CITY OF WALDPORT

TRANSPORTATION SYSTEM PLAN

1998-1999

Prepared For:

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The contents of this document do not necessarily reflect the views or policies of the State of Oregon.

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I. INTRODUCTION

PROJECT DESCRIPTION

The City of Waldport has received a State of Oregon grant to prepare a Transportation System Plan (TSP). The Plan will result in a plan to satisfy the community's transportation needs and desires for the 20 year planning period. For purposes of this effort, the year 2020 will be used for the 20 year planning period. The TSP will be developed for land within the Waldport Urban Growth Boundary. The plan will be in compliance with the State's Transportation Planning rule (TPR) and with other State and Federal policies and mandates.

The Transportation System Plan will address and provide recommendations for the following elements:

- Development of a multi-modal circulation system to and from schools, parks and recreational amenities, and commercial and residential uses;
- Development of a functional transportation classification system of streets, roads, highways, pedestrian and bicycle ways, and unimproved easements/rights-of-way;
- Local street connections;
- Provide transportation routes that promote safety, reduce pedestrian/bicycle - automobile conflicts, and are aesthetically pleasing;
- Improve access to recreational facilities;
- Connect recreational facilities with a pedestrian/bicycle system;
- Utilize existing unimproved easements and rights-of-way in developing the pedestrian /bicycle system;
- Improve street surfaces;
- Improve parking;
- Establish priorities;
- Identify funding strategies for different modal improvements;
- Consider positive and negative consequences of designating the downtown as a Special Transportation Area (STA) consistent with the State Highway Plan;
- Ensure public involvement throughout the planning process.

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation (ODOT) and the Oregon Department of Land Conservation and Development (DLCD). The TGM grant is funded with federal Intermodal Surface Transportation Efficiency Act and local government funds. The contents of this document do no necessarily reflect views or policies of the State of Oregon.

PROJECT OBJECTIVES

The primary objectives of the Waldport TSP are to:

- Develop and adopt a Transportation System Plan which provides for street connectivity, bicycle and pedestrian needs, decreased dependence on the private automobile, and pleasing transportation routes which promote safety by reducing conflicts between pedestrian/bicycles and automobiles;

- Promote increased understanding of planning, transportation and public facility issues through a clear citizen involvement program;
- Promote increased use of recreational facilities by developing a system of pedestrian and bicycle ways that connect such facilities and encourage and support the City's Park Master Plan which anticipates the development of such facilities;
- Encourage and maintain the existing positive working relationship with ODOT regarding management of Highways 34 and 101 within the UGB;
- Develop, to the extent feasible, a system of hiker/biker paths throughout the City using existing unimproved easements and rights-of-way.

PLANNING PROCESS

A well-conceived plan is the result of a planning process that follows a series of sequential tasks. For the Waldport TSP the planning process consists of the following four primary tasks and objectives:

Task A. Goal Setting and Establish Public Involvement Program

Objectives:

- For primary participants to gain a thorough understanding and reach consensus on the planning process and schedule, project goals, the public involvement process, and project responsibilities. Primary participants include representatives from the City Council, Waldport Transportation Safety Commission, SR Enterprises (City's Project Manager), Lincoln County, ODOT and the TriLand Team;
- Ensure an adequate public participation process is in place that includes a broad range of constituents.

Task B. Research and Analysis

Objectives:

- To develop a thorough understanding of physical characteristics of the City/UGB and inventory of existing transportation elements;
- To become familiar with the regulatory environment which may affect future transportation planning;
- Assess existing and future traffic conditions;
- Prepare citywide/UGB base map.

Task C. Alternative Scenarios

Objectives:

- Identify, for the 20 year (2020) planning period, potential transportation improvements that will provide for connectivity; pedestrian/bicycle facilities within and connecting recreational facilities; street/highway improvements that address safety concerns; address LOS standards, right-of-way/easement improvements, and multi-modal approaches to meeting community needs;
- Educate the public about the Transportation System Plan and solicit input regarding transportation needs and desires from a broad range of public constituents.

Task D. Transportation System Plan

Objectives:

- To prepare a comprehensive transportation system plan that identifies and recommends physical improvements;
- To prepare proposed City Comprehensive Plan and Code amendment language that comply with the Oregon Transportation Planning Rule (TPR);
- To develop implementation strategies for recommended improvements.

PUBLIC INVOLVEMENT PROCESS

Public involvement is an important component of the planning process. It provides useful technical and community input to determine community needs and desires while establishing a program for future planning. Public involvement provides opportunities for community leaders and citizenry to become knowledgeable and involved in the future development of the city, leading to broad-based community review that aids in the acceptance of the plan in later stages of the process. Building public consensus and giving ownership of the plan to the public is critical to implementation. For the Waldport TSP, four public involvement mechanisms will be utilized:

- Workshops throughout the planning process with the primary participants (representatives from the City, City Council, Transportation Safety Committee, Lincoln County and ODOT);
- Interviews & Questionnaires with a wide cross-section of the community to review alternative transportation system diagrams and solicit input regarding transportation-related needs, desires and issues;
- Open House where the entire community is invited to review and comment on the alternative circulation system plans;
- Public Presentations & Public Hearings to the City Council and up to three other groups for review and approval of the Waldport Transportation.

II. RESEARCH & ANALYSIS

The purpose for the Research & Analysis is to gain a thorough understanding of the existing transportation system in Waldport; and to identify transportation-related plans, policies and regulations that affect future transportation improvements. The Research & Analysis is divided into four sections:

- Existing Transportation System
- Existing Highway 101 and Highway 34 Conditions
- Forecast Traffic Conditions Analysis
- Existing Plans, Policies and Regulations

EXISTING TRANSPORTATION SYSTEM

THE PHYSICAL FRAMEWORK OF WALDPORT

Waldport is a prime example of a community built upon a strong framework of open spaces and roadways. Waldport and the surrounding area has a wealth of natural open space amenities including the Pacific Ocean, Alsea Bay, Alsea River, Siuslaw National Forest, beaches, hillsides, sloughs and wetlands.

The physical limits of Waldport are well-defined by the Pacific Ocean and Alsea Bay to the west, Alsea Bay, Alsea River to the north, and Siuslaw National Forest to the east-southeast. Waldport has developed as a two-tier city defined by the "old" Waldport with downtown commercial and residential uses located in the lowland areas adjacent to the bay and ocean; and the newer, developing residential and industrial uses located on the upland.

Highway 101 and Highway 34 provide the primary access to Waldport. State Highway 101 provides the north-south connection and Highway 34 provides access from the east. Local collector and residential streets provide access to Highways 101 and 34. The older part of Waldport, located between Highway 34 and Alsea Bay, is a grid system of local streets. Crestline Drive, Range Drive and Cedar Street are collector streets providing connection from Highways 101 and 34 to the upland area. Other local streets provide direct connections to Highways 101 and 34.

STREETS

The street network is the most dominant component of the transportation system. The following summary of the existing street system is identified by the existing street hierarchy (principal highways, collectors and local streets) and by geographic location.

Highway 101 and Highway 34

The following table provides a summary of the existing facilities on Highways 101 and 34. This section also includes a technical memorandum prepared by Kittelson & Associates, Inc. The technical memorandum focuses on Highways 101 and 34 including existing transportation facilities, traffic counts and volumes, intersection level-of-service analysis, accident history, and access locations.

HIGHWAY 101 AND HIGHWAY 34 EXISTING CONDITIONS

Street	ROW Width	Travel Lanes	Pvmnt Wid/Typ	Bike Ln Wid/Type	Sdwlk Wid/Type	Notable Features/Comments
Highway 101						
Alsea Bridge		4	±60' AC	6' AC	5-6' AC	
Bridge – S. of Maple	80'	4-5	58 AC	Shared	±6' Conc.	Parallel parking both sides, some turn lanes
S. of Maple – S. UGB	80'	2		Shared		
Highway 34						
Hwy 101 - Mill	80'	3	60' AC	Shared	6' Conc.	Parallel parking both sides
Mill - Rio Vista	80' *	2		Shared		

Collector Streets

Collector streets provide both access and traffic circulation within residential neighborhoods, commercial, and industrial areas; distribute trips from arterials and highways through these areas to their final destination, and conversely, collect traffic from local streets and channel it onto arterials and highways.

Crestline Drive

Crestline Drive is the primary collector street accessing residential, public and industrial uses on the upland area. Crestline Drive connects to Hwy. 34 and to Highway 101 south of Waldport.

Range Drive

Range Drive provides a connection between Hwy. 101 and Crestline Drive.

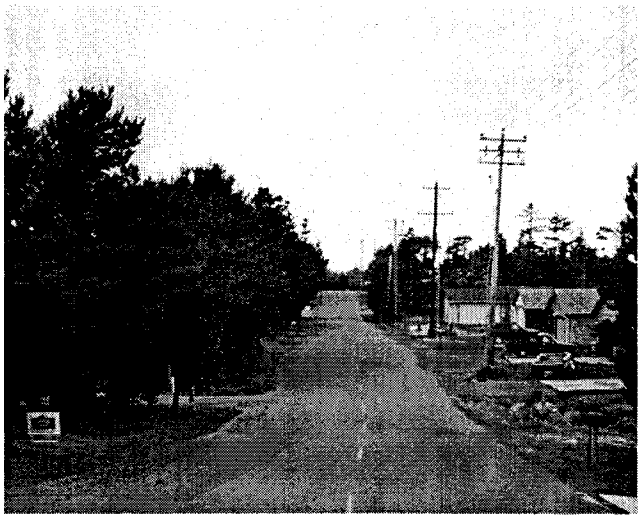
Cedar Street

Cedar Street provides a connection between Hwy. 34 and Crestline Drive.

COLLECTOR STREET EXISTING CONDITIONS

Street	ROW Width	Travel Lanes	Pvmnt Wid/Typ	Bike Ln Wid/Type	Sdwlk Wid/Type	Notable Features/Comments
Crestline Drive						
Hwy. 34 – Lint Slough (High School Dr.)	60'	2	24' AC	-	-	25 mph; 20 mph near schools when children present
Lint Slough – Edgecliff	60'	2	24' AC	-	-	
Edgecliff – Cedar	60'	2	24' AC	-	-	stop sign @ Cedar
Cedar - View	60'	2	24' AC	-	-	
View - Salmon	60'	2	24' AC	-	-	
Salmon - South UGB	60'	2	32' AC	5' AC	-	County maintained; 11' travel lanes
Range Drive						
Range (101-OceanT.)	60'	2	20' AC	-	-	25 mph sign
Range (OceanTer.-Crestline)	60'	2	28' AC	-	-	25 mph sign
Cedar Street						
Cedar St. (n. of Starr)	60'	2	44' AC	-	Limited	5' conc. Sidewalk n. of Starr/Willow
Cedar St. (s. of Starr)	60'	2	30' AC	-	-	3' AC shoulder w. side, 1' e. side

Crestline Drive looking north from Midge Lane



Range Drive looking west from Crestline Drive

Local Streets

Local streets provide access to adjacent land and access to higher classified roads; provide the lowest level of travel mobility; and typically carry less than 1,500 vehicles per day. The majority of streets in Waldport are classified as local streets. The following inventory of local streets is divided into geographical areas.

LOCAL STREET EXISTING CONDITIONS

Street	ROW Width	Travel Lanes	Pvmnt Wid/Typ	Bike Ln Wid/Type	Sdwlk Wid/Type	Notable Features/Comments
East Waldport						
Rio Vista Dr.	50'	2	24' AC	-	-	w/ grass ditches, some culverts
Lucy Lane	50'	2	24' AC	-	-	AC to Jefferson, then gravel
Merten Dr.	50'	2	24' AC	-	-	
Washington St.	50'	2	24' AC	-	-	
Jefferson St.	50'	2	24' AC	-	-	
Alsea Way	80'-90'	2	24' AC	-	-	
Waldport Heights Dr.	60'	2	20' AC	-	-	Grass shoulders
High St.	60'	2	20' gravel	-	-	
Rebel Rd.	50'	2	16-20' AC	-	-	
Hillside Dr.	50'	1+	10' gravel	-	-	
Old Town (North of Hwy. 34)						
Mill St. (south of Grant)	60'	2	24' AC	-	-	AC and gravel shoulders
Mill St. (north of Grant)	60'	2	40' AC	-	w. side 6' conc.	N. of Ruble - curbs on both sides Bad shape
Broadway St.	80'	2	34' AC	5' AC	Limited	12' gravel parking-no curb
Broadway St. (Keady-Pine)	80'	2	18' AC		w. side 4' conc.	Head-in parking
Commercial St.	60'	2	24' AC	-	Limited	12' gravel parking-no curb
Bay St.	60'	2	24'AC	-	Limited	10' gravel shoulder both sides
Alder St.	60'	2	20' AC	-	-	10' gravel shoulder both sides
Cedar St.	60'	2	24' AC	-	-	Gravel shoulder; head-in parking @ Huckleberry (church) & w. side Spruce to Spring (old-school)
John St.	80'	2		-	-	
Spring St.	80'	2	20' AC	-	ex-school frontage	Gravel shoulder both sides-commercial uses. Needs parking & sidewalk
Spruce St.	60'	2	20' AC	-	-	10' grass shoulder
Huckleberry St.	60'	2	24' AC	-	Limited	4' conc. sidewalk Bay to Alder mostly gravel shoulders; church pk'g
Fayette St.	60'	2	20' AC	-	-	10' south side gravel/grass shoulders
Pine St.	60'	2	24' AC	-	Limited	Gravel shoulders; church parking
Keady St.	60'	2	16' conc.	-	Limited	Gravel/grass shoulders; 16' AC shoulder @ k-school frontage
Grant St.	60'	2	20' AC	-	-	Gravel parking both sides
Ruble St.	60'	2	20' AC	-	N. side 4' conc.-ag.	10' gravel parking-n. side; no sidewalk w. of Broadway
Spencer St.	60'	2	24' AC	-	N. side 4' conc.-ag.	12' gravel parking - both sides
Port St.	50'	1	15' AC	-	6' conc.	1-way east-bound; diag. parking; curbs

Street	ROW Width	Travel Lanes	Pvmnt Wid/Typ	Bike Ln Wid/Type	Sdwlk Wid/Type	Notable Features/Comments
(Lowland) East of Hwy. 101/South of Hwy. 34						
Willow St.	60'	2	20' AC	-	-	Street disconnected @ Post Office
Alder St.	60'	2	20' AC			
John St.	60'	2	48' AC	-	5' conc.	No sidewalk 1/2 block on west side.
Verbina St.	80'	2	66' AC	-	5' conc.	Diagonal parking - both sides.
Strawberry Ln.	20'					Narrow pavement for 2-way traffic
Starr St.	100'	2	22' AC		-	gravel shoulder; ditch/canal NW side
Pacific View Dr.	40'	1	12' gravel	-	-	connects Norwood to Starr; sloped
Norwood Dr.	50'-80'	2	24' AC			
Lily Ln.	50'	2	24' AC		-	future extension to Norwood Dr.
Dolores Dr.	50'	2	32' AC		-	
Skyline Terr.	50'	2	24' AC	-		
Norwood Park Pl.	50'			-	-	
West of Hwy 101						
Maple St.	30'-40'	2	20' AC	-	-	
Willow	30'	1	24' AC	-	-	1-way west-bound off Hwy. 101
Hemlock St.	80'	2	58' AC	-	Partial	Head-in parking - both sides
Aziyata Ave.	50'	1-2	15' AC	-	-	Trail to beach
Adahl Ave.	50'	1-2	15' AC	-	-	
Cornona Ct.	30'	1	15' gravel	-	-	Pedestrian trail to beach
La Barre Dr.	50'	1	15' gravel	-	-	
Sherwood Terr.	50'	1	15' gravel	-	-	
Alicia Ln.	50'	1-2	15' gravel	-	-	
Range Drive Area						
Seabrook Ln.	60'	2	20' AC		-	Terminates @ "Public Water Supply" gate -possible extension?
Seabrook Way	40'	2	24' gravel	-	-	
Southmayd Way	40'	2	24' AC		-	
Southmayd Ln.	40'	1-2	15' gravel	-		
Tera Ln.	60'	2	15' gravel	-		
Ocean Terrace	50'	2	24' AC			
Crest Circle	50'	2	24' AC			
Kelsie Way	50'	2	28' AC			
Fairway Drive	50'	2	28' AC	-	-	
Forest Park Way	50'	2	28' AC			
Chad Dr.	50'	2	28' AC			
Double Eagle Dr.	60'	2	28' AC	-	4' conc.	
Ironwood Dr.	60'	2	28' AC	-	4' conc.	

Street	ROW Width	Travel Lanes	Pvmnt Wid/Typ	Bike Ln Wid/Type	Sdwlk Wid/Type	Notable Features/Comments
Off Crestline Drive						
Lint Slough Rd.	60'	2	24' AC	-	-	AC pavement for 300', then gravel
Edgecliff Dr.	50'	2	24' AC	-	-	
Bay St.	60' +	2	24' AC	-	-	
View Dr.	50'	2	24' AC	-	-	
Greenwood Way	50'	2	24' AC	-	-	
Brentwood Dr.	50'	2	24' AC	-	-	
Canyon Dr.	50'	2	24' AC	-	-	
Park Dr.	50'	2	24' AC	-	-	rough trail extends W from end of park
Hill St.	30'	1	12' AC	-	-	
Ball Blvd.	50'	2	30' AC	-	4' AC	Township 13 Gated Subdivision; 4' AC sidewalks
Lundy Ln.	50'	2	30' AC	-	4' AC	Township 13 Gated Subdivision; 4' AC sidewalks
Rolph Ct.	50'	2	30' AC	-	4' AC	Township 13 Gated Subdivision; 4' AC sidewalks
Salmon St.	50'	2	37' AC	-	-	asphalt curbs
Rose St.	50'	2	37' AC	-	-	asphalt curbs
Michael St.	50'	2	37'AC	-	-	asphalt curbs
Midge Ln.	50'	2	24" gravel	-	-	
Green Dr.	60'	2	36' AC	-	-	Potential future extension to west; golf course on north side
Fairway Circle	50'	2	24' AC	-	-	
New industrial street		2	30' AC	-	-	only 1/2 block long - to be extended
West of Alsea Bay						
Highland Dr.	40'	2	20' AC	-	-	
Highland Circle	40'	2	20' AC	-	-	

PUBLIC TRANSPORTATION AND PARK-AND-RIDE FACILITIES

A summary of existing public transportation is provided later in this section under the summary of the 1993 Lincoln County Transit Plan. Currently, there are no designated park-and-ride facilities located in Waldport.

EXISTING BICYCLE WAYS

- U.S. Highway 101 is a designated bicycle route. Through downtown Waldport, U.S. Highway 101 generally consists of four travel lanes with shared bicycle lanes. South of downtown, U.S. Highway 101 is a two-lane road with shoulder bicycle lanes.
- State Highway 34 through Waldport generally consists of two travel lanes, a center turn lane, and shared bicycle lanes.
- Crestline Drive, south of Salmon Street, is a county maintained road and consists of two travel lanes and 5' shoulder bicycle lanes.
- Cedar Street, south of Starr Street has a 3' shoulder bicycle lane on the west and north side.
- Broadway Street has 5' bicycle lanes on both sides.

EXISTING PEDESTRIAN WAYS

- U.S. Highway 101, through downtown from the Alsea Bridge south to Maple and Starr Streets, has continuous sidewalks that vary in width from six to nine feet.
- State Highway 34 has six foot continuous sidewalks from Hwy. 101 east to Crestline and Mill Streets.
- A limited section of Cedar Street has a 5'sidewalk on the north side, south of Crestline Drive.
- Streets in the Old Town section of Waldport, north of Hwy. 34, have limited sections of sidewalk ranging from four to six feet and consisting of concrete and concrete aggregate. Sidewalks are often on one side only and do not provide a continuous pedestrian system. Some sidewalks are in poor condition.
- Hemlock Street, west of Hwy. 101 and across from Hwy. 34, has limited sections of sidewalk.
- North of Range Drive, near the east end, Double Eagle Drive and Ironwood Drive have four foot sidewalks.
- Within Township 13, a gated subdivision accessed off Crestline Drive, Ball Boulevard, Lundy Lane, and Rolph Court have four foot sidewalks.
- Undeveloped land, between the lowland (downtown) and upland area (Crestline and adjacent streets) has unimproved pathways that currently provide limited pedestrian access. Most of these unimproved trails are within utility easements and there are some topographic constraints associated with portions of the pathways.
- A pedestrian beach access is located off Waziyata Avenue.
- The beach, along the Alsea Bay, from the Alsea Bridge northeast to the Port of Alsea, provides pedestrian access.
- The beach, along the Alsea Bay, from the Alsea Bridge south, provides pedestrian access at low tide. When accessible, this portion of the beach provides pedestrian access for approximately seven miles south to Yachats.

EXISTING AIR, FREIGHT, RAIL, WATER, PIPELINE TRANSPORTATION

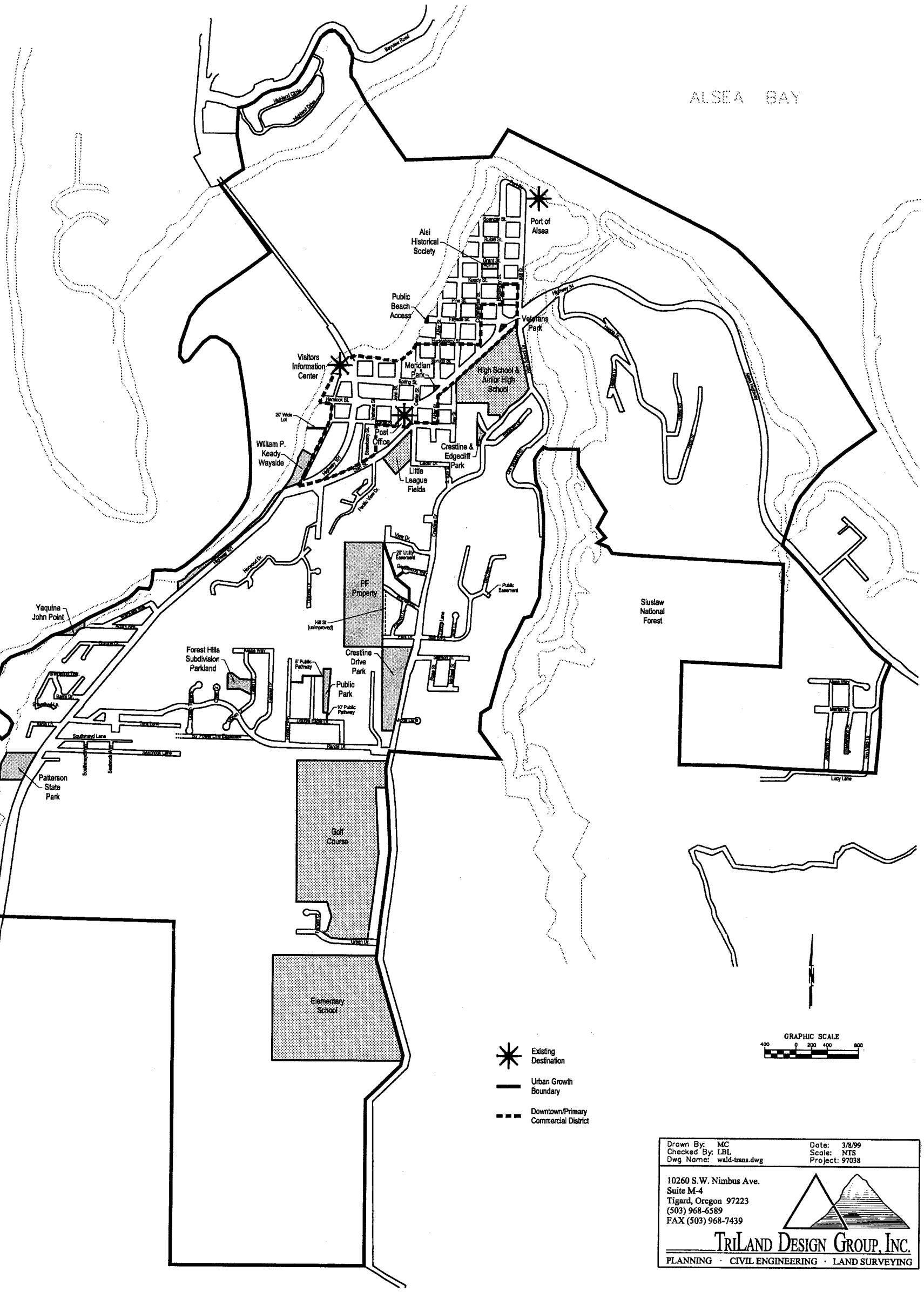
Freight services are generally limited to trucking as no air or rail facilities exist. Alsea Bay and The Port of Alsea are primarily used for commercial and recreational fishing, and not as a facility for transport of freight or destination of ocean going vessels. The marina at the Port of Alsea is used to access the Alsea River which is known for its fishing.

ENVIRONMENTAL CONSTRAINTS - NATURAL & CULTURAL

Environmental constraints play a significant role in shaping Waldport's existing and future transportation system. The City is bordered by the Pacific Ocean and Alsea Bay on the west and north sides. These natural features limit transportation to vehicular access across the Alsea Bridge and to boat traffic. The eastern limits of Waldport are primarily defined by the Lint Slough which includes significant topographical constraints and wetlands, and by the Siuslaw National Forest. Access from Waldport to the east is limited to Highway 34 which crosses Lint Slough or by boat via the Alsea River.

Existing Streets & Destinations

Waldport Transportation System Plan



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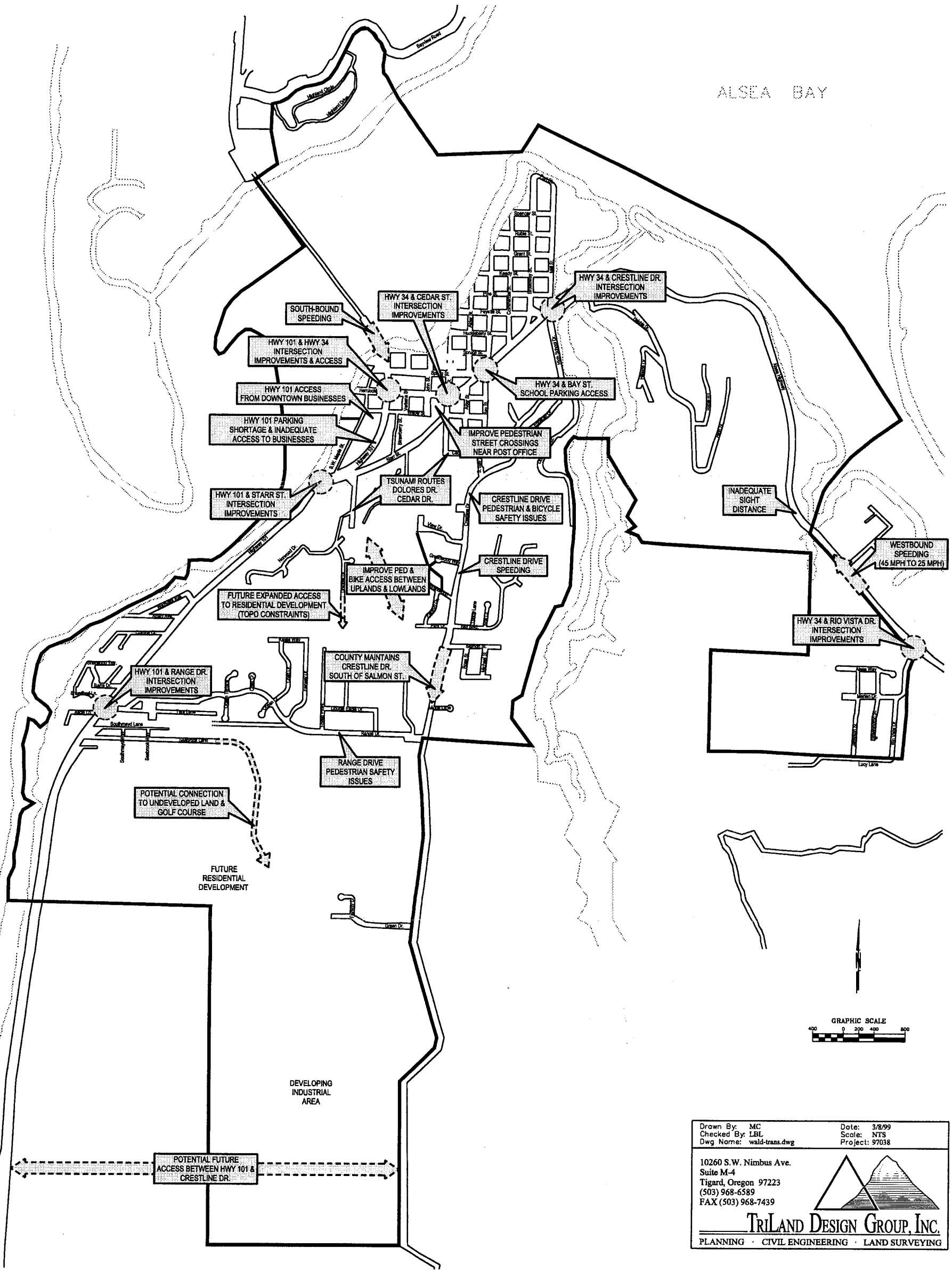
Transportation Issues

Waldport Transportation System Plan



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EXISTING HIGHWAY 101 AND HIGHWAY 34 TRANSPORTATION SYSTEM

Key elements addressed in this section include:

- Existing transportation facilities, including lane configurations and traffic-control devices
- Existing traffic counts and estimated summer peak period traffic volumes
- Intersection level-of-service analysis under summer peak traffic conditions
- Review of accident history in the study area
- Review of access locations on US 101 and Oregon 34.

EXISTING TRANSPORTATION FACILITIES

Highway 101 and Highway 34 provide access to the study area, and are operated and maintained by ODOT. Both highways are classified in the 1991 Oregon Highway Plan as highways of *Statewide* level of importance (LOI). The primary function of highways at this level is to provide connections and links to larger urban areas, ports, and major recreation areas that are not directly served by interstate highways. Statewide highways provide links and connections for intra-urban and intra-regional trips. Connections are primarily with roadways that serve areas of regional significance or scope. Additionally, Highway 34 is designated as an Access Oregon Highway (AOH). According to the Highway Plan, the objective of highways of this designation is to provide for safe and efficient high-speed continuous-flow operation in the rural areas and high-to-moderate-speed operations with limited interruptions of flow in urban and urbanizing areas.

Bayview Road, which is just north of the Alsea Bay, is maintained by Lincoln County, as is the portion of Crestline Drive south of Salmon Street. All other roadways within the study area are maintained by the City of Waldport (see Figure 1). Figure 2 shows the existing lane configurations and stop control devices at the study intersections.

EXISTING PEAK HOUR TRAFFIC VOLUMES AND OPERATIONS

Manual traffic counts were conducted at the study intersections during weekday a.m. and p.m. peak periods in December 1998. Historic traffic volume data obtained from ODOT (Reference 1) were evaluated to determine the degree of monthly variation in traffic volume on Highways 101 and 34. The data indicate that August is the peak demand on these facilities occurs during August. Therefore, the December traffic counts were adjusted to reflect August peak volumes. Existing traffic volume estimates at Highway 101 and Highway 34 intersections are provided in the following table. Estimated weekday a.m. and p.m. traffic volume and LOS diagrams are provided at the end of this subsection.

