OR 22 (EAST) FACILITY PLAN
FINAL REPORT

Salem, Oregon
June 2017

Prepared for
Oregon Department of Transportation
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List of Acronyms

AADT ..... Annual Average Daily Traffic
AASHTO..... American Association of State and Highway Transportation Officials
ARTS ..... All Roads Transportation Safety
HCM..... Highway Capacity Manual
HSIP ..... Highway Safety Improvement Program
HSM ..... Highway Safety Manual
LOS ..... Level of Service
MUTCD..... Manual on Uniform Traffic Control Devices
MWVCOG ..... Mid-Willamette Valley Council of Governments
ODOT ..... Oregon Department of Transportation
OHP ..... Oregon Highway Plan
SKATS..... Salem-Keizer Area Transportation Study
SPIS..... Safety Priority Index System
TSP..... Transportation System Plan
vph ..... Vehicles per Hour

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EXECUTIVE SUMMARY

1.0
EXECUTIVE SUMMARY

The goal of the OR 22 (East) Facility Plan is to evaluate the existing conditions and future transportation needs along the OR 22 (East) corridor between 25th Street and Gaffin Road. This report summarizes the methods used to accomplish this goal, which include evaluating the existing safety and operational performance of the study corridor, forecasting of future traffic demands, evaluating the future operational performance at key study intersections, identifying system deficiencies, and developing a list of recommended improvements that can be feasibly implemented given the right-of-way constraints along the corridor and limited funding available. In addition to engineering investigations, this facility plan was developed through a significant amount public involvement that provided insight into the issues and concerns along the corridor today, as well as potential improvements. The final list of recommended improvements includes:

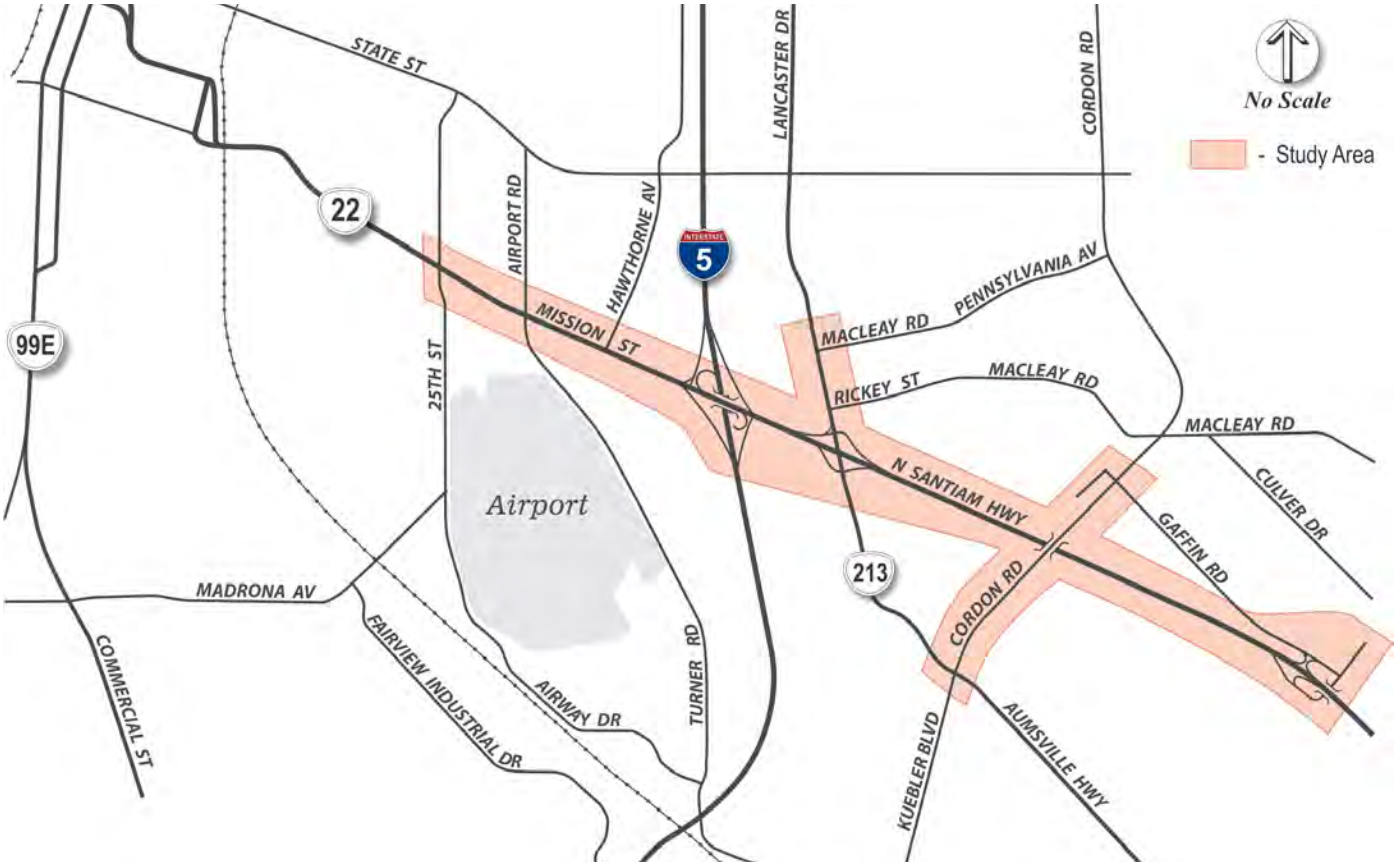
- Capacity improvements at the intersections of Mission Street (OR 22)/25th Street, Mission Street (OR 22)/Airport Road-Turner Road, Mission Street (OR 22)/Hawthorne Avenue, and Cordon Road/Gaffin Road.
- New interchange on OR 22 at Cordon Road.
- Implement Alternative Mobility Targets for the intersection of Mission Street (OR 22)/25th Street, Mission Street (OR 22)/Airport Road-Turner Road, Mission Street (OR 22)/Hawthorne Avenue, OR 22/I-5 SB Ramps, OR 22/I-5 NB Ramps, and Lancaster Drive/OR 22 WB Ramps.
- Improvements to the bicycle, pedestrian, and transit networks including a separated multi-use path and increased transit service along the corridor.
- Signal hardware and software improvements that will improve the safety and operational performance of the corridor (reflectorized back plates, supplemental signal heads, and adaptive signal timing).
- Access management strategies to maintain a balance between access and mobility along the corridor.

INTRODUCTION

2.0 INTRODUCTION

The goal of the OR 22 (East) Facility Plan is to assess existing and future transportation operations and safety conditions on OR 22 (Mission Street) between 25th Street and Gaffin Road in Salem. The study area extents are shown on Figure 1.

Figure 1.
OR 22 (East) Facility Plan Study Area Extents



The OR 22 (East) Facility Plan documents the existing conditions of the study area transportation system, as well as the forecasted future conditions for a 2035 horizon year. The primary objective of this plan is to identify system improvements that will create a safe and efficient facility for all roadway users. In addition to evaluating the study area intersections that exist today, this plan also considers a new interchange on OR 22 at Cordon Road.

This plan is the result of collaboration between agencies, jurisdictions, and the surrounding community to create a common vision for the future of the OR 22 corridor. The OR 22 (East) Facility Plan was developed for the Oregon Department of Transportation (ODOT), in partnership with the City of Salem and Marion County, and involvement from local stakeholders and members of the public.

The contents of the OR 22 (East) Facility Plan are as follows:

- **Chapter 3: Background –** A summary of local, regional, and state plans, policies, and regulations relevant to the study area.
- **Chapter 4: Existing Conditions –** A description of the safety and operational performance of the existing transportation network.
- **Chapter 5: Future (2035) Conditions –** An overview of the forecasting methodology for estimating future traffic volumes, and the associated operational performance of the existing transportation network under future traffic demands.
- **Chapter 6: Identified System Deficiencies –**A description of the safety and operational deficiencies of the existing and future transportation network, including an evaluation of the bicycle, pedestrian, and transit networks.
- **Chapter 7: Public Involvement –** An overview of the public involvement process, including open house and community outreach events and a summary of feedback received from local residents, commuters, and business owners.
- **Chapter 8: Recommended System Improvements –** A detailed description of the recommended transportation system improvements, including alternative mobility targets, and a prioritized list of improvements based on a combination of public input and a benefit-cost evaluation.

BACKGROUND

3.0 BACKGROUND

This project is a continuation of past work to examine and improve the OR 22 (East) corridor, including the Southeast Salem Area Transportation Study (SESATS), conducted in 2005, and the Cordon Road Interchange Study (CRIS), completed in 2012. In addition to these two studies, there are several local, regional, and statewide planning documents, policies, and regulations that impact the study area of this facility plan. The relevant documents are summarized in the following sections.

3.1 Local Plans, Policies, and Regulations

The following section summarizes several local plans, policies, and regulations including the SESATS and CRIS, the Salem Transportation System Plan, the Salem Area Comprehensive Plan, the Salem Airport Master Plan, the Salem-Keizer Area Transportation Study (SKATS) Regional Transportation Systems Plan, the Salem-Keizer Transit: Regional Transit Plan, the Marion County Rural Transportation System Plan, and the Marion County Comprehensive Plan.

3.1.1 Southeast Salem Area Transportation Study and Cordon Road Interchange Study

In 2005, the Oregon Department of Transportation (ODOT) initiated Southeast Salem Area Transportation Study (SESATS) that evaluated potential improvements at the Kuebler Boulevard/I-5 interchange as well as improvements along the OR 22 (East) Corridor including the need for a new Cordon Road/OR 22 interchange. Based on this study, ODOT concluded that a Cordon Road interchange would not be justified based on transportation needs and operations on the highway. However, City and County officials believed the interchange would provide significant benefits to their roadway network and requested that additional study of the interchange be considered.

Based on the City and County request, the Cordon Road Interchange Study (CRIS) was completed in 2012 by the City of Salem, Marion County, and ODOT. The purpose of the study was to address the need for a future interchange on OR 22 (East) at Cordon Road by documenting the rationale for the interchange to support the Expressway Management Plan and other local and regional transportation plans. The study considered the transportation, economic development, interchange spacing standards, and the design, costs, and funding aspects of the project to identify anticipated benefits.

The study found that benefits of the interchange included:

- Travel time savings;
- Resolving the geometric deficiencies, and associated safety issues, at the Cordon Road overpass;
- Providing an alternative to the existing and deficient interchanges at Gaffin Road and Lancaster Drive;
- Enhancing the transportation facilities and access for existing and planned employment centers, including truck traffic;
- Creating additional connectivity and supporting the functional classification hierarchy planned for the area;
- Improving detour routes for I-5 and OR 22 (East) as well as emergency response times; and
- Improving traveler safety.

The travel time saving and financial benefits are for a future scenario in the year 2030 during the PM peak hour. A new interchange could save between 37 and 49 hours of travel time on the roadway network within the study area, even with the additional delay caused along Cordon Road by the new interchange. This validates the intuitive assumption that the interchange would improve connectivity in the area, thus savings would extend beyond the weekday peak periods. The financial benefit of the interchange is estimated to be between $36.7 and $48.8 million, which exceed the cost of constructing the interchange over an estimated 30-year lifetime.

The CRIS includes the geometric constraints of the potential interchange as follows:

- Existing overcrossings of Lancaster Drive and Cordon Road do not meet current vertical clearance design standards (ODOT has since completed projects to lower OR 22 (East) at these locations so this is no longer a geometric constraint);
- Distance between existing interchanges at Lancaster Drive and Gaffin Road currently meet spacing standards, but adding an interchange at Cordon Road would require an exception from FHWA (preliminary feedback indicates that the exception would be granted);
- Sight distance and lack of shoulders create a safety hazard on the overcrossing on Cordon Road.

Much of the CRIS considers the impact an interchange would have on system connectivity and travelers. The study notes that Cordon Road serves as a circumferential route on the east side of Salem/Marion County, which is supported by the several local and regional TSPs. Based on existing roadway classifications and truck routes, the study also stated that an interchange at Cordon Road would be consistent with ODOT, City of Salem, and Marion County goals of travel efficiency. The study also found that an interchange would enhance exist-

ing safety by improving conditions for pedestrian and bicycles at OR 22 (East) and Lancaster Drive, and emergency response by improving response times and providing an alternative route if I-5 or OR 22 (East) experienced events that caused full closures. Additionally, improving the Cordon Road overcrossing would benefit all modes of transportation as the road has limited vertical sight clearance, narrow lanes, and no bike facilities, shoulder, sidewalk or railing.

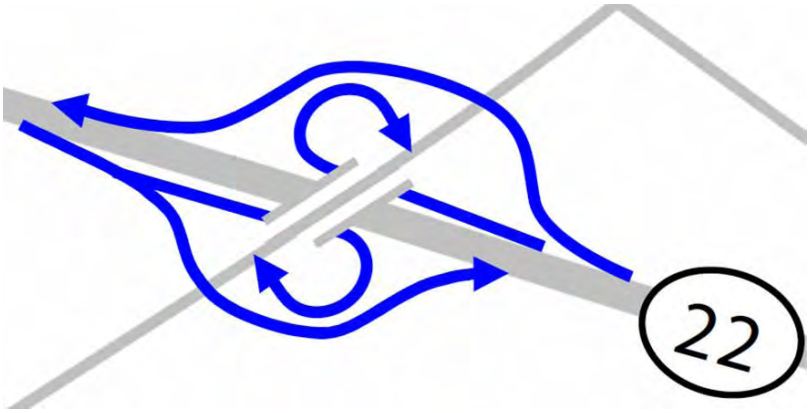
The CRIS includes rationale on the economic development of the area and how an interchange would support economic development by enhancing access and marketability of the area. Some existing businesses expressed their support for this conclusion including Sanyo Solar of Oregon (now Panasonic Eco Solutions Solar America, LLC), who plans to expand their existing facility, Corban University, who plans to purchase land to develop a conference center, businesses within the Mill Creek Corporate Center (FedEx and Home Depot Distribution Center, who sees 300 trucks per day accessing their site), and the Salem Airport, who plan to develop 71 acres of property for industrial and warehouse use.

What does this mean for the OR 22 (East) Facility Plan?

This document provides a thorough background on the existing conditions, future possibilities, and potential benefits of the Cordon Road/OR 22 interchange. The study includes technical memos that provide the detailed analysis completed to find the travel time and financial benefits, the geometric constraints of the study area, the system connectivity and traveler accessibility improvements from the interchange, and the community/traveler safety and emergency response benefits. It provides critical information to help guide development of the OR 22 (East) Facility Plan.

Finally, the CRIS provides a limited conceptual design and a planning level cost estimate of the interchange. Figure 2 shows a high level conceptual design of a basic partial clover interchange that considers the expected high number of left-turn movements on Cordon Road. This design is estimated at approximately $25.8 million (based on 2011 dollars), including right-of-way acquisition. Replacing the overcrossing (phase one) would cost about $17.5 million with an additional $8.3 million in subsequent phase to add interchange ramps. The CRIS notes that there is currently no funding identified for an interchange but it is listed as an "Included" project in the Salem-Keizer Area Transportation Study (SKATS) Regional Transportation Systems Plan (SKATS RTSP) and funding could come from a combination of sources. For funding purposes, the proposed interchange is considered a local project and is listed as a City of Salem project in the SKATS Metropolitan Transportation Improvement Program (MTIP).

Figure 2.
Conceptual Design of OR 22 & Cordon Road Interchange (CRIS, 2012)



3.1.2 Salem Transportation System Plan (TSP)

The Salem TSP, adopted in 1998 and last amended in 2016, is a component of the Salem Area Comprehensive Plan. Its primary goal is to provide a framework of goals, objects, and policies that will guide how investments are to be made in Salem's transportation system over the next 25 years to meet anticipated travel demands. This document must be consistent with the adopted Salem-Keizer Area Transportation Study (SKATS) Regional Transportation Systems Plan and the adopted Oregon Transportation Plan. The key elements discussed in the plan that apply to this project include the following:

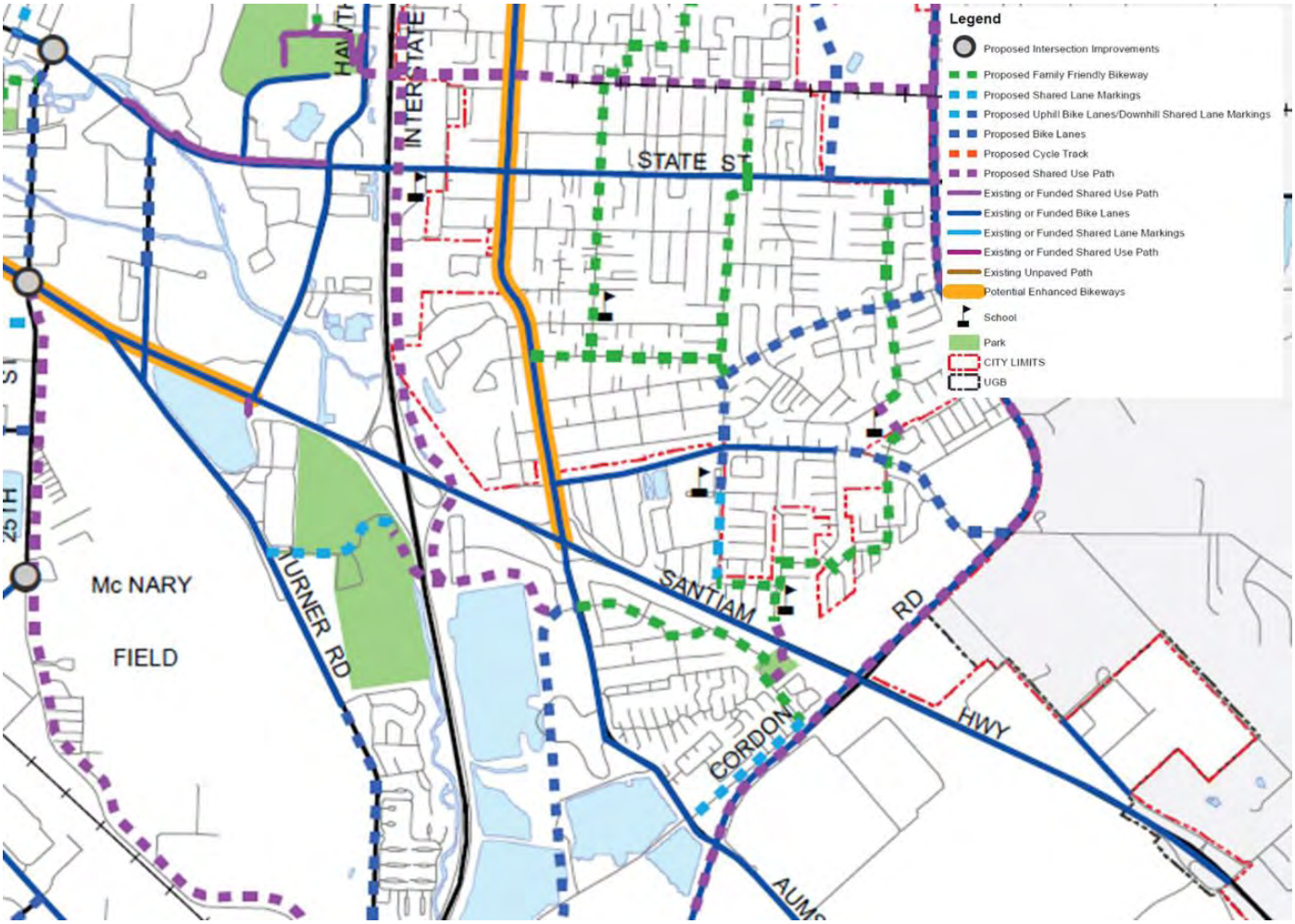
- Street System & Local Street Connectivity
- Transportation System Management & Neighborhood Traffic Management
- Bicycle, Pedestrian, and Transit Systems
- Intercity Passenger Travel
- Transportation Demand Management
- Freight Movement

In the Long-range Transportation Strategy section (years beyond 2030), it is recommended that OR 22 (East) may become a limited access facility through the Salem Urban Area. One improvement identified in the long-range plan is a new interchange at Cordon Road which should become part of a series of grade-separated interchanges at Cordon Road, Lancaster Drive, Interstate 5, and Hawthorne Avenue. Another improvement would be to eliminate driveway accesses along Mission Street/OR 22 between Hawthorne Avenue SE and Church Street and instead have a system of frontage roads to provide access to properties lacking frontage on side streets.

Bicycle and Pedestrian Facilities

Figure 3 shows the existing and proposed bicycle and pedestrian facilities in the study area. There is currently no off street facility for bicyclists along OR 22 (East), however, there is a proposed shared use path that provides access from Turner Road to Lancaster Drive under I-5. This crossing would allow bicyclists and pedestrians to avoid the I-5 interchange. There are also proposed facility developments along Airport Road, Lancaster Driver, and Cordon Road, including a crossing of OR 22 between Lancaster Drive and Cordon Road. If the Cordon Road bridge is reconstructed to include adequate bicycle and pedestrian facilities, that project may negate the need for the additional highway crossing.

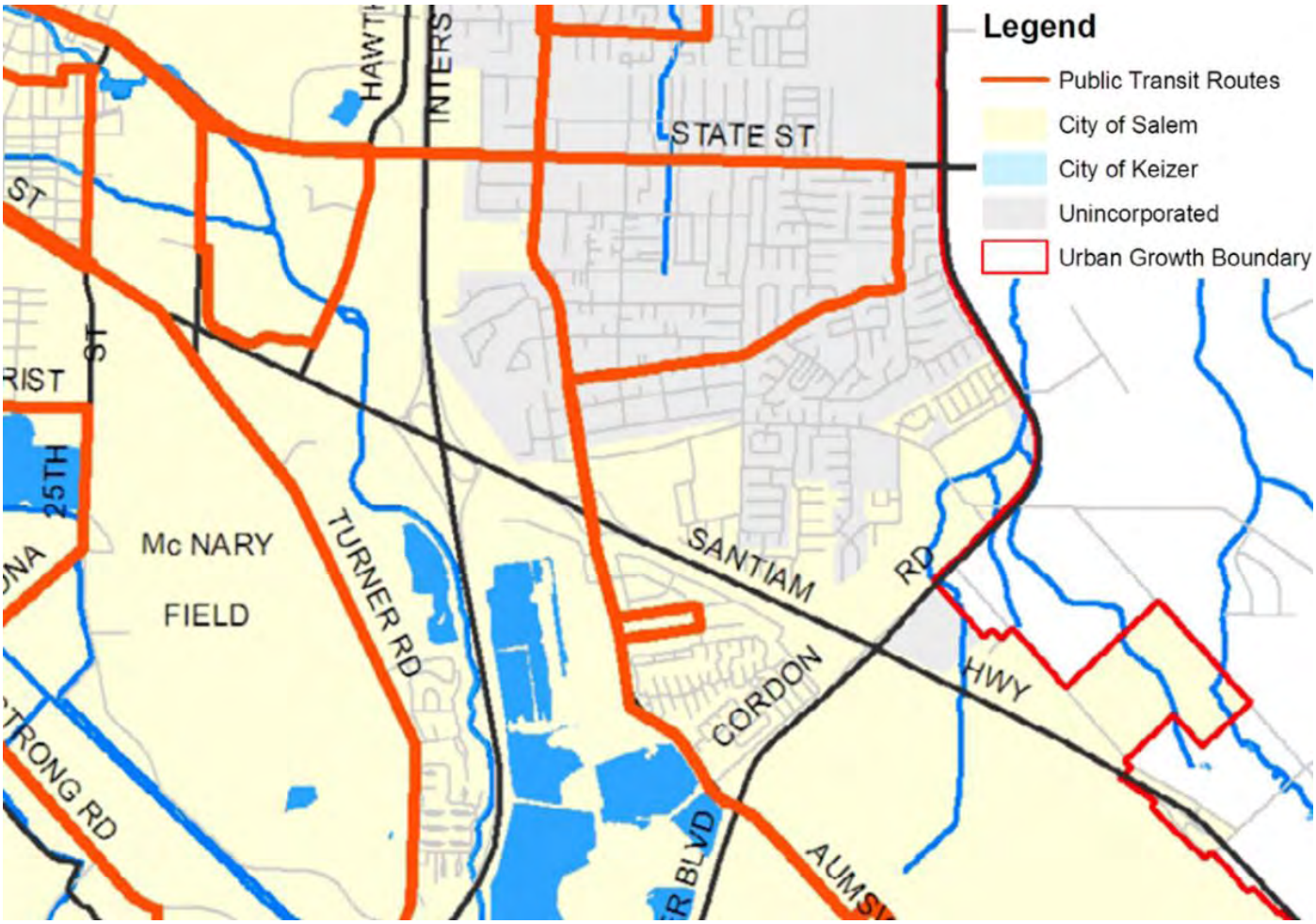
Figure 3.
Salem TSP Bicycle and Pedestrian Plan



Transit Facilities

Figure 4 shows the existing transit routes in the study area provided by Cherriots. Along OR 22 (East) there are limited transit routes with the exception of near Airport Road. The primary routes are along Turner Road and Lancaster Drive. The transit agencies that operate within the study area along OR 22 (East) include Cascades POINT, Greyhound, Valley Retriever, and Cherriots. Additionally, the Bolt Bus, HUT Airport Shuttle, and the City to City Shuttle operate on I-5.

Figure 4.
Salem TSP Transit Facilities



What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will reflect the goals, objectives, and policies of the Salem TSP and take into consideration all aspects of the TSP listed above. The specific improvement section related to Cordon Road SE and OR 22 will be further considered in the OR 22 (East) Facility Plan.

3.1.3 Salem Area Comprehensive Plan

The Salem Area Comprehensive Plan is a long-range plan for guiding development in the Salem Urban Area for the next 20 years. The goal is to accommodate development in a timely, orderly, and efficient arrangement of land uses and public facilities and services that meet the needs of present and future residents of the Salem urban area. There are several objectives of the plan including creating one document to present the goals and policies regarding urban growth, promote a desirable balance and location of land uses that are related to the transportation network, and coordinate the growth and development of the City of Salem with that of both Marion and Polk Counties and the City of Keizer. The plan discusses the following issues:

- Land Use Plan Map
- Urban Growth Policies
- Growth Management Program
- Implementation of the Comprehensive Plan
- Regional Procedures and Policies – Salem/Keizer Urban Areas
- Salem Urban Area Goals and Policies

The regional procedures and policies consider issues such as the relationship between Salem and Keizer Comprehensive plans, urban growth boundaries, transportation, residential density, and various utility facilities. The Salem Urban Area Goals and Policies section specifically considers issue such as urban growth and growth management, various levels of zoned development, transportation, open space and parks and recreation, and school location and development. One goal of the plan is to provide a balanced, multimodal transportation system for the Salem Urban Area that supports the safe and efficient movement of goods and people.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will carefully consider the land use planning maps, urban growth policies, and growth management programs of the Salem Area Comprehensive Plan as the study area is located completely within the Salem Urban Growth Boundary. It will also consider the goals and policies of the Salem urban area.

3.1.4 SKATS Regional Transportation Systems Plan

The 2015 Salem-Keizer Area Transportation Study (SKATS) Regional TSP addresses how to provide a sufficient level of accessibility to the residents and businesses of the Salem-Keizer area on a system that is safe for all users while maintaining compliance with Federal and State regulations, given the funding that is anticipated to be available, the support of the populace and local businesses, and the growth forecast for the next 20 years. The plan considers changing demographics, funding, and congestion factors at a regional level and addresses the following issues:

- Policies & Finances
- Existing & Proposed System
- Potential Impacts to the natural and built environment
- Outstanding Issues
- Population & Employment
- Regional Congestion Management

The Regional TSP specifically notes that OR 22 (East) from 25th Street to Gaffin Road is a congested section and includes several key intersections that are expected to worsen in the future. The plan expresses the need for an interchange-type connection between OR 22 (East) and Cordon Road. Additionally, the plan states that an environmental analysis needs to be performed as part of an Expressway Management Plan (EMP) in order to determine what future updates and projects should be included in the RTSP.

The plan includes several projects along the Kuebler Boulevard/Cordon Road/ Hazelgreen Road corridor to promote a limited access facility, with four travel lanes, turn lanes where appropriate and a separated multi-use path. One project includes widening Cordon Road between OR 22 (East) to Caplinger Road and between State Street and Center Street to four lanes and recommends replacing the current overpass with an interchange at OR 22 (East). Another project is to add or replace traffic signals along Lancaster Drive and to interconnect the signals to the Regional Traffic Signal Control Center (RTSCC). A number of planned projects bring the roads up to "urban standards" by providing sidewalks, curbs/gutters or bioswales, and bicycle lanes.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will consider existing and proposed systems and will try to limit the impact to the natural and built environment. Additionally, the population and employment aspects of the Salem-Keizer Region will be considered to better address the type of facility needed for future situations. The planned projects along OR 22 and Cordon Road will be further considered in the OR 22 (East) Facility Plan.

3.1.5 Salem Municipal Airport Master Plan – Phase 2

The 2012 Salem Municipal Airport (SLE) Master Plan was created to address current and future opportunities and challenges posed by changing region and national aviation trends. The SLE was originally built in 1929 and is owned and operated by the City of Salem. It supports aviation activity including scheduling commercial cargo airlines, non-scheduled commercial charter airlines, and general aviation (GA) users. SLE is part of the FAA National Plan of Integrated Airport Systems (NPIAS) and is eligible to receive grants under the Federal Aviation Administration Airport Improvement Program. It should be noted that only select portions of the Airport Master Plan have been approved by the FAA (notably, the airport layout plan), and that the 2012 Airport Master Plan update has not been formally adopted into the Salem Area Comprehensive Plan.

The airport's area of influence extends beyond the property boundaries, which requires the airport to work with municipalities and property owners. Many property owners have signed aviation easements allowing the property owners to continue to use their land pursuant to local zoning code, and allow the City to limit the height of the structures, terrain, and vegetation to keep the airspace safe for aircraft operations.

The master plan includes the various environmental impacts and existing and future aviation activity of the airport. It also discusses the need for a runway expansion and new passenger terminal and presents multiple alternatives, all of which impact the surrounding area. The proposed runway expansion plan will require property acquisition or easement of 11 acres south and 2 acres north of property boundaries. The new passenger terminal would include placing signs along OR 22 (East) directing passengers to the new facility.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will consider the future plans and development of the airport when considering potential improvements to the corridor.

3.1.6 Salem-Keizer Transit: Regional Transit Plan

The 2013 Salem-Keizer Transit Long-Range Regional Transit Plan (LRRTP) provides long-term strategic guidance for Salem-Keizer Transit service over the next 20 years through guidance on operational planning for both Cherriots and CARTS transit routes and coordination between Salem-Keizer Transit and other transit agencies in specific areas. The Salem-Keizer region includes Marion and Polk Counties, focusing on the urbanized areas, and includes a connection to Wilsonville in Clackamas County. The plan provides short, medium, and long-term recommendations for transit improvements and prioritizes them based on regional trip volumes, transit inclination, and total employment (2010). Each corridor has a travel market assessment discussion, feedback from stakeholders, and recommendations on transit services.

The plan discusses the undeveloped Industrial/Commercial area near OR 22 (East) and Cordon Road. The potential growth that is projected for this area may lead to employment growth between 14 to 17 percent from 2010 to 2020. This growth may indicate that the area will increase in its relative importance for transit services in the future.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will consider existing and potential transit services that operate along OR 22. The OR 22 (East) corridor within the study area is considered to be a high priority as it provides connection from Salem to Marion County and surrounding cities. Existing transit facilities provide access to the retail businesses along Lancaster Drive, which was also the route with the highest annual ridership in 2011. Additional commercial and industrial growth may lead to more transit services in the area.

3.1.7 Marion County Rural Transportation Systems Plan

The 2005 Marion County Rural Transportation Systems Plan (RTSP) provides the framework for developing a balanced, safe, multi-modal transportation system to accommodate planned growth, facilitate economic development, recognize fiscal reality, and maintain a high standard of livability and safety for the next 20 years. The goals of the plan include the following:

- Improve transportation system safety
- Provide an accessible, efficient, and practical transportation system appropriate to both urban and rural areas throughout the county
- Provide sufficient transportation capacity
- Recognize fiscal reality; facilitate best usage of available financial resources
- Work with partnership and communities to address community needs and values
- Promote alternative modes of transportation
- Consider land use and transportation relationships
- Address transportation policy issues and intergovernmental coordination
- Provide a useful plan document

The plan includes information about roadway inventory, bicycle and pedestrian facilities, traffic operations, public transportation provides, rail service and grade crossings, air service, water transportation, and utility service. Chapter 7 of the plan considers several different strategies for future development and projects and determines that a combination of the Intra-County and Inter-County strategies best address the goals and objective of the TSP. This strategy can be summarized as improvements that emphasize transportation along the county's primary Intra- and Inter-County corridors.

The plan recognizes the existing and planned land-use near OR 22 (East) and Cordon Road and notes that future growth in the area may increase its relative importance for transit services. The plan also calls for a refinement study to look at the need and impact of a new interchange on OR 22 (East) at Cordon Road and to determine the most effective design and other engineering or land use actions as alternatives to building a new interchange at Cordon Road.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will develop a balanced, safe, multi-modal transportation system to accommodate planned growth, facilitate economic develop, recognize fiscal reality, and maintain a high standard of livability. OR 22 (East) is a critical component of the Marion County Transportation System.

3.1.8 Marion County Comprehensive Plan

The 2010 Marion County Comprehensive Plan was developed for the purpose of providing a guide to development and conservation of Marion County's land resources for the next 10 to 20 years. The plan is a generalized long-range policy guide and lane use map that provides the basis for decisions on the physical, social, and economic development of Marion County. This plan coordinates sewer and water, transportation, housing, commerce, industry, schools, land use, recreation, and natural resources to address the following objectives:

- Prevent further conflicts between land use activities
- Provide an objective basis for the land use decisions of elected officials, planners, public agencies, and individual citizens
- Provide a source of information describing the conditions and characteristics of the community
- Identify the direction and nature of changes which may be expected within the community
- Provide a better understanding of specific actions, programs and regulations which may affect the general public
- Establish a balance between the competing state and county resource preservation goals and development preference

The plan provides a goal, policy, objectives, standards, and guidelines that are intended to be used for coordination with other jurisdictions. The plan considers issues such as agricultural and forest lands, rural development, urbanization, transportation, parks and recreation, economic development, environmental quality and natural resources, and energy.

What does this mean for the OR 22 (East) Facility Plan?

The guidelines provided in the Marion County Comprehensive Plan will impact the Facility Plan by defining the land use activities near OR 22 (East) and potentially predict the types of developments that will occur within the project area.

3.2 Statewide Plans, Policies, and Regulations

The following sections summarize the Oregon Highway Plan, the Oregon Transportation Plan, the Oregon Bike and Pedestrian Plan, the Oregon Freight Plan, the Transportation Planning Rule, the Access management Rules, and the Statewide Transportation Improvement Program.

3.2.1 Oregon Highway Plan

The Oregon Highway Plan (OHP) was originally adopted in 1991 and was significantly amended/updated in 1999 when it was reaffirmed as a modal element of the 2006 Oregon Transportation Plan (OTP). The OHP defines policies and investment strategies for Oregon's state highway system. The plan contains three elements: a vision element that describes the broad goal for how the highway

system should look in 20 years; a policy element that contains goals, policies, and actions to be followed by state, regional, and local jurisdictions; and a system element that includes an analysis of needs, revenues, and performance measures. The OHP addresses the following issues:

- Efficient management of the system to increase safety, preserve the system, and extend its capacity
- Increased partnerships, particularly with regional and local governments
- Links between land use and transportation
- Access management
- Links with other transportation modes
- Environmental and scenic resource
- Describe roadway characteristics and applicable mobility standards

The OHP designates OR 22 (East) as a Statewide Highway (NHS), which primarily provides connections to major cities, regions of the state, and other states. A secondary function in urban areas is to provide connections for regional trips within the metropolitan area. The management objective is to provide for safe and efficient high-speed continuous-flow operation in urban and rural areas. OR 22 (East) within the study area is also classified as an Expressway, a Freight Route, part of the National Network (Federally Designated Truck Route), and a Reduction Review Route[1].

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will consider all of the issues discussed in the Oregon Highway Plan and use the guidelines provided in the plan for improvement recommendations with the goal to provide connections to major cities, regions of the state, and other states while providing safe and efficient high-speed continuous-flow operations.

The OHP also outlines mobility targets (volume to capacity ratios) for state facilities inside and outside the Portland metro area. The study area for this facility plan includes two state roadways – OR 22 (East) and Interstate 5. According to the OHP, OR 22 (East) is classified as a Statewide Highway while I-5 is classified as an Interstate Highway. Both OR 22 (East) and I-5 are freight routes and Reduction Review Routes[2], which means that the vehicle-carrying capacity of the route may not be permanently reduced, except in specific cases to address safety or access considerations. Table 1 shows the mobility targets for these two roadways.

Table 1. Volume to Capacity Ratio Targets outside Metro

ROADWAY	JURISDICTION (HIGHWAY CATEGORY) [a]	MOBILITY TARGET
OR 22 (East)	ODOT (Freight Route on a State Highway)	v/c ≤ 0.85
Interstate 5	ODOT (Interstate Highway)	v/c ≤ 0.85

[a] All major road segments are inside the urban growth boundary and MWVCOG MPO

1 Oregon Highway Plan, Appendix D-OR Classification by Milepoint for State OR 72 and 162.
2 As defined in Oregon Revised Statute (ORS) 366.215 and Oregon Administrative Rule (OAR) 731-012-0010.

The OHP also outlines access spacing standards, including interchange spacing standards, for state highways, as shown in Table 2.

Table 2. Minimum Spacing Standards Applicable to Non-Freeway Interchanges with Two-Lane Crossroads

CATEGORY OF MAINLINE	TYPE OF AREA	SPEED OF MAINLINE	SPACING DIMENSIONS				
			B	C	X	Y	Z
Expressways, Stateside, Regional and District Highways	Fully Developed Urban	45 mph (75 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	750 ft. (230 m)	1320 ft. (400 m)	990 ft. (300 m)
	Urban	45 mph (70 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)
	Rural	55 mph (90 kph)	1 mi. (1.6 km)	2 mi. (3.2 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)

3.2.2 Oregon Transportation Plan

An update of the Oregon Transportation Plan (OTP) was adopted by the Oregon Transportation Commission (OTC) in 2006. The OTP is a comprehensive plan that addresses the future transportation needs of the State of Oregon through the year 2030. It considers all modes of transportation, including airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation, and railroads.

The following seven goals with associated policies and strategies are provided in the plan to address the core challenges and opportunities facing transportation in Oregon:

There are also six key initiatives identified to reflect the desired direction of the plan and to frame the plan implementation. These initiatives are:

1. Maintain the existing transportation system to maximize the value of the assets. If funds are not available to maintain the system, develop a triage method for investing available funds.

2. Optimize system capacity and safety through information technology and other methods.

3. Integrate transportation, land use, economic development and the environment.

4. Integrate the transportation system across jurisdictions, ownerships and modes.

5. Create a sustainable funding plan for Oregon transportation.

6. Invest strategically in capacity enhancements.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will prioritize travel demand management and transportation system operations given the different land use areas along the corridor as well as identify solutions that support the movement of people over vehicles, while reducing transportation barriers to daily activities for walkers, bikers, and public transportation users in a safe and secure manner.

3.2.3 Oregon Bike and Pedestrian Plan

The provision of safe and accessible bicycling and walking facilities in an effort to encourage increased levels of bicycling and walking is the goal of the Oregon Bicycle and Pedestrian Plan, which is an element of the Oregon Transportation Plan (OTP) that was most recently adopted in May 2016. The plan identifies actions that will assist local jurisdictions in understanding the principals and policies that ODOT follows in providing bike and walkways along state highways. In order to achieve the plan's objectives, the strategies for system design are outlined, including:

- Providing bikeway and walkway systems and integrating with other transportation systems
- Providing a safe and accessible biking and walking environment
- Developing educational programs that improve bicycle and pedestrian safety

The document includes the Policy & Action Plan and the Bikeway & Walkway Planning Design, Maintenance & Safety. The Policy & Action section contains background information, legal mandates and current conditions, goals, actions and implementation strategies ODOT proposes to improve bicycle and pedestrian transportation. The Bikeway & Walkway Planning Design, Maintenance & Safety section assists

What does this mean for the OR 22 (East) Facility Plan?

OR 22 (East) has dedicated bicycle lanes and sidewalks beginning west of the I-5 interchange and continuing to downtown Salem. This Bicycle and Pedestrian Plan will help guide improvements to facilities where walking and bicycle activity is present along OR 22 (East).

ODOT, cities and counties in designing, constructing and maintaining pedestrian and bicycle facilities. Design standards are recommended and information on safety is provided.

3.2.4 Oregon Freight Plan

The purpose of the 2011 Oregon Freight Plan (OFP) is to improve freight connections to local, state, regional, national, and global markets in order to increase trade-related job and income for Oregon workers and businesses. The plan provides an outline for ODOT, other state and local agencies, and businesses to work together to enhance the freight system. The plan identifies a number of current challenges including:

- System Operation and Development
- Safety and Communications
- Funding and Environmental Considerations

The OFP will support the Oregon Transportation plan's key initiatives through seeking input from stakeholders and the public as well as federal, state, and local advisory committees, coordinating among and between ODOT business units as well as with other federal, state, and local agencies, and developing coordinated transportation system plans on a state and local level.

The OFP lists OR 22 (East) as a facility that provides connectivity within the Mid-Willamette Valley Area Commission on Transportation (MWACT), which includes Marion, Yamhill, and Polk Counties. The Salem Airport is classified as Category 1: Commercial Service Airport, where measureable air cargo shipment volumes are expected.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will provide guidance for trucks, rail, river, and air transportation systems that are along OR 22 (East) and how to make safe and efficient facility for freight systems.

3.2.5 Transportation Planning Rule (OAR 660.012)

Transportation system planning in Oregon is required by Statewide Planning Goal 12 – Transportation.[3] The Transportation Planning Rule (TPR), OAR 660-012, describes how to implement Statewide Planning Goal 12.[4]

By implementing Statewide Planning Goal 12 (Transportation), the TPR promotes the development of safe, convenient, and economic transportation systems that are designed to reduce reliance on

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will promote the growth of existing and future centers of economic activity, routes and modes connecting passenger facilities and freight facilities, intermodal facilities and industrial land, and major intercity and intra-city transportation corridors and supporting transportation networks. It will also promote the most cost-effective modes and solutions over the long-term that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged.

3 Statewide Planning Goals: http://www.oregon.gov/LCD/goals.shtml
4 Transportation Planning Rule: http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_012.html

the automobile. Key elements include direction for preparing, coordinating, and implementing transportation system plans. In particular, OAR 660-012-0060 addresses amendments to plans and land use regulations and includes measures to be taken to ensure allowed land uses are consistent with the identified function and capacity of existing and planned transportation facilities. This rule includes criteria for identifying significant effects of plan or land use regulation amendments on transportation facilities, actions to be taken when a significant effect would occur, identification of planned facilities, and coordination with transportation facility providers.

3.2.6Access Management Rules (OAR 734-051)

On January 1, 2012 Senate Bill 264 took effect which directed ODOT to establish less stringent access management rules, mitigation measures, access spacing and mobility standards for highways. Based on this Senate Bill, the Oregon Access Management Rule[5] (OAR 734-051) was updated in 2012 to balance the safety and mobility needs of travelers along state highways with the access needs of property and business owners. ODOT's rules manage access to the state's highway facilities in order to maintain highway function, operations, safety, and the preservation of public investment consistent with the policies of the 1999 OHP. Access management rules allow ODOT to control the issuing of permits for access to state highways, state highway rights of way and other properties under the State's jurisdiction.

In addition, the ability to close existing approaches, set access spacing standards and establish a formal appeals process in relation to access issues is identified. These rules enable the State to direct location and spacing of intersections and approaches on state highways, ensuring the relevance of the functional classification system and preserving the efficient operation of state routes. The access spacing standards for state highways with an AADT greater than 5,000 vpd are shown in Table 3.

What does this mean for the OR 22 (East) Facility Plan?

The OR 22 (East) Facility Plan will adhere to the access spacing standards since they increase the safety of streets by creating an environment that matches the street functional classification and forestalling costly major capacity improvements.

Table 3. Access Spacing Standards for Statewide Highways with AADT > 5,000

	URBAN EXPRESSWAY	URBAN HIGHWAY
SPEED (MPH)	Spacing (feet)	
55 or higher	2,640	1,320
50	2,640	1,100
40-45	2,640	800

5 Access Management Rule: http://arcweb.sos.state.or.us/rules/OARS_700/OAR_734/734_051.html

3.2.7 Statewide Transportation Improvement Program

The 2015 Statewide Transportation Improvement Program (STIP) is the Oregon Department of Transportation's short term capital improvement program, providing project funding and scheduling information for ODOT and the state's metropolitan planning organizations. This ongoing 4-year program was developed by the department, federal, and local governments, Area Commissions on Transportation, tribal governments, and the public. The program covers state and federally-funded system improvements of which funding is approved and that are expected to be undertaken during the upcoming four-year period. The major components that are compiled in the STIP include:

- **Enhance Program –** allocating available funding to ODOT Regions
- **Fix-It Program –** projects identified from Oregon Transportation Management Systems
- **State and Local Programs –** Federal or state regulations or legislation; OTC direction; or in place agreements
- **Statewide Competitive Programs and Public Transit Programs**
- **Metropolitan Transportation Improvement Program (MTIP) –** Urban areas with over 50,000 residents
- **Federal and State Discretionary Projects –** Special set-asides approved by Federal or State Government
- **Tribal Transportation Programs –** Federally administered program with projects in STIP

What does this mean for the OR 22 (East) Facility Plan?

The STIP provides funding sources for projects that improve the transportation system in Oregon. The recommendations of the OR 22 (East) Facility Plan may be eligible for funding from these sources.

3.3 Key Findings and Considerations

Several of the local, regional, and statewide planning documents have a common goal – to improve the safety, mobility, and efficiency of the transportation network in the Salem-Keizer area. Many plans specifically identify the OR 22 (East) corridor as a vital component of the transportation system for passenger vehicles, freight, bicycles, and pedestrians. The benefits of providing an interchange connection between OR 22 (East) and Cordon Road were discussed in several of the documents. The recommendations presented in Chapter 8.0 of this report were developed in accordance with the goals, objectives, regulations, and planned improvements outlined in the aforementioned planning documents.

EXISTING CONDITIONS

4.0
EXISTING CONDITIONS

The existing conditions of the study area transportation system were evaluated on the basis of safety, operations, and environmental considerations. The following sections present a summary of the existing roadway facilities (including bicycle, pedestrian, and transit facilities), observed traffic patterns, roadway and intersection safety performance, intersection operational performance, and key environmental features within the study area.

4.1 Transportation Facilities and Activity

As shown on Figure 5, the OR 22 (East) Facility Plan study area includes seven signalized intersections and three unsignalized intersection along OR 22 (East) and in the surrounding area. I-5 runs north/south through the middle of the study area. OR 22 (East) is a major commuter route into downtown Salem. The land use along OR 22 (East) includes commercial and residential development. Access is only provided via major intersections along OR 22 (East), with the exception of the segment between 25th Street and Airport Road/Turner Road that currently includes three driveways. The Oregon Highway Plan designates OR 22 (East) in the project area as a Statewide Highway, Expressway, and Freight Route and is part of the National Highway System (NHS). The highway is also a Reduction Review Route, as described in ORS 366.215 and OAR 734-012.

Figure 5.
OR 22 (East) Facility Plan Study Intersections

Between 25th Street and Airport Road/Turner Road, OR 22 (East), also known as Mission Street or Salem Highway No. 72, is classified as an Urban Principal Arterial. From Airport Road/Turner Road east to Gaffin Road, OR 22 (East), also called Salem Highway No. 72 and North Santiam Highway No. 162, is classified as an Urban Freeway/Expressway.[6] As such, the two segments of OR 22 (East) have different characteristics. Mission Street provides access to downtown Salem from I-5 with a 4 or 6 lane cross section and multiple access points, while North Santiam Highway east of I-5 is a 4 lane highway with very limited access and higher speeds. The segment of Mission Street (OR 22) within the study area experiences a lot of commuter traffic during the a.m. and p.m. peak periods, high commercial traffic volumes throughout the day, and regular freight traffic coming to and from the airport, downtown, and the various shopping centers. East of I-5, OR 22 (East) experiences more pronounced directional peaks in traffic volumes which is a common trend on commuter routes. These traffic patterns are discussed further in Section 4.3.

4.1.1 Roadway Network

The key characteristics of the study area roadways are shown in Table 4 and include functional classification, number of travel lanes, posted speed, and the presence of sidewalks and/or bike lanes (within the vicinity of OR 22). The functional classification is important because it specifies the purpose of the facility[7] and is a determining factor roadway design, access spacing, and intersection performance standards.

Table 4. Existing Study Area Roadway Characteristics

ROADWAY	CLASSIFICATION	TRAVEL LANES	POSTED SPEED	SIDEWALK	BIKE LANES
ODOT ROADWAY [a]					
OR 22 – Mission Street	Urban Other Principal Arterial	6	40-50	Partial	Partial
OR 22 – North Santiam	Urban Other Freeway/Expressway	4	50	No	No
I-5 Pacific Highway	Urban Interstate	6	60	No	No
CITY OR COUNTY ROADWAY [b]					
25th Street (south)	Major Arterial	4	45	Partial	No
25th Street (north)	Minor Arterial	3-4	25	Yes	No
Airport Road	Minor Arterial	3-4	40	Partial	Yes
Turner Road	Minor Arterial	3-4	45	Partial	Yes
Hawthorne Avenue	Major Arterial	3-4	40	Yes	Yes
Lancaster Drive (north)	Major Arterial	4	40	Yes	Yes
Lancaster Drive (south)	Major Arterial	2	40	Partial	Partial
Cordon Road	Parkway	2	45	No	Yes[c]
Gaffin Road/Deer Park Road	Minor Arterial	2	45	No	No

[a] Data from ODOT TransGIS Online Tool, October 2015.
[b] Data from 2012 Salem Transportation System Plan: Street System Map 3-1 Street Plan
[c] No Bike Lane on overpass

6 East of Salem, OR 22 (East) is classified as a Rural Principle Arterial

7 The primary purpose of an arterial is to provide mobility, whereas at the opposite end of the spectrum, a local road is primarily concerned with site access. Collector roadways provide a transition between arterials and local roads.

4.1.2 Intersecting Facilities and Land Use

25th Street provides access to a large residential area to the north as well as a shopping center and Post Office. To the south, 25th Street provides access to the Salem Airport and industrial and office uses on McGilchrist Street, Madrona Avenue, and Fairview Industrial Drive. Turner Road provides secondary access to the airport as well as two large shopping centers and industrial and office uses. Airport Road connects OR 22 (East) to State Street and provides access to several government buildings and offices. Hawthorne Avenue, similar to Airport Road, connects OR 22 (East) to State Street and provides access to Costco, office buildings and several hotels. The study intersection at 25th Street, Airport Road-Turner Road, and Hawthorne Avenue have similar characteristics and experience high traffic volumes during the peak hours.

4.1.3 Bicycle and Pedestrian Facilities

There are several different types of bicycle and pedestrian facilities along OR 22 (East) and the adjacent street network, as shown on Figure 6. The network of bicycle and pedestrian facilities along OR 22 (East) is more comprehensive west of I-5 than to the east.

Figure 6.
Existing Bicycle and Pedestrian Facilities

The most noticeable gaps in the bicycle and pedestrian network are on the Lancaster Drive and Cordon Road bridges over OR 22 (East), as well as the I-5 interchange and surrounding area (shown on Figure 7 and Figure 8, respectively). Although OR 22 east of I-5 provides wide shoulders that can be used by bicyclists and pedestrians, the context of the roadway is significantly different from the west side of I-5 and is not a comfortable environment for bicycle or pedestrian travel.

Figure 7.
Street-View of Cordon Road Bridge

Figure 8.
OR 22 Bicycle and Pedestrian Facilities in the Vicinity of I-5

4.2 Existing Safety Performance

The existing safety performance of the OR 22 (East) corridor was evaluated using ODOT's most recent Safety Priority Index System (SPIS) findings, the ODOT All Roads Transportation Safety (ARTS) project findings, and an analysis of the past five years of collision data, as described in the following sections.

4.2.1 Safety Priority Index System (SPIS)

The Safety Priority Index System (SPIS) is a ranking system developed by ODOT to identify potential safety problems on state highways. SPIS scores are developed based upon crash frequency, severity, and rate for a 0.10 mile or variable length segment along the state highway over a rolling three-year window (i.e., every year it is updated with the most recent three years). A prioritized list of the top 10 percent of statewide SPIS sites is created for each region, and the top five percent are investigated by ODOT. For the most current year analyzed (2014), there are four locations along OR 22 (East) that are in the top 10 percent of statewide SPIS locations within the study area as shown in Figure 9.

Figure 9.
2014 SPIS (2011-2013 crashes)

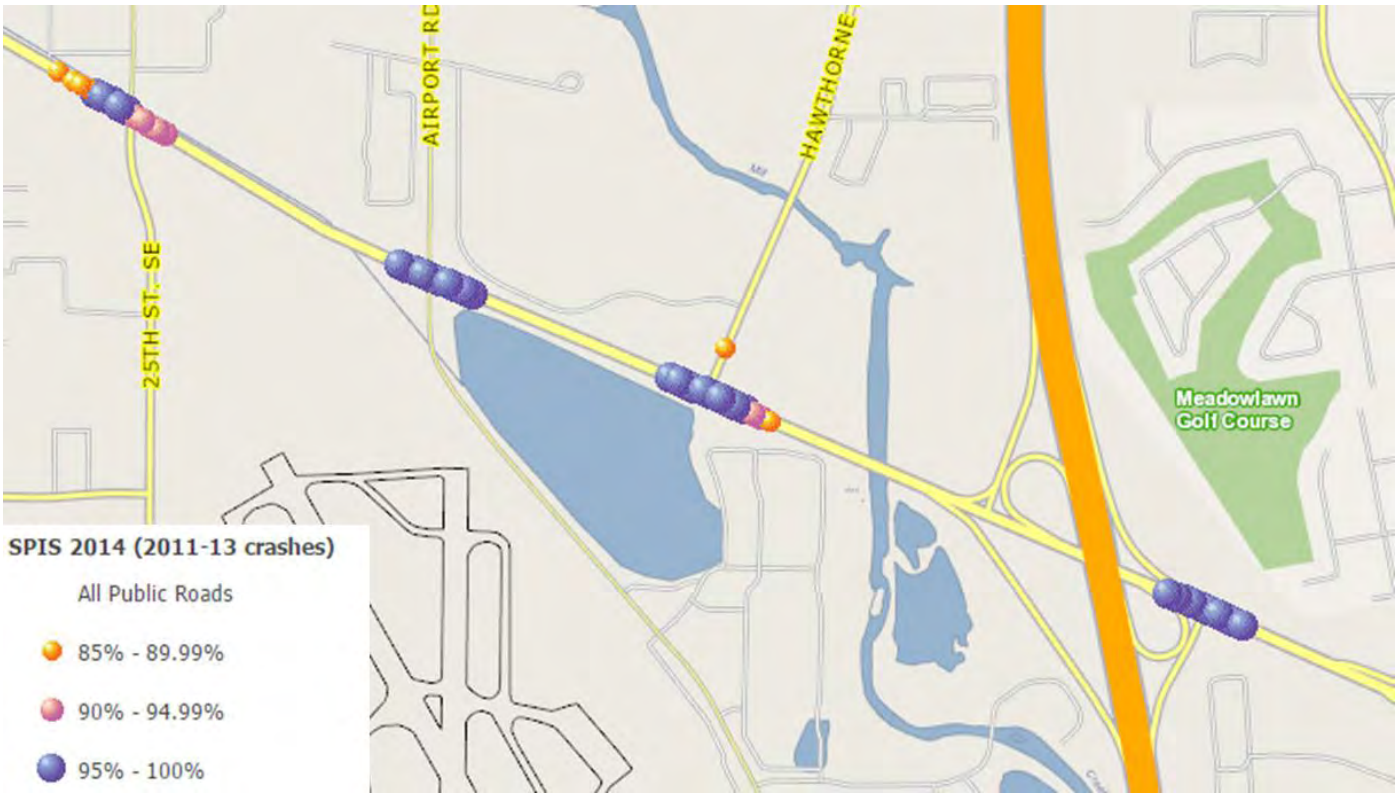


Table 5 has a description of each location and comments about the types of collisions that occurred in each segment. General trends include an overrepresentation of rear-end collisions and drivers following too closely. This is likely due to the driving conditions during the congested peak hours where stop and go traffic is experienced between the signalized intersections.

Table 5. Study Area Top Ten Percentile 2014 SPIS Segment Results

SEGMENT	INTERSECTION	MILE POST		SPIS SCORE	ODOT SPIS NOTES SUMMARY
		START	END		
1	Mission Street (OR 22) at 25th Street	7.43	7.62	66.96	• Crash characteristics: Rear-end, following too closely, improper lane change, older drivers
2	Mission Street (OR 22) at Airport Road/Turner Road	7.83	8.02	75.21	• Segment and intersection crash rates > critical rate • Crash characteristics: Rear-end, head-on collision, following too closely, improper lane change, careless driving, older drivers
3	Mission Street (OR 22) at Hawthorne Avenue	8.17	8.37	77.74	• Segment and intersection crash rates > critical rate • Crash characteristics: rear-end, following too closely, wet conditions, early morning hours, older drivers
4	OR 22 at I-5 Northbound Ramp Terminal	1.45	1.65	78.05	• Segment and intersection crash rates > peer and critical rates • Crash characteristics: intersection-related crashes, careless driving

4.2.2 ODOT ARTS Study

The Oregon Department of Transportation (ODOT) met with the League of Oregon Cities (LOC) and the Association of Oregon Counties (AOC) to establish the framework for what the new program should look like. A Memorandum of Understanding was agreed upon and the All Roads Transportation Safety (ARTS) Program was formed.

Development of a safety program for all public roads will increase awareness of safety on local roads, promote best practices for infrastructure safety, compliment behavioral safety efforts, and focus limited resources on the areas most likely to reduce fatal and serious injury crashes in the State of Oregon. The following are key themes that form the backbone of the ARTS Program. The principle guidelines for this program include:

- The program goal is to reduce fatal and serious injury crashes.
- The program must include all public roads.
- The program is data driven and blind to jurisdiction.
- The process will be overseen by ODOT Regions.

The ARTS program incorporates both traditional "hot spot" and systemic methodologies.

Table 6 shows the locations identified by the ARTS program that are within the study area and the recommended countermeasures. These projects are currently being scoped by ODOT and will progress based on their results.

Table 6. 2015 ARTS Proposed Hot-Spot Project List

RANK	LOCATION DESCRIPTION	INTERSECTION	COST-BENEFIT RATIO	COUNTERMEASURES
7	OR 22 @ Mile point 8.3 (072-Salem)	Mission Street (OR 22) at Hawthorne Avenue	92.1	• Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number • Install Pedestrian Countdown Timer(s)
12	OR 22 @ Mile point 1.5 (162-North Santiam)	OR 22 at NB I-5 Ramps	62.4	• Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number
67	OR 22 @ Mile point 7.9 (072-Salem)	Mission Street (OR 22) at Airport Road/ Turner Road	4.7	• Install Urban Green Bike Lanes at Conflict Points • Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number • Install Pedestrian Countdown Timer(s)

4.2.3 ODOT Collision Data (2009-2013)

The raw collision data obtained from the ODOT Crash and Analysis Reporting Unit was also evaluated. This evaluation considered the most recent five years (2009-2013) of collision data along OR 22 and the adjacent streets. The majority of collisions occurred along OR 22 between 25 Street and the Lancaster Drive Interchange. Calculated collision rates that exceed the ODOT critical crash rates (intersections) or average statewide crash rates on similar facilities (segments) are noted in bold in Table 7. Raw collision data can be found in Appendix D.

Table 7 summarizes collisions along the major corridor segments and includes collision severity, collisions per year, and the collision rate for the five year period. The average ODOT State Highway Crash Rates for similar functional classification roadways (Urban Principle Arterial and Urban Freeway/Expressway) are 2.82 and 0.94 collisions per million vehicle-miles traveled, respectively.[8] Accord-

8 2013 State Highway Crash Rate Tables, ODOT Crash Analysis and Reporting Unit, July 2013; Table IV.

ing to the ODOT Analysis Procedures Manual, the critical crash rates for urban three-leg and four-leg signalized intersections are 0.51 and 0.86, respectively. Calculated collision rates that exceed the ODOT critical crash rates (intersections) or average statewide crash rates on similar facilities (segments) are noted in bold in Table 7.

Table 7. OR 22 Study Area Collision Data (2009-2013)

OR 22 - SEGMENT (DISTANCE)	SEGMENT COLLISIONS (BY SEVERITY)							
	FATAL	INJURY A	INJURY B	INJURY C	PDO[a]	TOTAL	COLLISIONS PER YEAR	COLLISION RATE[b]
Mission Street (OR 22) (1.31 mi.)	1	0	6	26	41	74	14.8	0.73
OR 22 (2.62 mi.)	0	1	7	22	46	76	15.2	0.45
Lancaster Drive								
(0.60 mi.)	0	0	1	4	1	6	1.2	0.10
Cordon Road (1.0 mi.)	0	0	0	2	3	5	1.0	0.12
Deer Park Drive								
(0.2 mi.)	0	0	1	1	1	3	0.6	0.72
25th Street (0.1 mi.)	0	0	0	0	1	1	0.2	0.29
OR 22 - INTERSECTIONS	**INTERSECTION COLLISIONS (BY SEVERITY)**							
	FATAL	INJURY A	INJURY B	INJURY C	PDO[a]	TOTAL	COLLISIONS PER YEAR	COLLISION RATE[c]
Mission Street (OR 22)/25th Street	0	1	5	26	52	84	16.8	0.82
Mission Street (OR 22)/Airport Road-Turner Road	0	1	9	23	29	62	12.4	0.59
Mission Street (OR 22)/ Hawthorne Avenue	1	0	6	37	53	97	19.4	**1.04**
OR 22/I-5 Pacific Highway SB Ramp	0	2	4	13	20	39	7.8	0.42
OR 22/I-5 Pacific Highway NB Ramp	0	0	7	29	35	71	14.2	**0.64**
OR 22/ Lancaster Drive EB Ramps	0	0	1	4	15	20	4.0	0.47
OR 22/ Lancaster Drive WB Ramps	0	0	4	6	6	16	3.2	0.30

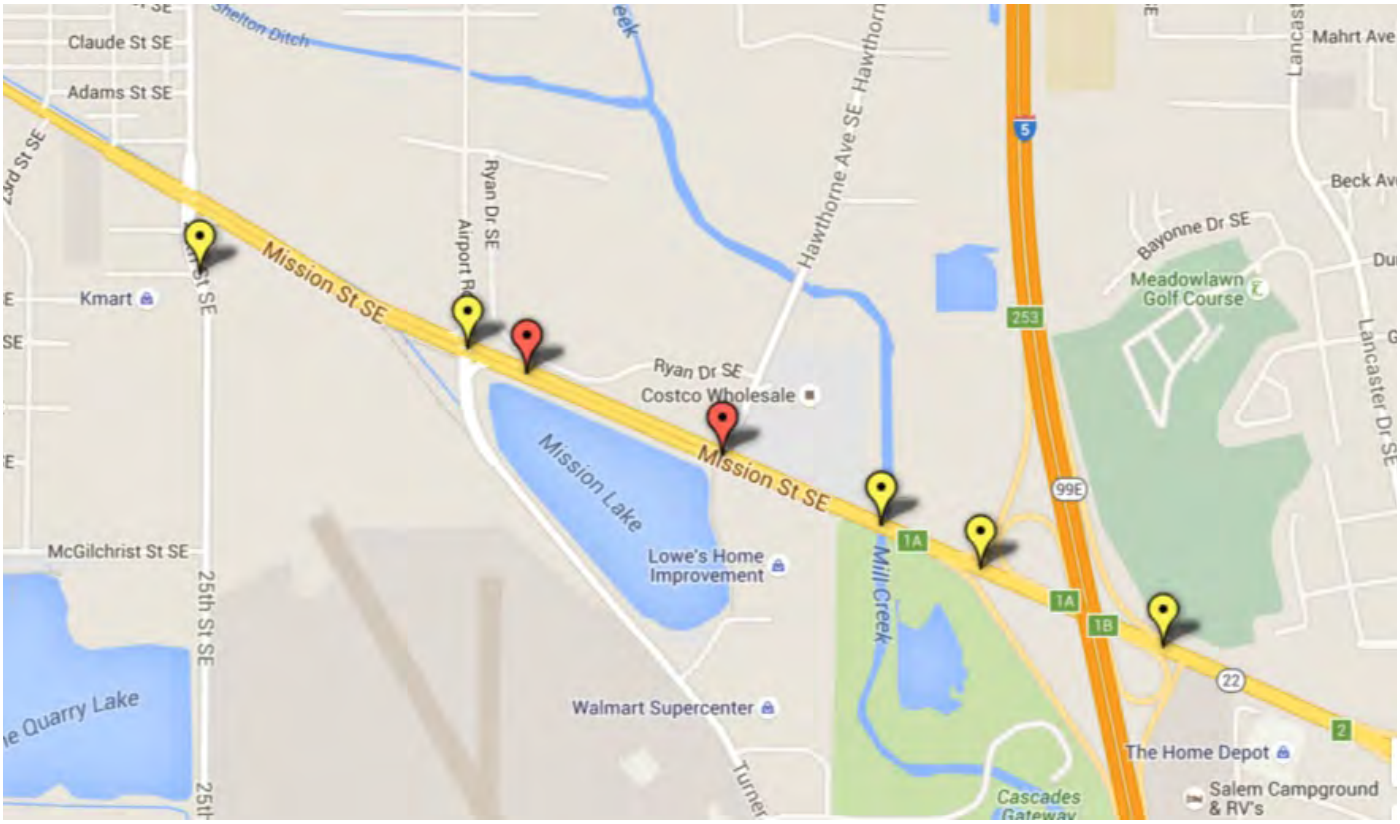
[a] PDO = Property Damage Only.
[b] Segment Collision Rate = Collisions per year per million vehicle-miles traveled
[c] Intersection Collision Rate = Collisions per year million entering vehicles

Bold/Highligted Text = Collision rate exceeds critical crash rate

The collision data in Figure 10 shows the Fatal and 'Injury A' type collisions. There are two fatal collisions along OR 22 (East); one occurring at the intersection of Mission Street (OR 22) and Hawthorne Avenue and the other along a segment or Mission Street (OR 22) between intersections. Both collisions occurred during the day with clear weather. One fatality was a head on collision between two passenger vehicles caused by one vehicle crossing the center line. The second fatality was caused by a passenger vehicle running a red light at the traffic signal and hitting a pedestrian.

A total of five 'Injury A' type crashes were recorded, one of which included a cyclist. Three of the collisions were rear end collisions while the others were turning and angle related. Three collisions occurred during clear, dry weather, one occurred during cloudy, dry weather and another in rainy, wet weather. Three collisions occurred during the daytime and two occurred at night with street lights.

Figure 10.
Fatal (red) and Injury A (yellow) Collisions Along OR 22 (2009-2013)



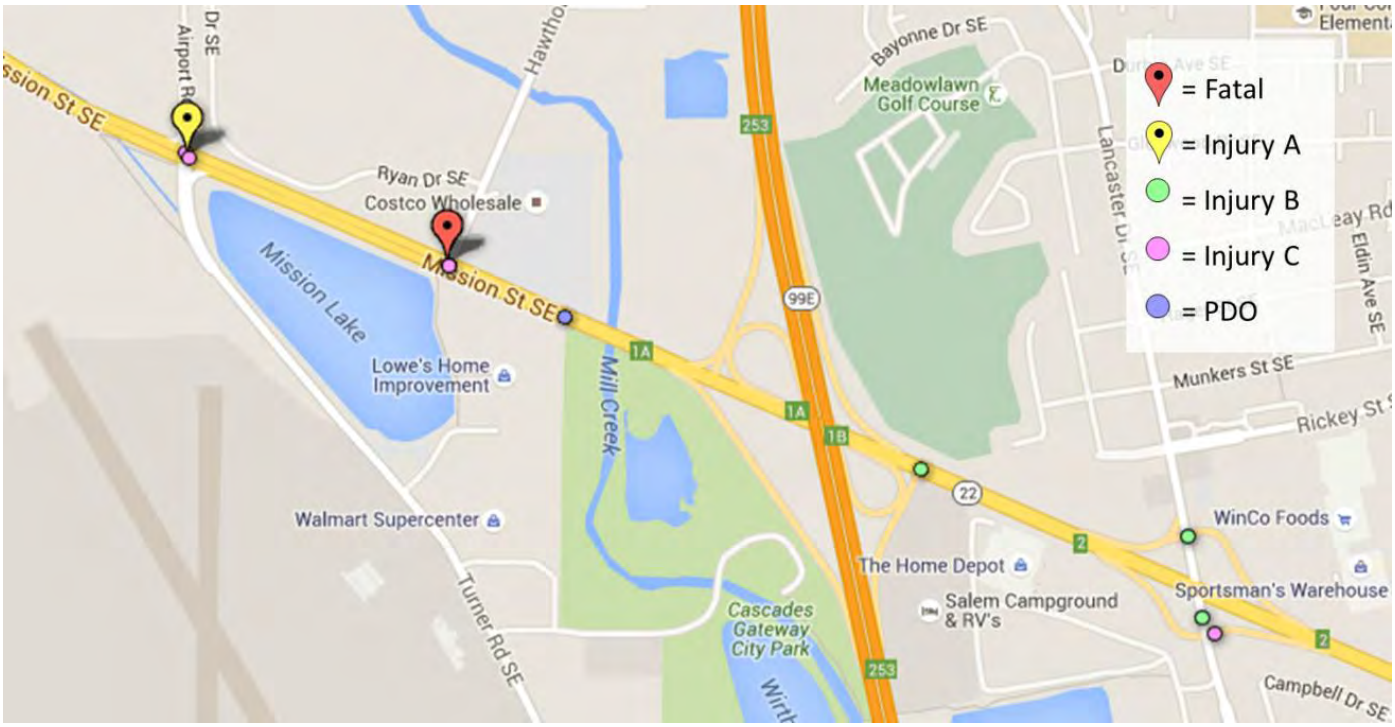
Further investigation was performed for the corridor to assess whether there are any clear trends in the collision data. First, the collision data were broken down by the type of collision. Table 8 shows the collision breakdown by type for each the study corridor segments. As shown, the most prevalent collision types were rear-end collisions. Together they account for approximately 65 percent of the total collisions, which is typical on urban highways with traffic signals. The majority of turning collisions are due to the driver behavior of not yielding or turning improperly.