ESTIMATED HIGHWAY 101 & HIGHWAY 34 TRAFFIC VOLUMES, WEEKDAY AM PEAK HOUR (SUMMER)

Intersection	Northbound			Southbound			Eastbound			Westbound		
	Strt	LT	RT	Strt	LT	RT	Strt	LT	RT	Strt	LT	RT
Hwy 34/Mill St.-Crestline	10	75	15	5	5	15	100	5	85	240	80	5
Hwy 34/Hwy 101	215	<5	115	195	175	<5	15	10	<5	5	125	155
Hwy 101/Starr St.	325	-	25	300	5	-	-	-	-	-	25	15
Hwy 101/Range Dr.	275	-	10	175	30	-	-	-	-	-	10	55

ESTIMATED HIGHWAY 101 & HIGHWAY 34 TRAFFIC VOLUMES, WEEKDAY PM PEAK HOUR (SUMMER)

Intersection	Northbound			Southbound			Eastbound			Westbound		
	Strt	LT	RT	Strt	LT	RT	Strt	LT	RT	Strt	LT	RT
Hwy 34/Mill St.-Crestline	<5	15	15	5	10	25	240	15	15	125	10	<5
Hwy 34/Hwy 101	195	5	130	305	230	<5	30	5	10	10	185	100
Hwy 101/Starr St.	285	-	25	475	15	-	-	-	-	-	40	20
Hwy 101/Range Dr.	280	-	10	345	45	-	-	-	-	-	5	30

Strt = Straight **LT** = Left Turn **RT** = Right Turn

Level-of-service (LOS) analysis was conducted to evaluate traffic operations at the study intersections under the estimated (summer) weekday peak hour conditions. All LOS analyses described in this report were performed in accordance with the procedures described in the *Highway Capacity Manual* (HCM, Reference 2). In order to ensure that this analysis is based upon worst-case conditions, the peak 15-minute flow rates during the peak hours were used in the evaluation of all intersection levels of service.

Level-of-Service Analysis Results
The estimated traffic volumes for the weekday a.m. and p.m. peak hours in August are shown in Figures 4 and 5, along with a summary of the level-of-service results. The summary for the signalized intersection of Highway 101 and Highway 34 includes the intersection volume-to-capacity ratio and the average delay in seconds per vehicle. For unsignalized intersections, the critical approach is identified along with the corresponding volume-to-capacity ratio and average delay at that approach. *Level-of-service analysis worksheets are provided in the Appendix.*

The Oregon Highway Plan specifies an operating standard of LOS C for intersections on facilities of statewide LOI in urbanizing areas. The City of Waldport does not have specific LOS standards for intersection operations. Typically, local jurisdictions in Oregon consider LOS E or better to be the standard for unsignalized intersections. At signalized intersections, LOS D or better is a typical standard for acceptable operations. This standard has been applied in this analysis. As the figures show, the study intersections operate at acceptable levels of service under existing weekday peak hour traffic conditions.

The HCM level-of-service methodology was modified to analyze the intersection of Highway 101 with Norwood Drive and Starr Street due to the irregular lane configuration. Volumes from both local streets were combined to reflect a single westbound approach lane.

No capacity problems were revealed in the analysis.

Left-Turn Lane Warrant Analysis
The need for left-turn lanes was evaluated at the unsignalized intersections in the study area. The results are summarized in the following table.

HIGHWAY 101 & HIGHWAY 34 LEFT-TURN LANE WARRANT ANALYSIS

Intersection	Warrant Met?	
	Southbound	**Northbound**
US 101/Range Drive	Yes	N/A
US 101/Starr-Norwood	No	N/A
	Eastbound	**Westbound**
ORE 34/Cedar Street	No	No
ORE 34/Mill-Crestline	No	Yes
* Methodology developed by MD Harmelink (Reference 3)		

The results indicate that a left-turn lane is not warranted for either the westbound or the eastbound traffic at the Highway 34/Mill-Crestline intersection, although a left-turn lane is currently provided for westbound vehicles. Also, a southbound left-turn lane is warranted at the Highway 101/Range Drive intersection, which is currently not provided. *The left-turn warrant analysis worksheets are provided in the Appendix.*

Traffic Signal Warrant Analysis
Signal warrants were evaluated at all of the unsignalized intersections in the study area. The Minimum Vehicular Volumes (Warrant 1), Interruption of Continuous Traffic (Warrant 2), and the Peak Hour Volume (Warrant 11) warrants were evaluated, as described in the Manual of Uniform Traffic Control Devices (MUTCD, Reference 4).

The analysis results indicate that signals are not warranted at any of the unsignalized study intersections under current traffic conditions. *The signal warrant analysis worksheets are provided in the Appendix.*

Existing Intersection Geometry Issues
Although no capacity issues are apparent at the Highway 101/Starr-Norwood intersection, the unconventional lane configuration (two westbound approaches intersecting a single north-south street), the skew of the approaches, and the grade of Norwood Drive may result in safety problems, particularly as traffic volumes increase.

The off-set of the minor street approaches at the Highway 34/Mill-Crestline intersection poses potential safety problems. Eastbound left-turning traffic is not provided with a storage lane and must make the left-turn movement from the through-traffic lane, cutting through the westbound left-turn lane. However, frequently eastbound left-turning vehicles wait in the left-turn lane provided for westbound traffic, causing potential conflicts with the intended traffic as well as with drivers making the correct maneuver from the through lane.

ACCIDENT ANALYSIS

A review of accident data was conducted for the most recent three-year period for which data are available. ODOT provided accident data on Highways 101 (milepost 155.89 to 156.21) and 34 (milepost 0.0 to 1.62) in the study area. The following table shows a summary of the accident history.

ACCIDENT HISTORY

Time Period	Accident Severity			Accident Type				Total
	PDO*	Injury	Fatal	Rear-end	Turning	Pedestrian	Other	
Highway 101, MP 155.89 to MP 156.21								
1995	1	0	0	0	0	0	1	1
1996	3	1	0	2	1	0	1	4
1997	3	4	0	2	2	1	2	7
3-Year	7	5	0	4	3	1	4	12
Highway 34, MP 0.0 to 1.62								
1995	6	2	0	2	3	0	3	8
1996	1	2	0	2	1	0	0	3
1997	3	1	0	2	1	0	1	4
3-Year	10	5	0	6	5	0	4	15

*Property Damage Only

Accidents have occurred with increasing frequency on Highway 101 during the three-year period reviewed. Approximately 58 percent of the accidents in the study area were caused by rear-end or turning movement collisions. There were no fatal accidents within the study area during the three-year period for which data were obtained.

The frequency of accidents on Highway 34 has decreased during the three years under review, with four accidents during 1997, down from eight accidents in 1995. Similar to Highway 101, most of the accidents involved rear-end collisions or turning movements.

The accident rates for both highways are shown in the following table, along with the statewide average for comparable facilities. Accident rates on arterials are measured in terms of accidents per million vehicle miles.

ACCIDENT RATES IN STUDY AREA AND STATEWIDE FACILITIES

Facility	Accident Rate
Highway 101, MP 155.89 to MP 156.21	
1995	1.07
1996	4.38
1997	6.44
Three-Year Average	**3.95**
Statewide Average for Urban Non-Freeways (among State Highways)	**3.52**
Highway 34, MP 0.00 to 1.62	
1995	2.65
1996	0.99
1997	1.33
Three-Year Average	**1.66**
Statewide Average for Rural Non-Freeways (among State Highways)	**0.79**

*Accident rates are expressed in Accidents per Million Vehicle Miles of Travel (acc/mvm)

The 1997 accident rate on Highway 101 was 6.44 acc/mvm, compared to 1.07 acc/mvm in 1995. The three-year average accident rate on Highway 101 (3.95 acc/mvm) is slightly higher than the statewide average on similar urban facilities (3.52 acc/mvm). The accident rate on Highway 34 within the study area has consistently been higher than the statewide average for similar rural state highways.

The accident locations are shown in a diagram at the end of this section. The figure shows that the accident locations have been clustered in the high activity area near the intersection of Highway 101 and Highway 34. Out of the twelve accidents reported on Highway 101, nine occurred within 0.05 miles of the intersection with Highway 34. Two other occurred near the Highway 101 intersection with Starr Street and Norwood Drive, and the remaining accident was near the Range Drive intersection. Twelve of the 15 reported accidents (or 80%) took place along the high activity area within a half-mile of the Highway 101 intersection.

ACCESS MANAGEMENT

Per the 1999 Oregon Highway Plan, Access Management Spacing Standards for urban statewide highways is as follows:

ACCESS MANAGEMENT SPACING STANDARDS FOR URBAN STATEWIDE HIGHWAYS

Posted Speed	Spacing Standard (in feet)*
≥55	1320
50	1100
40 & 45	990
30 & 35	770
≤25	550

* Measurement of the approach road spacing is from center to center on the same side of the roadway.

Access management on Highway 101 in its urban section within Waldport is an important element to maintaining needed arterial capacity. Accordingly, an inventory was conducted of the current access in the 2000-foot section from Spruce Street to Maple Street. The following tables show the number of observed driveways in each section, as defined by intersection public street intersections.

HIGHWAY 101 ACCESS LOCATIONS
2000' SECTION FROM SPRUCE TO MAPLE

Cross Street	Number of Driveways	
	West Side	East Side
Spruce to Spring	-	0
Spring to Highway 34	3	2
Highway 34 to Willow	0	2
Willow to Starr/Norwood	6	6
Starr/Norwood to Maple	1	0

The following table summarizes the access locations on Highway 34 near the intersection with Highway 101.

HIGHWAY 34 ACCESS LOCATIONS
2,500' SECTION FROM HIGHWAY 101 TO MILL STREET

Cross Street	Number of Driveways	
	North Side	South Side
US 101 to Verbena	3	10*
Verbena to John	1	2
John to Cedar	0	1
Cedar to Spring	0	0
Spring to Bay	1	1
Bay to Broadway	0	1
Broadway to Mill	0	0
Total	5	15
* This section has 10 head-in parking spaces which require backing onto Highway 34 for exit maneuvers.		

The following table shows a summary of the access data collected. As shown, there are a total of ten driveways entering onto U.S. 101 on each side, in addition to the four public streets. This amounts to an average access spacing in this 2000-foot section of 143 feet. This compares to an ODOT policy of 550 feet, as indicated in the March 18, 1999 Oregon Highway Plan (January 1999). An access management plan will be developed for this section, using ODOT policy, traffic volumes and composition, accident history, economic development, and physical characteristics to assist in its development.

SUMMARY OF ACCESS DATA
HIGHWAY 101 FROM SPRUCE TO MAPLE

	West Side	East Side
Number of driveways	10	10
Number of public streets	4	4
Total accesses	14	14
Average Access Spacing (ft)	143	143
ODOT Spacing Standard (ft)*	550	550

*According to the 1998 Draft Oregon Highway Plan, dated January 1999.

Careful comparison of the accident data and the number of driveways shown by section in the previous three tables reveals a direct correlation between driveway access and accidents. This indicates a particular need for

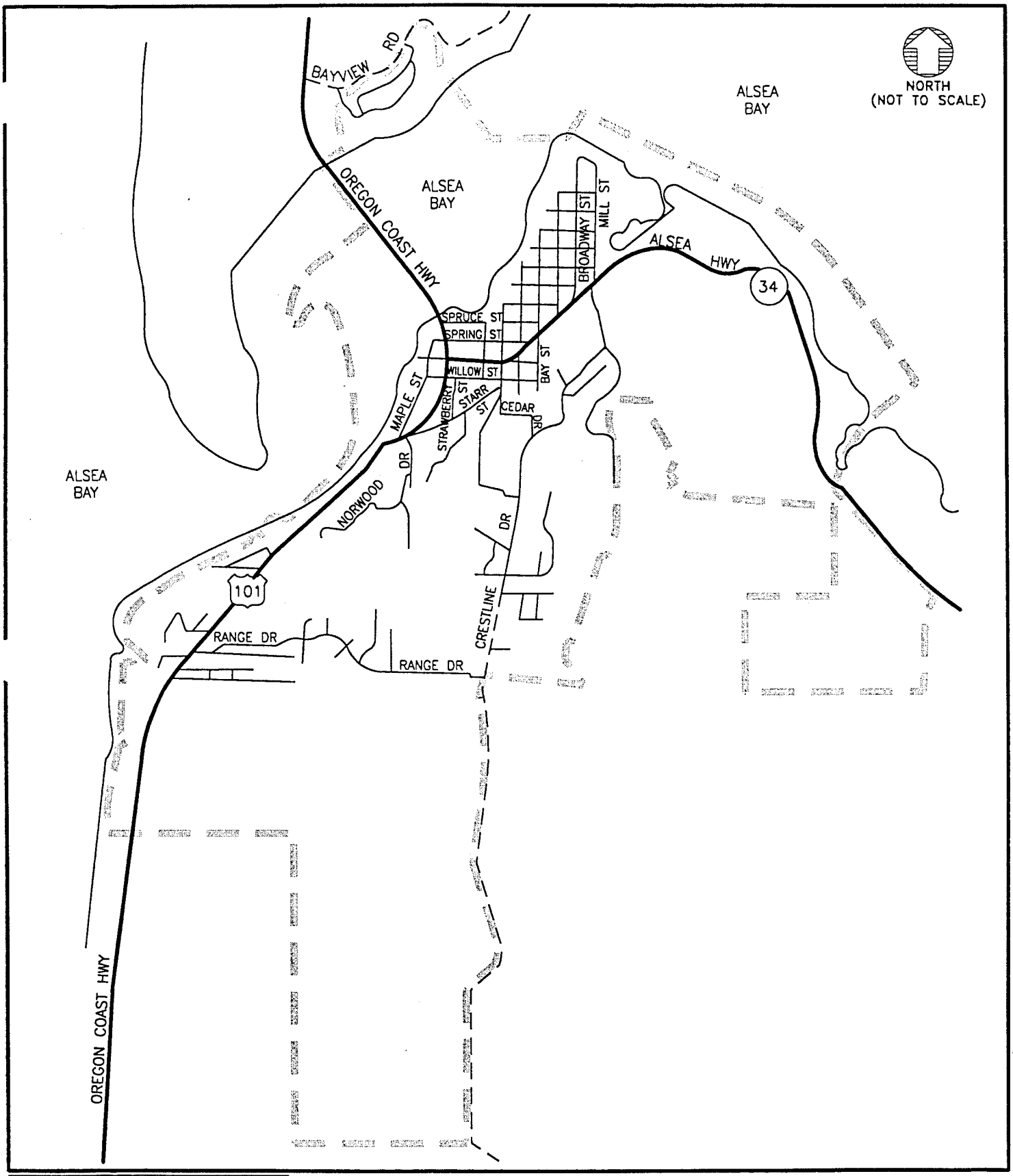
Waldport and ODOT to reduce the number of conflicting driveways within close proximity of the Highway 101/Highway 34 intersection, over time.

FINDINGS

- Traffic volumes on Highways 101 and 34 are highest during the summer months, with peak volumes typically occurring in August.
- All study intersections operate at acceptable levels of service during the weekday a.m. and p.m. peak hours under estimated peak summer volumes.
- A southbound left-turn lane is warranted at the intersection of Highway 101 and Range Drive.
- The lane configuration at the Highway 101/Starr-Norwood intersection (two westbound approaches merge at the confluence with Highway 101), as well as the high skew of the intersection and the sharp grade on Norwood Drive are a potential safety problem, particularly as traffic volumes increase.
- The off-set of the minor street approaches at the Highway 34/Mill-Crestline intersection results in potential turn-movement and storage conflicts between eastbound and westbound left-turning vehicles.
- Accidents on Highway 101 within the City of Waldport have occurred with increasing frequency in recent years. The average accident rate for the three-year period was 3.95 accidents per million vehicle miles (Acc/MVM), which is somewhat higher than the statewide average rate of 3.52 for similar facilities. Similarly, the three-year accident rate on Highway 34 within city limits is higher than the statewide average for similar facilities.
- Most of the accidents within the study area occurred in high-activity areas near the intersection of Highway 101 and Highway 34.
- Access spacing of driveways and public streets on Highway 101 are inconsistent with ODOT's access spacing standards.

REFERENCES

1. Oregon Department of Transportation. *1997 Traffic Volume Tables.* 1998.
2. Transportation Research Board. *Highway Capacity Manual. Special Report No. 209, Third Edition.* 1994.
3. MD Harmelink, *Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersection,* Highway Research Record 211.
4. United States Department of Transportation: *Manual on Uniform Traffic Control Devices,* 1988 Edition.



LEGEND

- CITY STREETS
- COUNTY STREETS
- STATE HIGHWAYS
- URBAN GROWTH BOUNDARY

STUDY AREA MAP

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

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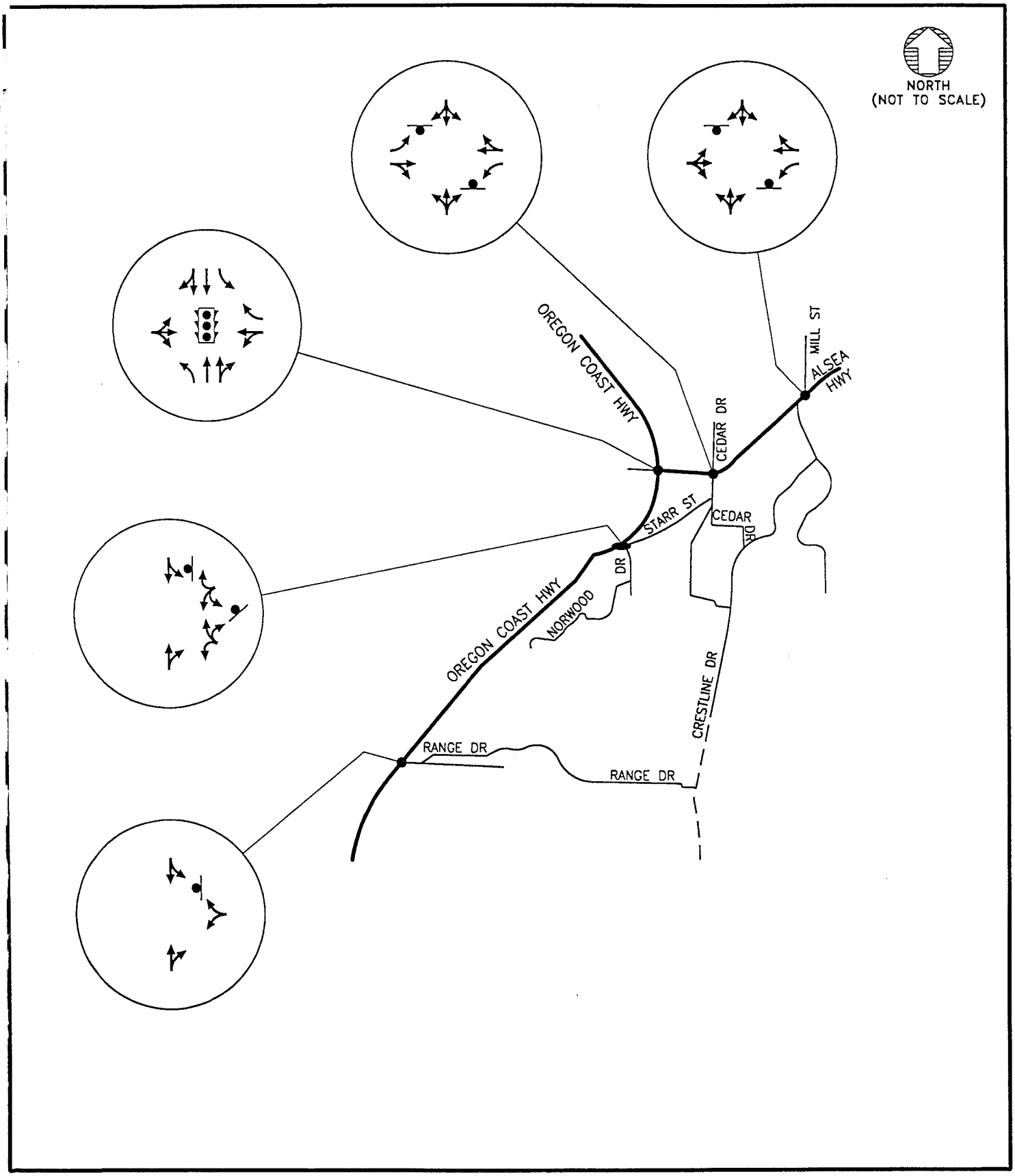

LEGEND

- STOP SIGN
- TRAFFIC SIGNAL

EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

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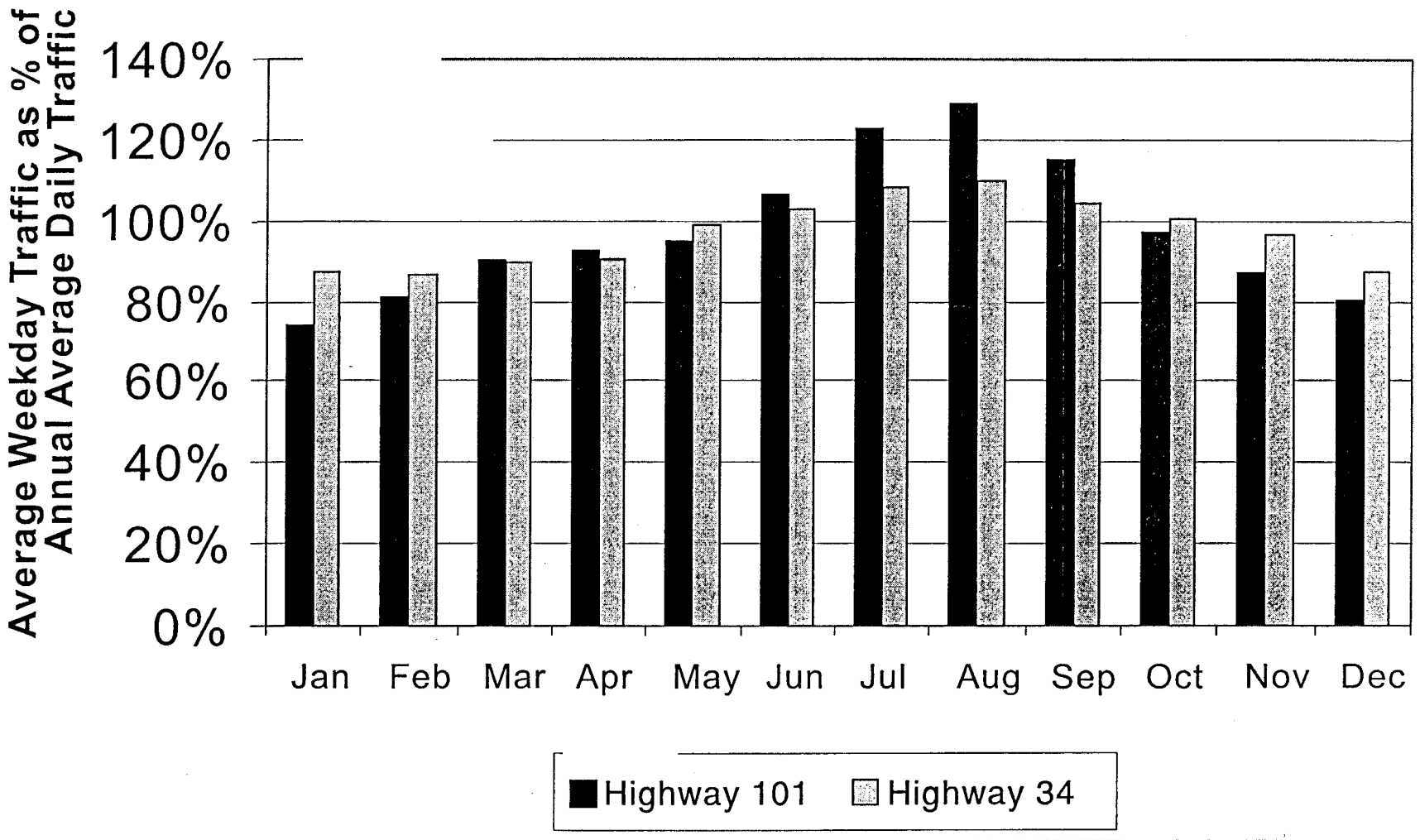
US 101 & ORE 34 Monthly Traffic Variation



MONTHLY TRAFFIC VARIATION

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

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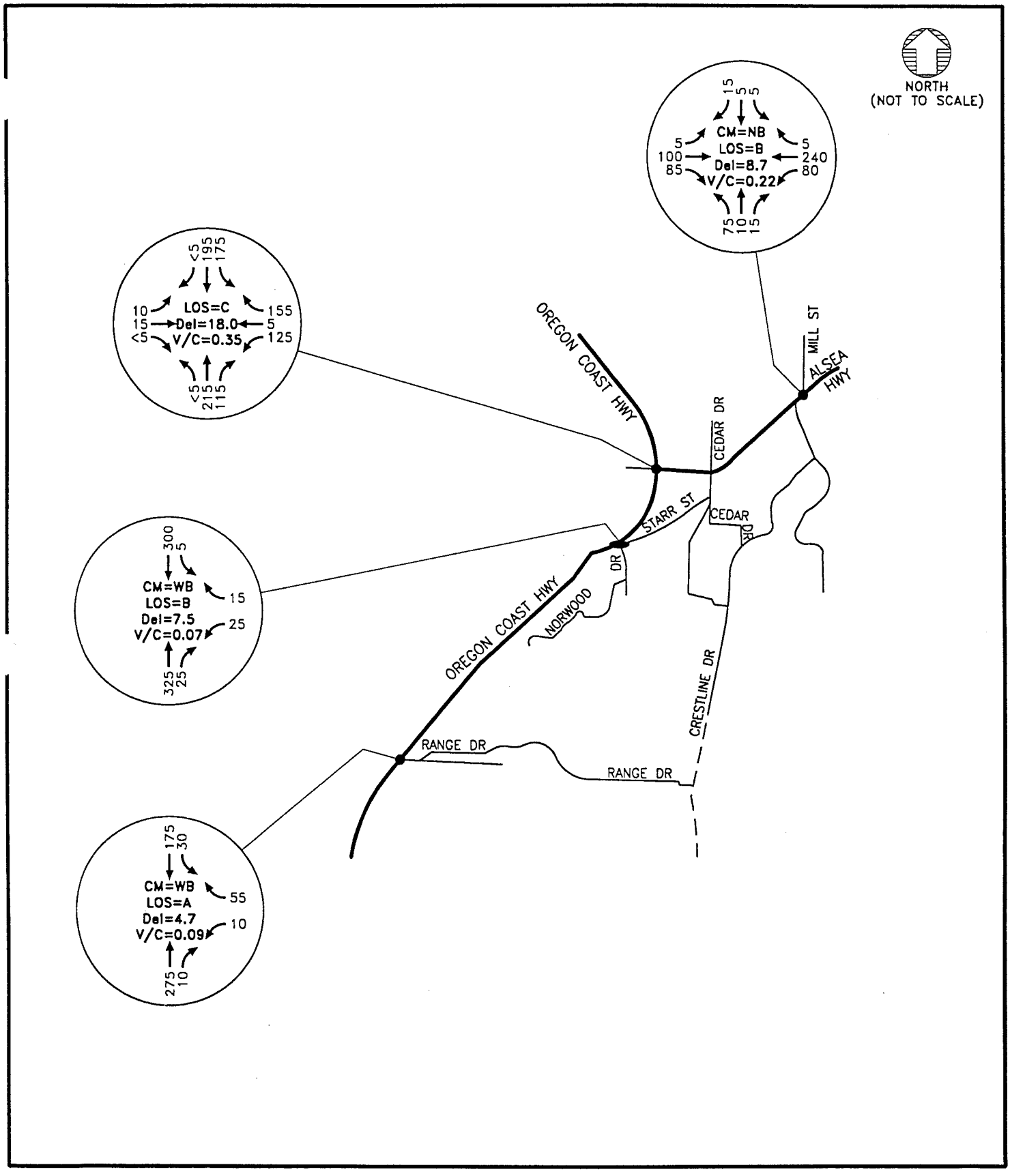

LEGEND

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

ESTIMATED TRAFFIC VOLUMES & LOS RESULTS, WEEKDAY AM PEAK HOUR (SUMMER)

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

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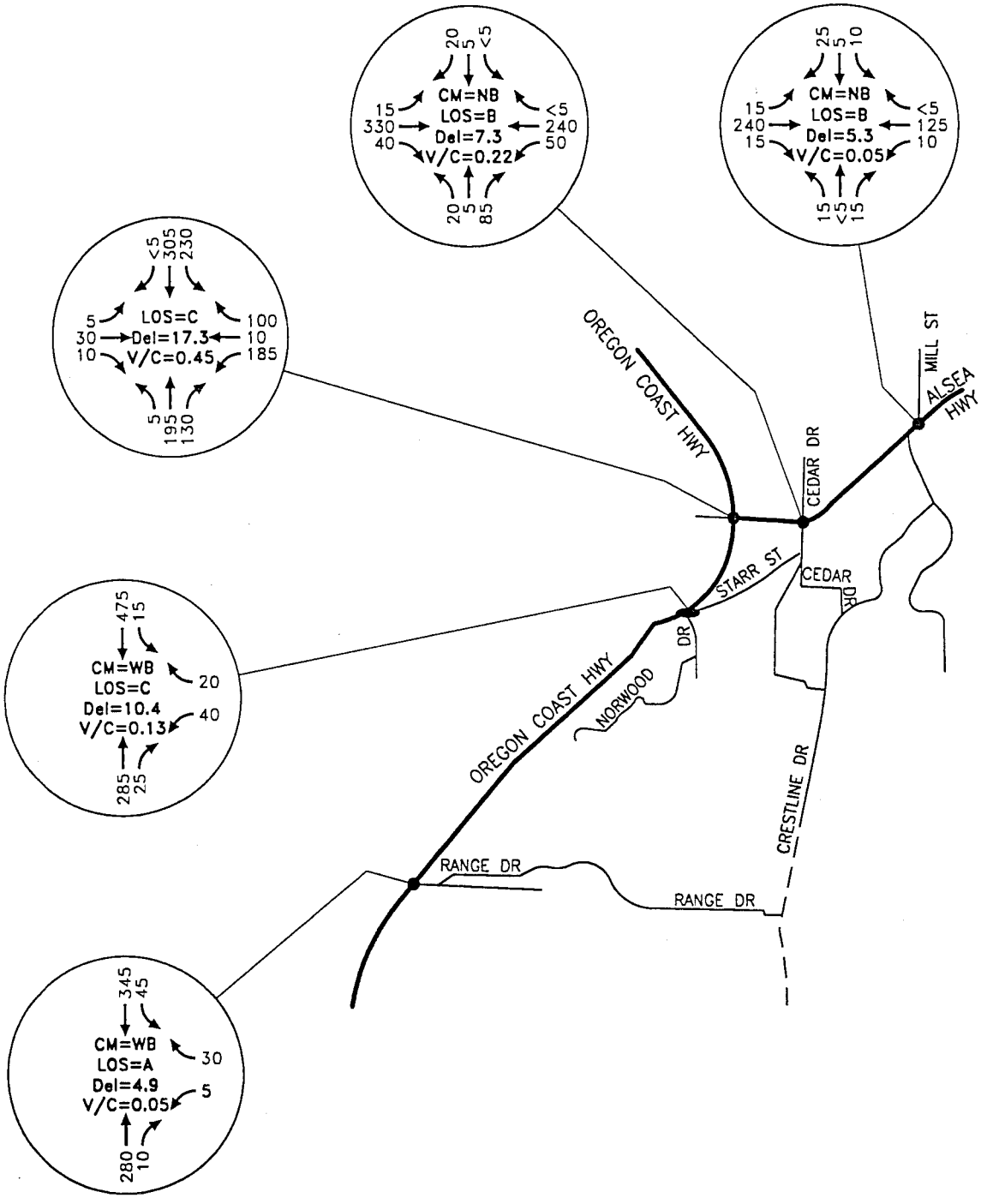

LEGEND

, = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

ESTIMATED TRAFFIC VOLUMES & LOS RESULTS, WEEKDAY PM PEAK HOUR (SUMMER)

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

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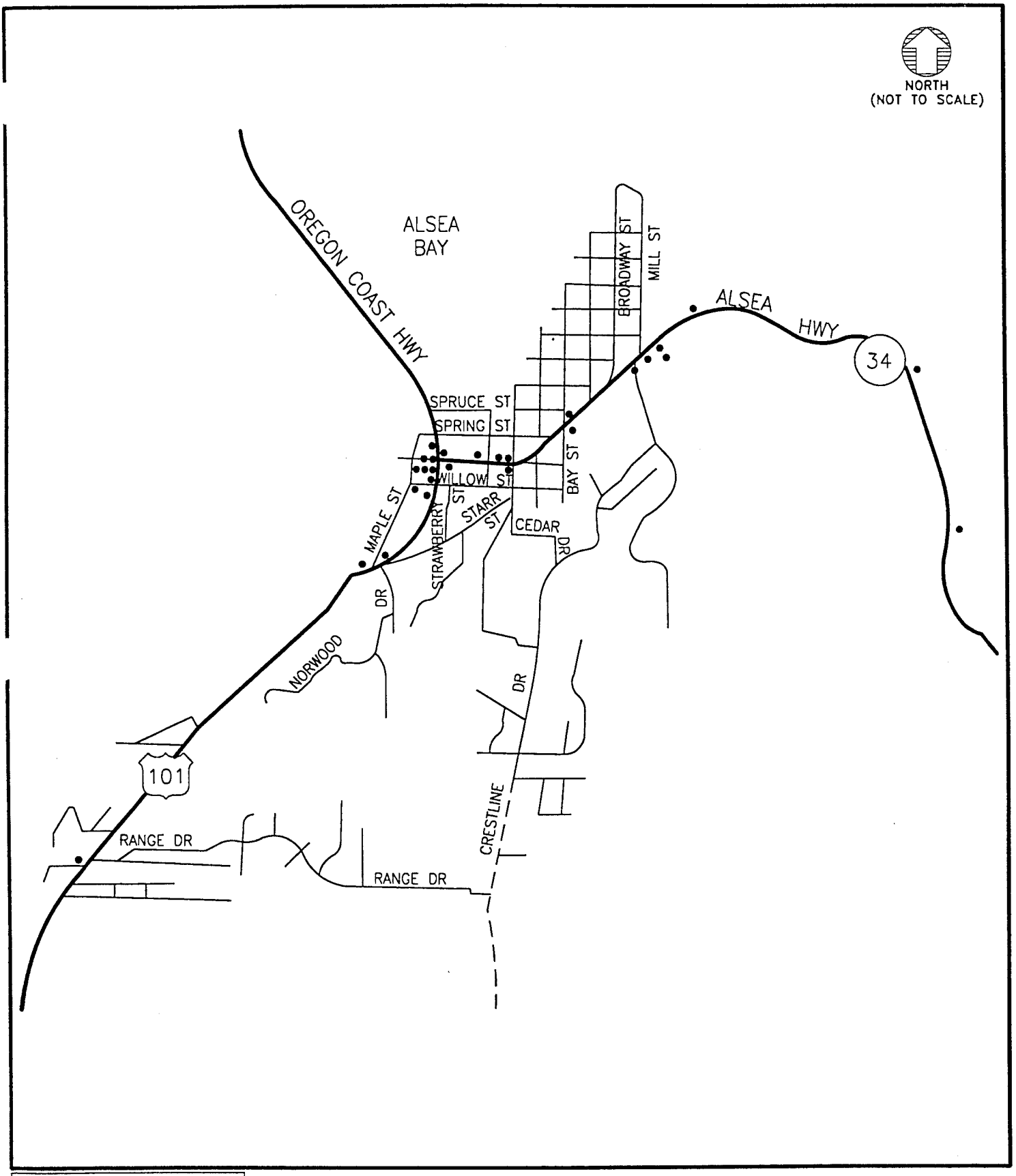

LEGEND

- ACCIDENT LOCATIONS

HIGHWAY ACCIDENT LOCATIONS 1995 THROUGH 1997

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

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EXISTING POPULATION AND GROWTH FORECASTS

In order to prepare a future conditions analysis, growth assumptions for the city of Waldport have been determined. This section identifies the existing Waldport population, estimates future population, and includes an estimate of the proportion of workers living in Waldport who travel out of the city to work.

The current city population is approximately 1,870 people. Future population for the year 2020 is estimated to increase 2,2,15 to approximately 4,085. At a residential density of 1.3 persons per household, this corresponds to 290 additional dwelling units. This estimate is based on the growth forecast for Lincoln County as provided by the Office of the State Economist.

Additional commercial and industrial development is estimated at 10 and 51 acres, respectively. Typical floor area ratios (FAR) were applied to these estimates to arrive at the following conclusions:

WALDPORT COMMERCIAL AND INDUSTRIAL GROWTH FORECASTS

Land Use	Developed Land	Assumed FAR	Total Building Area
Commercial	10 acres (or 435.60 ksf)	0.20	87 ksf
Industrial	51 acres (or 2,221.56 ksf)	0.15	333 ksf

Assuming one employee per new dwelling unit (a relatively high estimate given the average occupancy rate of 1.3), an additional 290 dwelling units would create the need for 290 new jobs. Based on data summarized in the *ITE Trip Generation* manual, the 87 ksf of new commercial space would accommodate approximately 158 employees. If the remaining 132 employees were associated with industrial uses, the corresponding area would be approximately 57 ksf, or 8.75 acres.

To summarize, calculations indicate that growth in Waldport through the year 2020 will be comprised of:

290 additional dwelling units
87 ksf commercial development
57 ksf industrial development

Further to the growth estimates, the number of workers living in Waldport who travel out of the city to work is estimated at approximately 50%. This is based on US Census Data indicating that the median travel time for residents in the Waldport area is 17.5 minutes. This 50% factor will be applied in the distribution of trips to and from new dwelling units and employment developments.

FORECAST TRAFFIC CONDITIONS ANALYSIS

This memorandum summarizes the results of the traffic conditions analysis based on 20-year traffic forecasts in Waldport. Specifically, the following issues were addressed:

- Population and employment forecasts for the City of Waldport were developed with City staff based on growth forecasts for Lincoln County.
- Traffic growth on the Highways 101 and 34 was estimated based on historic traffic trends obtained from automatic traffic recorder data.
- A model was developed to evaluate traffic operations at key study intersections under future peak hour traffic conditions.
- System deficiencies were identified under future no-build traffic conditions.

Summary of Existing Conditions Analysis
The existing traffic conditions analysis determined that the study intersections currently operate at acceptable levels of service during the weekday a.m. and p.m. peak hours. No capacity issues were identified in the existing conditions analysis. However, several other system deficiencies were identified, including irregular intersection configuration and the high frequency of access driveways. The key findings from the existing conditions analysis are as follows:

- Traffic volumes on Highways 101 and 34 are highest during the summer months, with peak volumes typically occurring in August.
- All study intersections operate at acceptable levels of service during the weekday a.m. and p.m. peak hours under estimated peak summer volumes.
- A southbound left-turn lane is warranted at the intersection of Highway 101 and Range Drive.
- The lane configuration at the Highway 101/Starr-Norwood intersection (two westbound approaches merge at the confluence with Highway 101), as well as the high skew of the intersection and the sharp grade on Norwood Drive are a potential safety problem, particularly as traffic volumes increase.
- The off-set of the minor street approaches at the Highway 34/Mill-Crestline intersection results in potential turn-movement and storage conflicts between eastbound and westbound left-turning vehicles.
- Accidents on Highway 101 within the City of Waldport have occurred with increasing frequency in recent years. The average accident rate for the three-year period was 3.95 accidents per million vehicle miles (Acc/MVM), which is somewhat higher than the statewide average rate of 3.52 for similar facilities. Similarly, the three-year accident rate on Highway 34 within city limits is higher than the statewide average for similar facilities.
- Most of the accidents within the study area occurred in high-activity areas near the intersection of Highway 101 and Highway 34.
- Access spacing of driveways and public streets on Highway 101 are inconsistent with ODOT's access spacing standards.

20-Year Forecast Conditions Analysis
Traffic growth within the 20-year planning horizon was estimated based on anticipated development within the UGB evaluation, as well as traffic volume trends on the Highway 101 and Highway 34. Forecasts of future development in the study area were developed based in consultation with planning staff for the City of Waldport. The estimated future residential, industrial, and commercial developments in the study area were based on the projection of population growth in Lincoln County, as provided by the Office of the State Economist. In summary, the development was estimated to include:

- 290 residential units
- 87,000 square feet of commercial development
- 57,000 square feet of industrial development

It was estimated that approximately 50% of peak hour trips associated with the new development begin or end outside of the study area. This estimate was based on US Census data regarding travel time to work for Waldport residents. Trip generation estimates from the future developments were assigned to the transportation network based on existing traffic and development patterns, as well as future development forecasts. *See the Appendix for details of the land use and trip generation/distribution forecasts.*

Vehicles traveling through Waldport on Highway 101 or Highway 34 were estimated based on historic traffic count data from ODOT's Traffic Volumes Tables (Reference 1). Annual average daily traffic (AADT) volumes are shown in Figure 1 for the years 1978 through 1997. The traffic volume figures for Highway 101 and Highway 34 reflect average annual growth rates of 0.2% and 1.4%, respectively, or a combined growth rate of 0.7%. The 20-year forecast was developed based on average annual growth in traffic of 1% for both facilities.

Finally, hourly traffic counts were obtained from ODOT's traffic data section. These data are shown graphically in Figure 2. As Figure 2 shows, traffic volumes are highest during the period between 4 and 6 p.m. The remainder of the analysis focused on the critical p.m. peak hour.

Future Conditions Intersection Operations Analysis

Level-of-service (LOS) analysis was conducted to evaluate traffic operations at the study intersections under the forecast traffic conditions for the weekday p.m. peak hour. As in the existing conditions analysis, all LOS analyses described in this report were performed in accordance with the procedures described in the *Highway Capacity Manual* (HCM, Reference 2). The 20-year Forecast Traffic Volume diagram for the weekday p.m. peak hour is shown at the end of this section, along with a summary of the level-of-service results. The summary for the signalized intersection of Highway 101 and Highway 34 includes the intersection volume-to-capacity ratio and the average delay in seconds per vehicle. For unsignalized intersections, the critical approach is identified along with the corresponding volume-to-capacity ratio and average delay at that approach.

As the diagram shows, all of the study intersections are expected to operate at acceptable levels of service under the 20-year forecast conditions. *Level-of-service analysis worksheets are provided in the Appendix.*

20-YEAR FORECAST TRAFFIC VOLUMES, WEEKDAY PM PEAK HOUR

Intersection	Northbound			Southbound			Eastbound			Westbound		
	Strt	LT	RT	Strt	LT	RT	Strt	LT	RT	Strt	LT	RT
Hwy 34/Mill St.-Crestline	<5	20	20	5	10	30	365	20	20	195	15	<5
Hwy 34/Cedar St.	5	25	105	5	<5	25	470	20	50	335	60	<5
Hwy 34/Hwy 101	295	5	215	405	290	<5	35	5	10	10	260	130
Hwy 101/Starr St.	460	-	35	650	20	-	-	-	-	-	50	25
Hwy 101/Range Dr.	345	-	35	420	130	-	-	-	-	-	40	155

Strt = Straight **LT** = Left Turn **RT** = Right Turn

Left-Turn Lane Warrant Analysis

The need for left-turn lanes was evaluated at the unsignalized intersections in the study area. The methodology developed by Harmelink (Reference 3) was used in the analysis. The results are summarized in the following table. The table shows that a southbound left-turn lane will be warranted on Highway 101 at Starr Street-Norwood Drive (in addition to the Range Drive location at which left-turn lane warrants were met under existing conditions). A westbound left-turn lane will also be warranted at the Highway 34/Cedar Street intersection. This movement is already served by the existing two-way-left-turn lane on Highway 34. *The left-turn lane warrant analysis worksheets are provided in the Appendix.*

LEFT-TURN LANE WARRANT ANALYSIS

Intersection	Warrant Met?	
	Southbound	**Northbound**
US 101/Range Drive	Yes	N/A
US 101/Starr-Norwood	Yes	N/A
	Eastbound	**Westbound**
ORE 34/Cedar Street	No	Yes*
ORE 34/Mill-Crestline	No	No
* A two-way-left-turn lane is provided in this section of Highway 34.		

Signal Warrant Analysis
Signal warrants were evaluated at all of the unsignalized intersections in the study area. The Minimum Vehicular Volumes (Warrant 1), Interruption of Continuous Traffic (Warrant 2), and the Peak Hour Volume (Warrant 11) warrants were evaluated, as described in the Manual of Uniform Traffic Control Devices (MUTCD, Reference 3). All three of the warrants will be met at the intersection of Highway 101 and Range Drive. No other intersections warrant signalization under the forecast conditions. *The signal warrant analysis worksheets are provided in the Appendix.*

Findings

- Anticipated development in the City of Waldport during the 20-year analysis period is estimated to be approximately 190 residential units, 87,000 square feet of commercial space, and 57,000 square feet of industrial space.
- The Annual Average Daily Traffic volumes for Highway 101 and Highway 34 reflect average annual growth rates of 0.2% and 1.4%, respectively, or a combined growth rate of 0.7%. For the purposes of this study, an annual growth rate of 1.0% was assumed.
- Hourly traffic counts on Highway 101 and Highway 34 reveals that the highest traffic volumes occur during the p.m. peak period.
- Level of service analysis indicates that all study intersection will operate at acceptable levels of service during the weekday p.m. peak hour under 20-year forecast traffic conditions.
- A southbound left-turn lane will be warranted on Highway 101 at the Starr-Norwood intersection under 20-year forecast traffic volumes.
- Signal warrants will be met at the Highway 101/Range Drive intersection under 20-year forecast traffic volumes.

References

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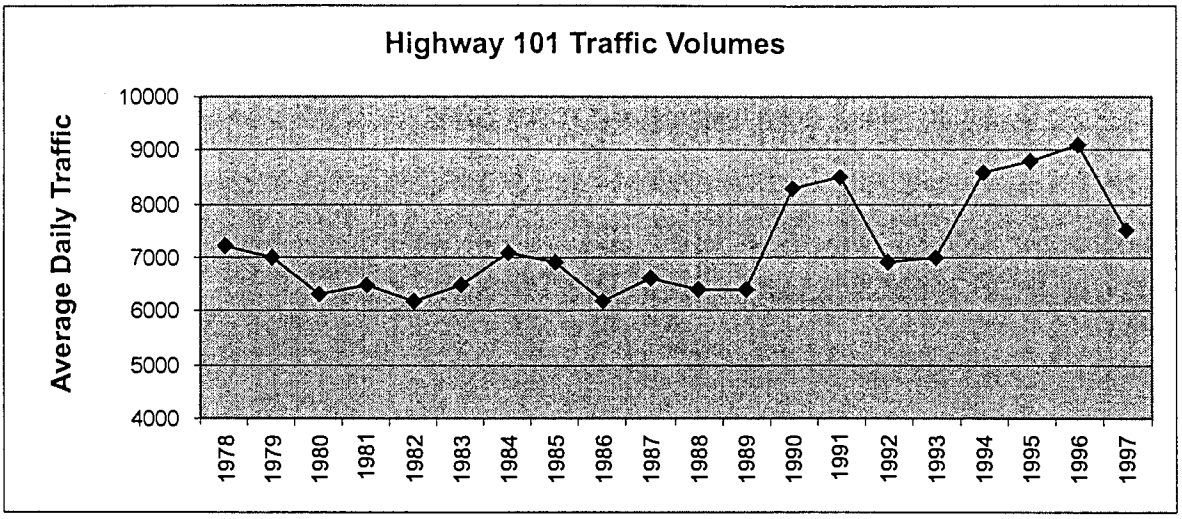
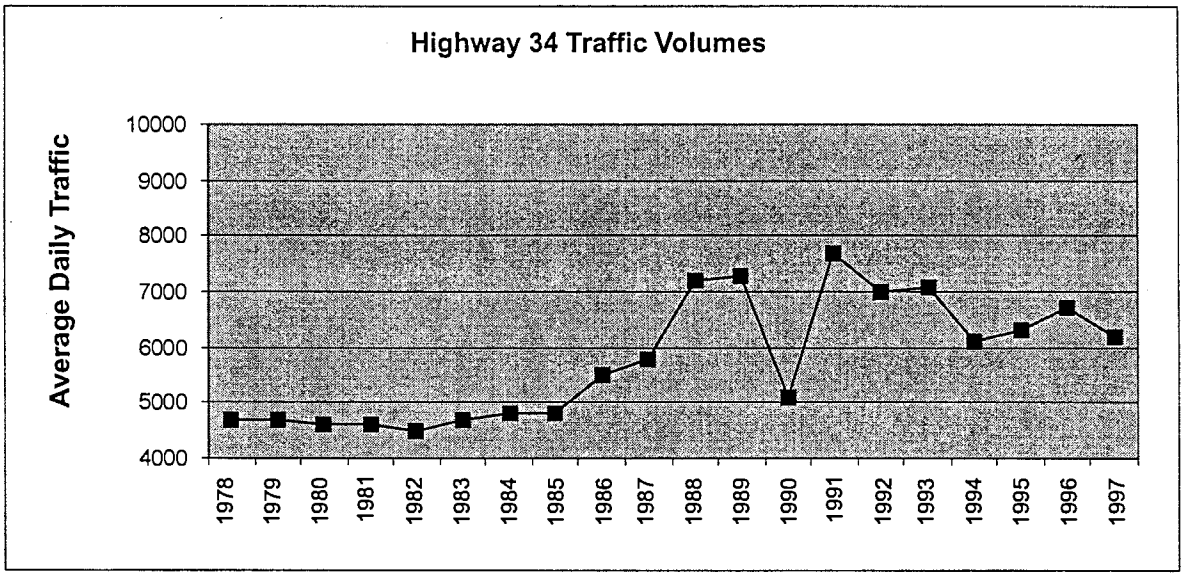
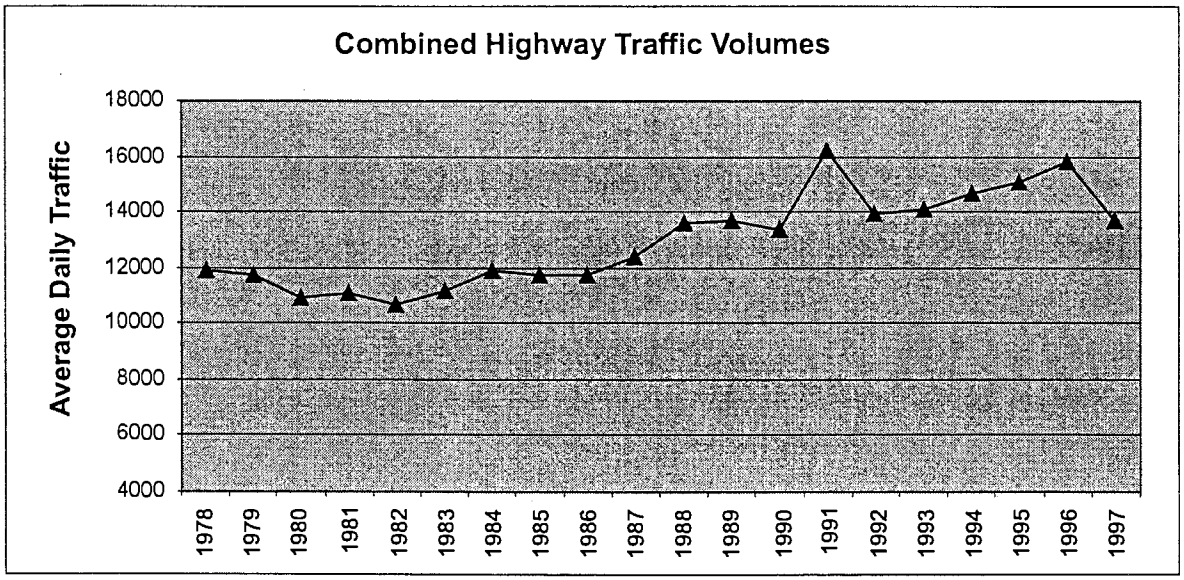
United States Department of Transportation: *Manual on Uniform Traffic Control Devices,* 1988 Edition.







HISTORIC HIGHWAY TRAFFIC VOLUME TRENDS

CITY OF WALDPORT TSP WALDPORT, OREGON	
MAY 1999	

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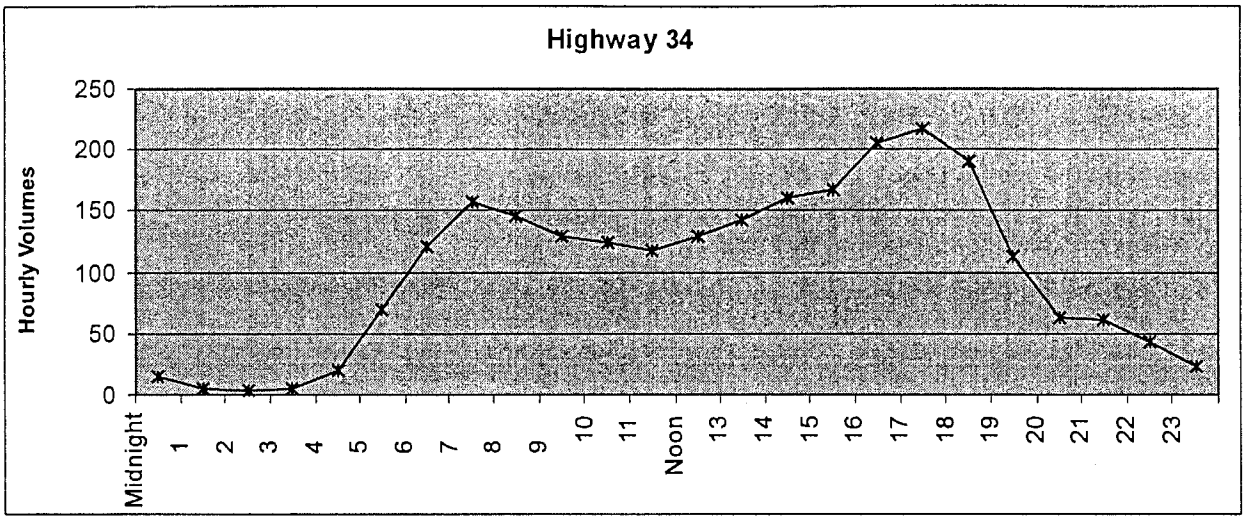

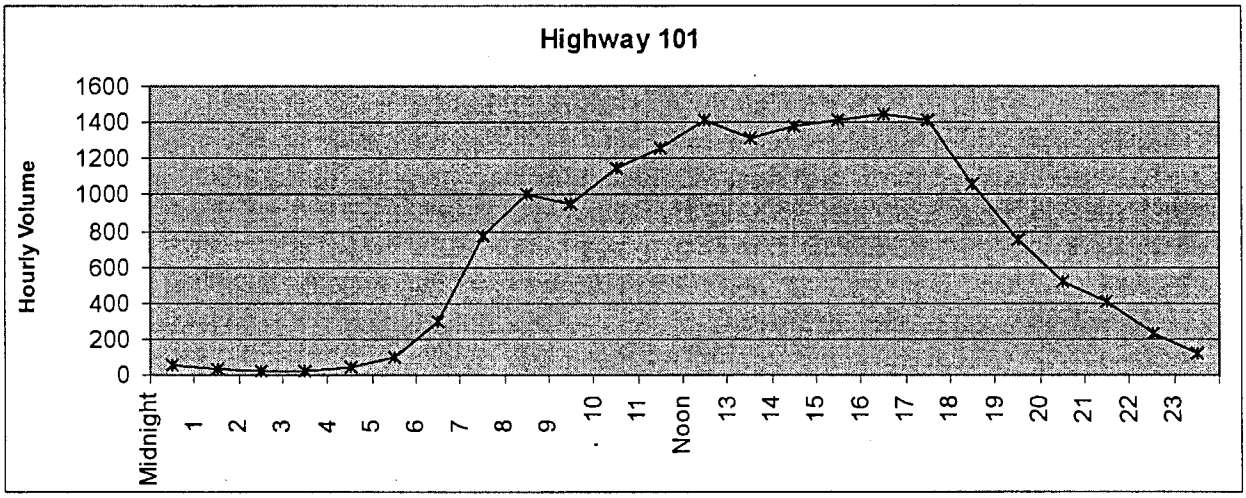

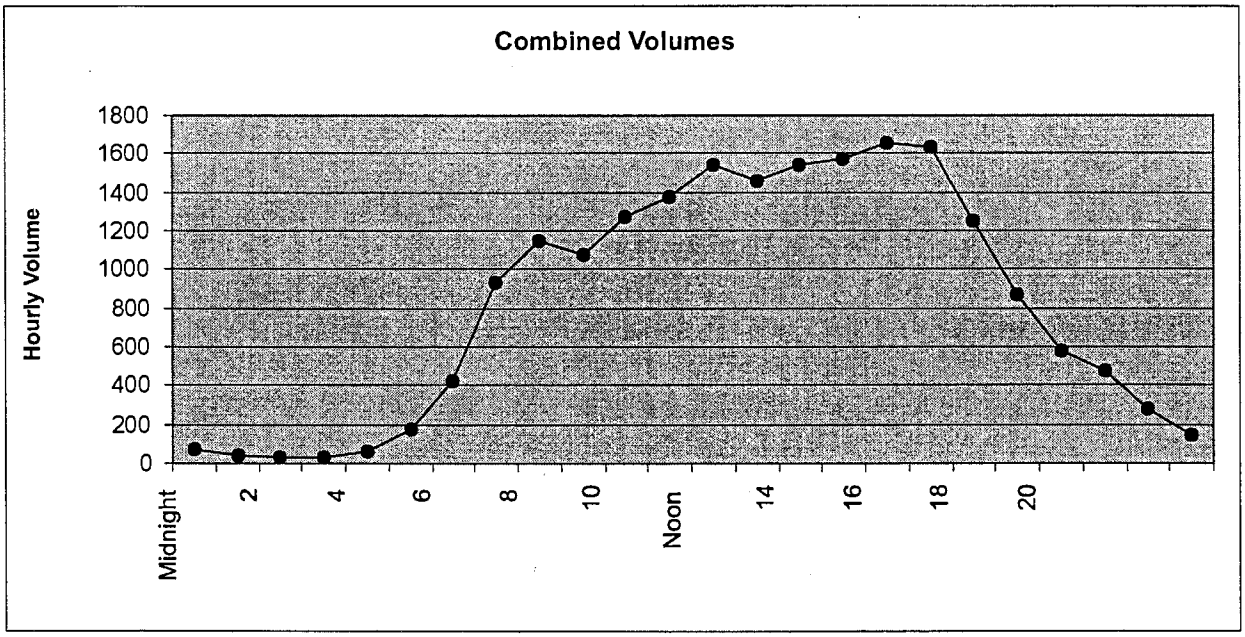

HOURLY TRAFFIC VOLUMES
HIGHWAY 34 AND HIGHWAY 101

CITY OF WALDPORT TSP WALDPORT, OREGON	
MAY 1999	

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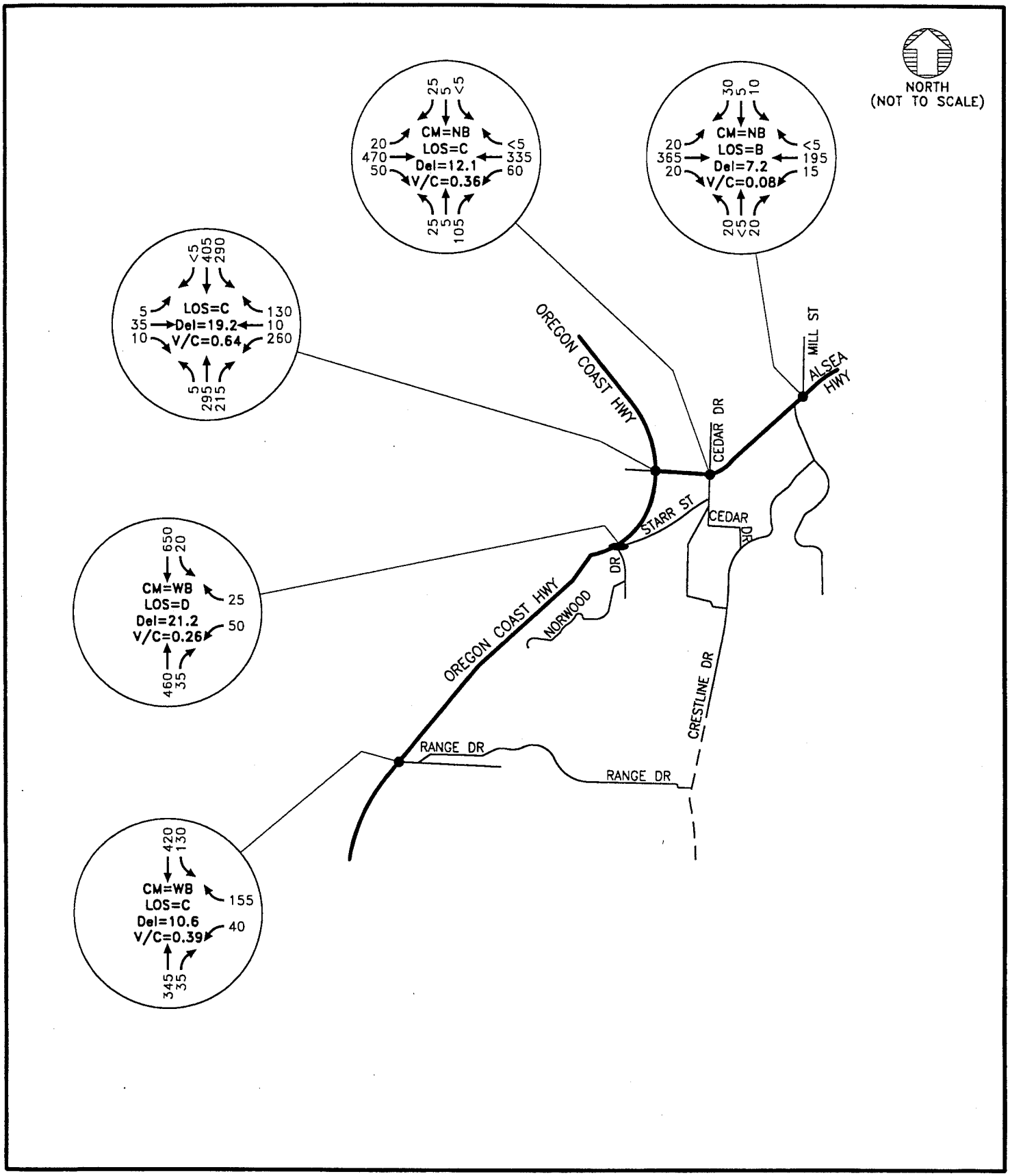


LEGEND

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE DELAY (SIGNALIZED)/ CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

20-YEAR FORECAST TRAFFIC VOLUMES AND LEVEL-OF-SERVICE RESULTS WEEKDAY PM PEAK HOUR

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

2890F203

EXISTING PLANS, POLICIES & STANDARDS

WALDPORT COMPREHENSIVE PLAN GOALS & POLICIES

Goal V: ... to conserve open space

Policy 1: Additional access to public space lands should be developed, especially to ocean beaches and the Alsea Bay, where practicable.

Policy 3: Publicly owned lands, including street rights-of-way, will be examined for their potential open space use before their disposition.

Policy 5. The City of Waldport supports the development and maintenance of the Oregon Coast Hiking Trail and the Oregon Coast Bicycle Route by the Oregon Sate Parks Division.

Goal XII: ... transportation

Policy 6e: Designation and improvement of inter- and intra-city pedestrian and bicycle routes.

A. Goal XIII: ... energy conservation

Policy 4: The City of Waldport shall develop a pedestrian access plan that will encourage foot traffic from the City's residential areas to commercial and recreational areas.

WALDPORT DEVELOPMENT CODE

Definition 111. Road (Street): A public or private way created to provide vehicular access to one or more lots, parcels, areas of tracts of land, excluding a private way that is created to provide access to such land in conjunction with its use for forestry, mining, or agricultural purposes.