Table 8. Collision Breakdown by Crash Type (2009-2013)

CORRIDOR SEGMENT (DISTANCE)	CRASH TYPE								
	REAR-END	TURN	ANGLE	FIXED OBJ.	BIKE/ PED	SIDE-SWIPE	HEAD ON	OTHER	TOTAL
Mission Street (OR 22) (1.31 mi.)	248	26	6	8	8	22	1	3	322
OR 22 (2.62 mi.)	115	19	1	20	1	24	1	5	186
I-5 Pacific Highway (0.82 mi.)	11	21	2	1	3	1	0	1	40
Lancaster Drive (0.60 mi.)	0	2	0	0	0	0	0	0	2
Cordon Road (1.0 mi.)	2	3	0	2	0	3	0	0	10

The lighting condition, often an important factor in collision analysis, was also evaluated. The majority of collisions occurred during daylight conditions and therefore, lack of street lighting does not appear to be a contributing factor in most of the OR 22 (East) collisions. Figure 11 shows the locations of bicycle and pedestrian collisions along OR 22 (East).

Figure 11.
Bicycle and Pedestrian Collisions Along OR 22 (2009-2013)



4.3 Existing Traffic Patterns and Operations

Existing traffic conditions were evaluated for the OR 22 (East) study corridor which included vehicular volume, speed, and classification analysis; intersection turn movement counts; mobility standards and existing intersection operations; and bicycle and pedestrian activity.

4.3.1 Existing Traffic Volumes

Table 9 presents data collected from 24-hour tube counts[9] at five locations along the project corridor. This data includes vehicular bi-directional volumes, 85th percentile speed,[10] and heavy vehicle traffic percentages. As shown, traffic volumes remain consistent along the corridor to the west of Lancaster Drive; however, they are considerably lower to the east. To the west of Lancaster Drive, 85th percentile speeds are within six miles-per-hour of the posted speed, and in some cases are lower than the posted speed. Speeds lower than the posted speed limits are likely due to congestion along the corridor. To the east of Lancaster Drive, travel speeds are significantly higher than the posted speed limit. This information is also summarized in Figure 12. Traffic count data can be found in Appendix A.

Table 9. OR 22 Bi-Directional Volumes, Speeds, and Heavy Vehicle Usage

SURVEYED DATA	COUNT LOCATION ALONG OR 22 (EAST)				
	25thStreet to Airport Road	Airport Road to Hawthorne Avenue	Hawthorne Avenue to I-5	I-5 to Lancaster Drive	East of Lancaster Drive
AVERAGE DAILY TRAFFIC					
Eastbound	21,177 (49.4%)	22,384 (51.7%)	22,045 (54.5%)	21,297 (48.1%)	12,468 (48.2%)
Westbound	21,679 (50.6%)	20,894 (48.3%)	18,424 (45.5%)	23,024 (51.9%)	13,390 (51.8%)
Total	42,856	43,278	40,469	44,321	25,858
85TH PERCENTILE SPEED					
Eastbound	45 mph	48 mph	48 mph	54 mph	69 mph
Westbound	43 mph	44 mph	47 mph	54 mph	64 mph
POSTED SPEED					
Both Directions	40 mph	50 mph	50 mph	50 mph	55 mph
TRUCK TRAFFIC PERCENTAGE[1]					
Both Directions	7.1%	8.1%	8.0%	5.9%	8.4%

[1] Specified as buses and vehicles with three or more axles

9 Quality Counts 24-hour classification and speed counts were taken on Wednesday, September 16, 2015.

10 The 85th percentile speed is defined as the speed below which 85 percent of the vehicles are traveling.

Figure 12.
24-hour Traffic Volume Counts along OR 22

To further understand the vehicular use of OR 22 (East) over the course of a 24-hour period, Figure 13 shows the directional volumes throughout the day between 25th Avenue and Airport Road and Figure 14 shows the directional volumes east of the Lancaster Drive interchange. On the western portion of the study corridor (Figure 13) traffic volumes remain consistent throughout the day and there is not a noticeable directional shift. However, on the eastern portion of the study corridor (Figure 14), there are clear a.m. and p.m. peaks with heavy westbound flow in the morning and heavy eastbound flow in the afternoon.

Figure 13.
OR 22 24-Hour Volumes between 25th Avenue and Airport Road

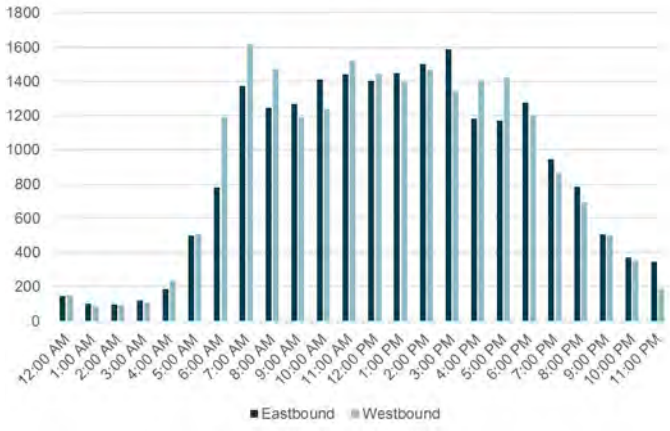
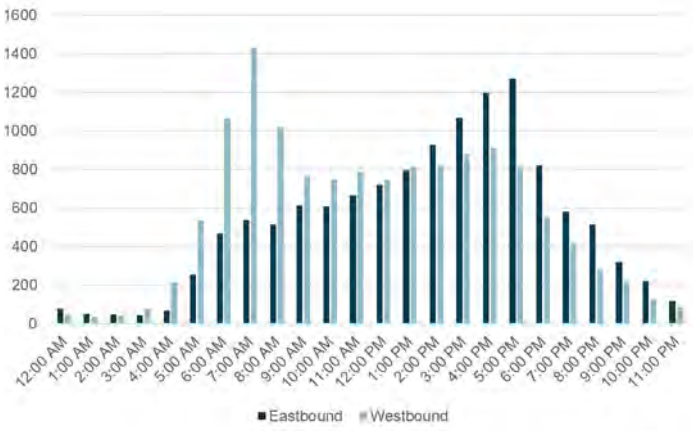


Figure 14.
OR 22 24-Hour Volumes East of Lancaster Drive



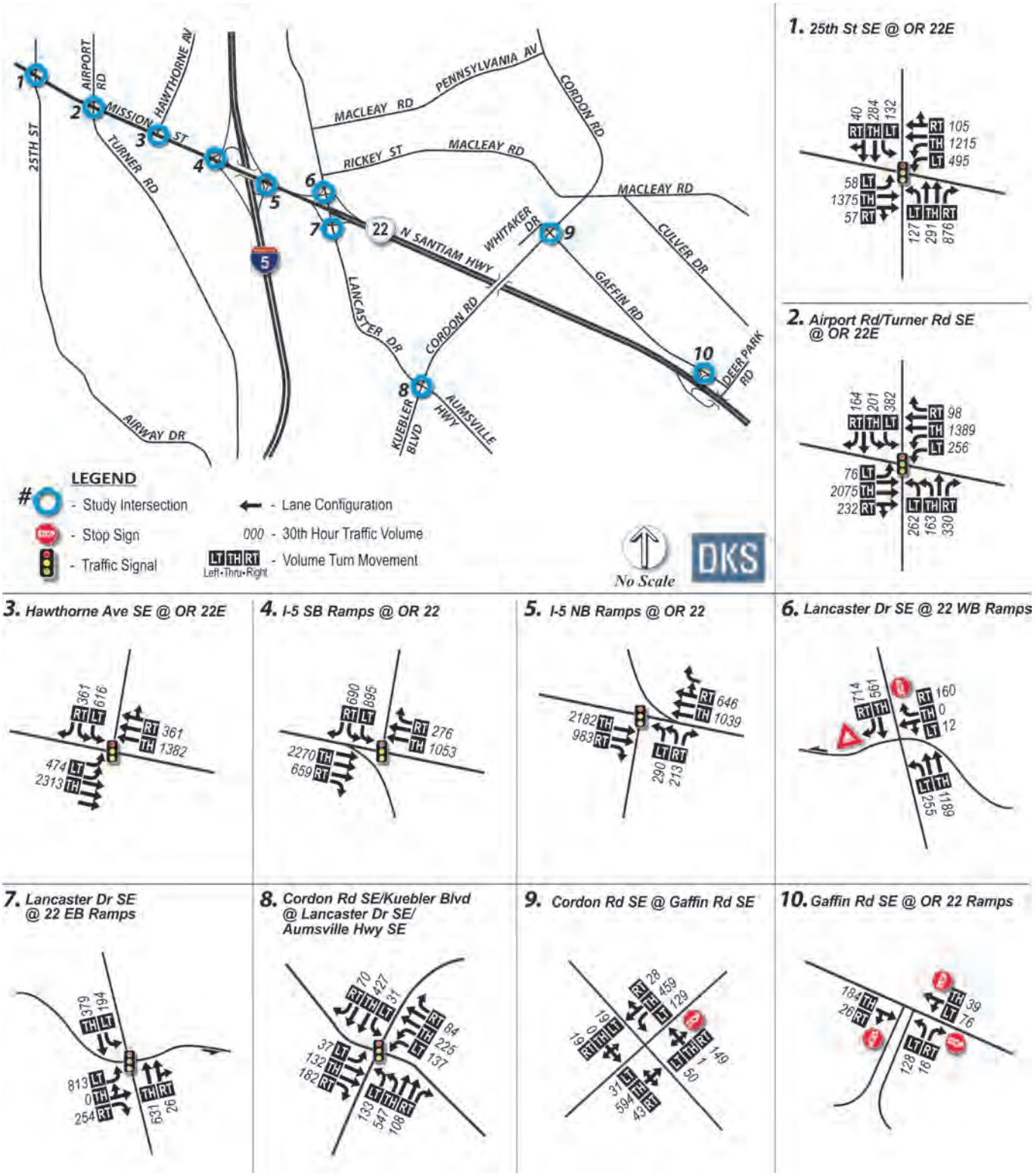
4.3.2 Intersection Turn Movement Volumes

Intersection turn movement volumes were collected at each intersection along OR 22 (East) and the surrounding roadway network.[11] Mid-week weekday 16-hour counts were collected for the intersections located along OR 22 (East) while the remaining intersections were collected during the a.m. (7:00 a.m. to 9:00 a.m.) and p.m. (4:00 a.m. to 6:00 p.m.) peak periods. The 30th highest annual traffic volumes, lane configuration, and traffic control for the ten study intersections are shown on Figure 15. The data was collected in the month of September and the route is considered a commuter route; therefore, a seasonal adjustment factor of 1.03 was used to adjust for 30th highest hour volumes.[12]

11 Quality Counts 16-hour turning movement counts were conducted on Wednesday, September 16, 2015

12 Seasonal adjustment factor calculated using the ODOT Transportation Planning Analysis Unit's Analysis Procedures Manual, 2015; Section 5.4 using the On-Site ATR Seasonal Method and the ATR Characteristics Table method.

Figure 15.
Existing Motor Vehicle 30th Highest Traffic Volumes



4.3.3Existing Pedestrian and Bicycle Volumes

The study area includes residential, industrial, and office uses as well as several shopping centers that generate pedestrian and bicycle trips within the study area. Table 10 shows the existing pedestrian and bicycle volumes at each of the study intersection.

The intersection with the most bicycle and pedestrian volumes is Mission Street (OR 22) and 25th Street with 28 total pedestrian crossings and six total bicycles. This intersection has crosswalks across the north, south, and west legs. There is a near side transit stop located on the east leg of the intersection approximately 100 feet from the intersection and a far side transit stop located on the south leg of the intersection approximately 250 feet from the intersection.

Table 10. Existing Bicycle and Pedestrian 30th Highest Volumes

	PEDESTRIAN VOLUMES			BICYCLE VOLUMES		
INTERSECTION	NORTH SOUTH	EAST WEST	TOTAL	NORTH SOUTH	EAST WEST	TOTAL
SIGNALIZED						
Mission Street (OR 22)/25th Street	7	21	28	3	3	6
Mission Street (OR 22)/Airport Road	6	2	8	2	2	4
Mission Street (OR 22)/ Hawthorne Avenue	2	4	6	0	0	0
OR 22/I-5 SB Ramps	1	0	1	0	0	0
OR 22/I-5 NB Ramps	2	0	2	0	0	0
Lancaster Drive/OR 22 EB Ramps	0	23	23	0	0	0
Cordon Road/Kuebler Boulevard/Aumsville Highway	5	2	7	2	0	2
UNSIGNALIZED						
Lancaster Drive/OR 22 WB Ramps	3	16	19	0	0	0
Gaffin Road/OR 22 Ramp	0	0	0	2	0	2
Gaffin Road/Cordon Road	0	0	0	0	0	0

4.3.4 Existing Intersection Operations

The existing performance of the study intersections was evaluated using Synchro™ software, which employs methodology from the *2010 Highway Capacity Manual*[13] for unsignalized intersections and *2000 Highway Capacity Manual*[14] for signalized intersections. The traffic volumes and transportation system configurations described previously were used to determine intersection levels of service (LOS) and volume-to-capacity (v/c) ratios.

13 *2010 Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2010.
14 *2000 Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000.

Agency Operating Standards

Agency operating standards require intersections to meet certain level of service (LOS) or volume-to-capacity (v/c) intersection operation thresholds.

- The intersection LOS is similar to a "report card" rating based upon average vehicle delay. Level of service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of service D and E are progressively worse operating conditions. Level of service F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.
- The volume-to-capacity (v/c) ratio represents the level of saturation of the intersection or individual movement. It is determined by dividing the peak hour traffic volume by the maximum hourly capacity of an intersection or turn movement. When the v/c ratio approaches 0.95, operations become unstable and small disruptions can cause the traffic flow to break down, as seen by the formation of excessive queues.

ODOT mobility targets are given as v/c ratios and are based on the highway category, as discussed in Section 3.2.1.[15] Mobility targets for the City of Salem are based on the functional classification of the roadway.

Table 11. Applicable Study Intersection Mobility Targets

ROADWAY	STUDY AREA EXTENTS	JURISDICTION	HIGHWAY CATEGORY[a] OR FUNCTIONAL CLASSIFICATION[b]	MOBILITY TARGET
OR 22 (East)	25th Street to Gaffin Road	ODOT	Freight Route on a State Highway	v/c ≤ 0.85
Interstate 5	OR 22 (East) Interchange	ODOT	Interstate Highway	v/c ≤ 0.85
Lancaster Drive	OR 22 (East) to Kuebler Boulevard/ Cordon Road	City of Salem	Major Arterial	v/c ≤ 0.90
Cordon Road	Gaffin Road to Lancaster Drive/ Aumsville Highway	City of Salem	Parkway	v/c ≤ 0.90

[a] All major road segments are inside the urban growth boundary and MWVCOG MPO

[b] Functional classifications are based on the Salem TSP designations

The results of the intersection operations analysis are presented in Table 12 on the following page.

15 *1999 Oregon Highway Plan,* Oregon Department of Transportation, 1999; Table 5 in Policy 1F displays the maximum allowable V/C ratios for areas outside of the Portland Metropolitan Area.

Table 12. 2015 Study Intersection Performance

INTERSECTION	MOBILITY TARGET	CRITICAL MOVEMENT	30TH HIGHEST VOLUME		
			DELAY	V/C	LOS
SIGNALIZED					
Mission Street (OR 22)/25th Street	0.85 v/c	n/a	48.1	**0.90**	D
Mission Street (OR 22)/Airport Road	0.85 v/c	n/a	105.1	**> 1.0**	F
Mission Street (OR 22)/ Hawthorne Avenue	0.85 v/c	n/a	34.0	0.80	C
OR 22/I-5 SB Ramps	0.85 v/c	n/a	27.8	0.82	C
OR 22/I-5 NB Ramps	0.85 v/c	n/a	11.6	**0.87**	B
Lancaster Drive/OR 22 EB Ramps	0.85 v/c	n/a	31.6	0.60	C
Cordon Road/Kuebler Boulevard/Aumsville Highway	0.90 v/c	n/a	33.6	0.39	C
UNSIGNALIZED					
Lancaster Drive/OR 22 WB Ramps	0.85 v/c	WB Left	117.5	0.75	F
Gaffin Road/Cordon Road	0.90 v/c	WB Left	153	**> 1.0**	F
Gaffin Road/OR 22 WB Ramp	0.85 v/c	NB Left	10.2	0.21	B

Signalized intersection:
Delay = Average Intersection Delay (sec.)
v/c = Volume-to-Capacity Ratio
LOS = Level of Service
Bold/Highlighted = Fails to meet mobility target

Unsignalized intersection:
Delay = Critical Movement Approach Delay (sec.)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Major Street LOS/Minor Street LOS

As shown in Table 12, there are several intersections that do not meet mobility targets. The intersection at Gaffin Road and Cordon Road is currently being re-constructed for the installation of a traffic signal, which would improve operations. Additionally, the proposed interchange at Cordon Road would relieve some of the traffic demand at Lancaster Drive and as well as Gaffin Road. Intersection operation analysis reports can be found in Appendix C.

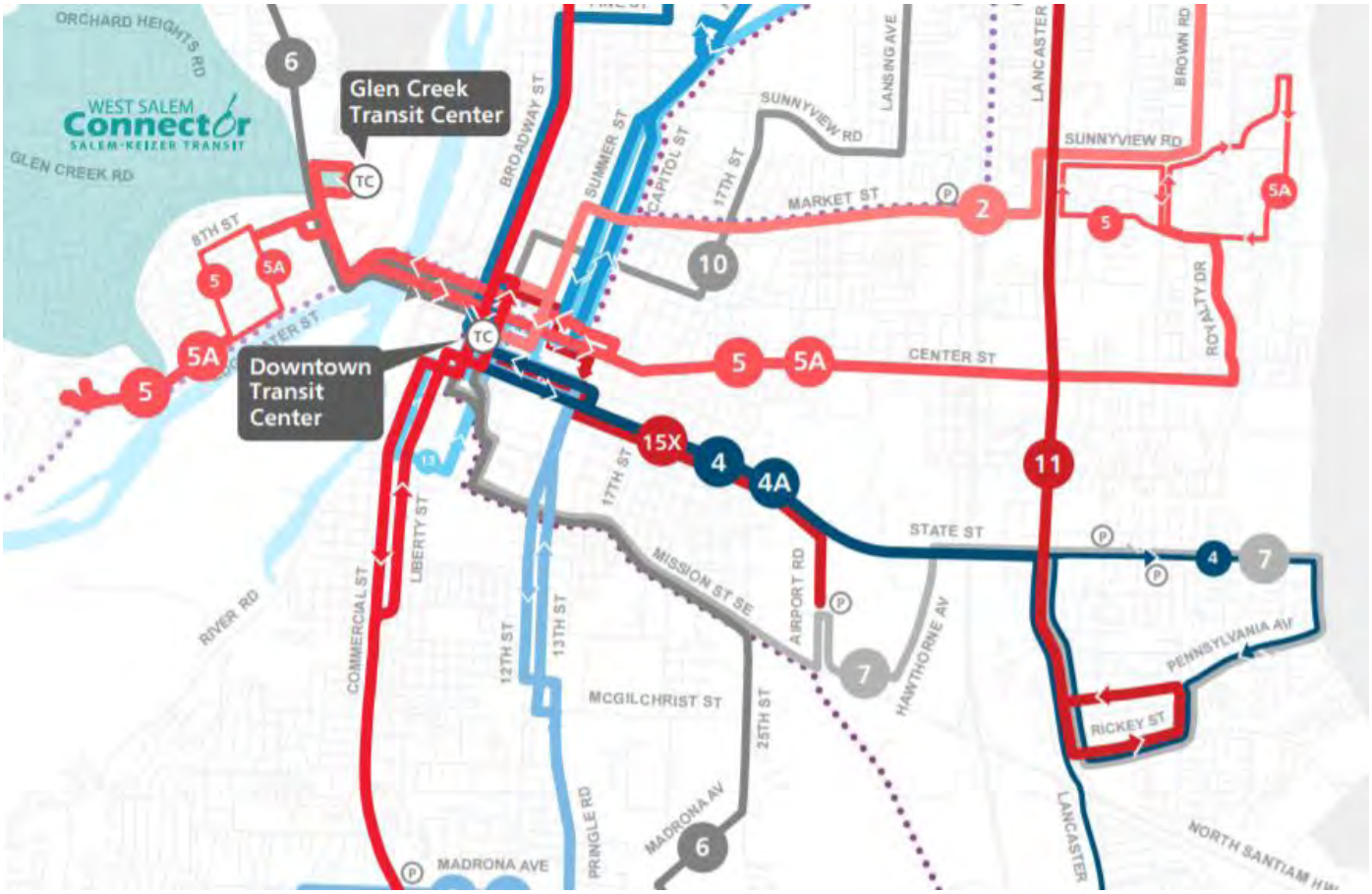
4.3.5Freight Mobility

The study section of OR 22 (East) is designated as a freight route in the OHP, which emphasizes the corridor's importance for freight mobility throughout the Region. OR 22 (East) is also designated as a Reduction Review Route, which means there can be "No reduction of vehicular capacity" (ORS 366.215) and trucks must be allowed a "hole-in-the-air" which is defined by ODOT as, "the entire area (height, width, and length) a truck and its load will occupy while traversing a section of roadway." Any proposed solutions that could potentially affect freight mobility will have to go through further review to receive approval.

4.3.6 Transit Mobility

The OR 22 (East) corridor is served by several public transit services. Within the study area, OR 22 (East) is utilized by Greyhound, the Valley Retriever, Cascades POINT, and Cherriots. The Cherriots routes are shown on Figure 16. While many transit vehicles travel along OR 22, the only fixed transit stop within the study area is a Cherriots bus stop on the northwest corner of the intersection at 25th Street and Mission Street (OR 22). There is also a park and ride facility off of Airport Road just north of Mission Street (OR 22).

Figure 16.
Cherriots Transit Routes in the Vicinity of Mission Street (OR 22)



4.4 Environmental Considerations

As part of the existing conditions evaluations, the undeveloped and natural areas were evaluated to identify any significant environmental constraints that could pose challenges or barriers to transportation improvements. The evaluation of environmental considerations included mapped wetlands and protected species and habitats listed under the Federal ESA.[16] The key findings of this investigation are summarized below.

4.4.1 Wetlands

- Mill Creek and its adjacent riparian areas include relatively large and high-functioning wetland habitats that are considered to have relatively high wildlife values.
- A band of forested wetland is present in the southwest quadrant of the OR 22/Cordon Road overcrossing.
- Wetlands are present along the north side of OR 22 in the vicinity of the I-5 interchange.
- East of Cordon Road there is a patchwork of open areas, roadside wetlands, fields, pastures, and shrubby upland areas, as well as a large section of open land occupied by the Oregon State Correctional Institute. These areas could provide suitable habitats for several listed species; however limited access to these areas prevented the verification of existing habitats.

4.4.2 Fish Species

- Steelhead and Chinook salmon presence was identified in Mill Creek.

4.4.3 Terrestrial Species

- Nelson's Sidalcea is a threatened species that has a confirmed presence in the study area.
- Streaked Horned Lark, Golden Paintbrush, Water Howellia, and Kincaid's Lupine are all threatened species that are typically found in habitats similar to those in the study area, but their presence was not confirmed.
- Bradshaw's Desert-Parsley, Willamette Daisy, and Fender's Blue Butterfly are all endangered species that are typically found in habitats similar to those in the study area, but their presence was not confirmed.

16 *Potential Environmental Constraints Technical Memorandum #5.* David Evans and Associates. January 2016.

FUTURE (2035) CONDITIONS

5.0
FUTURE (2035) CONDITIONS

This chapter summarizes the forecasted future conditions along the OR 22 (East) study corridor. The methodology and results are described in further detail in the following sections.

5.1 2035 Traffic Volume Forecasts

The first step in analyzing the future conditions was to forecast 2035 traffic volumes at each of the study intersections using the Mid-Willamette Valley Council of Governments' (MWVCOG) Salem-Keizer Area Transportation Study (SKATS) VISUM model. The MWVCOG model that was used included the planned interchange at OR 22 and Cordon Road (currently assumed to be a diamond interchange). The project team made no edits to the provided model, but did make minor adjustments to the model output during the post-processing effort, as described below.

5.1.1 Post-Processing

Post-processing involves making minor adjustments to the initial VISUM model traffic volumes to correct for unexpected travel patterns or balancing between intersections. These adjustments are summarized below.

Cordon Interchange: The model output included relatively high eastbound and westbound through volumes at the Cordon Road interchange, indicating vehicles would exit OR 22 (East) and immediately return to the highway. This travel pattern is not typical and these volumes were removed from the interchange and added to the OR 22 (East) mainline. Additionally, the eastbound left-turn at the OR 22/Lancaster Drive interchange decreased slightly from existing traffic volumes. This pattern makes sense given the proposed interchange at Cordon Road; however the eastbound left-turn volume at Cordon Road didn't match that pattern of shifting traffic. Therefore, the eastbound left at Cordon Road was increased accordingly. Lastly, the model output showed relatively low volumes oriented from the east to the south and vice versa. Because much of the potential growth in the area is likely to occur in the southeast quadrant of the OR 22/Cordon Road interchange, the westbound-to-southbound and northbound-to-eastbound turning movement volumes were increased to more realistic levels.

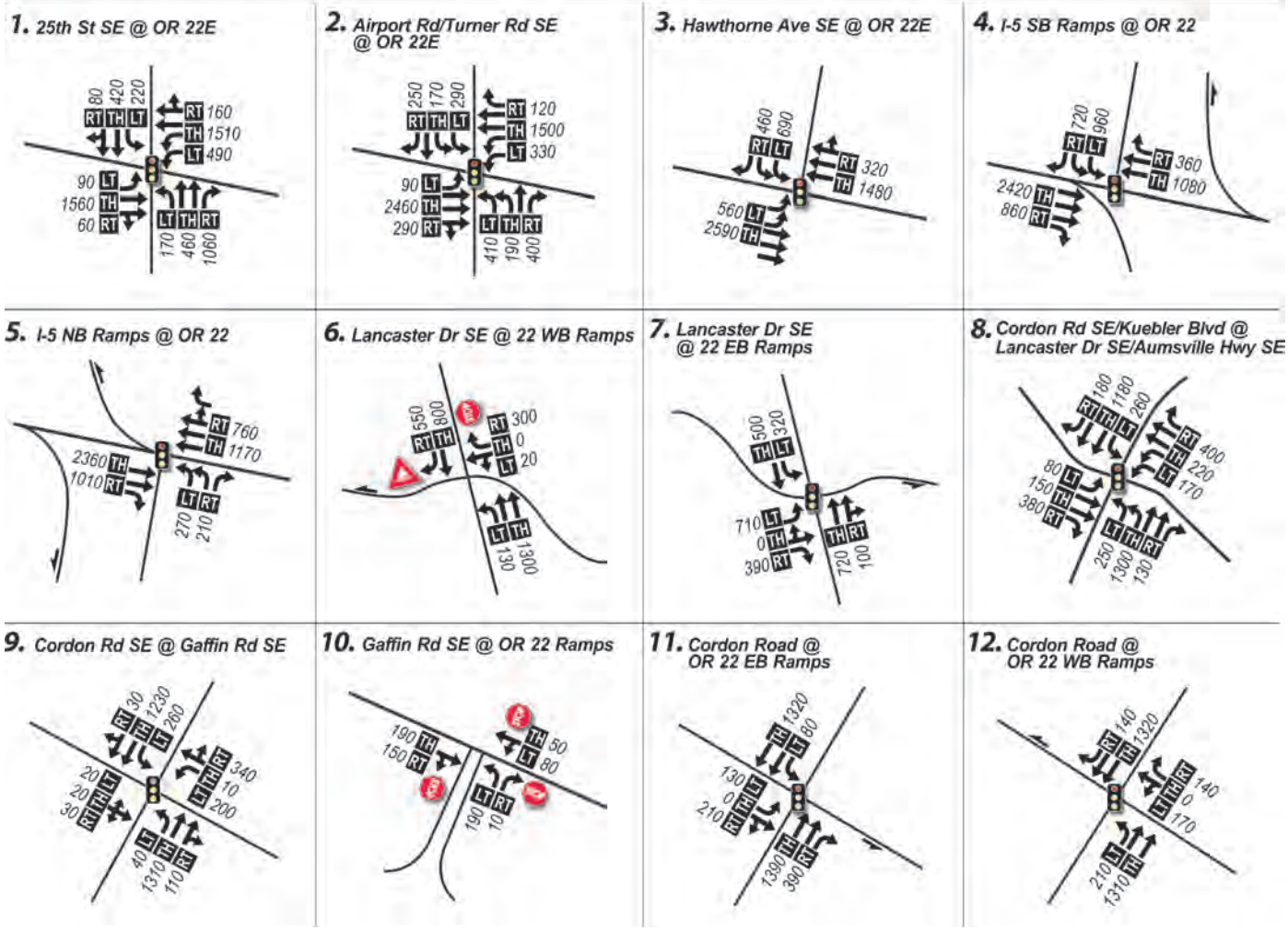
Lancaster Interchange: Similar to the Cordon Road interchange, the model output included eastbound and westbound through volumes at the interchange terminals. These volumes were removed and added to the mainline volumes.

Airport Road/Turner Road at OR 22: The model output showed a fairly significant drop in traffic volumes on the southbound approach (north leg). The project team could not identify a clear reason for the significant drop in southbound through and left-turn volumes, and thus the volumes were increased. The final volumes are still lower than existing, but the magnitude of the difference is smaller.

Volume Balancing: Additional minor adjustments were required to balance volumes between intersections. The majority of the adjustments were made to balance volumes between interchange ramp terminals and on segments without mid-block access points.

The final adjusted 2035 volumes (shown on Figure 17) were used in the future conditions operational analyses described in the following section.

Figure 17.
2035 Motor Vehicle 30th Highest Traffic Volumes



5.2 2035 Intersection Operations

For all but two of the study intersections, the 2035 operations analysis investigated the performance of existing infrastructure (traffic control, lane geometry, etc.) under future traffic volumes. However, the analysis did include planned state and city improvement projects that are expected to be completed by 2035, including the signalization of the Cordon Road/Gaffin Road intersection and the proposed OR 22/Cordon Road interchange. The assumed lane configuration and traffic control for the ten study intersections are shown on Figure 17 on the previous page.

The future performance of the study intersections was evaluated using Synchro™ software, which employs methodology from the *2010 Highway Capacity Manual*[17] for unsignalized intersections and the *2000 Highway Capacity Manual* [18]for signalized intersections (consistent with ODOT requirements). The traffic volumes and transportation system configurations described previously were used to determine intersection levels of service (LOS) and volume-to-capacity (v/c) ratios. The results of the intersection operations analysis are presented in Table 13 on the following page.

As shown in Table 13, there are several intersections that are not expected to meet operating standards under 2035 traffic demands. The failing movements at each intersection are presented graphically on Figure 18.

17 *2010 Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2010.
18 *2000 Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000.

Table 13. Existing and Future Study Intersection Operating Performance (30 HV)

INTERSECTION	OPERATING STANDARD	2015 – EXISTING CONDITIONS			2035 – FUTURE CONDITIONS		
		DELAY	LOS	V/C	DELAY	LOS	V/C
SIGNALIZED							
Mission Street (OR 22)/25th Street	0.85 v/c	48.1	D	**0.90**	> 80.0	F	**1.10**
Mission Street (OR 22)/Airport Road	0.85 v/c	> 80.0	F	**1.06**	> 80.0	F	**1.28**
Mission Street (OR 22)/ Hawthorne Avenue	0.85 v/c	34.0	C	0.80	37.1	D	**0.89**
OR 22/I-5 SB Ramps	0.85 v/c	27.8	C	0.82	23.2	C	**0.88**
OR 22/I-5 NB Ramps	0.85 v/c	11.6	B	0.87	15.8	B	**0.94**
Lancaster Drive/OR 22 EB Ramps	0.85 v/c	31.6	C	0.60	29.0	C	0.78
Cordon Road/Kuebler Boulevard/ Aumsville Highway	0.90 v/c	33.6	C	0.39	44.7	D	0.90
Cordon Road/Gaffin Road	0.90 v/c	-	-	-	26.0	C	0.80
Cordon Road/OR 22 EB Ramps	0.85 v/c	-	-	-	15.3	B	0.62
Cordon Road/OR 22 WB Ramps	0.85 v/c	-	-	-	17.7	B	0.73
UNSIGNALIZED							
Lancaster Drive/OR 22 WB Ramps	0.90 v/c*	> 80.0	B/F	0.75	> 80.0	B/F	**1.36**
Cordon Road/Gaffin Road	0.90 v/c	> 80.0	A/F	1.13	Intersection Signalized		
Gaffin Road/OR 22 WB Ramps	0.90 v/c*	10.2	A/B	0.27	12.2	B/B	0.43

Signalized intersection:

Delay = Average Intersection Delay (sec.)

v/c = Volume-to-Capacity Ratio

LOS = Level of Service

Unsignalized intersection:

Delay = Critical Movement Approach Delay (sec.)

v/c = Critical Movement Volume-to-Capacity Ratio

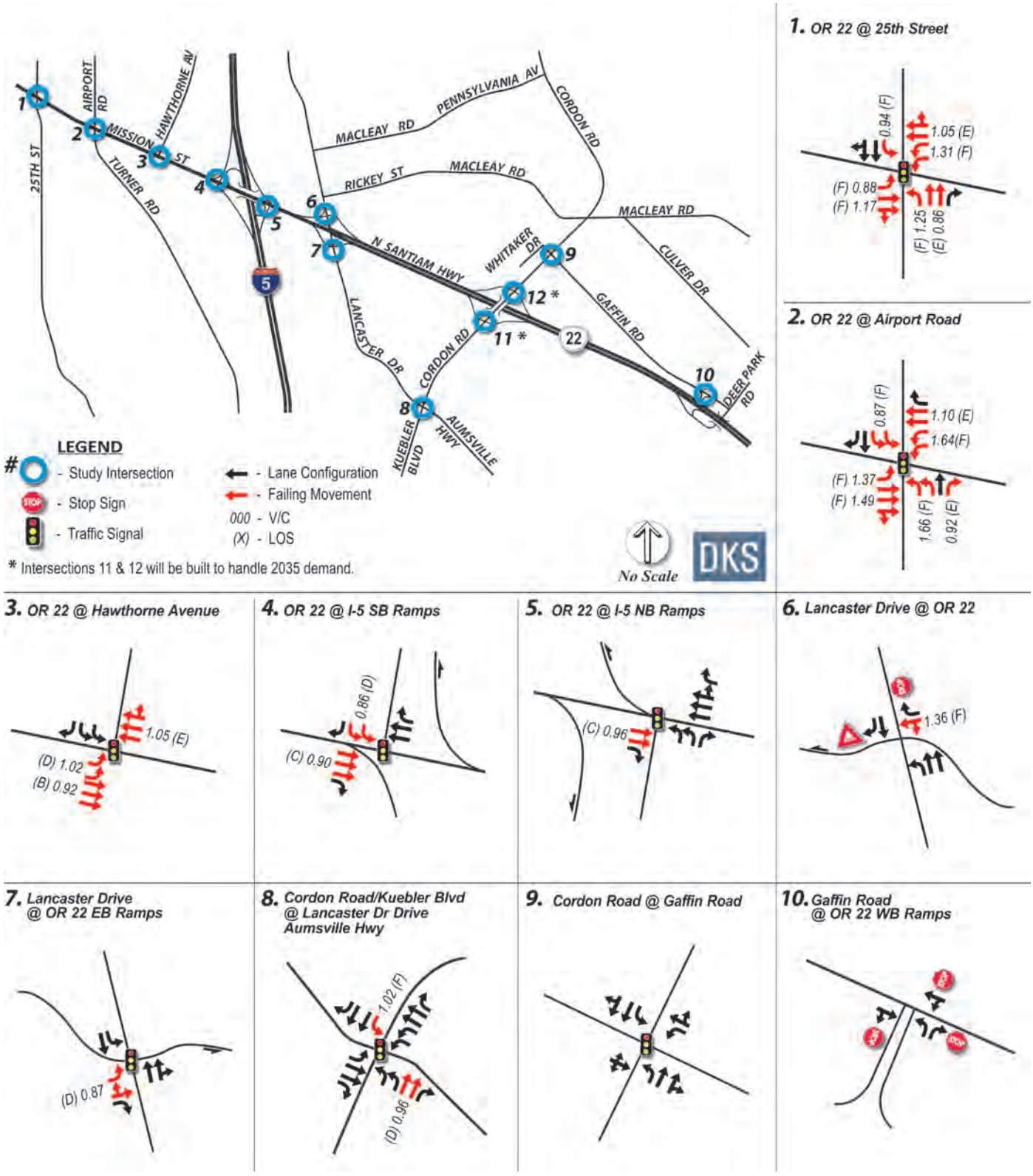
LOS = Major Street LOS/Minor Street LOS

Bold/Highlighted = Fails to not meet ODOT Operating Standards

*Operating Standards on OR 22 approaches is 0.85 v/c

As shown on Figure 18, the major failing movements at the Mission Street (OR 22)/25th Street intersection are the eastbound and westbound through movements and left turns on OR 22. The high left turning volumes limit the amount of time for the through movements and during peak congestions queue lengths continue to grow and cycle failures (vehicles in the queue require numerous traffic signal cycles to clear the intersection) are a common occurrence. Additionally, the southbound left turning queues extend beyond the existing storage lane. The queues interfere with through traffic and result in additional delay.

Figure 18.
Future (2035) Intersection Deficiencies



At the Mission Street (OR 22)/Airport Road-Turner Road intersection, the congested movements are the eastbound and westbound through lanes, the westbound left turns, and the northbound and southbound left turns. The east-west movements fail in a similar way to the Mission Street (OR 22)/25th Street intersection. The northbound left turn volumes are high and during peak periods there are frequent cycle failures. Additionally, the northbound left turn queues extend beyond the existing storage lane. The queues interfere with through traffic and result in additional delay. It should be noted that due to geometric constraints, the northbound and southbound left turning movements cannot currently operate at the same time and require split phases, which lead to inefficient operations.

At the Mission Street (OR 22)/Hawthorne Avenue intersection, the major failing movements are the eastbound left turns and the westbound through movement. These are the only failing movements at this intersection and are caused by the high through volumes during the peak hours.

At the OR 22/I-5 Ramps intersections, the failing movement at the northbound I-5 ramp terminal intersection is the eastbound through movement. This is caused by the high through volumes during the peak hours. The failing movement at the southbound I-5 ramp terminal intersection is the southbound left turns and the eastbound through movements.

At the OR 22/Lancaster Drive interchange, heavy volumes and insufficient gaps on Lancaster Drive result in failure of the off-ramp through-left movements at both the eastbound and westbound ramp terminal intersections.

5.3 Future Planned Improvements

The following locations are identified as either "committed" or "included" projects in the 2015 Regional TSP and are within the OR 22 (East) study area (there were no projects listed in the 2012 Salem TSP with committed funding).

- **Gaffin Road (Cordon Road to west of Highway 22 Interchange):** Widen the road to Minor Arterial standards from Cordon Road east to the western border of the Salem Renewable Energy and Technology Center.
- **Cordon Road at Gaffin Road:** Construct westbound left-turn pocket on Gaffin Road and signalize the intersection.
- **25th Street from Mission Street to Madrona Street:** Traffic Signal Interconnect
- **Lancaster Drive from Hagers Grove Road to Cordon Road:** Traffic Signal Interconnect

- **Cordon Road at Highway 22 (Santiam Highway):** Construct a grade-separated interchange at Cordon Road at Highway 22 to improve access to the Cordon Road/Kuebler Boulevard circumferential travel route.
- **Kuebler Boulevard/Cordon Road from Turner Road to Highway 22:** Widen to four travel lanes with paved or raised median, bike lanes, curbs gutters and sidewalks.
- **Lancaster Drive from Cranston Street to Kuebler Boulevard:** Realign curves and widen to 2 travel lanes with a center turn lane, plus curbs, gutters, sidewalks, and bike lanes.

The following locations are identified in the 2015 ODOT ARTS Hot-Spot Project List and are within the OR 22 (East) study area. These projects are currently being scoped by ODOT and implementation will depend on the final prioritization rankings.

- **Mission Street (OR 22)/Hawthorne Avenue Intersection:** Improve signal hardware (lenses, reflectorized back plates, number of signal heads), and install pedestrian countdown timers.
- **OR 22/NB I-5 Ramps Intersection:** Improve signal hardware (lenses, reflectorized back plates, number of signal heads)
- **Mission Street (OR 22)/Airport Road-Turner Road Intersection:** Install Urban Green Bike Lanes at conflict points, improve signal hardware (lenses, reflectorized back plates, number of signal heads), and install pedestrian countdown timers.

IDENTIFIED SYSTEM DEFICIENCIES

6.0
IDENTIFIED SYSTEM DEFICIENCIES

The key findings of the existing and future conditions analyses (presented in Chapter 4 and 5) helped to identify deficiencies of the transportation system within the study area. The following sections summarize the identified deficiencies related to safety performance, bicycle, pedestrian, and transit facilities, and intersection operational performance.

6.1 Safety Concerns

- Two study intersections have crash rates that exceed the ODOT critical crash rate (i.e.: the expected crash rate for similar intersections across the state). These intersections are Mission Street (OR 22)/Hawthorne Avenue and OR 22/I-5 Northbound Ramp Terminal.
- The most common crash type observed in the study area was rear-end (67% of crashes), which is likely related to the high traffic volumes and the density of traffic signals on the corridor. Over 50% of the reported crashes on the study corridor were attributed to drivers following too closely, which often results in rear-end crashes.
- Between 2009 and 2013, there was one fatal pedestrian collision at Mission Street (OR 22)/Hawthorne Avenue and one serious injury bicycle collision at Mission Street (OR 22)/Airport Road-Turner Road.

6.2 Bicycle, Pedestrian, and Transit Network Deficiencies

6.2.1 Bicycle and Pedestrian Deficiencies

The following list describes the identified deficiencies of the bicycle and pedestrian network within the study area. The existing network of bicycle and pedestrian facilities was shown previously in Figure 6.

- There is a lack of safe and comfortable bicycle and pedestrian facilities along OR 22 (East). Crossing I-5 is particularly difficult as there are multiple free-flowing ramps and intersections to navigate. East of I-5, a wide shoulder is the only means of travel for bicyclists and pedestrians along OR 22 (East). Riders desire separated bicycle facilities along OR 22 (East) due to the high speeds and traffic volumes. Although there currently is not a large pedestrian and bicycle demand in the area, the volumes may be suppressed due to the lack of desirable facilities that are currently provided.

- There is a gap in bicycle facilities on Lancaster Drive across the OR 22 (East) interchange bridge.
- There is a lack of bicycle and pedestrian facilities along Gaffin Road.
- There are currently no bicycle or pedestrian facilities on the Cordon Road bridge over OR 22 (East).

6.2.2Public Transit Deficiencies

There are several public transit routes that use OR 22 (East) including the local "Cherriots" transit service, Cascades POINT, Valley Retriever, and Greyhound services; however, the only service with an active transit stop in the study area is Cherriots (bus stop near the intersection of Mission Street (OR 22)/25th Street). The 2012 Salem Transportation System Plan (TSP) states that the current Cherriots system operates at a moderate level of service and frequency. Components of the existing public transit system that can be improved include:

- **Frequency:** There is currently no transit service provided at night or on weekends. Extended hours would contribute to better system convenience.
- **Safety:** The safety of a transit system extends beyond buses and transit stops. Transit users need safe routes to access transit services via continuous sidewalks and bicycle facilities, which are lacking in the areas surrounding transit stops along the study corridor. Park-and-ride lots, bus shelters, and improved lighting would improve the safety of users traveling to a transit stop and awaiting busses.
- **Bus Stop Design:** If additional bus stops are provided along OR 22 (East), bus bays or bus pull-offs should be considered due to traffic volumes and high speeds along the corridor. Bus stops should also be placed in close proximity to marked pedestrian crossings to promote safe route choices.

6.3 Intersection Operations Deficiencies

Several of the study intersections will fail to meet current mobility targets under 2035 traffic demands without capacity improvements. These intersections are listed in Table 14 along with a description of the capacity improvements that would be required to meet mobility targets in 2035. It should be noted that ODOT considers many of the improvements listed in Table 14 unreasonable, as discussed on the following page.

Table 14. Summary of Deficient Intersections and Necessary Improvements to Meet Mobility Targets

INTERSECTION	NECESSARY IMPROVEMENTS TO MEET MOBILITY TARGETS IN 2035
Mission Street (OR 22)/25th Street	Add third WB left-turn lane (requires SB receiving lane), add third WB thru lane, add third EB thru lane, add separate EB right-turn lane; Or, construct a grade-separated interchange
Mission Street (OR 22)/Airport Road-Turner Road	Add third WB left-turn lane (requires SB receiving lane), add WB shared thru-right lane, add fourth EB thru lane, add separate EB right-turn lane, add a second EB left-turn lane (requires NB receiving lane); Or, construct a grade-separated interchange
Mission Street (OR 22)/Hawthorne Avenue	Add a separated WB right-turn lane, add a second SB right-turn lane.
OR 22/I-5 Southbound Ramp Terminal	Add a third SB left-turn lane (requires bridge widening)
OR 22/I-5 Northbound Ramp Terminal	Add a third EB thru lane (requires bridge widening)
Lancaster Drive/OR 22 Westbound Ramp Terminal	Signalize intersection, add a second WB right-turn lane
Cordon Road/Gaffin Road	Add a shared thru-right turn lane to the NB and SB approaches (requires widening of Cordon Road)

Funding limitations and right-of-way constraints often prohibit the expansion of a roadway network to accommodate 20-year planning horizon traffic volumes while meeting existing volume-to-capacity (v/c) based mobility targets. This is particularly common in larger communities with roadways that experience higher travel demands, such as Mission Street (OR 22) which has significant adjacent development. For example, the intersection of Mission Street/25th Street would require triple left-turn lanes or a grade separated interchange to meet current mobility targets under 2035 forecasted traffic volumes, neither of which is realistic given the right-of-way constraints and surrounding development (e.g., the airport). In such cases, it is appropriate to adjust roadway performance expectations, as expressed through alternative mobility targets (AMTs), to match the performance that is actually forecasted to exist under 2035 traffic demands. An investigation to determine the appropriate mobility targets for each of the above intersections was completed. The evaluation methodology and results are described in the following section.

6.3.1 Alternative Mobility Targets

Along OR 22 (East), the operational analysis identified six intersections which are not expected to meet ODOT's existing mobility targets under forecasted 2035 traffic volumes, even with implementation of feasible intersection improvements. This section documents the need for AMTs for the OR 22 (East) study corridor and describes the methodology utilized to determine the recommended AMTs. Representatives from the City of Salem, Marion County, and ODOT were all involved in the process of identifying study locations that warranted AMT evaluation and the selection of the final recommended AMTs.

Factors Limiting the Ability to Meet Existing Mobility Targets

Several factors combine to make it challenging to comply with the current mobility targets along OR 22 (East). These factors include:

Competition from Multiple Users: The importance of OR 22 (East) to statewide, regional, and local traffic creates significant demands for both short and long trips along the corridor. These competing users including motorists making local trips to homes, work, and shopping, freight traveling to and through OR 22 (East) which is a Federal Truck Route, transit, including movement and access, and bicyclists and pedestrians using the most direct route, in some places the only route, connecting their residences with community facilities, employment, and shopping.

Financial Factors: As is true for most agencies, funding for City and ODOT transportation improvements is limited. Even if all forecasted state and local transportation revenue for projects in Salem over the next 20 years were spent on facility improvements, it would still fall well short of enabling current mobility targets to be met.

Existing Development Patterns: In many areas along Mission Street (OR 22), adjacent development constrains the ability to add multiple travel lanes and turn lanes at intersections. Obtaining needed right-of-way for these improvements would require acquisition and removal of such development, which would be very expensive and undesirable to the community.

Environmental Factors: The identified environmental factors discussed in Section 4.4 may provide a challenging environment for transportation improvements and make the construction or expansion of transportation facilities potentially cost prohibitive at some locations.

Practical Capacity Improvements

An evaluation of right-of way impacts, adjacent development types, potential operational impacts, and estimated improvement costs provided insight into the practicality of possible capacity improvements. The improvements that were considered practical given the funding limitations and right of way constraints along the OR 22 (East) corridor are as follows:

- Install a separated westbound right turn lane at Mission Street (OR 22)/25th Street
- Install a second eastbound left turn lane and a separated eastbound right turn lane at Mission Street (OR 22)/Airport Road-Turner Road
- Reconstruct the northbound and southbound approaches to Mission Street (OR 22)/Airport Road-Turner Road to allow simultaneous left turn movements
- Install a separated westbound right turn lane at Mission Street (OR 22)/ Hawthorne Avenue
- Install a traffic signal at the Gaffin Road/Cordon Road intersection and add a second northbound and southbound through lane on Cordon Road

It should be noted that the intersection of Lancaster Drive/OR 22 WB Ramp Terminal will fail to meet current mobility targets in 2035 as a stop-controlled intersection. However, a traffic signal is not warranted[19] and signalization was not analyzed as a practical capacity improvement at this location.

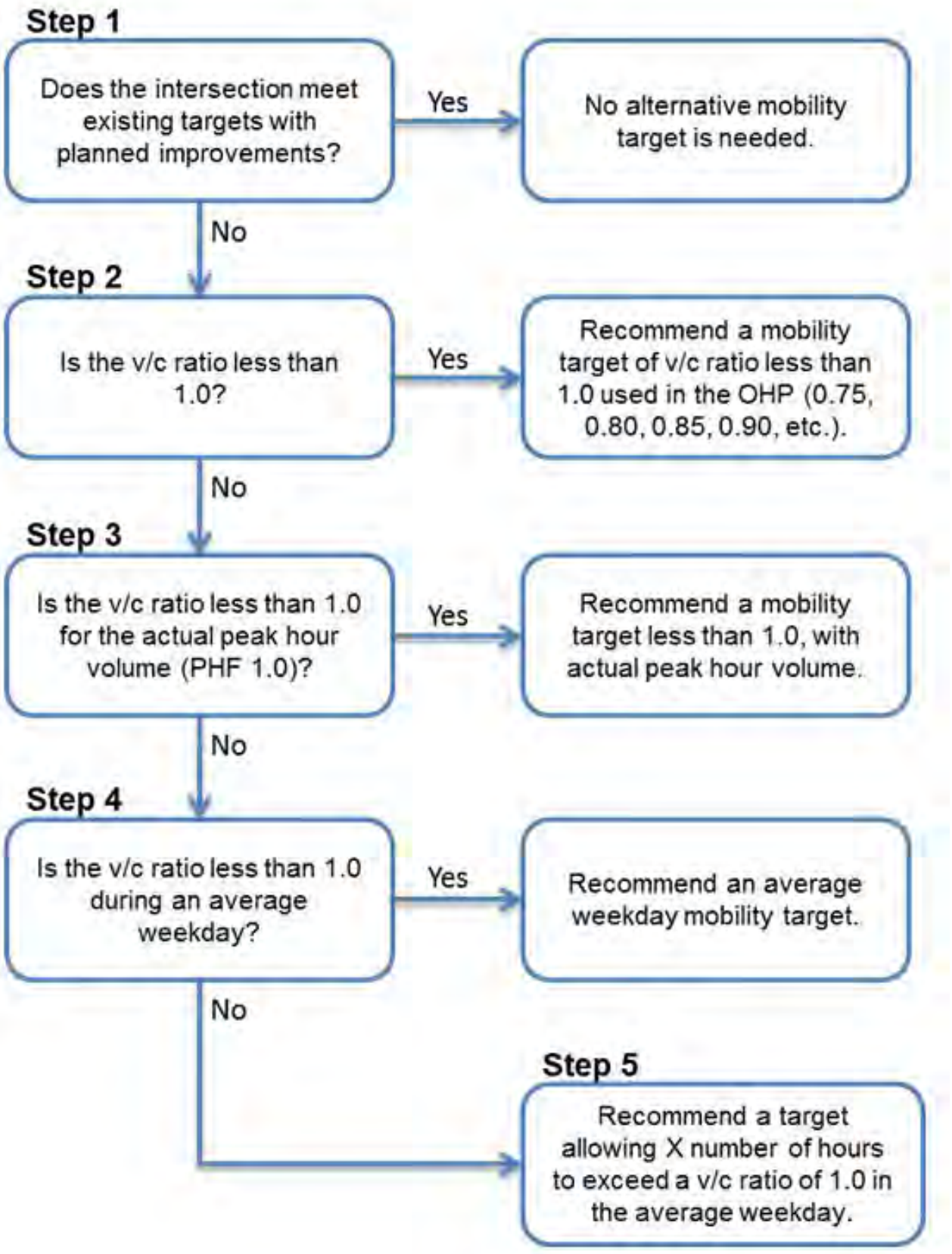
Alternative Mobility Target Evaluation Methodology

Figure 19 on the following page shows the ODOT Region 2 methodology for determining alternative mobility targets.[20]

19 The intersection does not meet MUTCD traffic signal warrants under forecasted 2035 traffic volumes. Furthermore, meeting one or more signal warrants does not alone guarantee that installation of a traffic signal will be approved by ODOT or the City of Salem.

20 As outlined in an ODOT Interoffice Memo dated December 30, 2009.

Figure 19.
ODOT Region 2 Alternative Mobility Target Methodology



Step 1: Six of the 10 study intersections (five of which are signalized) are expected to fail to meet the existing Oregon Highway Plan (OHP) mobility targets in 2035, after implementing the practical capacity improvements described above.

Step 2: Of the six study intersections that would not meet current mobility targets in 2035, three would be expected to operate with v/c ratios less than 1.0 (Mission Street (OR 22)/Hawthorne Avenue and at the Northbound and Southbound I-5 ramp terminals). Based on their expected v/c ratios, an AMT of 0.90 is recommended for all three intersections. The remaining three intersections (Mission Street (OR 22)/25th Street, Mission Street (OR 22)/Airport Road-Turner Road, and Lancaster Drive/WB OR 22 Ramps) have a v/c greater than 1.0 (proceed to Step 3).

Step 3: When traffic demand nears or exceeds capacity, the actual traffic volume through an intersection is constrained to the available capacity and does not exhibit the same peaking characteristics of unconstrained traffic flow. In other words, when the v/c is close to 1.0, a peak hour factor (PHF) of 1.0 represents actual traffic patterns better than the measured PHF. After applying a PHF of 1.0, the intersections of Mission Street (OR 22)/25th Street and Lancaster Drive/WB OR 22 Ramps still operate at a v/c greater than 1.0, but the intersection of Mission Street (OR 22)/Airport Road-Turner Road operates with a v/c of 0.99. Although this would meet the requirement for a v/c less than 1.0, it is recommended that alternative mobility targets based on the average weekday traffic volumes be investigated (as discussed in Step 4).

Step 4: To analyze the average weekday traffic volumes, the 2014 monthly weekday traffic volumes from ATR Station 24-004 (located on OR 22 near Cordon Road) were used to compare the peak traffic volumes to the annual average weekday traffic volumes, as shown on Figure 20.

As shown on Figure 20, the average weekday volume is approximately 88% of the peak volume. After reducing the 2035 forecasted volumes by 12%, the intersections of Mission Street (OR 22)/25th Street, Mission Street/Airport Road-Turner Road, and Lancaster Drive/WB OR 22 Ramps are all forecasted to have a v/c ratio less than 1.0 during an average weekday in 2035.

Table 15 summarizes the assessment of each study intersection along OR 22 (East) using the methodology described above. The resulting recommended AMTs are presented in the last column of Table 15.

Figure 20.
2014 Annual Weekday ADT for ATR Station 24-004

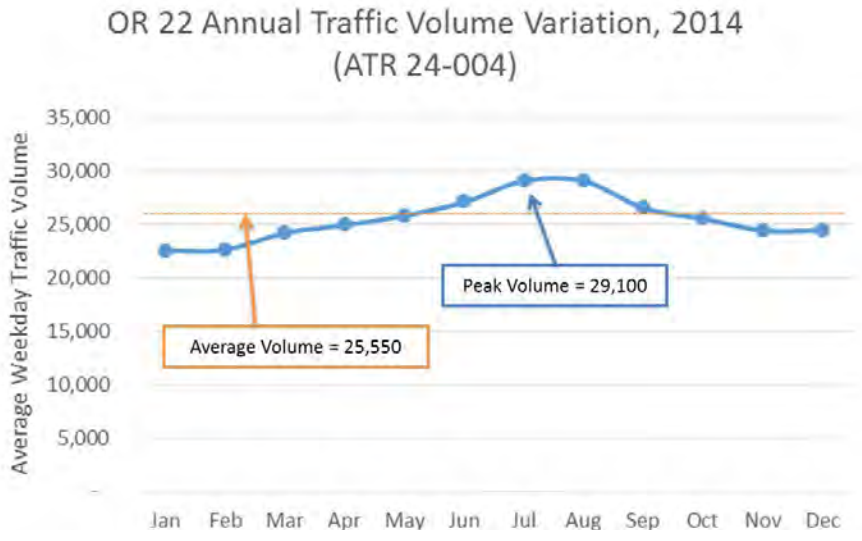


Table 15. Alternative Mobility Target Results (v/c ratio) for Recommended Improvements

INTERSECTION	EXISTING OHP MOBILITY TARGET	STEP 1: COMPARE TO EXISTING TARGETS	STEP 2: COMPARE TO V/C OF 0.99		STEP 3: USE A PHF OF 1.00	STEP 4: USE AVERAGE WEEKDAY VOLUMES	RECOMMENDED ALTERNATIVE MOBILITY TARGET
		2035 (30 HV) INTERSECTION OPERATIONS	2035 (30 HV) INTERSECTION OPERATIONS		2035 (30 HV) INTERSECTION OPERATIONS	2035 AVERAGE WEEKDAY INTERSECTION OPERATIONS	
SIGNALIZED INTERSECTION							
Mission Street (OR 22)/25th Street	0.85	**1.11**	0.99	**1.11**	**1.07**	0.91	0.95 for Average Weekday Volumes
Mission Street (OR 22)/Airport Road-Turner Road	0.85	**1.05**	0.99	**1.05**	0.99	0.88	0.90 for Average Weekday Volumes
Mission Street (OR 22)/ Hawthorne Avenue	0.85	**0.86**	0.99	0.86	-	-	0.90 for 30 HV Conditions
OR 22/I-5 SB Ramps	0.85	**0.88**	0.99	0.88	-	-	0.90 for 30 HV Conditions
OR 22/I-5 NB Ramps	0.85	**0.91**	0.99	0.91	-	-	0.95 for 30 HV Conditions
UNSIGNALIZED INTERSECTION							
Lancaster Drive/ OR 22 WB Ramps	0.85	**1.36**	0.99	**1.36**	1.21	0.81	0.85 for Average Weekday Volumes

Bold/Highlighted: Indicates the intersection fails to meet mobility target.

Recommended Alternative Mobility Targets

Six of the 10 study intersections are expected to fail to meet current mobility targets under 2035 forecasted volumes, even with implementation of practical capacity improvements. Based on the ODOT Region 2 documented methodology for developing AMTs, the final recommended AMTs for the OR 22 (East) study corridor are as follows:

Table 16. Summary of Recommended AMTs

INTERSECTION	EXISTING OHP MOBILITY TARGET	RECOMMENDED ALTERNATIVE MOBILITY TARGET
Mission Street (OR 22)/25th Street	0.85 for 30 HV Conditions	0.95 for Average Weekday Conditions
Mission Street (OR 22)/Airport Road-Turner Road	0.85 for 30 HV Conditions	0.90 for Average Weekday Conditions
Mission Street (OR 22)/Hawthorne Avenue	0.85 for 30 HV Conditions	0.90 for 30 HV Conditions
OR 22/I-5 SB Ramps	0.85 for 30 HV Conditions	0.90 for 30 HV Conditions
OR 22/I-5 NB Ramps	0.85 for 30 HV Conditions	0.95 for 30 HV Conditions
Lancaster Drive/ OR 22 WB Ramps	0.85 for 30 HV Conditions	0.85 for Average Weekday Conditions

PUBLIC INVOLVEMENT

7.0
PUBLIC INVOLVEMENT

Industry, commercial development, apartments, and residential areas are all key elements of the OR 22 (East) corridor. In addition, it is a critical freight and expressway route and is used by cyclists and pedestrians. The project team conducted interviews with key stakeholders to identify their ideas and concerns for the corridor. The resulting Interested Parties list formed the basis for recruiting to the two Open Houses.

A total of eight emails were sent to the Interested Parties list, including Open House invitations, reminders, and thank you notes with links to meeting summaries and documents. The open rate for the meeting invitations was 52%, and the other emails averaged 45%.

After sending the email invitation to the Open House, the project followed up with individual calls to organizations, neighborhood groups, and businesses along the corridor. Of the 76 businesses called, 59 people chose to sign up for the Interested Parties List. The result was a diverse Interested Parties List of 185 people and strong attendance at both events: 45 people attended Open House #1 (Existing and Future Conditions), 30 people attended Open House #2 (Recommended Improvements), and another 19 participated in a follow up online survey.

Under-represented populations were carefully considered in planning and recruiting for the events. The project team called and posted invitation flyers at mobile home parks and apartment complexes in the area. The second event was held at Houck Middle School, where 60% of the student population identifies as Hispanic and 79% qualify for the school lunch program. Staff and families from the school attended the event. See Page 8 for a full list of the 25 agencies, 17 organizations, 10 apartments and mobile home parks, and 72 businesses that represent the diverse interests on the corridor.

Additional information related to the public involvement process, including detailed summaries of public comments and a list of stakeholders is included in Appendix E.

RECOMMENDED SYSTEM IMPROVEMENTS

8.0
RECOMMENDED SYSTEM IMPROVEMENTS

This chapter summarizes the recommended improvements for the OR 22 (East) corridor. The following recommendations are based on the results of safety evaluations, operations analysis, environmental considerations, and public support.

8.1 Recommended Safety Improvements

While safety was a primary consideration in the development of all of the recommended improvements, the following recommendations are focused specifically on reducing the frequency and severity of crashes along the study corridor.

8.1.1 Improve Signal Hardware

Improving signal hardware includes larger or reflectorized back plates and adding supplemental signal heads. Suggested locations for improving signal hardware include the intersections at 25th Street, Airport Road, and Hawthorne Avenue. Improved signal hardware can reduce the total number of crashes at signalized intersections by 20 to 30 percent, depending on how many improvements are made. These improvements are currently being scoped (and may possibly be funded) through the ARTS program.

8.1.2 Pedestrian Crossing Improvements

The wide cross section of Mission Street (OR 22) requires long pedestrian crossing times and can create barriers to pedestrian travel. At the intersection of Mission Street (OR 22)/25th Street, it is recommended that a median refuge island be installed on the west leg, which would allow for the flexibility of implementing a two-phase pedestrian crossing. This would require extending the existing median on the west leg to include a pedestrian refuge island and adding push buttons in the median.

8.2 Recommended Bicycle, Pedestrian, and Transit Improvements

The following is a list of recommended bicycle, pedestrian, and transit improvements. The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted for state facilities are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any state facility are subject to change, will ultimately be determined through a preliminary and final design process, and are subject to ODOT approval.

8.2.1 Multi-use Path

It is recommended that a multi-use path be constructed along OR 22 (East) from 25th Street to Cordon Road to improve the safety and connectivity for bicycles and pedestrians. Figure 21 on the following page shows a potential alignment for a multi-use path. There is currently an unimproved trail that runs under I-5, connecting the south end of Cascade Gateway City Park to Hagers Grove Road (which connects to Lancaster Drive SE). The City of Salem Bicycle Plan suggests improving this trail as part of a larger multi-use path. The potential downsides to this proposal are a safety concern for bicyclists and pedestrian traveling through an undercrossing and the out of direction travel required to take this route. I-5 creates a significant barrier for bicyclists and pedestrians traveling east and west on OR 22 (East) and the proposed multi-use path would provide a safe alternative across this barrier. Alternatively, a multi-use path could be constructed adjacent to the existing OR 22 (East) bridge over I-5 that could tie into the existing bicycle and pedestrian network. The multi-use path along OR 22 (East) would be integrated as part of the OR 22 (East)/Cordon Road interchange to connect Corban University, the Mill Creek Corporate Center, and several schools and residential areas that are currently divided by OR 22 (East). Additionally, a multi-use path would connect to the planned multi-use path along Cordon Road north of OR 22 (East). If a separated multi-use path is constructed, sufficient lighting will be critical to provide a safe and secure facility.

Figure 21.
Potential Multi-use Path Alignment

8.2.2 Bicycle and Pedestrian Network

There are currently several gaps in the network of bicycle lanes and sidewalks in the study area. It is recommended that these gaps be filled, specifically along Mission Street (OR 22) east of Hawthorne Avenue, across I-5, along Cordon Road (including the new interchange overpass), the Lancaster Drive overpass, and along Gaffin Road. If the previously recommended multi-use path is constructed, additional infill along OR 22 (East) would not be necessary.

8.2.3Transit Services

It is recommended that the frequency of transit service and number of transit stops along corridor be increased. The existing regional transit services, the Valley Retriever and Cascade POINT, do not have any stops within the study area. The local transit service, Cherriots, has one stop along Mission Street (OR 22) at 25th Street and several stops on the minor roads including 25th Street, Hawthorne Avenue, and Lancaster Drive. Transit services are currently not provided on OR 22 (East) east of 25th Street along Cordon Road or Gaffin Road. An additional park-and-ride lot east of I-5 combined with increased transit frequency would promote transit use and reduce the number of single-occupancy vehicles along the corridor. It should be noted that Salem-Keizer Transit currently operates under significant budget constraints that limit their ability to expand service. The District has indicated it would be interested in reevaluating service in this part of the region when projected demand justifies additional service.

8.3 Recommended Capacity and Operations Improvements

The following are recommended improvements that were deemed practical by the Project Management Team to increase the efficiency and mobility of traffic on OR 22 (East). Improvements include an adaptive signal timing plan and infrastructure improvements at study intersections that enhance facility operating conditions.

8.3.1 Adaptive Signal Timing

Adaptive Signal timing is a traffic management strategy that allows traffic signal timing to dynamically change or adapt to the actual traffic demands along a corridor. The existing traffic signals along OR 22 (East) currently run an adaptive signal traffic responsive operations (ASTRO) using the Voyage software, which is a hybrid system that is more advanced than basic time-of-day timing plans but is not fully adaptive.[21] By implementing a full adaptive signal timing plan, upgrading the detector system, signal hardware and software, the corridor operations could be greatly improved during the peak hours. Additionally, with proper detection and a fully adaptive signal system, freight and/or transit priority could be

21 Meeting with Roger Boettcher, Oregon Department of Transportation Traffic Signal Control Specialists on May 9, 2016.

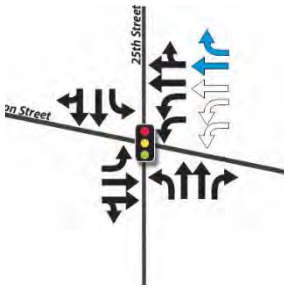
implemented on the corridor. It should be noted that the City is currently in the process of requesting an IGA to take over maintenance of the Mission Street traffic signals.

8.3.2Intersection Improvements

The recommended intersection improvements are summarized below with accompanying figures depicting the existing (solid black arrows) and recommended lane configuration (hollow arrows are unchanged lanes, blue arrows are new or reconfigured lanes).

Mission Street (OR 22)/25th Street

Construct a dedicated westbound right lane on Mission Street (OR 22). This addition would require acquiring right-of-way and would impact the adjacent property owner.

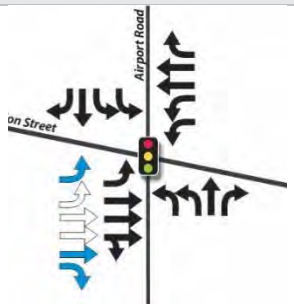


With the improvements shown in the figure, the peak hour intersection operations are enhanced but would still not meet the current mobility target. Recommended alternative mobility target (0.95 v/c) would be met.

Although it is not recommended at this time (based on current traffic volumes), another improvement option that could be considered is to restripe the northbound and southbound approaches to include dual left turn lanes, removing one of the through lanes in each direction. This may be particularly relevant if the redevelopment of adjacent land uses requires reconfiguration of existing accesses near the intersection.

Mission Street (OR 22)/Airport Road-Turner Road

Reconstruct the intersection to allow the northbound and southbound dual left turns to operateO simultaneously. Construct a second eastbound left turn lane (which would require an additional receiving lane on the north leg of the intersection) and construct a dedicated eastbound right turn lane. These additions would require removing the existing raised median along the west leg and acquiring the right-of-way.



With these improvements, the peak hour intersection operations would improve but would not meet current mobility targets. Recommended alternative mobility target (0.90 v/c)would be met.

While it is not recommended at this time, another improvement that could be considered in the future is adding a westbound auxiliary lane on Mission Street (OR 22) between 25th Street SE and Airport Road-Turner Road SE. This would increase capacity by shifting the drop lane from Airport Road-Turner Road to 25th Street SE. However, there is little demand for the westbound right turn movement at 25th Street SE and the auxiliary lane would be underutilized with forecasted traffic volumes.

Mission Street (OR 22)/Hawthorne Avenue

Construct a westbound right turn lane. This addition would require right-of-way and would impact the landscape strip adjacent to Costco.

With these improvements, the peak hour intersection operations would improve but would not meet current mobility targets. Recommended alternative mobility (0.90 v/c) target would be met.

Gaffin Road/Cordon Road

In additional to the planned signalization of this intersection, widen Cordon Road to a five-lane cross-section (two through travel lanes in each direction).[22]

With these changes the operating conditions of the intersection would improve and will meet current mobility targets.