A) Arterial or Major Highway:

Section 10.080 Street Widths and Improvement Standards (page 113-114)

1. Street Widths:

Type of Street	Street Width	Surface Width
a. Collector streets and all business streets other than arterials:	60-80'+	36-48'
b. Local streets in single family density areas:		
1) Streets which in the judgement of the City will never be more than 2400 feet in length and which will have a relatively even distribution of traffic to two or more exits:	50'	28'
2) Other such street:	60'	36'
c. Cul-de-Sacs:	50'	28'
d. Circular ends of cul-de-sacs:	90'+++	70'+++
e. Hammerheads:		++++
f. All streets not specifically provided for above:	60'	40'

\+ Measured from face to face of curbs or shoulders.
++ The City may require a width within the limits shown based upon adjacent physical conditions, safety of the public and the traffic needs of the community.
+++ Measured by diameter of circle constituting circular end.
++++ Hammerheads will be of such width and length as to allow for adequate turn-a-round of all emergency vehicles as determined by the City Superintendent.

2. Improvements: Improvements shall have the following minimum standards unless increased at the request of the City Engineer.

   a. All streets shall be rough graded for the full width.
   b. All streets shall have a minimum of 8" well graded quality crushed aggregate base material with a minimum width of 28'.
   c. All streets shall have a leveling course of 1" 00 crushed rock. 2" deep-compacted.
   d. All streets shall be paved with 4" of asphalt concrete to be applied in 2" lifts with each lift compacted to a minimum of 28" in wid5th.
   e. All street improvements shall be certified by an engineer licensed in the State of Oregon as meeting the required standards.
   f. All bridges, or other drainage structures shall have a thirty year minimum life expectancy and shall be constructed to load limit and other standards as approved by the City Superintendent.
   g. Street lighting: Adequate street lighting shall be provided and arranged in cooperation with the Central Lincoln P.U.D.
   h. Sidewalks and service driveways shall conform to standards established under City Ordinance or any amendments or standards as established by the City Council.

WALDPORT PARKS AND RECREATION PRELIMINARY MASTER PLAN

V. Park Development Policies

Policy 5. The City of Waldport shall work with the Port of Alsea, the State of Oregon, and other federal, state, and local agencies to identify and improve access to public open space on the Alsea Bay and ocean beaches.

Policy 10. The City of Waldport shall review all proposed property vacations and other City-owned property for park or recreational value prior to change of use ownership.

This is an important policy in that many property vacations are associated with public right-of-way, often where a street terminates, and there is potential pedestrian access to a natural amenity, i.e. beach, bay or river. Also, street vacation requests occur where, although automobile access does not occur, there is potential for pedestrian and bicycle access which provides connectivity where it otherwise would not occur.

The Parks Development Policies identify the above state Comprehensive Plan goals, that have a bearing on park planning, as well as transportation.

The Parks Development Policies also acknowledges that a Transportation Master Plan is being underway, and that new goals and policies (from the Transportation Master Plan) may impinge on park planning and development, requiring future amendments to the Parks Plan.

VI. Park Development Standards and Strategies

Crestline Park - A City of Waldport Strategy is to develop Crestline Park as a community park. Transportation-related development within the park should include parking, and access into the natural area by development of trails and pathways.

Crestline Park - 15 Acre Park Connection - Additional land requirements, identified in this section, include a parcel of land through the Cedar Heights development adequate to connect the Crestline Park parcel to the 15-acre reserve parcel. (This connection should include a pedestrian/bicycle linkage between the two parks.)

Lint Slough - Access for a nature trail along Lint Slough.

VII. Financial Strategies

A. Park Development
   2. Grants: Elements of the park, park features, or specific programs may be eligible for grant support. For example, certain bike or pedestrian paths may be eligible for funding from the Oregon Department of Transportation (ODOT).

VIII. Twenty-Year Plan For Parks (Transportation-related improvements)

1998-2003
- *15 Acre PF Parcel* - Solicit easements for connecting trails between Crestline Park and Starr Street.

By 2003
- *Crestline Park* - Parking; exercise/nature trail, with connecting trail to 15-acre PF Reserve parcel.
- *15 Acre PF Parcel* - Trail access to Crestline Park and Starr Street (pedestrian/bicycle trails for both recreation and alternate intra-city transportation route).

By 2013
- *Nature Trail, Lint Slough* - Obtain easements, explore volunteer and training possibilities, possibly in conjunction with ODFW.

By 2018
- *Nature Trail, Lint Slough* - Finish and use.

Appendix A: City-Owned Properties
Crestline Drive Park
PF Property
Yaquina John Point
Waldport Heights
Keady Wayside
Forest Hills Subdivision Parkland
West end of Fayette Street
Crestline and Edgecliff
Meridian Park
Alsi Historical Museum
Veteran's Park
Other Unused Street Easements and Right-of-Way: The City owns a number of street rights-of-way which may be usable for walking or biking paths. These routes should be considered for such use, in coordination with the City's Transportation Plan.

WALDPORT URBAN RENEWAL PLAN - UPDATE #2

The Waldport Urban Renewal Area boundary is generally defined by Alsea Bay, Highway 34 including most tax lots adjacent and southeast of Hwy. 34, and Mill Street. This area if often referred to as "old town". The Urban Renewal Area includes a mix of uses including commercial, residential, and the recreation oriented port property. The primary objectives of the Urban Renewal Plan are to improve the function, condition and appearance of the Urban Renewal Area and to eliminate existing blight and blighting influences in order to strengthen the local economy.

II. Goals and Objectives of Urban Renewal Plan

Transportation-related goals include:

Goal 2. Provide pedestrian linkages, including sidewalks throughout the area, particularly between residence and the downtown.
Goal 3. Provide pedestrian and street amenities throughout the Plan area.
Goal 4. Require the installation and maintenance of adequate off-street parking.

The original Urban Renewal Plan also identified the need to develop a street tree program to enhance the physical and visual environment.

III. Relationship of Urban Renewal Goals and Objectives to Local Land Use Plans

The Urban Renewal Plan promotes many local objectives of the Waldport Comprehensive Plan.

C. Transportation

The City of Waldport should work with Lincoln County and other jurisdictions, agencies, and private enterprises to improve access from Waldport to other areas and within the city by encouraging improvement and maintenance of roadways, sidewalks and pedestrian ways.

The original Urban Renewal Plan included a section "Open Space, Natural, Scenic and Historic Resources" that identified the need for additional access to public space lands should be developed, especially to ocean beaches and the Alsea Bay, where practicable; and to development of the Maple Street area along the Alsea Bay shore west of the Alsea Bay Bridge, including public access to the Bay and scenic views of the bridge and estuary.

IV. Why The Urban Renewal Plan is Necessary

A. Inefficient Land Use

Among other uses and conditions identified, the lack of pedestrian walkways contribute to create blight in the "old town" area and impede development.

B. Inadequate Public Infrastructure

3. Storm Drainage

Most storm drainage improvements are constructed in conjunction with new street improvements. The City of Waldport should adopt a policy requiring that necessary storm drainage be constructed prior to or during street improvements. In order for new storm drainage improvements to be effective in controlling surface runoff, curbs and gutters should be required along with the street construction.

4. Streets

A survey of existing street conditions conducted in 1985 indicated that Waldport's local streets were in need of the most improvement.

There are currently no designated bike paths within the City's boundary, although there is considerable bicycle use of the existing road and highway shoulders.

C. Inadequate Parking for Commercial Use

Expansion of commercial activities in the central business area is partially dependent on provision of adequate public parking in proximity to main street businesses. Convenient parking also provides an incentive for visitors to stop and do business in Waldport.

Currently, parking for commercial uses along Highway 101 is limited for the most part to on-street parking. Parking alternatives are not visible to motorists driving through Waldport and therefore potential tourists and visitor may not stop.

VI. Outline of Projects and Activities

B. Public Improvements

(All identified public improvements have a transportation-related component, therefore, the majority of this entire subsection is repeated below.)

1. Intent

   Public facilities and utilities may be improved or constructed within public rights-of-way, easements, or on public property. These improvements may include storm and sanitary sewer improvements, water system improvements, street improvements, street lighting and traffic signalization, landscaping, pedestrian amenities, parking facilities, and open space development.

2. Anticipated Improvements

   Public improvements which may be installed under this Plan include, but are not limited to, the improvement of the street system, sidewalks, signage, marine recreation development, parking lot development, and boardwalk development.

   f. Construction of sidewalks throughout the Urban Renewal Area.
   g. Provision of off-street parking for downtown businesses and matching funds for parking in the north section of Old Town.
   h. Construction of an overlay on Cedar Street from Alsea Highway to Huckleberry Street.

   The original Urban Renewal Plan also identified:

   - Construction of a pedestrian boardwalk from the bridge to the Port of Alsea property to provide a link from the city center to the recreation area.
   - Improved signage directing traffic to the visitor center, city center and port recreation area.
   - Addition of street trees along Highway 101 between it's intersection with Maple Street and Spring Street.
   - Construction of a sidewalk along the east side of Broadway from the Alsea Highway to the Port's recreation area.

C. Acquisition & Disposition of Real Property

1. Acquisition

   It is the intent of the Plan to acquire properties within the downtown area and easily accessible from Highway 101 to provide off-street parking for downtown merchants.

   The original Urban Renewal Plan also identified the need to acquire land:

   - Between downtown and the Port recreation property to provide off-street parking near the boardwalk.
   - The block bounded by Highway 101, Maple Street, and Willow Street to provide off-street parking for downtown merchants.

Highway 34
- Pedestrian street crossings near sidewalks

Intersections
- Highway 101/Highway 34 intersection
- Highway 101/Starr Street intersection
- Highway 101/Range Drive intersection
- Highway 34/Cedar Street intersection
- Highway 34/Crestline Drive/Mill Street intersection
- Highway 34/Bay Street school parking access

Crestline Drive
- Pedestrian and bicycle safety issues
- Speeding
- County maintenance south of Salmon Street

Range Drive
- Pedestrian safety issues

South Waldport
- Potential new connections between Highway 101 and Crestline Drive

East Waldport
- Inadequate sight distance on Highway 34
- Westbound speeding traffic on Highway 34 entering Waldport
- Highway 34/Rio Vista intersection

Old Town
- Street terminating near the bay have not been vacated and therefore, provide potential access to the bayfront.

Future Development/Redevelopment
- Improvements to some existing transportation problems can only occur with redevelopment of private property, e.g. the ingress/egress on Highways 34 and 101 at the Chevron Station and adjacent business.

Tsunami Plan
- Expand tsunami evacuation routes to include Dolores Drive, as well as Range Drive, Cedar Street and Crestline Drive

SUMMARY OF MARCH 16-17, 1999 INTERVIEWS

Interviews were held with eleven Waldport citizens and public agency employees to solicit input on transportation issues and needed improvements. Recommended transportation improvements identified by the interviewees are described below.

Primary Recommended Transportation Improvements Identified By Four Or More Interviewees
- Crestline Drive - Improvements are especially needed at the north end of Crestline at the hill and curves. Improvements should include widening and bicycle/pedestrian facilities. Bicycle/pedestrian facilities should be provided from Highway 34 to the elementary school. Bicycle/pedestrian facilities are preferred on both sides of Crestline Drive however one side may be adequate. Existing conditions may make it more feasible to have a pedestrian pathway or sidewalk on the east side of Crestline north of Range Drive and on the west side south of Range Drive. It may also be appropriate to incorporate the bicycle/pedestrian facility within Crestline Park located on the west side, north of Range Drive. (8 of 11 interviewees identified this need.)

How important are these potential transportation improvements?
Fourteen potential transportation improvements were identified. Participants were asked to circle one number with 1 = Most Important, 2 = More Important, 3 = Important, 4 = Minimally Important, 5 = Not Important. The total score and average score of each potential improvement was used to determine the following prioritized ranking.

		Total Score	Avg. Score
1.	Safe pedestrian/bicycle crossings on Hwy. 101 and Hwy. 34	232	1.58
2.	Safe pedestrian/bicycle facilities on Crestline Drive	272	1.85
3.	Safe and connected community-wide bicycle/pedestrian system	280	1.90
4.	Additional or improved public transportation (i.e. bus service)	283	1.93
5.	Traffic speed enforcement	290	1.97
6.	Safe pedestrian/bicycle facilities on Range Drive	296	2.01
7.	Improve the Hwy. 101/Range Drive intersection	304	2.07
8.	Bicycle/pedestrian connections between downtown and Crestline Drive	312	2.12
9.	Improve the Hwy. 101/Starr intersection	313	2.13
10.	Improve the Hwy. 34/Crestline intersection	319	2.17
11.	Improve the Hwy. 34/Cedar intersection	338	2.30
12.	Improve access to local businesses (parking, walking, driveways)	340	2.31
13.	Additional public parking	369	2.51
14.	Improve the Hwy. 101/Hwy. 34 intersection	385	2.62

What is the single most important transportation improvement needed?
(number of times identified in parenthesis)
1. Street maintenance (28)
2. Community-wide bicycle/pedestrian system (25)
3. Public bus/van service (24)
4. Pedestrian Crossings on Hwys. 101 and 34 (16)
5. Enforce speed limits (12)
6. Post Office access, circulation and parking improvements (8)
7. Range Drive improvements (6)
8. Additional public parking (4)

What is the 2nd most important transportation improvement needed?
1. Community-wide bicycle/pedestrian system (18)
2t. Street maintenance (15)
2t. Pedestrian Crossings on Hwys. 101 and 34 (15)
4. Enforce speed limits (14)
5. Public bus/van service (12)
6t. Range Drive improvements (6)
6t. Hwy. 101/Range Drive intersection improvements (6)
8t. Post Office access, circulation and parking improvements (5)
8t. Crestline Drive improvements (5)
10t. Additional public parking (4)
10t. Cedar Street improvements (4)

What other transportation-related improvements would you like that will make Waldport a better place to live in and visit?
1. Street maintenance (22)
2. Community-wide bicycle/pedestrian system (10)
3. Additional public parking (9)
4. Enforce speed limits (6)
5. Public bus/van service (5)
6. No transportation improvements needed (4)

DRAFT RECOMMENDED TRANSPORTATION IMPROVEMENTS

The following draft recommended transportation improvements for Waldport are based on 1) review of existing and forecasted conditions, 2) input provided by the Waldport Transportation Safety Committee, 3) results of interviews with eleven Waldport citizens and public agency representatives, and 4) results of 147 questionnaires returned by Waldport citizens and surrounding residents. The draft list of recommended improvements are generally prioritized according the input received.

A. Connected Community-Wide Pedestrian/Bicycle System

Establish an interconnected pedestrian/bicycle system throughout Waldport. The system should provide connections between the lowland and upland areas, i.e. downtown and Crestline Drive; connect destinations (activity centers), i.e. downtown, residential areas, schools, parks; and provide alternative connections and "loops" for recreational bicyclists, walkers and runners.

Potential pedestrian/bicycle connections identified in the public involvement process included:

- The ball fields (Kyle Field) to Crestline Drive through existing utility easements and two public park parcels located off Crestline Drive, View Drive, Greenwood Way, Brentwood Drive and Park Drive;
- Pedestrian access between Crestline Drive and Waldport High School. There is an existing partial, unimproved pedestrian connection.
- The elementary school to Range Drive via the west side of the golf course. The specific location of this pedestrian/bicycle facility needs to consider the safety of people walking/bicycling through woods;
- A pathway along the slough;
- A pathway along the entire bay frontage (realizing that high tide may restrict access);
- Continuous pedestrian/bicycle facilities on major streets, i.e. Highway 101, Highway 34, Crestline Drive, Range Drive, Cedar Drive;
- Connections between residential developments, i.e. from Norwood Drive and Dolores Drive to Kelsie Way and Forest Parkway, along Pacific View Drive, etc.

B. Street Maintenance

Improve and maintain existing streets, i.e. potholes, paving, and striping.

C. Pedestrian Crossings on Highway 101 and Highway 34

Provide safe pedestrian crossings at intersections on Highway 101 and Highway 34. Potential crosswalk improvements could include striping and other markings making motorists aware of pedestrians, pavement color and texture improvements, signage, lighting, and curb extensions.

D. Public Transportation

Increased public transit (bus and van) service between Waldport and other cities, i.e. Newport, Lincoln City, Corvallis, Salem, and Portland.

E. Speeding

Enforce and reduce speeding at the three main entrances (gateways) into the community including:

- Southbound Highway 101 traffic coming off the bridge;
- Northbound Highway 101 traffic;
- Westbound Highway 34 traffic.

Standards methods for reducing speed include reducing maximum speed limit, enforcement signs, and pavement striping, etc. Traffic calming and reduced speeds can also occur through "gateway" improvements, i.e. landscaping, community entry/welcome signs, etc.

F. Range Drive Improvements
Widening, eliminating or mitigating curves and sight distance inadequacies, and providing pedestrian/bicycle facilities on both sides of the street.

G. Additional Downtown Parking
Provide additional parking for downtown businesses, particularly for Highway 101 businesses. This may occur through a central parking lot(s) located close to downtown businesses

H. Crestline Drive Improvements
Continuous pedestrian/bicycle facilities are needed between Highway 34 and the elementary school. Bicycle lanes and pedestrian pathways are preferred on both sides of the street, however, they need to at least be continuous on one side. Initially, it may be more feasible to construct a pedestrian facility (sidewalk or pathway) on the east side of Crestline Drive north of Range Drive, and on the west side south of Range Drive. However, it may be appropriate to extend the pathway along the west side, through Crestline Park, just north of Range Drive. The northern portion of Crestline Drive, where the hill and curves are located, is currently an unsafe section of road, especially for bicyclists and pedestrians..

I. Highway 101/Range Drive Intersection Improvements
The most important improvement at this intersection is the need for a center turn lane for southbound Highway 101 traffic.

J. Post Office Access, Circulation, and Parking Improvements
Improve ingress and egress to the post office including better circulation and parking.

K. Highway 101/Starr Street/Norwood Drive Intersection Improvements
Norwood Drive and Starr Street intersect Highway 101 in the same location and at an odd angle. Ultimate improvements would include one street intersecting Highway 101 at a ninety degree angle.

L. Highway 34/Crestline Drive/Mill Street Intersection Improvements
The Highway 34/Crestline Drive intersection is offset from the Highway 34/Mill Street intersection. In addition, it is currently confusing and unsafe for eastbound Highway 34 traffic to turn north on to Mill Street.

M. Cedar Street Improvements
Widening improvements including bicycle and pedestrian facilities to provide safer and easier access between this Crestline Drive - Highway 34 connection.

N. Downtown Access Management and Pedestrian Circulation Improvements
Potential improvements include consolidation of driveways and a continuous, consistent pedestrian facility (sidewalk) on both sides of Highway 101 and Highway 34.

O. Highway 101/Highway 34 Intersection Improvements
Improvements will primarily occur with redevelopment to ensure that better ingress and egress is provided to businesses located on or near the intersection.

P. New East-West Road in south Waldport Connecting Highway 101 and Crestline Drive
A new east-west road(s) connecting Highway 101 and Crestline Drive. This would serve the developing industrial area and reduce truck traffic on Range Drive. It would also serve the developing residential zoned land and the elementary school, particularly for traffic approaching this area from Highway 101, south of the City.

Potential locations include 1) from Crestline Drive west through the industrial zoned land and through land currently located outside the Urban Growth Boundary; 2) extending Seabrook Lane east and south, connecting to Crestline Drive south of the Golf Course, i.e. Green Drive.

Q. Pavement Striping Improvements
Crosswalk, bicycle lane, and fog line improvements to provide better demarcation and vision for motorists.

R. Highway 34/Bay Street Intersection and Parking Access Improvements
Eastbound Highway 34 traffic exits to the school parking lot at the location where vehicles entering Highway 34 from city hall and the school are stopped for Highway 34 traffic.

S. Highway 34/Cedar Street Intersection Improvements
Cedar Street is one of two existing roads connecting Highway 34 and Crestline Drive. Improvements are needed to create better traffic flow, especially for motorists on Cedar Street making a westbound turn on to Highway 34.

T. Sight Distance on Highway 34
Inadequate sight distance at the curve near the east edge of Waldport.

U. Vehicular, Bicycle, and Pedestrian Improvements at the South Edge of the High School
Better define circulation for vehicles, bicyclists and pedestrians.

V. Additional High School Parking and Improved Bus Circulation
Provide additional student parking and better circulation for school buses at the high school.

W. Red Ditch Improvements
Improvements can vary from creating a landscaped drainage way with pedestrian and bicycle path to covering Red Ditch to provide for additional parking.

X. Additional Tsunami Routes
Designate additional routes from the lowland areas to the upland.

Y. (South) Highway 101 Continuous Center Turn Lane to Patterson State Park
Long term, provide a continuous center turn lane from south of Maple Street to Patterson State Park on Highway 101.

Z. Prohibiting Street Vacations
Prohibit street vacations where they provide access to amenities, i.e. the bay, or provide better connectivity to adjacent land.

AB. Highway 34/Spring Street Improvements
Improvements to prevent southbound Highway 101 traffic from accessing eastbound Spring Street which is currently not allowed.

AC. Circulation Connectivity with New Development
Require new development to provide connections to adjacent streets and pedestrian/bicycle facilities.

AD. Access Improvements with Redevelopment
When redevelopment occurs, ensure adequate and safe access occurs, i.e. ingress and egress issues near intersections such as the service station and tire store at the Highway 101/Highway 34 intersection.

TRANSPORTATION SYSTEM IMPROVEMENT ALTERNATIVES

This section addresses existing and anticipated safety and capacity issues that were identified in the two previous memoranda. Improvement alternatives were developed and a comparative evaluation of the alternatives was conducted in terms of safety and operational improvements, impacts to the surrounding area, the cost of implementation, and constructability.

SUMMARY OF EXISTING AND FORECAST CONDITIONS ANALYSIS

No fundamental capacity problems were identified on the study roadways based on the analysis of the transportation system under existing and forecast peak hour traffic conditions. All study intersections are expected to continue operating at acceptable levels of service. However, specific system deficiencies were identified in the study area including:

- The need for a southbound left-turn lane at the Highway 101/Range Road intersection,
- Unconventional lane configuration, the skew of approaches, and topographic issues at the Highway 101/Starr-Norwood intersection,
- Turn-movement conflicts related to the off-set of the side streets at Highway 34/Mill-Crestline intersection, and
- High accident rates near the intersection of Highway 101 and Highway 34.

During the course of this study, circulation issues related to Strawberry Street were brought to the attention of the project team. This issue was also addressed in this memorandum.

FUTURE CIRCULATION

As development occurs south of Range Road, a new east/west connection will be needed to minimize the need for out-of-direction travel between Highway 101 and the large acreage of residential and industrial land to the east. One option will be to extend the Ocean Hills Retirement Community access eastward to connect Highway 101 with Crestline Drive. Another alternative is to extend Breakers Drive to connect with Crestline Drive. This would require a roadway connection outside of the Urban Growth Boundary, which is inconsistent with the policies of the Department of Land Conservation and Development, and would require the City to apply for an exception to general policy.

INTERSECTION IMPROVEMENTS

US 101/Range Drive

Short Term Treatment

The Highway 101/Range Drive intersection is shown in Figure 1. Left-turn lane and signal warrants were evaluated for this intersection under existing traffic conditions (see Technical Memorandum 1). The analysis showed that a left-turn lane in the southbound direction is warranted at this intersection. Accordingly, it is recommended that a southbound left-turn lane be installed at the Highway 101/Range Drive intersection in the immediate practical future.

Additional safety improvements would be gained by realigning the commercial access west of the highway to align with Range Drive, and providing a northbound left-turn pocket to remove turning vehicles from the path of through-traffic. A second access driveway at the northern edge of the commercial parking lot would improve internal circulation and allow southbound vehicles to access the property prior to the Range Drive intersection.

Long Term Treatment
A significant share of the forecast residential, commercial, and industrial development within the UGB is expected to use Range Drive for access to Highway 101. Based on this development pattern, the increased traffic volumes will result in the need for a traffic signal at this intersection. Based on traffic projections, a signal will be warranted at this location.

Design Considerations
- A northbound left-turn lane should be constructed to shadow the southbound left-turn lane. This would provide access to the commercial property to the west of Highway 101.
- Separate right- and left-turn lanes at the westbound approach would improve Range Drive operations and could be constructed simultaneous to the Highway 101 turn lane construction.
- Side streets intersecting Highway 101 near Range Drive may influence the design of left-turn storage and transition on the highway. A two-way-left-turn-lane may be needed for some distance from the intersection in order to maintain highway access to adjacent properties.

US 101/Starr-Norwood
Existing geometric issues at the Highway 101 intersection with Starr Street and Norwood Drive include the merge of the two minor streets at the intersection confluence, the skewed approach of the minor streets, and the steep grade on Norwood Drive (see diagram at the end of this subsection). Several improvement alternatives were considered to address these existing deficiencies. The improvement alternatives are shown in diagrams at the end of this subsection. The following table provides a summary of the comparative evaluation of the alternatives.

Under the 20-year forecast traffic conditions, a southbound left-turn lane will be warranted on Highway 101 at this intersection. Highway 101 widens to a four-lane facility immediately north of this intersection. As such, the existing pavement width could be used to provide a southbound left-turn lane, continuing the single northbound lane north of the Starr Street intersection before widening to two northbound lanes. This treatment is included in all of the improvement alternatives.

Do Nothing Alternative
Under this alternative, potential safety problems will be compounded as traffic volumes increase.

Alternative A: Starr Street Primary
The main objective of Alternatives A and B is to reconfigure the intersection so that only one roadway intersects with Highway 101, while providing a connection to the remaining minor street at the maximum possible distance from the highway. The topography of the Norwood Drive alignment is the most significant challenge to this objective.

As shown in the diagram, Norwood Drive could be realigned to a T-intersection with Starr Street. Starr Street would be maintained as the primary roadway since it provides a direct connection to Cedar Street and Highway 34. However, the realignment of Norwood Drive would increase the already steep grade and would require considerable grading and retaining walls to partially mitigate the slope.

Alternative B: Norwood Drive Primary
Starr Street could be realigned to form a T-intersection with Norwood Drive (see diagram at the end of this subsection). This alternative has the advantage of reducing the skew at the Highway 101 approach, but has the same topographic issues related to the steep slope of Norwood Drive as identified in Alternative A. Furthermore, only minimal storage would be available on Norwood Drive between Starr Street and Highway 101. Vehicles queued on Norwood Drive could block the Starr Street access, potentially resulting in vehicles spilling back onto Highway 101.

Alternative C: Starr Street Closure
Under this alternative, the Starr Street connection to Highway 101 would be closed, allowing only Norwood Drive traffic to access Highway 101 at this intersection. Although some out-of-direction travel would be required, alternative outlets are available for traffic on Starr Street. Sufficient pavement width should be maintained to allow a turn-around area at the closure.

Alternative D: Starr Street-Norwood Drive Realignment
As shown in the following diagram, Alternative D would connect Starr Street and Norwood Drive along a common alignment, and provide a single connection to Highway 101. This alternative meets the objective of limiting the intersection to a single connecting roadway while maximizing the spacing from Highway 101. Also, the new connecting roadway could be aligned perpendicular to the highway, eliminating the high skew that currently exists. Both of the newly aligned side street approaches would have STOP signs at the intersection with the new Highway 101 connecting street. This would ensure adequate clearance for traffic to exit Highway 101 without being hindered by westbound queues.

Unlike the other improvement alternatives, this alternative would require some right-of-way acquisition from the adjacent property. However, it could be implemented without directly impacting existing structures.

The following table summarizes the findings of the comparative evaluation of improvement alternatives.

HIGHWAY 101/STARR-NORWOOD ALTERNATIVES EVALUATION

Evaluation Factor	Do Nothing	Starr Primary	Norwood Primary	Close Starr	Realign Starr-Norwood
Operations & Safety	Poor	Fair	Fair	Good	Good
Impact to Surrounding Area	Good	Good	Good	Fair	Fair
Cost to Implement	Good	Fair	Fair	Good	Fair
Constructability	Good	Poor	Poor	Good	Fair

Recommended Treatment
Each of the alternatives evaluated poses challenges in terms of topography and/or impacts to surrounding land uses. However, as traffic volumes grow on all of the intersection roadways, the potential for safety problems will increase. Traffic conditions should be monitored as development occurs in the area and through traffic volumes on Highway 101 increase.

The closure of Starr Street at Highway 101 is a relatively inexpensive and low-impact improvement that could be implemented in the near-term. Although it will restrict local circulation to some extent, alternative routes are available for access from Starr Street to Highway 101 with only moderate out-of-direction travel required.

The preferred long-term solution is Alternative D because it improves the Highway intersection configuration and does not require increasing the slope on Norwood Drive. As redevelopment occurs, the City should seek opportunities to acquire the needed right-of-way in a manner that minimizes impacts to the adjacent properties.

As traffic increases, a southbound left-turn lane will be warranted at this approach. This improvement will likely be warranted in the 10 to 15 year future.

Highway 34/Mill Street– Crestline Drive
Operational issues related to the off-set of the minor streets at the Highway 34 intersection with Mill Street-Crestline Drive were identified in the analysis of existing conditions (Technical Memorandum 1). The following diagram shows a turn lane is provided on Highway 34 for westbound left turns but not for eastbound left turns. The asymmetry in eastbound and westbound approaches, coupled with fact that Highway 34 has a two-way-left-turn-lane west of the intersection, apparently results in the perception that eastbound left-turning vehicles have a

left-turn lane. Frequently, eastbound left-turning vehicles wait in the left-turn lane provided for westbound traffic, causing potential conflicts with the intended traffic as well as with drivers making the correct maneuver from the through lane. A left-turn lane cannot currently be provided in the eastbound direction due to the offset of the side streets at this intersection.

Do Nothing Alternative
The conflicting movements and potential for accidents will increase as traffic volumes grow.

Alternative A: Realign Mill Street Directly Opposite Crestline Drive
This alternative would improve operations significantly by realigning Mill Street to directly Crestline Drive (see diagram at the end of this subsection). However, the realignment would require acquisition and removal of the existing commercial structure in the northwest corner of the intersection. The acquisition of the hardware store on the northwest corner would be expensive and would have a significant impact on the community.

Alternative B: Realign Crestline Drive Directly Opposite Mill Street
Similar to Alternative A, realigning the Crestline Drive approach to directly oppose Mill Street would improve operations significantly (Alternative 5B). However, construction of the realigned Crestline Drive would require filling wetlands on the southeast corner at a very high expense, and would raise considerable environmental mitigation issues. A pump station that was recently installed in the southeast corner of the intersection would need to be relocated. Furthermore, due to the bridge located approximately 300 feet east of the intersection, the available distance for left-turn storage and transition is inadequate. Therefore, this alternative was REJECTED.

Alternative C: Prohibit Eastbound Left Turns onto Mill Street
Alternative C would prohibit eastbound left turns from Highway 34 onto Mill Street. This alternative serves to separate potential conflicting movements at minimal cost, with minimal diversion of traffic. The relatively low demand for this movement (approximately 15 vehicles during the peak hour) could be served by Broadway Street or other parallel streets. This alternative may include improvements on Broadway Street to provide an improved alternative route for the diverted traffic. The restriction could be implemented initially by signing and striping. In case violation of the eastbound left-turn restriction becomes a problem, the placement of physical barriers may be required. However, since such barriers would also preclude southbound left turns at the intersection, this action should only be taken for the purpose of enforcement of the eastbound left turn prohibition.

Alternative D: Realign Both Minor Street Approaches
Under Alternative D, both Mill Street and Crestline Drive were realigned to directly oppose each other at an approximate mid-point, thus sharing the impact to adjacent property. However, the commercial property in the northwest corner would still be impacted, and impacts to the wetlands would still require considerable cost and environmental mitigation. Furthermore, the location of the bridge east of the intersection precludes the provision of adequate storage and transition distance. Therefore, this alternative was REJECTED.

Alternative E: Install a Roundabout
A roundabout treatment was considered to mitigate the existing geometric issues at this intersection. Similar to Alternative D, this alternative would significantly impact adjacent properties but would distribute the impact. However, it was determined that this site does not meet ODOT's minimum site standards for a roundabout. This alternative was REJECTED.

HIGHWAY 34/MILL-CRESTLINE ALTERNATIVES EVALUATION

Evaluation Factor	Do Nothing	Realign Mill	Realign Crestline	Prohibit Left Turns	Realign Both Side Streets	Round-about
Operational/Safety Improvements	Poor	Good	Fair	Fair	Fair	Poor
Impact to Surrounding Area	Good	Poor	Poor	Good	Poor	Poor
Cost to Implement	Good	Poor	Poor	Good	Poor	Poor
Constructability	Good	Fair	Poor	Good	Poor	Poor

Recommended Treatment
Roadway realignment alternatives at this intersection would pose significant impacts to adjacent properties and/or very high construction and wetland mitigation costs. Prohibition of eastbound left turns was determined to be the preferred solution, given the low volumes of traffic making this movement and the availability of alternative routes. This project could be implemented with relatively simple signing. In the event that significant and persistent violations occur, raised barriers could be considered.

Strawberry Street
During the course of this study, circulation issues related to Strawberry Street were brought to the attention of the project team. Specifically, property owners in the area were concerned about the possibility of restricting Strawberry Street to one-way travel. Also, residents perceive a potential for excess speeds along the roadway.

Although the pavement width is generally sufficient to allow two vehicles travelling in opposite directions to pass each other at slow speeds, the frequent power poles obstruct simultaneous flow of traffic in both directions. Due to the low volume of traffic on the road, and in the absence of a demonstrated safety problem, limiting Strawberry Street to one-way travel would be overly restrictive. Furthermore, such a restriction would sharply hinder circulation in the event that the Starr Street access to Highway 101 is closed (under Alternative C of the Highway 101/Starr-Norwood intersection alternatives).

No existing speeding problem has been identified. If travel speeds become excessive, a speed study could be conducted and the installation of speed bumps could be considered, along with other traffic calming measures.

HIGHWAY 101/STARR–NORWOOD
EXISTING INTERSECTION CONFIGURATION

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

2890D002

ALTERNATIVE A
STARR PRIMARY

FIG
3A

ALTERNATIVE B
NORWOOD PRIMARY

FIG
3B

ALTERNATIVE C
CLOSE STARR STREET

FIG
3C

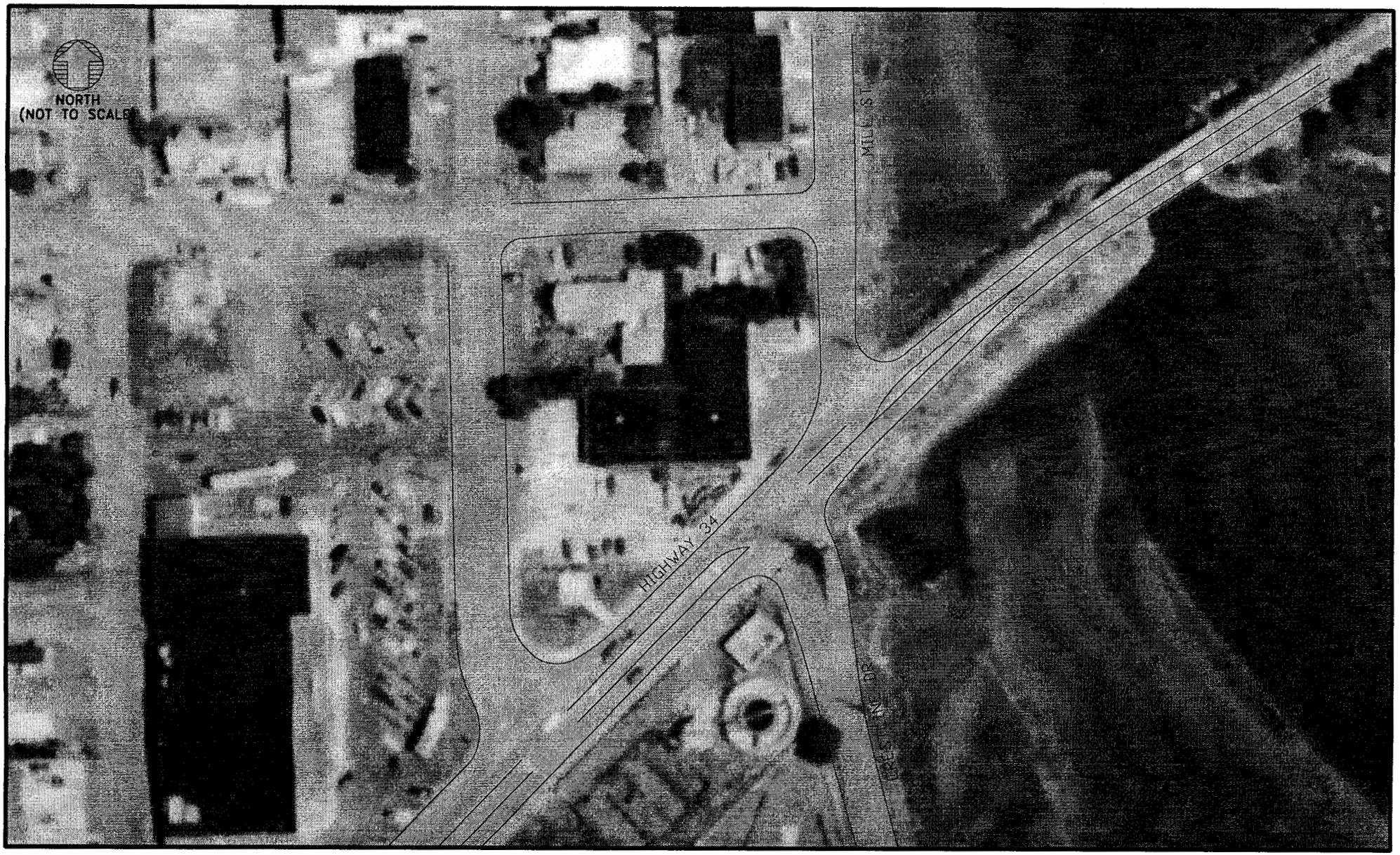
ALTERNATIVE D
STARR ST–NORWOOD DR
REALIGNMENT

FIG
3D

HIGHWAY 101/STARR–NORWOOD

CITY OF WALDPORT TSP
WALDPORT, OREGON
MAY 1999

2890D003



HIGHWAY 34/CRESTLINE–MILL
EXISTING INTERSECTION CONFIGURATION

CITY OF WALDPORT TSP WALDPORT, OREGON	
MAY 1999	

2890D004

ALTERNATIVE A REALIGN MILL STREET	FIG 5A

ALTERNATIVE B REALIGN CRESTLINE	FIG 5B

ALTERNATIVE C PROHIBIT EASTBOUND LEFT TURN	FIG 5C

HIGHWAY 101/MILL–CRESTLINE IMPROVEMENT ALTERNATIVES

CITY OF WALDPORT TSP WALDPORT, OREGON		K
MAY 1999		

28900005

EVALUATION OF WALDPORT AS A SPECIAL TRANSPORTATION DISTRICT (STA)

The Waldport Transportation System Plan includes this evaluation to determine the appropriateness of designating Waldport's downtown area as a Special Transportation Area (STA). This section includes the definition, objective, location, traffic characteristics, and design characteristics of an STA as defined by "A Primer on Special Transportation Areas From the 1999 Oregon Highway Plan" *(identified in italics)*. Each subsection is followed an evaluation of how Waldport's downtown area is in accordance with the STA characteristics.

Definition. *A Special Transportation Area (STA) is a highway segment designation that may be applied to a highway segment when a downtown, business district or community center straddles the state highway within an urban growth boundary or in an unincorporated community.*

Evaluation: Waldport's existing downtown straddles both Highway 101 and Highway 34 within an urban growth boundary, therefore meeting this criteria.

Objective. *The primary objective of an STA is to provide access to community activities, businesses and residences and to accommodate pedestrian, bicycle and transit movement along and across the highway in a downtown, business district and/or community center. The need for appropriate access outweighs the considerations of highway mobility except on designated Freight Highways where accessibility and mobility needs are balanced.*

Evaluation: Existing Waldport downtown area land uses, adjacent and near Highway 101 and Highway 34 include community activities such as the senior community center, library, post office, and city hall. Businesses are adjacent to both Highways 101 and 34 throughout the downtown, and residences are located within one block on both sides of Highways 101 and 34. The STA would help facilitate the accommodation of pedestrian, bicycle, and transit movement along and across both highways within a downtown that also functions as a business district and is clearly to central focus of the community. Neither Highway 101 or Highway 34 are designated Freight Highways in Waldport. The objective criteria appears to be satisfied in the Waldport downtown area.

Location of STAs.

1. *An STA is located in:*
   a. *An urban growth boundary, or*
   b. *An unincorporated community as defined by OAR 660-22.*
2. *AN STA is either:*
   a. *An existing or planned downtown, business district or community center, or*
   b. *A redevelopment of an area within city limits or between city limits and an UGB to eliminate an existing pattern of strip development.*
3. *The STA must straddle a state highway.*
4. *The STA cannot be located on a freeway or expressway.*
5. *An STA does not apply to an entire city or the majority of a city or to strip development areas.*

Evaluation: The Waldport downtown area:

(1) is located in an urban growth boundary;
(2) is an existing downtown;
(3) straddles both Highway 101 and Highway 34;
(4) is not located on a freeway or expressway and;
(5) does not comprise the entire city, majority of the city, or consist of a strip development area.

Waldport's downtown area appears to satisfy the criteria for the location of an STA.

Traffic Characteristics of an STA

1. *A compact area with interconnected local street networks to facilitate local automobile and pedestrian circulation, except where topography severely constrains the potential for street connections;*
2. *While automobiles move through and access an STA, convenience of movement is focused on pedestrians, bicyclists and transit where available.*
3. *Traffic speeds are slow, generally 25 mph (40 kilometers) or less.*
4. *Highway mobility standards allow for more congestion than on other urban highways.*

Evaluation: The Waldport downtown area:

(1) is a compact area defined by natural features including the Alsea Bay approximately one block west of Highway 101, a ridgeline with severe topographic constraints east of Highway 101 and south of Highway 101, and the urban renewal district located north of Highway 34. There is an existing interconnected local street network that facilitates local automobile and pedestrian circulation within the downtown area;

(2) Currently, movement is primarily focused on movement of automobiles. However, there are existing sidewalks on the state highways and some local streets within the downtown area. The designation of the Waldport downtown area as an STA would help facilitate improvements that would focus on the pedestrian, bicycle, and transit movement within the downtown area;

(3) Traffic speeds within the downtown area are generally 25 mph;

(4) Existing conditions and standards allow for more congestion than on other urban highways by incorporating a mix of land uses, many closely spaced buildings with setbacks to the highways consisting of sidewalks, and crosswalks at key intersections.

Waldport's downtown area appears to satisfy the traffic characteristics of an STA.

Design Characteristics of an STA.

1. *Mixed uses;*
2. *Buildings spaced close together and located adjacent to the street with little or no setback that accommodate pedestrian and bicycle circulation;*
3. *Sidewalks with ample width which are located adjacent to the highway and the buildings;*
4. *Convenient automobile and pedestrian circulation within the center and off the state highway;*
5. *Public road connections preferred over private driveways; minimum spacing is 175 feet or mid-block, a smaller distance than other classifications;*
6. *On street parking and shared or general purpose parking lots which are located behind or to the side of buildings;*
7. *Streets designed for ease of crossing by pedestrians.*

Evaluation:

(1) The Waldport downtown area includes a mix of uses including retail, office, residential, and institutional/public uses;

(2) The majority of buildings fronting Highways 101 and 34 are close together with setbacks limited to sidewalks.

(3) Sidewalks adjacent to Highways 101 and 34 are generally a minimum of 5-6 feet wide and located adjacent to the highway curb and buildings;

(4) The existing downtown street system is generally a grid system of local streets that directly access Highways 101 and 34, therefore providing convenient automobile and pedestrian circulation.

(5) Highways 101 and 34 currently have a mix of public road and private driveway connections. Typical block spacing is approximately 225 feet.

(6) Both highways have on street parallel parking. In addition there appear to be shared or general purpose parking lots located in such places as the Visitors Information Center near the northwest corner of Highways 101 and 34; at Clark's Market on Highway 101; and at the Senior Community Center on Highway 34. In addition there is general head-in parking located on Starr Street within two blocks of the Highway 101 downtown area.

(7) There are existing pedestrian crossings located at key intersections on Highways 101 and 34. This TSP recommends enhancements to highway pedestrian crossings including additional striping, signage, pavement texture and color, and landscaping.

The Waldport downtown area appears to satisfy the design characteristics of an STA.

Conclusion

The Waldport downtown area appears to meet the criteria for STA designation including the definition, objective, location, traffic characteristics, and design characteristics. The City of Waldport and ODOT should consider joint identification of downtown Waldport as an STA and pursue development of a management plan. Throughout the TSP planning process, there was general consensus amongst the community that improved pedestrian, bicycle, and transit facilities would reduce reliance on the automobile, provide a safe environment for pedestrians and bicyclists, and provide a more pedestrian-friendly atmosphere within a compact downtown area.

IV. TRANSPORTATION SYSTEM PLAN

The purpose of the Transportation System Plan is to guide the development of a safe, convenient and efficient transportation system that promotes economic prosperity and livability for all City residents.

As required by the Transportation Planning Rule (TPR), the City of Waldport proposes to adopt standards and policies in this Transportation System Plan (TSP) that comply with the requirements to provide a multi-modal approach to solving transportation issues. The TPR identifies the specifications required of jurisdictions based on their population. For most urban areas, the TPR requires an alternative analysis to compare various new project options versus an alternative that proposes to build only existing funded and committed projects. Many of the alternatives have goals such as an increase in mode split share and reduced vehicle miles traveled (VMT). These goals are measurable in many urban areas or areas with a Metropolitan Planning Organization (MPO), but not in small communities or rural areas. The logical alternative choices in rural areas would be to:

- Pursue an alternative that programs only the identified projects in current City capital improvement plans and gradually shifts funding from new capital projects to more preservation and maintenance. Over time, capital improvements to address traffic and safety problem areas will proceed on a prioritized basis. The long-term effect is that preservation and maintenance of the existing system becomes a higher priority than relieving congestion and solving safety issues. This is often referred to as the "no build" alternative.
- Adopt a 'build" alternative, which tries to keep pace with anticipated growth by focusing funding on building capacity-enhancing and safety oriented projects, while also attempting to maintain the existing road network.
- Adopt a combination alternative, as recommended in this TSP, which includes a mixture of new projects to enhance roadway capacity, improve safety while also maximizing preservation and maintenance. The alternative also shifts emphasis to non-auto modes as much as is practical to meet the intent of the TPR.

This Plan balances the need to reduce the reliance on single occupant vehicles given the community's needs, geography and demographics, with the need to solve safety and operational problems. At the same time, the system needs a significant effort in maintenance over the next twenty years to preserve the investment already made by the community.

This Plan contains brief descriptions of required transportation facilities including listing of policies and recommended transportation projects that cover the following areas:

- Coordination and Implementation of the Transportation System Plan;
- Streets Plan Element ;
- Public Transportation Plan;
- Bicycle / Pedestrian Plan;
- Air/Rail/Water/Pipeline Plan;
- Transportation System and Demand Management Plan (TSM & TDM).
- The Plan also provides identification of potential implementation mechanisms and a spreadsheet that prioritizes projects according to high, medium, or low; identifies cost implications, and potential implementation mechanisms.

TRANSPORTATION POLICIES AND IMPLEMENTING STRATEGIES

Based on the requirements of the Transportation Planning Rule (TPR), the City of Waldport intends to have the Transportation System Plan be the beginning of an ongoing procedure to periodically analyze, prepare and plan for the transportation needs of Waldport residents and visitors. Toward this end, the following goals and policies are intended to assist in the implementation of the Waldport Transportation System Plan, and thereby meet the requirements of the TPR.

Goals

1. **Achieve an efficient, safe, convenient and economically viable transportation, air, communication system. This system includes roads, rail lines, public transit, pipeline, pedestrian and bicycle facilities. The Waldport transportation system shall be designed to serve the existing and projected needs of the City. The system shall provide connections between different modes of transportation to reduce reliance on the single-occupancy vehicle.**

2. **Have an ongoing transportation planning process and maintain a transportation plan that meets the needs of the City and its residents. The transportation plan and facilities of Waldport shall be coordinated with the plans and facilities of Lincoln County and the State of Oregon.**

Policies

1. **The City of Waldport shall:**
   a. **Identify local, regional and state transportation needs;**
   b. **Develop a transportation plan that shall address those needs;**
   c. **Review and update the plan every three to five years;**
   d. **Continue to coordinate transportation planning with local, regional and state plans by reviewing any changes to regional transportation plans, the Oregon Transportation Plan, and ODOT's State Transportation Improvement Plan (STIP); and**
   e. **Continue public and interagency involvement in the transportation planning process.**

2. **The City of Waldport shall notify ODOT concerning:**
   a. **All land use proposals or actions that would create access onto a state highway or add >100 ADT to any County road intersection with a state highway;**
   b. **Any proposed land use or development within 500 feet of a state highway; and**
   c. **Required ODOT road approach permits.**

3. **The City of Waldport shall protect approved or proposed transportation project sites through:**
   a. **Access control measures;**
   b. **Review of future large development and transportation projects that significantly transportation affect the City transportation system; and**
   c. **The imposition of conditions of approval on developments and transportation projects that have a significant effect on the City's transportation system.**

4. **The City of Waldport shall coordinate local plans and land use decisions with state transportation plans, including the Oregon Transportation Plan, modal plans, and corridor plans. These plans provide ODOT policies and performance standards for statewide highways within Waldport. The statewide plans also provide the framework for access management on statewide to protect the capacity and function of the highways.**

5. **The lead agency for transportation project review in Waldport shall be:**

   a. **The City of Waldport for projects within the city limits;**

   b. **The City of Waldport and Lincoln County for projects within the UGB but outside the city limits projects involving county-owned facilities; and**

   c. **The State of Oregon and the City of Waldport on projects involving state-owned facilities.**

6. **Transportation Projects**

   a. **The City shall have a list of transportation projects, adopted by the Waldport City Council, in accordance with the policies set forth below.**

   b. **The initial Transportation Project List shall be set forth in the Transportation System Plan adopted as part of the Resource Element of the Comprehensive Plan. The City Council shall update the Transportation Project List periodically by resolution adopted by the City Council, without need of a formal amendment to the TSP.**

   c. **New transportation projects shall be included on the City's Transportation Project List. A transportation project proposed for addition to the list shall be subject to an individual land use review only if applicable administrative rules or land use regulations require such review.**

   d. **Transportation or development projects that require a plan text amendment or a conditional use permit may be required to fulfill conditions or implement mitigation measures before approval is granted. Mitigation and conditions may include, but are not limited to:**
      - **Improvement of surrounding roads;**
      - **Limits on level of development;**
      - **Revision of development placement;**
      - **Addition or redesign of access;**
      - **Addition of traffic management devices such as traffic signals, medians, turn lanes or signage; and/or**
      - **Improvements that reduce transportation impacts.**

      The City of Waldport acknowledges that land use designations have a significant impact on the overall transportation system and any alterations shall be completed with consideration to traffic impacts on the City road system.

   e. **The findings of compliance with applicable statewide planning goals, acknowledged comprehensive plan policies, and land use regulations, shall be coordinated with the preparation of any Environmental Impact Statement (EIS) required for a proposed transportation facility that is identified in the Waldport Transportation System Plan.**

STREETS PLAN ELEMENT

The findings in this Plan conclude that the existing street network within and connecting Waldport is adequate to serve the City needs over the next twenty years. Exceptions to this are transportation-related needs associated with new development. Given that the central and northern portions of the Waldport Urban Growth Boundary are primarily developed, new streets that will be created will be the result of new residential subdivisions and developing industrial zoned land located in the southern half of Waldport. These new roads will primarily be local streets that will be approved as part of land use development applications. The exception to this may be the recommended new collector street connection(s) between Highway 101 and Crestline Drive in the southern part of the City.

The majority of street-related projects will consist of :
- Safety-related improvements;
- Upgrades to provide multi-modal transportation facilities, and
- Maintenance and repair.

Safety, maintenance, and repair should be actively pursued to maintain the integrity of the system and not jeopardize current conditions. Pedestrian, bicycle, and transit modes of transportation typically require wider, smoother roadways. These improvements also benefit automobile and truck traffic by making the roads safer and more efficient. Providing pedestrian and bicycle facilities, as well as transit modes of transportation, within the street system promote the Oregon Transportation Plan policy of encouraging alternatives to the auto.

This Street Plan Element is divided into the following subsections:
- Functional Street Classification
- Street Design Standards
- Access Management Plan
- Truck Route Plan
- Recommended Street Projects

FUNCTIONAL STREET CLASSIFICATION

Functional street classification describes how the public street system should operate. Streets are grouped by their similar characteristics in providing mobility and/or land access. Within the City, there are three general street classifications including principal arterials, minor collectors, and local streets.

Principal Arterial

The primary function of a primary arterial is to provides for trips passing through a community and connecting regional centers. Principal arterials in Waldport include:
- U.S. Highway 101 - the north-south oriented highway along the Oregon coastline
- State Highway 34 - the east-west oriented highway connects Highway 101 in Waldport and Highway 20 approximately 6 miles west of Corvallis.

Minor Collectors

Minor collector streets channel traffic from local streets to major collectors and arterial streets, and provide property access. The primary difference between minor and major collectors is that minor collectors provide property access whereas major collectors provide limited property access. Minor collectors in Waldport include:
- Crestline Drive - channels traffic to Highway 34 and to Highway 101 via Wicanda Beach Drive.
- Range Drive - channels traffic between Highway 101 and Crestline Drive.
- Cedar Street - channels traffic between Highway 34 and Crestline Drive.

Each of these collector streets provide direct access to local streets as well as to private property. Recent development abutting the collector streets, primarily off Range Drive, have limited direct access to local streets, and do not provide direct property access.

Local Streets

Local streets provide direct access to individual properties. The remaining streets in Waldport, not identified as principal arterials or collectors, are considered local streets. Local streets can be further classified as local commercial and local residential streets according to the adjacent land uses.

Functional Street Classification Policy

Policy 1. The City of Waldport shall periodically review functions of existing streets to ensure appropriate functional street classifications are designated for streets.

STREET DESIGN STANDARDS

Street design standards are provisions for the construction of roads. Street design standards are developed for each type of functional classification, i.e. arterials, collectors, and local streets. Waldport street design standards are identified in the recommended street plan projects.

Street Design Standards Policy

Policy 2. Upon City adoption of the Waldport Minimum Street Design Standards, all new and reconstructed City of Waldport streets shall be built to those identified standards.

ACCESS MANAGEMENT PLAN

Streets accommodate two types of traffic: local travel and through traffic. Arterial streets are intended for through movement of traffic while local streets are designed to give direct access to the abutting properties. Collector streets provide a link between the local and arterial streets, balancing accessibility and function.

Without access management, arterial streets can become overused for short distance trips and local access to property. Land use changes along arterials also contribute to increased trip generation and traffic conflicts, as businesses normally desire to locate on high traffic arterials. The lack of adequate access management and insufficient coordination of land use development, property division, and access review can contribute to the deterioration of both the arterial and collector road network. Partial access control, which is often found on major arterials and highways, is provided by limiting or prohibiting driveway access, left turn movements, and cross traffic at intersections. These limitations increase the capacity of an arterial to carry through traffic at the desired speeds without requiring the additions of more travel lanes. Coordination, planning, and proper policies can help avoid these problems and costly solutions.

An inventory of existing accesses to Highway 101 and Highway 34 was conducted and summarized in the existing conditions analysis. Accordingly, the sections of Highways 101 and 34, close to their intersection, have been identified as having particular access management issues.

Highway 101

In the section of Highway 101 one block north and south of Highway 34 (from Spring Street to Hemlock Street), there are 5 total driveways. These driveways provide access to adjacent businesses, and based on the building locations cannot be removed without significant hardship. In recognition of this, ODOT and the City should monitor traffic operations and safety in this section. If traffic accidents in this section increase beyond an acceptable threshold based on ODOT criteria, modifications to the existing driveways (i.e. driveway closures or consolidation) should be considered. Moreover, in the event that land use actions (i.e. redevelopment) are

requested for parcels in this section, serious consideration should be given to modifying the number and locations of driveways. Particular attention should be given to accesses to the following uses:

- Chevron Station in the northeast corner of US 101/Highway 34 intersection.
- Retail uses in the southeast corner of the US 101/Highway 34 intersection.

Highway 34
In the section of Highway 34 immediately east of US 101 (between Highway 101 and Verbena Street), the number and location of driveway accesses conflicts with the efficient operation of the intersection and highways. In particular, the three driveways to the Chevron Station and the Auto Parts store on the north side could be consolidated and/or removed if these properties redevelop. Based on the existing configuration of the buildings on the site, it would be difficult to modify these driveways prior to redevelopment.

On the south side of Highway 34, parking for the adjacent furniture store is provided with ten front-in spaces directly on Highway 34. Motorists exiting these spaces must back into Highway 34, thereby creating safety and operational problems. Traffic safety should be monitored. If traffic accidents in this section increase beyond an acceptable threshold based on ODOT criteria, this direct head-in driveway access should be removed. In addition, in the event that land use actions (i.e. redevelopment) are requested for this parcel, direct head-in parking should be eliminated.

Collector Streets
Crestline Drive, Range Drive and Cedar Street are currently the only streets that connect Highway 101 and Highway 34 with Waldport's upland area. These three streets originally served as local streets for initial residential development in the upland area. The original residential upland development occurred fronting and providing direct access to Crestline Drive, Range Drive, and Cedar Street. Over time, additional upland development occurred. This resulted in additional local streets that accessed Crestline Drive, Range Drive, and Cedar Street, thereby making these three streets collector streets since they were (are) the only connections to the arterials.

The majority of future development will occur in the upland area of Waldport which will place an increased burden on the three collector streets. Therefore, it is prudent to establish an access management system for collector streets to ensure the quality and function of the collector street system is maintained.

Direct property access to collector streets should be limited to infill development in those specific areas where direct access has occurred, e.g. the west side of Crestline Drive between Range Drive and Green Drive, the east side of Crestline Drive north of Range Drive, and the eastern part of Range Drive. That is, where a single tax lot cannot be developed without direct access to a collector street, an exception can be made to allow direct collector street access. Surrounding development should access collector streets via local streets. Local streets should be spaced at no less than 300 feet on collectors.

Access Management Plan Policies

Policy 3. The City of Waldport shall designate access and land uses appropriate to the function of a given road.

Policy 4. The City of Waldport shall require new development to minimize direct access points onto arterials and collectors by encouraging the utilization of new local streets that access arterials and collectors, and by encouraging the utilization of common driveways.

TRUCK ROUTE PLAN

Truck traffic is generally confined to industrial, commercial, and surface mining areas. State highways serve the majority of truck traffic and are most suitable for truck use. This is true in Waldport where Highway 101 and Highway 34 serve a majority of truck traffic.

Range Drive and Crestline Drive provide access for trucks accessing the limited commercial and industrial development in the upland area. As the industrial zoned area continues to development Range Drive and Crestline Drive will experience additional truck traffic unless a new collector road is constructed. If constructed, a new Highway 101 - Crestline Drive connection will need to provide a more convenient access to the industrial development in order to alleviate truck traffic on Range Drive and Crestline Drive. If the new collector road is constructed consideration should be given to limiting truck traffic on Range Drive and Crestline Drive since these streets primarily service residential uses. The City should monitor the need to construct a new road and limit truck traffic on Range Drive and Crestline Drive as growth and development of the industrial zoned land occurs.

Truck Route Plan Policies

Policy 5. The City of Waldport shall designate that long-haul, through trucks, be limited to operating on arterial roads as designated in the City transportation network, except in emergency situations and when no reasonable alternative arterial road is available for access to commercial or industrial uses.

Policy 6. If, in the future, a new collector road is constructed in south Waldport from Highway 101 to the industrial zoned land, the City shall consider restricting truck access on Range Drive and Crestline Drive.

RECOMMENDED STREET PLAN PROJECTS

A. Street Design Standards (High Priority)

Street design standards are provisions for the construction of roads. Street design standards are developed for each type of functional classification, i.e. arterials, collectors, and local streets. Waldport street design standards are identified in the following table.

MINIMUM STREET DESIGN STANDARDS

Functional Class	Right-of-Way Width	Surface Width	Turn Lane Width	Surface Type	Base Depth	Maximum Grade	Design Speed	Minimum Tangent	Minimum Curve	Curb Type
Principal Arterial	80'	60-80'(1)	14'	(see note #1)		6%	(see note #1)			16"
Minor Collector	60'	36-48'	14"	3" AC	8"	15%	(see note #2)			16''
Local Commercial	50-60'	36-48'	--	3" AC	6"	15%	(see note #2)			12"
Local Residential	50'	24-28'	--	3" AC	6"	15%	(see note #2)			12"

(1) Design shall be in accordance with Oregon Department of Transportation Design Standards.
(2) Design shall be in accordance with AASHTO standards.

B. Street Maintenance (High Priority)

Improve and maintain existing streets, i.e. potholes, paving, and striping. Additionally, there is a lack of street identification signs or existing street signs old, faded and difficult to read. On Highways 101 and 34 ODOT may provide street signs are improvements if requested.

C. Enforce and Reduce Speeding (High Priority)

Enforce and reduce speeding at the three main entrances (gateways) into the community including:

- Southbound Highway 101 traffic coming off the bridge;

One potential improvement at this location is for the City to request ODOT to determine appropriate transition speed limits. Currently the southbound speed limit is 55 mph approaching the bridge, whereas a reduced speed of 40-45 mph may be more appropriate prior to the 25 mph speed limit. Additional signage, i.e. "speed zone ahead" may also help.

- Northbound Highway 101 traffic;
- Westbound Highway 34 traffic.

Standards methods for reducing speed include reducing maximum speed limit, enforcement signs, pavement striping, traffic speed detectors, etc. Traffic calming and reduced speeds can also occur through "gateway" improvements, i.e. landscaping, community entry/welcome signs, etc.

D. Range Drive Improvements (High Priority)
Widening, eliminating or mitigating curves and sight distance inadequacies, and providing pedestrian/bicycle facilities on both sides of the street.

E. Highway 101/Range Drive Intersection (High Priority)
The most important improvement at this intersection is the need for a center turn lane for southbound Highway 101 traffic. Additional improvements may include access improvements to the commercial establishments on the west side of Highway 101 so that access to this commercial area aligns with the realigned Range Drive.

F. Crestline Drive Improvements (High Priority)
Continuous pedestrian/bicycle facilities are needed between Highway 34 and the elementary school. Bicycle lanes and pedestrian pathways are preferred on both sides of the street, however, they need to at least be continuous on one side. Initially, it may be more feasible to construct a pedestrian facility (sidewalk or pathway) on the east side of Crestline Drive north of Range Drive, and on the west side south of Range Drive. However, it may be appropriate to extend the pathway along the west side, through Crestline Park, just north of Range Drive. The northern portion of Crestline Drive, where the hill and curves are located, is currently an unsafe section of road, especially for bicyclists and pedestrians.

G. Maintain Access To Amenities And To Undeveloped Land (High Priority)
Maintain public access to amenities and to improve connectivity. This includes prohibiting street vacations where they provide access to amenities, i.e. the bay, or provide better connectivity to adjacent land.

H. Circulation Connectivity with New Development (High Priority)
Require new development to provide connections to adjacent streets and pedestrian/bicycle facilities. This should occur through the land use application process and include provisions that transportation improvements be constructed concurrent with development, that right-of-way be dedicated, and that connections to adjacent properties occur to ensure future development connectivity.

I. Access Improvements With Redevelopment (High Priority)
When redevelopment occurs, ensure adequate and safe access occurs, i.e. ingress and egress issues near intersections such as the service station and auto store at the Highway 101/Highway 34 intersection.