Figure 22 on the following page presents the existing and recommended lane geometry for all study area intersections. Planning level conceptual designs of select improvements are presented in Section 8.4.

22 Regional Transportation System Plan, Project S289. City of Salem. 2015.

Figure 22.
Intersection Improvement Recommendations

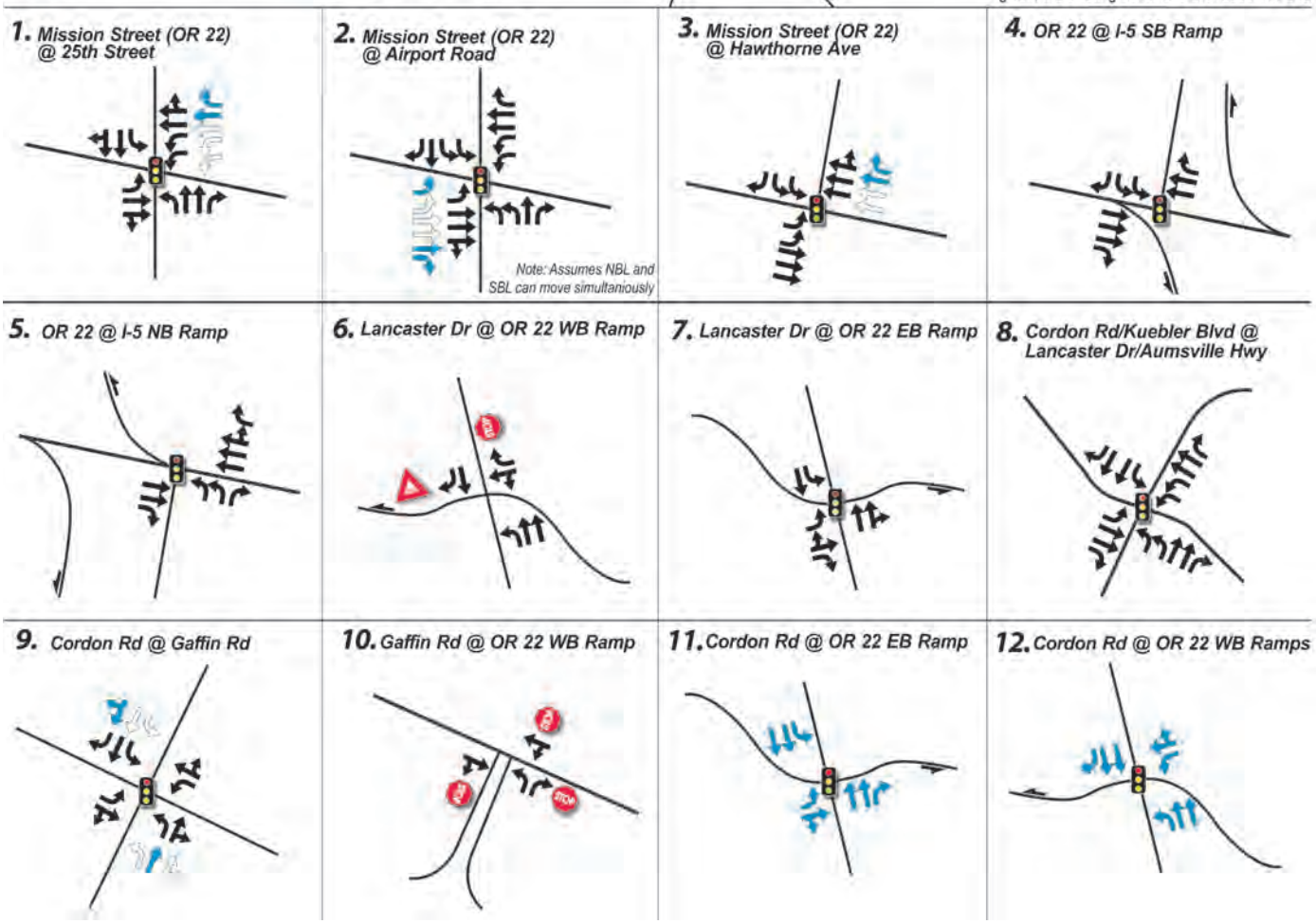


Table 17 summarizes the intersection operations for the study area intersections for the no-build scenario as well as the expected operations if all recommended improvements are implemented. The mobility targets shown for the recommended improvements include all recommended alternative mobility targets presented in Section 6.3.10.

Table 17. 2035 Future Traffic Operations for Recommended Improvements

INTERSECTION	NO BUILD			RECOMMENDED		
	EXISTING MOBILITY TARGETS	V/C	LOS	REC'D ALTERNATIVE MOBILITY TARGETS	V/C	LOS
Mission Street (OR 22)/25th Street	0.85 v/c	**1.11**	F	0.95 v/c[b]	0.91[b]	D
Mission Street (OR 22)/ Airport Road-Turner Road	0.85 v/c	**1.24**	F	0.90 v/c[b]	0.88[b]	F
Mission Street (OR 22)/ Hawthorne Avenue	0.85 v/c	**0.89**	C	0.90 v/c	0.86	C
OR 22/I-5 SB Ramps	0.85 v/c	**0.88**	C	0.90 v/c	0.88	C
OR 22/I-5 NB Ramps	0.85 v/c	**0.87**	A	0.90 v/c	0.87	A
Lancaster Drive/OR 22 WB Ramps	0.85 v/c[a]	**1.36**	B/F	0.85 v/c[b]	0.81[b]	A/F
Cordon Road/Gaffin Road	0.90 v/c	**1.31**	F	0.90 v/c	0.85	C

Signalized Intersection:
v/c = Volume-to-Capacity Ratio
LOS = Level of Service

Unsignalized Intersection:
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Major Street LOS/Minor Street LOS

Bold/Highlighted Text: Does not meet Mobility Target
[a] Mobility Target is 0.85 v/c for OR 22 off/on ramps and 0.90 along Lancaster Drive
[b] Mobility Target and reported operations pertain to average weekday conditions. All others assume 30th highest hour conditions (consistent with existing and future no-build analysis).

8.3.3 Cordon Road Interchange

A previously conducted transportation study of the Cordon Road Interchange[23] concluded that an interchange would have the following impacts on the roadway network and community:

- Improve connectivity;
- Provide travel time benefits;
- Have a corresponding financial benefit;
- Improve geometric constraints at the current overcrossing;
- Improve traveler safety;
- Support economic development and freight in the area of Cordon Road and OR 22 (East);
- Enhance efforts to market employment sites at Mill Creek Corporate Center; and
- Enhance efforts to market employment sites at Salem Renewable Energy and Technology Park.

The Cordon Road Interchange Study clearly identified the benefits of constructing an interchange at this location. The following sections summarize how the proposed interchange will impact operations on the OR 22 (East) mainline (weaving analysis), several possible functional forms for the interchange, and the expected interchange terminal operations and configuration for a tight diamond interchange.

Potential Interchange Designs

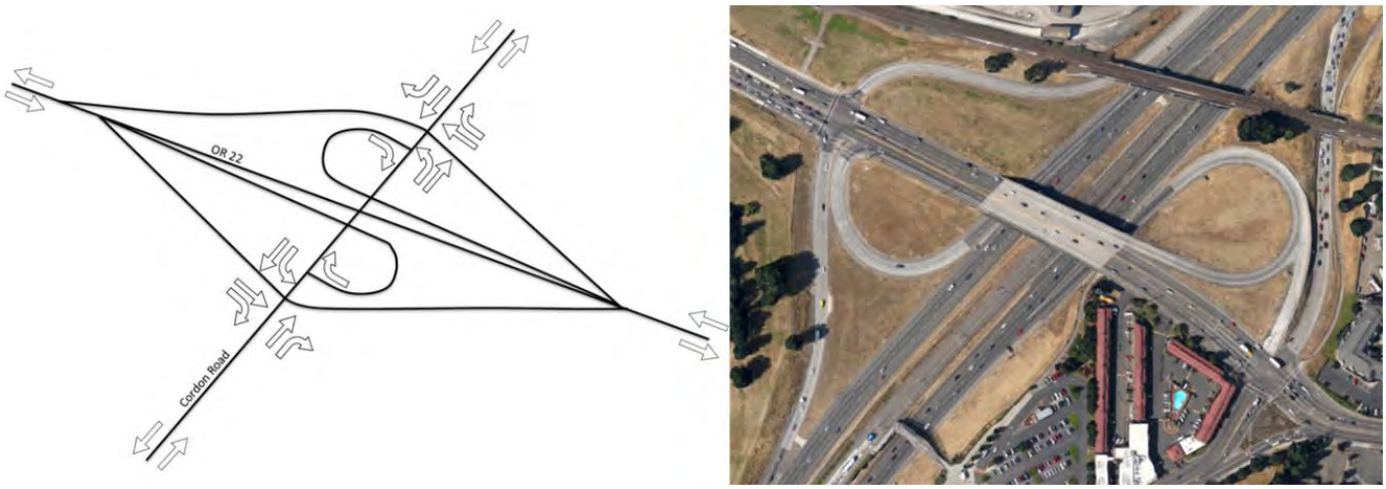
Several interchange functional forms have been investigated for the Cordon Road Interchange, including a partial clover leaf, single-point urban interchange, a traditional diamond, a diamond with roundabout terminals, and a tight diamond. These concepts are summarized below.

23 *Project Rationale: OR 22/Cordon Road Interchange*. CH2MHill. June 2012.

Partial Clover Leaf Interchange

A Partial Clover Leaf interchange combines elements from a clover leaf interchange and elements from a diamond interchange. One or more of the ramps connecting the highway to the cross road is a loop, forming a "leaf" in the clover. This design requires a large amount of right-of-way. The previously recommended design was a partial clover leaf interchange with westbound and eastbound exit loop ramps. This design maximizes efficiency for left turn movements onto Cordon Road. This design requires a large footprint that would have a greater impact on adjacent properties and residential buildings. A schematic drawing of the proposed Cordon Road partial clover interchange as well as a photo of a local example is shown in Figure 23.

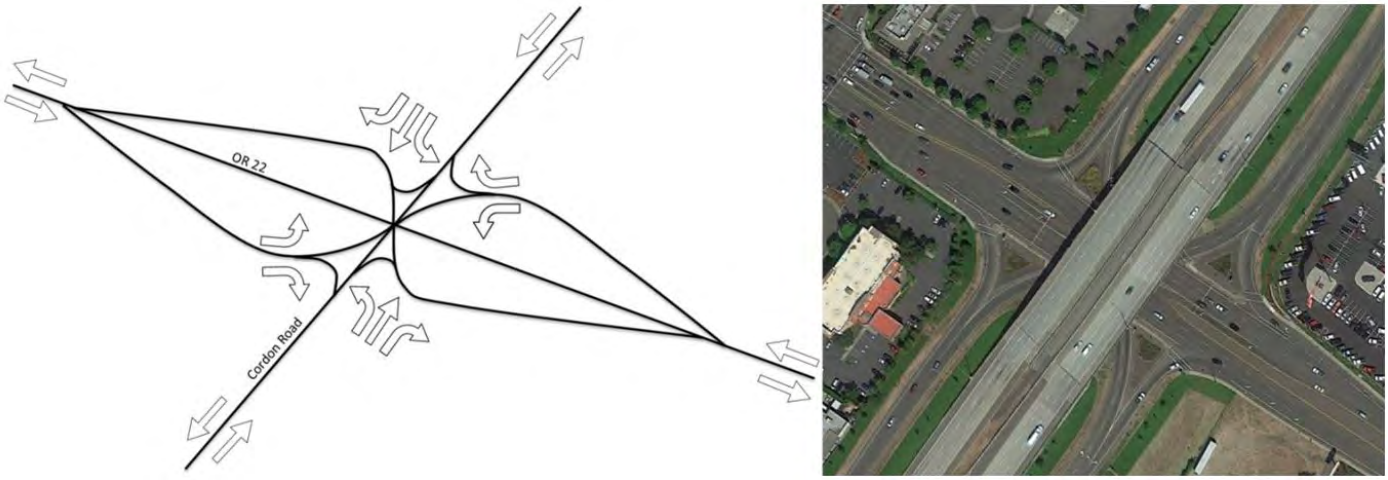
Figure 23.
Partial Clover Leaf Interchange Example (I-205/Killingsworth Street, Portland, OR)



Single-Point Urban Interchange

A single-point urban interchange (SPUI) is similar to a diamond interchange; however it pulls both ramp terminals into a single intersection while allowing opposing left turns to operate simultaneously. The biggest advantage of a SPUI is a high level of operational efficiency and safety as well as reduced right-of-way requirements as compared to other interchange designs. One disadvantage to the SPUI is the high cost of construction due to the need for wider bridge structures. A schematic drawing of the proposed Cordon Road single-point urban interchange as well as a photo of a local example is shown in Figure 24.

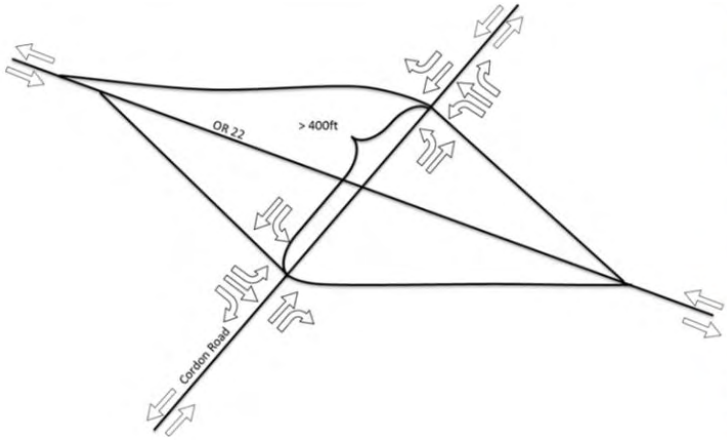
Figure 24.
Single-Point Urban Interchange Example (I-5/Market Street, Salem, OR)



Traditional Diamond Interchange

A traditional diamond interchange is the most commonly used interchange design. This design includes two separated intersections at the ramp terminals that are typically stop or signal controlled. This interchange design requires a moderate amount of right-of-way. Typical spacing on the overpass between the ramp intersections is greater than 400 feet. A schematic drawing of the proposed Cordon Road diamond interchange as well as a photo of a local example is shown in Figure 25.

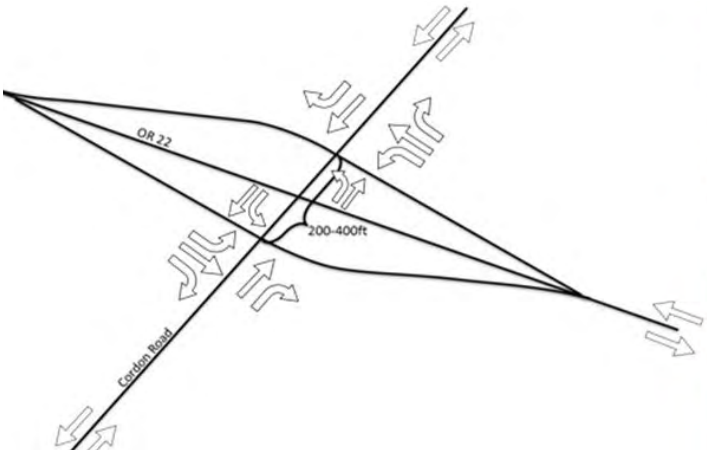
Figure 25.
Traditional Diamond Interchange Example (I-5/Brooklake Road, Brooks, OR)



Tight Diamond Interchange

An alternative to the traditional diamond interchange design is a Tight Diamond Design. In this design, the ramp terminal intersections on either side of the highway are spaced closely together. The overall footprint of the interchange is less than a normal diamond interchange; however the bridge structures are typically wider to accommodate side-by-side left turn lanes. Typical spacing on the overpass between the ramp intersections is between 200-400 feet.[24] A major advantage of a tight diamond with signalized ramp terminals is that both intersections can run on a single controller, resulting in very efficient operations. A schematic drawing of the proposed Cordon Road tight diamond interchange as well as a photo of a local example is shown in Figure 26.

Figure 26.
Tight Diamond Interchange Example (US 26/Scholls Ferry Road, Portland, OR)



24 *Alternative Intersection/Interchanges: Informational Report Chapter 9*. FHWA. 2010.

Diamond Interchange with Roundabout Traffic Control

A diamond interchange where the ramp intersections are configured with roundabout traffic control. Roundabouts can generally handle the same amount of traffic as a signalized intersection but with fewer approach lanes, eliminating the need for a wider bridge and reducing the cost. However, roundabouts have a large footprint and require special consideration in the design process to properly accommodate heavy vehicles and emergency vehicles. A schematic drawing of the proposed Cordon Road diamond interchange with roundabout traffic control as well as a photo of a local example is shown in Figure 27.

Figure 27.
Diamond Interchange with Roundabout Traffic Control Example (SR-14/Frontage Rd, Washougal, WA)

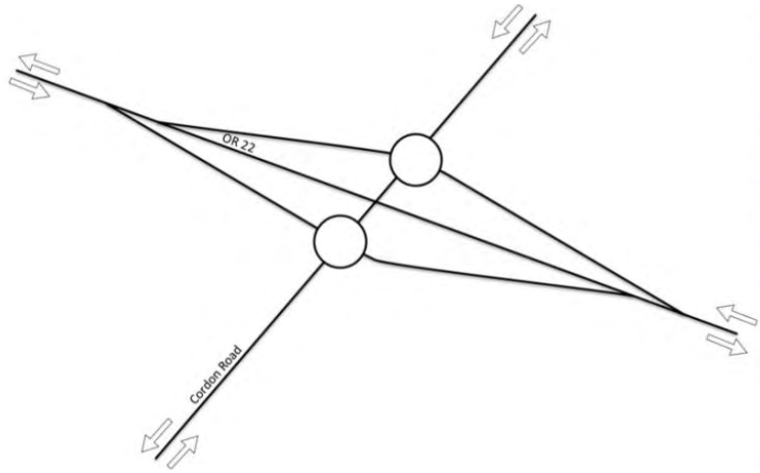


Table 18 on the following page summarizes the considerations for each interchange form, including safety, operations, bicycle and pedestrian accessibility, right of way impacts, and construction costs.

Table 18. Interchange Consideration Matrix

INTERCHANGE DESIGN	CONSIDERATIONS				
	SAFETY	OPERATIONS	BIKE/PED	RIGHT OF WAY IMPACT	RELATIVE COST
PARTIAL CLOVERLEAF	★	★★★★★	★★	★★	$$$$
	Potential for ramp queueing and wrong-way movements; weaving on mainline	Free flow ramps increase capacity	Conflicts with free-flowing vehicle movements	High - Loop ramps require large footprint	Large amount of right of way needed
SINGLE POINT URBAN (SPUI)	★★★★	★★★★★	★★	★★★★★	$$$$
	Single intersection limits conflict points	Single intersection minimizes stops and delay	Challenging to cross due to wide cross-section and unique configuration	Low - Single intersection minimizes footprint	Large structure needed
DIAMOND	★★★	★★★★	★★★★	★★★★	$$$
	Meets driver expectations; safety performance similar to traditional intersections	Flexible traffic control depending on volumes	Crossings are typically at right-angles and are protected via traffic control	Moderate - Longer structure with traditional ramps	Moderate right of way and narrow structure
TIGHT DIAMOND	★★★	★★★½	★★★★★	★★★★★	$$$
	Meets driver expectations; safety performance similar to traditional intersections	Both terminals can operate on a single controller; efficient operations	Crossings are typically at right-angles and are protected via signal control	Low - Shorter structure with traditional ramps	Minimal right of way and moderate structure
ROUNDABOUT DIAMOND	★★★★★	★★★★	★★★	★★★	$$$$
	Fewest number of vehicle conflicts	Minimal delay at terminals	Can be difficult for bikes and pedestrians to navigate, particularly those with vision impairments	Moderate - Terminal intersections are large	Narrow structure, large terminal intersections

★★★★★ = most favorable performance
★ = least favorable performance
$= $10-15 Million

Further investigations (including environmental impact studies and right-of-way investigations) will need to be completed to identify a preferred functional form for the Cordon Road Interchange. For purposes of this report, a tight diamond interchange is assumed for evaluation of future interchange operations due to its small footprint and limited right-of-way impacts. The following section summarizes the expected operations and recommended lane geometry for the Cordon Road Interchange if a tight diamond configuration is implemented.

Operations and Configuration of a Tight Diamond Interchange

To determine the recommended lane configuration for a tight diamond interchange at Cordon Road and OR 22 (East), several different scenarios were modeled to evaluate the transportation operations. Preliminary signal warrants were also evaluated for both ramp terminal intersections and it was determined that under future traffic volumes, the eastbound terminal would warrant signalization while the westbound terminal may not. However, given a tight diamond configuration, both terminals would need to be signalized for the interchange to operate efficiently. As such, both ramp terminal intersections were assumed to be signalized for analysis and conceptual design purposes.

The recommended lane configuration for a tight diamond interchange includes two through lanes, a single left turn lane, and a single right turn lane in the northbound and southbound directions. The eastbound and westbound off ramps have a left turn lane and shared through-right lane. Figure 33 in Section 8.4 shows the recommended lane configuration for the tight diamond interchange option. Table 19 presents the expected operations of the tight diamond interchange under 2035 traffic volumes. As shown, the interchange is expected to operate well within current mobility targets.

Table 19. Cordon Interchange Intersection Operations for Recommended Design

SIGNALIZED INTERSECTION	MOBILITY TARGET	DELAY	V/C	LOS
OR 22 Eastbound Ramp Terminal at Cordon Road	0.85 v/c[a]	19.6	0.73	B
OR 22 Westbound Ramp Terminal at Cordon Road		15.0	0.78	B

[a] Mobility Target is 0.85 v/c for OR 22 off/on ramps and 0.90 along Cordon Road

Highway Weaving Analysis

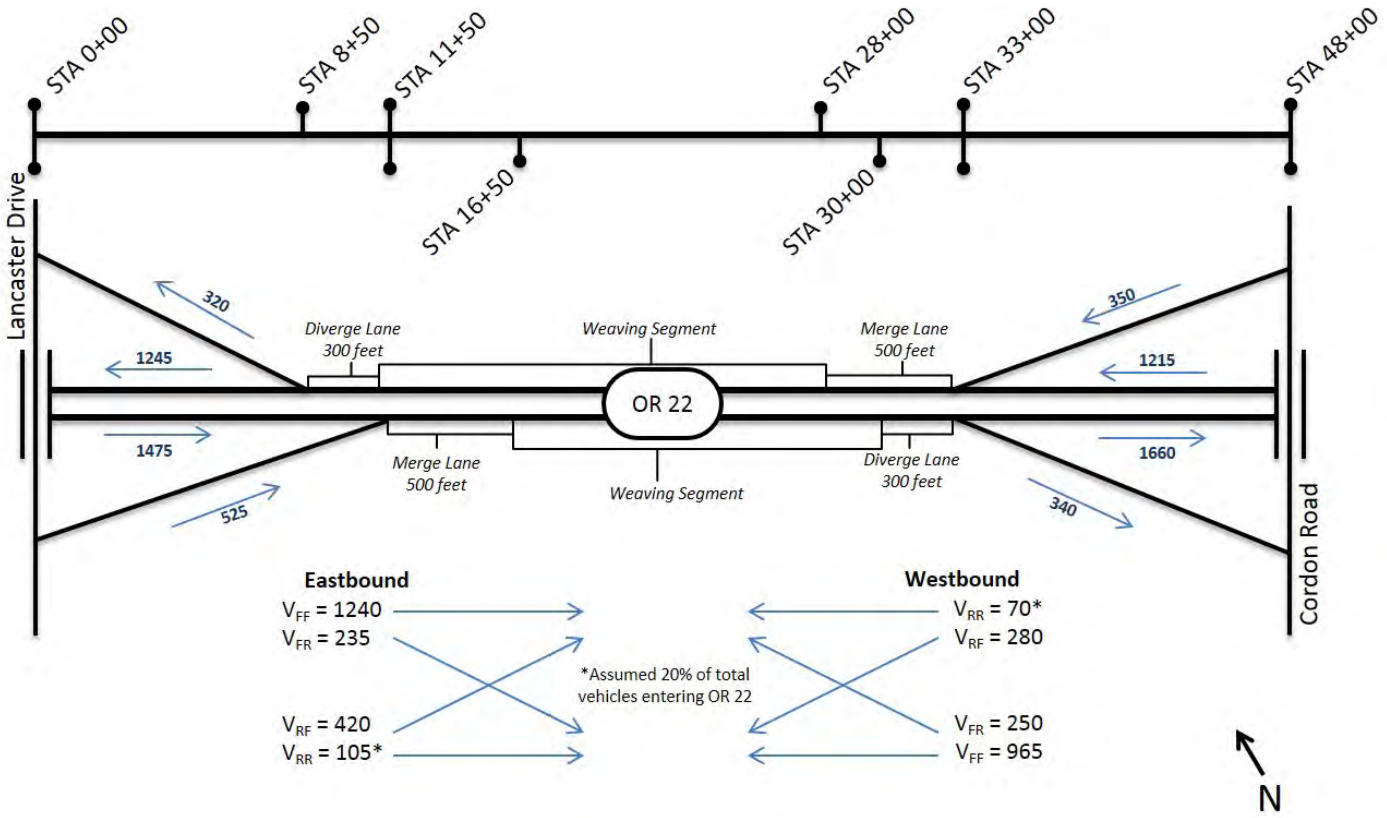
Adding an interchange to OR 22 (East) at this location requires a design exception as the proposed Cordon interchange would not meet either the Oregon Highway Plan (OHP) or the Highway Design Manual standards. Spacing between the proposed Cordon Interchange would be approximately 0.9 mile to Lancaster Drive and approximately 1.2 miles to Gaffin Road. The OHP recommends a minimum of 1.9 miles between interchanges in an urban area and 3.0 miles between interchanges in a rural area. A weaving analysis was completed between the proposed Cordon Road interchange and Lancaster Drive interchange. It was

assumed that weaving behaviors between the proposed Cordon Road interchange and Gaffin Road would have similar or better operations than between the proposed Cordon Road interchange and Lancaster Drive interchange.

Highway Operational Performance

The Highway Capacity Software (HCS) based on the 2010 Highway Capacity Manual (HCM) merging and diverging methodology, was used to evaluate the merge, diverge, and weaving operations between the Lancaster Drive interchange and the proposed Cordon Road interchange. The analysis assumed a 5% heavy vehicle percentage and a highway free flow speed of 65 mph based on the 85th percentile speeds.[25] The location, configuration, and geometry of the Cordon Road interchange ramps were generated based on coordination with ODOT staff. The ramp locations between Cordon Road and Lancaster Drive were similar for a tight diamond interchange design or a partial clover interchange design. Figure 28 graphically presents the estimated distances and traffic volumes associated with a tight diamond interchange at this location.

Figure 28.
OR 22 Interchange Distance and Volumes - Lancaster Drive to Cordon Road



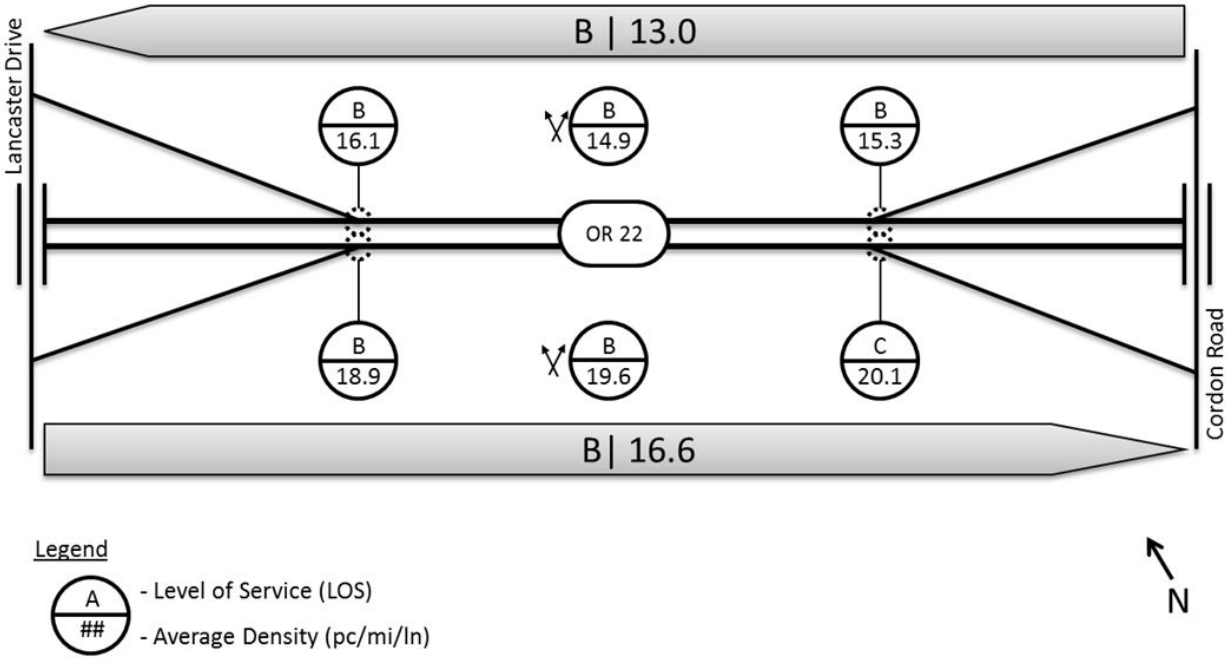
As shown in Figure 28, the analysis assumed 20% of the vehicles entering OR 22 (East) from Lancaster Drive would exit at Cordon Road, and vice versa. A sensitivity test was performed to evaluate the significance of that assumption. Assuming 50% of the entering vehicles took the next exit, the results showed a negligible change in highway operations compared to the 20% assumption. In other words, because the total traffic volumes are relatively low, the precise percentage of vehicles entering and immediately exiting the highway has little

25 Data collected by Quality Counts on September 16, 2015 on OR 22 east of Lancaster Drive.

impact on the analysis results. Therefore, the assumption of 20% entering and immediately exiting was maintained for the analysis.

Figure 29 shows the results of the merge and diverge analysis as well as the weaving analysis. Using the 2035 future volumes, it was found that all merge/diverge points for both interchanges would operate at Level of Service (LOS) B and have a density of less than 20 passenger cars per mile per lane (pc/mi/ln). The weaving analysis was indicated that the eastbound direction would have the worst LOS at a B and the highest average density of 19.6 passenger cars per mile per lane.

Figure 29.
Future (2035) Highway Operations for OR 22



Based on the results of the highway operational performance measures, there would not be an immediate need for an auxiliary lane between Lancaster Drive and Cordon Road. The HCS weaving analysis reports can be found in Appendix G.

8.4 Conceptual Designs of Recommended Improvements

The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted for state facilities are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any state facility are subject to change, will ultimately be determined through a preliminary and final design process, and are subject to ODOT approval. Planning level conceptual designs were developed to better understand the feasibility and potential right-of-way impacts of the recommended improvements, as shown on Figure 30 through Figure 33.

Figure 30.
Conceptual Design of Recommended Improvements at Mission Street (OR 22)/25th Street

Figure 31.
Conceptual Design of Recommended Improvements at Mission Street (OR 22)/Airport Road-Turner Road

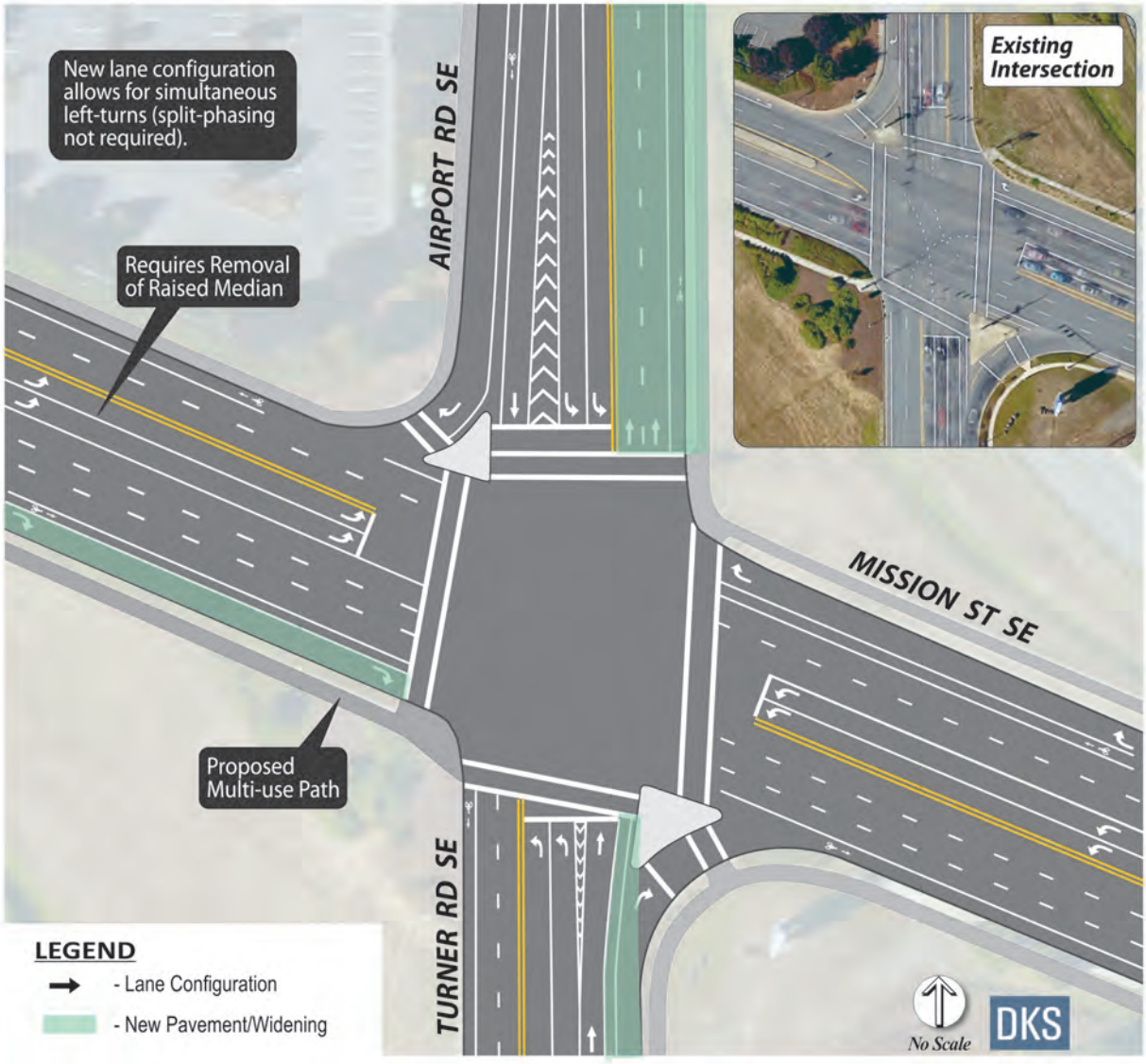


Figure 32.
Conceptual Design of Recommended Improvements at Mission Street (OR 22)/Hawthorne Avenue

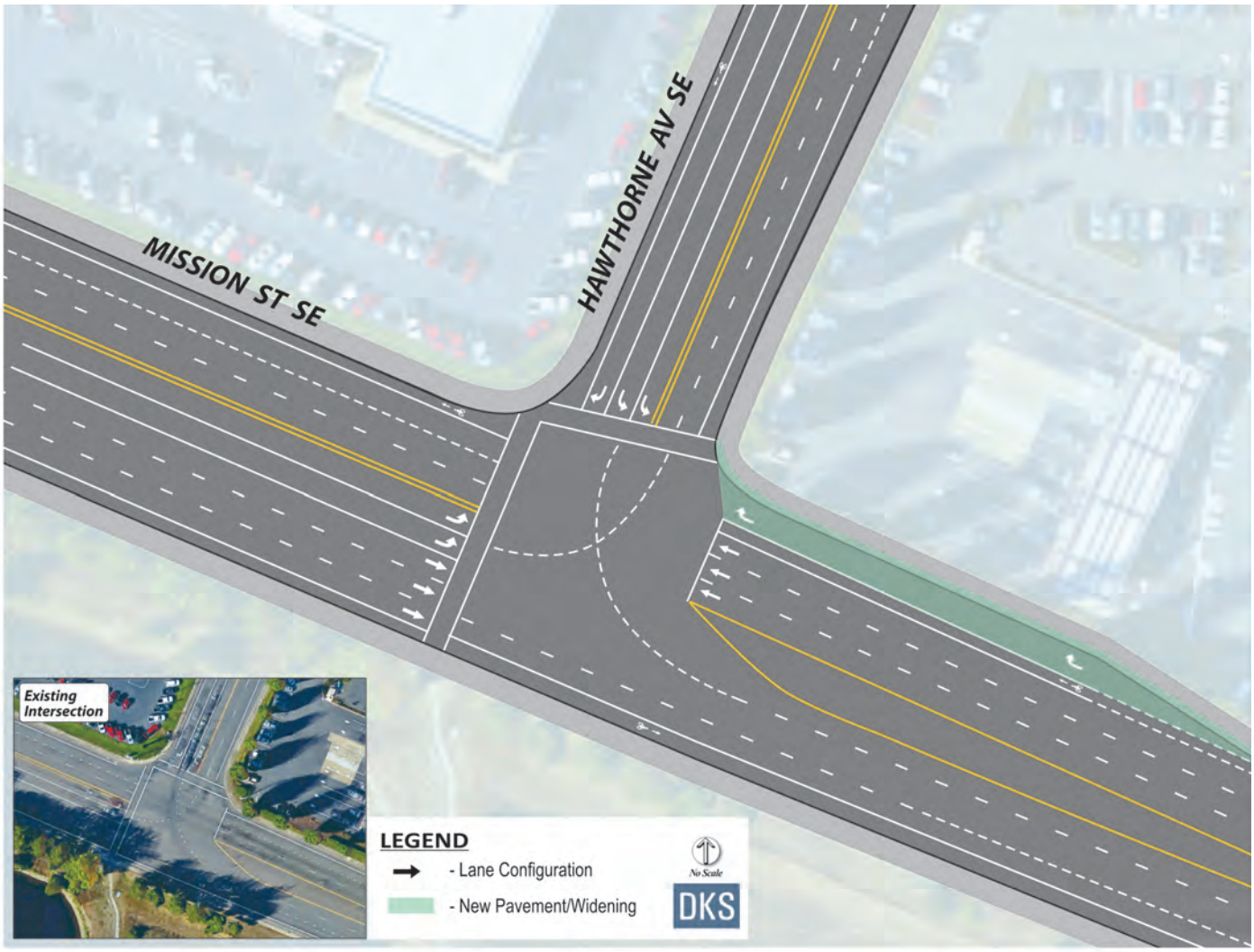
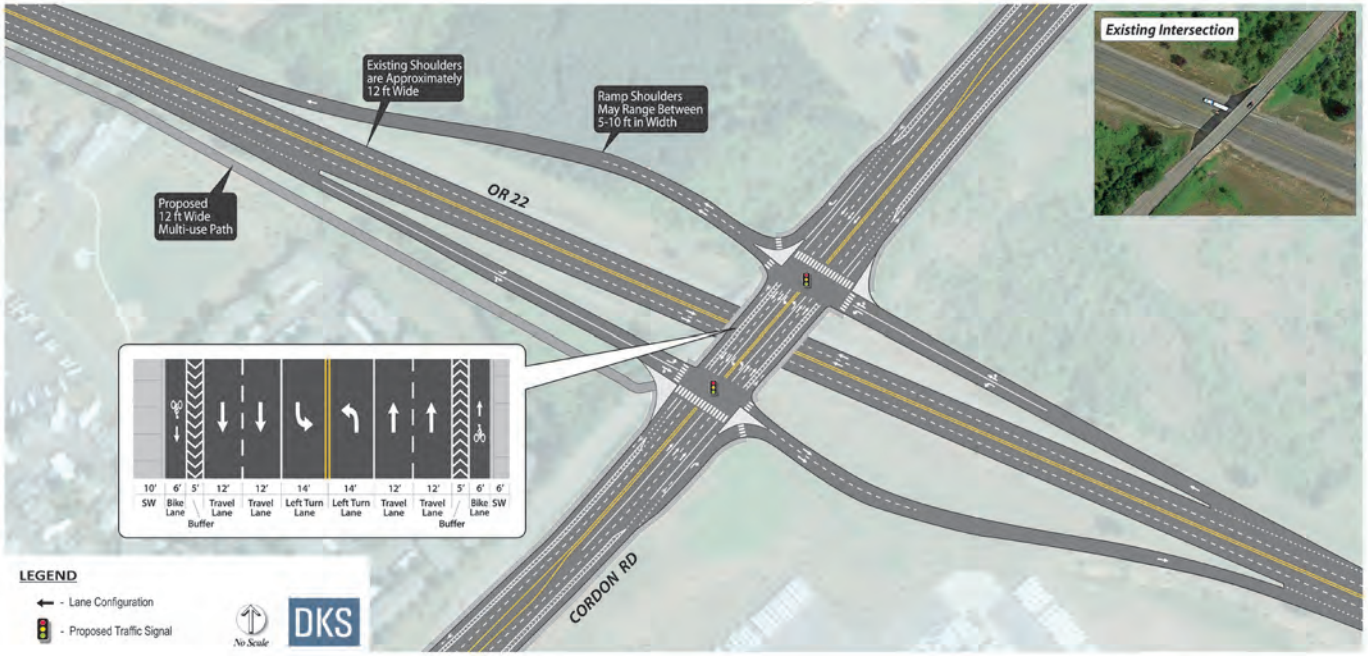


Figure 33.
Conceptual Design of Recommended Improvements at OR 22/Cordon Road



8.5 Recommended Access Management Strategies

A key element of the OR 22 (East) Facility Plan is the long-range preservation of operational efficiency and safety by managing access to the highway. Access points, where side roads or driveways intersect the highway, are potential locations for vehicle conflicts. Vehicles frequently stop or slow down at these access points, which can significantly impact the flow of traffic and increase the likelihood of a crash. By reducing the number of access points and increasing the distance between them, these impacts can be minimized.

As of February 2017, there are five signalized intersections and three unsignalized driveways that access OR 22 (East) within the study area. All three existing driveways are located on the north side of Mission Street (OR 22) between 25th Street and Airport Road-Turner Road. Aside from this roadway section, OR 22 (East) is access controlled within the study area. Two of the driveways serve a currently vacant property and the third driveway serves the Power Nissan car dealership. Based on the existing layout of the Power Nissan site, the third driveway has the potential to be shared by both developments. A shared driveway is something that both property owners must agree on and construct together. All three driveways are currently full-movement (e.g., there are no restrictions on turning movements in to or out of the developments).

ODOT and the City are currently working with a potential developer of the vacant property between 25th Street and Airport Road-Turner Road. Access decisions regarding that property will be made through the development review and access permitting process and will move toward meeting spacing requirements as specified in OAR 734-051.

8.5.1 Access Management Strategies

Because driveways are only present on Mission Street (OR 22) between 25th Street and Airport Road-Turner Road, the recommended access management strategies are limited to this roadway segment.

Short-Range:

Limiting Turning Movements within Intersection Functional Areas

The functional area of an intersection represents the distance upstream and downstream of an intersection that is impacted by the operations of that intersection (e.g., vehicles slowing down to join a queue or accelerating after turning onto the roadway). Because this area creates a complex driving environment, it is recommended that driveways not be located within the functional area of an intersection. If an existing driveway is located within the functional area of an intersection and cannot be relocated, it is recommended that turning movements be restricted where possible through the use of signs, markings, channelizing islands, and/or medians.

Medium-Range:

Providing Auxiliary Lanes at Driveways

The primary safety concern at driveways is the speed differential between turning vehicles and through traffic. It is recommended that turn lanes be provided when warranted by the volume of traffic utilizing the driveway.

Medium-Range:

Consolidation of Access Points

Fewer access points results in improved mobility and safety. When properties redevelop in the future, consider supporting developments to consolidating or share access points between adjacent developments.

8.6 Evaluation of Recommended Improvements

All of the recommended improvements are expected to have a measureable benefit on operations or safety along the OR 22 (East) corridor. However, it is also important to understand how the improvements may affect the community on a higher level. The following sections summarize the evaluation methodology that takes into account community wide impacts, direct benefits, and estimated costs.

8.6.1 Evaluation Focus Areas and Criteria

A set of six focus areas served as the framework for the evaluation methodology: transportation impacts, environmental considerations, social and economic impacts, and community values. The goals associated with each focus area and the associated criteria are summarized below.

Focus Area 1:

Improves safety and accessibility for all modes

Goal: Provide a multi-modal transportation system to meet existing and future safety and accessibility needs for all transportation system users. The following criteria were developed to evaluate how well the recommended improvements address transportation safety and accessibility needs:

- Reduce potential conflict points at intersections and driveways.
- Improve pedestrian safety and accessibility.
- Improve bicycle safety and accessibility.
- Improve overall traffic safety.

Focus Area 2:

Improves mobility and connectivity for all modes while minimizing impacts to adjacent land uses

Goal: Provide a multi-modal transportation system to meet existing and future mobility needs for all transportation system users. The following criteria were developed to evaluate how well the recommended improvements address transportation mobility and connectivity needs:

- Improve vehicle capacity along OR 22 (East).
- Improve mobility and connectivity along Cordon Road.
- Improve mobility along OR 22 (East), including freight.
- Support public transit service.
- Improve emergency vehicle response time.
- Meets current or alternative mobility targets.
- Minimize impacts to the airport.

Focus Area 3:

Avoid or minimize adverse permanent and temporary impacts to the environment

Goal: Avoid or minimize the impacts to local environmental and community resources while incorporating opportunities to enhance those resources. The following criteria were developed to evaluate the environmental impacts of the recommended improvements:

- Avoid or minimize adverse permanent and temporary impacts to environmentally sensitive natural resource areas.
- Avoid or minimize adverse permanent and temporary impacts to identified historical resources.
- Avoid or minimize adverse permanent and temporary impacts to cultural resources.
- Avoid or minimize adverse permanent and temporary impacts to visual resources.

Focus Area 4:

Support community livability and community values

Goal: Support the economic viability of the region including industrial, commercial, recreational, and tourist activities; protect the livability and integrity of the residential areas; provide a financially viable project. The following criteria were developed to evaluate the social and economic impacts of the recommended improvements:

- Improves multi-modal access to residential and commercial areas.
- Improves roadway geometrics for freight movements.
- Provides accessible transportation facilities for all community members and users.
- Consistent with City and County Economic Development Strategies.
- Improves aesthetics of corridor to create a welcoming gateway to the City of Salem.
- Minimizes impacts to properties along the corridor.

Focus Area 5:

Ensure consistency with regional plans

Goal: Be consistent with the adopted long term goals and policies of the community and the region. The following criteria were developed to evaluate how well the recommended improvements align with community values:

- Be consistent with Oregon Highway Plan.
- Be consistent with Oregon Bicycle and Pedestrian Plan.
- Be consistent with Marion County and City of Salem Transportation System Plans.
- Be consistent with City of Salem Comprehensive Plan.
- Support planned development and growth within the Urban Growth Boundary.

Focus Area 6:

Provide economic benefits

Goal: Provide an economic benefit to the community. The following criteria were developed to evaluate the economic benefits of the recommended improvements:

- The solution is fundable.
- The solution is cost effective relative to the expected benefits.
- The solution is feasible given existing and future physical and funding constraints.
- The solution is sustainable over the long term.

8.6.2 Criteria Scoring

The goal of this evaluation process is to provide a basis for comparing and prioritizing the recommended improvements using a quantitative measure of project benefits. All of the criteria listed above were assigned a value ranging from (-1) to (+1), where (-1) indicates that the improvement fails to meet the criteria, zero indicates that the improvement has no impact or is not applicable to the criteria, and (+1) indicates that the improvement successfully meets the criteria. Each focus area was weighted equally, and the sum of all focus area criteria scores provided the final evaluation score for each alternative. The minimum and maximum final evaluation scores range from (-6) to (+6). Summary tables of the evaluation scoring for each project can be found in Appendix G.

The total score for each project, multiplied by 100,000, was then be compared to the planning level projected construction costs to provide an estimated benefit-cost ratio. The benefit-cost ratios were used to rank the projects and develop a prioritized list of recommended corridor improvements, as presented in the following section.

8.7 Prioritized List of Recommended System Improvements

The evaluation of cost effectiveness described in the previous section was combined with the level of public support for each project to determine a final prioritized list of recommended improvements. The level of public support was categorized as low, medium, or high based on community feedback and the results of a "spending exercise" conducted at the second Community Open House event. The prioritized list of recommended improvements is presented in Table 20.

Table 20: Prioritization of Recommended Improvements

LOCATION	IMPROVEMENT	SHORT, MEDIUM, LONG TERM	EVALUATION SCORE	PLANNING LEVEL COST ESTIMATE	EVALUATION SCORE (X100,000)/ COST RATIO
OPERATION IMPROVEMENTS					
Mission Street (OR 22)/ 25th Street	Install Westbound Right Turn with Storage Lane	Short	3.0	$350,000.00	0.86
Mission Street (OR 22)/ Airport Road-Turn Road	Install Eastbound Right Turn with Storage Lane	Short	3.0	$350,000.00	0.86
	Improve North/South Intersection Geometry	Short	3.6	$500,000.00	0.72
	Install Eastbound Left Turn with Storage Lane (Dual Lefts)	Long	2.0	$350,000.00	0.57
Mission Street (OR 22)/ Hawthorne Avenue	Install Westbound Right Turn with Storage Lane	Short	3.0	$350,000.00	0.86
OR 22/Cordon Road	Construct an Interchange with the recommended Signalized Intersections and Lane Configuration	Long	3.2	$30,000,000.00	0.01
Cordon Road/Gaffin Road	Install Northbound Through Lane on Cordon Road	Long	3.4	$500,000.00	0.68
	Install Southbound Through Lane on Cordon Road	Long	3.4	$500,000.00	0.68
Corridor	Adaptive Signal Timing	Medium	3.8	$225,000.00	1.69
SAFETY IMPROVEMENTS					
Multiple Intersections	Improve the Signal Hardware	Short	3.4	$42,000.00	8.13
Mission Street (OR 22)/25th Street	Install Pedestrian Refuge Island on West Leg	Short	3.8	$250,000.00	1.53
BIKE/PED/TRANSIT IMPROVEMENTS					
Corridor	Construct a separated Multi-use Path[1]	Long	3.3	$475,000.00	0.69
Corridor	Infill Existing Gaps in Bicycle Lane Network	Medium	2.1	$25,000.00	8.20

[1] Begins at 25th Street and continues to Cordon Road.

APPENDIX A
RAW TRAFFIC DATA (TRAFFIC COUNTS)

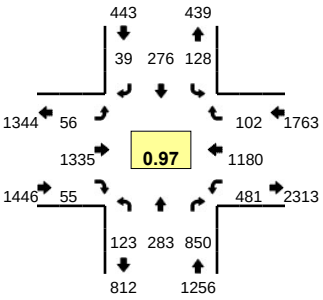
Type of peak hour being reported: Intersection Peak

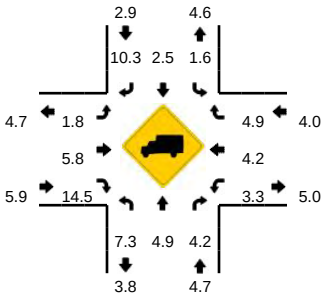
Method for determining peak hour: Total Entering Volume

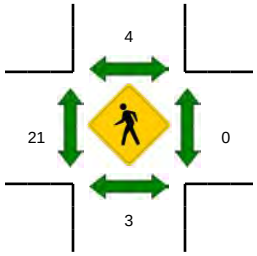
LOCATION: 25th St SE -- OR-22
CITY/STATE: Salem, OR

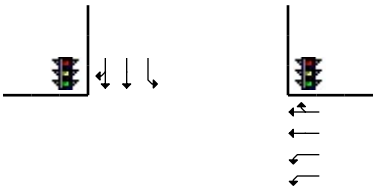
QC JOB #: 13585201
DATE: Wed, Sep 16 2015

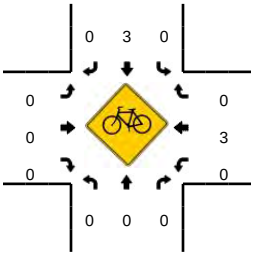
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

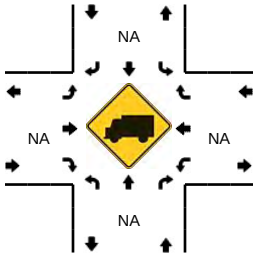


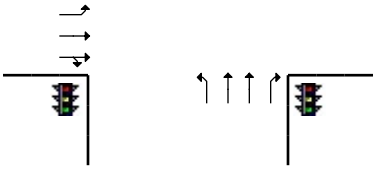


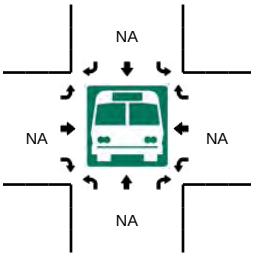












5-Min Count Period Beginning At	25th St SE (Northbound)				25th St SE (Southbound)				OR-22 (Eastbound)				OR-22 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:45 PM	8	20	81	0	4	20	2	0	3	108	7	0	37	75	5	0	370	4686
3:50 PM	10	20	79	0	11	17	3	0	5	116	6	0	36	107	4	0	414	4722
3:55 PM	8	22	82	0	9	15	5	0	2	99	4	0	42	106	3	0	397	4751
4:00 PM	6	17	66	0	15	21	2	0	4	91	6	0	43	88	4	0	363	4740
4:05 PM	14	28	67	0	11	28	7	0	5	99	4	0	39	103	10	0	415	4723
4:10 PM	11	27	72	0	10	34	6	0	2	104	2	0	32	109	7	0	416	4696
4:15 PM	7	22	75	0	5	28	5	0	6	115	8	2	41	100	9	0	423	4708
4:20 PM	9	16	72	0	5	21	2	0	8	118	7	0	42	122	13	0	435	4763
4:25 PM	6	15	58	0	6	31	3	0	2	101	5	0	30	101	4	0	362	4763
4:30 PM	10	20	62	0	9	20	2	0	3	113	2	0	37	105	10	0	393	4750
4:35 PM	7	21	75	0	10	15	3	0	7	103	2	0	56	74	8	0	381	4764
4:40 PM	15	35	71	0	16	24	2	0	3	103	4	0	42	107	6	0	428	4797
4:45 PM	15	16	81	0	15	25	4	0	8	103	2	0	41	96	5	0	411	4838
4:50 PM	12	21	66	0	19	23	3	0	1	118	6	0	30	104	6	0	409	4833
4:55 PM	12	30	67	0	8	32	4	0	2	116	7	0	39	78	11	0	406	4842
5:00 PM	7	28	69	0	12	19	5	0	3	113	3	0	36	96	8	0	399	4878
5:05 PM	11	24	84	0	6	24	2	0	7	114	6	0	43	97	9	0	427	4890
5:10 PM	12	35	70	0	17	14	4	0	4	118	3	0	44	100	13	0	434	4908
5:15 PM	17	27	77	0	23	29	3	0	5	102	3	0	38	78	13	0	415	4900
5:20 PM	8	35	74	0	11	33	6	0	3	98	2	0	43	87	8	0	408	4873
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5:30 PM	7	15	45	0	5	16	2	0	3	119	12	0	32	113	8	0	377	4846
5:35 PM	5	13	67	0	11	26	4	0	2	104	6	0	33	119	6	0	396	4861
5:40 PM	7	12	51	0	16	13	2	0	5	86	9	0	59	94	6	0	360	4793

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	120	348	892	0	140	228	44	0	56	1380	48	0	492	1172	120	0	5040
Heavy Trucks	12	16	12		0	0	4		0	40	4		28	40	8		164
Pedestrians		8				12				28				0			48
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

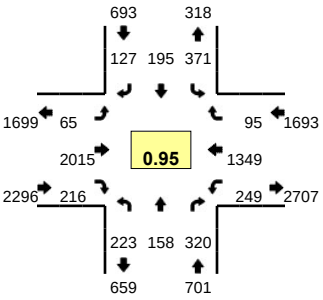
Type of peak hour being reported: Intersection Peak

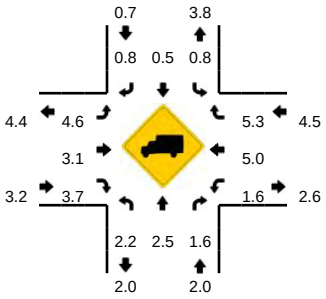
Method for determining peak hour: Total Entering Volume

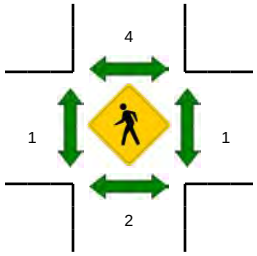
LOCATION: Airport Rd SE -- OR 22
CITY/STATE: Salem, OR

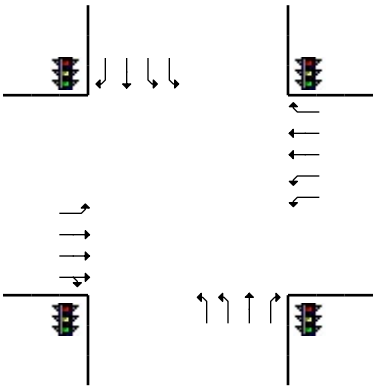
QC JOB #: 13585202
DATE: Wed, Sep 16 2015

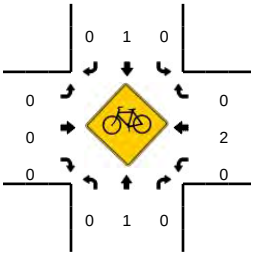
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

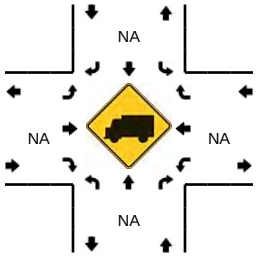


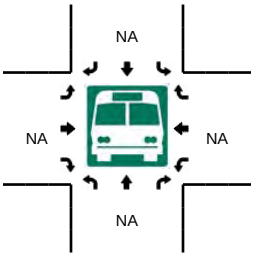












5-Min Count Period Beginning At	Airport Rd SE (Northbound)				Airport Rd SE (Southbound)				OR 22 (Eastbound)				OR 22 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	21	12	31	0	29	16	11	0	4	154	14	0	14	112	4	0	422	4981
4:10 PM	21	6	17	0	29	19	6	0	5	147	15	0	21	108	13	0	407	4932
4:15 PM	22	9	38	0	24	20	7	0	3	144	17	0	23	153	8	0	468	4969
4:20 PM	11	7	26	0	23	20	3	0	1	171	25	0	16	137	12	0	452	5049
4:25 PM	13	11	17	0	19	18	14	0	2	169	18	0	26	112	5	0	424	5087
4:30 PM	11	8	18	0	22	9	10	0	4	169	19	0	12	111	6	0	399	5060
4:35 PM	33	25	54	0	35	21	10	0	7	152	16	0	21	99	8	0	481	5124
4:40 PM	19	14	25	0	43	15	20	0	4	170	16	0	16	117	10	0	469	5219
4:45 PM	12	15	18	0	43	22	5	0	7	151	14	0	24	112	8	0	431	5214
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5:00 PM	16	4	16	0	22	7	12	0	10	173	26	0	12	93	8	0	399	5252
5:05 PM	17	16	33	0	50	21	12	0	6	182	17	0	15	92	4	1	466	5296
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5:35 PM	16	5	16	0	14	11	6	0	6	178	27	0	13	117	2	0	411	5313
5:40 PM	11	6	25	0	11	15	4	0	2	144	22	0	16	115	6	0	377	5221
5:45 PM	23	8	21	0	9	13	8	0	2	144	9	0	13	119	2	0	371	5161
5:50 PM	19	8	23	0	18	18	3	0	3	123	17	0	23	106	5	0	366	5100
5:55 PM	17	9	25	0	8	8	2	0	1	123	11	0	22	117	5	0	348	4975
6:00 PM	16	7	18	0	13	7	8	0	1	129	14	0	11	91	5	0	320	4896

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	296	196	396	0	484	288	124	0	44	2184	192	0	244	1132	72	4	5656
Heavy Trucks	0	0	12		0	0	4		0	28	0		0	52	0		96
Pedestrians		0				0				0				0			0
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

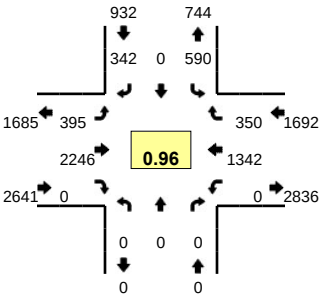
Type of peak hour being reported: Intersection Peak

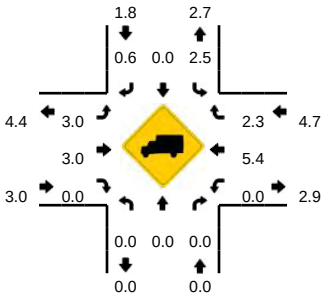
Method for determining peak hour: Total Entering Volume

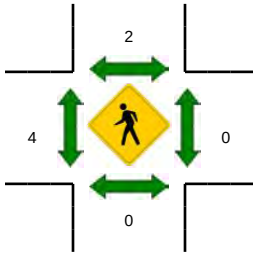
LOCATION: Hawthorne Ave SE -- OR-22
CITY/STATE: Salem, OR

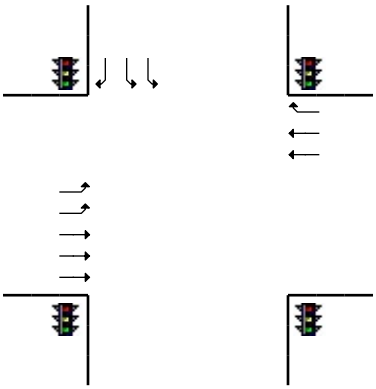
QC JOB #: 13585203
DATE: Wed, Sep 16 2015

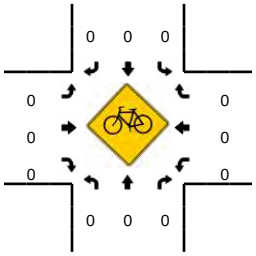
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

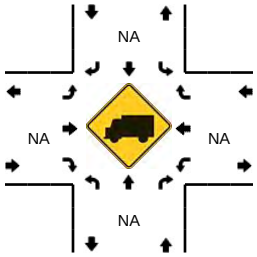


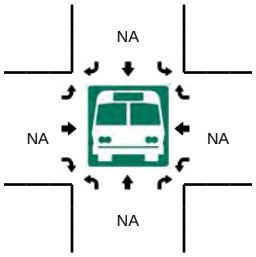












5-Min Count Period Beginning At	Hawthorne Ave SE (Northbound)				Hawthorne Ave SE (Southbound)				OR-22 (Eastbound)				OR-22 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	0	0	0	0	42	0	31	0	40	170	0	0	0	105	35	0	423	5032
4:10 PM	0	0	0	0	48	0	41	0	39	171	0	0	0	128	26	0	453	5061
4:15 PM	0	0	0	0	40	0	25	0	35	172	0	0	0	125	30	0	427	5069
4:20 PM	0	0	0	0	48	0	31	0	35	161	0	0	0	117	27	0	419	5089
4:25 PM	0	0	0	0	35	0	29	0	51	169	0	0	0	103	24	0	411	5104
4:30 PM	0	0	0	0	55	0	45	0	42	143	0	0	0	90	25	0	400	5073
4:35 PM	0	0	0	0	56	0	33	0	32	203	0	0	0	110	32	0	466	5122
4:40 PM	0	0	0	0	45	0	31	0	32	191	0	0	0	116	41	0	456	5184
4:45 PM	0	0	0	0	61	0	37	0	40	149	0	0	0	122	35	0	444	5211
4:50 PM	0	0	0	0	41	0	26	0	39	192	0	0	0	111	30	0	439	5231
4:55 PM	0	0	0	0	63	0	38	0	32	173	0	0	0	94	36	0	436	5234
5:00 PM	0	0	0	0	39	0	19	0	35	173	0	1	0	90	28	0	385	5159
5:05 PM	0	0	0	0	36	0	20	0	23	241	0	0	0	100	25	0	445	5181
5:10 PM	0	0	0	0	51	0	20	0	29	204	0	0	0	110	14	0	428	5156
5:15 PM	0	0	0	0	52	0	26	0	30	197	0	0	0	137	28	0	470	5199
5:20 PM	0	0	0	0	61	0	37	0	26	184	0	0	0	124	34	0	466	5246
5:25 PM	0	0	0	0	48	0	35	0	31	166	0	0	0	108	27	0	415	5250
5:30 PM	0	0	0	0	37	0	20	0	45	173	0	0	0	120	20	0	415	5265
5:35 PM	0	0	0	0	51	0	28	0	44	152	0	0	0	101	22	0	398	5197
5:40 PM	0	0	0	0	43	0	27	0	35	155	0	0	0	115	25	0	400	5141
5:45 PM	0	0	0	0	39	0	30	0	33	142	0	0	0	119	33	0	396	5093
5:50 PM	0	0	0	0	44	0	21	0	44	124	0	0	0	122	28	0	383	5037
5:55 PM	0	0	0	0	18	0	25	0	32	126	0	0	0	88	24	0	313	4914
6:00 PM	0	0	0	0	38	0	32	0	27	109	0	0	0	77	19	0	302	4831

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	648	0	404	0	416	2172	0	0	0	1392	432	0	5464
Heavy Trucks	0	0	0		8	0	0		36	92	0		0	84	16		236
Pedestrians		0				4				8				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

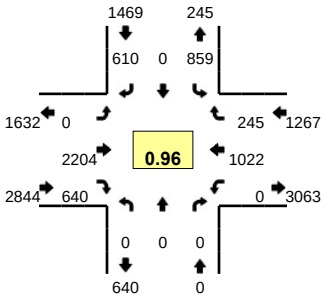
Method for determining peak hour: Total Entering Volume

LOCATION: I-5 SB Ramps -- OR-22

QC JOB #: 13585204

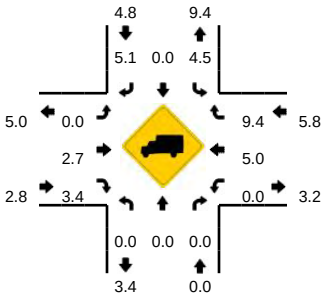
CITY/STATE: Salem, OR

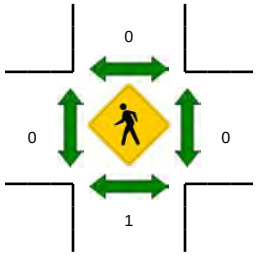
DATE: Wed, Sep 16 2015

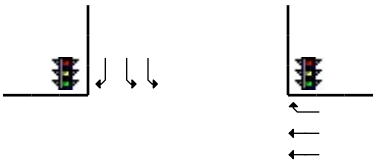


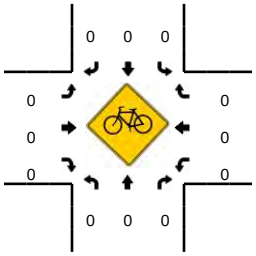
Peak-Hour: 4:35 PM -- 5:35 PM

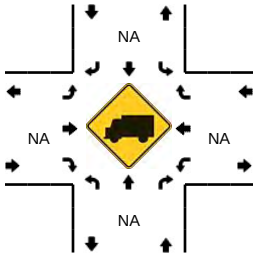
Peak 15-Min: 5:05 PM -- 5:20 PM

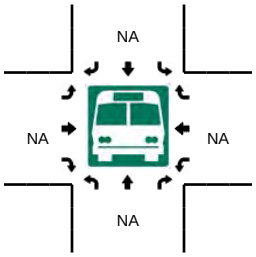












5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-22 (Eastbound)				OR-22 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	0	0	0	0	49	0	57	0	0	167	45	0	0	97	29	0	444	5141
4:10 PM	0	0	0	0	70	0	51	0	0	172	47	0	0	86	18	0	444	5171
4:15 PM	0	0	0	0	73	0	47	0	0	171	38	0	0	97	20	0	446	5201
4:20 PM	0	0	0	0	77	0	70	0	0	156	47	0	0	101	23	0	474	5280
4:25 PM	0	0	0	0	57	0	40	0	0	163	49	0	0	85	17	0	411	5290
4:30 PM	0	0	0	0	55	0	48	0	0	144	54	0	0	95	14	0	410	5273
4:35 PM	0	0	0	0	57	0	54	0	0	220	53	0	0	93	35	0	512	5341
4:40 PM	0	0	0	0	63	0	54	0	0	178	63	0	0	77	18	0	453	5364
4:45 PM	0	0	0	0	58	0	51	0	0	175	49	0	0	97	17	0	447	5356
4:50 PM	0	0	0	0	85	0	47	0	0	175	62	0	0	87	17	0	473	5414
4:55 PM	0	0	0	0	72	0	53	0	0	169	57	0	0	78	18	0	447	5425
5:00 PM	0	0	0	0	61	0	42	0	0	166	41	0	0	81	18	0	409	5370
5:05 PM	0	0	0	0	72	0	40	0	0	219	55	0	0	84	29	0	499	5425
5:10 PM	0	0	0	0	54	0	46	0	0	197	41	0	0	100	23	0	461	5442
5:15 PM	0	0	0	0	80	0	68	0	0	193	56	0	0	86	17	0	500	5496
5:20 PM	0	0	0	0	69	0	55	0	0	190	58	0	0	78	18	0	468	5490
5:25 PM	0	0	0	0	90	0	47	0	0	160	59	0	0	73	23	0	452	5531
5:30 PM	0	0	0	0	98	0	53	0	0	162	46	0	0	88	12	0	459	5580
5:35 PM	0	0	0	0	66	0	37	0	0	158	36	0	0	87	20	0	404	5472
5:40 PM	0	0	0	0	52	0	66	0	0	167	49	0	0	78	19	0	431	5450
5:45 PM	0	0	0	0	68	0	64	0	0	148	33	0	0	86	14	0	413	5416
5:50 PM	0	0	0	0	51	0	45	0	0	148	44	0	0	65	16	0	369	5312
5:55 PM	0	0	0	0	50	0	45	0	0	122	26	0	0	74	13	0	330	5195
6:00 PM	0	0	0	0	46	0	40	0	0	113	33	0	0	63	12	0	307	5093

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	824	0	616	0	0	2436	608	0	0	1080	276	0	5840
Heavy Trucks	0	0	0		60	0	20		0	32	12		0	60	24		208
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

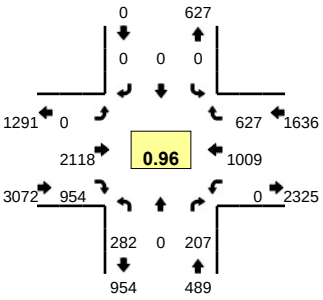
LOCATION: I-5 NB Ramps -- OR 22

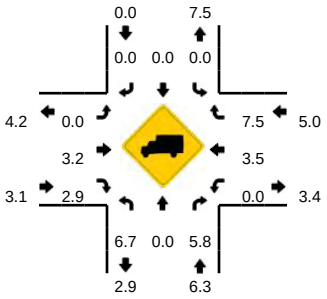
QC JOB #: 13585205

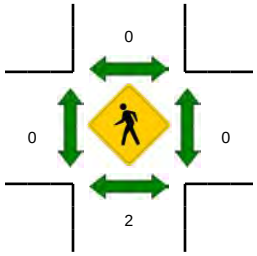
CITY/STATE: Salem, OR

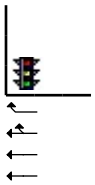
DATE: Wed, Sep 16 2015

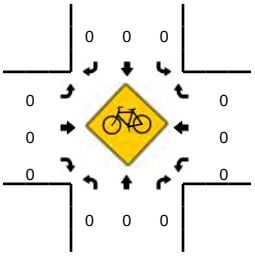
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

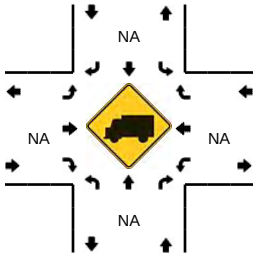


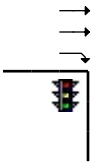


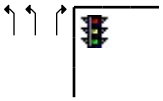


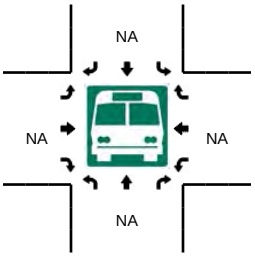












5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR 22 (Eastbound)				OR 22 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	17	0	15	0	0	0	0	0	0	152	75	0	0	85	53	0	397	4692
4:10 PM	12	0	19	0	0	0	0	0	0	175	79	0	0	100	52	0	437	4771
4:15 PM	38	0	27	0	0	0	0	0	0	132	99	0	0	77	51	0	424	4792
4:20 PM	26	0	16	0	0	0	0	0	0	177	57	0	0	89	51	0	416	4809
4:25 PM	20	0	16	0	0	0	0	0	0	158	67	0	0	82	56	0	399	4868
4:30 PM	14	0	14	0	0	0	0	0	0	151	60	0	0	78	52	0	369	4879
4:35 PM	16	0	17	0	0	0	0	0	0	174	91	0	0	95	61	0	454	4915
4:40 PM	20	0	8	0	0	0	0	0	0	174	70	0	0	92	54	0	418	4924
4:45 PM	28	0	24	0	0	0	0	0	0	161	79	0	0	86	48	0	426	4970
4:50 PM	28	0	21	0	0	0	0	0	0	192	76	0	0	76	52	0	445	4992
4:55 PM	21	0	28	0	0	0	0	0	0	160	78	0	0	75	43	0	405	5015
5:00 PM	21	0	20	0	0	0	0	0	0	160	69	0	0	87	50	0	407	4997
5:05 PM	20	0	5	0	0	0	0	0	0	194	82	0	0	90	51	0	442	5042
5:10 PM	22	0	19	0	0	0	0	0	0	181	85	0	0	84	68	0	459	5064
5:15 PM	29	0	15	0	0	0	0	0	0	204	72	0	0	90	49	0	459	5099
5:20 PM	22	0	14	0	0	0	0	0	0	186	78	0	0	82	50	0	432	5115
5:25 PM	25	0	20	0	0	0	0	0	0	162	88	0	0	73	53	0	421	5137
5:30 PM	30	0	16	0	0	0	0	0	0	170	86	0	0	79	48	0	429	5197
5:35 PM	18	0	19	0	0	0	0	0	0	161	66	0	0	89	43	0	396	5139
5:40 PM	19	0	15	0	0	0	0	0	0	175	53	0	0	83	63	0	408	5129
5:45 PM	21	0	21	0	0	0	0	0	0	139	59	0	0	72	42	0	354	5057
5:50 PM	25	0	11	0	0	0	0	0	0	162	60	0	0	78	50	0	386	4998
5:55 PM	17	0	11	0	0	0	0	0	0	134	45	0	0	50	60	0	317	4910
6:00 PM	27	0	19	0	0	0	0	0	0	117	50	0	0	58	32	0	303	4806

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	284	0	156	0	0	0	0	0	0	2316	956	0	0	1056	672	0	5440
Heavy Trucks	24	0	16		0	0	0		0	56	20		0	24	36		176
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Lancaster Dr SE -- OR-22 EB Ramps

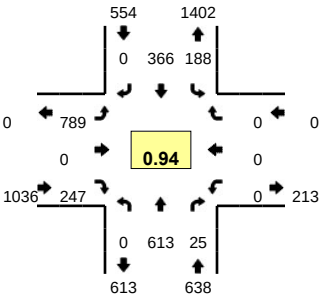
CITY/STATE: Salem, OR

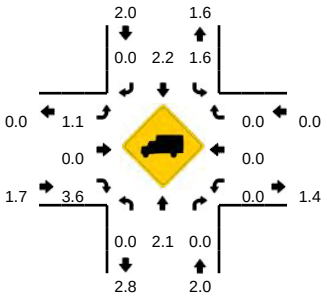
QC JOB #: 13585206

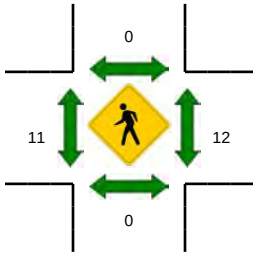
DATE: Wed, Sep 16 2015

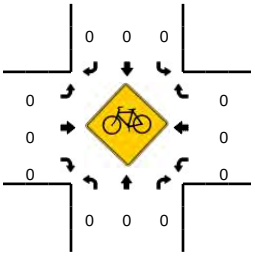
Peak-Hour: 4:35 PM -- 5:35 PM

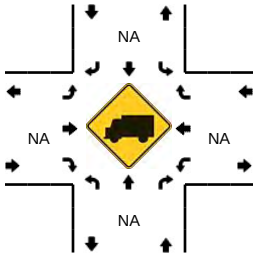
Peak 15-Min: 4:45 PM -- 5:00 PM

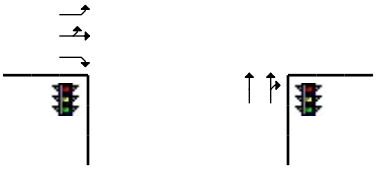


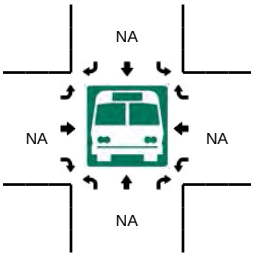












5-Min Count Period Beginning At	Lancaster Dr SE (Northbound)				Lancaster Dr SE (Southbound)				OR-22 EB Ramps (Eastbound)				OR-22 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	0	47	2	0	19	25	0	0	55	0	32	0	0	0	0	0	180	2025
4:10 PM	0	60	4	0	9	30	0	0	50	0	28	0	0	0	0	0	181	2053
4:15 PM	0	46	1	0	19	28	0	0	46	0	19	0	0	0	0	0	159	2025
4:20 PM	0	37	1	0	12	19	0	0	88	1	23	0	0	0	0	0	181	2035
4:25 PM	0	53	5	0	11	30	0	0	74	0	17	0	0	0	0	0	190	2072
4:30 PM	0	52	3	0	23	33	0	0	43	0	16	0	0	0	0	0	170	2083
4:35 PM	0	60	3	0	15	28	0	0	65	0	21	0	0	0	0	0	192	2116
4:40 PM	0	43	3	0	13	29	0	0	70	0	15	0	0	0	0	0	173	2106
4:45 PM	0	65	4	0	14	33	0	0	59	0	24	0	0	0	0	0	199	2124
4:50 PM	0	45	2	0	15	39	0	0	46	0	27	0	0	0	0	0	174	2140
4:55 PM	0	47	0	0	12	27	0	0	104	0	28	0	0	0	0	0	218	2193
5:00 PM	0	47	2	0	19	31	0	0	65	0	21	0	0	0	0	0	185	2202
5:05 PM	0	49	0	0	8	33	0	0	53	0	12	0	0	0	0	0	155	2177
5:10 PM	0	56	1	0	14	21	0	0	72	0	18	0	0	0	0	0	182	2178
5:15 PM	0	52	2	0	24	36	0	0	59	0	15	0	0	0	0	0	188	2207
5:20 PM	0	47	3	0	16	36	0	0	61	0	22	0	0	0	0	0	185	2211
5:25 PM	0	43	3	0	23	27	0	0	74	0	17	0	0	0	0	0	187	2208
5:30 PM	0	59	2	0	15	26	0	0	61	0	27	0	0	0	0	0	190	2228
5:35 PM	0	45	2	0	18	30	0	0	62	0	18	0	0	0	0	0	175	2211
5:40 PM	0	38	2	0	8	38	0	0	81	0	20	0	0	0	0	0	187	2225
5:45 PM	0	55	1	0	14	32	0	0	62	0	16	0	0	0	0	0	180	2206
5:50 PM	0	41	2	0	13	28	0	0	66	0	16	0	0	0	0	0	166	2198
5:55 PM	0	45	3	0	14	20	0	0	51	0	14	0	0	0	0	0	147	2127
6:00 PM	0	38	0	0	23	30	0	0	76	0	14	0	0	0	0	0	181	2123

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	628	24	0	164	396	0	0	836	0	316	0	0	0	0	0	2364
Heavy Trucks	0	8	0		0	16	0		20	0	20		0	0	0		64
Pedestrians		0				0				8				20			28
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

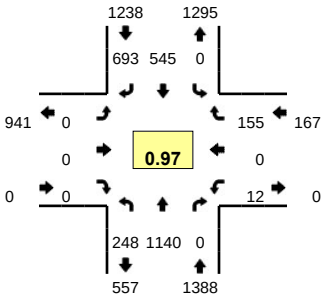
Type of peak hour being reported: Intersection Peak

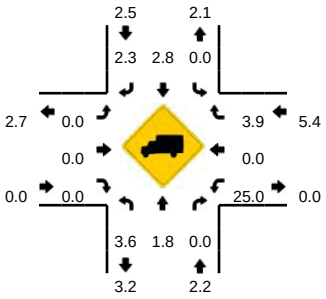
Method for determining peak hour: Total Entering Volume

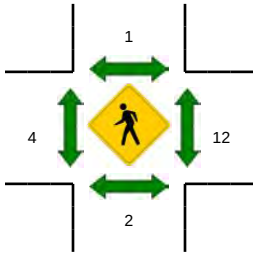
LOCATION: Lancaster Dr SE -- OR-22 WB Ramps
CITY/STATE: Marion, OR

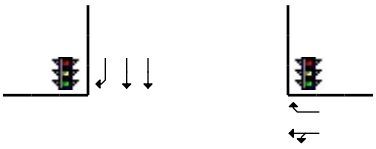
QC JOB #: 13585207
DATE: Wed, Sep 16 2015

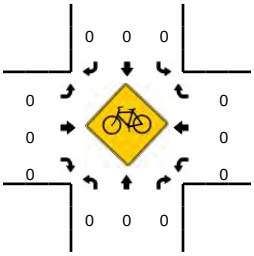
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

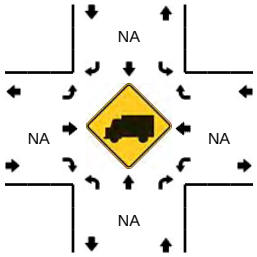


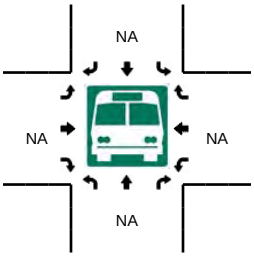












5-Min Count Period Beginning At	Lancaster Dr SE (Northbound)				Lancaster Dr SE (Southbound)				OR-22 WB Ramps (Eastbound)				OR-22 WB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:05 PM	21	73	0	0	0	45	61	0	0	0	0	0	1	0	16	0	217	2511
4:10 PM	24	87	0	0	0	42	55	0	0	0	0	0	0	0	14	0	222	2530
4:15 PM	28	78	0	0	0	42	52	0	0	0	0	0	2	0	12	0	214	2523
4:20 PM	20	84	0	0	0	29	67	0	0	0	0	0	1	0	13	0	214	2514
4:25 PM	21	114	0	0	0	43	56	0	0	0	0	0	1	0	6	0	241	2535
4:30 PM	17	86	0	0	0	49	49	0	0	0	0	0	3	0	12	0	216	2558
4:35 PM	27	90	0	0	0	43	61	0	0	0	0	0	1	0	9	0	231	2590
4:40 PM	21	94	0	0	0	46	54	0	0	0	0	0	2	0	21	0	238	2600
4:45 PM	26	101	0	0	0	40	52	0	0	0	0	0	1	0	17	0	237	2630
4:50 PM	18	77	0	0	0	48	56	0	0	0	0	0	4	0	8	0	211	2645
4:55 PM	19	114	0	0	0	42	50	0	0	0	0	0	1	0	11	0	237	2682
5:00 PM	15	108	0	0	0	47	59	0	0	0	0	0	0	0	6	0	235	2713
5:05 PM	22	82	0	0	0	40	69	0	0	0	0	0	0	0	12	0	225	2721
5:10 PM	30	79	0	0	0	47	54	0	0	0	0	0	0	0	11	0	221	2720
5:15 PM	16	97	0	0	0	52	55	0	0	0	0	0	2	0	13	0	235	2741
5:20 PM	18	103	0	0	0	51	65	0	0	0	0	0	0	0	13	0	250	2777
5:25 PM	19	83	0	0	0	46	51	0	0	0	0	0	1	0	24	0	224	2760
5:30 PM	17	112	0	0	0	43	67	0	0	0	0	0	0	0	10	0	249	2793
5:35 PM	14	94	0	0	0	45	51	0	0	0	0	0	1	0	9	0	214	2776
5:40 PM	21	96	0	0	0	44	63	0	0	0	0	0	2	0	16	0	242	2780
5:45 PM	15	103	0	0	0	47	51	0	0	0	0	0	1	0	11	0	228	2771
5:50 PM	15	102	0	0	0	41	63	0	0	0	0	0	0	0	11	0	232	2792
5:55 PM	18	75	0	0	0	34	48	1	0	0	0	0	1	0	16	0	193	2748
6:00 PM	11	96	0	0	0	50	45	0	0	0	0	0	0	0	10	0	212	2725

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	216	1192	0	0	0	560	732	0	0	0	0	0	4	0	188	0	2892
Heavy Trucks	8	24	0		0	4	4		0	0	0		0	0	4		44
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

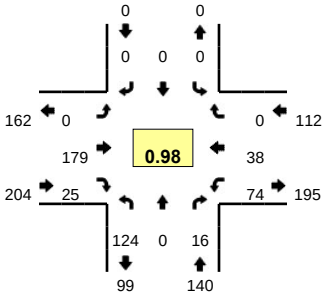
LOCATION: Gaffin Rd SE -- OR-22 Ramps

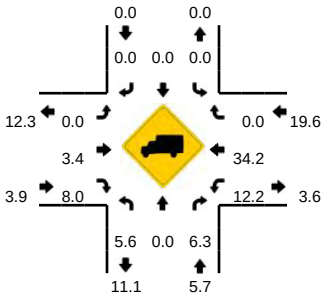
QC JOB #: 13585211

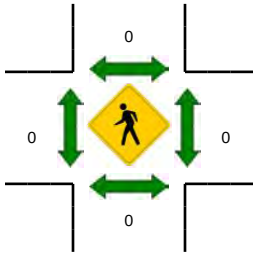
CITY/STATE: Salem, OR

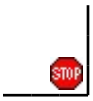
DATE: Tue, Sep 15 2015

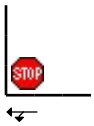
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

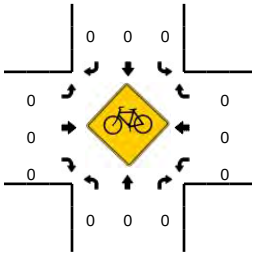


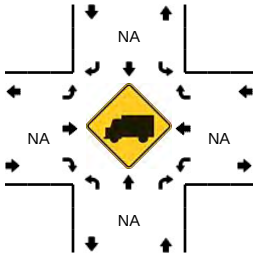


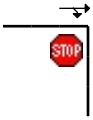


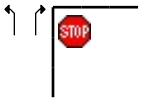


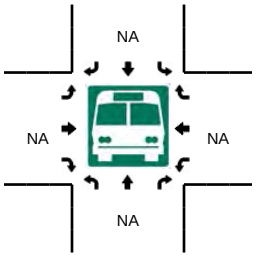












5-Min Count Period Beginning At	Gaffin Rd SE (Northbound)				Gaffin Rd SE (Southbound)				OR-22 Ramps (Eastbound)				OR-22 Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:15 PM	12	0	1	0	0	0	0	0	0	14	1	0	12	4	0	0	44	
4:20 PM	11	0	0	0	0	0	0	0	0	16	1	0	9	3	0	0	40	
4:25 PM	9	0	4	0	0	0	0	0	0	9	4	0	8	3	0	0	37	
4:30 PM	6	0	0	0	0	0	0	0	0	9	1	0	3	5	0	0	24	
4:35 PM	8	0	1	0	0	0	0	0	0	11	0	0	6	6	0	0	32	
4:40 PM	7	0	4	0	0	0	0	0	0	6	1	0	7	3	0	0	28	
4:45 PM	16	0	3	0	0	0	0	0	0	18	0	0	8	3	0	0	48	
4:50 PM	9	0	2	0	0	0	0	0	0	15	2	0	4	3	0	0	35	
4:55 PM	3	0	1	0	0	0	0	0	0	16	0	0	5	4	0	0	29	420
5:00 PM	2	0	2	0	0	0	0	0	0	13	5	0	8	6	0	0	36	418
5:05 PM	12	0	2	0	0	0	0	0	0	13	6	0	12	2	0	0	47	437
5:10 PM	7	0	1	0	0	0	0	0	0	11	2	0	5	7	0	0	33	433
5:15 PM	15	0	0	0	0	0	0	0	0	10	2	0	5	4	0	0	36	425
5:20 PM	12	0	0	0	0	0	0	0	0	19	2	0	7	2	0	0	42	427
5:25 PM	10	0	1	0	0	0	0	0	0	15	2	0	6	2	0	0	36	426
5:30 PM	12	0	2	0	0	0	0	0	0	10	2	0	6	2	0	0	34	436
5:35 PM	15	0	0	0	0	0	0	0	0	17	2	0	4	2	0	0	40	444
5:40 PM	11	0	2	0	0	0	0	0	0	22	0	0	4	1	0	0	40	456
5:45 PM	7	0	1	0	0	0	0	0	0	7	1	0	8	3	0	0	27	435
5:50 PM	16	0	0	0	0	0	0	0	0	11	0	0	7	4	0	0	38	438
5:55 PM	8	0	0	0	0	0	0	0	0	7	1	0	4	3	0	0	23	432
6:00 PM	13	0	0	0	0	0	0	0	0	12	2	0	3	0	0	0	30	426
6:05 PM	8	0	0	0	0	0	0	0	0	12	1	0	7	2	0	0	30	409
6:10 PM	5	0	0	0	0	0	0	0	0	14	0	0	4	2	0	0	25	401

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	0	20	0	0	0	0	0	0	148	52	0	100	60	0	0	464
Heavy Trucks	0	0	4		0	0	0		0	8	8		24	20	0		64
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cordon Rd SE -- Gaffin Rd SE

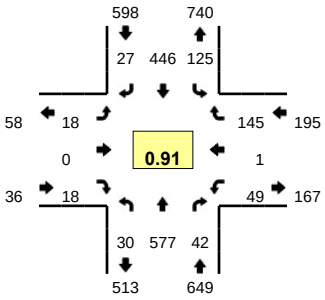
CITY/STATE: Salem, OR

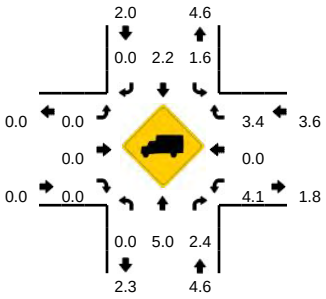
QC JOB #: 13585212

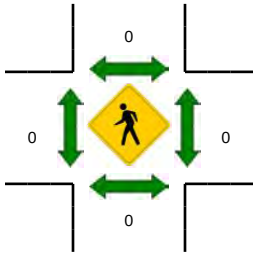
DATE: Wed, Sep 16 2015

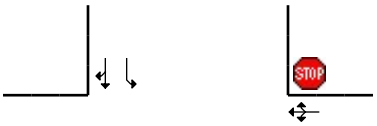
Peak-Hour: 4:30 PM -- 5:30 PM

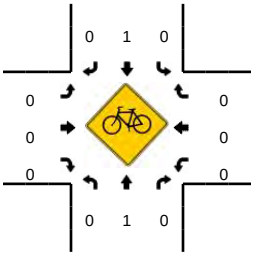
Peak 15-Min: 5:15 PM -- 5:30 PM

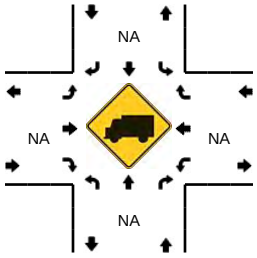


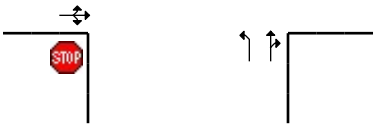


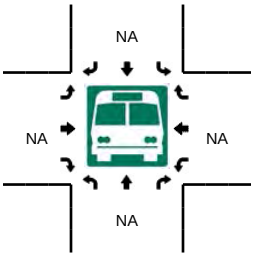












5-Min Count Period Beginning At	Cordon Rd SE (Northbound)				Cordon Rd SE (Southbound)				Gaffin Rd SE (Eastbound)				Gaffin Rd SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	42	3	0	6	22	4	0	3	0	0	0	2	0	11	0	94	
4:05 PM	2	36	9	0	8	34	2	0	2	0	2	0	2	0	11	0	108	
4:10 PM	1	29	5	0	9	41	4	0	1	0	2	0	5	0	15	0	112	
4:15 PM	2	50	5	0	10	40	2	0	2	1	1	0	4	2	15	0	134	
4:20 PM	0	30	2	0	8	35	2	0	0	0	0	0	4	0	6	0	87	
4:25 PM	2	41	6	0	13	45	3	0	1	1	1	0	0	0	6	0	119	
4:30 PM	0	46	2	0	12	37	3	0	2	0	2	0	5	0	7	0	116	
4:35 PM	2	50	6	0	12	36	0	0	4	0	4	0	6	0	10	0	130	
4:40 PM	4	50	4	0	11	34	3	0	1	0	2	0	4	0	11	0	124	
4:45 PM	6	38	5	0	11	27	4	0	2	0	1	0	5	0	11	0	110	
4:50 PM	1	35	1	0	15	27	2	0	2	0	0	0	3	0	13	0	99	
4:55 PM	3	56	3	0	8	35	4	0	1	0	0	0	6	0	10	0	126	1359
5:00 PM	2	39	0	0	10	39	0	0	1	0	1	0	3	0	15	0	110	1375
5:05 PM	5	51	5	0	5	36	1	0	1	0	2	0	6	0	9	0	121	1388
5:10 PM	1	71	4	0	15	30	1	0	2	0	1	0	4	0	8	0	137	1413
5:15 PM	0	49	7	0	11	48	1	0	0	0	1	0	2	1	17	0	137	1416
5:20 PM	5	44	2	0	5	46	6	0	1	0	2	0	4	0	14	0	129	1458
5:25 PM	1	48	3	0	10	51	2	0	1	0	2	0	1	0	20	0	139	1478
5:30 PM	3	38	3	0	8	20	1	0	2	0	0	0	1	0	13	0	89	1451
5:35 PM	2	39	3	0	9	31	3	0	1	0	0	0	4	0	8	0	100	1421
5:40 PM	0	41	0	0	10	39	4	0	1	0	0	0	0	0	6	0	101	1398
5:45 PM	2	37	1	0	15	25	5	0	1	0	3	0	3	1	12	0	105	1393
5:50 PM	0	42	0	0	11	28	5	0	3	0	0	0	1	0	9	0	99	1393
5:55 PM	0	48	3	0	9	26	1	0	2	0	0	0	1	1	6	0	97	1364

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	564	48	0	104	580	36	0	8	0	20	0	28	4	204	0	1620
Heavy Trucks	0	20	0		4	4	0		0	0	0		0	0	4		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

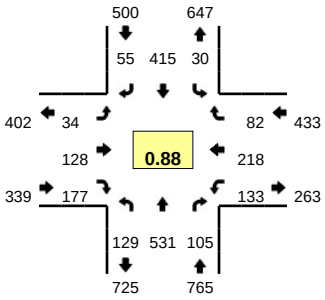
Type of peak hour being reported: Intersection Peak

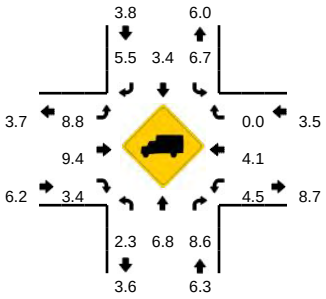
Method for determining peak hour: Total Entering Volume

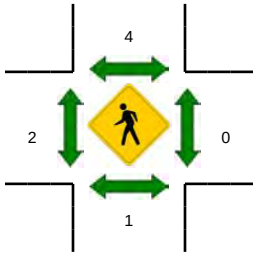
LOCATION: Cordin Rd -- Aumsville Hwy
CITY/STATE: Salem, OR

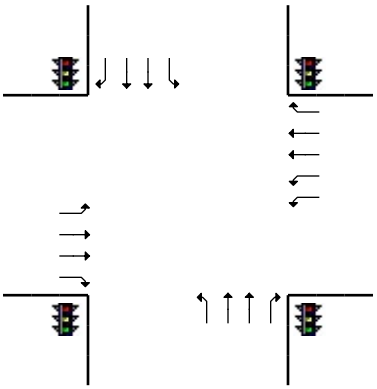
QC JOB #: 13585213
DATE: Wed, Sep 16 2015

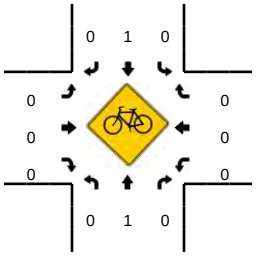
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

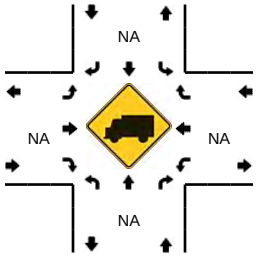


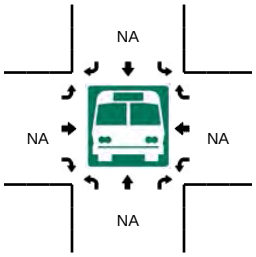












5-Min Count Period Beginning At	Cordin Rd (Northbound)				Cordin Rd (Southbound)				Aumsville Hwy (Eastbound)				Aumsville Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	38	6	0	2	23	3	0	4	18	11	0	10	13	4	0	136	
4:05 PM	22	42	5	0	4	23	3	0	3	14	12	0	7	18	4	0	157	
4:10 PM	10	37	10	0	3	39	5	0	1	7	11	0	10	14	4	0	151	
4:15 PM	9	43	6	0	7	33	8	0	5	13	20	0	5	13	3	0	165	
4:20 PM	16	26	8	0	2	40	3	0	5	4	13	0	2	16	1	0	136	
4:25 PM	13	39	8	0	6	34	6	0	2	11	17	0	10	12	5	0	163	
4:30 PM	9	46	6	0	1	23	6	0	2	15	14	0	9	19	3	0	153	
4:35 PM	13	52	5	0	3	37	6	0	4	8	12	0	14	12	8	0	174	
4:40 PM	13	41	6	0	4	42	1	0	1	10	11	0	12	14	6	0	161	
4:45 PM	8	48	7	0	0	30	4	0	3	9	16	0	17	16	2	0	160	
4:50 PM	7	37	12	0	1	20	3	0	2	13	8	0	7	14	4	0	128	
4:55 PM	15	41	4	0	3	31	4	0	2	12	13	0	10	24	6	0	165	1849
5:00 PM	9	35	12	0	0	39	4	0	6	13	22	0	18	19	12	0	189	1902
5:05 PM	9	46	11	0	0	42	6	0	5	8	14	0	15	23	11	0	190	1935
5:10 PM	14	59	13	0	4	32	4	0	2	8	19	0	10	26	8	0	199	1983
5:15 PM	12	45	8	0	3	36	5	0	1	12	16	0	9	19	11	0	177	1995
5:20 PM	10	38	8	0	4	43	6	0	3	8	16	0	6	20	8	0	170	2029
5:25 PM	10	43	13	0	7	40	6	0	3	12	16	0	6	12	3	0	171	2037
5:30 PM	11	29	7	0	3	26	5	0	5	9	10	0	5	13	6	0	129	2013
5:35 PM	17	37	6	0	6	17	3	0	4	8	11	0	4	18	2	0	133	1972
5:40 PM	11	40	8	0	1	38	1	0	4	5	11	0	5	12	5	0	141	1952
5:45 PM	6	37	7	0	3	23	2	0	4	18	17	0	3	11	4	0	135	1927
5:50 PM	8	38	9	0	3	24	6	0	2	9	11	0	4	8	5	0	127	1926
5:55 PM	10	40	7	0	4	23	3	0	2	7	6	0	3	19	6	0	130	1891

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	128	560	144	0	16	452	56	0	52	116	220	0	172	272	124	0	2312
Heavy Trucks	0	52	4		0	8	4		8	4	0		8	4	0		92
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad Stopped Buses																	

Comments:

Report generated on 9/29/2015 1:44 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

LOCATION: OR-22 Tube btwn 25th & Airport
QC JOB #: 13585215
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			148			148			148	
1:00 AM			87			87			87	
2:00 AM			94			94			94	
3:00 AM			107			107			107	
4:00 AM			237			237			237	
5:00 AM			504			504			504	
6:00 AM			1191			1191			1191	
7:00 AM			**1616**			**1616**			**1616**	
8:00 AM			1470			1470			1470	
9:00 AM			1190			1190			1190	
10:00 AM			1239			1239			1239	
11:00 AM			1518			1518			1518	
12:00 PM			1443			1443			1443	
1:00 PM			1395			1395			1395	
2:00 PM			**1467**			**1467**			**1467**	
3:00 PM			1344			1344			1344	
4:00 PM			1408			1408			1408	
5:00 PM			1422			1422			1422	
6:00 PM			1202			1202			1202	
7:00 PM			866			866			866	
8:00 PM			693			693			693	
9:00 PM			498			498			498	
10:00 PM			353			353			353	
11:00 PM			187			187			187	
Day Total			21679			21679			21679	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak			7:00 AM			7:00 AM			7:00 AM	
Volume			1616			1616			1616	
PM Peak			2:00 PM			2:00 PM			2:00 PM	
Volume			1467			1467			1467	

Comments:

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: WB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	84	30	4	8	2	1	4	4	3	0	0	4	4	148
1:00 AM	0	62	6	0	6	0	0	1	5	0	0	0	4	3	87
2:00 AM	0	60	13	1	5	1	1	0	1	0	0	0	7	5	94
3:00 AM	0	58	20	1	10	2	0	4	5	1	0	0	5	1	107
4:00 AM	0	150	55	1	11	1	0	4	9	1	0	1	0	4	237
5:00 AM	5	321	95	6	32	5	1	12	9	0	0	0	2	16	504
6:00 AM	8	767	157	11	70	16	**2**	39	11	16	4	1	**11**	78	1191
7:00 AM	15	**1055**	173	**22**	82	18	2	53	**15**	15	1	1	3	**161**	**1616**
8:00 AM	18	890	212	12	80	18	1	**65**	10	**17**	1	1	6	139	1470
9:00 AM	16	666	216	11	**91**	14	2	50	7	5	3	1	8	100	1190
10:00 AM	9	698	207	11	88	**19**	2	51	12	9	**5**	1	10	117	1239
11:00 AM	**20**	929	**235**	7	90	17	2	59	9	14	2	**2**	7	125	1518
12:00 PM	9	919	195	10	69	**20**	4	52	11	**17**	3	1	**9**	124	1443
1:00 PM	16	881	169	7	**77**	15	2	**61**	**14**	8	**7**	1	5	132	1395
2:00 PM	**34**	909	196	**15**	66	10	**7**	44	13	8	4	3	7	**151**	**1467**
3:00 PM	20	826	**200**	15	57	15	2	42	4	7	4	**4**	5	143	1344
4:00 PM	17	952	181	2	55	16	3	50	6	7	5	4	2	108	1408
5:00 PM	9	**988**	180	7	47	11	1	42	5	8	2	0	3	119	1422
6:00 PM	9	855	154	0	59	6	0	26	5	5	4	0	4	75	1202
7:00 PM	8	581	139	4	42	6	1	24	5	1	0	2	4	49	866
8:00 PM	4	511	101	2	22	0	0	16	2	0	1	0	3	31	693
9:00 PM	1	358	71	3	25	3	0	9	9	2	1	0	3	13	498
10:00 PM	2	258	52	1	19	0	0	4	2	1	0	0	5	9	353
11:00 PM	1	135	33	0	3	0	0	4	1	1	0	0	3	6	187
Day Total	221	13913	3090	153	1114	215	34	716	174	146	47	23	120	1713	21679
Percent	1.0%	64.2%	14.3%	0.7%	5.1%	1.0%	0.2%	3.3%	0.8%	0.7%	0.2%	0.1%	0.6%	7.9%	
ADT 21679															
AM Peak	11:00 AM	7:00 AM	11:00 AM	7:00 AM	9:00 AM	10:00 AM	6:00 AM	8:00 AM	7:00 AM	8:00 AM	10:00 AM	11:00 AM	6:00 AM	7:00 AM	7:00 AM
Volume	20	1055	235	22	91	19	2	65	15	17	5	2	11	161	1616
PM Peak	2:00 PM	5:00 PM	3:00 PM	2:00 PM	1:00 PM	12:00 PM	2:00 PM	1:00 PM	1:00 PM	12:00 PM	1:00 PM	3:00 PM	12:00 PM	2:00 PM	2:00 PM
Volume	34	988	200	15	77	20	7	61	14	17	7	4	9	151	1467

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	221	13913	3090	153	1114	215	34	716	174	146	47	23	120	1713	21679
Percent	1.0%	64.2%	14.3%	0.7%	5.1%	1.0%	0.2%	3.3%	0.8%	0.7%	0.2%	0.1%	0.6%	7.9%	

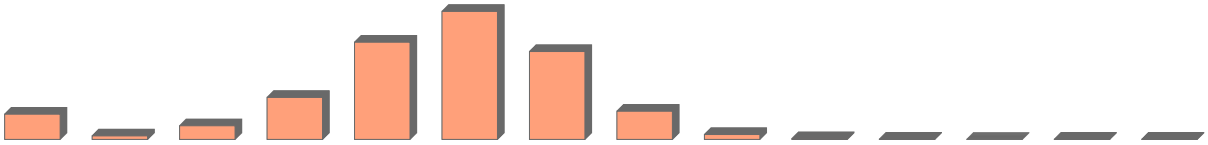
ADT 21679

Comments:

Report generated on 9/28/2015 2:45 PM

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	4	0	2	2	3	23	58	41	11	3	**1**	0	0	0	148	41-50	98
1:00 AM	2	0	1	0	1	15	32	23	9	**4**	0	0	0	0	87	41-50	54
2:00 AM	2	1	0	0	3	12	40	27	6	3	0	0	0	0	94	41-50	67
3:00 AM	1	0	0	0	2	15	52	27	8	2	0	0	0	0	107	41-50	79
4:00 AM	1	0	1	0	3	27	106	83	16	0	0	0	0	0	237	41-50	189
5:00 AM	11	0	0	0	15	88	219	**139**	**27**	4	1	0	0	0	504	41-50	357
6:00 AM	58	**13**	19	62	224	403	289	100	19	3	1	0	0	0	1191	36-45	691
7:00 AM	**117**	5	54	**196**	**438**	480	271	50	5	0	0	0	0	0	**1616**	31-40	918
8:00 AM	98	11	**68**	160	423	443	219	38	8	2	0	0	0	0	1470	31-40	865
9:00 AM	86	0	20	72	315	400	196	84	16	1	0	0	0	0	1190	31-40	715
10:00 AM	82	3	21	82	293	438	261	48	9	1	1	0	0	0	1239	31-40	730
11:00 AM	93	11	24	64	292	**587**	**353**	89	4	0	1	0	0	0	1518	36-45	939
12:00 PM	94	13	23	125	345	**494**	296	46	6	0	**1**	0	0	0	1443	31-40	838
1:00 PM	96	2	22	202	**487**	403	160	23	0	0	0	0	0	0	1395	31-40	889
2:00 PM	104	**42**	134	**327**	436	322	90	11	1	0	0	0	0	0	**1467**	26-35	763
3:00 PM	**108**	34	**137**	257	364	318	112	13	1	0	0	0	0	0	1344	31-40	681
4:00 PM	87	22	76	239	467	380	128	8	1	0	0	0	0	0	1408	31-40	847
5:00 PM	86	18	68	226	414	422	160	24	4	0	0	0	0	0	1422	31-40	836
6:00 PM	56	0	10	78	178	408	**356**	95	19	2	0	0	0	0	1202	36-45	764
7:00 PM	39	0	3	9	101	274	289	**130**	15	**4**	0	0	**1**	**1**	866	36-45	562
8:00 PM	22	0	0	6	54	219	284	92	16	0	0	0	0	0	693	36-45	502
9:00 PM	9	0	1	1	12	146	221	91	13	4	0	0	0	0	498	36-45	367
10:00 PM	7	0	0	2	13	79	144	87	**20**	1	0	0	0	0	353	41-50	230
11:00 PM	5	0	0	0	2	38	80	48	11	3	0	0	0	0	187	41-50	127
Day Total	1268	175	684	2110	4885	6434	4416	1417	245	37	6	0	1	1	21679	31-40	11318
Percent	5.8%	0.8%	3.2%	9.7%	22.5%	29.7%	20.4%	6.5%	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%			
ADT 21679																	
AM Peak	7:00 AM	6:00 AM	8:00 AM	7:00 AM	7:00 AM	11:00 AM	11:00 AM	5:00 AM	5:00 AM	1:00 AM	12:00 AM				7:00 AM		
Volume	117	13	68	196	438	587	353	139	27	4	1				1616		
PM Peak	3:00 PM	2:00 PM	3:00 PM	2:00 PM	1:00 PM	12:00 PM	6:00 PM	7:00 PM	10:00 PM	7:00 PM	12:00 PM		7:00 PM	7:00 PM	2:00 PM		
Volume	108	42	137	327	487	494	356	130	20	4	1		1	1	1467		

Comments:

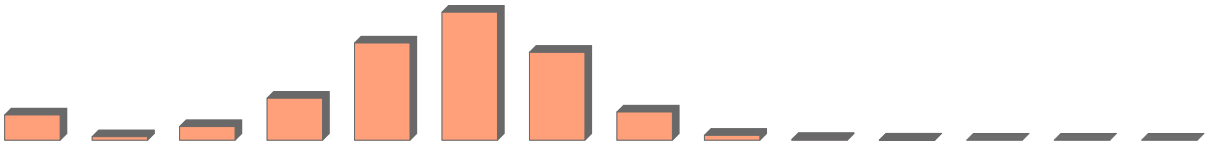
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1268	175	684	2110	4885	6434	4416	1417	245	37	6	0	1	1	21679	31-40	11318
Percent	5.8%	0.8%	3.2%	9.7%	22.5%	29.7%	20.4%	6.5%	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	5.8%	6.7%	9.8%	19.5%	42.1%	71.8%	92.1%	98.7%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%			

ADT 21679



85th Percentile 43 MPH

Mean Speed(Average) 34 MPH

Median 36 MPH
Mode: 38 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn 25th & Airport
QC JOB #: 13585215
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			295			295			295	
1:00 AM			189			189			189	
2:00 AM			189			189			189	
3:00 AM			225			225			225	
4:00 AM			424			424			424	
5:00 AM			1003			1003			1003	
6:00 AM			1972			1972			1972	
7:00 AM			**2990**			**2990**			**2990**	
8:00 AM			2715			2715			2715	
9:00 AM			2457			2457			2457	
10:00 AM			2648			2648			2648	
11:00 AM			2958			2958			2958	
12:00 PM			2846			2846			2846	
1:00 PM			2843			2843			2843	
2:00 PM			**2968**			**2968**			**2968**	
3:00 PM			2930			2930			2930	
4:00 PM			2590			2590			2590	
5:00 PM			2594			2594			2594	
6:00 PM			2479			2479			2479	
7:00 PM			1810			1810			1810	
8:00 PM			1476			1476			1476	
9:00 PM			1002			1002			1002	
10:00 PM			723			723			723	
11:00 PM			530			530			530	
Day Total			42856			42856			42856	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			7:00 AM 2990			7:00 AM 2990			7:00 AM 2990	
PM Peak Volume			2:00 PM 2968			2:00 PM 2968			2:00 PM 2968	

Comments:

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB/WB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	2	169	68	5	16	6	1	5	6	3	0	0	7	7	295
1:00 AM	1	132	21	0	9	0	0	1	8	2	0	0	8	7	189
2:00 AM	3	108	26	5	11	3	1	3	3	1	0	0	13	12	189
3:00 AM	1	117	39	9	24	2	0	8	8	2	0	0	9	6	225
4:00 AM	2	257	82	5	28	6	0	7	16	4	0	1	3	13	424
5:00 AM	6	620	207	16	67	8	2	25	16	4	0	0	2	30	1003
6:00 AM	14	1249	303	17	134	17	4	59	22	18	5	2	12	116	1972
7:00 AM	27	**1966**	371	32	151	29	4	104	**31**	22	2	1	5	**245**	**2990**
8:00 AM	30	1628	422	**33**	170	34	3	**111**	25	22	3	1	10	223	2715
9:00 AM	26	1394	**466**	29	**179**	23	4	82	18	13	6	1	16	200	2457
10:00 AM	25	1542	454	19	179	**40**	**5**	96	23	13	**8**	5	**18**	221	2648
11:00 AM	**34**	1834	461	17	178	34	2	98	25	**24**	5	**6**	13	227	2958
12:00 PM	24	1759	**447**	17	134	**39**	7	95	**27**	**24**	5	2	**14**	252	2846
1:00 PM	25	1801	409	18	**164**	25	5	**101**	27	13	**11**	3	8	233	2843
2:00 PM	**49**	**1816**	435	**27**	136	34	**9**	93	23	14	9	3	12	**308**	**2968**
3:00 PM	39	1807	444	26	138	36	4	93	10	16	7	**5**	8	297	2930
4:00 PM	39	1648	355	13	103	26	7	76	12	13	6	4	6	282	2590
5:00 PM	33	1726	342	10	107	22	2	63	10	11	2	3	3	260	2594
6:00 PM	16	1757	347	1	117	14	0	59	10	8	5	1	6	138	2479
7:00 PM	12	1270	270	9	71	10	1	46	13	2	1	4	7	94	1810
8:00 PM	6	1072	236	6	51	1	1	34	8	3	2	0	4	52	1476
9:00 PM	4	705	163	6	46	8	2	14	13	3	1	0	7	30	1002
10:00 PM	5	505	126	5	34	1	0	11	4	5	0	0	5	22	723
11:00 PM	2	357	114	3	19	2	0	5	2	2	0	0	6	18	530
Day Total	425	27239	6608	328	2266	420	64	1289	360	242	78	42	202	3293	42856
Percent	1.0%	63.6%	15.4%	0.8%	5.3%	1.0%	0.1%	3.0%	0.8%	0.6%	0.2%	0.1%	0.5%	7.7%	
ADT 42856															
AM Peak	11:00 AM	7:00 AM	9:00 AM	8:00 AM	9:00 AM	10:00 AM	10:00 AM	8:00 AM	7:00 AM	11:00 AM	10:00 AM	11:00 AM	10:00 AM	7:00 AM	7:00 AM
Volume	34	1966	466	33	179	40	5	111	31	24	8	6	18	245	2990
PM Peak	2:00 PM	2:00 PM	12:00 PM	2:00 PM	1:00 PM	12:00 PM	2:00 PM	1:00 PM	12:00 PM	12:00 PM	1:00 PM	3:00 PM	12:00 PM	2:00 PM	2:00 PM
Volume	49	1816	447	27	164	39	9	101	27	24	11	5	14	308	2968

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB/WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	425	27239	6608	328	2266	420	64	1289	360	242	78	42	202	3293	42856
Percent	1.0%	63.6%	15.4%	0.8%	5.3%	1.0%	0.1%	3.0%	0.8%	0.6%	0.2%	0.1%	0.5%	7.7%	

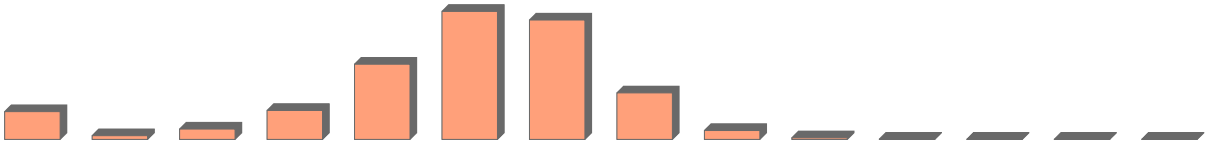
ADT 42856

Comments:

Report generated on 9/28/2015 2:45 PM

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB/WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	6	0	3	2	10	63	114	78	13	5	1	0	0	0	295	41-50	192
1:00 AM	3	0	1	4	4	36	77	44	12	8	0	0	0	0	189	41-50	121
2:00 AM	5	1	0	0	8	29	80	49	13	3	1	0	0	0	189	41-50	129
3:00 AM	3	0	0	2	8	39	94	63	14	2	0	0	0	0	225	41-50	157
4:00 AM	5	0	2	1	10	53	173	140	36	3	1	0	0	0	424	41-50	313
5:00 AM	21	0	0	2	23	135	367	328	**102**	**22**	**3**	0	0	0	1003	41-50	694
6:00 AM	88	13	19	67	237	513	593	330	97	13	2	0	0	0	1972	36-45	1105
7:00 AM	**182**	6	54	**197**	**530**	754	**841**	**348**	63	13	1	**1**	0	0	**2990**	36-45	1594
8:00 AM	167	11	**68**	168	480	750	730	276	50	13	2	0	0	0	2715	36-45	1480
9:00 AM	163	0	26	103	421	772	704	232	33	3	0	0	0	0	2457	36-45	1476
10:00 AM	160	3	25	101	446	960	743	179	27	3	1	0	0	0	2648	36-45	1702
11:00 AM	171	**15**	36	94	479	**1099**	805	234	18	6	1	0	0	0	2958	36-45	1904
12:00 PM	204	16	36	197	574	**956**	650	184	22	4	2	0	0	**1**	2846	36-45	1606
1:00 PM	177	7	35	259	**745**	940	524	136	16	3	1	0	0	0	2843	31-40	1685
2:00 PM	230	66	**181**	**423**	717	728	487	112	20	3	1	0	0	0	**2968**	31-40	1444
3:00 PM	236	54	179	362	647	895	449	96	9	3	0	0	0	0	2930	31-40	1542
4:00 PM	**299**	**101**	170	348	667	676	285	37	6	1	0	0	0	0	2590	31-40	1342
5:00 PM	246	58	128	307	597	724	417	97	17	3	0	0	0	0	2594	31-40	1321
6:00 PM	110	1	13	83	263	720	**924**	307	51	7	0	0	0	0	2479	36-45	1644
7:00 PM	74	0	4	12	130	463	726	**337**	**54**	8	0	0	**1**	1	1810	36-45	1189
8:00 PM	39	0	3	9	89	411	607	264	50	4	0	0	0	0	1476	36-45	1018
9:00 PM	22	0	1	5	32	245	439	204	41	**10**	**3**	0	0	0	1002	36-45	683
10:00 PM	15	0	0	5	21	135	301	194	48	4	0	0	0	0	723	41-50	494
11:00 PM	14	0	0	0	15	80	225	154	33	8	0	0	1	0	530	41-50	378
Day Total	2640	352	984	2751	7153	12176	11355	4423	845	152	20	1	2	2	42856	36-45	23531
Percent	6.2%	0.8%	2.3%	6.4%	16.7%	28.4%	26.5%	10.3%	2.0%	0.4%	0.0%	0.0%	0.0%	0.0%			
ADT 42856																	
AM Peak	7:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM	11:00 AM	7:00 AM	7:00 AM	5:00 AM	5:00 AM	5:00 AM	7:00 AM			7:00 AM		
Volume	182	15	68	197	530	1099	841	348	102	22	3	1			2990		
PM Peak	4:00 PM	4:00 PM	2:00 PM	2:00 PM	1:00 PM	12:00 PM	6:00 PM	7:00 PM	7:00 PM	9:00 PM	9:00 PM		7:00 PM	12:00 PM	2:00 PM		
Volume	299	101	181	423	745	956	924	337	54	10	3		1	1	2968		

Comments:

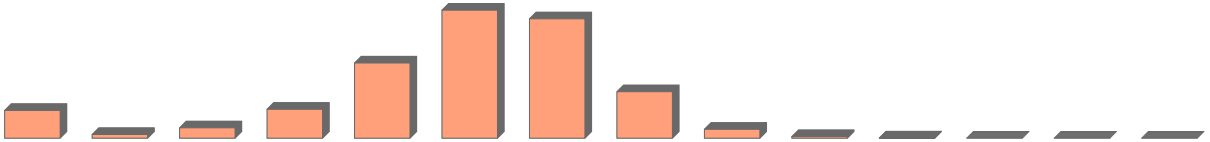
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB/WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	2640	352	984	2751	7153	12176	11355	4423	845	152	20	1	2	2	42856	36-45	23531
Percent	6.2%	0.8%	2.3%	6.4%	16.7%	28.4%	26.5%	10.3%	2.0%	0.4%	0.0%	0.0%	0.0%	0.0%			
Cumulative Percent	6.2%	7.0%	9.3%	15.7%	32.4%	60.8%	87.3%	97.6%	99.6%	99.9%	100.0%	100.0%	100.0%	100.0%			

ADT 42856



85th Percentile 44 MPH

Mean Speed(Average) 36 MPH

Median 38 MPH
Mode: 38 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn 25th & Airport
QC JOB #: 13585215
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			147			147			147	
1:00 AM			102			102			102	
2:00 AM			95			95			95	
3:00 AM			118			118			118	
4:00 AM			187			187			187	
5:00 AM			499			499			499	
6:00 AM			781			781			781	
7:00 AM			1374			1374			1374	
8:00 AM			1245			1245			1245	
9:00 AM			1267			1267			1267	
10:00 AM			1409			1409			1409	
11:00 AM			**1440**			**1440**			**1440**	
12:00 PM			1403			1403			1403	
1:00 PM			1448			1448			1448	
2:00 PM			1501			1501			1501	
3:00 PM			**1586**			**1586**			**1586**	
4:00 PM			1182			1182			1182	
5:00 PM			1172			1172			1172	
6:00 PM			1277			1277			1277	
7:00 PM			944			944			944	
8:00 PM			783			783			783	
9:00 PM			504			504			504	
10:00 PM			370			370			370	
11:00 PM			343			343			343	
Day Total			21177			21177			21177	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 1440			11:00 AM 1440			11:00 AM 1440	
PM Peak Volume			3:00 PM 1586			3:00 PM 1586			3:00 PM 1586	

Comments:

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	2	85	38	1	8	4	0	1	2	0	0	0	3	3	147
1:00 AM	1	70	15	0	3	0	0	0	3	2	0	0	4	4	102
2:00 AM	3	48	13	4	6	2	0	3	2	1	0	0	6	7	95
3:00 AM	1	59	19	8	14	0	0	4	3	1	0	0	4	5	118
4:00 AM	2	107	27	4	17	5	0	3	7	3	0	0	3	9	187
5:00 AM	1	299	112	10	35	3	1	13	7	4	0	0	0	14	499
6:00 AM	6	482	146	6	64	1	2	20	11	2	1	1	1	38	781
7:00 AM	12	**911**	198	10	69	11	2	**51**	**16**	7	1	0	2	84	1374
8:00 AM	12	738	210	**21**	90	16	2	46	15	5	2	0	4	84	1245
9:00 AM	10	728	**250**	18	88	9	2	32	11	8	**3**	0	**8**	100	1267
10:00 AM	**16**	844	247	8	**91**	**21**	**3**	45	11	4	3	**4**	8	**104**	1409
11:00 AM	14	905	226	10	88	17	0	39	16	**10**	3	4	6	102	**1440**
12:00 PM	15	840	**252**	7	65	19	3	43	**16**	7	2	1	**5**	128	1403
1:00 PM	9	920	240	11	**87**	10	3	40	13	5	4	2	3	101	1448
2:00 PM	15	907	239	**12**	70	**24**	2	49	10	6	**5**	0	5	157	1501
3:00 PM	19	**981**	244	11	81	21	2	**51**	6	**9**	3	1	3	154	**1586**
4:00 PM	22	696	174	11	48	10	**4**	26	6	6	1	0	4	**174**	1182
5:00 PM	**24**	738	162	3	60	11	1	21	5	3	0	**3**	0	141	1172
6:00 PM	7	902	193	1	58	8	0	33	5	3	1	1	2	63	1277
7:00 PM	4	689	131	5	29	4	0	22	8	1	1	2	3	45	944
8:00 PM	2	561	135	4	29	1	1	18	6	3	1	0	1	21	783
9:00 PM	3	347	92	3	21	5	2	5	4	1	0	0	4	17	504
10:00 PM	3	247	74	4	15	1	0	7	2	4	0	0	0	13	370
11:00 PM	1	222	81	3	16	2	0	1	1	1	0	0	3	12	343
Day Total	204	13326	3518	175	1152	205	30	573	186	96	31	19	82	1580	21177
Percent	1.0%	62.9%	16.6%	0.8%	5.4%	1.0%	0.1%	2.7%	0.9%	0.5%	0.1%	0.1%	0.4%	7.5%	
ADT 21177															
AM Peak	10:00 AM	7:00 AM	9:00 AM	8:00 AM	10:00 AM	10:00 AM	10:00 AM	7:00 AM	7:00 AM	11:00 AM	9:00 AM	10:00 AM	9:00 AM	10:00 AM	11:00 AM
Volume	16	911	250	21	91	21	3	51	16	10	3	4	8	104	1440
PM Peak	5:00 PM	3:00 PM	12:00 PM	2:00 PM	1:00 PM	2:00 PM	4:00 PM	3:00 PM	12:00 PM	3:00 PM	2:00 PM	5:00 PM	12:00 PM	4:00 PM	3:00 PM
Volume	24	981	252	12	87	24	4	51	16	9	5	3	5	174	1586

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	204	13326	3518	175	1152	205	30	573	186	96	31	19	82	1580	21177
Percent	1.0%	62.9%	16.6%	0.8%	5.4%	1.0%	0.1%	2.7%	0.9%	0.5%	0.1%	0.1%	0.4%	7.5%	

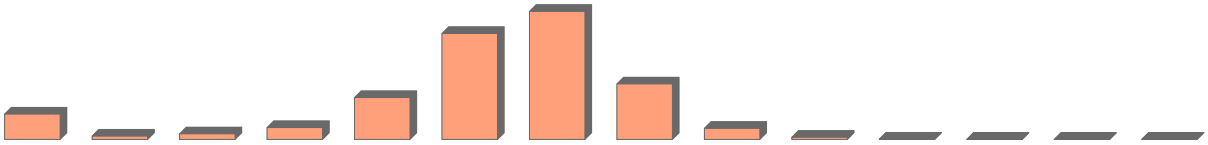
ADT 21177

Comments:

Report generated on 9/28/2015 2:45 PM

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	2	0	1	0	7	40	56	37	2	2	0	0	0	0	147	37-46	95
1:00 AM	1	0	0	4	3	21	45	21	3	4	0	0	0	0	102	36-45	66
2:00 AM	3	0	0	0	5	17	40	22	7	0	1	0	0	0	95	41-50	62
3:00 AM	2	0	0	2	6	24	42	36	6	0	0	0	0	0	118	41-50	78
4:00 AM	4	0	1	1	7	26	67	57	20	3	1	0	0	0	187	41-50	124
5:00 AM	10	0	0	2	8	47	148	189	75	**18**	**2**	0	0	0	499	41-50	336
6:00 AM	30	0	0	5	13	110	304	230	**78**	10	1	0	0	0	781	41-50	534
7:00 AM	65	1	0	1	92	274	**570**	**298**	58	13	1	**1**	0	0	1374	41-50	867
8:00 AM	69	0	0	8	57	307	511	238	42	11	2	0	0	0	1245	36-45	818
9:00 AM	77	0	6	**31**	106	372	508	148	17	2	0	0	0	0	1267	36-45	879
10:00 AM	**78**	0	4	19	153	**522**	482	131	18	2	0	0	0	0	1409	36-45	1004
11:00 AM	78	**4**	**12**	30	**187**	512	452	145	14	6	0	0	0	0	**1440**	36-45	964
12:00 PM	110	3	13	72	229	462	354	138	16	4	1	0	0	**1**	1403	36-45	815
1:00 PM	81	5	13	57	258	537	364	113	16	3	1	0	0	0	1448	36-45	900
2:00 PM	126	24	47	96	281	406	397	101	19	3	1	0	0	0	1501	36-45	803
3:00 PM	128	20	42	105	**283**	**577**	337	83	8	3	0	0	0	0	**1586**	36-45	914
4:00 PM	**212**	**79**	**94**	**109**	200	296	157	29	5	1	0	0	0	0	1182	31-40	496
5:00 PM	160	40	60	81	183	302	257	73	13	3	0	0	0	0	1172	36-45	559
6:00 PM	54	1	3	5	85	312	**568**	**212**	32	5	0	0	0	0	1277	36-45	879
7:00 PM	35	0	1	3	29	189	437	207	**39**	4	0	0	0	0	944	41-50	644
8:00 PM	17	0	3	3	35	192	323	172	34	4	0	0	0	0	783	36-45	515
9:00 PM	13	0	0	4	20	99	218	113	28	**6**	**3**	0	0	0	504	41-50	331
10:00 PM	8	0	0	3	8	56	157	107	28	3	0	0	0	0	370	41-50	263
11:00 PM	9	0	0	0	13	42	145	106	22	5	0	0	**1**	0	343	41-50	250
Day Total	1372	177	300	641	2268	5742	6939	3006	600	115	14	1	1	1	21177	36-45	12680
Percent	6.5%	0.8%	1.4%	3.0%	10.7%	27.1%	32.8%	14.2%	2.8%	0.5%	0.1%	0.0%	0.0%	0.0%			
ADT 21177																	
AM Peak	10:00 AM	11:00 AM	11:00 AM	9:00 AM	11:00 AM	10:00 AM	7:00 AM	7:00 AM	6:00 AM	5:00 AM	5:00 AM	7:00 AM			11:00 AM		
Volume	78	4	12	31	187	522	570	298	78	18	2	1			1440		
PM Peak	4:00 PM	4:00 PM	4:00 PM	4:00 PM	3:00 PM	3:00 PM	6:00 PM	6:00 PM	7:00 PM	9:00 PM	9:00 PM		11:00 PM	12:00 PM	3:00 PM		
Volume	212	79	94	109	283	577	568	212	39	6	3		1	1	1586		

Comments:

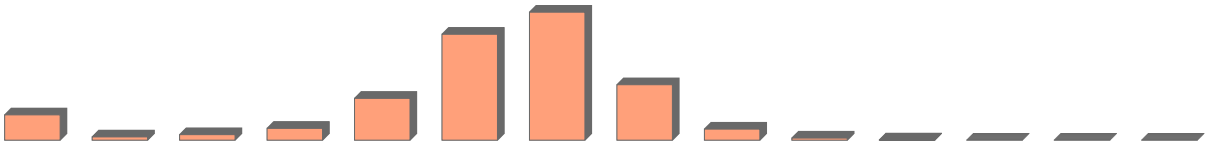
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn 25th & Airport
SPECIFIC LOCATION: OR-22 Tube btwn 25th & Airport
CITY/STATE: Salem, OR

QC JOB #: 13585215
DIRECTION: EB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1372	177	300	641	2268	5742	6939	3006	600	115	14	1	1	1	21177	36-45	12680
Percent	6.5%	0.8%	1.4%	3.0%	10.7%	27.1%	32.8%	14.2%	2.8%	0.5%	0.1%	0.0%	0.0%	0.0%			
Cumulative Percent	6.5%	7.3%	8.7%	11.8%	22.5%	49.6%	82.3%	96.5%	99.4%	99.9%	100.0%	100.0%	100.0%	100.0%			

ADT 21177



85th Percentile 45 MPH

Mean Speed(Average) 37 MPH

Median 40 MPH
Mode: 43 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
QC JOB #: 13585216
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			146			146			146	
1:00 AM			76			76			76	
2:00 AM			93			93			93	
3:00 AM			103			103			103	
4:00 AM			247			247			247	
5:00 AM			561			561			561	
6:00 AM			1164			1164			1164	
7:00 AM			1239			1239			1239	
8:00 AM			1343			1343			1343	
9:00 AM			1283			1283			1283	
10:00 AM			1314			1314			1314	
11:00 AM			**1386**			**1386**			**1386**	
12:00 PM			1341			1341			1341	
1:00 PM			1338			1338			1338	
2:00 PM			1050			1050			1050	
3:00 PM			1449			1449			1449	
4:00 PM			**1464**			**1464**			**1464**	
5:00 PM			1447			1447			1447	
6:00 PM			1248			1248			1248	
7:00 PM			899			899			899	
8:00 PM			686			686			686	
9:00 PM			493			493			493	
10:00 PM			350			350			350	
11:00 PM			174			174			174	
Day Total			20894			20894			20894	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 1386			11:00 AM 1386			11:00 AM 1386	
PM Peak Volume			4:00 PM 1464			4:00 PM 1464			4:00 PM 1464	

Comments:

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: WB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	93	18	2	10	2	1	3	6	3	0	0	5	2	146
1:00 AM	0	52	9	0	4	0	0	1	5	1	0	0	4	0	76
2:00 AM	0	61	13	1	4	1	0	2	1	0	0	0	6	4	93
3:00 AM	1	57	17	1	8	2	0	4	6	1	0	0	5	1	103
4:00 AM	0	166	47	3	12	0	0	4	10	1	0	1	1	2	247
5:00 AM	6	365	96	7	29	6	1	15	10	4	1	0	2	19	561
6:00 AM	22	706	157	9	39	23	3	29	**14**	6	2	0	**7**	147	1164
7:00 AM	38	660	110	**16**	52	**41**	5	22	6	6	**7**	**3**	4	**269**	1239
8:00 AM	**43**	778	142	14	53	38	**7**	42	10	3	3	1	6	203	1343
9:00 AM	17	797	197	9	62	28	5	**46**	12	9	1	1	5	94	1283
10:00 AM	18	798	**203**	10	**72**	30	5	37	12	**10**	2	3	6	108	1314
11:00 AM	28	**864**	183	13	45	33	7	40	6	10	3	1	7	146	**1386**
12:00 PM	28	799	178	**16**	**62**	**36**	**7**	35	8	**13**	3	1	4	151	1341
1:00 PM	37	758	176	10	51	36	0	**50**	**13**	10	**5**	**3**	4	185	1338
2:00 PM	**38**	571	111	8	29	28	4	34	7	6	1	2	2	**209**	1050
3:00 PM	26	896	204	12	58	35	3	37	10	10	5	2	**6**	145	1449
4:00 PM	27	958	206	8	54	28	5	27	4	7	4	3	6	127	**1464**
5:00 PM	20	**981**	**211**	8	33	31	2	36	9	4	2	0	5	105	1447
6:00 PM	14	902	170	4	42	19	1	25	8	3	0	0	0	60	1248
7:00 PM	10	646	139	3	31	6	0	15	5	3	2	0	4	35	899
8:00 PM	4	504	113	4	15	7	0	14	2	0	0	0	3	20	686
9:00 PM	2	369	68	3	18	2	0	5	4	2	0	0	4	16	493
10:00 PM	2	271	45	1	16	1	0	2	2	1	0	0	5	4	350
11:00 PM	0	128	33	1	2	0	0	1	1	1	0	0	5	2	174
Day Total	382	13180	2846	163	801	433	56	526	171	114	41	21	106	2054	20894
Percent	1.8%	63.1%	13.6%	0.8%	3.8%	2.1%	0.3%	2.5%	0.8%	0.5%	0.2%	0.1%	0.5%	9.8%	
ADT 20894															
AM Peak	8:00 AM	11:00 AM	10:00 AM	7:00 AM	10:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	10:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM	11:00 AM
Volume	43	864	203	16	72	41	7	46	14	10	7	3	7	269	1386
PM Peak	2:00 PM	5:00 PM	5:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	1:00 PM	1:00 PM	12:00 PM	1:00 PM	1:00 PM	3:00 PM	2:00 PM	4:00 PM
Volume	38	981	211	16	62	36	7	50	13	13	5	3	6	209	1464

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	382	13180	2846	163	801	433	56	526	171	114	41	21	106	2054	20894
Percent	1.8%	63.1%	13.6%	0.8%	3.8%	2.1%	0.3%	2.5%	0.8%	0.5%	0.2%	0.1%	0.5%	9.8%	

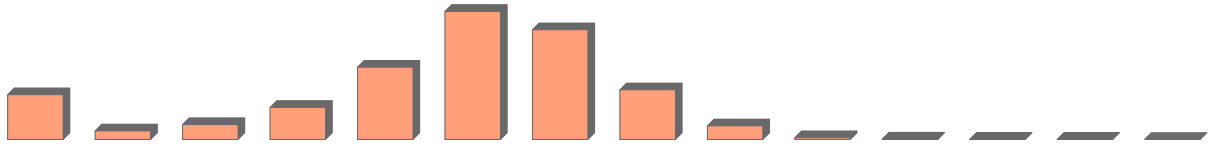
ADT 20894

Comments:

Report generated on 9/28/2015 2:45 PM

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	2	0	0	1	6	22	50	38	22	5	0	0	0	0	146	41-50	87
1:00 AM	0	0	0	1	1	12	28	19	12	2	0	**1**	0	0	76	41-50	46
2:00 AM	1	0	0	1	3	8	32	37	9	2	0	0	0	0	93	41-50	69
3:00 AM	1	0	0	0	3	11	25	36	23	3	1	0	0	0	103	41-50	61
4:00 AM	0	0	0	1	3	22	71	87	56	6	1	0	0	0	247	41-50	158
5:00 AM	14	0	0	1	14	74	171	**192**	**81**	**10**	**3**	0	**1**	0	561	41-50	362
6:00 AM	161	21	37	82	77	224	324	184	48	6	0	0	0	0	1164	36-45	547
7:00 AM	**285**	**76**	**105**	**162**	157	233	164	43	14	0	0	0	0	0	1239	36-45	396
8:00 AM	199	29	73	75	241	396	252	61	16	0	1	0	0	0	1343	36-45	648
9:00 AM	67	1	6	43	162	**466**	**394**	129	13	2	0	0	0	0	1283	36-45	859
10:00 AM	91	7	18	94	244	427	324	94	13	2	0	0	0	0	1314	36-45	750
11:00 AM	103	1	49	123	**364**	414	262	55	13	2	0	0	0	0	**1386**	31-40	777
12:00 PM	129	22	60	**182**	287	399	205	49	6	1	0	**1**	0	0	1341	31-40	685
1:00 PM	211	66	**100**	151	260	338	173	33	6	0	0	0	0	0	1338	31-40	598
2:00 PM	**272**	**107**	54	83	178	242	96	17	0	1	0	0	0	0	1050	31-40	419
3:00 PM	129	18	36	138	298	470	285	60	13	1	1	0	0	0	1449	31-40	768
4:00 PM	111	14	67	123	**361**	452	257	63	13	3	0	0	0	0	**1464**	31-40	813
5:00 PM	82	11	39	101	269	**474**	353	101	13	2	**2**	0	0	0	1447	36-45	826
6:00 PM	47	2	6	28	134	372	**421**	**199**	34	4	1	0	0	0	1248	36-45	793
7:00 PM	31	0	2	11	68	247	301	191	43	5	0	0	0	0	899	36-45	548
8:00 PM	17	0	0	2	21	146	278	173	**44**	4	1	0	0	0	686	41-50	451
9:00 PM	10	0	0	1	11	100	187	141	36	5	2	0	0	0	493	41-50	328
10:00 PM	2	0	0	1	7	54	119	122	40	3	2	0	0	0	350	41-50	240
11:00 PM	1	0	0	0	6	25	50	58	27	**7**	0	0	0	0	174	41-50	107
Day Total	1966	375	652	1405	3175	5628	4822	2182	595	76	15	2	1	0	20894	36-45	10450
Percent	9.4%	1.8%	3.1%	6.7%	15.2%	26.9%	23.1%	10.4%	2.8%	0.4%	0.1%	0.0%	0.0%	0.0%			
ADT 20894																	
AM Peak	7:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	9:00 AM	9:00 AM	5:00 AM	5:00 AM	5:00 AM	5:00 AM	1:00 AM	5:00 AM		11:00 AM		
Volume	285	76	105	162	364	466	394	192	81	10	3	1	1		1386		
PM Peak	2:00 PM	2:00 PM	1:00 PM	12:00 PM	4:00 PM	5:00 PM	6:00 PM	6:00 PM	8:00 PM	11:00 PM	5:00 PM	12:00 PM			4:00 PM		
Volume	272	107	100	182	361	474	421	199	44	7	2	1			1464		