J. Ensure Transportation Facilities and Services Accommodate Special Needs (High Priority)
Ensure transportation facilities are in accordance with Americans with Disability Act standards wherever possible, and that public transportation services accommodate special needs, i.e. disabled and elderly.

K. New East-West Road in South Waldport Connecting Hwy. 101 and Crestline Drive (Medium Priority)
A new east-west road(s) connecting Highway 101 and Crestline Drive. This would serve the developing industrial area and reduce truck traffic on Range Drive and Crestline Drive. It would also serve the developing residential zoned land and the elementary school, particularly for traffic approaching this area from Highway 101, south of the City. Potential locations include:

- West from Crestline Drive through the industrial zoned land and through land currently located outside the Urban Growth Boundary. This would necessitate an exception to the statewide goal of prohibiting development of new roads outside urban growth boundaries;

- Extend Seabrook Lane east and south, connecting to Crestline Drive south of the Golf Course, i.e. Green Dr.

L. Highway 101/Starr Street/Norwood Drive Intersection (Medium Priority)
Starr Street and Norwood Drive intersect Highway 101 in the same location and at an odd angle. Ultimate improvements would include one street intersecting Highway 101 at a ninety degree angle.

M. Highway 34/Crestline Drive/Mill Street Intersection (Medium Priority)
The Highway 34/Crestline Drive intersection is offset from the Highway 34/Mill Street intersection. In addition, it is currently confusing and unsafe for eastbound Highway 34 traffic to turn north on to Mill Street. The recommended alternative is to reroute northbound turning traffic from Highway 34 to Broadway Street and prohibit the northbound turn on Mill Street from eastbound Highway 34. If high school redevelopment/improvements occur, consider realigning Crestline Drive to align with Broadway Street.

N. Highway 34/Bay Street Intersection Improvements (Medium Priority)
Eastbound Highway 34 traffic exits to the school parking lot at the location where vehicles entering Highway 34 from city hall and the school are stopped for Highway 34 traffic.

O. Highway 101/Highway 34 Intersection Improvements (Low Priority)
Improvements will primarily occur with redevelopment to ensure that better ingress and egress is provided to businesses located on or near the intersection. However, improved (safer) pedestrian crossing improvements could occur sooner.

P. Pavement Striping Improvements (Low Priority)
Crosswalk, bicycle lane, and fog line improvements to provide better demarcation and vision for motorists.

Q. Improve the Inadequate Sight Distance at the Curve in East Waldport (Low Priority)
Inadequate sight distance at the curve near the east edge of Waldport (east of slough bridge, near the RV Park).

R. Red Ditch Improvements (Low Priority)
Conduct a study to determine appropriate improvements, i.e. that vary from creating a landscaped drainageway with pedestrian and bicycle path to covering Red Ditch to provide for additional parking.

S. (South) Highway 101 Continuous Center Turn Lane to Beachside State Park (Low Priority)
Long term, provide a continuous center turn lane between the seawall and Beachside State Park on Highway 101.

T. Highway 101/Spring Street Turning Movement Improvements (Low Priority)
Improvements to prevent southbound Highway 101 traffic from accessing eastbound Spring Street which is currently prohibited but physically possible.

U. Additional Downtown Parking (Low Priority)
Provide additional parking for downtown businesses, particularly for Highway 101 businesses. This may occur through a central parking lot(s) located close to downtown businesses. Potential sites, near Hwy. 101, were identified in the planning process. However, a decision was made not to specifically identify (in the TSP) privately-owned parcels that may be utilized for future downtown parking. This decision was made in order to be sensitive to the needs of existing property owners, and to help ensure that land asking prices are not escalated due to a perception that the City is interested in acquiring specific parcels. The City should pursue acquisition of parcels near Highway 101 for additional public parking in the future.

V. Downtown Access Management and Pedestrian Circulation Improvements (Low Priority)
Potential improvements include consolidation of driveways and a continuous, consistent pedestrian facility (sidewalk) on both sides of Highway 101 and Highway 34.

W. Improve Auto, Bus, Bicycle, and Pedestrian Improvements at Waldport High School (Low Priority)
Better define circulation for automobile, bus, bicycle, and pedestrian circulation and provide additional parking.

PUBLIC TRANSPORTATION ELEMENT

The need for public transportation in Waldport is an intercity system that provides services to Newport, Lincoln City, and the Willamette Valley. Currently, there is a bus/van weekday service that provides two a.m. and two p.m. trips to Newport and Lincoln City. Although this existing service appears adequate to accommodate existing weekday demand, there is a perception that many Waldport citizens are not aware of the existing service. In addition, there appears to be a need for weekend, early morning, and evening public transportation services.

Public transportation services need to accommodate the elderly and transit disadvantaged.

Public Transportation Policies

Policy 7. The City of Waldport shall work with ODOT, Lincoln County, the cities of Newport and Lincoln City, and transit service providers to study public transit needs and possibilities.

Policy 8. The City of Waldport shall work with special service providers, ODOT, Lincoln County, and the cities of Newport and Lincoln City to secure additional funding and promote transit services that may be underutilized.

Policy 9. The City of Waldport shall identify and monitor transportation needs of the elderly and disadvantaged, and attempt to fulfill those needs.

PUBLIC TRANSPORTATION PROJECTS

X. Increase Public Transportation Service (High Priority)

Increase public transit (bus and van) service between Waldport and other cities, i.e. Newport, Lincoln City, Corvallis, Salem, and Portland. Improved public transit service and increased ridership can occur through alternative mechanisms:

- Increasing public awareness of the existing service that currently runs four times a day during the week;
- Increasing public transportation trips to include weekend, early morning, and evening services;
- Physical public transportation-related improvements within Waldport, i.e. ensuring an adequate number and easily identifiable drop-off/pick-up locations; and attractive bus/van shelters with routing and scheduling information.

PEDESTRIAN AND BIKEWAY SYSTEM ELEMENT

There are two types of pedestrian/bicycle facilities - those associated with the street system and off-street multi-modal pathways. Pedestrian/bicycle facilities associated with the street system are preferred because of funding, maintenance, and safety issues. However, in Waldport it is appropriate to create a pedestrian/bikeway system that incorporates both on-street and off-street facilities. The need for off-street multi-modal pathways is due to the need to provide connections between the upland and lowland areas of the City, the topographic constraints of connecting the upland and lowland areas, and the opportunities for multi-modal pathways through existing utility easements and parkland.

The planned interconnected pedestrian/bicycle system throughout Waldport will provide connections between the lowland and upland areas; connect destinations (activity centers); and provide connections and "loops" for recreational bicyclists, walkers and runners.

On-Street Pedestrian/Bicycle Facilities
Based on need and street characteristics, all streets open for public use should be considered for the potential to improve bicycling and walking. Facilities should safely accommodate the majority of users. Streets designed to accommodate cyclists with moderate skills will meet the needs of most riders with special consideration given to close proximity to school areas where facilities designed specifically for children should be provided. Streets designed to accommodate young, elderly, and disabled pedestrians serve all users well.

Pedestrian/bicycle facilities are considered in the development of street design standards according to functional classifications. The following pedestrian/bicycle facilities are appropriate on the street system in Waldport.

Bicycle Lanes and Sidewalks
Principal arterial design standards through an urban area include the provision for designated bicycle lanes with a minimum 6-foot width, and 6-foot wide sidewalks. This is appropriate on Highway 101 and Highway 34.

Shoulder Bikeways
Collector streets (Crestline Drive, Range Drive, and Cedar Street) typically would have shoulder bikeways. Shoulder bikeways are paved shoulders that are adjacent but typically differentiated from the travel lane by a stripe. Paved shoulders are typically 4-6 feet wide according to average daily vehicle traffic (ADT). A four foot paved shoulder is appropriate on streets with an ADT of 400 or less. Shoulder bikeways can also serve pedestrians.

In Waldport, shoulder bikeways are recommended for Crestline Drive and Range Drive. In addition, separate pedestrian facilities (sidewalks or pathways) are recommended on or adjacent to these two street rights-of-way. Bicycle and pedestrian facilities are not recommended on (upper) Cedar Street due to topographic constraints and opportunities for multi-modal pathways in close proximity to Cedar Street. In addition to the collector streets, Broadway Street, located in the "old town" section of Waldport has 5-foot shoulder bikeways.

Shared Roadways
Shared roadways are appropriate on local streets that do not experience high traffic volumes, i.e. less than 250 ADT. Shared roadways are simply the streets pavement width as constructed and provide for shared motor vehicle, bicycle, and pedestrian usage. Local residential streets in Waldport have shared facilities, although many local residential streets have also have sidewalks. Sidewalks are appropriate on local commercial streets in Waldport.

Off-Street Multi-Modal Pathways

Off-street pathways can be paved or unpaved. If unpaved, the surface material should be packed hard enough to be usable by wheelchairs and bicycles. Recycled pavement grindings provide a suitable material and they are usually inexpensive and easy to grade.

Though originally conceived to provide a facility for bicyclists separated from motor-vehicle traffic, paths often see greater use by pedestrians, joggers, and skaters, and sometimes equestrians. The planning and design of multi-use paths must therefore take into account the various skills, experience and characteristics of these different users. Additionally, a primary consideration to designing and constructing the multi-modal pathways in Waldport will be the topography and trying to maintain grades that pedestrians, cyclists, and disabled people can use.

Well-planned and designed multi-use paths can provide good pedestrian and bicycle mobility. They can have their own alignment along drainageways and greenways, and may be components of a community trail system.

Paths can serve both commuter and recreational pedestrians and cyclists. Many inexperienced cyclists fear motor vehicle traffic and will not ride on streets until they gain experience and confidence. A separated path provides a learning ground for potential bicycle commuters and can attract experienced cyclists who prefer an aesthetic ride. Key components to successful paths include:

- Connection to land uses, such as downtown and commercial areas, schools, parks, and other community destinations;
- Well-designed street crossings, with measures such as bike and pedestrian activated signals, median refuges, and warning signs for both motor vehicles and path users;
- Shorter trip lengths than the road network, with connections between dead-end streets or cul-de-sacs; or as short-cuts through open spaces;
- Visibility: proximity to housing and businesses increases safety. Despite fears of some property owners, paths have not attracted crime into adjacent neighborhoods;
- Good design, by providing adequate width and sight distance, and avoiding problems such as poor drainage, blind corners, and steep slopes; and
- Proper maintenance, with regular sweeping and repairs. The separation from motor vehicle traffic can reduce some maintenance requirements, such as sweeping the debris that accumulates on roads.
- Continuous separation from traffic, by locating paths along a river or a greenbelt with few street or driveway crossings;
- Scenic qualities, offering an aesthetic experience that attracts cyclists and pedestrians;

The topographical change between Waldport's lowland and upland creates a challenge in providing a safe, well-connected pedestrian/bikeway system. Limited street connections between the lowland and upland provide limited pedestrian/bikeway opportunities. The steepness of these collector roads also creates challenging ped/bike sections. Because of these limitations it is appropriate to consider off-street multi-modal pathways that will assist in providing a connected pedestrian/bikeway system.

Much of the land between the lowland and upland is steep, heavily wooded, and therefore will remain as open space. The City visualizes this undevelopable area as an open space amenity that becomes part of the parks and open space system. The park lands, combined with existing utility easements, provide opportunities to link the lowland and upland areas with pedestrian/bicycle facilities. In addition, most of the streets that terminate near the park land and utility easements have unimproved trail connections. This includes View Drive, Greenwood Way, Brentwood Drive, and Park Drive. This connection is the shortest and most direct route between the lowland and upland areas.

There are additional opportunities to provide a connected pedestrian/bicycle system through off-street pathways. These opportunities are identified and described below as transportation projects.

Pedestrian and Bicycle Transportation Policy

Policy 10. Establish an interconnected pedestrian/bicycle system throughout Waldport. The system should provide connections between the lowland and upland areas; connect destinations (activity centers); and provide connections and "loops" for recreational bicyclists, walkers, runners, skaters, and equestrian needs.

PEDESTRIAN AND BICYCLE TRANSPORTATION PROJECTS

Y. Pedestrian Crossings On Highway 101 and Highway 34 (High Priority)

Provide safe pedestrian crossings at intersections on Highway 101 and Highway 34. Potential crosswalk improvements could include striping and other markings making motorists aware of pedestrians, pavement color and texture improvements, signage, lighting, and curb extensions. Pedestrian crossings on Highway 101 and Highway 34 are recommended at the following locations:

- Highway 101/Highway 34
- Highway 101/Willow Street
- Highway 101 near the Bakery and Flounders
- Highway 101 near the Texaco Station
- Highway 34/Verbena Street
- Highway 34/John Street
- Highway 34/Cedar Street
- Highway 34/Commercial Street
- Highway 34/Crestline Drive

Z. Arterial and Collector Street Bicycle/Pedestrian Facilities (High Priority)

Provide continuous pedestrian/bicycle facilities on major streets, i.e. Highway 101, Highway 34, Crestline Drive, Range Drive, and (lower) Cedar Drive.

AA. Connected Community-wide Pedestrian/Bicycle System

AA1. Crestline Drive – Ball Fields Connection (High Priority)
Crestline Drive to the ball fields (Kyle Field) through existing utility easements and two public park parcels located off Crestline Drive, View Drive, Greenwood Way, Brentwood Drive and Park Drive.

AA2. Elementary School – Range Drive Connection (High Priority)
The elementary school to Range Drive via the west side of the golf course. The specific location of this pedestrian/bicycle facility needs to consider the safety of people walking/bicycling through woods.

AA3. Crestline Drive – Waldport High School Connection (Medium Priority)
Pedestrian access between Crestline Drive and Waldport High School. There is an existing partial, unimproved pedestrian connection. This connection would likely require right-of-way acquisition or an easement through private property. Due to topographic constraints, this connection would likely be pedestrian-only.

AA4. Norwood Drive – Range Drive Connections (Medium Priority)
Connections between residential developments, i.e. from Norwood Drive and Dolores Drive to Kelsie Way and Forest Parkway, along Pacific View Drive, etc. These ped/bike connections would typically occur through the land use application process where the City will require connections concurrent with land development.

AA5. Kelsie Way – Highway 101 Connection (Low Priority)
An east-west oriented pathway connection. There is an existing unimproved pathway along this route.

AA6. Slough Loop (Low Priority)
An east Waldport loop including a pathway along the slough.

AA7. Bay Path (Low Priority)
A pathway along the entire bay frontage (realizing that high tide may restrict access).

AIR, RAIL, WATER, AND PIPELINE SYSTEM ELEMENT

Air and rail transportation planning is not applicable in Waldport.

Water-borne transportation planning is applicable to the Alsea River and Bay, and the Pacific Ocean. The Port of Alsea provides a major facility for boaters, and will continue to be the primary facility for water transportation. Alsea Bay and the Port of Alsea are primarily used for commercial and recreational fishing, and not as a facility for transport of freight or destination of ocean going vessels.

Pipelines currently carry power transmission lines, cable television, telephone, natural gas, water and sewage. The City encourages the continued use of pipelines to carry goods across City boundaries and for distribution within the City.

TRANSPORTATION SYSTEM AND DEMAND MANAGEMENT ELEMENT

TRANSPORTATION SYSTEM MANAGEMENT

Transportation System Management (TSM) improvements focus on optimizing the carrying capacity of streets by alleviating congestion and reducing accidents. Examples of TSM strategies include:

- Minimizing the number of access points
- Channelization of turning movements
- Creation of continuous turning and merging lanes
- Raised medians
- Signalization

An important aspect of TSM is that public agencies work closely with affected businesses to fully evaluate impacts from changes to access. In addition, TSM must account equally for the needs of all modes of travel, particularly that bike, pedestrian, and transit movements and safety are not compromised in exchange for improving roadway capacity.

Several TSM strategies are incorporated in this Plan and identified in the Transportation Projects. Examples include access management, intersection improvements, and turn lane improvements.

TRANSPORTATION DEMAND MANAGEMENT

Unlike TSM strategies, which focus on physical changes, Transportation Demand Management (TDM) measures target driver behavior, mode choice and employers to lower the traffic demands on the roads, especially during the peak travel times of the day. Examples of TDM strategies include:

- Alternative or flexible work schedules
- Ridesharing/carpooling
- Transit use
- Bicycling/walking
- Parking management
- Working at home/telecommuting (teleworking)

Transportation Demand Management (TDM) measures identify opportunities to reduce the impact of trips generated by various land uses, particularly during peak travel hours. TDM techniques typically seek to reduce reliance on single-occupancy vehicle trips and promote the use of alternative travel modes by persons accessing a

given area or facility. The Oregon Transportation Planning Rule encourages the evaluation of TDM measures as part of the TSP development process.

TDM strategies often focus on major employers or other sources of traffic that can be influenced through measures such as scheduling changes, or alternative transit opportunities such as carpools and buses. Oftentimes, financial disincentives are included in programs to generate revenue that can be used to support other elements of an overall TDM program. The success of fee parking and other commonly used disincentives is dependent on the environment in which a given employer is located.

Given the small population of Waldport, the TDM measures available to the city are limited in scope as compared to larger metropolitan areas. Typical TDM measures such as fee parking are not practical in a community where employee-paid parking does not exist. Although no major employers are located within the city, residents can still be encouraged to carpool when appropriate. Provision of sidewalks and bicycle lanes will at least provide the community's residents with viable alternative travel modes for some local travel. Development patterns that encourage non-auto-oriented travel should be promoted.

TDM and TSM Policies

Policy 12. The City of Waldport shall adopt land use regulations to limit the location and number of driveways and access points on all collector and arterial roads.

Policy 13. The City of Waldport shall ensure that land use actions support the access management policies of the Oregon Department of Transportation (ODOT) along state highways.

Policy 14. The City of Waldport shall promote safety and encourage adequate traffic flow along arterials by forwarding speed limit recommendations to the State Speed Control Board.

RECOMMENDED WALDPORT DEVELOPMENT CODE REVISIONS

Several policies and recommendations previously identified in this section should be implemented and regulated through the Waldport Development Code. A list of these recommended improvements is provided below:

ACCESS MANAGEMENT PLAN POLICY

Require new development to minimize direct access points onto arterials and collectors by encouraging the utilization of new local streets that access arterials and collectors, and by encouraging the utilization of common driveways.

STREET PLAN PROVISIONS

Street Design Standards (High Priority)

Street design standards are provisions for the construction of roads. Street design standards are developed for each type of functional classification, i.e. arterials, collectors, and local streets. Waldport street design standards are identified in the following table.

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Local Residential	50'	24-28'	--	3" AC	6"	15%	(see note #2)			12"

(1) Design shall be in accordance with Oregon Department of Transportation Design Standards.
(2) Design shall be in accordance with AASHTO standards.

Maintain Access To Amenities And To Undeveloped Land (High Priority)

Require development/redevelopment to maintain public access to amenities and to improve connectivity. This includes prohibiting street vacations where they provide access to amenities, i.e. the bay, or provide better connectivity to adjacent land.

Circulation Connectivity with New Development (High Priority)

Require development/redevelopment to provide connections to adjacent streets and pedestrian/bicycle facilities. This should occur through the land use application process and include provisions that transportation improvements be constructed concurrent with development, that right-of-way be dedicated, and that connections to adjacent properties occur to ensure future development connectivity.

Access Improvements With Redevelopment (High Priority)

When redevelopment occurs, ensure adequate and safe access occurs, i.e. ingress and egress issues near intersections such as the service station and auto store at the Highway 101/Highway 34 intersection.

Ensure Transportation Facilities and Services Accommodate Special Needs (High Priority)

Ensure transportation facilities are in accordance with Americans with Disability Act standards wherever possible, and that public transportation services accommodate special needs, i.e. disabled and elderly.

RECOMMENDED PEDESTRIAN AND BICYCLE PROVISIONS

Arterial and Collector Street Bicycle/Pedestrian Facilities (High Priority)
Provide continuous pedestrian/bicycle facilities on major streets, i.e. Highway 101, Highway 34, Crestline Drive, Range Drive, and (lower) Cedar Drive.

Norwood Drive – Range Drive Connections (Medium Priority)
Provide pedestrian/bicycle connections between residential developments, i.e. from Norwood Drive and Dolores Drive to Kelsie Way and Forest Parkway, along Pacific View Drive, etc. These pedestrian/bicycle connections should occur through the land use application process where the City will require connections concurrent with land development.

TRANSPORTATION SYSTEM MANAGEMENT (TSM) AND TRANSPORTATION DEMAND MANAGEMENT (TDM)

Adopt land use regulations to limit the location and number of driveways and access points on all collector and arterial roads.

Ensure that land use actions support the access management policies of the Oregon Department of Transportation (ODOT) along state highways.

POTENTIAL IMPLEMENTATION MECHANISMS

There are several potential mechanisms available for implementing transportation improvements in Waldport. This section identifies the potential mechanisms according to the following categories:

- Revenue Resources
- Grants and Loans
- ODOT Funding Sources
- Volunteer Labor and Material Donation

REVENUE RESOURCES

In order to finance the recommended transportation system improvements requiring expenditure of capital resources, it will be important to consider a range of funding sources. Although the property tax has traditionally served as the primary revenue source for local governments, property tax revenue goes into general fund operations, and is typically not available for street improvements or maintenance. Despite this limitation, the use of alternative revenue funding has been a trend throughout Oregon as the full implementation of Measure 5 and 47 has significantly reduced property tax revenues (see below). *The alternative revenue sources described in this section may not all be appropriate in Waldport; however, this overview is being provided to illustrate the range of options currently available to finance transportation improvements during the next 20 years.*

Property Taxes

Property taxes have historically been the primary revenue source for local governments. However, property tax revenue goes into general fund operations, and is not typically available for street improvements or maintenance. The dependence of local governments on this revenue source is due, in large part, to the fact that property taxes are easy to implement and enforce. Property taxes are based on real property (i.e., land and buildings) which has a predictable value and appreciation to base taxes upon. This is as opposed to income or sales taxes that can fluctuate with economic trends or unforeseen events.

Property taxes can be levied through: 1) tax base levies, 2) serial levies, and 3) bond levies. The most common method uses tax base levies, which do not expire and are allowed to increase by six percent per annum. Serial levies are limited by amount and time they can be imposed. Bond levies are for specific projects and are limited by time based on the debt load of the local government on the project.

The historic dependence on property taxes is changing with the passage of Ballot Measure 5 in the early 1990s. Ballot Measure 5 limits the property tax rate for purposes other than payment of certain voter-approved general obligation indebtedness. Under full implementation, the tax rate for all local taxing authorities is limited to $15 per $1,000 of assessed valuation. As a group, all non-school taxing authorities are limited to $10 per $1,000 of assessed valuation. All tax base, serial, and special levies are subject to the tax rate limitation. Ballot Measure 5 requires that all non-school taxing districts' property tax rate be reduced if together they exceed $10 per $1,000 of assessed valuation, then all of the taxing districts' tax rates are reduced on a proportional basis. The proportional reduction in the tax rate is commonly referred to as compression of the tax rate.

Measure 47, an initiative petition, was passed by Oregon voters in November 1996. It is a constitutional amendment that reduces and limits property taxes and limits local revenues and replacement fees. The measure limits 1997-98 property taxes to the lesser of the 1995-96 tax minus 10 percent, or the 1994-95 tax. It limits future annual property tax increases to three percent, with exceptions. Local governments' lost revenue may be replaced only with state income tax, unless voters approve replacement fees or charges. Tax levy approvals in certain elections require 50 percent voter participation.

The state legislature created Measure 50 which retains the tax relief of Measure 47 but clarifies some legal issues. This revised tax measure was approved by voters in May 1997.

The League of Oregon Cities (LOC) estimated that direct revenue losses to local governments, including school districts, will total $467 million in fiscal year 1998, $553 million in 1999, and increase thereafter. The actual revenue losses to local governments will depend on actions of the Oregon legislature. LOC also estimates that the state will have revenue gains of $23 million in 1998, $27 million in 1999, and increase thereafter because of increased personal and corporate tax receipts due to lower property tax deduction.

Measure 50 ads another layer of restrictions to those which govern the adoption of tax bases and levies outside the tax base, as well as Measure 5's tax rate limits for schools and non-schools and tax rate exceptions for voter approved debt. Each new levy and the imposition of a property tax must be tested against a longer series of criteria before the collectible tax amount on a parcel of property can be determined.

System Development Charges

System Development Charges (SDCs) are becoming increasingly popular in funding public works infrastructure needed for new local development. Generally, the objective of systems development charges is to allocate portions of the costs associated with capital improvements upon the developments, which increase demand on transportation, sewer or other infrastructure systems.

Local governments have the legal authority to charge property owners and/or developers fees for improving the local public works infrastructure based on projected demand resulting from their development. The charges are most often targeted towards improving community water, sewer, or transportation systems. Cities and counties must have specific infrastructure plans in place that comply with state guidelines in order to collect SDCs.

Typically, the fee is collected when new building permits are issued. Transportation SDCs are based on trip generation of the proposed development. Residential calculations would be based on the assumption that a typical household will generate a given number of vehicle trips per day.

Nonresidential use calculations are based on employee ratios for the type of business or industrial uses. The SDC revenues would help fund the construction of transportation facilities necessitated by new development. A key legislative requirement for charging SDCs is the link between the need for the improvements and the developments being charged.

State Highway Fund

Gas tax revenues received from the State of Oregon are used by all counties and cities to fund street and road construction and maintenance. In Oregon, the State collects gas taxes, vehicle registration fees, overweight/overheight fines and weight/mile taxes, and returns a portion of the revenues to cities and counties through an allocation formula. The revenue share to cities is divided among all incorporated cities based on population. Oregon cities typically use state gas tax allocations to fund street construction and maintenance.

Local Gas Taxes

The Oregon Constitution permits counties and incorporated cities to levy additional local gas taxes with the stipulation that the moneys generated from the taxes will be dedicated to street-related improvements and maintenance within the jurisdiction. At present, only a few local governments (including the cities of Woodburn and The Dalles, and Multnomah and Washington Counties) levy a local gas tax. The City of Waldport may consider raising its local gas tax as a way to generate additional street improvement funds. However, with relatively few jurisdictions exercising this tax, an increase in the cost differential between gas purchased in Waldport and gas purchased in neighboring communities may encourage drivers to seek less expensive fuel elsewhere. Any action will need to be supported by careful analysis to minimize the unintended consequences of such an action.

Vehicle Registration Fees
The Oregon Vehicle Registration Fee is allocated to state, counties and cities for road funding. Oregon counties are granted authority to impose a vehicle registration fee covering the entire county. The Oregon Revised Statutes would allow Lincoln County to impose a biannual registration fee for all passenger cars licensed within the County. Although both counties and special districts have this legal authority, vehicle registration fees have not been imposed by local jurisdictions. A disincentive to employing such a fee may be the cost of collection and administration. In order for a local vehicle registration fee program to be viable in Lincoln County, all incorporated cities and the county would need to formulate an agreement which would detail how the fees would be spent on future street construction and maintenance.

Local Improvement Districts
The Oregon Revised Statues allow local governments to form Local Improvement Districts (LIDs) to construct public improvements. LIDs are most often used by cities to construct localized projects such as streets, sidewalks, bikeways, or utilities. The statues allow formation of a district by either the city government or property owners. Cities that use LIDs are required to have a local LID ordinance that provides a process for district formation and payback property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation. The types of allocation methods are only limited by the Local Improvement Ordinance. The cost of LID participation is considered an assessment against the property which is a lien equivalent to a tax lien. Individual property owners typically have the option of paying the assessment in cash or applying for assessment financing through the city. Since the passage of Ballot Measure 5, cities have most often funded local improvement districts through the sale of special assessment bonds.

GRANTS AND LOANS

There are a variety of grant and loan programs available, most with specific requirements relating to economic development or specific transportation issues, rather than for the general construction of new streets. Many programs require a match from the local jurisdiction as a condition of approval. Because grant and loan programs are subject to change as well as statewide competition, they should not be considered a secure long-term funding source for Waldport. Most of the programs available for transportation projects are funded and administered through ODOT and/or the Oregon Economic Development Department (OEDD).

Bike-Pedestrian Grants
By law (ORS 366.514), all road street or highway construction or reconstruction projects must include facilities for pedestrians and bicyclists, with some exceptions. ODOTs Bike and Pedestrian Program administers two programs to assist in the development of walking and bicycling improvements: local grants, and Small-Scale Urban Projects. Cities and counties with projects on local streets are eligible for local grant funds. An 80 percent state/20 percent local match ratio is required. Eligible projects include curb extensions, pedestrian crossings and intersection improvements, shoulder widening and restriping for bike lanes. Projects on urban state highways with little or no right-of-way taking and few environmental impacts are eligible for Small-Scale Urban Project Funds. Both programs are limited to projects costing up to $100,000. Projects that cost more than $100,000 require right-of-way acquisition or have environmental impacts should be submitted to ODOT for inclusion in the STIP.

Enhancement Program
This federally funded program earmarks $8 million annually for projects in Oregon. Projects must demonstrate a link to the intermodal transportation system, compatibility with approved plans, and local financial support. A 10.27 percent local match is required for eligibility. Each proposed project is evaluated against all other proposed projects in the region. Within the five Oregon regions, the funds are distributed on a formula based on population, vehicle miles traveled, number of vehicles registered and other transportation-related criteria. The initial solicitation for applications was mailed to cities and counties the last week of October 1998. Local

jurisdictions had until January 1999 to complete and file their applications for funding available during the 2000-2003 fiscal years, which begin October 1999.

Highway Bridge Rehabilitation or Replacement Program
The Highway Bridge Rehabilitation Program (HBRR) provides federal funding for the replacement and rehabilitation of bridges of all functional classifications. A portion of the HBRR funding is allocated for the improvement of bridges under local jurisdiction. A quantitative ranking system is applied to the proposed projects based on sufficiency rating, cost factor, and load capacity. They are ranked against other projects statewide, and require state and local matches of 10 percent each. It includes the Local Bridge Inspection Program and the Bridge Load Rating Program.

Transportation Safety Grant Program
Managed by ODOT's Transportation Safety Section (TSS), this program's objective is to reduce the number of transportation-related accidents and fatalities by coordination a number of statewide programs. These funds are intended to be used as seed money, funding a program for three years. Eligible programs include programs in impaired driving, occupant protection, youth, pedestrian, speed, enforcement, bicycle and motorcycle safety. Every year, TSS produces a Highway Safety Plan that identifies the major safety programs, suggests counter measures to existing safety problems, and lists successful projects selected for funding, rather than granting funds through an application process.

Special Transportation Fund
The Special Transportation Fund (STF) awards funds to maintain, develop, and improve transportation services for people with disabilities and people over 60 years of age. Financed by a two-cent tax on each pack of cigarettes sold in the state, the annual distribution is approximately $5 million. Three-quarters of these funds are distributed to mass transit districts, transportation districts, and where such districts do not exist, counties, or a per-capita formula. The remaining funds are distributed on a discretionary basis.

Special Small City Allotment Program
The Special Small City Allotment Program (SCA) is restricted to cities with populations under 5,000 residents. Unlike some other grant programs, no locally funded match is required for participation. Grant amounts are limited to $25,000 and must be earmarked for surface projects (drainage, curbs, sidewalks, etc.) However, the program does allow jurisdictions to use the grants to leverage local funds on non-surface projects if the grant is used specifically to repair the affected area. Criteria for the $1 million in total annual grant funds include traffic volume, the five-year rate of population growth, surface wear of the road, and the times since the last SCA grant.

Immediate Opportunity Grant Program
The Oregon Economic Development Department (OEDD) and ODOT collaborate to administer a grant program designed to assist local and regional economic development efforts. The program is funded to a level of approximately $7 million per year through state gas tax revenues. The following are primary factors in determining eligible projects:

- Improvement of public roads;
- Inclusion of an economic development-related project of regional significance;
- Creation of retention of primary employment; and
- Ability to provide local funds (50/50) to match grant.

The maximum amount of any grant under the program is $500,000. Local governments which have received grants under the program include: Washington County, Multnomah County, Douglas County, the City of Hermiston, Port of St. Helens, and the City of Newport.