Comments:

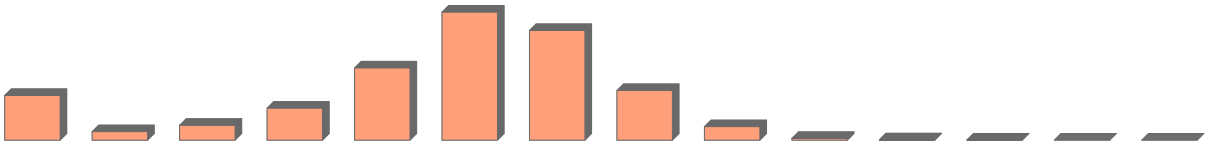
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1966	375	652	1405	3175	5628	4822	2182	595	76	15	2	1	0	20894	36-45	10450
Percent	9.4%	1.8%	3.1%	6.7%	15.2%	26.9%	23.1%	10.4%	2.8%	0.4%	0.1%	0.0%	0.0%	0.0%			
Cumulative Percent	9.4%	11.2%	14.3%	21.0%	36.2%	63.2%	86.3%	96.7%	99.6%	99.9%	100.0%	100.0%	100.0%	100.0%			

ADT 20894



85th Percentile 44 MPH

Mean Speed(Average) 35 MPH

Median 37 MPH
Mode: 38 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
QC JOB #: 13585216
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			291			291			291	
1:00 AM			183			183			183	
2:00 AM			190			190			190	
3:00 AM			220			220			220	
4:00 AM			412			412			412	
5:00 AM			1012			1012			1012	
6:00 AM			1902			1902			1902	
7:00 AM			2472			2472			2472	
8:00 AM			2473			2473			2473	
9:00 AM			2516			2516			2516	
10:00 AM			2726			2726			2726	
11:00 AM			**2883**			**2883**			**2883**	
12:00 PM			2911			2911			2911	
1:00 PM			2811			2811			2811	
2:00 PM			2620			2620			2620	
3:00 PM			**3144**			**3144**			**3144**	
4:00 PM			3134			3134			3134	
5:00 PM			3009			3009			3009	
6:00 PM			2621			2621			2621	
7:00 PM			1949			1949			1949	
8:00 PM			1509			1509			1509	
9:00 PM			1025			1025			1025	
10:00 PM			734			734			734	
11:00 PM			531			531			531	
Day Total			43278			43278			43278	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 2883			11:00 AM 2883			11:00 AM 2883	
PM Peak Volume			3:00 PM 3144			3:00 PM 3144			3:00 PM 3144	

Comments:

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
QC JOB #: 13585216
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	183	52	4	15	4	1	5	11	3	0	0	8	4	291
1:00 AM	1	127	23	0	8	0	0	1	8	3	0	0	8	4	183
2:00 AM	3	113	24	7	10	2	0	5	3	1	0	0	12	10	190
3:00 AM	1	121	38	7	18	2	0	7	9	3	0	0	8	6	220
4:00 AM	0	263	70	7	27	1	0	7	20	4	0	1	6	6	412
5:00 AM	6	648	188	17	50	9	2	25	18	9	1	0	3	36	1012
6:00 AM	31	1161	301	14	82	36	4	36	24	14	2	1	12	184	1902
7:00 AM	53	1418	306	25	119	**69**	8	69	18	14	8	**5**	8	**352**	2472
8:00 AM	**59**	1442	314	**33**	130	66	13	72	26	12	5	3	**15**	283	2473
9:00 AM	29	1509	406	25	145	61	8	86	27	16	4	4	11	185	2516
10:00 AM	40	1630	**436**	20	**152**	54	8	**102**	26	**20**	**11**	4	8	215	2726
11:00 AM	43	**1770**	428	27	127	62	**14**	81	**28**	15	6	4	9	269	**2883**
12:00 PM	50	1752	**439**	27	**140**	76	**13**	87	21	**19**	**11**	5	9	262	2911
1:00 PM	51	1691	385	22	131	59	4	**104**	**30**	19	10	3	13	289	2811
2:00 PM	**68**	1528	314	15	92	78	8	82	18	18	6	3	11	**379**	2620
3:00 PM	59	1918	427	27	124	**84**	5	91	21	18	6	3	12	349	**3144**
4:00 PM	66	1967	384	**33**	124	70	13	64	13	18	9	**7**	12	354	3134
5:00 PM	54	**1981**	368	19	89	72	8	67	16	12	7	2	**16**	298	3009
6:00 PM	29	1862	348	5	88	45	3	59	16	7	4	0	7	148	2621
7:00 PM	18	1396	285	10	63	24	1	37	15	5	2	0	7	86	1949
8:00 PM	8	1085	249	7	46	14	2	28	4	4	0	0	6	56	1509
9:00 PM	3	742	155	7	40	11	1	10	9	5	1	0	11	30	1025
10:00 PM	3	546	102	4	35	1	0	10	6	3	0	0	9	15	734
11:00 PM	1	385	94	3	15	2	0	5	2	6	0	0	6	12	531
Day Total	677	27238	6136	365	1870	902	116	1140	389	248	93	45	227	3832	43278
Percent	1.6%	62.9%	14.2%	0.8%	4.3%	2.1%	0.3%	2.6%	0.9%	0.6%	0.2%	0.1%	0.5%	8.9%	
ADT 43278															
AM Peak	8:00 AM	11:00 AM	10:00 AM	8:00 AM	10:00 AM	7:00 AM	11:00 AM	10:00 AM	11:00 AM	10:00 AM	10:00 AM	7:00 AM	8:00 AM	7:00 AM	11:00 AM
Volume	59	1770	436	33	152	69	14	102	28	20	11	5	15	352	2883
PM Peak	2:00 PM	5:00 PM	12:00 PM	4:00 PM	12:00 PM	3:00 PM	12:00 PM	1:00 PM	1:00 PM	12:00 PM	12:00 PM	4:00 PM	5:00 PM	2:00 PM	3:00 PM
Volume	68	1981	439	33	140	84	13	104	30	19	11	7	16	379	3144

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
QC JOB #: 13585216
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	677	27238	6136	365	1870	902	116	1140	389	248	93	45	227	3832	43278
Percent	1.6%	62.9%	14.2%	0.8%	4.3%	2.1%	0.3%	2.6%	0.9%	0.6%	0.2%	0.1%	0.5%	8.9%	

ADT 43278

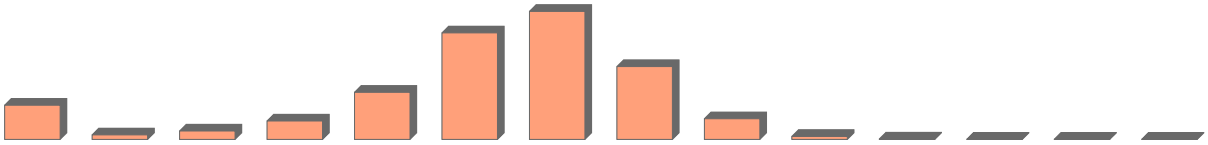
Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: EB/WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	2	0	0	1	8	38	100	100	35	7	0	0	0	0	291	41-50	200
1:00 AM	1	0	0	1	3	28	63	49	30	7	0	**1**	0	0	183	41-50	112
2:00 AM	1	0	0	2	4	22	62	70	24	5	0	0	0	0	190	41-50	132
3:00 AM	2	0	0	0	3	19	58	77	54	5	2	0	0	0	220	41-50	135
4:00 AM	1	0	0	2	6	34	116	139	98	13	3	0	0	0	412	41-50	255
5:00 AM	25	0	0	2	26	101	297	354	159	**42**	**4**	0	**2**	0	1012	41-50	650
6:00 AM	192	21	39	90	87	293	526	**468**	161	23	1	0	1	0	1902	41-50	993
7:00 AM	**348**	**76**	**105**	**166**	184	370	582	449	**171**	19	2	0	0	0	2472	41-50	1031
8:00 AM	257	29	74	94	285	569	632	396	116	17	3	1	0	0	2473	36-45	1201
9:00 AM	135	5	10	60	253	727	814	416	81	12	3	0	0	0	2516	36-45	1541
10:00 AM	174	8	21	102	288	755	**891**	396	84	6	1	0	0	0	2726	36-45	1645
11:00 AM	195	1	50	137	**445**	**776**	871	333	68	7	0	0	0	0	**2883**	36-45	1646
12:00 PM	217	22	67	194	371	843	827	305	59	5	0	**1**	0	0	2911	36-45	1670
1:00 PM	294	66	100	154	317	697	843	287	46	7	0	0	0	0	2811	36-45	1539
2:00 PM	**397**	**110**	65	125	371	738	574	199	35	6	0	0	0	0	2620	36-45	1312
3:00 PM	286	22	58	201	495	936	811	269	57	6	3	0	0	0	**3144**	36-45	1746
4:00 PM	286	27	**116**	**233**	**647**	**947**	625	200	47	6	0	0	0	0	3134	31-40	1594
5:00 PM	252	46	99	171	454	892	751	282	49	8	4	1	0	0	3009	36-45	1642
6:00 PM	117	4	9	35	167	642	**953**	**553**	121	16	2	1	0	**1**	2621	36-45	1594
7:00 PM	72	2	4	12	97	385	680	549	**130**	**17**	0	0	**1**	0	1949	41-50	1229
8:00 PM	43	0	0	4	29	262	609	421	123	16	1	0	1	0	1509	41-50	1030
9:00 PM	21	0	0	4	27	151	382	326	101	11	2	0	0	0	1025	41-50	708
10:00 PM	8	0	0	2	14	98	236	270	90	11	**5**	0	0	0	734	41-50	506
11:00 PM	7	0	0	0	9	60	175	191	72	16	1	0	0	0	531	41-50	366
Day Total	3333	439	817	1792	4590	10383	12478	7099	2011	288	37	5	5	1	43278	36-45	22860
Percent	7.7%	1.0%	1.9%	4.1%	10.6%	24.0%	28.8%	16.4%	4.6%	0.7%	0.1%	0.0%	0.0%	0.0%			
ADT 43278																	
AM Peak	7:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	11:00 AM	10:00 AM	6:00 AM	7:00 AM	5:00 AM	5:00 AM	1:00 AM	5:00 AM		11:00 AM		
Volume	348	76	105	166	445	776	891	468	171	42	4	1	2		2883		
PM Peak	2:00 PM	2:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	6:00 PM	6:00 PM	7:00 PM	7:00 PM	10:00 PM	12:00 PM	7:00 PM	6:00 PM	3:00 PM		
Volume	397	110	116	233	647	947	953	553	130	17	5	1	1	1	3144		

Comments:

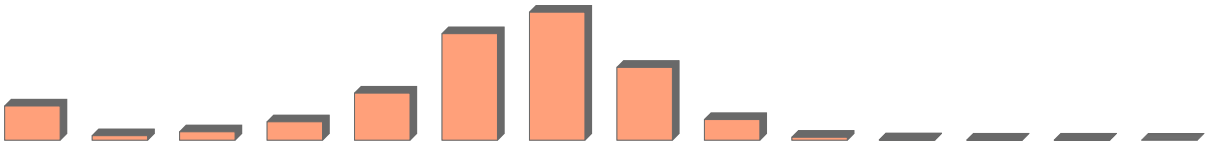
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: EB/WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	3333	439	817	1792	4590	10383	12478	7099	2011	288	37	5	5	1	43278	36-45	22860
Percent	7.7%	1.0%	1.9%	4.1%	10.6%	24.0%	28.8%	16.4%	4.6%	0.7%	0.1%	0.0%	0.0%	0.0%			
Cumulative Percent	7.7%	8.7%	10.6%	14.7%	25.4%	49.3%	78.2%	94.6%	99.2%	99.9%	100.0%	100.0%	100.0%	100.0%			

ADT 43278



85th Percentile 47 MPH

Mean Speed(Average) 37 MPH

Median 40 MPH
Mode: 43 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
QC JOB #: 13585216
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			145			145			145	
1:00 AM			107			107			107	
2:00 AM			97			97			97	
3:00 AM			117			117			117	
4:00 AM			165			165			165	
5:00 AM			451			451			451	
6:00 AM			738			738			738	
7:00 AM			1233			1233			1233	
8:00 AM			1130			1130			1130	
9:00 AM			1233			1233			1233	
10:00 AM			1412			1412			1412	
11:00 AM			**1497**			**1497**			**1497**	
12:00 PM			1570			1570			1570	
1:00 PM			1473			1473			1473	
2:00 PM			1570			1570			1570	
3:00 PM			**1695**			**1695**			**1695**	
4:00 PM			1670			1670			1670	
5:00 PM			1562			1562			1562	
6:00 PM			1373			1373			1373	
7:00 PM			1050			1050			1050	
8:00 PM			823			823			823	
9:00 PM			532			532			532	
10:00 PM			384			384			384	
11:00 PM			357			357			357	
Day Total			22384			22384			22384	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 1497			11:00 AM 1497			11:00 AM 1497	
PM Peak Volume			3:00 PM 1695			3:00 PM 1695			3:00 PM 1695	

Comments:

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: EB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	90	34	2	5	2	0	2	5	0	0	0	3	2	145
1:00 AM	1	75	14	0	4	0	0	0	3	2	0	0	4	4	107
2:00 AM	3	52	11	6	6	1	0	3	2	1	0	0	6	6	97
3:00 AM	0	64	21	6	10	0	0	3	3	2	0	0	3	5	117
4:00 AM	0	97	23	4	15	1	0	3	10	3	0	0	5	4	165
5:00 AM	0	283	92	10	21	3	1	10	8	5	0	0	1	17	451
6:00 AM	9	455	144	5	43	13	1	7	10	8	0	1	5	37	738
7:00 AM	15	758	196	9	67	28	3	47	12	8	1	2	4	83	1233
8:00 AM	16	664	172	**19**	77	28	6	30	16	9	2	2	**9**	80	1130
9:00 AM	12	712	209	16	**83**	**33**	3	40	15	7	3	**3**	6	91	1233
10:00 AM	**22**	832	233	10	80	24	3	**65**	14	**10**	**9**	1	2	107	1412
11:00 AM	15	**906**	**245**	14	82	29	**7**	41	**22**	5	3	3	2	**123**	**1497**
12:00 PM	22	953	**261**	11	78	40	6	52	13	6	**8**	**4**	5	111	1570
1:00 PM	14	933	209	12	**80**	23	4	**54**	**17**	9	5	0	9	104	1473
2:00 PM	30	957	203	7	63	**50**	4	48	11	**12**	5	1	9	170	1570
3:00 PM	33	**1022**	223	15	66	49	2	54	11	8	1	1	6	204	**1695**
4:00 PM	**39**	1009	178	**25**	70	42	**8**	37	9	11	5	4	6	**227**	1670
5:00 PM	34	1000	157	11	56	41	6	31	7	8	5	2	**11**	193	1562
6:00 PM	15	960	178	1	46	26	2	34	8	4	4	0	7	88	1373
7:00 PM	8	750	146	7	32	18	1	22	10	2	0	0	3	51	1050
8:00 PM	4	581	136	3	31	7	2	14	2	4	0	0	3	36	823
9:00 PM	1	373	87	4	22	9	1	5	5	3	1	0	7	14	532
10:00 PM	1	275	57	3	19	0	0	8	4	2	0	0	4	11	384
11:00 PM	1	257	61	2	13	2	0	4	1	5	0	0	1	10	357
Day Total	295	14058	3290	202	1069	469	60	614	218	134	52	24	121	1778	22384
Percent	1.3%	62.8%	14.7%	0.9%	4.8%	2.1%	0.3%	2.7%	1.0%	0.6%	0.2%	0.1%	0.5%	7.9%	
ADT 22384															
AM Peak	10:00 AM	11:00 AM	11:00 AM	8:00 AM	9:00 AM	9:00 AM	11:00 AM	10:00 AM	11:00 AM	10:00 AM	10:00 AM	9:00 AM	8:00 AM	11:00 AM	11:00 AM
Volume	22	906	245	19	83	33	7	65	22	10	9	3	9	123	1497
PM Peak	4:00 PM	3:00 PM	12:00 PM	4:00 PM	1:00 PM	2:00 PM	4:00 PM	1:00 PM	1:00 PM	2:00 PM	12:00 PM	12:00 PM	5:00 PM	4:00 PM	3:00 PM
Volume	39	1022	261	25	80	50	8	54	17	12	8	4	11	227	1695

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
QC JOB #: 13585216
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	295	14058	3290	202	1069	469	60	614	218	134	52	24	121	1778	22384
Percent	1.3%	62.8%	14.7%	0.9%	4.8%	2.1%	0.3%	2.7%	1.0%	0.6%	0.2%	0.1%	0.5%	7.9%	

ADT 22384

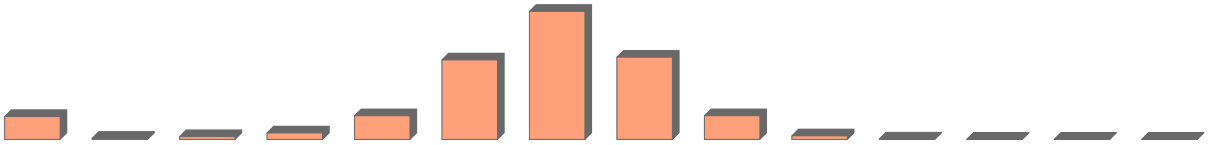
Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: EB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	2	16	50	62	13	2	0	0	0	0	145	41-50	112
1:00 AM	1	0	0	0	2	16	35	30	18	5	0	0	0	0	107	41-50	65
2:00 AM	0	0	0	1	1	14	30	33	15	3	0	0	0	0	97	41-50	62
3:00 AM	1	0	0	0	0	8	33	41	31	2	1	0	0	0	117	41-50	74
4:00 AM	1	0	0	1	3	12	45	52	42	7	2	0	0	0	165	41-50	97
5:00 AM	11	0	0	1	12	27	126	162	78	**32**	1	0	**1**	0	451	41-50	287
6:00 AM	31	0	2	8	10	69	202	284	113	17	1	0	1	0	738	41-50	485
7:00 AM	63	0	0	4	27	137	418	**406**	**157**	19	2	0	0	0	1233	41-50	824
8:00 AM	58	0	1	**19**	44	173	380	335	100	17	2	**1**	0	0	1130	41-50	715
9:00 AM	68	**4**	**4**	17	**91**	261	420	287	68	10	**3**	0	0	0	1233	41-50	707
10:00 AM	83	1	3	8	44	328	567	302	71	4	1	0	0	0	1412	36-45	895
11:00 AM	**92**	0	1	14	81	**362**	**609**	278	55	5	0	0	0	0	**1497**	36-45	970
12:00 PM	88	0	7	12	84	444	622	256	53	4	0	0	0	0	1570	36-45	1066
1:00 PM	83	0	0	3	57	359	**670**	254	40	7	0	0	0	0	1473	36-45	1029
2:00 PM	125	3	11	42	193	**496**	478	182	35	5	0	0	0	0	1570	36-45	973
3:00 PM	157	4	22	63	197	466	526	209	44	5	2	0	0	0	**1695**	36-45	992
4:00 PM	**175**	13	49	**110**	**286**	495	368	137	34	3	0	0	0	0	1670	36-45	862
5:00 PM	170	**35**	**60**	70	185	418	398	181	36	6	2	**1**	0	0	1562	36-45	815
6:00 PM	70	2	3	7	33	270	532	354	**87**	**12**	1	1	0	**1**	1373	41-50	885
7:00 PM	41	2	2	1	29	138	379	**358**	87	12	0	0	**1**	0	1050	41-50	736
8:00 PM	26	0	0	2	8	116	331	248	79	12	0	0	1	0	823	41-50	579
9:00 PM	11	0	0	3	16	51	195	185	65	6	0	0	0	0	532	41-50	380
10:00 PM	6	0	0	1	7	44	117	148	50	8	**3**	0	0	0	384	41-50	265
11:00 PM	6	0	0	0	3	35	125	133	45	9	1	0	0	0	357	41-50	258
Day Total	1367	64	165	387	1415	4755	7656	4917	1416	212	22	3	4	1	22384	41-50	12573
Percent	6.1%	0.3%	0.7%	1.7%	6.3%	21.2%	34.2%	22.0%	6.3%	0.9%	0.1%	0.0%	0.0%	0.0%			
ADT 22384																	
AM Peak	11:00 AM	9:00 AM	9:00 AM	8:00 AM	9:00 AM	11:00 AM	11:00 AM	7:00 AM	7:00 AM	5:00 AM	9:00 AM	8:00 AM	5:00 AM		11:00 AM		
Volume	92	4	4	19	91	362	609	406	157	32	3	1	1		1497		
PM Peak	4:00 PM	5:00 PM	5:00 PM	4:00 PM	4:00 PM	2:00 PM	1:00 PM	7:00 PM	6:00 PM	6:00 PM	10:00 PM	5:00 PM	7:00 PM	6:00 PM	3:00 PM		
Volume	175	35	60	110	286	496	670	358	87	12	3	1	1	1	1695		

Comments:

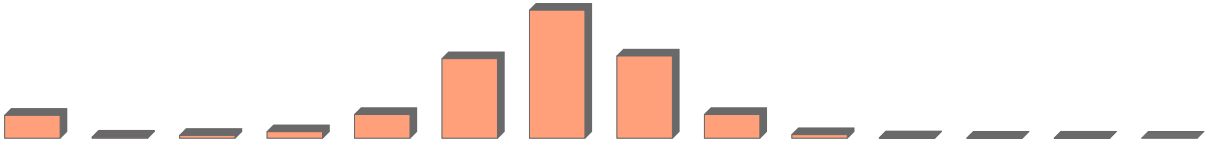
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn Aiport & Hawthorne
SPECIFIC LOCATION: OR-22 Tube btwn Aiport & Hawthorne
CITY/STATE: Salem, OR

QC JOB #: 13585216
DIRECTION: EB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1367	64	165	387	1415	4755	7656	4917	1416	212	22	3	4	1	22384	41-50	12573
Percent	6.1%	0.3%	0.7%	1.7%	6.3%	21.2%	34.2%	22.0%	6.3%	0.9%	0.1%	0.0%	0.0%	0.0%			
Cumulative Percent	6.1%	6.4%	7.1%	8.9%	15.2%	36.4%	70.6%	92.6%	98.9%	99.9%	100.0%	100.0%	100.0%	100.0%			

ADT 22384



85th Percentile 48 MPH

Mean Speed(Average) 40 MPH

Median 41 MPH
Mode: 43 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Hawthorne & I-5
QC JOB #: 13585217
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			134			134			134	
1:00 AM			74			74			74	
2:00 AM			96			96			96	
3:00 AM			123			123			123	
4:00 AM			250			250			250	
5:00 AM			595			595			595	
6:00 AM			**1382**			**1382**			**1382**	
7:00 AM			988			988			988	
8:00 AM			1031			1031			1031	
9:00 AM			1256			1256			1256	
10:00 AM			1247			1247			1247	
11:00 AM			902			902			902	
12:00 PM			883			883			883	
1:00 PM			1202			1202			1202	
2:00 PM			1017			1017			1017	
3:00 PM			1200			1200			1200	
4:00 PM			**1289**			**1289**			**1289**	
5:00 PM			1281			1281			1281	
6:00 PM			1147			1147			1147	
7:00 PM			793			793			793	
8:00 PM			609			609			609	
9:00 PM			435			435			435	
10:00 PM			323			323			323	
11:00 PM			167			167			167	
Day Total			18424			18424			18424	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			6:00 AM 1382			6:00 AM 1382			6:00 AM 1382	
PM Peak Volume			4:00 PM 1289			4:00 PM 1289			4:00 PM 1289	

Comments:

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: WB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	94	15	3	7	1	1	0	6	2	0	0	5	0	134
1:00 AM	0	52	7	1	2	0	0	1	6	1	0	0	4	0	74
2:00 AM	0	63	10	1	6	1	0	2	3	0	0	0	7	3	96
3:00 AM	0	72	20	0	11	3	0	4	5	2	0	0	6	0	123
4:00 AM	0	171	43	2	11	1	0	4	8	0	0	0	3	7	250
5:00 AM	7	393	103	5	35	8	1	18	6	2	0	0	4	13	595
6:00 AM	21	**943**	194	12	50	**40**	1	**28**	10	**7**	0	0	2	74	**1382**
7:00 AM	**31**	606	100	10	40	33	2	22	6	3	2	**1**	3	**129**	988
8:00 AM	25	657	128	6	57	23	2	28	13	3	2	0	2	85	1031
9:00 AM	14	812	193	11	**73**	35	**6**	27	**17**	6	**4**	0	7	51	1256
10:00 AM	21	784	**209**	11	57	32	5	23	15	3	3	0	**9**	75	1247
11:00 AM	27	502	122	**16**	37	36	4	20	9	2	3	1	5	118	902
12:00 PM	24	483	133	7	39	24	5	15	5	4	2	0	4	**138**	883
1:00 PM	18	763	164	**16**	55	32	2	30	**17**	5	1	0	2	97	1202
2:00 PM	35	596	122	12	49	32	**6**	26	6	5	2	0	5	121	1017
3:00 PM	26	740	186	11	**63**	29	3	**31**	11	7	3	1	4	85	1200
4:00 PM	27	838	**187**	1	54	**40**	4	24	8	6	**4**	1	2	93	**1289**
5:00 PM	**36**	**897**	162	5	36	33	1	28	8	**9**	0	**3**	2	61	1281
6:00 PM	14	854	148	3	45	14	1	20	7	3	2	1	2	33	1147
7:00 PM	11	600	105	6	24	3	0	17	4	3	0	0	3	17	793
8:00 PM	4	463	89	4	18	4	0	5	1	1	0	0	4	16	609
9:00 PM	2	330	58	3	15	3	1	4	6	4	2	0	3	4	435
10:00 PM	3	257	31	1	14	1	0	3	4	1	0	0	**7**	1	323
11:00 PM	0	133	21	1	3	3	0	0	1	0	0	0	3	2	167
Day Total	346	12103	2550	148	801	431	45	380	182	79	30	8	98	1223	18424
Percent	1.9%	65.7%	13.8%	0.8%	4.3%	2.3%	0.2%	2.1%	1.0%	0.4%	0.2%	0.0%	0.5%	6.6%	
ADT 18424															
AM Peak	7:00 AM	6:00 AM	10:00 AM	11:00 AM	9:00 AM	6:00 AM	9:00 AM	6:00 AM	9:00 AM	6:00 AM	9:00 AM	7:00 AM	10:00 AM	7:00 AM	6:00 AM
Volume	31	943	209	16	73	40	6	28	17	7	4	1	9	129	1382
PM Peak	5:00 PM	5:00 PM	4:00 PM	1:00 PM	3:00 PM	4:00 PM	2:00 PM	3:00 PM	1:00 PM	5:00 PM	4:00 PM	5:00 PM	10:00 PM	12:00 PM	4:00 PM
Volume	36	897	187	16	63	40	6	31	17	9	4	3	7	138	1289

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	346	12103	2550	148	801	431	45	380	182	79	30	8	98	1223	18424
Percent	1.9%	65.7%	13.8%	0.8%	4.3%	2.3%	0.2%	2.1%	1.0%	0.4%	0.2%	0.0%	0.5%	6.6%	

ADT 18424

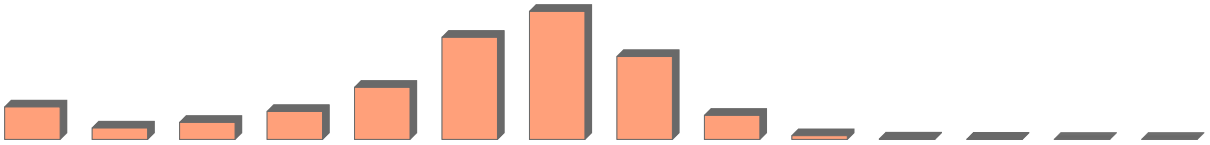
Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	1	4	14	53	38	18	5	**1**	0	0	0	134	41-50	90
1:00 AM	0	0	0	0	0	14	30	22	6	1	1	0	0	0	74	41-50	52
2:00 AM	0	0	0	1	2	7	34	37	14	0	1	0	0	0	96	41-50	71
3:00 AM	0	0	0	0	4	8	38	45	24	4	0	0	0	0	123	41-50	83
4:00 AM	4	0	0	1	5	18	62	100	48	11	1	0	0	0	250	41-50	162
5:00 AM	8	0	3	6	8	68	156	234	**97**	**14**	1	0	0	0	595	41-50	389
6:00 AM	58	3	22	55	108	298	**471**	**285**	74	8	0	0	0	0	**1382**	36-45	769
7:00 AM	142	48	84	**105**	121	192	203	68	22	3	0	0	0	0	988	36-45	395
8:00 AM	95	38	45	57	97	216	308	141	24	9	1	0	0	0	1031	36-45	524
9:00 AM	41	7	29	54	139	**349**	400	189	43	5	0	0	0	0	1256	36-45	749
10:00 AM	68	24	36	74	149	316	345	188	44	3	0	0	0	0	1247	36-45	661
11:00 AM	**154**	**71**	**94**	101	**153**	174	115	33	6	0	0	**1**	0	0	902	31-40	326
12:00 PM	**191**	**85**	74	102	159	157	92	22	1	0	0	0	0	0	883	31-40	315
1:00 PM	85	26	56	95	181	282	309	129	33	6	0	0	0	0	1202	36-45	590
2:00 PM	140	58	**94**	**141**	157	204	149	58	12	4	0	0	0	0	1017	31-40	360
3:00 PM	89	26	44	96	183	310	270	142	32	7	1	0	0	0	1200	36-45	580
4:00 PM	74	25	36	94	**186**	**357**	325	149	38	4	1	0	0	0	**1289**	36-45	682
5:00 PM	43	20	27	57	142	355	360	211	56	9	1	0	0	0	1281	36-45	715
6:00 PM	24	2	3	9	116	227	**376**	**292**	**82**	13	**3**	0	0	0	1147	41-50	668
7:00 PM	11	2	2	10	31	112	269	263	78	**14**	1	0	0	0	793	41-50	532
8:00 PM	10	0	0	0	21	100	225	191	54	8	0	0	0	0	609	41-50	416
9:00 PM	2	0	0	6	12	61	142	157	47	7	1	0	0	0	435	41-50	298
10:00 PM	1	0	0	2	4	42	109	124	39	2	0	0	0	0	323	41-50	233
11:00 PM	1	0	0	0	8	22	54	51	27	4	0	0	0	0	167	41-50	104
Day Total	1241	435	649	1067	1990	3903	4895	3169	919	141	14	1	0	0	18424	36-45	8798
Percent	6.7%	2.4%	3.5%	5.8%	10.8%	21.2%	26.6%	17.2%	5.0%	0.8%	0.1%	0.0%	0.0%	0.0%			
ADT 18424																	
AM Peak	11:00 AM	11:00 AM	11:00 AM	7:00 AM	11:00 AM	9:00 AM	6:00 AM	6:00 AM	5:00 AM	5:00 AM	12:00 AM	11:00 AM			6:00 AM		
Volume	154	71	94	105	153	349	471	285	97	14	1	1			1382		
PM Peak	12:00 PM	12:00 PM	2:00 PM	2:00 PM	4:00 PM	4:00 PM	6:00 PM	6:00 PM	6:00 PM	7:00 PM	6:00 PM				4:00 PM		
Volume	191	85	94	141	186	357	376	292	82	14	3				1289		

Comments:

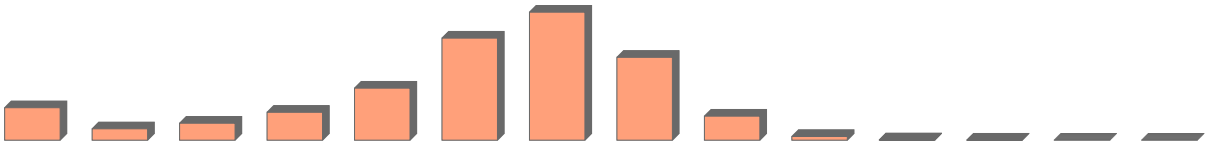
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1241	435	649	1067	1990	3903	4895	3169	919	141	14	1	0	0	18424	36-45	8798
Percent	6.7%	2.4%	3.5%	5.8%	10.8%	21.2%	26.6%	17.2%	5.0%	0.8%	0.1%	0.0%	0.0%	0.0%			
Cumulative Percent	6.7%	9.1%	12.6%	18.4%	29.2%	50.4%	77.0%	94.2%	99.2%	99.9%	100.0%	100.0%	100.0%	100.0%			

ADT 18424



85th Percentile 47 MPH

Mean Speed(Average) 37 MPH

Median 39 MPH
Mode: 43 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Hawthorne & I-5

QC JOB #: 13585217

SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5

DIRECTION: EB/WB

CITY/STATE: Salem, OR

DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			274			274			274	
1:00 AM			166			166			166	
2:00 AM			189			189			189	
3:00 AM			225			225			225	
4:00 AM			411			411			411	
5:00 AM			1013			1013			1013	
6:00 AM			2110			2110			2110	
7:00 AM			2133			2133			2133	
8:00 AM			2049			2049			2049	
9:00 AM			2406			2406			2406	
10:00 AM			**2494**			**2494**			**2494**	
11:00 AM			2159			2159			2159	
12:00 PM			2262			2262			2262	
1:00 PM			2668			2668			2668	
2:00 PM			2618			2618			2618	
3:00 PM			3083			3083			3083	
4:00 PM			**3212**			**3212**			**3212**	
5:00 PM			3095			3095			3095	
6:00 PM			2474			2474			2474	
7:00 PM			1858			1858			1858	
8:00 PM			1431			1431			1431	
9:00 PM			951			951			951	
10:00 PM			696			696			696	
11:00 PM			492			492			492	
Day Total			40469			40469			40469	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			10:00 AM 2494			10:00 AM 2494			10:00 AM 2494	
PM Peak Volume			4:00 PM 3212			4:00 PM 3212			4:00 PM 3212	

Comments:

LOCATION: OR-22 Tube btwn Hawthorne & I-5
QC JOB #: 13585217
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	188	38	4	11	3	1	2	12	2	0	0	9	4	274
1:00 AM	1	114	17	1	7	0	0	1	9	5	0	0	8	3	166
2:00 AM	3	113	18	6	11	3	0	4	6	2	0	1	12	10	189
3:00 AM	0	129	39	4	18	5	0	7	7	3	0	0	10	3	225
4:00 AM	0	274	57	6	24	4	0	6	17	4	0	0	6	13	411
5:00 AM	8	652	186	16	54	11	1	33	15	8	1	0	5	23	1013
6:00 AM	24	1418	324	17	84	53	1	41	25	**13**	1	0	5	104	2110
7:00 AM	49	1325	258	20	100	**65**	4	54	20	8	5	**2**	6	217	2133
8:00 AM	44	1241	278	29	121	49	4	**70**	28	11	5	0	8	161	2049
9:00 AM	36	1469	390	28	**146**	56	**9**	65	**36**	13	4	0	8	146	2406
10:00 AM	34	**1532**	**423**	26	132	59	7	63	35	9	**8**	0	**15**	151	**2494**
11:00 AM	**52**	1277	294	**35**	82	64	8	68	24	8	5	2	10	**230**	2159
12:00 PM	52	1354	321	24	92	59	7	50	25	11	3	**5**	9	250	2262
1:00 PM	44	1700	372	**26**	**145**	54	10	69	**34**	11	7	3	6	187	2668
2:00 PM	61	1632	326	20	111	67	10	78	24	11	6	2	**10**	260	2618
3:00 PM	51	1952	**422**	23	124	77	**15**	**86**	17	**16**	4	1	9	286	3083
4:00 PM	78	2042	408	11	111	**97**	8	74	20	13	**9**	1	5	**335**	**3212**
5:00 PM	**84**	**2070**	355	16	82	94	8	61	18	12	4	3	5	283	3095
6:00 PM	37	1789	317	5	87	38	3	43	13	8	6	2	2	124	2474
7:00 PM	26	1383	229	11	54	20	1	38	11	3	1	0	7	74	1858
8:00 PM	13	1053	206	8	41	19	2	17	3	3	0	0	7	59	1431
9:00 PM	5	719	121	8	30	5	2	10	11	8	2	0	10	20	951
10:00 PM	6	544	76	4	22	2	0	8	11	3	1	0	9	10	696
11:00 PM	1	386	59	3	10	4	0	5	2	5	1	0	6	10	492
Day Total	709	26356	5534	351	1699	908	101	953	423	190	73	22	187	2963	40469
Percent	1.8%	65.1%	13.7%	0.9%	4.2%	2.2%	0.2%	2.4%	1.0%	0.5%	0.2%	0.1%	0.5%	7.3%	
ADT 40469															
AM Peak	11:00 AM	10:00 AM	10:00 AM	11:00 AM	9:00 AM	7:00 AM	9:00 AM	8:00 AM	9:00 AM	6:00 AM	10:00 AM	7:00 AM	10:00 AM	11:00 AM	10:00 AM
Volume	52	1532	423	35	146	65	9	70	36	13	8	2	15	230	2494
PM Peak	5:00 PM	5:00 PM	3:00 PM	1:00 PM	1:00 PM	4:00 PM	3:00 PM	3:00 PM	1:00 PM	3:00 PM	4:00 PM	12:00 PM	2:00 PM	4:00 PM	4:00 PM
Volume	84	2070	422	26	145	97	15	86	34	16	9	5	10	335	3212

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB/WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	709	26356	5534	351	1699	908	101	953	423	190	73	22	187	2963	40469
Percent	1.8%	65.1%	13.7%	0.9%	4.2%	2.2%	0.2%	2.4%	1.0%	0.5%	0.2%	0.1%	0.5%	7.3%	

ADT 40469

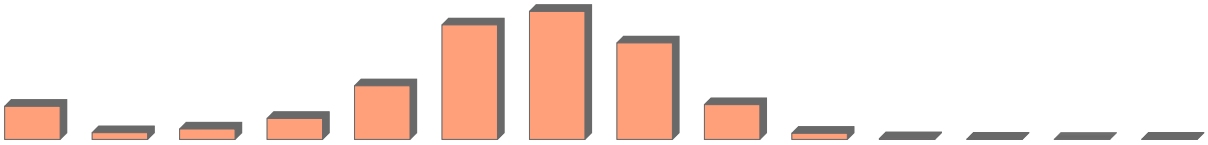
Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB/WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	0	1	15	33	76	94	45	8	1	0	0	0	274	41-50	170
1:00 AM	0	0	1	2	3	28	51	48	24	6	3	0	0	0	166	41-50	98
2:00 AM	1	0	0	2	6	18	57	65	36	3	1	0	0	0	189	41-50	122
3:00 AM	0	0	0	0	7	16	58	88	47	8	1	0	0	0	225	41-50	146
4:00 AM	7	0	0	3	12	41	94	143	85	23	2	**1**	0	0	411	41-50	237
5:00 AM	15	0	3	7	14	116	230	383	194	**45**	**6**	0	0	0	1013	41-50	613
6:00 AM	81	3	22	61	128	400	643	**526**	**204**	37	4	1	0	0	2110	41-50	1169
7:00 AM	209	48	89	120	188	438	491	344	169	34	2	1	0	0	2133	36-45	929
8:00 AM	149	38	60	97	201	425	573	376	99	25	5	1	0	0	2049	36-45	997
9:00 AM	126	29	57	110	**295**	**603**	**674**	387	107	15	2	1	0	0	2406	36-45	1277
10:00 AM	123	25	37	86	255	588	660	518	169	30	3	0	0	0	**2494**	36-45	1248
11:00 AM	**237**	**72**	**100**	**138**	269	552	460	236	83	9	2	1	0	0	2159	36-45	1012
12:00 PM	281	**85**	76	140	324	655	424	210	56	11	0	0	0	0	2262	36-45	1079
1:00 PM	162	26	59	104	285	588	**738**	521	160	22	2	**1**	0	0	2668	36-45	1325
2:00 PM	244	61	**96**	**205**	356	625	597	321	89	24	0	0	0	0	2618	36-45	1222
3:00 PM	247	30	60	158	479	884	692	397	114	20	2	0	0	0	3083	36-45	1576
4:00 PM	**295**	51	78	198	**594**	**892**	679	314	97	11	3	0	0	0	**3212**	36-45	1571
5:00 PM	250	64	78	179	387	822	699	473	123	18	2	0	0	0	3095	36-45	1521
6:00 PM	94	4	12	35	214	551	720	**605**	205	27	**6**	0	0	**1**	2474	41-50	1325
7:00 PM	63	2	3	17	113	338	505	546	**228**	**39**	4	0	0	0	1858	41-50	1051
8:00 PM	40	0	0	3	76	260	484	390	153	23	2	0	0	0	1431	41-50	874
9:00 PM	14	0	2	9	42	148	263	318	126	27	1	1	0	0	951	41-50	581
10:00 PM	6	0	0	2	15	91	217	255	98	12	0	0	0	0	696	41-50	472
11:00 PM	4	0	0	0	13	58	165	168	70	12	1	1	0	0	492	41-50	333
Day Total	2649	538	833	1677	4291	9170	10250	7726	2781	489	55	9	0	1	40469	36-45	19420
Percent	6.5%	1.3%	2.1%	4.1%	10.6%	22.7%	25.3%	19.1%	6.9%	1.2%	0.1%	0.0%	0.0%	0.0%			
ADT 40469																	
AM Peak	11:00 AM	11:00 AM	11:00 AM	11:00 AM	9:00 AM	9:00 AM	9:00 AM	6:00 AM	6:00 AM	5:00 AM	5:00 AM	4:00 AM			10:00 AM		
Volume	237	72	100	138	295	603	674	526	204	45	6	1			2494		
PM Peak	4:00 PM	12:00 PM	2:00 PM	2:00 PM	4:00 PM	4:00 PM	1:00 PM	6:00 PM	7:00 PM	7:00 PM	6:00 PM	1:00 PM		6:00 PM	4:00 PM		
Volume	295	85	96	205	594	892	738	605	228	39	6	1		1	3212		

Comments:

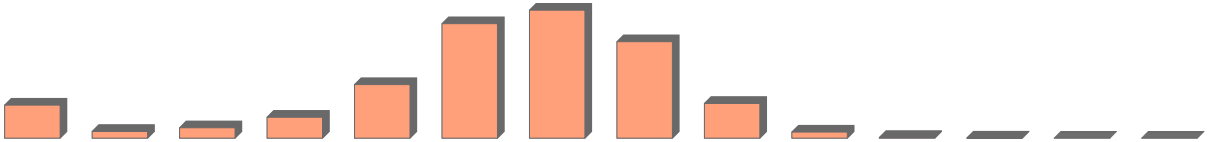
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB/WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	2649	538	833	1677	4291	9170	10250	7726	2781	489	55	9	0	1	40469	36-45	19420
Percent	6.5%	1.3%	2.1%	4.1%	10.6%	22.7%	25.3%	19.1%	6.9%	1.2%	0.1%	0.0%	0.0%	0.0%			
Cumulative Percent	6.5%	7.9%	9.9%	14.1%	24.7%	47.3%	72.7%	91.8%	98.6%	99.8%	100.0%	100.0%	100.0%	100.0%			

ADT 40469



85th Percentile 48 MPH

Mean Speed(Average) 38 MPH

Median 40 MPH
Mode: 43 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Hawthorne & I-5
QC JOB #: 13585217
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			140			140			140	
1:00 AM			92			92			92	
2:00 AM			93			93			93	
3:00 AM			102			102			102	
4:00 AM			161			161			161	
5:00 AM			418			418			418	
6:00 AM			728			728			728	
7:00 AM			1145			1145			1145	
8:00 AM			1018			1018			1018	
9:00 AM			1150			1150			1150	
10:00 AM			1247			1247			1247	
11:00 AM			**1257**			**1257**			**1257**	
12:00 PM			1379			1379			1379	
1:00 PM			1466			1466			1466	
2:00 PM			1601			1601			1601	
3:00 PM			1883			1883			1883	
4:00 PM			**1923**			**1923**			**1923**	
5:00 PM			1814			1814			1814	
6:00 PM			1327			1327			1327	
7:00 PM			1065			1065			1065	
8:00 PM			822			822			822	
9:00 PM			516			516			516	
10:00 PM			373			373			373	
11:00 PM			325			325			325	
Day Total			22045			22045			22045	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 1257			11:00 AM 1257			11:00 AM 1257	
PM Peak Volume			4:00 PM 1923			4:00 PM 1923			4:00 PM 1923	

Comments:

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	94	23	1	4	2	0	2	6	0	0	0	4	4	140
1:00 AM	1	62	10	0	5	0	0	0	3	4	0	0	4	3	92
2:00 AM	3	50	8	5	5	2	0	2	3	2	0	**1**	5	7	93
3:00 AM	0	57	19	4	7	2	0	3	2	1	0	0	4	3	102
4:00 AM	0	103	14	4	13	3	0	2	9	4	0	0	3	6	161
5:00 AM	1	259	83	11	19	3	0	15	9	6	1	0	1	10	418
6:00 AM	3	475	130	5	34	13	0	13	15	6	1	0	3	30	728
7:00 AM	18	719	158	10	60	**32**	2	32	14	5	3	1	3	88	1145
8:00 AM	19	584	150	**23**	64	26	2	42	15	**8**	3	0	**6**	76	1018
9:00 AM	22	657	197	17	73	21	3	38	19	7	0	0	1	95	1150
10:00 AM	13	748	**214**	15	**75**	27	2	40	**20**	6	**5**	0	6	76	1247
11:00 AM	**25**	**775**	172	19	45	28	**4**	**48**	15	6	2	1	5	**112**	**1257**
12:00 PM	28	871	188	**17**	53	35	2	35	**20**	7	1	**5**	5	112	1379
1:00 PM	26	937	208	10	**90**	22	8	39	17	6	**6**	3	4	90	1466
2:00 PM	26	1036	204	8	62	35	4	52	18	6	4	2	5	139	1601
3:00 PM	25	**1212**	**236**	12	61	48	**12**	**55**	6	**9**	1	0	5	201	1883
4:00 PM	**51**	1204	221	10	57	57	4	50	12	7	5	0	3	**242**	**1923**
5:00 PM	48	1173	193	11	46	**61**	7	33	10	3	4	0	3	222	1814
6:00 PM	23	935	169	2	42	24	2	23	6	5	4	1	0	91	1327
7:00 PM	15	783	124	5	30	17	1	21	7	0	1	0	4	57	1065
8:00 PM	9	590	117	4	23	15	2	12	2	2	0	0	3	43	822
9:00 PM	3	389	63	5	15	2	1	6	5	4	0	0	**7**	16	516
10:00 PM	3	287	45	3	8	1	0	5	7	2	1	0	2	9	373
11:00 PM	1	253	38	2	7	1	0	5	1	5	1	0	3	8	325
Day Total	363	14253	2984	203	898	477	56	573	241	111	43	14	89	1740	22045
Percent	1.6%	64.7%	13.5%	0.9%	4.1%	2.2%	0.3%	2.6%	1.1%	0.5%	0.2%	0.1%	0.4%	7.9%	
ADT 22045															
AM Peak	11:00 AM	11:00 AM	10:00 AM	8:00 AM	10:00 AM	7:00 AM	11:00 AM	11:00 AM	10:00 AM	8:00 AM	10:00 AM	2:00 AM	8:00 AM	11:00 AM	11:00 AM
Volume	25	775	214	23	75	32	4	48	20	8	5	1	6	112	1257
PM Peak	4:00 PM	3:00 PM	3:00 PM	12:00 PM	1:00 PM	5:00 PM	3:00 PM	3:00 PM	12:00 PM	3:00 PM	1:00 PM	12:00 PM	9:00 PM	4:00 PM	4:00 PM
Volume	51	1212	236	17	90	61	12	55	20	9	6	5	7	242	1923

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	363	14253	2984	203	898	477	56	573	241	111	43	14	89	1740	22045
Percent	1.6%	64.7%	13.5%	0.9%	4.1%	2.2%	0.3%	2.6%	1.1%	0.5%	0.2%	0.1%	0.4%	7.9%	

ADT 22045

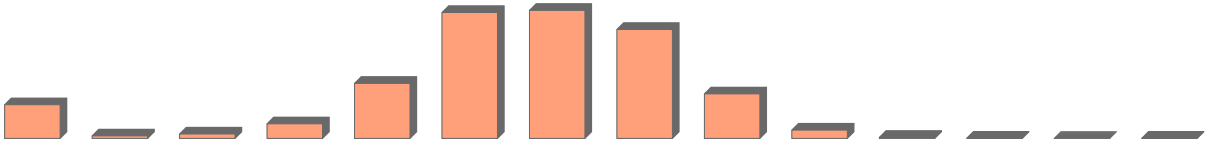
Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	0	0	11	19	23	56	27	3	0	0	0	0	140	46-55	83
1:00 AM	0	0	1	2	3	14	21	26	18	5	2	0	0	0	92	41-50	47
2:00 AM	1	0	0	1	4	11	23	28	22	3	0	0	0	0	93	46-55	50
3:00 AM	0	0	0	0	3	8	20	43	23	4	1	0	0	0	102	46-55	65
4:00 AM	3	0	0	2	7	23	32	43	37	12	1	**1**	0	0	161	46-55	80
5:00 AM	7	0	0	1	6	48	74	149	97	**31**	**5**	0	0	0	418	46-55	245
6:00 AM	23	0	0	6	20	102	172	241	130	29	4	1	0	0	728	41-50	413
7:00 AM	67	0	5	15	67	246	288	276	**147**	31	2	1	0	0	1145	41-50	564
8:00 AM	54	0	15	40	104	209	265	235	75	16	4	1	0	0	1018	41-50	500
9:00 AM	**85**	**22**	**28**	**56**	**156**	254	274	198	64	10	2	1	0	0	1150	36-45	527
10:00 AM	55	1	1	12	106	272	315	**330**	125	27	3	0	0	0	1247	41-50	645
11:00 AM	83	1	6	37	116	**378**	**345**	203	77	9	2	0	0	0	**1257**	36-45	723
12:00 PM	90	0	2	38	165	498	332	188	55	11	0	0	0	0	1379	36-45	830
1:00 PM	77	0	3	9	104	306	429	**392**	127	16	2	**1**	0	0	1466	41-50	821
2:00 PM	104	3	2	64	199	421	**448**	263	77	20	0	0	0	0	1601	36-45	868
3:00 PM	158	4	16	62	296	**574**	422	255	82	13	1	0	0	0	1883	36-45	996
4:00 PM	**221**	26	42	104	**408**	535	354	165	59	7	2	0	0	0	**1923**	31-40	943
5:00 PM	207	**44**	**51**	**122**	245	467	339	262	67	9	1	0	0	0	1814	36-45	805
6:00 PM	70	2	9	26	98	324	344	313	123	14	**3**	0	0	**1**	1327	36-45	667
7:00 PM	52	0	1	7	82	226	236	283	**150**	**25**	3	0	0	0	1065	41-50	519
8:00 PM	30	0	0	3	55	160	259	199	99	15	2	0	0	0	822	41-50	457
9:00 PM	12	0	2	3	30	87	121	161	79	20	0	1	0	0	516	41-50	282
10:00 PM	5	0	0	0	11	49	108	131	59	10	0	0	0	0	373	41-50	238
11:00 PM	3	0	0	0	5	36	111	117	43	8	1	1	0	0	325	41-50	227
Day Total	1408	103	184	610	2301	5267	5355	4557	1862	348	41	8	0	1	22045	36-45	10622
Percent	6.4%	0.5%	0.8%	2.8%	10.4%	23.9%	24.3%	20.7%	8.4%	1.6%	0.2%	0.0%	0.0%	0.0%			
ADT 22045																	
AM Peak	9:00 AM	9:00 AM	9:00 AM	9:00 AM	9:00 AM	11:00 AM	11:00 AM	10:00 AM	7:00 AM	5:00 AM	5:00 AM	4:00 AM			11:00 AM		
Volume	85	22	28	56	156	378	345	330	147	31	5	1			1257		
PM Peak	4:00 PM	5:00 PM	5:00 PM	5:00 PM	4:00 PM	3:00 PM	2:00 PM	1:00 PM	7:00 PM	7:00 PM	6:00 PM	1:00 PM		6:00 PM	4:00 PM		
Volume	221	44	51	122	408	574	448	392	150	25	3	1		1	1923		

Comments:

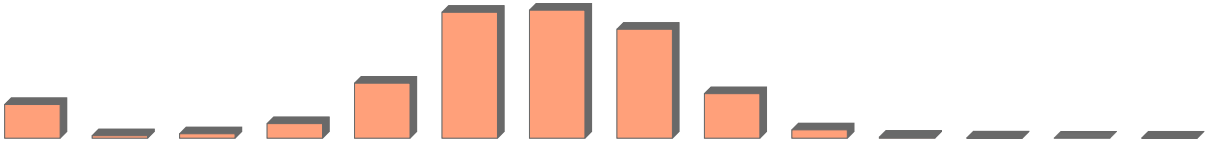
SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn Hawthorne & I-5
SPECIFIC LOCATION: OR-22 Tube btwn Hawthorne & I-5
CITY/STATE: Salem, OR

QC JOB #: 13585217
DIRECTION: EB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1408	103	184	610	2301	5267	5355	4557	1862	348	41	8	0	1	22045	36-45	10622
Percent	6.4%	0.5%	0.8%	2.8%	10.4%	23.9%	24.3%	20.7%	8.4%	1.6%	0.2%	0.0%	0.0%	0.0%			
Cumulative Percent	6.4%	6.9%	7.7%	10.5%	20.9%	44.8%	69.1%	89.7%	98.2%	99.8%	100.0%	100.0%	100.0%	100.0%			

ADT 22045



85th Percentile 48 MPH

Mean Speed(Average) 39 MPH

Median 41 MPH
Mode: 43 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			94			94			94	
1:00 AM			87			87			87	
2:00 AM			75			75			75	
3:00 AM			144			144			144	
4:00 AM			326			326			326	
5:00 AM			850			850			850	
6:00 AM			1477			1477			1477	
7:00 AM			**1904**			**1904**			**1904**	
8:00 AM			1438			1438			1438	
9:00 AM			1267			1267			1267	
10:00 AM			1247			1247			1247	
11:00 AM			1347			1347			1347	
12:00 PM			1421			1421			1421	
1:00 PM			1450			1450			1450	
2:00 PM			1535			1535			1535	
3:00 PM			1554			1554			1554	
4:00 PM			**1572**			**1572**			**1572**	
5:00 PM			1516			1516			1516	
6:00 PM			1172			1172			1172	
7:00 PM			844			844			844	
8:00 PM			655			655			655	
9:00 PM			548			548			548	
10:00 PM			318			318			318	
11:00 PM			183			183			183	
Day Total			23024			23024			23024	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak			7:00 AM			7:00 AM			7:00 AM	
Volume			1904			1904			1904	
PM Peak			4:00 PM			4:00 PM			4:00 PM	
Volume			1572			1572			1572	

Comments:

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	67	11	2	2	0	0	7	0	0	1	0	0	4	94
1:00 AM	0	58	12	1	7	0	0	4	0	1	0	0	0	4	87
2:00 AM	0	46	17	2	3	0	0	4	0	0	2	0	0	1	75
3:00 AM	1	74	25	1	14	1	0	9	0	0	8	1	1	9	144
4:00 AM	0	204	62	6	24	1	0	7	0	0	7	0	0	15	326
5:00 AM	0	516	185	6	69	1	1	32	0	1	8	1	0	30	850
6:00 AM	**4**	962	261	**22**	97	8	1	37	0	**3**	7	**2**	0	73	1477
7:00 AM	4	**1250**	278	16	**123**	**17**	**2**	54	**2**	1	6	0	**2**	**149**	**1904**
8:00 AM	0	901	267	10	115	7	0	57	0	2	4	0	2	73	1438
9:00 AM	2	739	**290**	12	115	2	0	41	1	2	4	0	1	58	1267
10:00 AM	2	756	262	12	93	8	0	**59**	0	1	**9**	0	2	43	1247
11:00 AM	1	829	275	16	99	6	0	55	1	1	7	1	0	56	1347
12:00 PM	0	862	307	17	107	**7**	**2**	**52**	0	3	7	**1**	1	55	1421
1:00 PM	0	887	296	**30**	102	3	0	51	0	**6**	8	0	1	66	1450
2:00 PM	0	990	305	21	**108**	5	1	39	**2**	3	5	0	2	54	1535
3:00 PM	**1**	1006	**315**	18	84	3	0	52	1	1	7	1	0	65	1554
4:00 PM	0	1032	307	11	98	7	1	43	0	4	**9**	1	**3**	56	**1572**
5:00 PM	1	**1037**	254	5	95	5	1	43	0	3	3	0	1	**68**	1516
6:00 PM	0	792	233	3	72	3	0	21	1	0	8	0	1	38	1172
7:00 PM	0	582	143	16	58	1	1	12	0	0	4	0	0	27	844
8:00 PM	0	464	118	10	26	0	0	16	0	0	1	0	0	20	655
9:00 PM	0	393	103	7	25	0	0	7	0	0	0	0	0	13	548
10:00 PM	0	244	43	5	9	1	0	6	0	0	0	0	0	10	318
11:00 PM	0	126	40	0	6	1	0	3	0	0	0	0	1	6	183
Day Total	16	14817	4409	249	1551	87	10	711	8	32	115	8	18	993	23024
Percent	0.1%	64.4%	19.1%	1.1%	6.7%	0.4%	0.0%	3.1%	0.0%	0.1%	0.5%	0.0%	0.1%	4.3%	
ADT 23024															
AM Peak	6:00 AM	7:00 AM	9:00 AM	6:00 AM	7:00 AM	7:00 AM	7:00 AM	10:00 AM	7:00 AM	6:00 AM	10:00 AM	6:00 AM	7:00 AM	7:00 AM	7:00 AM
Volume	4	1250	290	22	123	17	2	59	2	3	9	2	2	149	1904
PM Peak	3:00 PM	5:00 PM	3:00 PM	1:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	2:00 PM	1:00 PM	4:00 PM	12:00 PM	4:00 PM	5:00 PM	4:00 PM
Volume	1	1037	315	30	108	7	2	52	2	6	9	1	3	68	1572

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

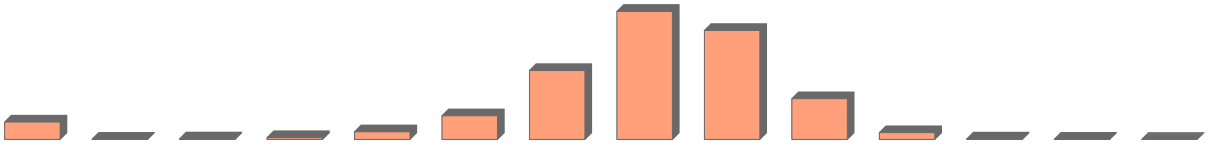
Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	16	14817	4409	249	1551	87	10	711	8	32	115	8	18	993	23024
Percent	0.1%	64.4%	19.1%	1.1%	6.7%	0.4%	0.0%	3.1%	0.0%	0.1%	0.5%	0.0%	0.1%	4.3%	
ADT 23024															

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	4	0	0	0	0	5	10	30	38	7	0	0	0	0	94	46-55	67
1:00 AM	4	0	0	0	2	7	17	31	18	7	1	0	0	0	87	46-55	48
2:00 AM	1	0	0	0	2	2	13	31	18	5	2	1	0	0	75	46-55	48
3:00 AM	9	0	0	4	0	4	22	41	51	9	3	1	0	0	144	46-55	91
4:00 AM	15	0	0	0	0	5	33	79	108	63	22	1	0	0	326	46-55	187
5:00 AM	30	0	0	0	8	20	111	235	280	143	20	**2**	**1**	0	850	46-55	515
6:00 AM	70	0	3	12	46	94	265	441	**392**	136	17	1	0	0	1477	46-55	833
7:00 AM	**154**	**10**	**15**	**46**	**125**	**223**	**365**	463	350	129	23	1	0	0	**1904**	41-50	827
8:00 AM	73	0	0	5	31	80	251	428	339	**201**	28	2	0	0	1438	46-55	766
9:00 AM	58	0	0	4	12	96	208	369	352	135	**31**	2	0	0	1267	46-55	721
10:00 AM	42	0	2	2	18	61	224	417	330	129	20	2	0	0	1247	46-55	747
11:00 AM	55	0	2	3	19	65	245	**470**	358	121	9	0	0	0	1347	46-55	827
12:00 PM	54	0	2	5	28	84	249	448	400	126	24	1	0	0	1421	46-55	848
1:00 PM	65	0	2	4	28	88	265	501	356	123	18	0	0	0	1450	46-55	857
2:00 PM	53	0	0	3	20	**112**	**307**	512	386	129	13	0	0	0	1535	46-55	898
3:00 PM	64	0	**3**	**9**	18	91	258	489	443	152	27	0	0	0	1554	46-55	931
4:00 PM	56	0	0	0	**31**	102	279	**522**	408	146	27	1	0	0	**1572**	46-55	929
5:00 PM	**68**	0	0	1	19	74	214	440	**487**	**182**	**31**	0	0	0	1516	46-55	927
6:00 PM	38	0	1	3	16	60	192	430	305	99	25	3	0	0	1172	46-55	735
7:00 PM	27	0	0	0	2	21	107	294	268	101	22	1	**1**	0	844	46-55	562
8:00 PM	20	0	0	0	4	20	100	248	199	58	4	1	1	0	655	46-55	446
9:00 PM	13	0	0	0	2	16	102	189	166	50	10	0	0	0	548	46-55	355
10:00 PM	10	0	0	0	1	11	61	117	78	37	3	0	0	0	318	46-55	195
11:00 PM	6	0	0	0	0	3	18	56	64	28	3	**5**	0	0	183	46-55	120
Day Total	989	10	30	101	432	1344	3916	7281	6194	2316	383	25	3	0	23024	46-55	13474
Percent	4.3%	0.0%	0.1%	0.4%	1.9%	5.8%	17.0%	31.6%	26.9%	10.1%	1.7%	0.1%	0.0%	0.0%			
ADT 23024																	
AM Peak	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	6:00 AM	8:00 AM	9:00 AM	5:00 AM	5:00 AM		7:00 AM		
Volume	154	10	15	46	125	223	365	470	392	201	31	2	1		1904		
PM Peak	5:00 PM		3:00 PM	3:00 PM	4:00 PM	2:00 PM	2:00 PM	4:00 PM	5:00 PM	5:00 PM	5:00 PM	11:00 PM	7:00 PM		4:00 PM		
Volume	68		3	9	31	112	307	522	487	182	31	5	1		1572		

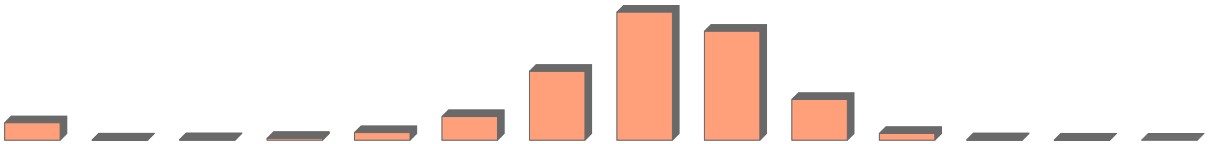
Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	989	10	30	101	432	1344	3916	7281	6194	2316	383	25	3	0	23024	46-55	13474
Percent	4.3%	0.0%	0.1%	0.4%	1.9%	5.8%	17.0%	31.6%	26.9%	10.1%	1.7%	0.1%	0.0%	0.0%			
Cumulative Percent	4.3%	4.3%	4.5%	4.9%	6.8%	12.6%	29.6%	61.3%	88.2%	98.2%	99.9%	100.0%	100.0%	100.0%			

ADT 23024



85th Percentile 54 MPH

Mean Speed(Average) 46 MPH

Median 48 MPH
Mode: 48 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges

QC JOB #: 13585218

SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges

DIRECTION: EB/WB

CITY/STATE: Salem, OR

DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			247			247			247	
1:00 AM			175			175			175	
2:00 AM			143			143			143	
3:00 AM			228			228			228	
4:00 AM			454			454			454	
5:00 AM			1241			1241			1241	
6:00 AM			2140			2140			2140	
7:00 AM			**2893**			**2893**			**2893**	
8:00 AM			2389			2389			2389	
9:00 AM			2356			2356			2356	
10:00 AM			2352			2352			2352	
11:00 AM			2548			2548			2548	
12:00 PM			2726			2726			2726	
1:00 PM			2817			2817			2817	
2:00 PM			3034			3034			3034	
3:00 PM			3315			3315			3315	
4:00 PM			**3641**			**3641**			**3641**	
5:00 PM			3602			3602			3602	
6:00 PM			2538			2538			2538	
7:00 PM			1801			1801			1801	
8:00 PM			1476			1476			1476	
9:00 PM			1085			1085			1085	
10:00 PM			693			693			693	
11:00 PM			427			427			427	
Day Total			44321			44321			44321	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak			7:00 AM			7:00 AM			7:00 AM	
Volume			2893			2893			2893	
PM Peak			4:00 PM			4:00 PM			4:00 PM	
Volume			3641			3641			3641	

Comments:

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	181	38	2	6	2	0	8	0	0	1	0	1	7	247
1:00 AM	0	107	28	2	19	0	0	5	5	2	0	1	2	4	175
2:00 AM	0	82	27	7	7	2	0	5	3	0	2	1	3	4	143
3:00 AM	1	125	38	3	20	2	0	12	2	3	8	1	2	11	228
4:00 AM	0	265	83	10	37	3	0	10	13	0	8	1	3	21	454
5:00 AM	2	752	258	12	89	3	1	47	10	5	8	**2**	5	47	1241
6:00 AM	7	1385	370	30	151	17	1	53	7	**12**	8	2	2	95	2140
7:00 AM	11	**1880**	459	23	182	**25**	**6**	79	14	8	**10**	0	4	**192**	**2893**
8:00 AM	3	1429	463	29	197	19	1	88	**22**	9	4	0	6	119	2389
9:00 AM	**19**	1366	495	**32**	**207**	19	2	71	22	7	9	0	7	100	2356
10:00 AM	9	1408	484	23	185	22	1	**97**	11	11	9	0	**9**	83	2352
11:00 AM	11	1555	**498**	28	202	20	4	76	16	10	8	2	6	112	2548
12:00 PM	6	1630	568	32	215	26	3	88	13	8	9	1	9	118	2726
1:00 PM	13	1751	526	**38**	196	30	**4**	81	10	10	9	0	5	144	2817
2:00 PM	14	1909	570	37	210	24	1	90	**15**	**13**	8	0	**10**	133	3034
3:00 PM	17	2078	646	27	201	32	4	100	12	9	**11**	3	6	169	3315
4:00 PM	**23**	2357	**668**	24	**229**	**33**	1	99	7	8	11	**4**	7	**170**	**3641**
5:00 PM	19	**2478**	559	7	211	29	2	**111**	4	7	5	0	1	169	3602
6:00 PM	10	1731	460	7	148	13	1	53	9	2	9	0	1	94	2538
7:00 PM	5	1232	325	19	123	9	2	27	1	2	4	0	2	50	1801
8:00 PM	3	1030	258	13	72	7	0	32	5	3	1	0	2	50	1476
9:00 PM	4	764	205	8	57	0	0	16	0	3	0	0	4	24	1085
10:00 PM	2	511	107	5	30	5	0	9	3	0	0	0	3	18	693
11:00 PM	0	315	75	0	18	1	0	3	0	3	0	0	3	9	427
Day Total	180	28321	8208	418	3012	343	34	1260	204	135	142	18	103	1943	44321
Percent	0.4%	63.9%	18.5%	0.9%	6.8%	0.8%	0.1%	2.8%	0.5%	0.3%	0.3%	0.0%	0.2%	4.4%	
ADT 44321															
AM Peak	9:00 AM	7:00 AM	11:00 AM	9:00 AM	9:00 AM	7:00 AM	7:00 AM	10:00 AM	8:00 AM	6:00 AM	7:00 AM	5:00 AM	10:00 AM	7:00 AM	7:00 AM
Volume	19	1880	498	32	207	25	6	97	22	12	10	2	9	192	2893
PM Peak	4:00 PM	5:00 PM	4:00 PM	1:00 PM	4:00 PM	4:00 PM	1:00 PM	5:00 PM	2:00 PM	2:00 PM	3:00 PM	4:00 PM	2:00 PM	4:00 PM	4:00 PM
Volume	23	2478	668	38	229	33	4	111	15	13	11	4	10	170	3641

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	180	28321	8208	418	3012	343	34	1260	204	135	142	18	103	1943	44321
Percent	0.4%	63.9%	18.5%	0.9%	6.8%	0.8%	0.1%	2.8%	0.5%	0.3%	0.3%	0.0%	0.2%	4.4%	

ADT 44321

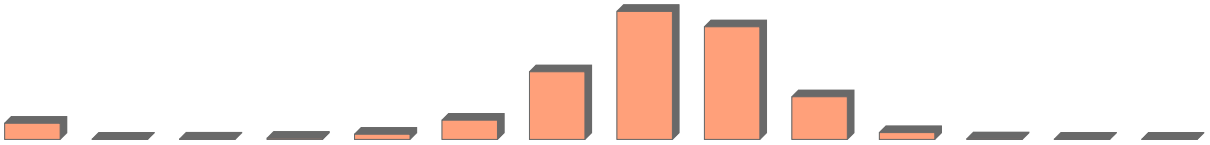
Comments:

Report generated on 9/28/2015 2:45 PM

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	6	0	0	0	1	17	31	78	83	28	2	0	**1**	0	247	46-55	161
1:00 AM	4	0	0	0	4	17	34	52	38	25	1	0	0	0	175	46-55	89
2:00 AM	3	0	0	0	2	2	20	54	42	14	5	1	0	0	143	46-55	96
3:00 AM	10	0	0	4	4	9	38	66	73	19	4	1	0	0	228	46-55	139
4:00 AM	17	0	0	0	5	11	45	114	143	90	28	1	0	0	454	46-55	257
5:00 AM	42	0	0	0	15	31	162	355	386	210	36	3	1	0	1241	46-55	741
6:00 AM	89	0	3	12	49	116	388	650	580	227	21	**5**	0	0	2140	46-55	1230
7:00 AM	**189**	**10**	**15**	**46**	**134**	**266**	**633**	807	546	212	34	1	0	0	**2893**	41-50	1440
8:00 AM	109	0	0	6	41	133	439	747	604	**264**	**42**	4	0	0	2389	46-55	1351
9:00 AM	92	0	0	5	17	145	438	778	626	211	40	4	0	0	2356	46-55	1403
10:00 AM	75	0	3	8	30	87	412	782	**692**	221	38	3	1	0	2352	46-55	1474
11:00 AM	102	0	2	4	29	133	489	**839**	683	235	31	1	0	0	2548	46-55	1521
12:00 PM	110	**4**	**4**	5	36	140	513	889	728	248	47	2	0	0	2726	46-55	1616
1:00 PM	129	1	2	5	38	178	505	962	696	249	50	0	**2**	0	2817	46-55	1657
2:00 PM	121	0	0	6	22	151	564	1001	822	309	37	1	0	0	3034	46-55	1823
3:00 PM	151	2	4	**10**	22	148	530	1049	972	366	58	2	1	0	3315	46-55	2021
4:00 PM	**159**	0	1	6	**50**	**232**	**676**	**1130**	1000	332	50	4	1	0	**3641**	46-55	2130
5:00 PM	156	0	0	1	27	114	543	1121	**1162**	**415**	59	3	1	0	3602	46-55	2283
6:00 PM	86	0	1	7	26	88	359	844	736	313	**71**	**7**	0	0	2538	46-55	1579
7:00 PM	46	0	1	2	9	31	184	607	621	253	42	4	1	0	1801	46-55	1228
8:00 PM	44	0	0	0	5	35	201	511	486	176	16	1	1	0	1476	46-55	997
9:00 PM	21	0	0	0	3	21	142	365	368	139	23	3	0	0	1085	46-55	732
10:00 PM	17	0	0	0	2	14	92	225	226	102	13	2	0	0	693	46-55	451
11:00 PM	9	0	0	0	0	8	46	140	150	61	5	7	0	**1**	427	46-55	290
Day Total	1787	17	36	127	571	2127	7484	14166	12463	4719	753	60	10	1	44321	46-55	26628
Percent	4.0%	0.0%	0.1%	0.3%	1.3%	4.8%	16.9%	32.0%	28.1%	10.6%	1.7%	0.1%	0.0%	0.0%			

ADT 44321



AM Peak	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	10:00 AM	8:00 AM	8:00 AM	6:00 AM	12:00 AM		7:00 AM		
Volume	189	10	15	46	134	266	633	839	692	264	42	5	1		2893		
PM Peak	4:00 PM	12:00 PM	12:00 PM	3:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	5:00 PM	5:00 PM	6:00 PM	6:00 PM	1:00 PM	11:00 PM	4:00 PM		
Volume	159	4	4	10	50	232	676	1130	1162	415	71	7	2	1	3641		

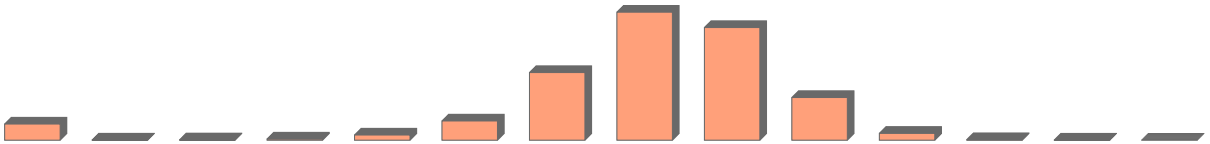
Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1787	17	36	127	571	2127	7484	14166	12463	4719	753	60	10	1	44321	46-55	26628
Percent	4.0%	0.0%	0.1%	0.3%	1.3%	4.8%	16.9%	32.0%	28.1%	10.6%	1.7%	0.1%	0.0%	0.0%			
Cumulative Percent	4.0%	4.1%	4.2%	4.4%	5.7%	10.5%	27.4%	59.4%	87.5%	98.1%	99.8%	100.0%	100.0%	100.0%			

ADT 44321



85th Percentile 54 MPH

Mean Speed(Average) 47 MPH

Median 48 MPH
Mode: 48 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges

QC JOB #: 13585218

SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges

DIRECTION: EB

CITY/STATE: Salem, OR

DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			153			153			153	
1:00 AM			88			88			88	
2:00 AM			68			68			68	
3:00 AM			84			84			84	
4:00 AM			128			128			128	
5:00 AM			391			391			391	
6:00 AM			663			663			663	
7:00 AM			989			989			989	
8:00 AM			951			951			951	
9:00 AM			1089			1089			1089	
10:00 AM			1105			1105			1105	
11:00 AM			**1201**			**1201**			**1201**	
12:00 PM			1305			1305			1305	
1:00 PM			1367			1367			1367	
2:00 PM			1499			1499			1499	
3:00 PM			1761			1761			1761	
4:00 PM			2069			2069			2069	
5:00 PM			**2086**			**2086**			**2086**	
6:00 PM			1366			1366			1366	
7:00 PM			957			957			957	
8:00 PM			821			821			821	
9:00 PM			537			537			537	
10:00 PM			375			375			375	
11:00 PM			244			244			244	
Day Total			21297			21297			21297	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 1201			11:00 AM 1201			11:00 AM 1201	
PM Peak Volume			5:00 PM 2086			5:00 PM 2086			5:00 PM 2086	

Comments:

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	1	114	27	0	4	2	0	1	0	0	0	0	1	3	153
1:00 AM	0	49	16	1	12	0	0	1	5	1	0	**1**	2	0	88
2:00 AM	0	36	10	5	4	2	0	1	3	0	0	1	3	3	68
3:00 AM	0	51	13	2	6	1	0	3	2	3	0	0	1	2	84
4:00 AM	0	61	21	4	13	2	0	3	13	0	1	1	3	6	128
5:00 AM	2	236	73	6	20	2	0	15	10	4	0	1	5	17	391
6:00 AM	3	423	109	8	54	9	0	16	7	9	1	0	2	22	663
7:00 AM	7	630	181	7	59	8	**4**	25	12	7	4	0	2	43	989
8:00 AM	3	528	196	19	82	12	1	31	**22**	7	0	0	4	46	951
9:00 AM	**17**	627	205	**20**	92	**17**	2	30	21	5	**5**	0	6	42	1089
10:00 AM	7	652	222	11	92	14	1	**38**	11	**10**	0	0	**7**	40	1105
11:00 AM	10	**726**	**223**	12	**103**	14	4	21	15	9	1	1	6	**56**	**1201**
12:00 PM	6	768	261	15	108	19	1	36	**13**	5	2	0	**8**	63	1305
1:00 PM	13	864	230	8	94	27	**4**	30	10	4	1	0	4	78	1367
2:00 PM	14	919	265	**16**	102	19	0	51	13	**10**	3	0	8	79	1499
3:00 PM	16	1072	331	9	117	**29**	4	48	11	8	**4**	2	6	104	1761
4:00 PM	**23**	1325	**361**	13	**131**	26	0	56	7	4	2	**3**	4	**114**	2069
5:00 PM	18	**1441**	305	2	116	24	1	**68**	4	4	2	0	0	101	**2086**
6:00 PM	10	939	227	4	76	10	1	32	8	2	1	0	0	56	1366
7:00 PM	5	650	182	3	65	8	1	15	1	2	0	0	2	23	957
8:00 PM	3	566	140	3	46	7	0	16	5	3	0	0	2	30	821
9:00 PM	4	371	102	1	32	0	0	9	0	3	0	0	4	11	537
10:00 PM	2	267	64	0	21	4	0	3	3	0	0	0	3	8	375
11:00 PM	0	189	35	0	12	0	0	0	0	3	0	0	2	3	244
Day Total	164	13504	3799	169	1461	256	24	549	196	103	27	10	85	950	21297
Percent	0.8%	63.4%	17.8%	0.8%	6.9%	1.2%	0.1%	2.6%	0.9%	0.5%	0.1%	0.0%	0.4%	4.5%	
ADT 21297															
AM Peak	9:00 AM	11:00 AM	11:00 AM	9:00 AM	11:00 AM	9:00 AM	7:00 AM	10:00 AM	8:00 AM	10:00 AM	9:00 AM	1:00 AM	10:00 AM	11:00 AM	11:00 AM
Volume	17	726	223	20	103	17	4	38	22	10	5	1	7	56	1201
PM Peak	4:00 PM	5:00 PM	4:00 PM	2:00 PM	4:00 PM	3:00 PM	1:00 PM	5:00 PM	12:00 PM	2:00 PM	3:00 PM	4:00 PM	12:00 PM	4:00 PM	5:00 PM
Volume	23	1441	361	16	131	29	4	68	13	10	4	3	8	114	2086

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	164	13504	3799	169	1461	256	24	549	196	103	27	10	85	950	21297
Percent	0.8%	63.4%	17.8%	0.8%	6.9%	1.2%	0.1%	2.6%	0.9%	0.5%	0.1%	0.0%	0.4%	4.5%	
ADT 21297															

Comments:

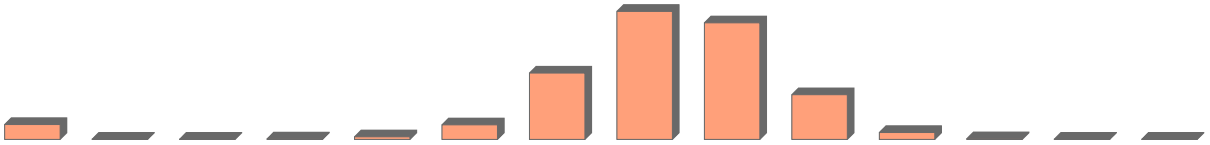
Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	2	0	0	0	1	12	21	48	45	21	2	0	**1**	0	153	46-55	93
1:00 AM	0	0	0	0	2	10	17	21	20	18	0	0	0	0	88	46-55	41
2:00 AM	2	0	0	0	0	0	7	23	24	9	3	0	0	0	68	46-55	46
3:00 AM	1	0	0	0	4	5	16	25	22	10	1	0	0	0	84	46-55	47
4:00 AM	2	0	0	0	5	6	12	35	35	27	6	0	0	0	128	46-55	70
5:00 AM	12	0	0	0	7	11	51	120	106	67	16	1	0	0	391	46-55	225
6:00 AM	19	0	0	0	3	22	123	209	188	91	4	**4**	0	0	663	46-55	397
7:00 AM	35	0	0	0	9	43	**268**	344	196	83	11	0	0	0	989	41-50	611
8:00 AM	36	0	0	1	10	53	188	319	265	63	14	2	0	0	951	46-55	584
9:00 AM	34	0	0	1	5	49	230	**409**	274	76	9	2	0	0	1089	46-55	682
10:00 AM	33	0	**1**	**6**	**12**	26	188	365	**362**	92	18	1	1	0	1105	46-55	727
11:00 AM	**47**	0	0	1	10	**68**	244	369	325	**114**	**22**	1	0	0	**1201**	46-55	694
12:00 PM	56	**4**	**2**	0	8	56	264	441	328	122	23	1	0	0	1305	46-55	768
1:00 PM	64	1	0	1	10	90	240	461	340	126	32	0	**2**	0	1367	46-55	801
2:00 PM	68	0	0	3	2	39	257	489	436	180	24	1	0	0	1499	46-55	925
3:00 PM	87	2	1	1	4	57	272	560	529	214	31	2	1	0	1761	46-55	1089
4:00 PM	**103**	0	1	**6**	**19**	**130**	**397**	608	592	186	23	3	1	0	2069	46-55	1200
5:00 PM	88	0	0	0	8	40	329	**681**	**675**	**233**	28	3	1	0	**2086**	46-55	1356
6:00 PM	48	0	0	4	10	28	167	414	431	214	**46**	**4**	0	0	1366	46-55	845
7:00 PM	19	0	1	2	7	10	77	313	353	152	20	3	0	0	957	46-55	665
8:00 PM	24	0	0	0	1	15	101	263	287	118	12	0	0	0	821	46-55	550
9:00 PM	8	0	0	0	1	5	40	176	202	89	13	3	0	0	537	46-55	377
10:00 PM	7	0	0	0	1	3	31	108	148	65	10	2	0	0	375	46-55	256
11:00 PM	3	0	0	0	0	5	28	84	86	33	2	2	0	**1**	244	46-55	169
Day Total	798	7	6	26	139	783	3568	6885	6269	2403	370	35	7	1	21297	46-55	13153
Percent	3.7%	0.0%	0.0%	0.1%	0.7%	3.7%	16.8%	32.3%	29.4%	11.3%	1.7%	0.2%	0.0%	0.0%			

ADT 21297



AM Peak	11:00 AM		10:00 AM	10:00 AM	10:00 AM	11:00 AM	7:00 AM	9:00 AM	10:00 AM	11:00 AM	11:00 AM	6:00 AM	12:00 AM		11:00 AM	
Volume	47		1	6	12	68	268	409	362	114	22	4	1		1201	
PM Peak	4:00 PM	12:00 PM	12:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	5:00 PM	5:00 PM	5:00 PM	6:00 PM	6:00 PM	1:00 PM	11:00 PM	5:00 PM	
Volume	103	4	2	6	19	130	397	681	675	233	46	4	2	1	2086	

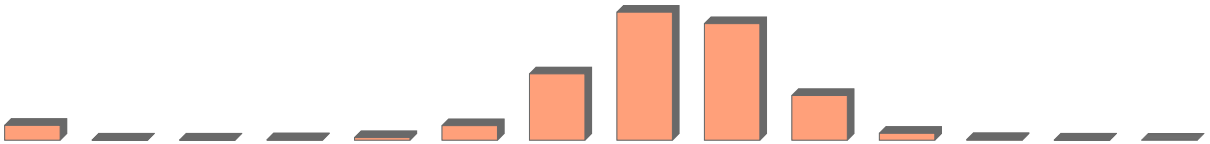
Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
QC JOB #: 13585218
SPECIFIC LOCATION: OR-22 Tube btwn I-5 & Lancaster interchanges
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	798	7	6	26	139	783	3568	6885	6269	2403	370	35	7	1	21297	46-55	13153
Percent	3.7%	0.0%	0.0%	0.1%	0.7%	3.7%	16.8%	32.3%	29.4%	11.3%	1.7%	0.2%	0.0%	0.0%			
Cumulative Percent	3.7%	3.8%	3.8%	3.9%	4.6%	8.3%	25.0%	57.3%	86.8%	98.1%	99.8%	100.0%	100.0%	100.0%			

ADT 21297



85th Percentile 54 MPH

Mean Speed(Average) 47 MPH

Median 48 MPH

Mode: 48 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			46			46			46	
1:00 AM			32			32			32	
2:00 AM			40			40			40	
3:00 AM			74			74			74	
4:00 AM			211			211			211	
5:00 AM			533			533			533	
6:00 AM			1062			1062			1062	
7:00 AM			**1429**			**1429**			**1429**	
8:00 AM			1021			1021			1021	
9:00 AM			767			767			767	
10:00 AM			746			746			746	
11:00 AM			785			785			785	
12:00 PM			743			743			743	
1:00 PM			814			814			814	
2:00 PM			819			819			819	
3:00 PM			879			879			879	
4:00 PM			**911**			**911**			**911**	
5:00 PM			814			814			814	
6:00 PM			549			549			549	
7:00 PM			416			416			416	
8:00 PM			280			280			280	
9:00 PM			217			217			217	
10:00 PM			121			121			121	
11:00 PM			81			81			81	
Day Total			13390			13390			13390	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak			7:00 AM			7:00 AM			7:00 AM	
Volume			1429			1429			1429	
PM Peak			4:00 PM			4:00 PM			4:00 PM	
Volume			911			911			911	

Comments:

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: WB
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	31	6	1	1	0	0	0	2	2	0	0	3	0	46
1:00 AM	0	24	4	0	3	0	0	0	0	0	0	0	0	1	32
2:00 AM	0	24	6	1	2	1	0	0	2	0	0	1	3	0	40
3:00 AM	0	33	16	1	7	2	0	1	2	1	0	0	**9**	2	74
4:00 AM	1	135	37	3	17	0	0	2	3	1	0	0	6	6	211
5:00 AM	3	317	110	4	62	1	1	13	4	4	0	0	3	11	533
6:00 AM	2	728	179	**14**	74	6	**3**	20	6	3	0	**2**	3	22	1062
7:00 AM	**14**	**1003**	**203**	9	**99**	**12**	0	23	9	5	**2**	1	6	**43**	**1429**
8:00 AM	8	645	199	7	85	9	0	**31**	8	1	2	0	4	22	1021
9:00 AM	3	438	183	7	74	8	1	13	14	**6**	1	1	3	15	767
10:00 AM	6	455	140	7	64	6	1	24	**16**	4	0	2	5	16	746
11:00 AM	6	469	168	13	65	9	1	22	10	5	0	1	6	10	785
12:00 PM	4	435	153	11	**73**	5	**2**	23	10	2	1	1	**8**	15	743
1:00 PM	**7**	456	170	**25**	71	10	1	**27**	**11**	4	1	1	2	**28**	814
2:00 PM	2	505	182	20	57	5	1	19	8	0	0	1	2	17	819
3:00 PM	6	539	**195**	13	63	2	1	21	10	1	**2**	0	6	20	879
4:00 PM	0	**571**	187	10	73	**12**	0	22	6	4	0	1	6	19	**911**
5:00 PM	4	554	149	5	61	4	0	17	4	**5**	1	0	1	9	814
6:00 PM	3	358	108	1	53	3	0	6	3	2	0	**2**	0	10	549
7:00 PM	1	262	74	12	48	2	0	7	0	1	1	1	3	4	416
8:00 PM	1	183	62	3	14	1	0	4	2	3	1	0	2	4	280
9:00 PM	1	148	45	2	12	0	0	4	1	1	0	0	2	1	217
10:00 PM	0	92	18	2	6	0	0	2	1	0	0	0	0	0	121
11:00 PM	1	63	12	0	2	1	0	0	0	1	0	0	1	0	81
Day Total	73	8468	2606	171	1086	99	12	301	132	56	12	15	84	275	13390
Percent	0.5%	63.2%	19.5%	1.3%	8.1%	0.7%	0.1%	2.2%	1.0%	0.4%	0.1%	0.1%	0.6%	2.1%	
ADT 13390															
AM Peak	7:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM	7:00 AM	6:00 AM	8:00 AM	10:00 AM	9:00 AM	7:00 AM	6:00 AM	3:00 AM	7:00 AM	7:00 AM
Volume	14	1003	203	14	99	12	3	31	16	6	2	2	9	43	1429
PM Peak	1:00 PM	4:00 PM	3:00 PM	1:00 PM	12:00 PM	4:00 PM	12:00 PM	1:00 PM	1:00 PM	5:00 PM	3:00 PM	6:00 PM	12:00 PM	1:00 PM	4:00 PM
Volume	7	571	195	25	73	12	2	27	11	5	2	2	8	28	911

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	73	8468	2606	171	1086	99	12	301	132	56	12	15	84	275	13390
Percent	0.5%	63.2%	19.5%	1.3%	8.1%	0.7%	0.1%	2.2%	1.0%	0.4%	0.1%	0.1%	0.6%	2.1%	

ADT 13390

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	**1**	6	11	15	10	1	2	0	46	51-60	26
1:00 AM	0	0	0	0	0	**1**	0	4	4	9	11	3	0	0	32	56-65	20
2:00 AM	0	0	0	0	0	0	0	3	9	14	11	1	1	1	40	56-65	25
3:00 AM	1	0	0	0	0	0	0	1	10	33	23	5	0	1	74	56-65	55
4:00 AM	2	0	0	0	0	0	0	3	21	71	92	20	2	0	211	56-65	163
5:00 AM	4	0	0	0	0	0	0	8	41	219	184	60	14	3	533	56-65	402
6:00 AM	18	0	0	0	0	0	0	10	156	414	367	92	5	0	1062	56-65	781
7:00 AM	**34**	0	0	0	0	0	0	2	108	**501**	**561**	**191**	25	**7**	**1429**	56-65	1062
8:00 AM	20	0	0	0	0	0	0	6	92	395	345	127	**29**	7	1021	56-65	740
9:00 AM	10	0	0	0	0	0	0	9	103	310	257	58	17	3	767	56-65	567
10:00 AM	12	0	0	0	0	0	0	13	108	355	210	41	6	1	746	56-65	565
11:00 AM	6	0	**1**	**1**	0	0	0	**40**	**209**	341	150	35	2	0	785	51-60	550
12:00 PM	14	0	0	0	0	2	**7**	10	98	303	216	77	10	**6**	743	56-65	519
1:00 PM	**24**	0	0	0	0	0	0	**15**	**152**	299	221	86	13	4	814	56-65	520
2:00 PM	13	0	0	0	0	0	0	9	111	333	266	74	11	2	819	56-65	599
3:00 PM	15	0	0	0	0	0	1	4	84	**358**	302	96	**16**	3	879	56-65	660
4:00 PM	13	0	0	0	0	**5**	1	4	95	345	310	**121**	12	5	**911**	56-65	655
5:00 PM	9	0	0	0	0	0	0	4	79	281	**325**	103	10	3	814	56-65	606
6:00 PM	8	0	0	0	0	0	0	2	59	170	212	81	11	6	549	56-65	381
7:00 PM	2	0	0	0	0	0	0	13	66	146	135	42	10	2	416	56-65	281
8:00 PM	3	0	0	0	0	0	2	12	66	115	66	12	4	0	280	51-60	181
9:00 PM	1	0	0	0	0	0	0	10	40	70	75	18	2	1	217	56-65	145
10:00 PM	0	0	0	0	0	0	0	2	22	49	34	12	2	0	121	56-65	83
11:00 PM	0	0	0	0	0	0	0	0	14	28	30	9	0	0	81	56-65	58
Day Total	209	0	1	1	0	8	12	190	1758	5174	4413	1365	204	55	13390	56-65	9587
Percent	1.6%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.4%	13.1%	38.6%	33.0%	10.2%	1.5%	0.4%			
ADT 13390																	
AM Peak	7:00 AM		11:00 AM	11:00 AM		1:00 AM	12:00 AM	11:00 AM	11:00 AM	7:00 AM	7:00 AM	7:00 AM	8:00 AM	7:00 AM	7:00 AM		
Volume	34		1	1		1	1	40	209	501	561	191	29	7	1429		
PM Peak	1:00 PM					4:00 PM	12:00 PM	1:00 PM	1:00 PM	3:00 PM	5:00 PM	4:00 PM	3:00 PM	12:00 PM	4:00 PM		
Volume	24					5	7	15	152	358	325	121	16	6	911		

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	209	0	1	1	0	8	12	190	1758	5174	4413	1365	204	55	13390	56-65	9587
Percent	1.6%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.4%	13.1%	38.6%	33.0%	10.2%	1.5%	0.4%			
Cumulative Percent	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.7%	3.1%	16.3%	54.9%	87.9%	98.1%	99.6%	100.0%			

ADT 13390

85th Percentile 64 MPH

Mean Speed(Average) 60 MPH

Median 59 MPH
Mode: 58 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

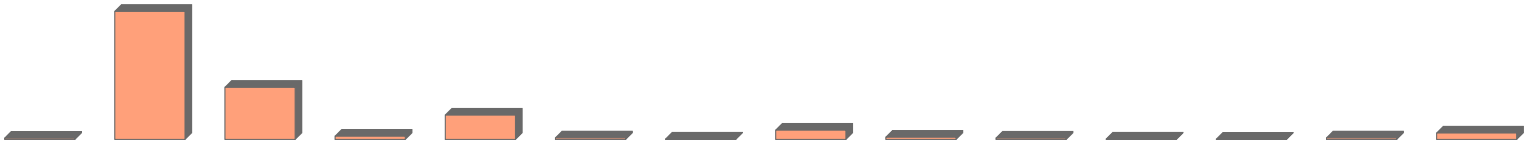
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			122			122			122	
1:00 AM			80			80			80	
2:00 AM			86			86			86	
3:00 AM			116			116			116	
4:00 AM			277			277			277	
5:00 AM			786			786			786	
6:00 AM			1527			1527			1527	
7:00 AM			**1965**			**1965**			**1965**	
8:00 AM			1533			1533			1533	
9:00 AM			1380			1380			1380	
10:00 AM			1353			1353			1353	
11:00 AM			1447			1447			1447	
12:00 PM			1462			1462			1462	
1:00 PM			1607			1607			1607	
2:00 PM			1746			1746			1746	
3:00 PM			1947			1947			1947	
4:00 PM			**2109**			**2109**			**2109**	
5:00 PM			2084			2084			2084	
6:00 PM			1369			1369			1369	
7:00 PM			994			994			994	
8:00 PM			793			793			793	
9:00 PM			537			537			537	
10:00 PM			341			341			341	
11:00 PM			197			197			197	
Day Total			25858			25858			25858	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak			7:00 AM			7:00 AM			7:00 AM	
Volume			1965			1965			1965	
PM Peak			4:00 PM			4:00 PM			4:00 PM	
Volume			2109			2109			2109	

Comments:

LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	75	27	2	6	1	0	2	2	2	0	0	4	1	122
1:00 AM	0	47	9	0	13	0	0	1	5	0	0	1	2	2	80
2:00 AM	0	42	17	4	7	3	0	0	5	0	0	1	5	2	86
3:00 AM	0	51	22	3	13	3	0	4	4	4	0	0	9	3	116
4:00 AM	1	162	44	5	29	0	0	3	9	2	1	1	9	11	277
5:00 AM	3	454	160	9	93	2	1	21	10	10	0	0	4	19	786
6:00 AM	2	957	291	18	139	11	**3**	44	10	10	0	**3**	7	32	1527
7:00 AM	**16**	**1268**	**346**	16	**172**	**17**	0	39	18	10	2	2	9	**50**	**1965**
8:00 AM	13	849	317	25	169	16	1	67	21	5	3	0	**11**	36	1533
9:00 AM	14	687	345	**35**	159	10	3	44	**26**	10	**5**	1	10	31	1380
10:00 AM	11	718	271	24	169	9	3	63	24	6	4	2	11	38	1353
11:00 AM	7	743	342	27	162	11	3	**69**	15	**11**	2	2	10	43	1447
12:00 PM	8	770	314	24	157	9	2	61	**20**	2	1	1	**12**	**81**	1462
1:00 PM	14	859	352	35	169	16	4	61	16	9	2	1	4	65	1607
2:00 PM	9	902	428	**40**	177	9	2	87	13	3	0	1	10	65	1746
3:00 PM	**15**	1006	467	30	203	11	**6**	107	18	7	**6**	0	11	60	1947
4:00 PM	3	1144	**481**	22	**236**	**17**	4	111	7	16	1	1	12	54	**2109**
5:00 PM	8	**1216**	439	6	204	6	2	**121**	6	**20**	3	1	3	49	2084
6:00 PM	5	772	337	6	149	6	0	51	5	3	1	**2**	1	31	1369
7:00 PM	1	543	258	15	124	4	0	23	2	2	1	1	6	14	994
8:00 PM	2	410	242	6	73	3	0	25	4	5	2	0	5	16	793
9:00 PM	2	283	167	2	51	0	0	17	1	4	0	0	4	6	537
10:00 PM	2	207	80	3	27	1	0	12	2	0	1	0	4	2	341
11:00 PM	1	124	55	0	9	1	0	0	0	3	0	0	3	1	197
Day Total	137	14289	5811	357	2710	166	34	1033	243	144	35	21	166	712	25858
Percent	0.5%	55.3%	22.5%	1.4%	10.5%	0.6%	0.1%	4.0%	0.9%	0.6%	0.1%	0.1%	0.6%	2.8%	
ADT 25858															
AM Peak	7:00 AM	7:00 AM	7:00 AM	9:00 AM	7:00 AM	7:00 AM	6:00 AM	11:00 AM	9:00 AM	11:00 AM	9:00 AM	6:00 AM	8:00 AM	7:00 AM	7:00 AM
Volume	16	1268	346	35	172	17	3	69	26	11	5	3	11	50	1965
PM Peak	3:00 PM	5:00 PM	4:00 PM	2:00 PM	4:00 PM	4:00 PM	3:00 PM	5:00 PM	12:00 PM	5:00 PM	3:00 PM	6:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	15	1216	481	40	236	17	6	121	20	20	6	2	12	81	2109

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: EB/WB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	137	14289	5811	357	2710	166	34	1033	243	144	35	21	166	712	25858
Percent	0.5%	55.3%	22.5%	1.4%	10.5%	0.6%	0.1%	4.0%	0.9%	0.6%	0.1%	0.1%	0.6%	2.8%	

ADT 25858

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: EB/WB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	1	7	14	28	49	16	7	0	122	56-65	77
1:00 AM	1	0	0	0	0	**1**	0	5	6	19	31	16	1	0	80	56-65	50
2:00 AM	0	0	0	0	0	0	0	4	11	24	31	10	3	3	86	56-65	55
3:00 AM	1	0	0	0	0	0	0	2	12	51	36	12	1	1	116	56-65	86
4:00 AM	2	0	0	0	0	0	0	5	23	79	120	44	4	0	277	56-65	199
5:00 AM	8	0	0	0	0	0	0	9	55	256	303	114	33	8	786	56-65	559
6:00 AM	25	0	0	0	**1**	0	0	11	175	479	551	230	50	5	1527	56-65	1030
7:00 AM	**39**	0	0	0	0	0	0	3	117	**583**	**764**	**378**	66	**15**	**1965**	56-65	1347
8:00 AM	26	0	0	0	0	0	**2**	7	104	501	543	280	60	10	1533	56-65	1043
9:00 AM	17	0	0	0	0	0	0	14	113	410	530	217	**70**	9	1380	56-65	940
10:00 AM	27	0	0	0	0	0	1	17	128	456	465	206	45	8	1353	56-65	921
11:00 AM	32	0	**1**	**1**	0	0	1	**43**	**219**	466	397	225	56	6	1447	56-65	863
12:00 PM	**72**	0	0	0	0	2	**7**	11	126	431	469	269	62	13	1462	56-65	899
1:00 PM	52	0	0	0	0	0	0	**18**	**172**	467	542	277	67	12	1607	56-65	1009
2:00 PM	44	0	0	0	0	0	1	9	138	470	634	346	77	27	1746	56-65	1104
3:00 PM	36	**1**	0	0	0	1	4	7	95	**478**	664	498	130	**33**	1947	61-70	1161
4:00 PM	30	0	0	0	0	**5**	2	9	112	473	730	587	**139**	22	**2109**	61-70	1317
5:00 PM	21	0	**1**	0	0	0	0	7	85	383	**797**	**648**	129	13	2084	61-70	1444
6:00 PM	18	0	0	0	0	1	1	2	70	250	540	372	91	24	1369	61-70	912
7:00 PM	7	0	1	0	0	0	1	15	80	235	352	246	48	9	994	61-70	598
8:00 PM	9	0	0	0	0	0	2	16	83	183	280	173	46	1	793	56-65	463
9:00 PM	2	0	0	0	0	0	0	11	45	112	198	130	32	7	537	61-70	328
10:00 PM	1	0	0	0	0	0	0	3	25	79	108	91	29	5	341	61-70	198
11:00 PM	1	0	0	0	0	0	0	1	16	49	73	46	8	3	197	57-66	121
Day Total	471	1	3	1	1	10	23	236	2024	6962	9207	5431	1254	234	25858	56-65	16169
Percent	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.9%	7.8%	26.9%	35.6%	21.0%	4.8%	0.9%			
ADT 25858																	
AM Peak	7:00 AM		11:00 AM	11:00 AM	6:00 AM	1:00 AM	8:00 AM	11:00 AM	11:00 AM	7:00 AM	7:00 AM	7:00 AM	9:00 AM	7:00 AM	7:00 AM		
Volume	39		1	1	1	1	2	43	219	583	764	378	70	15	1965		
PM Peak	12:00 PM	3:00 PM	5:00 PM			4:00 PM	12:00 PM	1:00 PM	1:00 PM	3:00 PM	5:00 PM	5:00 PM	4:00 PM	3:00 PM	4:00 PM		
Volume	72	1	1			5	7	18	172	478	797	648	139	33	2109		

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: EB/WB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	471	1	3	1	1	10	23	236	2024	6962	9207	5431	1254	234	25858	56-65	16169
Percent	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.9%	7.8%	26.9%	35.6%	21.0%	4.8%	0.9%			
Cumulative Percent	1.8%	1.8%	1.8%	1.8%	1.8%	1.9%	2.0%	2.9%	10.7%	37.6%	73.2%	94.2%	99.1%	100.0%			

ADT 25858

85th Percentile 67 MPH

Mean Speed(Average) 65 MPH

Median 61 MPH
Mode: 63 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

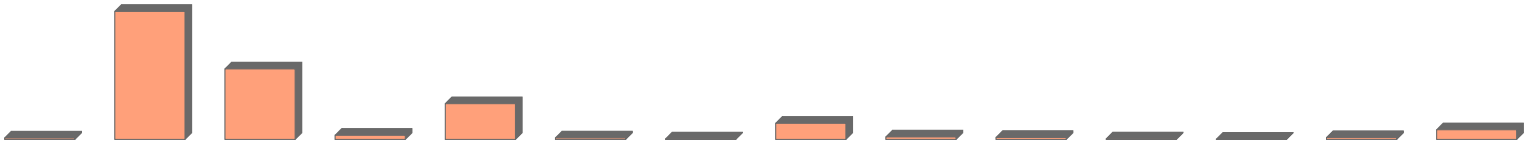
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Mon	Tue	Wed 16-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			76			76			76	
1:00 AM			48			48			48	
2:00 AM			46			46			46	
3:00 AM			42			42			42	
4:00 AM			66			66			66	
5:00 AM			253			253			253	
6:00 AM			465			465			465	
7:00 AM			536			536			536	
8:00 AM			512			512			512	
9:00 AM			613			613			613	
10:00 AM			607			607			607	
11:00 AM			**662**			**662**			**662**	
12:00 PM			719			719			719	
1:00 PM			793			793			793	
2:00 PM			927			927			927	
3:00 PM			1068			1068			1068	
4:00 PM			1198			1198			1198	
5:00 PM			**1270**			**1270**			**1270**	
6:00 PM			820			820			820	
7:00 PM			578			578			578	
8:00 PM			513			513			513	
9:00 PM			320			320			320	
10:00 PM			220			220			220	
11:00 PM			116			116			116	
Day Total			12468			12468			12468	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			11:00 AM 662			11:00 AM 662			11:00 AM 662	
PM Peak Volume			5:00 PM 1270			5:00 PM 1270			5:00 PM 1270	

Comments:

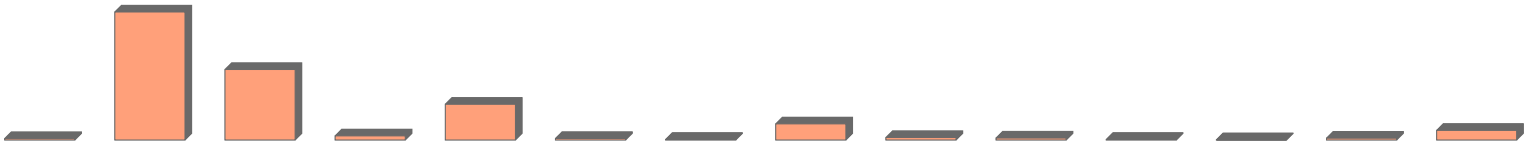
LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	44	21	1	5	1	0	2	0	0	0	0	1	1	76
1:00 AM	0	23	5	0	10	0	0	1	5	0	0	**1**	2	1	48
2:00 AM	0	18	11	3	5	2	0	0	3	0	0	0	2	2	46
3:00 AM	0	18	6	2	6	1	0	3	2	3	0	0	0	1	42
4:00 AM	0	27	7	2	12	0	0	1	6	1	1	1	3	5	66
5:00 AM	0	137	50	5	31	1	0	8	6	6	0	0	1	8	253
6:00 AM	0	229	112	4	65	5	0	24	4	**7**	0	1	4	10	465
7:00 AM	2	265	143	7	73	5	0	16	9	5	0	1	3	7	536
8:00 AM	5	204	118	18	84	**7**	1	36	**13**	4	1	0	**7**	14	512
9:00 AM	**11**	249	162	**28**	85	2	**2**	31	12	4	**4**	0	7	16	613
10:00 AM	5	263	131	17	**105**	3	2	39	8	2	4	0	6	22	607
11:00 AM	1	**274**	**174**	14	97	2	2	**47**	5	6	2	1	4	**33**	**662**
12:00 PM	4	335	161	13	84	4	0	38	**10**	0	0	0	4	**66**	719
1:00 PM	7	403	182	10	98	6	3	34	5	5	1	0	2	37	793
2:00 PM	7	397	246	**20**	120	4	1	68	5	3	0	0	**8**	48	927
3:00 PM	**9**	467	272	17	140	**9**	**5**	86	8	6	**4**	0	5	40	1068
4:00 PM	3	573	**294**	12	**163**	5	4	89	1	12	1	0	6	35	1198
5:00 PM	4	**662**	290	1	143	2	2	**104**	2	**15**	2	**1**	2	40	**1270**
6:00 PM	2	414	229	5	96	3	0	45	2	1	1	0	1	21	820
7:00 PM	0	281	184	3	76	2	0	16	2	1	0	0	3	10	578
8:00 PM	1	227	180	3	59	2	0	21	2	2	1	0	3	12	513
9:00 PM	1	135	122	0	39	0	0	13	0	3	0	0	2	5	320
10:00 PM	2	115	62	1	21	1	0	10	1	0	1	0	4	2	220
11:00 PM	0	61	43	0	7	0	0	0	0	2	0	0	2	1	116
Day Total	64	5821	3205	186	1624	67	22	732	111	88	23	6	82	437	12468
Percent	0.5%	46.7%	25.7%	1.5%	13.0%	0.5%	0.2%	5.9%	0.9%	0.7%	0.2%	0.0%	0.7%	3.5%	
ADT 12468															
AM Peak	9:00 AM	11:00 AM	11:00 AM	9:00 AM	10:00 AM	8:00 AM	9:00 AM	11:00 AM	8:00 AM	6:00 AM	9:00 AM	1:00 AM	8:00 AM	11:00 AM	11:00 AM
Volume	11	274	174	28	105	7	2	47	13	7	4	1	7	33	662
PM Peak	3:00 PM	5:00 PM	4:00 PM	2:00 PM	4:00 PM	3:00 PM	3:00 PM	5:00 PM	12:00 PM	5:00 PM	3:00 PM	5:00 PM	2:00 PM	12:00 PM	5:00 PM
Volume	9	662	294	20	163	9	5	104	10	15	4	1	8	66	1270

Comments:

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: OR-22 east of Lancaster interchange
QC JOB #: 13585214
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
DIRECTION: EB
CITY/STATE: Salem, OR
DATE: Sep 16 2015 - Sep 16 2015

Start Time	Motor-cycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	64	5821	3205	186	1624	67	22	732	111	88	23	6	82	437	12468
Percent	0.5%	46.7%	25.7%	1.5%	13.0%	0.5%	0.2%	5.9%	0.9%	0.7%	0.2%	0.0%	0.7%	3.5%	
ADT 12468															

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: EB
DATE: Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	1	3	13	39	15	5	0	76	61-70	54
1:00 AM	1	0	0	0	0	0	0	1	2	10	20	13	1	0	48	61-70	33
2:00 AM	0	0	0	0	0	0	0	1	2	10	20	9	2	2	46	56-65	30
3:00 AM	0	0	0	0	0	0	0	1	2	18	13	7	1	0	42	56-65	31
4:00 AM	0	0	0	0	0	0	0	2	2	8	28	24	2	0	66	61-70	51
5:00 AM	4	0	0	0	0	0	0	1	14	37	119	54	19	5	253	61-70	173
6:00 AM	7	0	0	0	**1**	0	0	1	19	65	184	138	45	5	465	61-70	322
7:00 AM	5	0	0	0	0	0	0	1	9	82	203	187	41	**8**	536	61-70	389
8:00 AM	6	0	0	0	0	0	**2**	1	12	106	198	153	31	3	512	61-70	351
9:00 AM	7	0	0	0	0	0	0	**5**	10	100	**273**	159	53	6	613	61-70	431
10:00 AM	15	0	0	0	0	0	1	4	**20**	101	255	165	39	7	607	61-70	420
11:00 AM	**26**	0	0	0	0	0	1	3	10	**125**	247	**190**	**54**	6	**662**	61-70	437
12:00 PM	**58**	0	0	0	0	0	0	1	**28**	128	253	192	52	7	719	61-70	444
1:00 PM	28	0	0	0	0	0	0	3	20	**168**	321	191	54	8	793	61-70	512
2:00 PM	31	0	0	0	0	0	1	0	27	137	368	272	66	25	927	61-70	640
3:00 PM	21	**1**	0	0	0	**1**	**3**	3	11	120	362	402	114	**30**	1068	61-70	764
4:00 PM	17	0	0	0	0	0	1	**5**	17	128	420	466	**127**	17	1198	61-70	886
5:00 PM	12	0	**1**	0	0	0	0	3	6	102	**472**	**545**	119	10	**1270**	61-70	1017
6:00 PM	10	0	0	0	0	1	1	0	11	80	328	291	80	18	820	61-70	619
7:00 PM	5	0	1	0	0	0	1	2	14	89	217	204	38	7	578	61-70	420
8:00 PM	6	0	0	0	0	0	0	4	17	68	214	161	42	1	513	61-70	375
9:00 PM	1	0	0	0	0	0	0	1	5	42	123	112	30	6	320	61-70	234
10:00 PM	1	0	0	0	0	0	0	1	3	30	74	79	27	5	220	61-70	153
11:00 PM	1	0	0	0	0	0	0	1	2	21	43	37	8	3	116	61-70	80
Day Total	262	1	2	0	1	2	11	46	266	1788	4794	4066	1050	179	12468	61-70	8860
Percent	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	2.1%	14.3%	38.5%	32.6%	8.4%	1.4%			
ADT 12468																	
AM Peak	11:00 AM				6:00 AM		8:00 AM	9:00 AM	10:00 AM	11:00 AM	9:00 AM	11:00 AM	11:00 AM	7:00 AM	11:00 AM		
Volume	26				1		2	5	20	125	273	190	54	8	662		
PM Peak	12:00 PM	3:00 PM	5:00 PM			3:00 PM	3:00 PM	4:00 PM	12:00 PM	1:00 PM	5:00 PM	5:00 PM	4:00 PM	3:00 PM	5:00 PM		
Volume	58	1	1			1	3	5	28	168	472	545	127	30	1270		

Comments:

SUMMARY - Tube Count - Speed Data

LOCATION: OR-22 east of Lancaster interchange
SPECIFIC LOCATION: OR-22 east of Lancaster interchange
CITY/STATE: Salem, OR

QC JOB #: 13585214
DIRECTION: EB
DATE: Sep 16 2015 - Sep 16 2015

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	262	1	2	0	1	2	11	46	266	1788	4794	4066	1050	179	12468	61-70	8860
Percent	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	2.1%	14.3%	38.5%	32.6%	8.4%	1.4%			
Cumulative Percent	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.2%	2.6%	4.7%	19.1%	57.5%	90.1%	98.6%	100.0%			

ADT 12468

85th Percentile 69 MPH

Mean Speed(Average) 69 MPH

Median 64 MPH
Mode: 63 MPH

Comments:

Report generated on 9/28/2015 2:45 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

APPENDIX B
LEVEL OF SERVICE DESCRIPTIONS

TRAFFIC LEVELS OF SERVICE

Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. For this, the concept of level of service has been developed to subjectively describe traffic performance. Level of service can be measured at intersections and along key roadway segments.

Levels of service categories are similar to report card ratings for traffic performance. Intersections are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is generally diminished in their vicinities. Levels of Service A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. Level of service D and E are progressively worse peak hour operating conditions and F conditions represent where demand exceeds the capacity of an intersection. Most urban communities set level of service D as the minimum acceptable level of service for peak hour operation and plan for level of service C or better for all other times of the day. The Highway Capacity Manual provides level of service calculation methodology for both intersections and arterials[1]. The following two sections provide interpretations of the analysis approaches.

[1] *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2000, Chapter 16 and 17.

UNSIGNALIZED INTERSECTIONS (Two-Way Stop Controlled)

Unsignalized intersection level of service is reported for the major street and minor street (generally, left turn movements). The method assesses available and critical gaps in the traffic stream which make it possible for side street traffic to enter the main street flow. The 2010 Highway Capacity Manual describes the detailed methodology. It is not unusual for an intersection to experience level of service E or F conditions for the minor street left turn movement. It should be understood that, often, a poor level of service is experienced by only a few vehicles and the intersection as a whole operates acceptably.

Unsignalized intersection levels of service are described in the following table.

Level-of-Service Criteria: Automobile Mode

Control Delay (s/vehicle)	**LOS by Volume-to-Capacity Ratio**	
	***v/c* ≤ 1.0**	***v/c* > 1.0**
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole

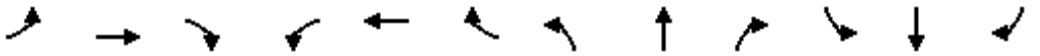
SIGNALIZED INTERSECTIONS

For signalized intersections, level of service is evaluated based upon average vehicle delay experienced by vehicles entering an intersection. Control delay (or signal delay) includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In previous versions of this chapter of the HCM (1994 and earlier), delay included only stopped delay. As delay increases, the level of service decreases. Calculations for signalized and unsignalized intersections are different due to the variation in traffic control. The 2000 Highway Capacity Manual provides the basis for these calculations.

Level of Service	Delay (secs.)	Description
A	<10.00	**Free Flow/Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Most vehicles do not stop at all. Progression is extremely favorable and most vehicles arrive during the green phase.
B	10.1-20.0	**Stable Operation/Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. This level generally occurs with good progression, short cycle lengths, or both.
C	20.1-35.0	**Stable Operation/Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted. Higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, and the number of vehicles stopping is significant.
D	35.1-55.0	**Approaching Unstable/Tolerable Delays:** The influence of congestion becomes more noticeable. Drivers may have to wait through more than one red signal indication. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. The proportion of vehicles not stopping declines, and individual cycle failures are noticeable.
E	55.1-80.0	**Unstable Operation/Significant Delays:** Volumes at or near capacity. Vehicles may wait though several signal cycles. Long queues form upstream from intersection. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
F	>80.0	**Forced Flow/Excessive Delays:** Represents jammed conditions. Queues may block upstream intersections. This level occurs when arrival flow rates exceed intersection capacity, and is considered to be unacceptable to most drivers. Poor progression, long cycle lengths, and v/c ratios approaching 1.0 may contribute to these high delay levels.

Source: *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C.

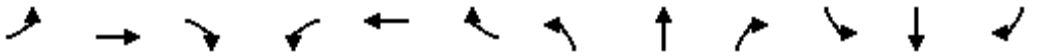
APPENDIX C
HCM ANALYSIS REPORTS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1375	57	495	1215	105	127	291	876	132	284	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3373		3400	3422		1687	3438	1553	1770	3421	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3373		3400	3422		1687	3438	1553	1770	3421	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	60	1418	59	510	1253	108	131	300	903	136	293	41
RTOR Reduction (vph)	0	2	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	60	1475	0	510	1357	0	131	300	903	136	326	0
Confl. Peds. (#/hr)	4		3	3		4	22					22
Confl. Bikes (#/hr)						3						3
Heavy Vehicles (%)	2%	6%	14%	3%	4%	5%	7%	5%	4%	2%	2%	10%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Free	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									Free			
Actuated Green, G (s)	8.3	59.0		27.2	77.9		12.0	18.0	140.0	15.8	21.8	
Effective Green, g (s)	8.3	59.0		27.2	77.9		12.0	18.0	140.0	15.8	21.8	
Actuated g/C Ratio	0.06	0.42		0.19	0.56		0.09	0.13	1.00	0.11	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	104	1421		660	1904		144	442	1553	199	532	
v/s Ratio Prot	0.03	c0.44		c0.15	0.40		c0.08	0.09		0.08	0.10	
v/s Ratio Perm									c0.58			
v/c Ratio	0.58	1.04		0.77	0.71		0.91	0.68	0.58	0.68	0.61	
Uniform Delay, d1	64.1	40.5		53.5	22.8		63.5	58.2	0.0	59.7	55.2	
Progression Factor	1.00	1.00		0.93	1.45		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.5	34.3		2.3	0.9		48.3	4.1	1.6	9.3	2.1	
Delay (s)	71.7	74.8		52.2	34.0		111.8	62.4	1.6	69.0	57.2	
Level of Service	E	E		D	C		F	E	A	E	E	
Approach Delay (s)		74.6			39.0			26.1			60.6	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

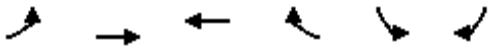
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	2075	232	256	1389	98	262	163	330	382	201	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.91		0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	4948		3433	3438	1490	3433	1863	1583	3467	1900	1577
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	4948		3433	3438	1490	3433	1863	1583	3467	1900	1577
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	2184	244	269	1462	103	276	172	347	402	212	173
RTOR Reduction (vph)	0	10	0	0	0	54	0	0	0	0	0	120
Lane Group Flow (vph)	80	2418	0	269	1462	49	276	172	347	402	212	53
Confl. Peds. (#/hr)	4		2	2		4	1		1	1		1
Confl. Bikes (#/hr)						2			1			1
Heavy Vehicles (%)	5%	3%	4%	2%	5%	5%	2%	2%	2%	1%	0%	1%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Prot	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	8	7	4	
Permitted Phases						6						4
Actuated Green, G (s)	10.3	55.6		14.4	59.7	59.7	13.7	35.0	35.0	15.0	36.3	36.3
Effective Green, g (s)	10.3	55.6		14.4	59.7	59.7	13.7	35.0	35.0	15.0	36.3	36.3
Actuated g/C Ratio	0.07	0.40		0.10	0.43	0.43	0.10	0.25	0.25	0.11	0.26	0.26
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	126	1965		353	1466	635	335	465	395	371	492	408
v/s Ratio Prot	0.05	c0.49		c0.08	c0.43		0.08	0.09	c0.22	c0.12	0.11	
v/s Ratio Perm						0.03						0.03
v/c Ratio	0.63	1.23		0.76	1.00	0.08	0.82	0.37	0.88	1.08	0.43	0.13
Uniform Delay, d1	63.0	42.2		61.1	40.1	23.8	62.0	43.4	50.5	62.5	43.2	39.7
Progression Factor	1.01	1.09		0.55	1.41	2.93	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	106.4		5.2	16.5	0.1	15.0	0.5	19.3	70.9	0.6	0.1
Delay (s)	68.9	152.5		39.0	72.9	70.0	77.0	43.9	69.7	133.4	43.8	39.9
Level of Service	E	F		D	E	E	E	D	E	F	D	D
Approach Delay (s)		149.8			67.7			66.7			88.7	
Approach LOS		F			E			E			F	

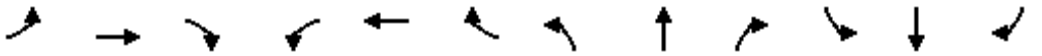
Intersection Summary			
HCM 2000 Control Delay	105.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



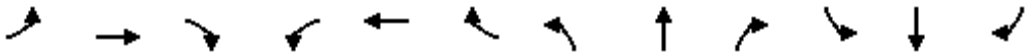
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	474	2313	1382	360	616	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		5.0	5.0
Lane Util. Factor	0.97	0.91	0.91		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3400	5036	4801		3433	1574
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3400	5036	4801		3433	1574
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	494	2409	1440	375	642	376
RTOR Reduction (vph)	0	0	33	0	0	230
Lane Group Flow (vph)	494	2409	1782	0	642	146
Confl. Peds. (#/hr)	2			2		4
Heavy Vehicles (%)	3%	3%	5%	2%	2%	1%
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	23.2	86.0	56.8		43.0	43.0
Effective Green, g (s)	23.2	86.0	56.8		43.0	43.0
Actuated g/C Ratio	0.17	0.61	0.41		0.31	0.31
Clearance Time (s)	6.0	6.0	6.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	563	3093	1947		1054	483
v/s Ratio Prot	0.15	c0.48	c0.37		c0.19	
v/s Ratio Perm						0.09
v/c Ratio	0.88	0.78	0.92		0.61	0.30
Uniform Delay, d1	57.0	20.0	39.3		41.3	37.0
Progression Factor	1.11	0.41	1.21		1.00	1.00
Incremental Delay, d2	1.6	0.2	7.2		2.6	1.6
Delay (s)	65.0	8.4	54.9		44.0	38.6
Level of Service	E	A	D		D	D
Approach Delay (s)		18.1	54.9		42.0	
Approach LOS		B	D		D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰↰		↱
Volume (vph)	0	2270	659	0	1053	276	0	0	0	895	0	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	4.0				6.0		4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5036	1536		3438	1482				3367		1538
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5036	1536		3438	1482				3367		1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2365	686	0	1097	288	0	0	0	932	0	719
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2365	686	0	1097	288	0	0	0	932	0	719
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	3%	3%	0%	5%	9%	0%	0%	0%	4%	0%	5%
Turn Type		NA	Free		NA	Free				custom		Free
Protected Phases		2			6							
Permitted Phases			Free			Free				4		Free
Actuated Green, G (s)		79.0	140.0		79.0	140.0				49.0		140.0
Effective Green, g (s)		79.0	140.0		79.0	140.0				49.0		140.0
Actuated g/C Ratio		0.56	1.00		0.56	1.00				0.35		1.00
Clearance Time (s)		6.0			6.0					6.0		
Vehicle Extension (s)		3.0			3.0					3.0		
Lane Grp Cap (vph)		2841	1536		1940	1482				1178		1538
v/s Ratio Prot		c0.47			0.32							
v/s Ratio Perm			0.45			0.19				c0.28		0.47
v/c Ratio		0.83	0.45		0.57	0.19				0.79		0.47
Uniform Delay, d1		25.1	0.0		19.5	0.0				40.9		0.0
Progression Factor		1.62	1.00		1.05	1.00				1.00		1.00
Incremental Delay, d2		2.0	0.6		1.1	0.3				5.5		1.0
Delay (s)		42.7	0.6		21.6	0.3				46.4		1.0
Level of Service		D	A		C	A				D		A
Approach Delay (s)		33.2			17.1			0.0			26.6	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2182	983	0	1039	646	290	0	213	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	6.0	6.0		6.0			
Lane Util. Factor		0.95	1.00		0.86	0.86	0.97		1.00			
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00		1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00		1.00			
Frt		1.00	0.85		0.97	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3505	1535		4534	1286	3273		1524			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3505	1535		4534	1286	3273		1524			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2273	1024	0	1082	673	302	0	222	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	2273	1024	0	1358	397	302	0	203	0	0	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	0%	3%	3%	0%	4%	8%	7%	0%	6%	0%	0%	0%
Turn Type		NA	Free		NA	Prot	Prot		custom			
Protected Phases		6			6	6	8					
Permitted Phases			Free						8			
Actuated Green, G (s)		104.1	140.0		104.1	104.1	23.9		23.9			
Effective Green, g (s)		104.1	140.0		104.1	104.1	23.9		23.9			
Actuated g/C Ratio		0.74	1.00		0.74	0.74	0.17		0.17			
Clearance Time (s)		6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		2606	1535		3371	956	558		260			
v/s Ratio Prot		c0.65			0.30	0.31	0.09					
v/s Ratio Perm			c0.67						0.13			
v/c Ratio		0.87	0.67		0.40	0.42	0.54		0.78			
Uniform Delay, d1		13.1	0.0		6.6	6.7	53.0		55.5			
Progression Factor		0.46	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		2.5	1.3		0.4	1.3	1.1		14.1			
Delay (s)		8.4	1.3		6.9	8.0	54.1		69.6			
Level of Service		A	A		A	A	D		E			
Approach Delay (s)		6.2			7.2			60.7			0.0	
Approach LOS		A			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	12	0	160	255	1189	0	0	561	714
Conflicting Peds, #/hr	1	0	2	2	0	1	4	0	12	12	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	120	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	26	0	4	4	2	0	0	3	2
Mvmt Flow	0	0	0	12	0	165	263	1226	0	0	578	736

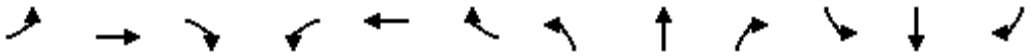
Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2332	2332	627	578	0	0	1228	0	0
Stage 1	1754	1754	-	-	-	-	-	-	-
Stage 2	578	578	-	-	-	-	-	-	-
Follow-up Headway	4	4	3	2	-	-	2	-	-
Pot Capacity-1 Maneuver	28	37	423	986	-	-	575	-	-
Stage 1	102	140	-	-	-	-	-	-	-
Stage 2	505	504	-	-	-	-	-	-	-
Time blocked-Platoon, %					-	-		-	-
Mov Capacity-1 Maneuver	20	0	418	976	-	-	569	-	-
Mov Capacity-2 Maneuver	20	0	-	-	-	-	-	-	-
Stage 1	74	0	-	-	-	-	-	-	-
Stage 2	500	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	55	2	0

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	976	-	-	90	418	569	-	-
HCM Lane V/C Ratio	0.269	-	-	0.748	0.263	-	-	-
HCM Control Delay (s)	10.043	-	-	117.5	16.7	0	-	-
HCM Lane LOS	B			F	C	A		
HCM 95th %tile Q(veh)	1.093	-	-	3.806	1.043	0	-	-

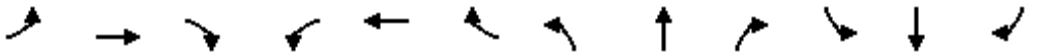
Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	813	0	254	0	0	0	0	631	26	194	379	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					5.0		4.0	5.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.99		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1698	1698	1553					3512		1765	1863	
Flt Permitted	0.95	0.95	1.00					1.00		0.31	1.00	
Satd. Flow (perm)	1698	1698	1553					3512		574	1863	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	865	0	270	0	0	0	0	671	28	206	403	0
RTOR Reduction (vph)	0	0	181	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	432	433	89	0	0	0	0	697	0	206	403	0
Confl. Peds. (#/hr)							11		12	12		11
Heavy Vehicles (%)	1%	0%	4%	0%	0%	0%	0%	2%	0%	2%	2%	0%
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8							2		
Actuated Green, G (s)	38.2	38.2	38.2					69.3		82.8	82.8	
Effective Green, g (s)	38.2	38.2	38.2					69.3		82.8	82.8	
Actuated g/C Ratio	0.29	0.29	0.29					0.53		0.64	0.64	
Clearance Time (s)	4.0	4.0	4.0					5.0		4.0	5.0	
Vehicle Extension (s)	0.5	0.5	0.5					0.5		0.5	0.5	
Lane Grp Cap (vph)	498	498	456					1872		452	1186	
v/s Ratio Prot	0.25	c0.26						0.20		c0.03	0.22	
v/s Ratio Perm			0.06							c0.26		
v/c Ratio	0.87	0.87	0.20					0.37		0.46	0.34	
Uniform Delay, d1	43.5	43.5	34.4					17.7		10.9	10.9	
Progression Factor	1.00	1.00	1.00					0.83		1.00	1.00	
Incremental Delay, d2	14.3	14.5	0.1					0.6		0.3	0.8	
Delay (s)	57.8	58.0	34.5					15.3		11.1	11.7	
Level of Service	E	E	C					B		B	B	
Approach Delay (s)		52.3			0.0			15.3			11.5	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	132	182	137	225	84	133	547	108	31	427	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1656	3312	1547	3367	3471	1588	3433	3374	1463	1687	3505	1501
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1656	3312	1547	3367	3471	1588	3433	3374	1463	1687	3505	1501
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	42	150	207	156	256	95	151	622	123	35	485	80
RTOR Reduction (vph)	0	0	146	0	0	65	0	0	70	0	0	48
Lane Group Flow (vph)	42	150	61	156	256	30	151	622	53	35	485	32
Confl. Peds. (#/hr)	4		1	1		4	2					2
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	9%	9%	3%	4%	4%	0%	2%	7%	9%	7%	3%	6%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	7.6	38.1	38.1	10.7	41.2	41.2	10.6	56.5	56.5	5.7	51.6	51.6
Effective Green, g (s)	7.6	38.1	38.1	10.7	41.2	41.2	10.6	56.5	56.5	5.7	51.6	51.6
Actuated g/C Ratio	0.06	0.29	0.29	0.08	0.32	0.32	0.08	0.43	0.43	0.04	0.40	0.40
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	96	970	453	277	1100	503	279	1466	635	73	1391	595
v/s Ratio Prot	0.03	0.05		c0.05	c0.07		c0.04	c0.18		0.02	0.14	
v/s Ratio Perm			0.04			0.02			0.04			0.02
v/c Ratio	0.44	0.15	0.13	0.56	0.23	0.06	0.54	0.42	0.08	0.48	0.35	0.05
Uniform Delay, d1	59.1	34.0	33.8	57.4	32.7	30.9	57.4	25.5	21.6	60.7	27.4	24.2
Progression Factor	1.16	0.93	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.3	0.6	2.6	0.5	0.2	2.1	0.9	0.3	4.9	0.7	0.2
Delay (s)	71.8	32.0	30.0	60.0	33.2	31.1	59.5	26.4	21.8	65.6	28.1	24.3
Level of Service	E	C	C	E	C	C	E	C	C	E	C	C
Approach Delay (s)		35.2			41.1			31.3			29.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	23.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	19	50	1	149	31	594	43	129	459	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	4	0	3	0	5	2	2	2	0
Mvmt Flow	21	0	21	55	1	164	34	653	47	142	504	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1630	1571	520	1559	1564	676	535	0	0	700	0	0
Stage 1	803	803	-	745	745	-	-	-	-	-	-	-
Stage 2	827	768	-	814	819	-	-	-	-	-	-	-
Follow-up Headway	4	4	3	4	4	3	2	-	-	2	-	-
Pot Capacity-1 Maneuver	82	112	560	90	113	452	1043	-	-	897	-	-
Stage 1	380	399	-	403	424	-	-	-	-	-	-	-
Stage 2	369	414	-	369	392	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	44	89	560	73	90	452	1043	-	-	897	-	-
Mov Capacity-2 Maneuver	44	89	-	73	90	-	-	-	-	-	-	-
Stage 1	359	336	-	381	401	-	-	-	-	-	-	-
Stage 2	222	392	-	299	330	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	88	153	0	2

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1043	-	-	82	195	897	-	-
HCM Lane V/C Ratio	0.033	-	-	0.509	1.127	0.158	-	-
HCM Control Delay (s)	8.568	0	-	87.7	153	9.765	-	-
HCM Lane LOS	A	A		F	F	A		
HCM 95th %tile Q(veh)	0.101	-	-	2.174	10.758	0.56	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

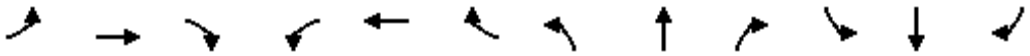
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	184	26	76	39	128	16
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	3	8	12	35	6	6
Mvmt Flow	188	27	78	40	131	16
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.1	8.9	9.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	66%
Vol Thru, %	0%	0%	88%	34%
Vol Right, %	0%	100%	12%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	16	210	115
LT Vol	0	0	184	39
Through Vol	0	16	26	0
RT Vol	128	0	0	76
Lane Flow Rate	131	16	214	117
Geometry Grp	7	7	2	2
Degree of Util (X)	0.213	0.021	0.265	0.16
Departure Headway (Hd)	5.871	4.663	4.451	4.905
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	611	766	808	731
Service Time	3.611	2.403	2.473	2.933
HCM Lane V/C Ratio	0.214	0.021	0.265	0.16
HCM Control Delay	10.2	7.5	9.1	8.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	0.8	0.1	1.1	0.6

Notes

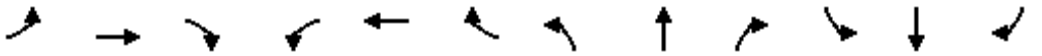
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1560	60	490	1505	160	170	460	1055	220	420	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3311		3367	3379		1656	3406	1538	1752	3350	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3311		3367	3379		1656	3406	1538	1752	3350	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	1608	62	505	1552	165	175	474	1088	227	433	77
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	0	0	11	0
Lane Group Flow (vph)	93	1668	0	505	1711	0	175	474	1088	227	499	0
Confl. Peds. (#/hr)	5		4	4		5	26					26
Confl. Bikes (#/hr)						4						4
Heavy Vehicles (%)	3%	8%	18%	4%	5%	6%	9%	6%	5%	3%	3%	13%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Free	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases									Free			
Actuated Green, G (s)	7.0	56.0		14.0	63.0		15.3	22.0	130.0	18.0	24.7	
Effective Green, g (s)	7.0	56.0		14.0	63.0		15.3	22.0	130.0	18.0	24.7	
Actuated g/C Ratio	0.05	0.43		0.11	0.48		0.12	0.17	1.00	0.14	0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0		6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	1426		362	1637		194	576	1538	242	636	
v/s Ratio Prot	0.05	c0.50		c0.15	0.51		0.11	0.14		c0.13	0.15	
v/s Ratio Perm									c0.71			
v/c Ratio	0.99	1.17		1.40	1.05		0.90	0.82	0.71	0.94	0.78	
Uniform Delay, d1	61.5	37.0		58.0	33.5		56.6	52.1	0.0	55.4	50.1	
Progression Factor	1.00	1.00		0.79	1.41		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	88.5	84.2		186.9	29.8		38.4	9.3	2.8	40.7	6.3	
Delay (s)	149.9	121.2		232.9	76.9		95.0	61.4	2.8	96.1	56.4	
Level of Service	F	F		F	E		F	E	A	F	E	
Approach Delay (s)		122.7			112.4			28.1			68.6	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM 2000 Control Delay	87.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

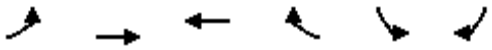
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	2460	290	325	1495	115	410	185	395	290	165	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	0.91		0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1703	4896		3400	3406	1473	3398	1845	1568	3466	1900	1577
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.55	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	1703	4896		3400	3406	1473	1971	1845	1568	1899	1900	1577
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	2589	305	342	1574	121	432	195	416	305	174	263
RTOR Reduction (vph)	0	11	0	0	0	53	0	0	0	0	0	98
Lane Group Flow (vph)	89	2883	0	342	1574	68	432	195	416	305	174	165
Confl. Peds. (#/hr)	5		3	3		5	1		1	1		1
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	4%	5%	3%	6%	6%	3%	3%	3%	1%	0%	1%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Prot	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8	8	7	4	
Permitted Phases						6	8			4		4
Actuated Green, G (s)	5.0	52.0		13.8	60.8	60.8	44.2	39.2	39.2	44.2	39.2	39.2
Effective Green, g (s)	6.5	53.5		15.3	62.3	62.3	47.2	40.7	40.7	47.2	40.7	40.7
Actuated g/C Ratio	0.05	0.41		0.12	0.48	0.48	0.36	0.31	0.31	0.36	0.31	0.31
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	85	2014		400	1632	705	786	577	490	767	594	493
v/s Ratio Prot	0.05	c0.59		0.10	c0.46		c0.03	0.11	c0.27	0.02	0.09	
v/s Ratio Perm						0.05	0.17			0.12		0.10
v/c Ratio	1.05	1.43		0.85	0.96	0.10	0.55	0.34	0.85	0.40	0.29	0.33
Uniform Delay, d1	61.8	38.2		56.3	32.8	18.5	33.0	34.3	41.8	30.2	33.8	34.3
Progression Factor	0.80	0.66		0.58	1.13	1.51	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	66.7	195.0		8.6	9.2	0.1	0.8	0.3	12.9	0.3	0.3	0.4
Delay (s)	116.0	220.1		41.2	46.2	28.1	33.8	34.7	54.7	30.5	34.0	34.7
Level of Service	F	F		D	D	C	C	C	D	C	C	C
Approach Delay (s)		217.0			44.3			42.3			32.8	
Approach LOS		F			D			D			C	

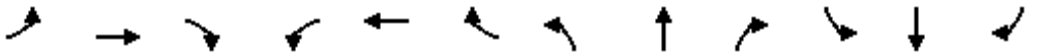
Intersection Summary			
HCM 2000 Control Delay	118.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