Oregon Special Public Works Fund

The Special Public Works Fund (SPWF) program was created by the 1995 State Legislature as one of several programs for the distribution of funds from the Oregon Lottery to economic development projects in communities throughout the state. The program provides grant and loan assistance to eligible municipalities primarily for the construction of public infrastructure which support commercial and industrial development that result in permanent job creation or job retention. To be awarded funds, each infrastructure project must support businesses wishing to locate, expand, or remain in Oregon. SPWF awards can be used for improvement, expansion, and new construction of public sewage treatment plants, water supply works, public roads, and transportation facilities.

While SPWF program assistance is provided in the form of both loans and grants, the program emphasizes loans in order to assure that funds will return to the state over time for reinvestment in local economic development infrastructure projects. Jurisdictions that have received SPWF funding for projects that include some type of transportation-related improvement include the cities of Baker City, Bend, Cornelius, Forest Grove, Madras, Portland, Redmond, Reedsport, Toledo, Wilsonville, Woodburn, and Douglas County.

Oregon Transportation Infrastructure Bank

The Oregon Transportation Infrastructure Bank (OTIB) program is a revolving loan fund administered by ODOT to provide loans to local jurisdictions (including cities, counties, special districts, transit districts, tribal governments, ports, and state agencies). Eligible projects include construction of federal-aid highways, bridges, roads, streets, bikeways, pedestrian accesses, and right-of-way costs. Capital outlays such as buses, light-rail cars and lines, maintenance years and passenger facilities are also eligible.

ODOT FUNDING OPTIONS

The State of Oregon provides funding for all highway related transportation projects through the Statewide Transportation Improvement Program (STIP) administered by the Oregon Department of Transportation. The STIP outlines the schedule for ODOT projects throughout the State. The STIP, which identifies projects for a three-year funding cycle, is updated on an annual basis. Starting with the 1998 budget year, ODOT will then identify projects for a four-year funding cycle. In developing this funding program, ODOT must verify that the identified projects comply with the Oregon Transportation Plan (OTP), ODOT Modal Plans, Corridor Plans, local comprehensive plans, and TEA-21 planning requirements. The STIP must fulfill federal planning requirements for staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on federal panning requirements and the different State plans. ODOT consults with local jurisdictions before highway related projects are added to the STIP.

The highway-related projects identified in Waldport's TSP will be considered for future inclusion on the STIP. The timing of including specific projects will be determined by ODOT based on an analysis of all the project needs within Region . The City of Waldport, Lincoln County, and ODOT will need to communicate on an annual basis to review the status of the STIP and the prioritization of individual projects within the project area. Ongoing communication will be important for the city, county, and ODOT to coordinate the construction of both local and state transportation projects.

ODOT also has the option of making some small highway improvements as part of their ongoing highway maintenance program. Types of road construction projects that can be included within the ODOT maintenance programs are intersection realignments, additional turn lanes, and striping for bike lanes. Maintenance related construction projects are usually done by ODOT field crews using state equipment. The maintenance crews do not have the staff or specialized road equipment needed for large construction projects.

An ODOT funding technique that may have future application to Waldport's TSP is the use of state and federal transportation dollars for off-system improvements. ODOT has the authority and ability to fund transportation projects that are located outside the boundaries of the highway corridors. It is expected that this funding

technique will be used to finance local system improvements that reduce traffic on state highways or reduce the number of access points for future development along state highways.

Financing Tools
In addition to funding options, the recommended improvements listed in this plan may benefit from a variety of financing options. Although often used interchangeably, the words financing and funding are not the same. Funding is the actual generation of revenue by which a jurisdiction pays for improvements, some examples include the sources discussed above: property taxes, SDCs, fuel taxes, vehicle registration fees, LIDs, and various grant programs. In contrast, financing refers to the collecting of funds through debt obligations.

There are a number of debt financing options available to the City of Waldport. The use of debt to finance capital improvements must be balanced with the ability to make future debt service payments and to deal with the impact on its overall debt capacity and underlying credit rating. Again, debt financing should be viewed not as a source of funding, but as a time shifting of funds. The use of debt to financing these transportation-system improvements is appropriate since the benefits from the transportation improvements will extend over the period of years. If such improvements were to be tax financed immediately, a large short-term increase in the tax rate would be required. By utilizing debt financing, local governments are essential; spreading the burden of the costs of these improvements to more of the people who are likely to benefit from the improvements and lowering immediate payments.

General Obligation Bonds
General obligation (GO) bonds are voter-approved bond issues which represent the least expensive borrowing mechanism available to municipalities. GO bonds are typically supported by a separate property tax levy specifically approved for the purposes of retiring debt. The levy does not terminate until all debt is paid off. The property tax levy is distributed equally throughout the taxing jurisdiction according to assessed value of property. GO debts typically are used to make public improvement projects that will benefit the entire community.

State statutes require that the GO indebtedness of a city not exceed three percent of the real market value of all taxable property in the city. Since GO bonds would be issued subsequent to voter approval, they would not be restricted to the limitations set forth in Ballot Measures 5, 47, and 50. Although new bonds must be specifically voter approved, Measure 47 and 50 provisions are not applicable to outstanding bonds, unissued voter-approved bonds, or refunding bonds.

Limited Tax Bonds
Limited tax general obligation (LTGO) bonds are similar to general obligation bonds in that they represent an obligation of the municipality. However, a municipality's obligation is limited to its current revenue sources and is not secured by the public entity's ability to raise taxes. As a result, LTGO bonds to not require voter approval. However, since the LTGO bonds are not secured by the full taxing power of the issuer, the limited tax bond represents a higher borrowing cost than GO bonds. The municipality must pledge to levy the maximum amount under constitutional and statutory limits, but are not the unlimited taxing authority pledged with GO bonds. Because LTGO bonds are not voter approved, they are subject to the limitations of Ballot Measures 5, 47, and 50.

Bancroft Bonds
Under Oregon Statute, municipalities are allowed to issue Bancroft bonds which pledge the city's full faith and credit to assessment bonds. As a result, the bonds become general obligations of the city but are paid with assessments. Historically, these bonds provided a city with the ability to pledge its full faith and credit in order to obtain a lower borrowing cost without requiring voter approval. However, since Bancroft bonds are not voter approved, taxes levied to pay debt service on them are subject to the limitations of Ballot Measures 5, 47, and 50. As a result, since 1991, Bancroft bonds have not been used by municipalities who were required to compress their tax rates.

VOLUNTEER LABOR AND MATERIAL DONATION

Volunteer labor and material donation is a potential mechanism for implementing transportation related improvements. This type of implementation mechanism typically should not be viewed as an ongoing long-term solution for making improvements. However, Waldport may have an opportunity to capitalize upon a local resource that could provide volunteer labor. The Mt. Angel Jobs Corps is located just south of the Waldport city limits. One activity that the job corps participates in is community service projects for local jurisdictions. The city should investigate potential opportunities to utilize services provided by the job corps for transportation related improvements.

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WALDPORT TRANSPORTATION PROJECT LIST

#	Project	Priority	Cost Implications	Constraints	Potential Implementation Mechanisms
A.	**STREET DESIGN STANDARDS**				
	Develop Street Design Standards	High	--	--	City of Waldport
B.	**STREET MAINTENANCE**				
	Improve and maintain existing streets	High	--	Limited funding	City, County, ODOT
C.	**ENFORCE AND REDUCE SPEEDING AT COMMUNITY GATEWAYS**				
C.1	Southbound Highway 101 traffic coming off the bridge.	High	Funding for increased enforcement	--	City, ODOT
C.2	Northbound Highway 101 traffic	High	Funding for increased enforcement; Gateways improvement costs	--	State and Federal Grants, City, Job Corps, Volunteers
C.3	Westbound Highway 34 traffic	High	Funding for increased enforcement; Gateways improvement costs	--	State and Federal Grants, City, Job Corps, Volunteers
D.	**RANGE DRIVE IMPROVEMENTS**				
	Widening, ped/bike facilities, curve and sight distance improvements	High	Potential land acquisition near curves to improve sight distance	Topography; sight distance at curves	City, State and Federal Grants
E.	**HIGHWAY 101/RANGE DRIVE INTERSECTION IMPROVEMENTS**				
	Realignment and center turn-lane	High	--	--	City, ODOT
E.	**CRESTLINE DRIVE IMPROVEMENTS**				
	Continuous ped/bike facilities and safety improvements at the hill/curves section	High	Potential land acquisition for hill/curve improvements	Topography; sight distance at curves; ADA compliance at hill	City, County
G.	**MAINTAIN ACCESS TO AMENITIES AND TO UNDEVELOPED LAND**				
	Maintain public access to amenities and to improve connectivity.	High	--	--	City of Waldport

#	Project	Priority	Cost Implications	Constraints	Potential Implementation Mechanisms
H.	**NEW DEVELOPMENT - CONNECTIONS TO EXISTING TRANSPORTATION SYSTEM**				
	Require new development to provide connections to the existing transportation system	High	--	Topography	City, Developers
I.	**REDEVELOPMENT – ACCESS IMPROVEMENTS**				
	Ensure adequate and safe access occurs with redevelopment	High	--	Timing of redevelopment	City, County, ODOT, Property owners/developers
J.	**ENSURE TRANSPORTATION FACILITIES AND SERVICES ACCOMMODATE SPECIAL NEEDS**				
	Ensure transportation facilities are in accordance with Americans with Disability Act (ADA) standards wherever possible, and that public transportation services accommodate special needs, i.e. disabled and elderly.	High	--	Topography	City, County, ODOT
K.	**NEW EAST-WEST ROAD IN SOUTH WALDPORT**				
	New road(s) connecting Highway 101 and Crestline Drive.	Medium	--	Statewide Goal exception if outside UGB	City, County, ODOT, Developers
L.	**HIGHWAY 101/STARR STREET/NORWOOD DRIVE INTERSECTION IMPROVEMENTS**				
	Realign this intersection for safer and more efficient traffic flow	Medium	--	Maintaining efficient traffic flow, Norwood Drive topography	City, ODOT, State and Federal Grants
M.	**HIGHWAY 34/CRESTLINE DRIVE/MILL STREET INTERSECTION IMPROVEMENTS**				
	Turning movement improvements for improved safety and traffic flow	Medium	--	--	City, ODOT
N.	**HIGHWAY 34/BAY STREET INTERSECTION IMPROVEMENT**				
	Improvements to improve ingress and egress at the Middle School and City Hall	Medium	--	--	City, ODOT
O.	**HIGHWAY 101/HIGHWAY 34 INTERSECTION IMPROVEMENTS**				
	Improve ingress and egress when redevelopment occurs	Low	--	Timing of redevelopment	City, ODOT

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#	Project	Priority	Cost Implications	Constraints	Potential Implementation Mechanisms
P.	**PAVEMENT STRIPING IMPROVEMENTS**				
	Crosswalk, bicycle lane, and fog line improvements	Low	Limited funding	--	City, County, ODOT
Q.	**HIGHWAY 34 SIGHT DISTANCE IMPROVEMENT**				
	Improve the inadequate sight distance on Highway 34 in east Waldport, east of the bridge near the RV Park.	Low	Potential land acquisition	Physical features – topography	ODOT
R.	**RED DITCH IMPROVEMENTS**				
	Conduct detailed study to determine appropriate improvements	Low	--	Potential storm drainage issues	City, Job Corps, Volunteers
S.	**(SOUTH) HIGHWAY 101 CONTINUOUS CENTER TURN LANE**				
	Long-term, provide a continuous center turn lane from just south of the seawall to Beachside State Park	Low	--	--	ODOT
T.	**HIGHWAY 101/SPRING STREET TURNING MOVEMENT IMPROVEMENT**				
	Improvements to physically prevent southbound Highway 101 traffic turning eastbound on Spring Street.	Low	--	--	ODOT
U.	**ADDITIONAL DOWNTOWN PARKING**				
	Provide additional parking for downtown businesses	Low	Land acquisition	Limited location opportunities	City, ODOT
V.	**DOWNTOWN ACCESS MANAGEMENT AND PEDESTRIAN CIRCULATION IMPROVEMENTS**				
	Detailed study to ensure safe and efficient highway access, and pedestrian connectivity	Low	--	Limited highway ingress/egress improvement opportunities w/out redevelopment	City, ODOT
W.	**IMPROVED HIGH SCHOOL AUTOMOBILE, BUS, BICYCLE, AND PEDESTRIAN CIRCULATION**				
	Better define vehicular and ped/bike circulation with additional parking	Low	--	--	School District
Y.	**PUBLIC TRANSPORTATION**				
	Increase public transportation (bus and van service between Waldport and other cities	High	--	--	City, County, Private Entities

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#	Project	Priority	Cost Implications	Constraints	Potential Implementation Mechanisms
Z.	**PEDESTRIAN CROSSINGS ON HIGHWAY 101 AND HIGHWAY 34**				
	Provide safe pedestrian crossings at intersections on Highway 101 and Highway 34	High	--	--	ODOT, State and Federal Grants
AA.	**CONNECTED COMMUNITY-WIDE PEDESTRIAN/BICYCLE SYSTEM**				
AA1	Arterial and Collector Street Ped/Bike Facilities	High	--	--	City, County, ODOT, State and Federal Grants, Property Owners/Developers
AA2	Crestline Drive - Ball Field Ped/Bike Connection	High	--	Topography, ADA compliance	State and Federal Grants, City, Job Corps, Volunteers
AA3	Elementary School - Range Drive Connection	High	Potential land acquisition	Land acquisition, easements, safe route	State and Federal Grants, City, Job Corps, Volunteers
AA4	Crestline Drive - High School Connection	Medium	Potential land acquisition	Public access, topography, ADA compliance	State and Federal Grants, City, Job Corps, Volunteers
AA5	Norwood Drive - Range Drive Connection	Medium	--	Public access, topography	Property Owners, Developers
AA6	Kelsie Way – Highway 101 Connection	Low	--	Public access, topography	State and Federal Grants, Oregon State Parks, City, Job Corps, Volunteers
AA7	Slough Pathway	Low	--	Environmental issues, physical feature limitations - wetlands, trees, topography	State and Federal Grants, U.S. Forest Service, City, Job Corps, Volunteers
AA8	Bay Pathway	Low	--	Environmental issues, high tide, winter weather	State and Federal Grants, Oregon State Parks, City, Job Corps, Volunteers

APPENDIX

Traffic Volume Data
Existing Analysis Worksheets for Level of Service, Left-Turn Warrants, Signal Warrants
Worksheets for Growth Forecasts, Trip Generation, Trip Assignment
Future Conditions Analysis Worksheets for Level of Service, Left-Turn Warrants, Signal Warrants
Conceptual Intersection Layouts
Questionnaire

Traffic Volume Data

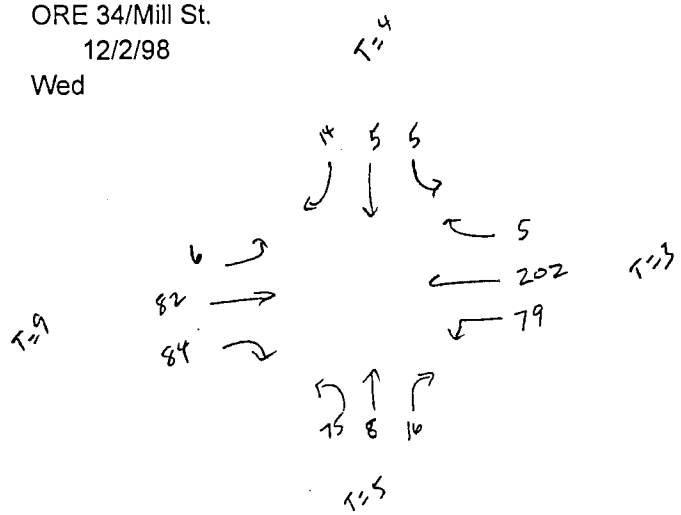
April 30, 1999

Kittelson & Associates, Inc.
Project 2890

Turning Movement Worksheet

Project: 2890
Intersection: ORE 34/Mill St.
Count Date: 12/2/98
Wed

Count Time: 7-9 a.m.
Peak Hour: 7:30-8:30
PHF: .69

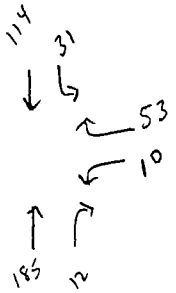


	Northbound			Westbound			Southbound			Eastbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
	1	2	3	4	5	6	7	8	9	10	11	12
7:00-7:15	2	0	2	0	20	0	0	0	0	0	4	2
trucks			1									
7:15-7:30	4	0	3	2	51	0	1	0	1	1	6	8
trucks											1	
7:30-7:45	6	1	1	9	49	3	1	0	3	1	19	17
trucks	0	0	0	0	2	0	0	0	0	0	4	1
7:45-8:00	16	0	3	31	51	0	1	0	4		11	16
trucks					2					1	1	
8:00-8:15	32	4	3	29	58	2	2	3	5	2	23	38
trucks			1	2				1			2	3
8:15-8:30	19	3	6	8	38		1	1	2	2	18	9
trucks	2		2		2						4	
8:30-8:45	4	2	4	1	28	2		2	4	2	18	2
trucks	2				3		1				4	
8:45-9:00	3	2	3	2	25			1	2	3	20	1
trucks		1	1								1	1
PH Trucks	2	0	3	2	6	0	0	1	0	1	11	4
PH All Traffic	75	8	16	79	202	5	5	5	14	6	82	84
PH Truck %		5%			3%			4%			9%	

Turning Movement Worksheet

Project: 2890
Intersection: US 101/Range
Count Date: 12/2/98
Wed

Count Time: 7-9 a.m.
Peak Hour: 7:45-8:45
PHF: 0.90

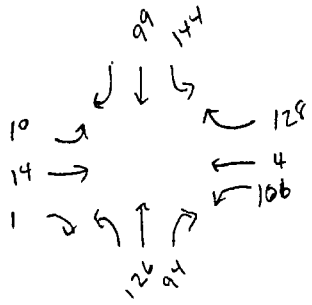


	Northbound			Westbound			Southbound			Eastbound		
	Left	Thru	Right	Left	hroug	Right	Left	hroug	Right	Left	hroug	Right
	1	2	3	4	5	6	7	8	9	10	11	12
7:00-7:15		24	1	1	1	7	2	16	1			
truc		1						2				
7:15-7:30		33	0	2	0	10	2	19	0			
truc		2						2				
7:30-7:45		33	3	3	0	10	7	20				
truc		2						1				
7:45-8:00		55	1	2		8	7	32				
truc		5				1	1					
8:00-8:15		40	2	2		10	10	22				
truc		1										
8:15-8:30		37	5	4		18	10	26				
truc		1						2				
8:30-8:45		44	4	2		16	3	29				
truc		2						3				
8:45-9:00		31				7	4	43				
truc		1						1				
PH Trucks	0	9	0	0	0	1	1	3	0	0	0	0
PH All Traf	0	174	11	11	0	47	35	103	0	0	0	0
PH Truck %		5%			2%			3%			#####	

Turning Movement Worksheet

Project: 2890
Intersection: US Highway 101/ORE 34
Count Date: 12/2/98
Wed

Count Time: 7-9 a.m.
Peak Hour: 7:30-8:30
PHF: 0.96

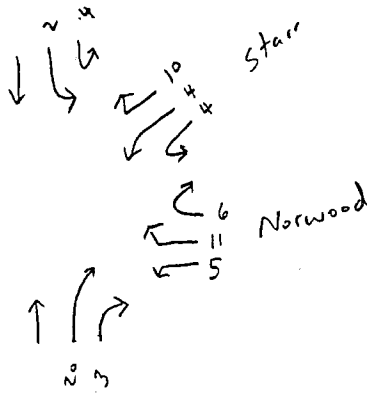


	Northbound			Westbound			Southbound			Eastbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
	1	2	3	4	5	6	7	8	9	10	11	12
7:00-7:15		25	3	17	2	17	8	9		0	0	0
trucks		1	0	3	0	1	0	1		0	0	0
7:15-7:30		25	5	10	0	24	15	12		1	0	0
trucks		2	5	0	0	0	1	1		0	0	0
7:30-7:45		45	18	22	3	36	31	21		2	4	1
trucks		0	1	0	0	2	3	1		0	0	0
7:45-8:00		23	22	27	0	24	42	28		7	2	0
trucks		1	4	2	0	0	1	0		0	0	0
8:00-8:15		23	23	25	1	28	33	17		1	6	0
trucks		1	0	0	0	1	6	0		0	0	0
8:15-8:30		31	24	29	0	37	28	29		0	2	0
trucks		2	2	1	0	0	0	3		0	0	0
8:30-8:45		34	20	15	1	17	22	27		3	3	2
trucks		2	0	1	0	3	0	2		0	0	0
8:45-9:00		27	15	33	4	16	17	23		4	1	3
trucks		1	1	1	0	0	0	1		0	0	0
PH Trucks	0	4	7	3	0	3	10	4	0	0	0	0
PH All Traffic	0	126	94	106	4	128	144	99	0	10	14	1
PH Truck %		5%			3%			6%			0%	

Turning Movement Worksheet

Project: 2890
Intersection: 101/Starr/Norwood
Count Date: 12/2/98
Wed

Count Time: 7-9 a.m.
Peak Hour:
PHF:

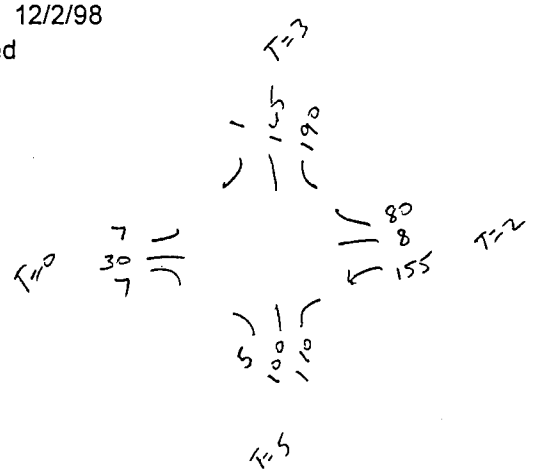


	Northbound			Norwood			Starr			Southbound		
	Throug	Starr 1	orwoo 2	SB101 4	NB101 5	Starr 6	orwoo 7	SB101 8	NB101 9	Starr S 10	orwood 11	hroug
7:00-7:15		4			2							
trucks												
7:15-7:30		6				1		4	3	1		
trucks												
7:30-7:45		3	1		6			3	3	1	1	
trucks												
7:45-8:00		9	1	1	1	1	1		1	1		
trucks												
8:00-8:15		5	1	3	3	5	2	1	2	2	1	
trucks												
8:15-8:30		3		1	1		1		4			
trucks												
8:30-8:45		8		1	1		2	5	3	1	1	
trucks												
8:45-9:00		2	2	1	4		2	3	4		1	
trucks												
PH Trucks	0	0	0	0	0	0	0	0	0	0	0	0
PH All Traffic	0	20	3	5	11	6	4	4	10	4	2	0
PH Truck %		0%			0%			0%			0%	

Turning Movement Worksheet

Project: 2890
Intersection: US Highway 101/ORE 34
Count Date: 12/2/98
Wed

Count Time: 4-6 pm
Peak Hour: 4-5
PHF: 0.91

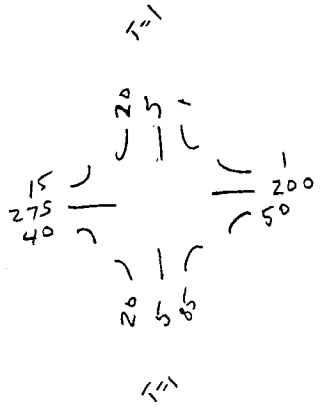


	Northbound			Westbound			Southbound			Eastbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
	1	2	3	4	5	6	7	8	9	10	11	12
4:00-4:15	2	28	33	33	4	26	55	38	0	1	7	3
trucks		2	1			2	1	1				
4:15-4:30	0	23	24	42	1	23	51	54		3	8	0
trucks		2			0	1	2	0				
4:30-4:45	2	22	28	40	1	16	33	39		1	9	0
trucks		2	3	2	0	0	4	0				
4:45-5:00	2	20	22	40	2	10	41	34		2	6	4
trucks			1				1	1				
5:00-5:15	1	27	22	45	7	18	33	54		6	9	3
trucks		1	2			2		2				
5:15-5:30	0	17	13	18	0	18	29	54	2	1	4	0
trucks				0	0	0	0	0				
5:30-5:45	1	18	22	26	2	5	40	32		1	3	0
trucks	0	1	0									
5:45-6:00	0	16	19	13	4	10	33	24	1	1	3	1
trucks	0	0	0					1				
PH Trucks	0	6	5	2	0	3	8	2	0	0	0	0
PH All Traffic	6	99	112	157	8	78	188	167	0	7	30	7
PH Truck %		5%			2%			3%			0%	

Turning Movement Worksheet

Project: 2890
Intersection: ORE 34/Cedar St.
Count Date: 12/2/98
Wed

Count Time: 4-6 p.m.
Peak Hour: 4:30-5:30
PHF: 0.82

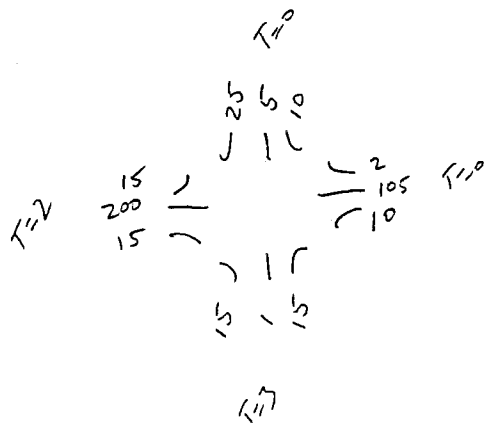


	Northbound			Westbound			Southbound			Eastbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
	1	2	3	4	5	6	7	8	9	10	11	12
4:00-4:15	10	4	33	14	52	1			6	10	74	13
trucks												
4:15-4:30	5	0	13	15	46	0	0	3	0	3	49	4
trucks					1							
4:30-4:45	10	3	22	15	47	0	0	2	4	3	69	9
trucks											1	
4:45-5:00	3	0	17	10	50	0	1	3	4	7	64	9
trucks											2	
5:00-5:15	5	2	30	15	68	0	0	0	8	4	77	8
trucks	1											
5:15-5:30	2	1	15	10	34	0	0	2	2	0	62	15
trucks												
5:30-5:45	4	0	16	8	30	0	0	0	1	0	71	11
trucks											2	
6:00	5	1	13	9	33	0	0	0	2	1	59	6
trucks											1	
PH Trucks	1	0	0	0	0		0	0	0	0	3	0
PH All Traffic	21	6	84	50	199		1	7	18	14	275	41
PH Truck %		1%			0%			0%			1%	

Turning Movement Worksheet

Project: 2890
Intersection: ORE 34/Mill St.
Count Date: 12/2/98
Wed

Count Time: 4-6 pm
Peak Hour: 4:30-5:30
PHF: 0.91

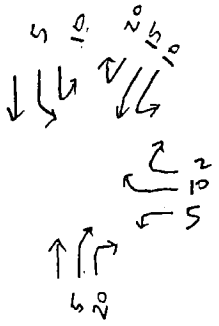


	Northbound			Westbound			Southbound			Eastbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
	1	2	3	4	5	6	7	8	9	10	11	12
4:00-4:15	10	1	6	1	25	1	4	0	5	4	33	2
trucks											2	
4:15-4:30	2	2	1	1	20	1	0	1	5	2	40	5
trucks												
4:30-4:45	4	2	2	2	16	0	1	0	4	1	41	9
trucks						1					1	1
4:45-5:00	4	0	3	3	27	1	3	3	6	6	48	4
trucks			1								4	
5:00-5:15	3	0	3		29	1	3	0	6	5	54	3
trucks											1	
5:15-5:30	2		5	3	25	0	3	0	5		45	3
trucks												
5:30-5:45	7	0	2	4	22	0	3	0	8	4	46	3
trucks												
6:00	4	0	0	3	21	1	2	0	4	1	49	3
trucks												
PH Trucks	0	0	1	0	0	0	0	0	0	0	5	0
PH All Traffic	16	0	14	10	103	2	12	3	25	15	198	13
PH Truck %		3%			0%			0%			2%	

Turning Movement Worksheet

Project: 2890
Intersection: 101/Starr/Norwood
Count Date: 12/2/98
Wed

Count Time: 4-6 pm
Peak Hour: 4:15-5:15
PHF: 0.83



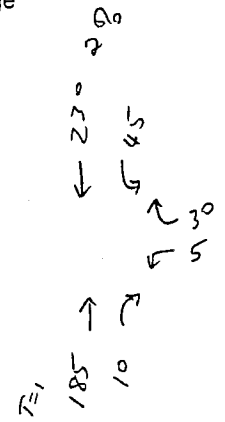
	Northbound			Norwood			Starr			Southbound		
		Starr	orwoo	SB101	NB101	Starr	orwoo	SB101	NB101	Starr S	orwood	
	Throug	1	2	4	5	6	7	8	9	10	11	hroug
4:00-4:15		1	2		2	1	1	3	5	3	1	
trucks												
4:15-4:30		2	3	2	1		2	5	2	4	0	
trucks												
4:30-4:45		2	5	1	4		1	2	6	1	3	
trucks												
4:45-5:00		1	7		2	1	2	6	7	3	0	
trucks												
5:00-5:15		1	3	2	1	1	3	2	7	0	1	
trucks												
5:15-5:30		1		1	1	3	1	3	2	3	6	
trucks												
5:30-5:45		1						3	2		1	
trucks												
5:45-6:00			2		1		1	3	3			
trucks												

PH Trucks 0
PH All Traffic
PH Truck % 0% 0% 0% 0%

Turning Movement Worksheet

Project: 2890
Intersection: US 101/Range
Count Date: 12/2/98
Wed

Count Time: 7-9 a.m.
Peak Hour: ~~4:45-5:45~~ 4-5
PHF: ~~0.00~~ .90



	Northbound			Westbound			Southbound			Eastbound		
	Left	Thru	Right	Left	hroug	Right	Left	hroug	Right	Left	hroug	Right
	1	2	3	4	5	6	7	8	9	10	11	12
4:00- truc		44	2	1		11	3	66				
4:15 ks		1					2					
4:15- truc		41	3	0		9	15	53				
4:30 ks								1				
4:30- truc		45	3	1		7	17	67				
4:45 ks								1				
4:45- truc		54	2	1		4	8	43				
5:00 ks								1				
5:00- truc		44	3	5		3	4	70				
5:15 ks												
5:15- truc		30		1		4	3	54				
5:30 ks		1										
5:30- truc		29	5	2		9	11	47				
5:45 ks		1						2				
5:45- truc		24	2	4		5	17	41				
6:00 ks		2										
PH Trucks		1	0	0		0	2	3				
PH All Traffic		185	10	3		31	45	232				
PH Truck %		1%	0%	0%		0%	4%	1%				

Existing Conditions Analysis Worksheets for

Level of Service,
Left-Turn Lane Warrants,
Signal Warrants

April 30, 1999

Kittelson & Associates, Inc.
Project 2890

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Turning Movement Report

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 US 101/ORE 34													
Base	1	215	115	175	195	1	10	15	1	125	5	155	1013
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	215	115	175	195	1	10	15	1	125	5	155	1013
#2 US 101/Norwood/Starr													
Base	0	325	25	5	300	0	0	0	0	25	0	15	695
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	325	25	5	300	0	0	0	0	25	0	15	695
#3 US 101/Range													
Base	0	275	10	30	175	0	0	0	0	10	0	55	555
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	275	10	30	175	0	0	0	0	10	0	55	555
#4 Highway 34/Cedar													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
#5 Highway 34/Mill													
Base	75	10	15	5	5	15	5	100	85	80	240	5	640
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	75	10	15	5	5	15	5	100	85	80	240	5	640