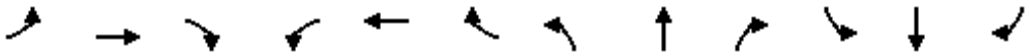
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	560	2585	1475	320	690	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		5.0	5.0
Lane Util. Factor	0.97	0.91	0.91		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3367	4988	4774		3400	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3367	4988	4774		3400	1571
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	583	2693	1536	333	719	479
RTOR Reduction (vph)	0	0	26	0	0	268
Lane Group Flow (vph)	583	2693	1843	0	719	211
Confl. Peds. (#/hr)	3			3		5
Heavy Vehicles (%)	4%	4%	6%	3%	3%	1%
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	25.1	86.0	54.9		33.0	33.0
Effective Green, g (s)	25.1	86.0	54.9		33.0	33.0
Actuated g/C Ratio	0.19	0.66	0.42		0.25	0.25
Clearance Time (s)	6.0	6.0	6.0		5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	650	3299	2016		863	398
v/s Ratio Prot	0.17	c0.54	c0.39		c0.21	
v/s Ratio Perm						0.13
v/c Ratio	0.90	0.82	0.91		0.83	0.53
Uniform Delay, d1	51.2	16.2	35.3		45.9	41.8
Progression Factor	1.14	0.40	0.96		1.00	1.00
Incremental Delay, d2	1.7	0.2	6.8		9.3	5.0
Delay (s)	60.1	6.6	40.8		55.2	46.8
Level of Service	E	A	D		E	D
Approach Delay (s)		16.2	40.8		51.8	
Approach LOS		B	D		D	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰↰		↱
Volume (vph)	0	2415	860	0	1080	355	0	0	0	955	0	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	4.0				6.0		4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		4988	1521		3406	1455				3335		1524
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		4988	1521		3406	1455				3335		1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2516	896	0	1125	370	0	0	0	995	0	745
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2516	896	0	1125	370	0	0	0	995	0	745
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	4%	4%	0%	6%	11%	0%	0%	0%	5%	0%	6%
Turn Type		NA	Free		NA	Free				custom		Free
Protected Phases		2			6							
Permitted Phases			Free			Free				4		Free
Actuated Green, G (s)		73.0	130.0		73.0	130.0				45.0		130.0
Effective Green, g (s)		73.0	130.0		73.0	130.0				45.0		130.0
Actuated g/C Ratio		0.56	1.00		0.56	1.00				0.35		1.00
Clearance Time (s)		6.0			6.0					6.0		
Vehicle Extension (s)		3.0			3.0					3.0		
Lane Grp Cap (vph)		2800	1521		1912	1455				1154		1524
v/s Ratio Prot		c0.50			0.33							
v/s Ratio Perm			0.59			0.25				c0.30		0.49
v/c Ratio		0.90	0.59		0.59	0.25				0.86		0.49
Uniform Delay, d1		25.2	0.0		18.7	0.0				39.6		0.0
Progression Factor		1.22	1.00		0.76	1.00				1.00		1.00
Incremental Delay, d2		2.9	0.9		1.2	0.4				8.6		1.1
Delay (s)		33.7	0.9		15.5	0.4				48.2		1.1
Level of Service		C	A		B	A				D		A
Approach Delay (s)		25.1			11.8			0.0			28.0	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2360	1010	0	1165	755	270	0	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	6.0	6.0		6.0			
Lane Util. Factor		0.95	1.00		0.86	0.86	0.97		1.00			
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00		1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00		1.00			
Frt		1.00	0.85		0.97	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3471	1520		4473	1263	3213		1495			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3471	1520		4473	1263	3213		1495			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2458	1052	0	1214	786	281	0	214	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	21	0	0	0
Lane Group Flow (vph)	0	2458	1052	0	1544	456	281	0	193	0	0	0
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	0%	4%	4%	0%	5%	10%	9%	0%	8%	0%	0%	0%
Turn Type		NA	Free		NA	Prot	Prot		custom			
Protected Phases		6			6	6	8					
Permitted Phases			Free						8			
Actuated Green, G (s)		96.0	130.0		96.0	96.0	22.0		22.0			
Effective Green, g (s)		96.0	130.0		96.0	96.0	22.0		22.0			
Actuated g/C Ratio		0.74	1.00		0.74	0.74	0.17		0.17			
Clearance Time (s)		6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		2563	1520		3303	932	543		253			
v/s Ratio Prot		c0.71			0.35	0.36	0.09					
v/s Ratio Perm			c0.69						0.13			
v/c Ratio		0.96	0.69		0.47	0.49	0.52		0.76			
Uniform Delay, d1		15.2	0.0		6.8	7.0	49.2		51.5			
Progression Factor		0.88	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		5.5	1.1		0.5	1.8	0.8		12.8			
Delay (s)		18.9	1.1		7.3	8.8	50.0		64.3			
Level of Service		B	A		A	A	D		E			
Approach Delay (s)		13.6			7.6			56.2			0.0	
Approach LOS		B			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	13.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	20	0	300	130	1295	0	0	795	545
Conflicting Peds, #/hr	1	0	3	3	0	1	5	0	15	15	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	0	120	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	31	0	5	5	3	0	0	4	3
Mvmt Flow	0	0	0	21	0	309	134	1335	0	0	820	562

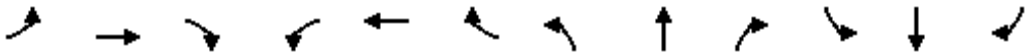
Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2426	2426	686	820	0	0	1338	0	0
Stage 1	1606	1606	-	-	-	-	-	-	-
Stage 2	820	820	-	-	-	-	-	-	-
Follow-up Headway	4	4	3	2	-	-	2	-	-
Pot Capacity-1 Maneuver	23	33	385	796	-	-	522	-	-
Stage 1	120	166	-	-	-	-	-	-	-
Stage 2	373	392	-	-	-	-	-	-	-
Time blocked-Platoon, %					-	-		-	-
Mov Capacity-1 Maneuver	# 19	0	379	786	-	-	515	-	-
Mov Capacity-2 Maneuver	# 19	0	-	-	-	-	-	-	-
Stage 1	99	0	-	-	-	-	-	-	-
Stage 2	368	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	129	1	0

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	91	379	515	-	-
HCM Lane V/C Ratio	0.171	-	-	1.359	0.544	-	-	-
HCM Control Delay (s)	10.519	-	-	$ 300.8	25.3	0	-	-
HCM Lane LOS	B			F	D	A		
HCM 95th %tile Q(veh)	0.612	-	-	9.156	3.127	0	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	705	0	385	0	0	0	0	720	205	320	495	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5					6.0		4.5	6.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1698	1698	1538					3369		1751	1845	
Flt Permitted	0.95	0.95	1.00					1.00		0.20	1.00	
Satd. Flow (perm)	1698	1698	1538					3369		361	1845	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	742	0	405	0	0	0	0	758	216	337	521	0
RTOR Reduction (vph)	0	0	217	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	371	371	188	0	0	0	0	949	0	337	521	0
Confl. Peds. (#/hr)							14		15	15		14
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	0%	3%	0%	3%	3%	0%
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8							2		
Actuated Green, G (s)	23.5	23.5	23.5					38.0		57.5	56.0	
Effective Green, g (s)	23.5	23.5	23.5					38.0		57.5	56.0	
Actuated g/C Ratio	0.26	0.26	0.26					0.42		0.64	0.62	
Clearance Time (s)	4.5	4.5	4.5					6.0		4.5	6.0	
Vehicle Extension (s)	0.5	0.5	0.5					0.5		0.5	0.5	
Lane Grp Cap (vph)	443	443	401					1422		439	1148	
v/s Ratio Prot	c0.22	0.22						0.28		c0.12	0.28	
v/s Ratio Perm			0.12							c0.38		
v/c Ratio	0.84	0.84	0.47					0.67		0.77	0.45	
Uniform Delay, d1	31.4	31.4	28.0					20.9		21.4	8.9	
Progression Factor	1.00	1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2	12.4	12.4	0.3					2.5		7.1	1.3	
Delay (s)	43.9	43.9	28.3					23.4		28.5	10.2	
Level of Service	D	D	C					C		C	B	
Approach Delay (s)		38.4			0.0			23.4			17.4	
Approach LOS		D			A			C			B	

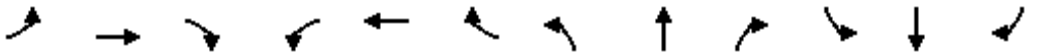
Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	150	375	165	220	400	245	1300	125	260	1180	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1622	3252	1532	3331	3438	1586	3400	3312	1437	1656	3471	1471
Flt Permitted	0.57	1.00	1.00	0.65	1.00	1.00	0.10	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	976	3252	1532	2286	3438	1586	342	3312	1437	112	3471	1471
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	158	395	174	232	421	258	1368	132	274	1242	189
RTOR Reduction (vph)	0	0	149	0	0	159	0	0	75	0	0	72
Lane Group Flow (vph)	84	158	246	174	232	262	258	1368	57	274	1242	117
Confl. Peds. (#/hr)	5		1	1		5	3					3
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	11%	11%	4%	5%	5%	0%	3%	9%	11%	9%	4%	8%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	38.0	34.0	34.0	38.0	34.0	34.0	66.0	56.0	56.0	79.0	63.0	63.0
Effective Green, g (s)	38.0	34.0	34.0	38.0	34.0	34.0	66.0	56.0	56.0	79.0	63.0	63.0
Actuated g/C Ratio	0.29	0.26	0.26	0.29	0.26	0.26	0.51	0.43	0.43	0.61	0.48	0.48
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	850	400	700	899	414	408	1426	619	269	1682	712
v/s Ratio Prot	c0.01	0.05		0.01	0.07		0.05	0.41		c0.13	0.36	
v/s Ratio Perm	0.07		0.16	0.06		c0.17	0.27		0.04	c0.48		0.08
v/c Ratio	0.28	0.19	0.61	0.25	0.26	0.63	0.63	0.96	0.09	1.02	0.74	0.16
Uniform Delay, d1	34.7	37.3	42.2	34.4	38.0	42.5	45.2	35.9	21.9	46.7	26.9	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	6.9	0.2	0.7	7.2	3.2	15.9	0.3	59.7	2.9	0.5
Delay (s)	35.2	37.7	49.1	34.6	38.7	49.7	48.3	51.8	22.2	106.4	29.8	19.3
Level of Service	D	D	D	C	D	D	D	D	C	F	C	B
Approach Delay (s)		44.5			43.4			49.1			41.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	15	30	200	5	340	35	1305	110	255	1230	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.85		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1710		1719	1557		1805	1773		1752	1845	1582
Flt Permitted	0.28	1.00		0.57	1.00		0.06	1.00		0.05	1.00	1.00
Satd. Flow (perm)	528	1710		1028	1557		106	1773		98	1845	1582
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	16	32	211	5	358	37	1374	116	268	1295	26
RTOR Reduction (vph)	0	28	0	0	137	0	0	3	0	0	0	9
Lane Group Flow (vph)	16	20	0	211	226	0	37	1487	0	268	1295	17
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	5%	0%	4%	0%	6%	3%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	16.0	14.4		26.4	20.8		74.0	71.6		85.6	79.2	79.2
Effective Green, g (s)	16.0	14.4		26.4	20.8		74.0	71.6		85.6	79.2	79.2
Actuated g/C Ratio	0.13	0.12		0.22	0.17		0.62	0.60		0.71	0.66	0.66
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	87	205		272	269		99	1057		207	1217	1044
v/s Ratio Prot	0.00	0.01		c0.05	c0.14		0.01	c0.84		c0.11	0.70	
v/s Ratio Perm	0.02			0.12			0.22			0.82		0.01
v/c Ratio	0.18	0.10		0.78	0.84		0.37	1.41		1.29	1.06	0.02
Uniform Delay, d1	45.9	47.0		43.4	48.0		28.4	24.2		42.7	20.4	7.0
Progression Factor	1.00	1.00		1.00	1.00		1.78	1.41		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2		12.9	19.9		2.0	187.9		163.6	44.7	0.0
Delay (s)	46.9	47.2		56.4	67.9		52.5	222.0		206.3	65.1	7.0
Level of Service	D	D		E	E		D	F		F	E	A
Approach Delay (s)		47.1			63.7			217.9			88.0	
Approach LOS		D			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	136.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	120.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

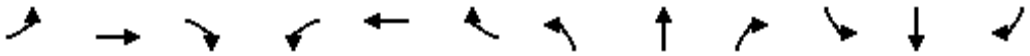
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	185	150	80	50	190	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	4	10	15	43	8	8
Mvmt Flow	189	153	82	51	194	5
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.9	9.7	12.1
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	62%
Vol Thru, %	0%	0%	55%	38%
Vol Right, %	0%	100%	45%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	5	335	130
LT Vol	0	0	185	50
Through Vol	0	5	150	0
RT Vol	190	0	0	80
Lane Flow Rate	194	5	342	133
Geometry Grp	7	7	2	2
Degree of Util (X)	0.335	0.007	0.428	0.195
Departure Headway (Hd)	6.221	5.011	4.508	5.3
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	574	707	796	673
Service Time	4.008	2.796	2.552	3.366
HCM Lane V/C Ratio	0.338	0.007	0.43	0.198
HCM Control Delay	12.2	7.8	10.9	9.7
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.5	0	2.2	0.7

Notes

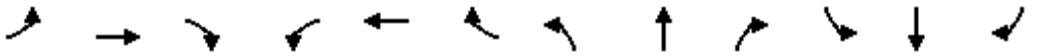
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1560	60	490	1505	160	170	460	1055	220	420	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3311		3367	3438	1495	1656	3406	1538	1752	3350	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3311		3367	3438	1495	1656	3406	1538	1752	3350	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	93	1608	62	505	1552	165	175	474	1088	227	433	77
RTOR Reduction (vph)	0	2	0	0	0	73	0	0	0	0	11	0
Lane Group Flow (vph)	93	1668	0	505	1552	92	175	474	1088	227	499	0
Confl. Peds. (#/hr)	5		4	4		5	26					26
Confl. Bikes (#/hr)						4						4
Heavy Vehicles (%)	3%	8%	18%	4%	5%	6%	9%	6%	5%	3%	3%	13%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Free	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6			Free			
Actuated Green, G (s)	7.0	56.0		14.0	63.0	63.0	15.3	22.0	130.0	18.0	24.7	
Effective Green, g (s)	7.0	56.0		14.0	63.0	63.0	15.3	22.0	130.0	18.0	24.7	
Actuated g/C Ratio	0.05	0.43		0.11	0.48	0.48	0.12	0.17	1.00	0.14	0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	1426		362	1666	724	194	576	1538	242	636	
v/s Ratio Prot	0.05	c0.50		c0.15	0.45		0.11	0.14		c0.13	0.15	
v/s Ratio Perm						0.06			c0.71			
v/c Ratio	0.99	1.17		1.40	0.93	0.13	0.90	0.82	0.71	0.94	0.78	
Uniform Delay, d1	61.5	37.0		58.0	31.5	18.4	56.6	52.1	0.0	55.4	50.1	
Progression Factor	1.00	1.00		0.79	1.41	2.63	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	88.5	84.2		186.9	6.6	0.2	38.4	9.3	2.8	40.7	6.3	
Delay (s)	149.9	121.2		232.9	51.0	48.6	95.0	61.4	2.8	96.1	56.4	
Level of Service	F	F		F	D	D	F	E	A	F	E	
Approach Delay (s)		122.7			92.2			28.1			68.6	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM 2000 Control Delay	80.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		

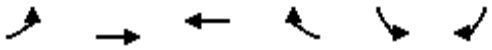
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	2460	290	325	1495	115	410	185	395	290	165	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	5.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3303	4988	1514	3400	3406	1493	3398	1845	1568	3466	1900	1577
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.55	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	3303	4988	1514	3400	3406	1493	1971	1845	1568	1899	1900	1577
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	2589	305	342	1574	121	432	195	416	305	174	263
RTOR Reduction (vph)	0	0	98	0	0	53	0	0	0	0	0	98
Lane Group Flow (vph)	89	2589	207	342	1574	68	432	195	416	305	174	165
Confl. Peds. (#/hr)	5		3	3		5	1		1	1		1
Confl. Bikes (#/hr)						3			1			1
Heavy Vehicles (%)	6%	4%	5%	3%	6%	6%	3%	3%	3%	1%	0%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Prot	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8	8	7	4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	5.0	51.0	51.0	14.8	60.8	60.8	44.2	39.2	39.2	44.2	39.2	39.2
Effective Green, g (s)	6.5	52.5	51.0	16.3	62.3	62.3	47.2	40.7	40.7	47.2	40.7	40.7
Actuated g/C Ratio	0.05	0.40	0.39	0.13	0.48	0.48	0.36	0.31	0.31	0.36	0.31	0.31
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	165	2014	593	426	1632	715	786	577	490	767	594	493
v/s Ratio Prot	0.03	c0.52		0.10	c0.46		c0.03	0.11	c0.27	0.02	0.09	
v/s Ratio Perm			0.14			0.05	0.17			0.12		0.10
v/c Ratio	0.54	1.29	0.35	0.80	0.96	0.10	0.55	0.34	0.85	0.40	0.29	0.33
Uniform Delay, d1	60.3	38.8	27.8	55.3	32.8	18.5	33.0	34.3	41.8	30.2	33.8	34.3
Progression Factor	0.79	0.66	0.28	0.60	1.29	2.11	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	129.7	0.5	7.1	11.5	0.2	0.8	0.3	12.9	0.3	0.3	0.4
Delay (s)	48.9	155.4	8.3	40.5	53.8	39.2	33.8	34.7	54.7	30.5	34.0	34.7
Level of Service	D	F	A	D	D	D	C	C	D	C	C	C
Approach Delay (s)		137.2			50.7			42.3			32.8	
Approach LOS		F			D			D			C	

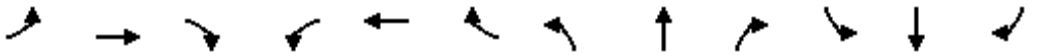
Intersection Summary			
HCM 2000 Control Delay	85.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



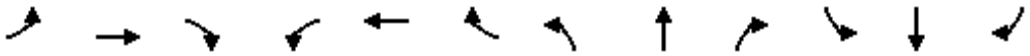
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	560	2585	1475	320	690	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	5.0	5.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	4988	4893	1544	3400	1571
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	4988	4893	1544	3400	1571
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	583	2693	1536	333	719	479
RTOR Reduction (vph)	0	0	0	174	0	297
Lane Group Flow (vph)	583	2693	1536	159	719	182
Confl. Peds. (#/hr)	3			3		5
Heavy Vehicles (%)	4%	4%	6%	3%	3%	1%
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	26.4	86.0	53.6	53.6	33.0	33.0
Effective Green, g (s)	26.4	86.0	53.6	53.6	33.0	33.0
Actuated g/C Ratio	0.20	0.66	0.41	0.41	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	683	3299	2017	636	863	398
v/s Ratio Prot	0.17	c0.54	0.31		c0.21	
v/s Ratio Perm				0.10		0.12
v/c Ratio	0.85	0.82	0.76	0.25	0.83	0.46
Uniform Delay, d1	49.9	16.2	32.7	25.0	45.9	40.9
Progression Factor	1.19	0.33	0.93	1.81	1.00	1.00
Incremental Delay, d2	1.0	0.2	2.4	0.8	9.3	3.8
Delay (s)	60.2	5.5	32.6	46.1	55.2	44.7
Level of Service	E	A	C	D	E	D
Approach Delay (s)		15.3	35.0		51.0	
Approach LOS		B	D		D	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2415	860	0	1080	355	0	0	0	955	0	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	4.0				6.0		4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	0.98		1.00	1.00				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		4988	1521		3406	1455				3335		1524
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		4988	1521		3406	1455				3335		1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2516	896	0	1125	370	0	0	0	995	0	745
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2516	896	0	1125	370	0	0	0	995	0	745
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	4%	4%	0%	6%	11%	0%	0%	0%	5%	0%	6%
Turn Type		NA	Free		NA	Free				custom		Free
Protected Phases		2			6							
Permitted Phases			Free			Free				4		Free
Actuated Green, G (s)		73.0	130.0		73.0	130.0				45.0		130.0
Effective Green, g (s)		73.0	130.0		73.0	130.0				45.0		130.0
Actuated g/C Ratio		0.56	1.00		0.56	1.00				0.35		1.00
Clearance Time (s)		6.0			6.0					6.0		
Vehicle Extension (s)		3.0			3.0					3.0		
Lane Grp Cap (vph)		2800	1521		1912	1455				1154		1524
v/s Ratio Prot		c0.50			0.33							
v/s Ratio Perm			0.59			0.25				c0.30		0.49
v/c Ratio		0.90	0.59		0.59	0.25				0.86		0.49
Uniform Delay, d1		25.2	0.0		18.7	0.0				39.6		0.0
Progression Factor		1.20	1.00		0.77	1.00				1.00		1.00
Incremental Delay, d2		2.9	0.9		1.2	0.4				8.6		1.1
Delay (s)		33.1	0.9		15.6	0.4				48.2		1.1
Level of Service		C	A		B	A				D		A
Approach Delay (s)		24.7			11.9			0.0			28.0	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2360	1010	0	1165	755	270	0	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0		6.0	6.0	6.0		6.0			
Lane Util. Factor		0.95	1.00		0.86	0.86	0.97		0.88			
Frpb, ped/bikes		1.00	0.98		1.00	1.00	1.00		1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00		1.00			
Frt		1.00	0.85		0.97	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3471	1520		4473	1263	3213		2632			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3471	1520		4473	1263	3213		2632			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	2458	1052	0	1214	786	281	0	214	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	22	0	0	0
Lane Group Flow (vph)	0	2458	1052	0	1544	456	281	0	192	0	0	0
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	0%	4%	4%	0%	5%	10%	9%	0%	8%	0%	0%	0%
Turn Type		NA	Free		NA	Prot	Prot		custom			
Protected Phases		6			6	6	8					
Permitted Phases			Free						8			
Actuated Green, G (s)		101.3	130.0		101.3	101.3	16.7		16.7			
Effective Green, g (s)		101.3	130.0		101.3	101.3	16.7		16.7			
Actuated g/C Ratio		0.78	1.00		0.78	0.78	0.13		0.13			
Clearance Time (s)		6.0			6.0	6.0	6.0		6.0			
Vehicle Extension (s)		3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)		2704	1520		3485	984	412		338			
v/s Ratio Prot		c0.71			0.35	0.36	0.09					
v/s Ratio Perm			c0.69						0.07			
v/c Ratio		0.91	0.69		0.44	0.46	0.68		0.57			
Uniform Delay, d1		10.9	0.0		4.8	5.0	54.1		53.3			
Progression Factor		0.82	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		2.7	1.1		0.4	1.6	4.6		2.2			
Delay (s)		11.7	1.1		5.2	6.5	58.7		55.5			
Level of Service		B	A		A	A	E		E			
Approach Delay (s)		8.5			5.5			57.3			0.0	
Approach LOS		A			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	13.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	20	0	300	130	1295	0	0	795	545
Conflicting Peds, #/hr	1	0	3	3	0	1	5	0	15	15	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	150	120	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	31	0	5	5	3	0	0	4	3
Mvmt Flow	0	0	0	21	0	309	134	1335	0	0	820	562

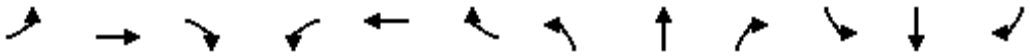
Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2426	2426	686	820	0	0	1338	0	0
Stage 1	1606	1606	-	-	-	-	-	-	-
Stage 2	820	820	-	-	-	-	-	-	-
Follow-up Headway	4	4	3	2	-	-	2	-	-
Pot Capacity-1 Maneuver	23	33	385	796	-	-	522	-	-
Stage 1	120	166	-	-	-	-	-	-	-
Stage 2	373	392	-	-	-	-	-	-	-
Time blocked-Platoon, %					-	-		-	-
Mov Capacity-1 Maneuver	# 19	0	379	786	-	-	515	-	-
Mov Capacity-2 Maneuver	# 19	0	-	-	-	-	-	-	-
Stage 1	99	0	-	-	-	-	-	-	-
Stage 2	368	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	129	1	0

Minor Lane / Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	91	379	515	-	-
HCM Lane V/C Ratio	0.171	-	-	1.359	0.544	-	-	-
HCM Control Delay (s)	10.519	-	-	$ 300.8	25.3	0	-	-
HCM Lane LOS	B			F	D	A		
HCM 95th %tile Q(veh)	0.612	-	-	9.156	3.127	0	-	-

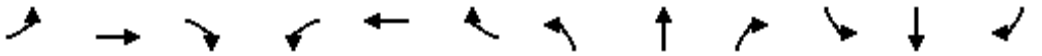
Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	705	0	385	0	0	0	0	720	205	320	495	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5					6.0		4.5	6.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00					0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1698	1698	1538					3369		1751	1845	
Flt Permitted	0.95	0.95	1.00					1.00		0.20	1.00	
Satd. Flow (perm)	1698	1698	1538					3369		361	1845	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	742	0	405	0	0	0	0	758	216	337	521	0
RTOR Reduction (vph)	0	0	217	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	371	371	188	0	0	0	0	949	0	337	521	0
Confl. Peds. (#/hr)							14		15	15		14
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	0%	3%	0%	3%	3%	0%
Turn Type	Split	NA	Perm					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8							2		
Actuated Green, G (s)	23.5	23.5	23.5					38.0		57.5	56.0	
Effective Green, g (s)	23.5	23.5	23.5					38.0		57.5	56.0	
Actuated g/C Ratio	0.26	0.26	0.26					0.42		0.64	0.62	
Clearance Time (s)	4.5	4.5	4.5					6.0		4.5	6.0	
Vehicle Extension (s)	0.5	0.5	0.5					0.5		0.5	0.5	
Lane Grp Cap (vph)	443	443	401					1422		439	1148	
v/s Ratio Prot	c0.22	0.22						0.28		c0.12	0.28	
v/s Ratio Perm			0.12							c0.38		
v/c Ratio	0.84	0.84	0.47					0.67		0.77	0.45	
Uniform Delay, d1	31.4	31.4	28.0					20.9		21.4	8.9	
Progression Factor	1.00	1.00	1.00					1.00		0.92	1.10	
Incremental Delay, d2	12.4	12.4	0.3					2.5		6.1	1.1	
Delay (s)	43.9	43.9	28.3					23.4		25.7	10.9	
Level of Service	D	D	C					C		C	B	
Approach Delay (s)		38.4			0.0			23.4			16.8	
Approach LOS		D			A			C			B	

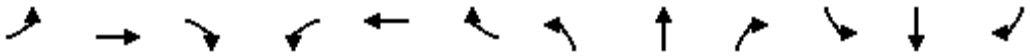
Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	150	375	165	220	400	245	1300	125	260	1180	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1622	3252	1532	3331	3438	1586	3400	3312	1437	1656	3471	1471
Flt Permitted	0.57	1.00	1.00	0.65	1.00	1.00	0.10	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	976	3252	1532	2286	3438	1586	342	3312	1437	112	3471	1471
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	158	395	174	232	421	258	1368	132	274	1242	189
RTOR Reduction (vph)	0	0	149	0	0	159	0	0	75	0	0	72
Lane Group Flow (vph)	84	158	246	174	232	262	258	1368	57	274	1242	117
Confl. Peds. (#/hr)	5		1	1		5	3					3
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	11%	11%	4%	5%	5%	0%	3%	9%	11%	9%	4%	8%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	38.0	34.0	34.0	38.0	34.0	34.0	66.0	56.0	56.0	79.0	63.0	63.0
Effective Green, g (s)	38.0	34.0	34.0	38.0	34.0	34.0	66.0	56.0	56.0	79.0	63.0	63.0
Actuated g/C Ratio	0.29	0.26	0.26	0.29	0.26	0.26	0.51	0.43	0.43	0.61	0.48	0.48
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	850	400	700	899	414	408	1426	619	269	1682	712
v/s Ratio Prot	c0.01	0.05		0.01	0.07		0.05	0.41		c0.13	0.36	
v/s Ratio Perm	0.07		0.16	0.06		c0.17	0.27		0.04	c0.48		0.08
v/c Ratio	0.28	0.19	0.61	0.25	0.26	0.63	0.63	0.96	0.09	1.02	0.74	0.16
Uniform Delay, d1	34.7	37.3	42.2	34.4	38.0	42.5	45.2	35.9	21.9	46.7	26.9	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	6.9	0.2	0.7	7.2	3.2	15.9	0.3	59.7	2.9	0.5
Delay (s)	35.2	37.7	49.1	34.6	38.7	49.7	48.3	51.8	22.2	106.4	29.8	19.3
Level of Service	D	D	D	C	D	D	D	D	C	F	C	B
Approach Delay (s)		44.5			43.4			49.1			41.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	15	30	200	5	340	35	1305	110	255	1230	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.85		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1710		1719	1557		1805	3368		1752	3495	
Flt Permitted	0.16	1.00		0.73	1.00		0.21	1.00		0.08	1.00	
Satd. Flow (perm)	306	1710		1313	1557		395	3368		145	3495	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	16	32	211	5	358	37	1374	116	268	1295	26
RTOR Reduction (vph)	0	26	0	0	244	0	0	4	0	0	1	0
Lane Group Flow (vph)	16	22	0	211	119	0	37	1486	0	268	1320	0
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	5%	0%	4%	0%	6%	3%	3%	3%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.8	24.8		24.8	24.8		74.2	74.2		97.2	97.2	
Effective Green, g (s)	24.8	24.8		24.8	24.8		74.2	74.2		97.2	97.2	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.57	0.57		0.75	0.75	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	58	326		250	297		225	1922		343	2613	
v/s Ratio Prot		0.01			0.08			0.44		c0.11	0.38	
v/s Ratio Perm	0.05			c0.16			0.09			c0.47		
v/c Ratio	0.28	0.07		0.84	0.40		0.16	0.77		0.78	0.51	
Uniform Delay, d1	44.9	43.1		50.7	46.1		13.2	21.4		34.3	6.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.1		22.1	0.9		1.6	3.1		11.0	0.7	
Delay (s)	47.5	43.2		72.8	47.0		14.8	24.5		45.3	7.4	
Level of Service	D	D		E	D		B	C		D	A	
Approach Delay (s)		44.3			56.5			24.3			13.7	
Approach LOS		D			E			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

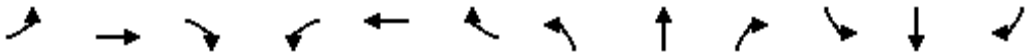
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	185	150	80	50	190	5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	4	10	15	43	8	8
Mvmt Flow	189	153	82	51	194	5
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.9	9.7	12.1
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	62%
Vol Thru, %	0%	0%	55%	38%
Vol Right, %	0%	100%	45%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	5	335	130
LT Vol	0	0	185	50
Through Vol	0	5	150	0
RT Vol	190	0	0	80
Lane Flow Rate	194	5	342	133
Geometry Grp	7	7	2	2
Degree of Util (X)	0.335	0.007	0.428	0.195
Departure Headway (Hd)	6.221	5.011	4.508	5.3
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	574	707	796	673
Service Time	4.008	2.796	2.552	3.366
HCM Lane V/C Ratio	0.338	0.007	0.43	0.198
HCM Control Delay	12.2	7.8	10.9	9.7
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.5	0	2.2	0.7

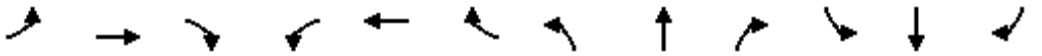
Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	0	210	0	0	0	0	1390	390	80	1410	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00						1.00	0.95	1.00	1.00	
Flpb, ped/bikes	1.00	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.85						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1538						3505	1538	1752	3505	
Flt Permitted	0.95	1.00						1.00	1.00	0.11	1.00	
Satd. Flow (perm)	1787	1538						3505	1538	202	3505	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	0	221	0	0	0	0	1463	411	84	1484	0
RTOR Reduction (vph)	0	75	0	0	0	0	0	0	188	0	0	0
Lane Group Flow (vph)	137	146	0	0	0	0	0	1463	223	84	1484	0
Confl. Peds. (#/hr)							14		15	15		14
Heavy Vehicles (%)	1%	0%	5%	0%	0%	0%	0%	3%	0%	3%	3%	0%
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases									2	6		
Actuated Green, G (s)	10.8	10.8						32.5	32.5	41.2	41.2	
Effective Green, g (s)	10.8	10.8						32.5	32.5	41.2	41.2	
Actuated g/C Ratio	0.18	0.18						0.54	0.54	0.69	0.69	
Clearance Time (s)	4.0	4.0						4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	321	276						1898	833	260	2406	
v/s Ratio Prot	0.08	c0.10						c0.42		0.03	c0.42	
v/s Ratio Perm									0.14	0.20		
v/c Ratio	0.43	0.53						0.77	0.27	0.32	0.62	
Uniform Delay, d1	21.9	22.3						10.8	7.4	7.4	5.1	
Progression Factor	1.00	1.00						1.00	1.00	1.02	1.81	
Incremental Delay, d2	0.9	2.0						3.1	0.8	0.4	0.7	
Delay (s)	22.8	24.3						13.9	8.2	8.0	9.9	
Level of Service	C	C						B	A	A	A	
Approach Delay (s)		23.7			0.0			12.7			9.8	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	170	0	140	210	1310	0	0	1320	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor				1.00	1.00		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.97
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1378	1518		1719	3505			3471	1522
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1378	1518		223	3505			3471	1522
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	179	0	147	221	1379	0	0	1389	147
RTOR Reduction (vph)	0	0	0	0	72	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	0	0	179	75	0	221	1379	0	0	1389	70
Confl. Peds. (#/hr)	1		3	3		1	5		15	15		5
Heavy Vehicles (%)	0%	0%	0%	31%	0%	5%	5%	3%	0%	0%	4%	3%
Turn Type				Split	NA		pm+pt	NA			NA	Perm
Protected Phases				8	8		5	2			6	
Permitted Phases							2					6
Actuated Green, G (s)				12.4	12.4		39.6	39.6			28.5	28.5
Effective Green, g (s)				12.4	12.4		39.6	39.6			28.5	28.5
Actuated g/C Ratio				0.21	0.21		0.66	0.66			0.48	0.48
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				284	313		324	2313			1648	722
v/s Ratio Prot				c0.13	0.05		0.08	c0.39			c0.40	
v/s Ratio Perm							0.37					0.05
v/c Ratio				0.63	0.24		0.68	0.60			0.84	0.10
Uniform Delay, d1				21.7	19.9		9.8	5.7			13.8	8.7
Progression Factor				1.00	1.00		0.85	1.21			1.00	1.00
Incremental Delay, d2				4.5	0.4		4.1	0.8			5.4	0.3
Delay (s)				26.2	20.3		12.4	7.7			19.2	8.9
Level of Service				C	C		B	A			B	A
Approach Delay (s)		0.0			23.5			8.4			18.2	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX D
COLLISION HISTORY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
04640	12/26/2013	Inj C	SB EX MISSION ST C2	MISSION ST SE	REAR	FOG	WET	DLIT
04612	12/23/2013	Inj C	NORTH SANTIAM HY	WB ENFR GAFFIN RD C4	FIX	CLR	WET	DARK
04614	12/23/2013	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	WET	DAY
04555	12/18/2013	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	WET	DAY
04561	12/18/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	WET	DAY
04518	12/16/2013	Inj B	LANCASTER DR NE	WB EX LANCASTER C4	PED	FOG	WET	DLIT
04522	12/16/2013	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
04488	12/13/2013	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DLIT
04496	12/13/2013	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DLIT
04471	12/12/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	FOG	WET	DAY
04420	12/8/2013	PDO	PACIFIC HY I-5	SB EF MISSION WB	FIX	CLR	ICE	DAWN
04336	12/6/2013	Inj C	MISSION ST SE	TURNER RD SE	REAR	SNOW	ICE	DAY
04307	12/5/2013	PDO	SB EX MISSION WB C3	MISSION ST SE	FIX	CLR	DRY	DAY
04264	12/2/2013	Inj C	LANCASTER DR NE	WB EF LANCASTER C5	TURN	CLR	WET	DLIT
04210	11/27/2013	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
04078	11/18/2013	Inj C	25TH ST SE	MISSION ST SE	REAR	CLR	DRY	DAY
04076	11/17/2013	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLD	WET	DAY
04041	11/15/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
04054	11/15/2013	PDO	GAFFIN FR RD	WB ENFR GAFFIN RD C4	TURN	CLD	DRY	DAY
03965	11/9/2013	Inj C	LANCASTER DR NE	WB EX LANCASTER C4	TURN	CLR	DRY	DARK
03914	11/6/2013	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DAY
03919	11/6/2013	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DUSK
03904	11/5/2013	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
03886	11/4/2013	PDO	MISSION ST SE	SB EX MISSION ST C2	TURN	RAIN	WET	DAY
03801	10/30/2013	PDO	MISSION ST SE	SB EX MISSION ST C2	SS-O	CLR	DRY	DAY
03778	10/29/2013	Inj C	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
03782	10/29/2013	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DLIT
03749	10/27/2013	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DAY
03693	10/23/2013	PDO	MISSION ST SE	25TH ST SE	REAR	FOG	DRY	DAY
03686	10/22/2013	PDO	GAFFIN FR RD	DEER PARK DR CN C1	REAR	CLR	DRY	DAY
03597	10/16/2013	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
03559	10/13/2013	Inj C	LANCASTER DR NE	EB EF LANCASTER C3	TURN	CLD	DRY	DAY
03553	10/12/2013	Inj B	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
03931	10/11/2013	PDO	NORTH SANTIAM HY	EB ENFR DEER PARK C3	SS-O	CLR	DRY	DAY
03431	10/3/2013	PDO	MISSION ST SE	25TH ST SE	FIX	CLD	DRY	DLIT
03406	10/1/2013	PDO	MISSION ST SE	SB EX MISSION ST C2	FIX	CLD	WET	DAY
03375	9/30/2013	Inj C	MISSION ST SE	25TH ST SE	REAR	CLD	WET	DAY
03336	9/27/2013	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
03236	9/20/2013	PDO	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
03214	9/19/2013	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
03194	9/18/2013	PDO	25TH ST SE	MISSION ST SE	TURN	CLD	DRY	DAY
03179	9/17/2013	Inj C	MISSION ST SE	AIRPORT RD SE	REAR	CLD	DRY	DAY
03164	9/16/2013	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
03032	9/6/2013	Inj A	AIRPORT RD SE	MISSION ST SE	ANGL	CLR	DRY	DAY
02925	8/29/2013	PDO	25TH ST SE	MISSION ST SE	TURN	RAIN	WET	DAY
02911	8/28/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02872	8/25/2013	PDO	MISSION ST SE	25TH ST SE	TURN	RAIN	WET	DAY
04720	8/21/2013	Inj C	MISSION ST SE	SB EF MISSION WB	REAR	CLR	DRY	DAY
02778	8/18/2013	PDO	NORTH SANTIAM HY	DEER PARK DR CN C1	REAR	CLR	DRY	DAY
02743	8/14/2013	PDO	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
02717	8/13/2013	Inj C	MISSION ST SE	TURNER RD SE	TURN	CLR	DRY	DLIT
02644	8/7/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
92644	8/7/2013	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
02625	8/6/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
02579	8/2/2013	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLD	DRY	DAY
02462	7/23/2013	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02448	7/22/2013	PDO	AIRPORT RD SE	MISSION ST SE	TURN	CLR	DRY	DAY
03300	7/22/2013	Inj B	LANCASTER DR NE	EB EF LANCASTER C3	REAR	CLR	DRY	DAY
02406	7/19/2013	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02380	7/17/2013	Inj C	LANCASTER DR NE	WB EX LANCASTER C4	ANGL	CLR	DRY	DAY
02357	7/15/2013	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02350	7/14/2013	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02321	7/12/2013	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02309	7/11/2013	PDO	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
02235	7/5/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02174	7/1/2013	PDO	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
02172	7/1/2013	Inj B	MISSION ST SE	NB EX MISSION ST C1	FIX	CLR	DRY	DUSK
02106	6/27/2013	Inj B	LANCASTER DR NE	WB EF LANCASTER C5	TURN	CLR	DRY	DAY
02096	6/26/2013	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02104	6/26/2013	Inj B	MISSION ST SE	25TH ST SE	REAR	CLD	DRY	DAY
02036	6/21/2013	Inj B	25TH ST SE	MISSION ST SE	REAR	CLR	DRY	DAY
01887	6/10/2013	PDO	MISSION ST SE	TURNER RD SE	TURN	CLR	DRY	DAY
01890	6/10/2013	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02117	6/7/2013	Inj B	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
01861	6/1/2013	Inj C	MISSION ST SE	NB EF MISSION EB	REAR	CLR	DRY	DAY
01735	5/29/2013	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01719	5/27/2013	PDO	NORTH SANTIAM HY	EB EF LANCASTER C3	REAR	CLR	DRY	DAY
01587	5/17/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01542	5/14/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAWN
01499	5/10/2013	Inj C	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
01441	5/7/2013	Inj C	LANCASTER DR NE	EB EX LANCASTER C1	REAR	CLR	DRY	DAY
01406	5/3/2013	Inj C	MISSION ST SE	25TH ST SE	TURN	CLR	DRY	DAY
01281	4/26/2013	Inj C	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
01280	4/26/2013	Inj C	CORDON RD SE	GAFFIN RD SE	TURN	CLR	DRY	DAY
01240	4/22/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
01250	4/22/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01215	4/21/2013	Inj B	MISSION ST SE	SB EX MISSION ST C2	TURN	CLR	DRY	DAY
01193	4/19/2013	Inj C	TURNER RD SE	MISSION ST SE	FIX	RAIN	WET	DAWN
01021	4/5/2013	Inj C	NORTH SANTIAM HY	EB EF LANCASTER C3	TURN	RAIN	WET	DAWN
01032	4/5/2013	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DAY
00964	3/30/2013	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00969	3/30/2013	PDO	NORTH SANTIAM HY	DEER PARK DR CN C1	SS-O	CLR	DRY	DAY
00899	3/23/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DLIT
00845	3/19/2013	Inj B	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
00830	3/18/2013	Inj C	NORTH SANTIAM HY	EB EX LANCASTER C1	SS-O	CLR	DRY	DAY
00774	3/13/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00679	3/5/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
00654	3/2/2013	PDO	MISSION ST SE	SB EX MISSION ST C2	TURN	CLR	DRY	DUSK
00663	3/2/2013	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00648	3/1/2013	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00647	3/1/2013	Inj C	MISSION ST SE	25TH ST SE	REAR	CLD	DRY	DAY
00617	2/26/2013	PDO	25TH ST SE	MISSION ST SE	REAR	CLR	DRY	DAY
00544	2/20/2013	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	WET	DAY
00530	2/19/2013	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	RAIN	WET	DLIT
00504	2/18/2013	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	RAIN	WET	DLIT
00462	2/15/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
00398	2/7/2013	Inj C	AIRPORT RD SE	MISSION ST SE	REAR	RAIN	WET	DAY
00383	2/6/2013	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLD	DRY	DAY
00384	2/6/2013	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00377	2/4/2013	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
00332	1/31/2013	PDO	MISSION ST SE	25TH ST SE	BACK	CLD	DRY	DAY
00320	1/30/2013	Inj B	AIRPORT RD SE	MISSION ST SE	ANGL	RAIN	WET	DAY
00308	1/28/2013	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
00264	1/25/2013	Inj C	TURNER RD SE	MISSION ST SE	REAR	CLD	DRY	DLIT
00232	1/21/2013	PDO	MISSION ST SE	25TH ST SE	FIX	FOG	DRY	DLIT
00216	1/20/2013	Inj C	CORDON RD		FIX	FOG	ICE	DAY
00202	1/18/2013	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
00173	1/15/2013	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
00149	1/13/2013	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DUSK
00096	1/9/2013	PDO	CORDON RD SE	GAFFIN RD SE	REAR	SNOW	WET	DUSK
04494	12/30/2012	Inj C	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DLIT
04400	12/21/2012	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLD	DRY	DAY
04399	12/21/2012	Inj C	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DUSK
04372	12/20/2012	Inj C	MISSION ST SE	TURNER RD SE	SS-O	RAIN	WET	DLIT
04370	12/20/2012	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DLIT
04393	12/20/2012	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	RAIN	WET	DAY
04252	12/13/2012	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DUSK
04215	12/10/2012	Inj C	MISSION ST SE	25TH ST SE	ANGL	CLR	DRY	DLIT
04143	12/4/2012	PDO	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
04072	11/30/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
03935	11/21/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
03917	11/19/2012	Inj C	MISSION ST SE	NB EF MISSION EB	REAR	RAIN	WET	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
03920	11/19/2012	PDO	MISSION ST SE	SB EF MISSION WB	REAR	RAIN	WET	DAWN
03859	11/14/2012	Inj C	MISSION ST SE	25TH ST SE	REAR	CLD	WET	DAY
03863	11/14/2012	PDO	MISSION ST SE	25TH ST SE	TURN	CLR	DRY	DAY
03820	11/12/2012	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
03811	11/11/2012	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DUSK
03759	11/6/2012	PDO	MISSION ST SE	25TH ST SE	ANGL	CLR	WET	DLIT
03767	11/6/2012	Inj A	MISSION ST SE	SB EF MISSION EB C1	REAR	CLD	DRY	DAY
03665	10/29/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	RAIN	WET	DAY
03653	10/28/2012	PDO	MISSION ST SE	25TH ST SE	FIX	RAIN	WET	DAY
03551	10/21/2012	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	CLD	WET	DAY
03536	10/19/2012	PDO	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
03468	10/14/2012	Inj C	NORTH SANTIAM HY	WB ENFR GAFFIN RD C4	SS-O	CLD	WET	DAY
04086	10/11/2012	PDO	MISSION ST SE	25TH ST SE	TURN	CLR	DRY	DAY
03361	10/7/2012	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
03365	10/6/2012	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
03338	10/5/2012	Inj C	NORTH SANTIAM HY	DEER PARK DR CN C1	REAR	CLR	DRY	DAY
03343	10/5/2012	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DLIT
03313	10/3/2012	Inj C	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
03315	10/3/2012	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
93315	10/3/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	BACK	CLR	DRY	DAY
03317	10/3/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DAY
03258	9/27/2012	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
03240	9/25/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
03150	9/18/2012	PDO	AIRPORT RD SE	MISSION ST SE	TURN	CLR	DRY	DAY
03155	9/18/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
03160	9/14/2012	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
02964	9/5/2012	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
02943	9/3/2012	Inj C	LANCASTER DR NE	WB EX LANCASTER C4	REAR	CLR	DRY	DAY
02953	9/3/2012	PDO	MISSION ST SE	25TH ST SE	BACK	CLR	DRY	DAY
02942	9/2/2012	PDO	WB EXTO GAFFIN RD C2	NORTH SANTIAM HY	FIX	CLR	DRY	DAY
02904	8/31/2012	PDO	GAFFIN FR RD	DEER PARK DR CN C1	TURN	CLR	DRY	DAY
02827	8/23/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02774	8/18/2012	Inj B	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
02775	8/18/2012	Inj A	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DLIT
02667	8/10/2012	Inj C	GAFFIN FR RD	WB ENFR GAFFIN RD C4	TURN	CLR	DRY	DAY
02613	8/6/2012	Inj B	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
02619	8/6/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	SS-O	CLR	DRY	DAWN
02593	8/4/2012	PDO	MISSION ST SE	AIRPORT RD SE	SS-O	CLR	DRY	DLIT
02519	7/31/2012	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
02495	7/30/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02457	7/25/2012	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02416	7/24/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02423	7/24/2012	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
02338	7/17/2012	Inj C	GAFFIN RD SE		BACK	CLR	DRY	DAY
02281	7/16/2012	Fatal	HAWTHORNE AVE SE	MISSION ST SE	PED	CLR	DRY	DAY
02254	7/11/2012	Inj C	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
02341	7/10/2012	PDO	MISSION ST SE	25TH ST SE	REAR	UNK	UNK	DAY
02248	7/9/2012	Inj B	LANCASTER DR NE	EB EF LANCASTER C3	TURN	CLR	DRY	DAY
02290	7/6/2012	PDO	25TH ST SE	MISSION ST SE	SS-O	UNK	UNK	DAY
02195	7/5/2012	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
02159	7/2/2012	PDO	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
02127	6/29/2012	Inj B	MISSION ST SE	TURNER RD SE	TURN	CLD	DRY	DAY
02094	6/26/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	FIX	RAIN	WET	DLIT
02045	6/22/2012	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
02007	6/18/2012	PDO	PACIFIC HY I-5	NB EF MISSION EB	SS-O	CLR	DRY	DAY
01884	6/8/2012	PDO	SB EX MISSION ST C2	PACIFIC HY I-5	ANGL	RAIN	WET	DAY
01888	6/8/2012	Inj B	MISSION ST SE	SB EF MISSION EB C1	REAR	CLD	DRY	DAY
01874	6/7/2012	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01866	6/6/2012	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01864	6/6/2012	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01846	6/5/2012	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
01848	6/5/2012	Inj B	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01834	6/4/2012	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01701	5/22/2012	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01662	5/18/2012	Inj C	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
01656	5/17/2012	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
01520	5/8/2012	Inj C	SB EF MISSION EB C1	MISSION ST SE	REAR	CLR	DRY	DAY
01513	5/7/2012	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01470	5/3/2012	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01422	4/29/2012	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	SS-O	CLR	DRY	DAY
01412	4/27/2012	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DAY
01394	4/26/2012	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLD	WET	DAY
01399	4/26/2012	PDO	SB EX MISSION ST C2	MISSION ST SE	REAR	CLR	DRY	DAY
01240	4/11/2012	PDO	MISSION ST SE	SB EX MISSION ST C2	FIX	CLD	DRY	DAY
01213	4/9/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	SS-O	CLR	DRY	DAY
01172	4/5/2012	Inj C	SB EX MISSION ST C2	MISSION ST SE	REAR	CLR	DRY	DAY
01164	4/4/2012	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	DRY	DAY
01153	4/4/2012	Inj C	LANCASTER DR NE	EB EF LANCASTER C3	REAR	CLR	DRY	DAY
01108	4/1/2012	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
01087	3/30/2012	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
01089	3/30/2012	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
01386	3/27/2012	PDO	NORTH SANTIAM HY	WB EX LANCASTER C4	FIX	RAIN	WET	DLIT
01048	3/25/2012	PDO	HAWTHORNE AVE SE	MISSION ST SE	TURN	UNK	UNK	DAY
01022	3/23/2012	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
00948	3/17/2012	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
02178	3/15/2012	PDO	SB EX MISSION ST C2	MISSION ST SE	SS-O	RAIN	WET	DAY
00889	3/12/2012	Inj C	CORDON RD SE	GAFFIN RD SE	TURN	RAIN	WET	DAY
00807	3/9/2012	Inj C	MISSION ST SE	SB EF MISSION WB	REAR	CLR	DRY	DAY
00740	3/1/2012	PDO	TURNER RD SE	MISSION ST SE	REAR	CLR	DRY	DUSK
00681	2/24/2012	PDO	MISSION ST SE	25TH ST SE	TURN	UNK	UNK	DAY
00676	2/24/2012	Inj C	MISSION ST SE	NB EX MISSION ST C1	TURN	CLD	WET	DLIT
00659	2/23/2012	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
00575	2/17/2012	PDO	NORTH SANTIAM HY	WB ENFR GAFFIN RD C4	SS-O	CLD	WET	DARK
00549	2/16/2012	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DAY
00479	2/10/2012	Inj C	MISSION ST SE	25TH ST SE	REAR	SNOW	WET	DAWN
00428	2/4/2012	Inj C	MISSION ST SE	AIRPORT RD SE	FIX	CLR	DRY	DLIT
00403	2/2/2012	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00368	1/31/2012	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DLIT
00367	1/31/2012	Inj C	MISSION ST SE	SB EF MISSION EB C1	REAR	CLD	DRY	DAY
00284	1/23/2012	Inj C	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
00278	1/23/2012	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DLIT
00420	1/23/2012	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
00152	1/13/2012	PDO	CORDON RD SE	GAFFIN RD SE	SS-O	CLR	DRY	DAY
00133	1/12/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00118	1/11/2012	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
00110	1/11/2012	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DLIT
00097	1/10/2012	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DUSK
00114	1/5/2012	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	UNK	UNK	DAWN
00011	1/3/2012	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
04491	12/30/2011	PDO	MISSION ST SE	25TH ST SE	SS-O	RAIN	WET	DAY
04475	12/29/2011	PDO	MISSION ST SE	AIRPORT RD SE	REAR	RAIN	WET	DAY
04473	12/28/2011	Inj C	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
04439	12/23/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
04442	12/23/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
04508	12/22/2011	PDO	NORTH SANTIAM HY	WB EX LANCASTER C4	REAR	CLR	DRY	DARK
04533	12/22/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	WET	DUSK
04389	12/21/2011	Inj C	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	CLD	DRY	DARK
04374	12/20/2011	Inj C	MISSION ST SE	SB EF MISSION EB C1	REAR	CLD	DRY	DUSK
04385	12/19/2011	PDO	LANCASTER DR NE	EB EF LANCASTER C3	REAR	CLR	DRY	DAY
04280	12/13/2011	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DLIT
04266	12/12/2011	Inj B	PACIFIC HY I-5	NB EF MISSION WB C2	SS-O	CLR	DRY	DLIT
04267	12/12/2011	Inj C	PACIFIC HY I-5	NB EX MISSION ST C1	SS-O	CLR	DRY	DAY
04264	12/12/2011	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	FOG	ICE	DAWN
04213	12/8/2011	Inj A	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
04191	12/7/2011	PDO	PACIFIC HY I-5	NB EX MISSION ST C1	FIX	CLR	DRY	DARK
04186	12/7/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DUSK
04169	12/6/2011	PDO	25TH ST SE	MISSION ST SE	TURN	FOG	DRY	DUSK
04161	12/5/2011	Inj C	CORDON RD SE	GAFFIN RD SE	SS-M	FOG	ICE	DAWN
04155	12/5/2011	PDO	CORDON RD SE	GAFFIN RD SE	FIX	CLR	ICE	DARK
04151	12/5/2011	Inj B	MISSION ST SE	NB EX MISSION ST C1	REAR	FOG	DRY	DLIT
04152	12/5/2011	Inj C	MISSION ST SE	TURNER RD SE	TURN	CLD	DRY	DAY
04061	11/30/2011	Inj C	HAWTHORNE AVE SE	MISSION ST SE	TURN	CLR	DRY	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
04048	11/28/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAWN
04047	11/28/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
04037	11/27/2011	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	RAIN	WET	DUSK
04006	11/25/2011	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
04260	11/25/2011	Inj C	DEER PARK DR CN C1	GAFFIN FR RD	FIX	CLR	DRY	DAY
03989	11/23/2011	Inj B	PACIFIC HY I-5	SB EX MISSION ST C2	FIX	RAIN	WET	DAY
03996	11/23/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
04001	11/23/2011	PDO	25TH ST SE	MISSION ST SE	TURN	RAIN	WET	DAY
03955	11/22/2011	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
03929	11/19/2011	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	CLD	DRY	DAY
03913	11/18/2011	Inj C	LANCASTER DR SE		REAR	RAIN	WET	DAY
03916	11/18/2011	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DUSK
03908	11/17/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DUSK
03894	11/16/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	TURN	RAIN	WET	DLIT
03842	11/13/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	DRY	DAY
03843	11/13/2011	PDO	MISSION ST SE	TURNER RD SE	SS-O	CLR	DRY	DAY
03793	11/10/2011	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DLIT
03778	11/9/2011	PDO	LANCASTER DR SE		REAR	FOG	WET	DUSK
03777	11/9/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
03727	11/5/2011	Inj B	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
03706	11/4/2011	PDO	MISSION ST SE	25TH ST SE	TURN	CLR	DRY	DAY
03716	11/4/2011	PDO	MISSION ST SE	25TH ST SE	TURN	CLR	DRY	DAY
03685	11/2/2011	PDO	LANCASTER DR NE	EB EX LANCASTER C1	FIX	CLD	DRY	DAY
03669	10/31/2011	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
03645	10/30/2011	PDO	NORTH SANTIAM HY	WB ENFR GAFFIN RD C4	SS-O	RAIN	WET	DAY
03605	10/26/2011	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	FOG	DRY	DAWN
03563	10/24/2011	Inj B	SB EF MISSION WB	MISSION ST SE	NCOL	CLR	DRY	DAY
03567	10/24/2011	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	SS-O	CLR	DRY	DAY
03531	10/20/2011	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DLIT
03469	10/17/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
03461	10/15/2011	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLD	DRY	DARK
03414	10/11/2011	Inj C	LANCASTER DR NE	EB EX LANCASTER C1	REAR	CLR	DRY	DAY
03288	10/2/2011	PDO	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DUSK
03284	10/2/2011	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLD	WET	DAY
03282	10/2/2011	Inj C	LANCASTER DR NE	WB EF LANCASTER C5	TURN	RAIN	WET	DAY
03260	9/30/2011	Inj B	PACIFIC HY I-5	SB EX MISSION ST C2	FIX	CLR	DRY	DAY
03243	9/29/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
03237	9/29/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DUSK
03245	9/29/2011	Inj B	MISSION ST SE	TURNER RD SE	TURN	CLR	DRY	DLIT
03212	9/27/2011	PDO	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DAY
03191	9/26/2011	Inj C	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	CLD	DRY	DAY
03078	9/17/2011	PDO	LANCASTER DR NE	WB EF LANCASTER C5	TURN	CLD	DRY	DLIT
03008	9/10/2011	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
02998	9/9/2011	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
02959	9/7/2011	PDO	NORTH SANTIAM HY	WB EX LANCASTER C4	REAR	UNK	UNK	DARK
02886	9/2/2011	PDO	TURNER RD SE	MISSION ST SE	SS-O	CLR	DRY	DAY
02875	9/2/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02850	9/1/2011	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
02849	9/1/2011	PDO	NORTH SANTIAM HY	DEER PARK DR CN C1	FIX	CLR	DRY	DARK
02859	9/1/2011	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
02829	8/29/2011	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
02796	8/27/2011	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
02798	8/27/2011	PDO	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DAY
02795	8/27/2011	PDO	WB EX LANCASTER C4	LANCASTER DR NE	REAR	CLR	DRY	DAY
02788	8/26/2011	PDO	MISSION ST SE	SB EX MISSION WB C3	SS-O	CLR	DRY	DAY
02761	8/25/2011	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02756	8/24/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02631	8/13/2011	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
02601	8/11/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
02494	8/3/2011	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
02489	8/2/2011	Inj C	25TH ST SE	MISSION ST SE	REAR	CLR	DRY	DAY
02459	7/30/2011	Inj B	LANCASTER DR NE	WB EF LANCASTER C5	TURN	CLR	DRY	DAY
02411	7/27/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02393	7/25/2011	Inj B	DEER PARK DR CN C1	GAFFIN FR RD	FIX	CLR	DRY	DAY
02368	7/23/2011	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
02271	7/15/2011	PDO	25TH ST SE	MISSION ST SE	ANGL	CLR	DRY	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
02255	7/14/2011	PDO	LANCASTER DR SE		TURN	CLR	DRY	DAY
02223	7/12/2011	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	UNK	UNK	DAY
02158	7/7/2011	PDO	MISSION ST SE	TURNER RD SE	SS-O	CLR	DRY	DAY
02161	7/7/2011	Inj B	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02208	7/6/2011	PDO	MISSION ST SE	NB EF MISSION EB	REAR	CLR	DRY	DAY
02139	7/4/2011	PDO	AIRPORT RD SE	MISSION ST SE	TURN	CLR	DRY	DAY
02122	7/2/2011	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
02118	7/2/2011	Inj B	MISSION ST SE	25TH ST SE	ANGL	CLR	DRY	DUSK
02092	7/1/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
02076	6/30/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
02049	6/28/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
01979	6/21/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01972	6/20/2011	Inj C	NB EF MISSION EB	MISSION ST SE	FIX	CLR	DRY	DLIT
01965	6/20/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	FIX	CLR	DRY	DLIT
01962	6/19/2011	PDO	25TH ST SE	MISSION ST SE	ANGL	CLR	DRY	DAY
01958	6/18/2011	Inj B	PACIFIC HY I-5	NB EF MISSION EB	TURN	CLD	WET	DAY
01914	6/15/2011	Inj C	MISSION ST SE	SB EX MISSION ST C2	ANGL	CLR	DRY	DAY
01906	6/14/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	SS-O	CLR	DRY	DAY
01912	6/14/2011	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01896	6/13/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	TURN	CLR	DRY	DUSK
01891	6/12/2011	Inj C	HAWTHORNE AVE SE	MISSION ST SE	TURN	CLR	DRY	DAY
01982	6/9/2011	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
01826	6/7/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
01813	6/5/2011	Inj B	PACIFIC HY I-5	SB EX MISSION ST C2	NCOL	RAIN	WET	DLIT
01815	6/5/2011	PDO	MISSION ST SE	25TH ST SE	REAR	UNK	UNK	DAY
01725	5/29/2011	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLD	DRY	DAY
01720	5/27/2011	Inj C	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	RAIN	WET	DAY
02226	5/27/2011	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
01678	5/25/2011	Inj C	CORDON RD SE	GAFFIN RD SE	TURN	CLD	DRY	DAY
01665	5/25/2011	Inj B	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
01676	5/25/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01652	5/24/2011	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01610	5/20/2011	Inj B	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
01568	5/16/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01556	5/15/2011	PDO	EB ENFR DEER PARK C3	DEER PARK DR CN C1	FIX	CLR	DRY	DUSK
01558	5/15/2011	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DAY
01540	5/13/2011	PDO	DEER PARK DR SE	GAFFIN FR RD	REAR	CLR	DRY	DARK
01500	5/9/2011	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
01496	5/9/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
04253	5/9/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
01449	5/5/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01452	5/5/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01440	5/4/2011	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
01386	4/30/2011	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLD	DRY	DAY
01371	4/29/2011	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
01351	4/27/2011	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
01767	4/21/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	UNK	UNK	DAY
01240	4/19/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01224	4/18/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
01232	4/18/2011	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAWN
01176	4/14/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
01177	4/14/2011	Inj B	MISSION ST SE	SB EF MISSION EB C1	REAR	CLD	WET	DAY
01163	4/13/2011	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLD	DRY	DAY
01071	4/6/2011	PDO	NORTH SANTIAM HY	WB EF LANCASTER C5	REAR	RAIN	WET	DUSK
00994	3/30/2011	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00923	3/24/2011	Inj C	NORTH SANTIAM HY	EB EF LANCASTER C3	FIX	CLR	DRY	DAY
01181	3/23/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
00831	3/15/2011	Inj C	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
00815	3/14/2011	Inj B	MISSION ST SE	NB EF MISSION WB C2	REAR	CLD	DRY	DAY
00791	3/11/2011	PDO	MISSION ST SE	25TH ST SE	REAR	UNK	UNK	DAY
00779	3/10/2011	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DUSK
00736	3/7/2011	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00744	3/7/2011	PDO	GAFFIN FR RD	WB EXTO GAFFIN RD C2	TURN	CLD	WET	DAY
00726	3/5/2011	Inj C	MISSION ST SE	NB EX MISSION ST C1	TURN	CLD	WET	DAY
00665	3/1/2011	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	SS-O	CLD	DRY	DAY
00636	2/28/2011	PDO	HAWTHORNE AVE SE	MISSION ST SE	TURN	RAIN	WET	DLIT

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
00630	2/27/2011	PDO	NORTH SANTIAM HY	EB EX LANCASTER C1	TURN	RAIN	WET	DLIT
00421	2/10/2011	Inj B	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DAY
00427	2/10/2011	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
00402	2/9/2011	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
00293	1/31/2011	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
00295	1/31/2011	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
00174	1/18/2011	Inj C	LANCASTER DR NE	EB EF LANCASTER C3	PED	CLD	DRY	DLIT
00154	1/17/2011	PDO	LANCASTER DR NE	EB EX LANCASTER C1	TURN	CLD	DRY	DAY
00129	1/13/2011	Inj C	MISSION ST SE	HAWTHORNE AVE SE	TURN	RAIN	WET	DAY
00123	1/13/2011	PDO	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
00108	1/12/2011	Inj C	25TH ST SE	MISSION ST SE	TURN	RAIN	WET	DLIT
00076	1/9/2011	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00066	1/7/2011	PDO	SB EX MISSION ST C2	MISSION ST SE	SS-O	CLR	DRY	DAY
00044	1/6/2011	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLD	WET	DLIT
00018	1/4/2011	PDO	LANCASTER DR NE	WB EX LANCASTER C4	TURN	CLR	DRY	DAY
04612	12/28/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	RAIN	WET	DLIT
87314	12/27/2010	Inj C	DEER PARK DR CN C1	EB ENFR DEER PARK C3	FIX	CLD	WET	DAWN
04573	12/26/2010	Inj C	MISSION ST SE	AIRPORT RD SE	REAR	RAIN	WET	DAY
04568	12/25/2010	PDO	MISSION ST SE	AIRPORT RD SE	FIX	CLD	WET	DLIT
04521	12/23/2010	Inj C	AIRPORT RD SE	MISSION ST SE	REAR	CLD	DRY	DAY
04536	12/22/2010	Inj C	GAFFIN FR RD	DEER PARK DR CN C1	TURN	CLR	DRY	DAY
04475	12/18/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLD	WET	DAY
04455	12/17/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	WET	DAY
04398	12/14/2010	PDO	MISSION ST SE	25TH ST SE	BACK	RAIN	WET	DLIT
04331	12/10/2010	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DARK
04675	12/9/2010	Inj A	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DLIT
04289	12/8/2010	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
04295	12/8/2010	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	CLD	WET	DLIT
04222	12/3/2010	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	CLD	DRY	DAY
04169	11/30/2010	Inj C	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
04146	11/29/2010	PDO			FIX	CLD	ICE	DARK
04113	11/23/2010	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	SS-O	CLD	ICE	DARK
04038	11/22/2010	Inj C	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DAY
04055	11/21/2010	PDO	CORDON RD SE	GAFFIN RD SE	SS-O	RAIN	WET	DAY
04367	11/20/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
04109	11/18/2010	PDO	LANCASTER DR NE	EB EX LANCASTER C1	REAR	RAIN	WET	DAY
03990	11/17/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	WET	DAY
03877	11/10/2010	Inj B	MISSION ST SE	NB EX MISSION ST C1	TURN	CLD	WET	DLIT
03863	11/9/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	TURN	RAIN	WET	DAY
03843	11/8/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
03786	11/4/2010	Inj B	LANCASTER DR NE	WB EF LANCASTER C5	TURN	CLR	DRY	DAY
03740	11/1/2010	Inj C	LANCASTER DR NE	EB EX LANCASTER C1	REAR	RAIN	WET	DUSK
03693	10/29/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLD	WET	DAY
03661	10/27/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
03903	10/26/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
03628	10/25/2010	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
03619	10/25/2010	Inj C	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	RAIN	WET	DAY
93619	10/25/2010	Inj C	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	RAIN	WET	DAY
03621	10/25/2010	PDO	LANCASTER DR NE	EB EX LANCASTER C1	TURN	CLR	DRY	DAY
03481	10/15/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
03456	10/14/2010	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
03421	10/12/2010	Inj C	25TH ST SE	MISSION ST SE	REAR	CLR	DRY	DAY
03379	10/9/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
03387	10/9/2010	PDO	25TH ST SE	MISSION ST SE	FIX	RAIN	WET	DAY
03389	10/9/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DUSK
03343	10/6/2010	PDO	NORTH SANTIAM HY	EB EX LANCASTER C1	SS-O	CLR	DRY	DAY
03323	10/5/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
03316	10/4/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
03242	9/27/2010	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
03185	9/21/2010	PDO	25TH ST SE	MISSION ST SE	ANGL	CLR	DRY	DAY
03135	9/17/2010	Inj B	PACIFIC HY I-5	SB EX MISSION ST C2	FIX	CLR	DRY	DAY
03119	9/16/2010	Inj B	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
03077	9/14/2010	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
03079	9/14/2010	Inj B	MISSION ST SE	HAWTHORNE AVE SE	TURN	CLR	DRY	DAY
03083	9/14/2010	PDO	NB EX MISSION ST C1	MISSION ST SE	REAR	CLR	DRY	DAY
03058	9/13/2010	Inj B	MISSION ST SE	SB EX MISSION ST C2	TURN	CLD	DRY	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
03067	9/13/2010	PDO	LANCASTER DR NE	EB EX LANCASTER C1	SS-O	CLR	DRY	DAY
03034	9/10/2010	PDO	WB EX LANCASTER C4	LANCASTER DR NE	NCOL	CLR	DRY	DARK
03016	9/9/2010	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	CLR	DRY	DAY
02968	9/6/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02956	9/5/2010	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
02917	9/3/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02891	9/1/2010	Inj B	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
02863	8/30/2010	PDO	MISSION ST SE	AIRPORT RD SE	SS-O	CLR	DRY	DAY
02819	8/26/2010	Inj C	HAWTHORNE AVE SE	MISSION ST SE	ANGL	CLR	DRY	DAY
02711	8/20/2010	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
02676	8/19/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02650	8/13/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02566	8/6/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02479	7/31/2010	PDO	MISSION ST SE	AIRPORT RD SE	SS-O	UNK	UNK	UNK
02476	7/27/2010	PDO	MISSION ST SE	AIRPORT RD SE	SS-O	CLR	DRY	DAY
02369	7/23/2010	PDO	EB EX LANCASTER C1	LANCASTER DR NE	SS-O	CLR	DRY	DAY
02279	7/20/2010	PDO	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
02315	7/16/2010	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02212	7/14/2010	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
02157	7/7/2010	Inj C	PACIFIC HY I-5	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
02092	7/1/2010	PDO	25TH ST SE	MISSION ST SE	REAR	CLR	DRY	DAY
02023	6/28/2010	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02034	6/28/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02754	6/28/2010	Inj C	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
01993	6/24/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01961	6/22/2010	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01715	6/21/2010	Fatal	MISSION ST SE	HAWTHORNE AVE SE	HEAD	CLR	DRY	DAY
01902	6/17/2010	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
01896	6/16/2010	Inj C	HAWTHORNE AVE SE	MISSION ST SE	TURN	CLR	DRY	DAY
01837	6/14/2010	Inj B	HAWTHORNE AVE SE	MISSION ST SE	ANGL	CLR	DRY	DAY
01826	6/10/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	SS-O	RAIN	WET	DAY
01798	6/7/2010	Inj C	PACIFIC HY I-5	NB EX MISSION ST C1	FIX	CLD	DRY	DLIT
01761	6/4/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01766	6/4/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
01744	6/1/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01671	5/28/2010	PDO	LANCASTER DR NE	EB EF LANCASTER C3	REAR	CLR	DRY	DAY
01691	5/27/2010	Inj C	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	CLD	DRY	DAY
01575	5/18/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	DRY	DAY
01579	5/18/2010	PDO	25TH ST SE	MISSION ST SE	SS-O	CLR	DRY	DAY
01536	5/16/2010	Inj B	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
01541	5/16/2010	PDO	LANCASTER DR NE	EB EF LANCASTER C3	TURN	CLR	DRY	DAY
01469	5/10/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DAY
01408	5/5/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	WET	DAY
03738	5/1/2010	PDO	LANCASTER DR SE		ANGL	CLR	DRY	DAY
01328	4/30/2010	Inj B	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
01302	4/27/2010	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DAY
01252	4/25/2010	PDO	LANCASTER DR NE	WB EF LANCASTER C5	NCOL	CLR	DRY	DLIT
01197	4/19/2010	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLD	DRY	DAY
01198	4/19/2010	PDO	LANCASTER DR NE	WB EX LANCASTER C4	REAR	CLR	DRY	DAY
01178	4/18/2010	PDO	MISSION ST SE	SB EX MISSION ST C2	SS-O	UNK	UNK	DAY
01173	4/17/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01168	4/16/2010	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
01114	4/12/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01074	4/9/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01046	4/7/2010	Inj B	AIRPORT RD SE	MISSION ST SE	TURN	CLR	DRY	DAY
00992	4/3/2010	Inj B	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
01007	4/2/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
01013	4/2/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DAY
00977	3/31/2010	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLD	DRY	DAY
00962	3/30/2010	Inj C	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
00963	3/30/2010	Inj C	MISSION ST SE	25TH ST SE	SS-O	RAIN	WET	DAY
01052	3/21/2010	PDO	MISSION ST SE	SB EX MISSION ST C2	SS-O	CLR	DRY	DLIT
01858	3/16/2010	PDO	MISSION ST SE	25TH ST SE	REAR	UNK	UNK	DAY
00698	3/2/2010	PDO	MISSION ST SE	NB EF MISSION EB	REAR	CLR	DRY	DAWN
00690	3/2/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	SS-O	CLR	DRY	DAY
00636	2/26/2010	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
00517	2/19/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	TURN	UNK	UNK	DLIT
00452	2/12/2010	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
00428	2/6/2010	Inj B	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
00378	2/4/2010	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	RAIN	WET	DUSK
80086	2/3/2010	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
00353	2/3/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLD	WET	DAY
00340	2/2/2010	PDO	MISSION ST SE	NB EX MISSION ST C1	BACK	RAIN	WET	DAY
00314	2/1/2010	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
00312	2/1/2010	Inj C	MISSION ST SE	SB EF MISSION EB C1	REAR	RAIN	WET	DAY
00255	1/30/2010	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00308	1/25/2010	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DUSK
00247	1/23/2010	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DLIT
00160	1/19/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DLIT
00115	1/11/2010	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00109	1/11/2010	Inj B	LANCASTER DR NE	EB EF LANCASTER C3	PED	CLD	DRY	DLIT
00062	1/8/2010	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
00040	1/5/2010	PDO	MISSION ST SE	TURNER RD SE	SS-O	CLD	WET	DAY
04633	12/29/2009	Inj B	CORDON RD SE	GAFFIN RD SE	BACK	FOG	WET	DAWN
04564	12/26/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
04495	12/23/2009	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
04475	12/17/2009	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DLIT
04464	12/16/2009	Inj C	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
04449	12/16/2009	PDO	25TH ST SE	MISSION ST SE	ANGL	RAIN	WET	DLIT
04361	12/15/2009	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DLIT
04416	12/13/2009	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	FIX	CLR	ICE	DLIT
04411	12/12/2009	PDO	PACIFIC HY I-5	SB EF MISSION EB C1	FIX	CLD	ICE	DAY
04398	12/12/2009	PDO	MISSION ST SE	SB EF MISSION EB C1	REAR	RAIN	WET	DAY
04254	12/8/2009	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
04211	12/4/2009	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
04210	12/4/2009	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	FOG	DRY	DAWN
04146	11/27/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
04071	11/21/2009	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DLIT
04014	11/18/2009	PDO	MISSION ST SE	HAWTHORNE AVE SE	PED	CLR	DRY	DUSK
03930	11/12/2009	Inj B	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
03840	11/6/2009	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	RAIN	WET	DARK
03841	11/6/2009	Inj C	PACIFIC HY I-5	SB EX MISSION ST C2	FIX	RAIN	WET	DARK
03723	10/29/2009	Inj B	MISSION ST SE	TURNER RD SE	REAR	RAIN	WET	DAY
03702	10/26/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
03653	10/24/2009	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
03640	10/23/2009	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
03642	10/23/2009	PDO	MISSION ST SE	NB EF MISSION EB	FIX	CLR	DRY	DLIT
03631	10/23/2009	Inj B	MISSION ST SE	SB EF MISSION EB C1	REAR	CLD	WET	DUSK
03683	10/21/2009	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DLIT
03512	10/16/2009	Inj B	TURNER RD SE	MISSION ST SE	FIX	CLD	DRY	DAY
03583	10/16/2009	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAWN
03561	10/14/2009	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	RAIN	WET	DAY
03556	10/14/2009	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	RAIN	WET	DAY
03536	10/13/2009	Inj C	HAWTHORNE AVE SE	MISSION ST SE	ANGL	RAIN	WET	DLIT
03546	10/13/2009	PDO	MISSION ST SE	25TH ST SE	SS-O	CLD	WET	DAY
03538	10/13/2009	Inj C	HAWTHORNE AVE SE	MISSION ST SE	REAR	RAIN	WET	DLIT
03473	10/6/2009	Inj B	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLR	DRY	DAY
03394	10/2/2009	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DLIT
03324	9/29/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
03192	9/19/2009	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
03196	9/19/2009	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
03112	9/14/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
03138	9/11/2009	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
03058	9/10/2009	Inj C	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
03050	9/9/2009	PDO	NORTH SANTIAM HY	WB EF LANCASTER C5	OTH	CLR	DRY	DAY
03019	9/5/2009	Inj B	TURNER RD SE	MISSION ST SE	FIX	CLD	DRY	DAY
03033	9/5/2009	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
03004	9/4/2009	PDO	MISSION ST SE	NB EX MISSION ST C1	REAR	CLR	DRY	DAY
02947	9/1/2009	Inj B	MISSION ST SE	NB EF MISSION WB C2	TURN	CLD	DRY	DAY
02954	9/1/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02871	8/27/2009	Inj C	LANCASTER DR NE	EB EX LANCASTER C1	REAR	CLR	DRY	DAY
02884	8/26/2009	Inj C	EB EX LANCASTER C1	LANCASTER DR NE	SS-O	CLR	DRY	DAY

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
02597	8/3/2009	PDO	LANCASTER DR NE	WB EF LANCASTER C5	TURN	CLR	DRY	DAY
02594	8/3/2009	Inj C	MISSION ST SE	SB EF MISSION EB C1	REAR	CLR	DRY	DAY
02480	7/27/2009	PDO	AIRPORT RD SE	MISSION ST SE	REAR	CLR	DRY	DAY
02495	7/27/2009	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
02545	7/26/2009	Inj C	MISSION ST SE	NB EX MISSION ST C1	NCOL	CLR	DRY	DAY
02438	7/22/2009	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
02395	7/20/2009	PDO	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
02393	7/19/2009	PDO	HAWTHORNE AVE SE	MISSION ST SE	TURN	CLR	DRY	DAY
02311	7/11/2009	Inj C	SB EX MISSION ST C2	MISSION ST SE	REAR	CLR	DRY	DAY
02257	7/10/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02270	7/8/2009	Inj C	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DAY
02243	7/7/2009	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02227	7/6/2009	PDO	25TH ST SE	MISSION ST SE	TURN	CLR	DRY	DAY
02197	7/3/2009	Inj C	MISSION ST SE	AIRPORT RD SE	REAR	CLR	DRY	DAY
02157	7/2/2009	PDO	SB EX MISSION ST C2	MISSION ST SE	REAR	CLR	DRY	DAY
02100	6/27/2009	Inj B	MISSION ST SE	25TH ST SE	FIX	CLR	DRY	DLIT
02098	6/27/2009	Inj C	MISSION ST SE	TURNER RD SE	ANGL	CLR	DRY	DAY
02093	6/25/2009	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
02063	6/24/2009	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
02016	6/19/2009	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
02034	6/19/2009	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
01939	6/14/2009	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	WET	DAY
01933	6/11/2009	Inj C	LANCASTER DR NE	WB EX LANCASTER C4	TURN	RAIN	WET	DAY
01918	6/10/2009	Inj B	MISSION ST SE	TURNER RD SE	ANGL	CLR	DRY	DAY
01901	6/8/2009	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01768	5/30/2009	Inj C	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
01675	5/24/2009	Inj B	GAFFIN RD SE	CORDON RD SE	FIX	CLR	DRY	DARK
01613	5/18/2009	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01615	5/18/2009	PDO	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
01639	5/17/2009	PDO	MISSION ST SE	SB EX MISSION ST C2	TURN	CLR	DRY	DAY
01606	5/16/2009	PDO	PACIFIC HY I-5	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
01545	5/15/2009	Inj C	SB EX MISSION ST C2	MISSION ST SE	REAR	CLR	DRY	DAY
01804	5/15/2009	Inj C	MISSION ST SE	SB EX MISSION WB C3	REAR	CLR	DRY	DAY
01370	4/30/2009	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
01349	4/28/2009	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
01345	4/28/2009	PDO	MISSION ST SE	25TH ST SE	REAR	RAIN	WET	DAY
01337	4/27/2009	PDO	WB EF LANCASTER C5	NORTH SANTIAM HY	FIX	CLR	DRY	DAY
01238	4/20/2009	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DLIT
01165	4/11/2009	Inj B	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLD	DRY	DAY
01126	4/10/2009	PDO	MISSION ST SE	SB EX MISSION WB C3	SS-O	CLR	DRY	DAY
01137	4/10/2009	PDO	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
00998	4/5/2009	PDO	MISSION ST SE	SB EX MISSION ST C2	REAR	CLR	DRY	DAY
00975	3/29/2009	Inj B	MISSION ST SE	NB EF MISSION WB C2	SS-O	CLR	DRY	DAY
00921	3/25/2009	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	CLD	WET	DLIT
00862	3/17/2009	PDO	AIRPORT RD SE	MISSION ST SE	TURN	RAIN	WET	DAWN
00764	3/16/2009	Inj C	AIRPORT RD SE	MISSION ST SE	TURN	CLD	WET	DAY
00849	3/16/2009	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DAY
00795	3/11/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00748	3/6/2009	PDO	MISSION ST SE	TURNER RD SE	REAR	CLR	DRY	DAY
00706	3/4/2009	Inj C	25TH ST SE	MISSION ST SE	REAR	RAIN	WET	DAY
00711	3/4/2009	PDO	LANCASTER DR NE	EB EX LANCASTER C1	REAR	CLR	DRY	DAY
00702	3/3/2009	Inj C	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00638	2/27/2009	PDO	NORTH SANTIAM HY	DEER PARK DR CN C1	REAR	CLD	ICE	DAY
00552	2/19/2009	PDO	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DAY
00513	2/17/2009	Inj C	MISSION ST SE	HAWTHORNE AVE SE	REAR	CLR	DRY	DAY
00541	2/16/2009	PDO	TURNER RD SE	MISSION ST SE	SS-O	CLR	DRY	DAY
00398	2/10/2009	Inj B	MISSION ST SE	25TH ST SE	REAR	CLR	DRY	DLIT
00440	2/7/2009	PDO	NORTH SANTIAM HY	WB EX LANCASTER C4	REAR	UNK	UNK	DAY
00411	2/6/2009	Inj C	MISSION ST SE	NB EX MISSION ST C1	REAR	RAIN	WET	DAWN
00386	2/3/2009	PDO	SB EX MISSION ST C2	MISSION ST SE	REAR	CLR	DRY	DAY
00385	2/3/2009	Inj B	MISSION ST SE	SB EF MISSION WB	REAR	CLR	DRY	DAY
00304	1/29/2009	Inj C	MISSION ST SE	NB EF MISSION WB C2	REAR	CLR	DRY	DLIT
00294	1/28/2009	PDO	MISSION ST SE	NB EX MISSION ST C1	TURN	CLR	DRY	DLIT
00252	1/23/2009	PDO	MISSION ST SE	25TH ST SE	SS-O	CLR	DRY	DAY
00204	1/20/2009	PDO	LANCASTER DR NE	WB EX LANCASTER C4	ANGL	CLR	DRY	DLIT
00186	1/18/2009	Inj C	SB EF MISSION EB C1	MISSION ST SE	FIX	CLR	DRY	DARK

Serial #	Crash Date	Severity	1st Street	2nd Street	Collission Type	Weather	Surface	Light
00218	1/17/2009	PDO	CORDON RD SE		REAR	CLR	DRY	DAY
00215	1/16/2009	PDO	HAWTHORNE AVE SE	MISSION ST SE	REAR	FOG	DRY	DAY
00127	1/7/2009	Inj B	MISSION ST SE	NB EF MISSION EB	REAR	CLD	SNO	DAY
00064	1/5/2009	PDO	MISSION ST SE	SB EF MISSION WB	SS-O	CLD	DRY	DAY
00045	1/3/2009	Inj B	NORTH SANTIAM HY	EB ENFR DEER PARK C3	HEAD	CLR	ICE	DAY
00046	1/3/2009	PDO	NORTH SANTIAM HY	EB ENFR DEER PARK C3	FIX	CLR	ICE	DAY

APPENDIX E
PUBLIC INVOLVEMENT REPORT

Public Involvement/Title 6 Final Report

SUMMARY

Connecting with businesses, organizations, commuters, property owners, residents, bicyclists, pedestrians and freight to hear their ideas for future transportation in the corridor was the primary goal of the public outreach for this project. The project team began by conducting interviews with key stakeholders to identify issues and outreach methods. The resulting Public Involvement Plan and Interested Parties list formed a strong base for subsequent project outreach activities.

In the twelve months of public outreach, a total of eight emails were sent to the Interested Parties list, including Open House invitations, reminders, and thank you notes with links to meeting summaries, documents, and the ODOT project webpage. The email open rate for the meeting invitations was 52%, and the other emails averaged 45%.

After sending the email invitation to the Open House, the project followed up with individual calls to organizations, neighborhood groups, and businesses along the corridor. Of the 76 businesses called, 59 people chose to sign up for the Interested Parties List. The result was a diverse Interested Parties List of 185 and strong attendance at both events: 45 people attended Open House #1 Existing and Future Conditions, 30 people attended Open House #2 Recommended Improvements, and another 19 participated in a follow up online survey.

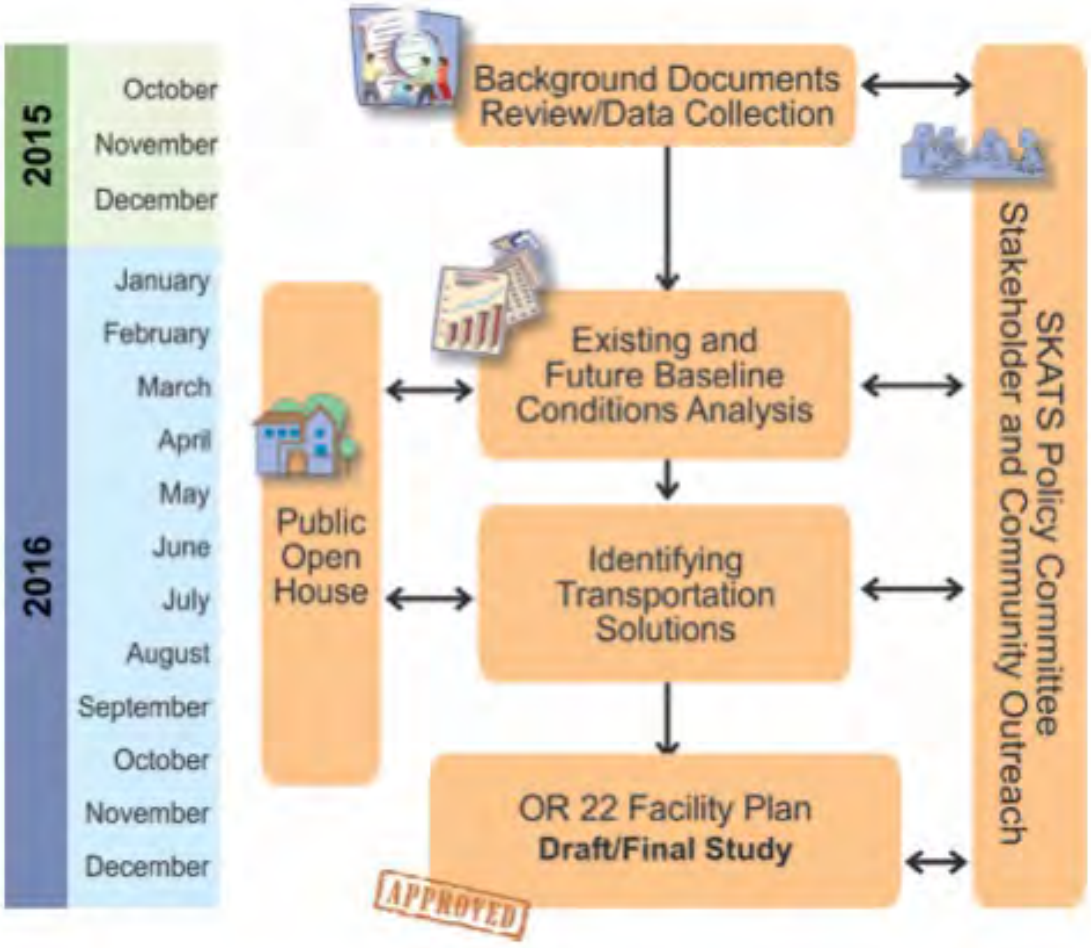
Under-represented populations were carefully considered in planning and recruiting for the events. The project called and posted invitation flyers at mobile home parks and apartment complexes in the area. The second event was held at Houck Middle School, where 60% of the student population identifies as Hispanic and 79% qualify for the school lunch program. Staff and families from the school attended the event. See Page 8 for a full list of the 25 agencies, 17 organizations, 10 apartments and mobile home parks, and 72 businesses that represent the diverse interests on the corridor.

PUBLIC INVOLVEMENT GOALS

The objectives of the OR 22 Facility Plan are to assess existing and future transportation operations and safety conditions on OR 22 (Mission Street SE) between 25th Street SE and Gaffin Road SE in Salem, and identify potential solutions to the problems. The Plan looks at the situation that exists today, forecasts conditions, identifies and analyzes future options, and makes recommendations for a safe and efficient facility.

Both the Federal Government and the State of Oregon direct public agencies to conduct planning activities in ways that ensure opportunities for citizens to be involved in all phases of the planning process. Connecting with project stakeholders, such as businesses, organizations, commuters, property owners, residents, bicyclists, and freight, to hear concerns about and vision for future transportation in the corridor was the primary goal of the public outreach for this project. The project team committed to a public engagement process that was:

- **Meaningful**: provide timely information
- **Accountable:** respond to input
- **Inclusive:** communicate outside of structured meetings
- **Transparent:** make decisions public; post materials on the website
- **Realistic:** inform about constraints and objectives
- **Outcome-oriented:** engage the public to maximize success



AUDIENCE AND STAKEHOLDERS

Pro-active outreach and input methods accessible to the public are essential. Project stakeholders included institutions, public agencies, advocacy groups, neighborhood and business groups and area residents. The project conducted active outreach to groups and individuals who represented the following interests: bicycle, freight, transit, pedestrians, mobility impaired, low income and underrepresented populations.

The Salem-Keizer Area Transportation Study (SKATS) Policy Committee provided input throughout the project, and it included key agency stakeholders on the project, including the City of Salem, Marion County, and the Salem Area Mass Transit District (SAMTD). The project team gave presentations on 3/22/16 and 10/25/16 and SKATS members received project updates and emails, including invitations to the two open houses. A project briefing was also held for the Mid-Willamette Valley Area Commission on Transportation MWACT) on 9/1/16.

The project allowed for full and fair participation by all potentially affected community members in the decision-making process, including people with disabilities, low-income, limited English proficiency, minority and other underserved groups. This included an analysis of the census data to report on the numbers of protected populations, as well as methods to conduct outreach to under-represented populations. See appendix for a summary of census data.

OUTREACH METHODS AND ACTIVITIES

Community Workshops provided a venue for vetting ideas and recommendations at key decision points in the project. The public offered input on the goals of the plan, as well as the specific solutions to be considered to address deficiencies:

Meeting #1: Existing and Future Conditions

Meeting #2: Recommended Improvements

The Project Webpage included:

- A brief project overview
- Maps showing the project area
- Meeting announcements and other public involvement opportunities
- Project technical memos and meeting summaries
- Capacity for individuals to sign up for email updates on the project and submit public comments and questions

Interested Parties List: The project team actively developed and maintained a comprehensive list of 185 individuals and organizations with an interest in the outcome of the plan. All interested parties received regular email updates with project information, online links, and invitations to the community meetings.

Public Comments: The project catalogued comments and responses, and shared with the project team in a timely manner for consideration. Comments are compiled in the Open House Summaries.

Outreach was tailored to key stakeholders:

- Businesses: The project identified businesses in the corridor, conducted in-person outreach to key businesses, and communicated regularly with the Salem Chamber of Commerce and the Strategic Economic Development Corporation (SEDCOR) to connect with large property owners in area.
- Commuters and Residents: The team connected with neighborhood organizations representing residents and commuters utilizing the facility on a regular basis, including SEMCA, SESNA, and ESSNA. We also contacted cities on OR 22 east of the project corridor, such as Aumsville, Stayton and Sublimity, and shared information on the project.
- Pedestrians and Bicyclists: The project collaborated with advocacy organizations and agencies committees charged with bicycle and pedestrian planning and safety, including Salem Bike Boulevard advocates and local bicycling shops.
- Freight: The team contacted the Oregon Freight Association and sent them regular project updates.
- Bus riders: The project included Salem Area Mass Transit District in the planning process and spoke with individuals at the Open Houses who used transit on a regular basis.
- Agencies (local, state, federal): The project included agencies with a stake in the outcome of the project in the interested parties list, proactively contacted agencies located in the corridor, and consulted regularly with Salem-Keizer Area Transportation Study (SKATS) Policy Committee and the Mid-Willamette Valley Area Commission on Transportation (MWACT).

Active Outreach to Under-Represented Populations

- The project posted flyers at and sent emails of the invitation to seven large apartment complexes and mobile home parks in the project area, including Paradise Island, Colonia Libertad, Hawksridge, Alpine Lakes, Evergreen Village, Santiam Village, Sundial, and Salem Campground and RV Park.
- The project emailed the neighborhood association leaders and asked them to share the invitation with their constituencies.
- The project sent invitation emails to over 170 individuals, businesses, and associations on the Interested Parties List, including organizations representing the Latino community, individuals with disabilities, mobile home and RV parks, apartment complexes, and area schools, including Miller Elementary and Houck Middle School.
- The City of Salem posted the Open House invitation in several publications, including the Community the Neighborhood Services E-Blast and the City Facebook page. The City also shared the invitation at a large Public Meeting earlier the same week.
- The Fire Station was chosen as a location for Open House #1 because it was easily accessible by many area businesses. As a result, several businesses participated in the event.
- Houck Middle School was chosen as a location for Open House #2 to encourage area families to give input to the plan. The project attended “Back to School” day on August 31 and talked with several

people to recruit for the Open House, share information about the plan, and ask families their experience with OR 22. Three to four families dropped by the Open House and shared their thoughts, as well as the Principal and 2 other district staff. At Houck, 60% of the student population identifies as Hispanic and 79% qualify for the school lunch program.

- The project called businesses adjacent to OR22 in the project area, as well as large employers just off the corridor, inquired about the best person to invite to the open house, and sent an email invitation. This included several businesses owned by under-represented populations, such as individuals with low incomes and communities of color.
- The Mid-Willamette Valley Area Commission on Transportation sent an invitation to its members.

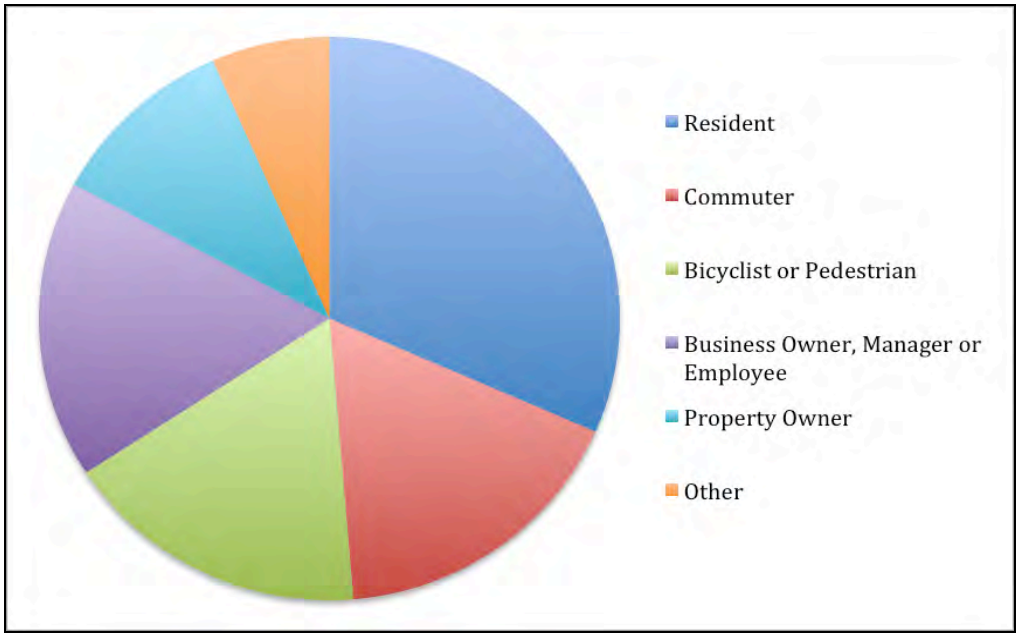
OPEN HOUSE PARTICIPATION

Held on March 30, 2015 at the Airport Fire Station adjacent to the corridor, **Open House #1** was attended by over 40 individuals, representing residents, businesses, commuters, bicyclists, freight, and pedestrians. Participants were greeted at the door and offered nametags, sign-in sheets, comment forms, and snacks. Poster displays about the project lined the perimeter of the room, and a slideshow played on one wall. Five members of the Project Management Team roamed the room and talked individually with participants, introducing them to the displays and answering their questions. When the majority of individuals had arrived, Scott Mansur briefly addressed the audience and shared the project goals and introducing the project team. Participants were encouraged to fill out the comment forms or talk with a member of the project team about their questions and ideas.

On September 15, 2016, **Open House #2** was attended by over 30 individuals, with more residents attending, perhaps due to the location being adjacent to residential areas. The format was similar to Open House #1, and Spanish speaking person was available to speak with Latino families, though the Latino families who attended all spoke English. The project team encouraged people to put dots on the three improvements they most wanted to see built and to fill out the comment forms if they had specific ideas to share.

An **online survey** was included in the follow up email to the Interested Parties List and posted on the website. To encourage people to participate, the project called and sent emails to individuals who said they could attend but didn't and individuals who attended Open House #1. A total of 19 online comments were submitted to augment the input from the Open House event.

Open House attendees and people who completed the online survey were a balanced range of stakeholders from the area:



Stakeholder	Online	Open House	Total
Resident	9	15	24
Commuter	7	6	13
Bicyclist or Pedestrian	6	7	13
Business Owner, Manager or Employee	5	8	13
Property Owner	3	5	8
Other	2	3	5
Total (participants could choose multiple stakeholder categories)	32	44	76

Salem-Keizer Area Transportation Study (SKATS) Policy Committee provided input to the project. The SKATS policy committee is made up of elected officials from the jurisdictions within the region (the cities of Salem, Turner and Keizer, and Marion and Polk counties) and representatives of agencies, such as the Oregon Department of Transportation (ODOT), Salem-Keizer School District, and Salem Area Mass Transit District (SAMTD). SKATS is the designated Metropolitan Planning Organization for the Salem-Keizer area, and the Policy Committee provides the region a valuable forum in which to consider the issues, develop coordinated strategies, and recommend prudent investments in our system to solve the transportation challenges we face in the region.

- Commissioner Sam Brentano, Marion County Board of County Commissioners
- Mayor Cathy Clark, Keizer (Chair)

- Director Robert Krebs, Salem Area Mass Transit District Board of Directors (Vice Chair)
- Paul Kyllo, Salem-Keizer School District Board
- Mayor Jim Lewis, Salem
- Commissioner Craig Pope, Polk County Board of County Commissioners
- Tim Potter, ODOT Area 3 Manager
- Mayor Gary Tiffin, Turner

Project Management Team

ODOT

- Dan Fricke, Senior Region Planner (Project Manager)
- Keith Blair, Senior Traffic Analyst
- Dave Warrick, Interchange Engineer

City of Salem

- Julie Warncke, Transportation Planning Manager
- Kevin Hottmann, City Traffic Engineer

Marion County

- Julia Uravich, County Traffic Engineer

Mid Willamette Valley Council of Governments (MWVCOG)

- Karen Odenthal, Senior Transportation Planner

Salem Area Mass Transit District

- Stephen Dickey, Director of Transportation Development

Public outreach is a powerful and dynamic force to create long lasting outcomes that are supported by the community. When done with inclusion, respect, and agility, it builds trust and strengthens the relationship between relationships between the community and public agencies.

INTERESTED PARTIES LIST

AGENCIES AND JURISDICTIONS

Cherriots (Salem Keizer Transit)
City of Aumsville
City of Salem Airport Advisory Commission
City of Salem Fire Department
City of Salem Neighborhood Services
City of Salem Community Development
City of Salem Police Department
City of Salem Public Works
City of Salem Urban Development
City of Salem, City Council
City of Salem, Human Rights and Relations Advisory Commission
City of Scio
City of Stayton
City of Sublimity
City of Turner
Marion County
Marion County Commission
Marion County Fire District No. 1
Marion County Sheriff's Office
ODOT Motor Carrier Transportation Division
ODOT Transportation Development Division
Oregon Business Development Department
Oregon Dept. of Land Conservation and Development
State of Oregon - Real Estate

BICYCLE AND PEDESTRIAN

Breakfast on Bikes Blog
Just Walk Salem
Salem Bicycle Club
Salem Bike Boulevard Advocates
Salem Breakfast on Bikes
The Bike Peddler

ORGANIZATIONS

Salem Chamber of Commerce
SEDCOR

Travel Salem
Northwest Senior and Disabiilty Services Advisory Commission
SCJ Alliance
Center 50+
Disability Rights Oregon
Northwest Senior and Disabiilty Services
ESSNA Neighborhood Association
Morningside Neighborhood Association
SEMCA Neighborhood Association
SESNA Neighborhood Association

IN THE CORRIDOR

Apartments/Mobile Home Parks
Colonia Libertad
Meadow Lark Mobile Homes
Paradise Island Park
Reserve at Hawksridge Apartments
Saddle Club Apartments
Salem Campground/RV
Santiam Village Apartments
Sundial Mobile Homes
The Reserve at Hawksridge
Triple Crown Apartments

Institutions/Organizations
Marion County Jail
Marion County Parole and Probation
Military Department
Oregon Dept of Public Safety and Standards and Training
Oregon State Correctional Institution
Santiam Correctional Institution
Marion County Salem-Keizer Recycling and Transfer Station
Marion-Polk County Medical Society
Salem Motor Pool
Elks Lodge

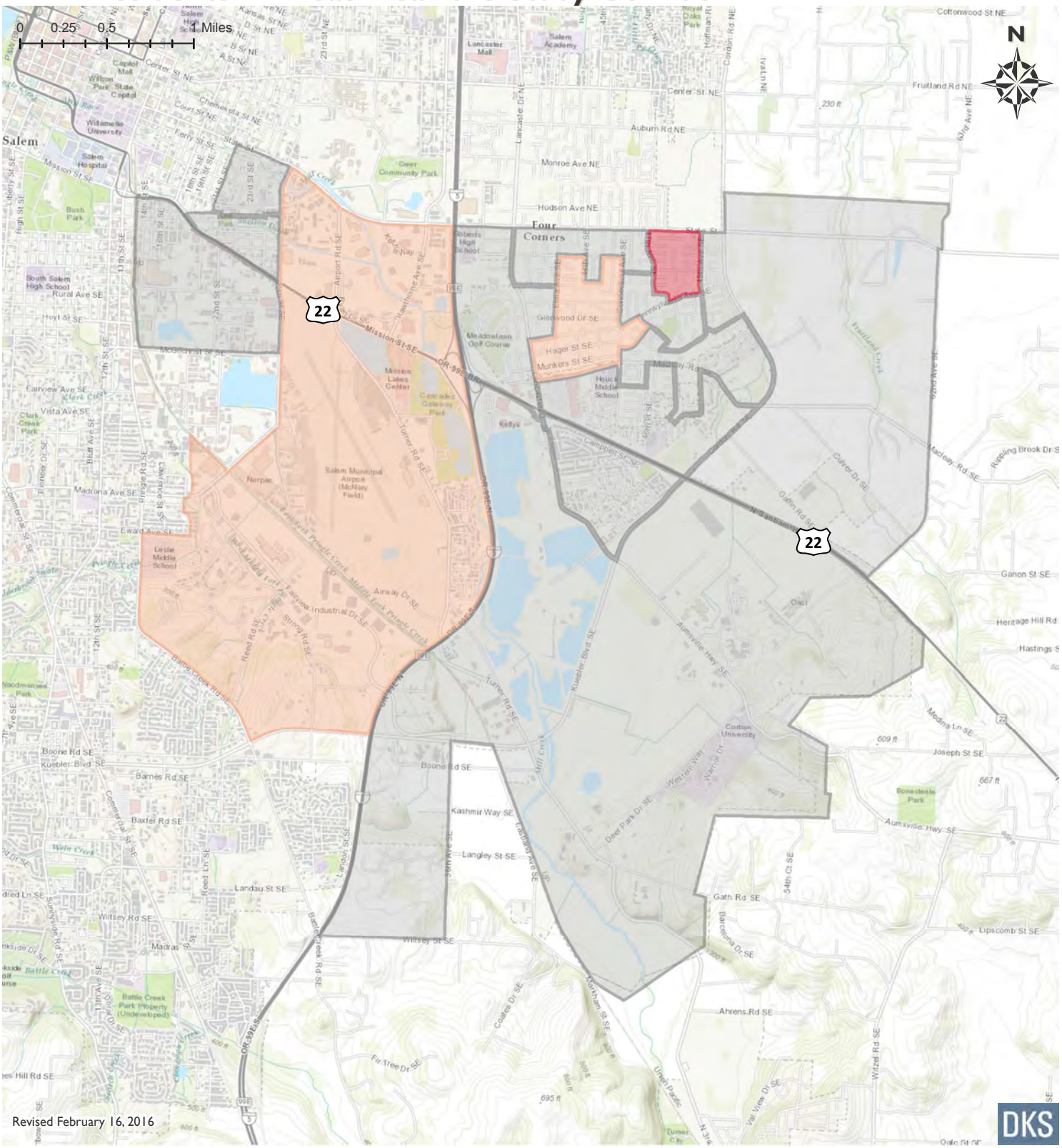
Schools
Corban University
Houck Middle School

Miller Elementary School
Salem Keizer School District

Businesses
Airport Truck and Auto Parts
Ashley Furniture
Best Western/Mill Creek Inn
Capitol Auto Property
CEMEX Sand and Gravel
Champion Feed
Chevron
Comfort Suites Salem
Costco
Craft Warehouse
Dennys
Dollar Tree
DQ Grill
East Salem RV and Boat Storage
FedEx Ground
Flight Deck Restaurant and Lounge
Gaffin Road RV and Boat Storage
Garmin
Get Salem Air
Gordon Trucking
Hampton Inn & Suites Salem
Henningsen Cold Storage
HiLine Homes of Salem
Home Depot
Home Depot Regional Distribution Center
Howard Johnson Inn
Jack in the Box
Kelly's Home Center
Kmart
La Quinta Inn & Suites
Lancaster Ready Mix Plant
Lancaster Space Age
Las Palomas Restaurant
Los Rubios Restaurant
Lowes
Marion County Salem-Keizer Recycling and Transfer Station

Marion-Polk County Medical Society
Nathan Levin Co.
Norpac
Panasonic
Plaid Pantry/Jacksons
Power Nissan
Republic Services Capitol Recycling and Transfer Station
Residence Inn by Marriott
Riverbend Sand and Gravel
Robertson Motors
Salem Aviation
Salem Road and Driveway
Shari's
Shell
Shelter Management, Inc
Shopko
Sportsmans
Sushi Kyo
Terra Gardens Nursery
Value Village
Walmart
West Coast Washers
Willamette Valley Community Health
Winco Foods

1 Demographic Variance of Impoverished Residents in Areas Near the Study Corridor



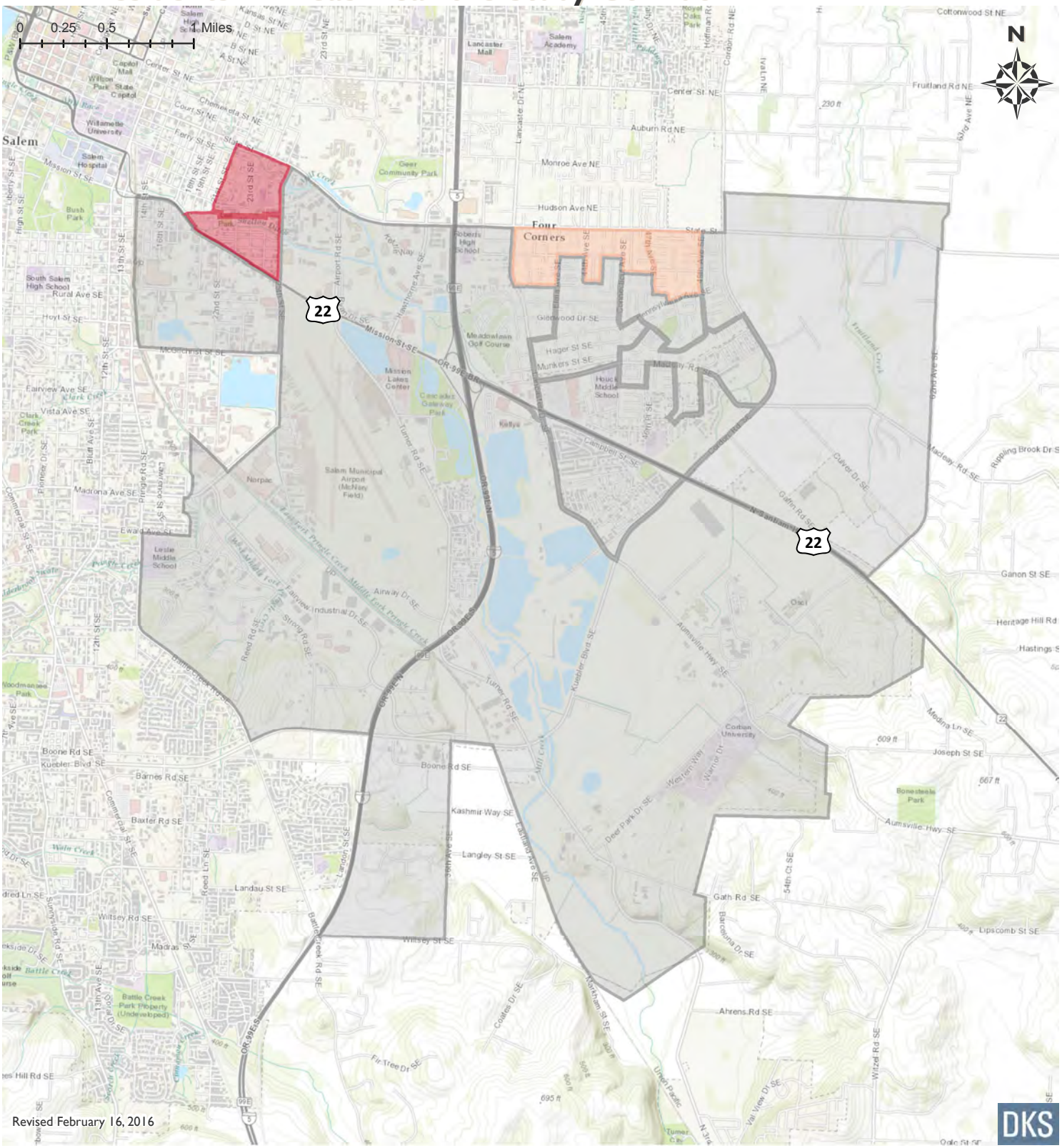
Desciption:

Locations with a greater proportion of impoverished residents based on 2013 census block groups that exceed the calculated 2013 block group average.

Legend:

- Part of the block group average (Less than 20% over average.)
- Greater than average (20% - 50% over average.)
- Considerably greater than average (+50% over average.)
- Study Corridor

2 Demographic Variance of Minority Residents in Areas Near the Study Corridor



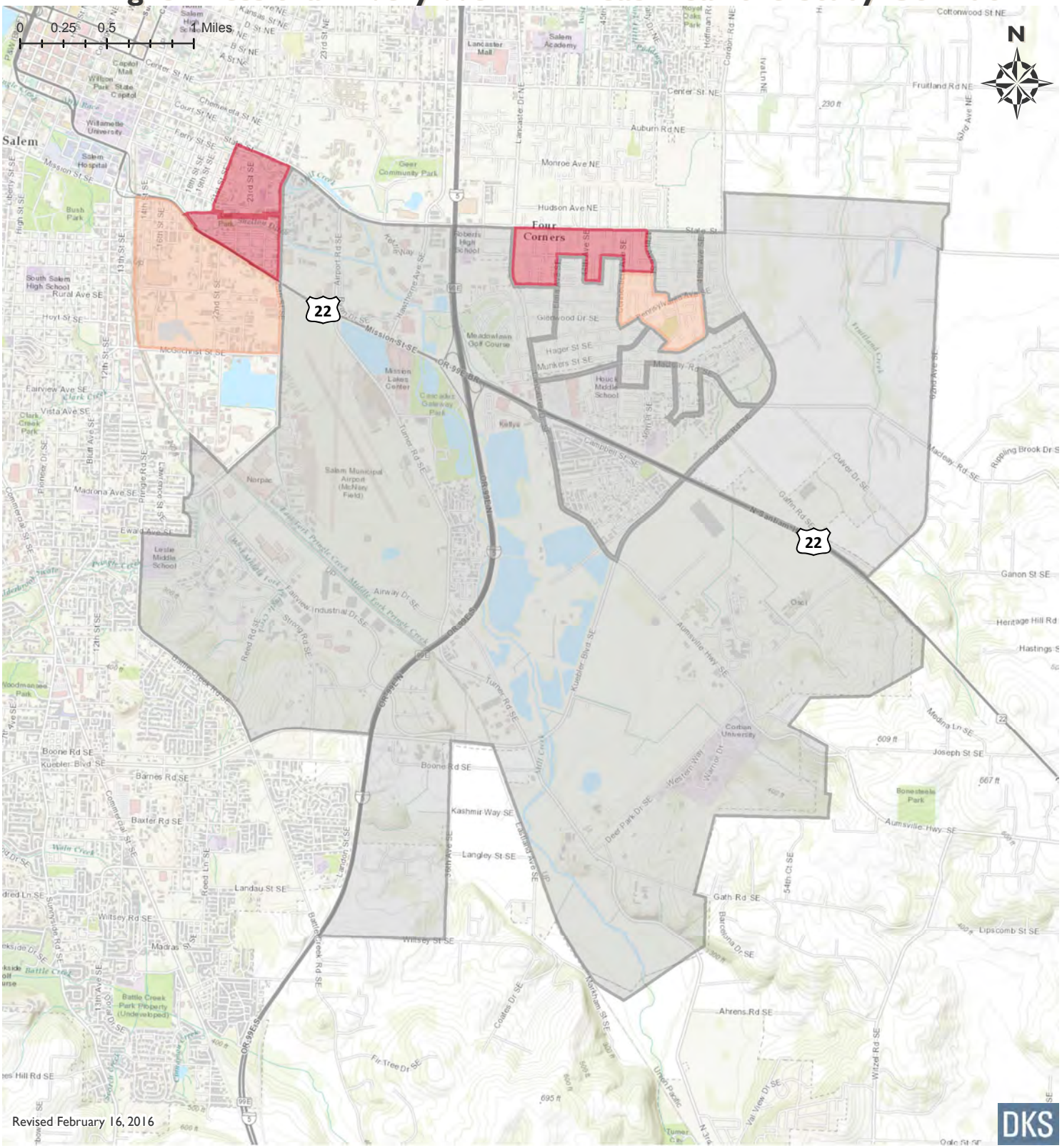
Desciption:

Locations with a greater proportion of minority residents based on 2013 census block groups that exceed the calculated 2013 block group average.

Legend:

- Part of the block group average (Less than 20% over average.)
- Greater than average (20% - 50% over average.)
- Considerably greater than average (+50% over average.)
- Study Corridor

3 Demographic Variance of Residents Over Age 5 Who Speak English Less than "Very Well" in Areas Near the Study Corridor



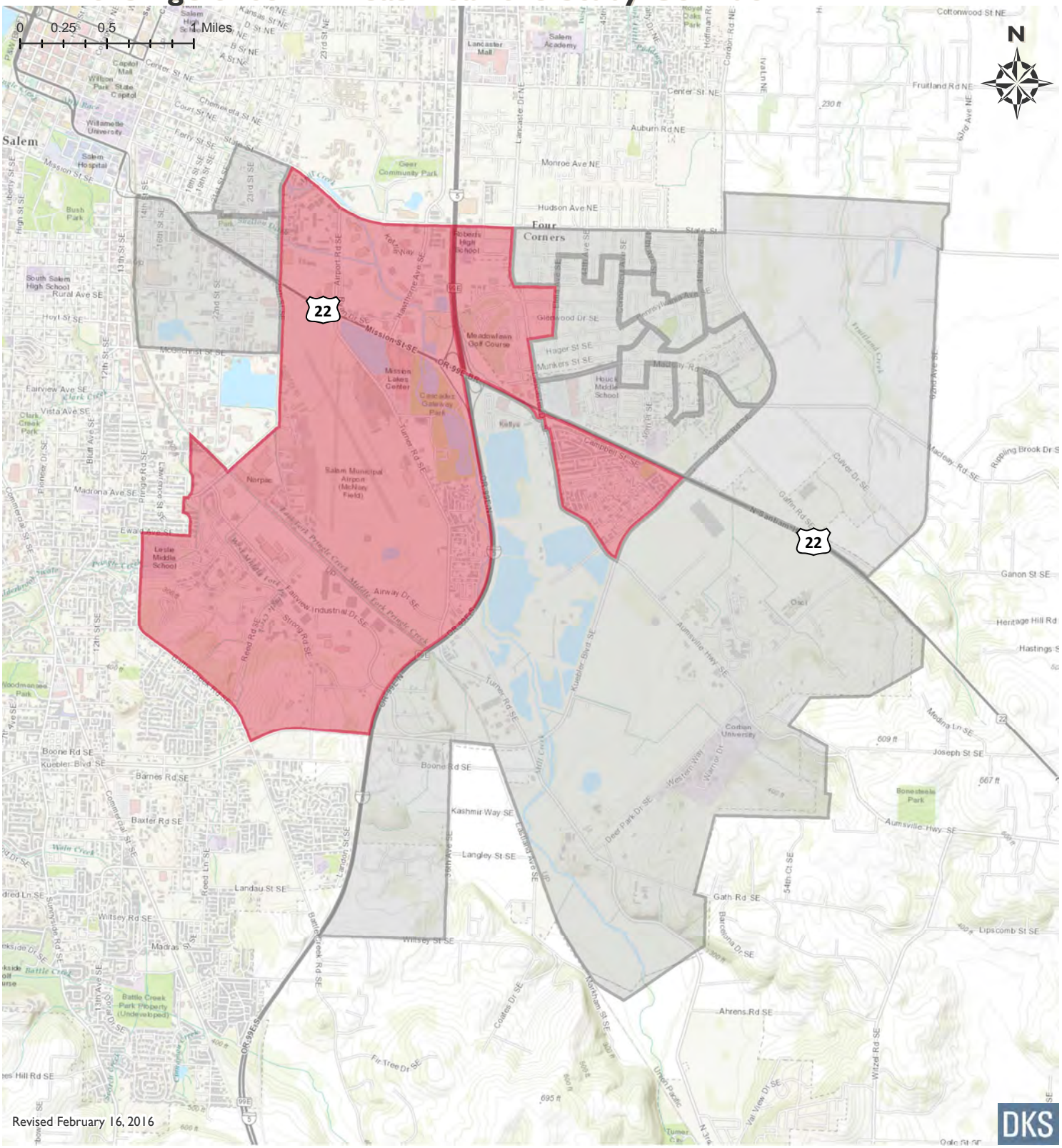
Desciption:

Locations with a greater proportion of residents over age 5 who speak english less than "very well" based on 2013 census block groups that exceed the calculated 2013 block group average.

Legend:

- Part of the block group average (Less than 20% over average.)
- Greater than average (20% - 50% over average.)
- Considerably greater than average (+50% over average.)
- Study Corridor

4 Demographic Variance of Residents Over the Age of 65 in Areas Near the Study Corridor



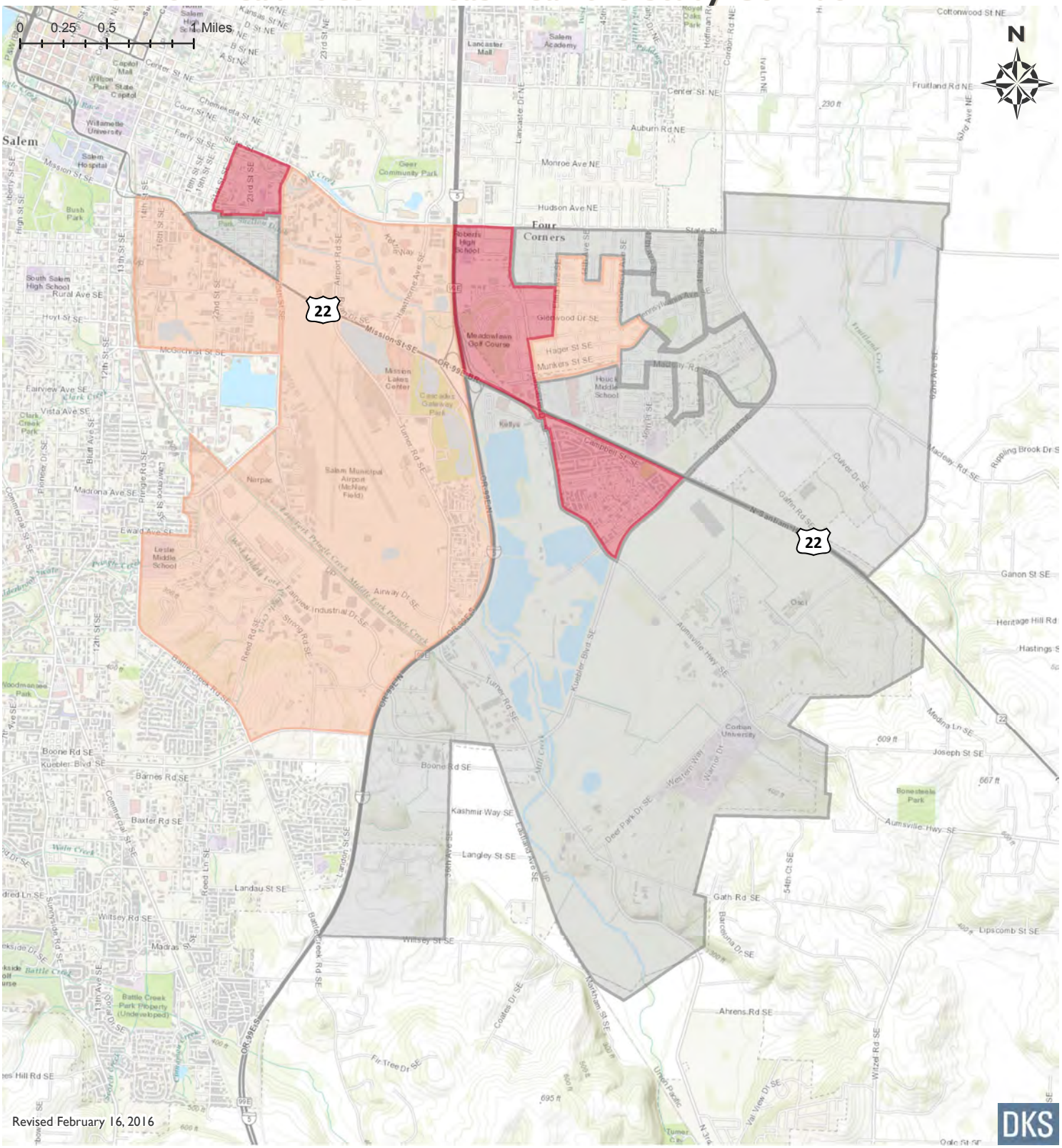
Desciption:

Locations with a greater proportion of residents over the age of 65 based on 2013 census block groups that exceed the calculated 2013 block group average.

Legend:

- Part of the block group average (Less than 20% over average.)
- Greater than average (20% - 50% over average.)
- Considerably greater than average (+50% over average.)
- Study Corridor

5 Demographic Variance of Residents Over the Age of 18 with Disabilities in Areas Near the Study Corridor



Desciption:

Locations with a greater proportion of residents over the age of 18 with disabilities based on 2013 census block groups that exceed the calculated 2013 block group average.

Legend:

- Part of the block group average (Less than 20% over average.)
- Greater than average (20% - 50% over average.)
- Considerably greater than average (+50% over average.)
- Study Corridor

APPENDIX F
SOLUTION EVALUATION TABLES

Multi-Use Path

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.80**
Reduces potential conflict points at intersections and driveways	1	
Improves pedestrian safety and accessibility	1	
Improves bicycle safety and accessibility	1	
Solution improves SPIS or ARTS identified safety location	0	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.25**
Improves vehicle capacity	0	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	0	
Improves emergency vehicle response times	0	
Minimizes traffic impacts during construction of improvements	0	
Does not create barriers to bicycle and pedestrian travel or access to transit	1	
Improves operations toward mobility target	0	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**-0.25**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	-1	
Avoids or minimizes impacts to identified historical resources	0	
Avoids or minimizes impacts to cultural resources	0	
Avoids or minimizes impacts to visual resources	0	
Support community livability and community values		**0.50**
Improves multi-modal access to residential and commercial areas	1	
Improves roadway geometrics for freight movements	0	
Provides accessible transportation facilities for all community members and users	1	
Consistent with City and County Economic Development Strategies	1	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	0	
Consistent with regional plans		**1.00**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	1	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**3.30**

Continous Bike Lanes

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.80**
Reduces potential conflict points at intersections and driveways	1	
Improves pedestrian safety and accessibility	1	
Improves bicycle safety and accessibility	1	
Solution improves SPIS or ARTS identified safety location	0	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.00**
Improves vehicle capacity	-1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	0	
Improves emergency vehicle response times	0	
Minimizes traffic impacts during construction of improvements	-1	
Does not create barriers to bicycle and pedestrian travel or access to transit	1	
Improves operations toward mobility target	0	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**-0.75**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	-1	
Avoids or minimizes impacts to identified historical resources	-1	
Avoids or minimizes impacts to cultural resources	-1	
Avoids or minimizes impacts to visual resources	0	
Support community livability and community values		**0.50**
Improves multi-modal access to residential and commercial areas	1	
Improves roadway geometrics for freight movements	0	
Provides accessible transportation facilities for all community members and users	1	
Consistent with City and County Economic Development Strategies	1	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	0	
Consistent with regional plans		**1.00**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	1	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**-1.00**
The solutution is fundable	-1	
The soluton is cost effective relative to the expected benefits	-1	
The solution is feasible given existing and future physical and funding constraints	-1	
The solution is sustainable over the long term	-1	
Total		**0.55**

Updated Signal Timings - Adaptive Signal Timing

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.20**
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	0	
Improves bicycle safety and accessibility	0	
Solution improves SPIS or ARTS identified safety location	1	
Improves overall traffic safety	0	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.63**
Improves vehicle capacity	1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	1	
Improves emergency vehicle response times	1	
Minimizes traffic impacts during construction of improvements	1	
Does not create barriers to bicycle and pedestrian travel or access to transit	0	
Improves operations toward mobility target	0	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**1.00**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	1	
Avoids or minimizes impacts to identified historical resources	1	
Avoids or minimizes impacts to cultural resources	1	
Avoids or minimizes impacts to visual resources	1	
Support community livability and community values		**0.17**
Improves multi-modal access to residential and commercial areas	0	
Improves roadway geometrics for freight movements	0	
Provides accessible transportation facilities for all community members and users	0	
Consistent with City and County Economic Development Strategies	0	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	1	
Consistent with regional plans		**0.80**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	0	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**3.79**

Right Turn Lane with Storage Lane

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.60**
Reduces potential conflict points at intersections and driveways	1	
Improves pedestrian safety and accessibility	0	
Improves bicycle safety and accessibility	0	
Solution improves SPIS or ARTS identified safety location	1	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.63**
Improves vehicle capacity	1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	1	
Improves emergency vehicle response times	1	
Minimizes traffic impacts during construction of improvements	0	
Does not create barriers to bicycle and pedestrian travel or access to transit	0	
Improves operations toward mobility target	1	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**0.00**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	0	
Avoids or minimizes impacts to identified historical resources	0	
Avoids or minimizes impacts to cultural resources	0	
Avoids or minimizes impacts to visual resources	0	
Support community livability and community values		**0.00**
Improves multi-modal access to residential and commercial areas	0	
Improves roadway geometrics for freight movements	1	
Provides accessible transportation facilities for all community members and users	0	
Consistent with City and County Economic Development Strategies	1	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	-1	
Minimizes impacts to properties along the corridor	-1	
Consistent with regional plans		**0.80**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	0	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**3.03**

Left Turn Lane with Storage Lane

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		0.00
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	-1	
Improves bicycle safety and accessibility	-1	
Solution improves SPIS or ARTS identified safety location	1	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		0.38
Improves vehicle capacity	1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	1	
Improves emergency vehicle response times	1	
Minimizes traffic impacts during construction of improvements	-1	
Does not create barriers to bicycle and pedestrian travel or access to transit	-1	
Improves operations toward mobility target	1	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		0.00
Avoids or minimizes impacts to environmentally sensitive natural resource areas	0	
Avoids or minimizes impacts to identified historical resources	0	
Avoids or minimizes impacts to cultural resources	0	
Avoids or minimizes impacts to visual resources	0	
Support community livability and community values		-0.17
Improves multi-modal access to residential and commercial areas	0	
Improves roadway geometrics for freight movements	1	
Provides accessible transportation facilities for all community members and users	0	
Consistent with City and County Economic Development Strategies	0	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	-1	
Minimizes impacts to properties along the corridor	-1	
Consistent with regional plans		0.80
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	0	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		1.00
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**2.01**

Improve North/South Intersection Geometry

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.40**
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	0	
Improves bicycle safety and accessibility	0	
Solution improves SPIS or ARTS identified safety location	1	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.50**
Improves vehicle capacity	1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	1	
Improves emergency vehicle response times	1	
Minimizes traffic impacts during construction of improvements	-1	
Does not create barriers to bicycle and pedestrian travel or access to transit	0	
Improves operations toward mobility target	1	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**0.75**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	0	
Avoids or minimizes impacts to identified historical resources	1	
Avoids or minimizes impacts to cultural resources	1	
Avoids or minimizes impacts to visual resources	1	
Support community livability and community values		**0.33**
Improves multi-modal access to residential and commercial areas	0	
Improves roadway geometrics for freight movements	1	
Provides accessible transportation facilities for all community members and users	0	
Consistent with City and County Economic Development Strategies	1	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	0	
Consistent with regional plans		**0.60**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	0	
Consistent with the Marion County Transportation System Plan	0	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**3.58**

Signalize Intersection

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.60**
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	1	
Improves bicycle safety and accessibility	1	
Solution improves SPIS or ARTS identified safety location	0	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.50**
Improves vehicle capacity	1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	0	
Improves emergency vehicle response times	1	
Minimizes traffic impacts during construction of improvements	-1	
Does not create barriers to bicycle and pedestrian travel or access to transit	1	
Improves operations toward mobility target	1	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**0.00**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	0	
Avoids or minimizes impacts to identified historical resources	0	
Avoids or minimizes impacts to cultural resources	0	
Avoids or minimizes impacts to visual resources	0	
Support community livability and community values		**0.50**
Improves multi-modal access to residential and commercial areas	1	
Improves roadway geometrics for freight movements	0	
Provides accessible transportation facilities for all community members and users	1	
Consistent with City and County Economic Development Strategies	0	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	1	
Consistent with regional plans		**0.80**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	1	
Consistent with the Marion County Transportation System Plan	0	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**3.40**

Interchange

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.20**
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	0	
Improves bicycle safety and accessibility	0	
Solution improves SPIS or ARTS identified safety location	0	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.75**
Improves vehicle capacity	1	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	1	
Improves emergency vehicle response times	1	
Minimizes traffic impacts during construction of improvements	0	
Does not create barriers to bicycle and pedestrian travel or access to transit	1	
Improves operations toward mobility target	1	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**0.75**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	0	
Avoids or minimizes impacts to identified historical resources	1	
Avoids or minimizes impacts to cultural resources	1	
Avoids or minimizes impacts to visual resources	1	
Support community livability and community values		**0.67**
Improves multi-modal access to residential and commercial areas	1	
Improves roadway geometrics for freight movements	1	
Provides accessible transportation facilities for all community members and users	1	
Consistent with City and County Economic Development Strategies	1	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	0	
Consistent with regional plans		**0.80**
Consistent with the Oregon Highway Plan	0	
Consistent with the Oregon Bicycle and Pedestrian Plan	0	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	1	
Provides economic benefit		**0.00**
The solutution is fundable	-1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	-1	
The solution is sustainable over the long term	1	
Total		**3.00**

Improved Signal Hardware

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.40**
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	0	
Improves bicycle safety and accessibility	0	
Solution improves SPIS or ARTS identified safety location	1	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.25**
Improves vehicle capacity	0	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	1	
Supports public transit services	0	
Improves emergency vehicle response times	0	
Minimizes traffic impacts during construction of improvements	0	
Does not create barriers to bicycle and pedestrian travel or access to transit	1	
Meets current mobility targets	0	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**1.00**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	1	
Avoids or minimizes impacts to identified historical resources	1	
Avoids or minimizes impacts to cultural resources	1	
Avoids or minimizes impacts to visual resources	1	
Support community livability and community values		**0.17**
Improves multi-modal access to residential and commercial areas	0	
Improves roadway geometrics for freight movements	0	
Provides accessible transportation facilities for all community members and users	0	
Consistent with City and County Economic Development Strategies	0	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	0	
Minimizes impacts to properties along the corridor	1	
Consistent with regional plans		**0.60**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	0	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	0	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**3.42**

Lighting at Intersection

Criteria - Focus Area	Scoring Range	Average Focus Area Score
Improve safety and accessibility for all modes		**0.80**
Reduces potential conflict points at intersections and driveways	0	
Improves pedestrian safety and accessibility	1	
Improves bicycle safety and accessibility	1	
Solution improves SPIS or ARTS identified safety location	1	
Improves overall traffic safety	1	
Improve mobility and connectivity for all modes while minimizing impact to adjacent land uses		**0.25**
Improves vehicle capacity	0	
Improves mobility and connectivity along Cordon Road and OR 22, including freight	0	
Supports public transit services	1	
Improves emergency vehicle response times	0	
Minimizes traffic impacts during construction of improvements	0	
Does not create barriers to bicycle and pedestrian travel or access to transit	1	
Meets current mobility targets	0	
Minimizes impact to Salem Airport	0	
Avoid or minimize adverse permanent and temporary impact to the environment		**1.00**
Avoids or minimizes impacts to environmentally sensitive natural resource areas	1	
Avoids or minimizes impacts to identified historical resources	1	
Avoids or minimizes impacts to cultural resources	1	
Avoids or minimizes impacts to visual resources	1	
Support community livability and community values		**0.67**
Improves multi-modal access to residential and commercial areas	1	
Improves roadway geometrics for freight movements	0	
Provides accessible transportation facilities for all community members and users	1	
Consistent with City and County Economic Development Strategies	0	
Improves aesthetics of corridor to create a welcoming gateway to the City of Salem	1	
Minimizes impacts to properties along the corridor	1	
Consistent with regional plans		**0.80**
Consistent with the Oregon Highway Plan	1	
Consistent with the Oregon Bicycle and Pedestrian Plan	1	
Consistent with the Marion County Transportation System Plan	1	
Consistent with the City of Salem Transportation System Plan	1	
Supports planned development and growth within the Urban Growth Boundary	0	
Provides economic benefit		**1.00**
The solutution is fundable	1	
The soluton is cost effective relative to the expected benefits	1	
The solution is feasible given existing and future physical and funding constraints	1	
The solution is sustainable over the long term	1	
Total		**4.52**

APPENDIX G
WEAVING ANALYSIS REPORTS

HCS 2010: Freeway Merge and Diverge Segments Release 6.1

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RFV
Agency/Co.:	DKS Associates
Date performed:	5/25/2016
Analysis time period:	30th HV
Freeway/Dir of Travel:	Eastbound
Junction:	Lancaster On Ramp
Jurisdiction:	ODOT/City of Salem
Analysis Year:	2035
Description:	Merge Analysis for Cordon Interchange on OR 22

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1475	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	525	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1475	525		vph
Peak-hour factor, PHF	0.95	0.95		
Peak 15-min volume, v15	388	138		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1591	566	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1591 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2157	4700	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1591 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2157	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 18.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.320	
Space mean speed in ramp influence area,	S_R = 57.6	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.6	mph

HCS 2010: Freeway Weaving Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RFV
Agency/Co.:	DKS Associates
Date Performed:	5/25/2016
Analysis Time Period:	30th HV
Freeway/Dir of Travel:	Eastbound OR 22
Weaving Location:	
Analysis Year:	2035
Description:	OR 22 Facility Plan

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	2	ln
Weaving segment length, LS	1400	ft
Freeway free-flow speed, FFS	65	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2350	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1240	420	235	105	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	326	111	62	28	
Trucks and buses	5	5	5	5	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.976	0.976	0.976	0.976	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1338	453	254	113	pc/h

Volume ratio, VR	0.328	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	2.22	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	707	lc/h
Weaving lane changes, LCW	839	lc/h
Non-weaving vehicle index, INW	451	
Non-weaving lane change, LCNW	673	lc/h
Total lane changes, LCALL	1512	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.240

Average weaving speed, SW	55.3	mi/h
Average non-weaving speed, SNW	54.7	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	54.9	mi/h
Weaving segment density, D	19.6	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.538	
Weaving segment flow rate, v	2158	pc/h
Weaving segment capacity, cW	3916	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	5882	1400	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2350	2007	c
		Maximum	Analyzed	
v/c ratio		1.00	0.538	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RFV
Agency/Co.:	DKS Associates
Date performed:	5/25/2016
Analysis time period:	30th HV
Freeway/Dir of Travel:	Eastbound
Junction:	Cordon Road Off Ramp
Jurisdiction:	ODOT/City of Salem
Analysis Year:	2035
Description:	Merge Analysis for Cordon Interchange on OR 22

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2000	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	340	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2000	340		vph
Peak-hour factor, PHF	0.95	0.95		
Peak 15-min volume, v15	526	89		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	2158	367	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2158 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2158	4700	No
$v_{FO} = v_F - v_R$	1791	4700	No
v_R	367	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2158 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2158	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 20.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.461

Space mean speed in ramp influence area, S_R = 54.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 54.4 mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	RFV
Agency/Co.:	DKS Associates
Date performed:	5/25/2016
Analysis time period:	30th HV
Freeway/Dir of Travel:	Westbound
Junction:	Cordon On Ramp
Jurisdiction:	ODOT/City of Salem
Analysis Year:	2035

Description: Merge Analysis for Cordon Interchange on OR 22

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1215	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	350	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1215	350		vph
Peak-hour factor, PHF	0.95	0.95		
Peak 15-min volume, v15	320	92		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1311	378	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1311 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1689	4700	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12} /2 No

If yes, v_{12A} = 1311 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1689	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 57.9	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S = 57.9	mph

HCS 2010: Freeway Weaving Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RFV
Agency/Co.:	DKS Associates
Date Performed:	5/25/2016
Analysis Time Period:	30th HV
Freeway/Dir of Travel:	Westbound OR 22
Weaving Location:	
Analysis Year:	2035
Description:	Merge Analysis for Cordon Interchange on OR 22

Inputs

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	2	ln
Weaving segment length, LS	1400	ft
Freeway free-flow speed, FFS	65	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2350	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

Conversion to pc/h Under Base Conditions

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	965	280	250	70	veh/h
Peak hour factor, PHF	0.95	0.95	0.95	0.95	
Peak 15-min volume, v15	254	74	66	18	
Trucks and buses	5	5	5	5	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.976	0.976	0.976	0.976	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1041	302	270	76	pc/h

Volume ratio, VR	0.339	

Configuration Characteristics

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	2.22	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	572	lc/h
Weaving lane changes, LCW	704	lc/h
Non-weaving vehicle index, INW	347	
Non-weaving lane change, LCNW	604	lc/h
Total lane changes, LCALL	1308	lc/h

Weaving and Non-Weaving Speeds

Weaving intensity factor, W	0.214

Average weaving speed, SW	56.2	mi/h
Average non-weaving speed, SNW	56.8	mi/h

Weaving Segment Speed, Density, Level of Service and Capacity

Weaving segment speed, S	56.6	mi/h
Weaving segment density, D	14.9	pc/mi/ln
Level of service, LOS	B	
Weaving segment v/c ratio	0.423	
Weaving segment flow rate, v	1689	pc/h
Weaving segment capacity, cW	3899	veh/h

Limitations on Weaving Segments

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6002	1400	a,b
		Maximum	Analyzed	
Density-based capacty, cIWL (pc/h/ln)		2350	1998	c
		Maximum	Analyzed	
v/c ratio		1.00	0.423	d

Notes:

a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
b. Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	RFV
Agency/Co.:	DKS Associates
Date performed:	5/25/2016
Analysis time period:	30th HV
Freeway/Dir of Travel:	Westbound
Junction:	Lancaster On Ramp
Jurisdiction:	ODOT/City of Salem
Analysis Year:	2035

Description: Merge Analysis for Cordon Interchange on OR 22

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1565	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	320	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1565	320		vph
Peak-hour factor, PHF	0.95	0.95		
Peak 15-min volume, v15	412	84		v
Trucks and buses	5	5		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.976	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	1689	345	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1689 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1689	4700	No
$v_{FO} = v_F - v_R$	1344	4700	No
v_R	345	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1689 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1689	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.459

Space mean speed in ramp influence area, S_R = 54.4 mph

Space mean speed in outer lanes, S_0 = N/A mph

Space mean speed for all vehicles, S = 54.4 mph

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RFV
Agency or Company:	DKS Associates
Date Performed:	5/25/2016
Analysis Time Period:	30th HV
Freeway/Direction:	Eastbound
From/To:	Lancaster Drive to Cordon Road
Jurisdiction:	ODOT/City of Salem
Analysis Year:	2035
Description:	Operational Analysis of OR 22

Flow Inputs and Adjustments

Volume, V	2000	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	526	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1079	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1079	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	RFV
Agency or Company:	DKS Associates
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Analysis Time Period:	30th HV
Freeway/Direction:	Westbound
From/To:	Lancaster Drive to Cordon Road
Jurisdiction:	ODOT/City of Salem
Analysis Year:	2035
Description:	Operational Analysis of OR 22

Flow Inputs and Adjustments

Volume, V	1565	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	412	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	844	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	844	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	13.0	pc/mi/ln
Level of service, LOS	B	