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 US 101/ORE 34	C	18.0	0.353	C	18.0	0.353	+ 0.000 D/V
# 2 US 101/Norwood/Starr	B	0.4	0.000	B	0.4	0.000	+ 0.000 V/C
# 3 US 101/Range	A	0.7	0.000	A	0.7	0.000	+ 0.000 V/C
# 5 Highway 34/Mill	B	1.9	0.000	B	1.9	0.000	+ 0.000 V/C

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #1 US 101/ORE 34

Cycle (sec):	110	Critical Vol./Cap. (X):	0.353
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	18.0
Optimal Cycle:	33	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	3	10	10	3	10	10	5	5	5	5	5	5
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 1!	0 0		0 1	0 0	1
Volume Module:												
Base Vol:	1	215	115	175	195	1	10	15	1	125	5	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	215	115	175	195	1	10	15	1	125	5	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	1	224	120	182	203	1	10	16	1	130	5	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	224	120	182	203	1	10	16	1	130	5	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	1	235	126	182	213	1	10	16	1	130	5	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.90	0.94	0.94	0.79	0.79	0.79	0.82	0.82	0.83
Lanes:	1.00	1.30	0.70	1.00	1.99	0.01	0.37	0.59	0.04	0.96	0.04	1.00
Final Sat.:	1719	2238	1200	1703	3568	17	557	892	56	1492	57	1568
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.11	0.06	0.06	0.02	0.02	0.02	0.09	0.09	0.10
Crit Moves:		****		****								****
Green/Cycle:	0.14	0.30	0.30	0.30	0.46	0.46	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.00	0.35	0.35	0.35	0.13	0.13	0.06	0.06	0.06	0.30	0.30	0.35
Level Of Service Module:												
Delay/Veh:	26.4	19.7	19.7	19.5	11.0	11.0	18.2	18.2	18.2	19.7	19.7	20.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.4	19.7	19.7	19.5	11.0	11.0	18.2	18.2	18.2	19.7	19.7	20.1
Queue:	0	6	3	4	4	0	0	0	0	3	0	4

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Detailed Computation Report
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0 1	1 0		1 0 1	1 0		0 0 1!	0 0		0 1	0 0	1
Lane Group:	L	RT		L	RT		LTR	LTR		LT	LT	R
#LnsInGrps:	1	2	2	1	2	2	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
% Hev Veh:		5			6			0			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(rt) and f(lt) Adj Case Module:												
f(rt) Case:	xxxx	5	5	xxxx	5	5	7	7	7	xxxx	xxxx	2
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	5	5	5	5	5	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.95	0.95	0.95	0.94	0.94	0.94	1.00	1.00	1.00	0.97	0.97	0.97
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.95	0.95	xxxx	1.00	1.00	0.89	0.89	0.89	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.89	0.89	0.89	0.84	0.84	xxxxx
HCM Sat Adj:	0.90	0.90	0.90	0.90	0.94	0.94	0.79	0.79	0.79	0.82	0.82	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.90	0.90	0.90	0.94	0.94	0.79	0.79	0.79	0.82	0.82	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < No > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > >											
DelAdjFctr:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	110	110
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	31.99	31.99
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	31.99	31.99
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	31.99	31.99
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	10	130
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.37	0.96
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	0.37
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	0.31	3.97
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	135	27
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	4.13	0.82
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.00	1.00
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	4.00	4.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	17.27	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.71	0.71
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	2.33	0.00
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	14.72	31.99
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	0.00
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	0.63
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.79	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.37	0.96
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.83	1.21
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	0.00
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.09	0.12
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.89	0.84
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.89	0.84

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 US 101/Norwood/Starr

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	325	25	5	300	0	0	0	0	25	0	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	325	25	5	300	0	0	0	0	25	0	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	349	27	5	323	0	0	0	0	27	0	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	349	27	5	323	0	0	0	0	27	0	16
Adjusted Volume Module:												
Grade:	0%			0%			0%			-4%		
% Cycle/Cars:	0.00	0.95		0.00	0.96		xxxx	xxxx		0.00	0.99	
% Truck/Comb:	0.05	0.00		0.04	0.00		xxxx	xxxx		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.30	0.80	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.00	1.20	
Adj Vol.:	0	349	27	5	323	0	0	0	0	22	0	13
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	376	xxxx	xxxxx	xxxx	xxxx	xxxxx	691	xxxx	363
Potent Cap.:	xxxx	xxxx	xxxxx	1134	xxxx	xxxxx	xxxx	xxxx	xxxxx	421	xxxx	907
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.99	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1134	xxxx	xxxxx	xxxx	xxxx	xxxxx	419	xxxx	907
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	4.0
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	525	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	7.5	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:		0.0			0.1			0.0			7.3	

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 US 101/Range

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	0	275	10	30	175	0	0	0	0	10	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	275	10	30	175	0	0	0	0	10	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	306	11	33	194	0	0	0	0	11	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	306	11	33	194	0	0	0	0	11	0	61
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.95		0.00	0.97		xxxx	xxxx		0.00	0.98	
% Truck/Comb:	0.05	0.00		0.03	0.00		xxxx	xxxx		0.02	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.50	2.00	
Adj Vol.:	0	306	11	34	194	0	0	0	0	11	0	62
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	317	xxxx	xxxxx	xxxx	xxxx	xxxxx	539	xxxx	311
Potent Cap.:	xxxx	xxxx	xxxxx	1211	xxxx	xxxxx	xxxx	xxxx	xxxxx	516	xxxx	963
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.97	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1211	xxxx	xxxxx	xxxx	xxxx	xxxxx	500	xxxx	963
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	4.0
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	843	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:		0.0			0.5			0.0			4.5	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Highway 34/Mill

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0	1	0	0 1 0
Volume Module:												
Base Vol:	75	10	15	5	5	15	5	100	85	80	240	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	10	15	5	5	15	5	100	85	80	240	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	84	11	17	6	6	17	6	112	96	90	270	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	84	11	17	6	6	17	6	112	96	90	270	6
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.95		0.00	0.96		0.00	0.91		0.00	0.97	
% Truck/Comb:	0.05	0.00		0.04	0.00		0.09	0.00		0.03	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	86	12	17	6	6	17	6	112	96	91	270	6
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	539	531	160	542	576	272	275	xxxx	xxxxx	208	xxxx	xxxxx
Potent Cap.:	516	574	1149	514	544	1008	1267	xxxx	xxxxx	1365	xxxx	xxxxx
Adj Cap:	0.92	0.93	1.00	0.92	0.93	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	475	533	1149	471	505	1008	1267	xxxx	xxxxx	1365	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	9.2	6.9	3.2	7.7	7.2	3.6	2.9	xxxx	xxxxx	2.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	527	xxxxx	xxxx	706	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	8.7	xxxxx	xxxxx	5.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		8.1			5.2			0.1			0.7	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Turning Movement Report

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 US 101/ORE 34													
Base	5	195	130	230	305	1	5	30	10	185	10	100	1206
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	195	130	230	305	1	5	30	10	185	10	100	1206
#2 US 101/Norwood/Starr													
Base	0	285	25	15	475	0	0	0	0	40	0	20	860
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	285	25	15	475	0	0	0	0	40	0	20	860
#3 US 101/Range													
Base	0	280	10	45	345	0	0	0	0	5	0	30	715
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	280	10	45	345	0	0	0	0	5	0	30	715
#4 Highway 34/Cedar													
Base	20	5	85	1	5	20	15	330	40	50	240	1	812
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	20	5	85	1	5	20	15	330	40	50	240	1	812
#5 Highway 34/Mill													
Base	15	1	15	10	5	25	15	240	15	10	125	2	478
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	15	1	15	10	5	25	15	240	15	10	125	2	478

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 US 101/ORE 34	C	17.3	0.447	C	17.3	0.447	+ 0.000 D/V
# 2 US 101/Norwood/Starr	C	0.6	0.000	C	0.6	0.000	+ 0.000 V/C
# 3 US 101/Range	A	0.4	0.000	A	0.4	0.000	+ 0.000 V/C
# 4 Highway 34/Cedar	B	1.3	0.000	B	1.3	0.000	+ 0.000 V/C
# 5 Highway 34/Mill	B	0.8	0.000	B	0.8	0.000	+ 0.000 V/C

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #1 US 101/ORE 34

Cycle (sec):	110			Critical Vol./Cap. (X):			0.447						
Loss Time (sec):	12 (Y+R = 4 sec)			Average Delay (sec/veh):			17.3						
Optimal Cycle:	38			Level Of Service:			C						

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	3	10	10	3	10	10	5	5	5	5	5	5
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 1	0	0 1
Volume Module:												
Base Vol:	5	195	130	230	305	1	5	30	10	185	10	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	195	130	230	305	1	5	30	10	185	10	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	5	214	143	253	335	1	5	33	11	203	11	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	214	143	253	335	1	5	33	11	203	11	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	225	150	253	352	1	5	33	11	203	11	110
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.92	0.97	0.97	0.84	0.84	0.84	0.78	0.78	0.83
Lanes:	1.00	1.20	0.80	1.00	1.99	0.01	0.10	0.68	0.22	0.95	0.05	1.00
Final Sat.:	1719	2041	1361	1752	3679	10	162	1069	356	1414	77	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.14	0.10	0.10	0.03	0.03	0.03	0.14	0.14	0.07
Crit Moves:		****		****							****	
Green/Cycle:	0.03	0.25	0.25	0.32	0.54	0.54	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.11	0.45	0.45	0.45	0.18	0.18	0.10	0.10	0.10	0.45	0.45	0.22
Level Of Service Module:												
Delay/Veh:	33.8	22.9	22.9	19.4	8.2	8.2	16.9	16.9	16.9	19.6	19.6	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	22.9	22.9	19.4	8.2	8.2	16.9	16.9	16.9	19.6	19.6	17.6
Queue:	0	6	4	6	5	0	0	1	0	5	0	2

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Detailed Computation Report
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 1	0	0 1
Lane Group:	L	RT	RT	L	RT	RT	LTR	LTR	LTR	LT	LT	R
#LnsInGrps:	1	2	2	1	2	2	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
% Hev Veh:		5			3			0			2	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < <						Other > > > > > > > > > > > > > > >					
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(rt) and f(lt) Adj Case Module:												
f(rt) Case:	xxxx	5	5	xxxx	5	5	7	7	7	xxxx	xxxx	2
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	5	5	5	5	5	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.95	0.95	0.95	0.97	0.97	0.97	1.00	1.00	1.00	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.94	0.94	xxxx	1.00	1.00	0.87	0.87	0.87	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.96	0.96	0.96	0.80	0.80	xxxxx
HCM Sat Adj:	0.90	0.90	0.90	0.92	0.97	0.97	0.84	0.84	0.84	0.78	0.78	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.90	0.90	0.92	0.97	0.97	0.84	0.84	0.84	0.78	0.78	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < <						No > > > > > > > > > > > > > > >					
Signal Type:	< < < < < < < < < < < < < < <						Actuated > > > > > > > > > > > > >					
DelAdjFctr:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	110	110
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	35.42	35.42
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	35.42	35.42
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	35.42	35.42
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	5	203
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.10	0.95
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	0.10
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	0.15	6.20
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	214	49
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	6.54	1.50
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.00	1.00
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	4.00	4.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	23.20	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.68	0.68
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	6.06	0.45
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	12.21	34.96
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	0.23
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	0.90
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.74	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.10	0.95
Through-car Equivalents, el1:	xxxxxx	xxxxxx	2.36	1.33
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	0.24
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.06	0.11
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.96	0.80
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.96	0.80

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 US 101/Norwood/Starr

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	285	25	15	475	0	0	0	0	40	0	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	285	25	15	475	0	0	0	0	40	0	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	317	28	17	528	0	0	0	0	44	0	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	317	28	17	528	0	0	0	0	44	0	22
Adjusted Volume Module:												
Grade:	0%			0%			0%			-4%		
% Cycle/Cars:	0.00	0.99		0.00	0.98		0.00	0.92		0.00	0.99	
% Truck/Comb:	0.01	0.00		0.02	0.00		0.06	0.02		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.30	0.80	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.00	1.20	
Adj Vol.:	0	317	28	17	528	0	0	0	0	36	0	18
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	344	xxxx	xxxxx	xxxx	xxxx	xxxxx	875	xxxx	331
Potent Cap.:	xxxx	xxxx	xxxxx	1175	xxxx	xxxxx	xxxx	xxxx	xxxxx	330	xxxx	942
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.98	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1175	xxxx	xxxxx	xxxx	xxxx	xxxxx	323	xxxx	942
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.9	xxxx	3.9
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	413	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*
ApproachDel:		0.0			0.1			0.0			9.9	

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 US 101/Range

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	0	280	10	45	345	0	0	0	0	5	0	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	280	10	45	345	0	0	0	0	5	0	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	311	11	50	383	0	0	0	0	6	0	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	311	11	50	383	0	0	0	0	6	0	33
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.99		0.00	0.98		xxxx	xxxx		0.00	0.99	
% Truck/Comb:	0.01	0.00		0.02	0.00		xxxx	xxxx		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.50	2.00	
Adj Vol.:	0	311	11	51	383	0	0	0	0	6	0	34
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	322	xxxx	xxxxx	xxxx	xxxx	xxxxx	750	xxxx	317
Potent Cap.:	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	390	xxxx	957
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	368	xxxx	957
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.9	xxxx	3.9
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	779	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:		0.0			0.4			0.0			4.8	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Highway 34/Cedar

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	20	5	85	1	5	20	15	330	40	50	240	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	5	85	1	5	20	15	330	40	50	240	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
PHF Volume:	24	6	104	1	6	24	18	402	49	61	293	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	24	6	104	1	6	24	18	402	49	61	293	1
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.99		0.00	0.99		0.00	0.98		0.00	0.98	
% Truck/Comb:	0.01	0.00		0.01	0.00		0.02	0.00		0.02	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	25	6	104	1	6	25	18	402	49	62	293	1
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	815	800	427	854	824	293	294	xxxx	xxxxx	451	xxxx	xxxxx
Potent Cap.:	357	415	842	339	403	983	1242	xxxx	xxxxx	1045	xxxx	xxxxx
Adj Cap:	0.91	0.93	1.00	0.82	0.93	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	325	385	842	277	374	983	1242	xxxx	xxxxx	1045	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	12.0	9.5	4.9	13.1	9.8	3.8	2.9	xxxx	xxxxx	3.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	627	xxxxx	xxxx	697	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	7.3	xxxxx	xxxxx	5.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		6.4			5.3			0.1			0.6	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #5 Highway 34/Mill

****

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0		
Volume Module:												
Base Vol:	15	1	15	10	5	25	15	240	15	10	125	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	1	15	10	5	25	15	240	15	10	125	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	16	1	16	11	5	27	16	264	16	11	137	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	16	1	16	11	5	27	16	264	16	11	137	2
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.97		0.00	0.99		0.00	0.98		0.00	0.98	
% Truck/Comb:	0.03	0.00		0.01	0.00		0.02	0.00		0.02	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	17	1	17	11	6	28	17	264	16	11	137	2
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	454	439	272	447	446	138	140	xxxx	xxxxx	280	xxxx	xxxxx
Potent Cap.:	578	642	1008	584	636	1178	1471	xxxx	xxxxx	1261	xxxx	xxxxx
Adj Cap:	0.95	0.98	1.00	0.97	0.98	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	551	628	1008	563	622	1178	1471	xxxx	xxxxx	1261	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	6.7	5.7	3.6	6.5	5.8	3.1	2.5	xxxx	xxxxx	2.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	709	xxxxx	xxxx	851	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	5.3	xxxxx	xxxxx	4.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	A	*	*	*	*	*	*	*
ApproachDel:		5.2			4.3			0.1			0.2	

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LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	25-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-ST

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	US 101/Starr-Norwood
Conditions (yr, alt., etc.):	Existing PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**NB**	**SB**
Advancing Volume	310	490
Opposing Volume	475	310
Left-Turn Volume	0	15
%Left Turns (L)	0.0%	3.1%
Speed (mph)	60	60
Storage Probability	0.00000100	0.00000100
Warrant Utilization (3-veh)	0.0100	0.0100
4-vehicle	0.0316	0.0316
5-vehicle	0.0631	0.0631
6-vehicle	0.1000	0.1000
7-vehicle	0.1389	0.1389
8-vehicle	0.1778	0.1778
9-vehicle	0.2154	0.2154
10-vehicle	0.2512	0.2512
11-vehicle	0.2848	0.2848
12-vehicle	0.3162	0.3162

CALCULATIONS:	**SB**
Critical Gap (Gc)	5.0
Exit Time (Te)	1.9
Wait Time (Tw)	1.25
Manuever Time (T1)	3.0
Usable Gaps	132
Blocked Time/hr	718.3
Mean Headway (Ta)	7.35
Mean Arrival Rate	9.3
Mean Service Rate	960.6

RESULTS:

Utilization Factor	0.0097
LT Lane Warranted?	NO
Storage Length (ft)	

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 25-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-STA

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Starr-Norwood
Conditions (yr, alt., etc.): Existing PM Peak

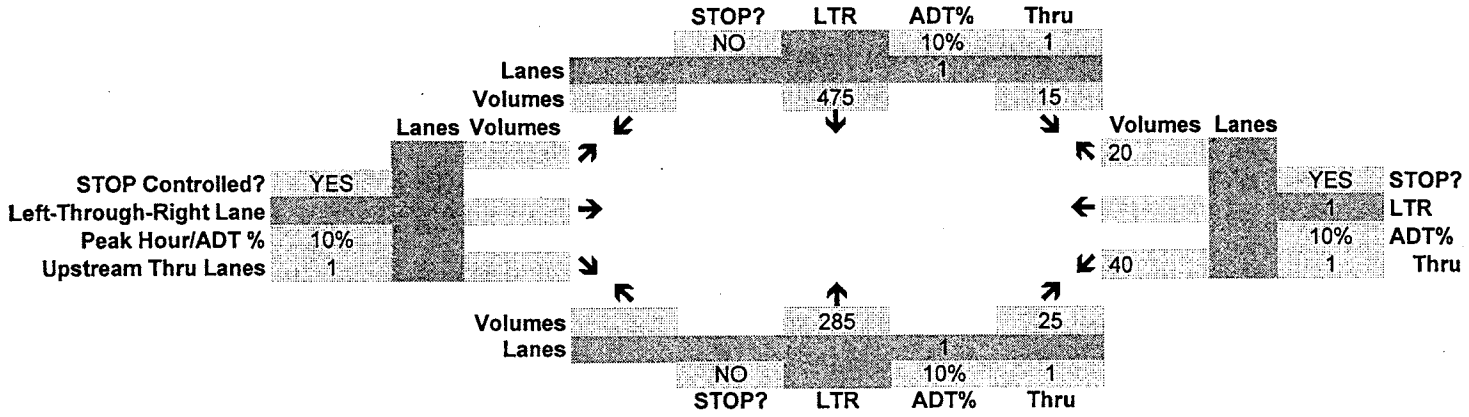
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	800 vph
Highest minor approach:	60 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	YES
Warrant Factor	70%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	350	105	800	60	640	36	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	525	52.5	800	60	640	36	NO
WARRANT 11 Peak Hour Volume	1	1	800	115	800	60	800	60	NO

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	US 101/Starr-Norwood	
Project Number:	2890	Conditions (year, alt.):	Existing PM Peak	
Analyst:	JAG	Major Street Direction:	NS	(NS or EW)
Date:	25-Apr-99	Major Street Speed:	55	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-STARR.W	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	25-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-CE

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	ORE 34/Cedar
Conditions (yr, alt., etc.):	Existing PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**EB**	**WB**
Advancing Volume	385	292
Opposing Volume	242	370
Left-Turn Volume	15	50
%Left Turns (L)	3.9%	17.1%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	**EB**	**WB**
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	0.94	1.54
Manuever Time (T1)	3.0	3.0
Usable Gaps	121	145
Blocked Time/hr	565.7	851.4
Mean Headway (Ta)	9.35	12.33
Mean Arrival Rate	6.6	17.3
Mean Service Rate	1011.4	916.2

RESULTS:

Utilization Factor	0.0065	0.0189
LT Lane Warranted?	NO	NO
Storage Length (ft)		

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 25-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-CED

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Cedar
Conditions (yr, alt., etc.): Existing PM Peak

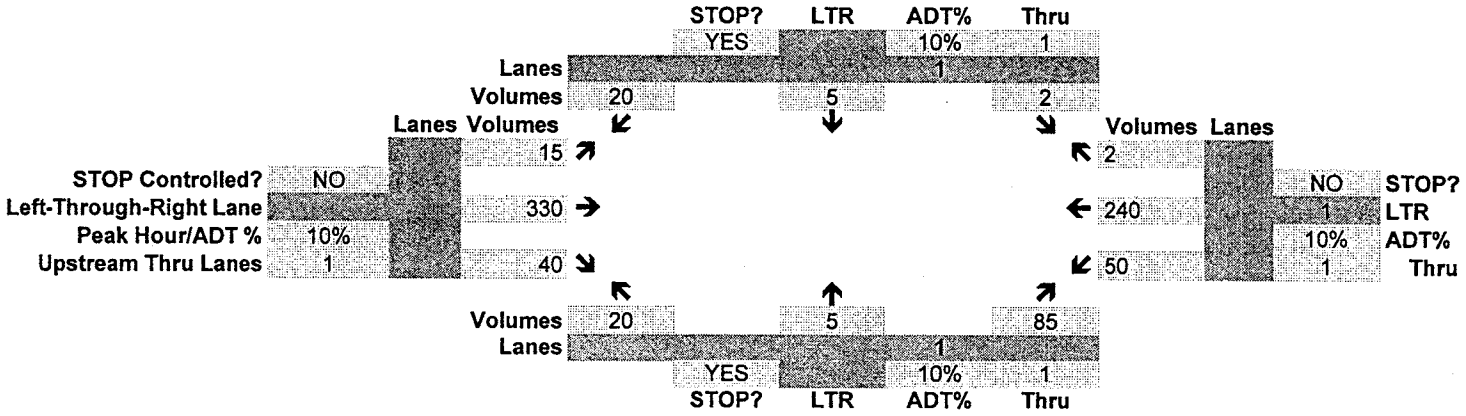
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	677 vph
Highest minor approach:	110 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	NO
Warrant Factor	100%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	677	110	541.6	66	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	677	110	541.6	66	NO
WARRANT 11 Peak Hour Volume	1	1	677	340	677	110	677	110	NO

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Cedar	
Project Number:	2890	Conditions (year, alt.):	Existing PM Peak	
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	25-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-CEDAR.	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 23-Apr-99
Filename: H:\PROJFILE\2890\QPRO\UNSIG2

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Range Road
Conditions (yr, alt., etc.): Existing PM Peak

GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	680 vph
Highest minor approach:	35 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	YES
Warrant Factor	70%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	350	105	680	35	544	21	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	525	52.5	680	35	544	21	NO
WARRANT 11 Peak Hour Volume	1	1	680	150	680	35	680	35	NO

LEFT-TURN LANE WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 23-Apr-99
Filename: H:\PROJFILE\2890\QPRO\UNSIG

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Range Road
Conditions (yr, alt., etc.): Existing PM Peak
Storage Length/Vehicle: 25 feet

INPUTS & WARRANTS:	NB	SB
Advancing Volume	290	390
Opposing Volume	345	290
Left-Turn Volume	0	45
%Left Turns (L)	0.0%	11.5%
Speed (mph)	60	60
Storage Probability	0.00000100	0.00000100
Warrant Utilization (3-veh)	0.0100	0.0100
4-vehicle	0.0316	0.0316
5-vehicle	0.0631	0.0631
6-vehicle	0.1000	0.1000
7-vehicle	0.1389	0.1389
8-vehicle	0.1778	0.1778
9-vehicle	0.2154	0.2154
10-vehicle	0.2512	0.2512
11-vehicle	0.2848	0.2848
12-vehicle	0.3162	0.3162

CALCULATIONS:	SB
Critical Gap (Gc)	5.0
Exit Time (Te)	1.9
Wait Time (Tw)	1.16
Manuever Time (T1)	3.0
Usable Gaps	131
Blocked Time/hr	671.2
Mean Headway (Ta)	9.23
Mean Arrival Rate	19.8
Mean Service Rate	976.3

RESULTS:

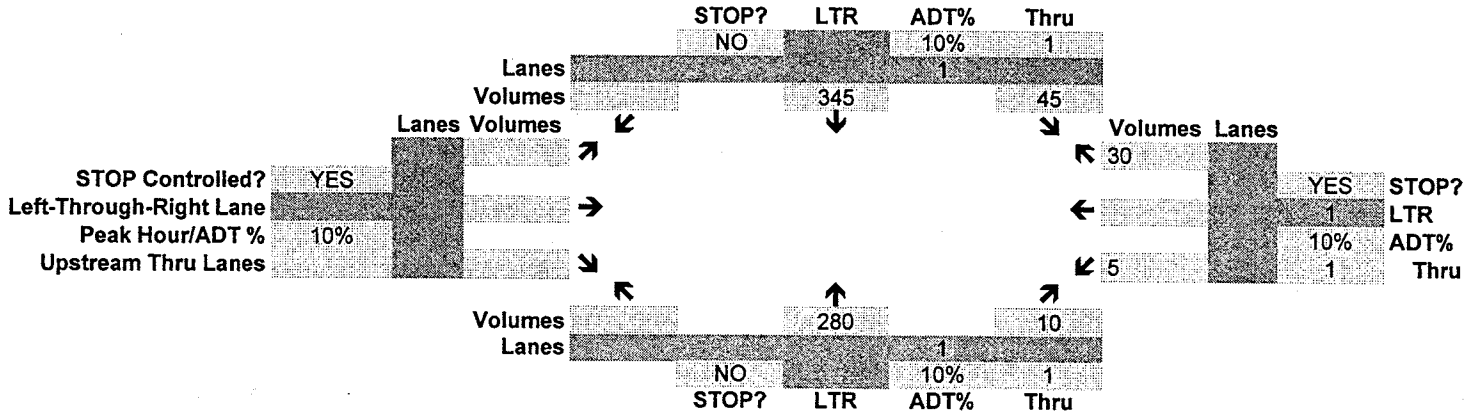
Utilization Factor	0.0203
LT Lane Warranted?	YES
Storage Length (ft)	75

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	23-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\UNSIG2.WB

Intersection:	US 101/Range Road	
Conditions (year, alt.):	Existing PM Peak	
Major Street Direction:	NS	(NS or EW)
Major Street Speed:	55	mph
Population<10,000?	NO	(YES or NO)
Factor Peak Hour -> 8th-Highest Hour:		
Major Street:	80%	
Minor Street:	60%	
Peak Hour Factor:	90%	



LEFT-TURN LANE WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-MIL

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Mill-Crestline
Conditions (yr, alt., etc.): Existing PM Peak
Storage Length/Vehicle: 25 feet

INPUTS & WARRANTS:	EB	WB
Advancing Volume	270	137
Opposing Volume	127	255
Left-Turn Volume	15	10
%Left Turns (L)	5.6%	7.3%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	EB	WB
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	0.47	1.00
Manuever Time (T1)	3.0	3.0
Usable Gaps	82	121
Blocked Time/hr	308.6	593.6
Mean Headway (Ta)	13.33	26.28
Mean Arrival Rate	3.8	1.5
Mean Service Rate	1097.1	1002.1

RESULTS:

Utilization Factor	0.0034	0.0015
LT Lane Warranted?	NO	NO
Storage Length (ft)		

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-MILL

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Mill-Crestline
Conditions (yr, alt., etc.): Existing PM Peak

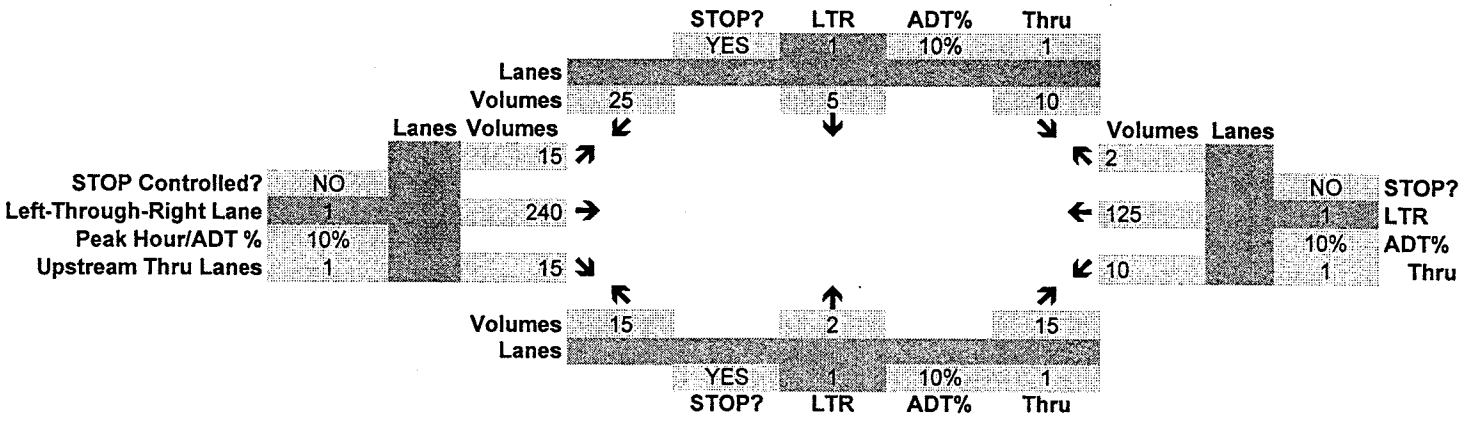
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	407 vph
Highest minor approach:	40 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	NO
Warrant Factor	100%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	407	40	325.6	24	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	407	40	325.6	24	NO
WARRANT 11 Peak Hour Volume	1	1	407	NA	407	40	407	40	NO

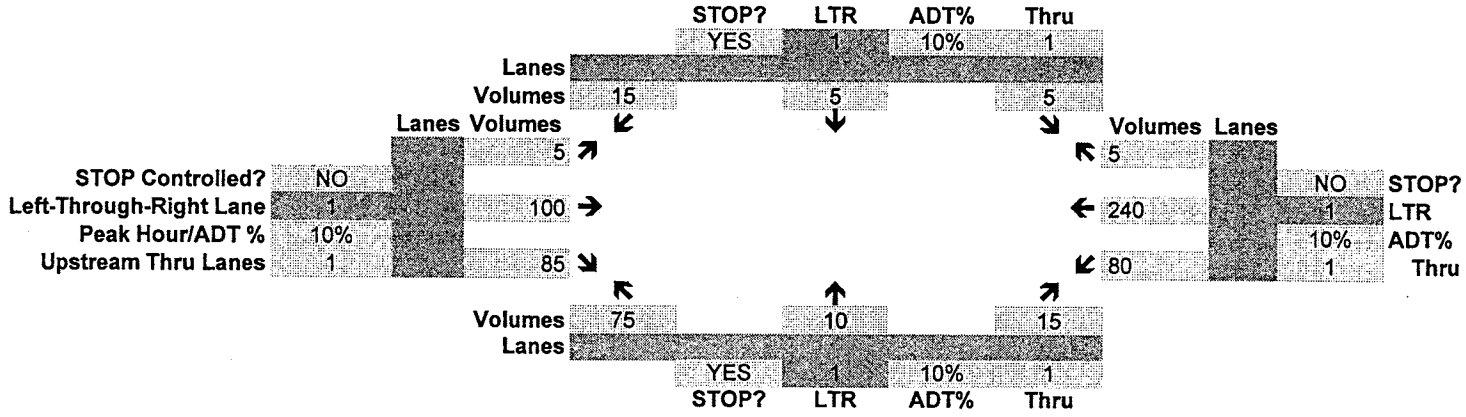
UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Mill-Crestline	
Project Number:	2890	Conditions (year, alt.):	Existing PM Peak	
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	26-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-MILL.WB	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Mill-Crestline	
Project Number:	2890	Conditions (year, alt.):	Existing ~~PM~~ AM Peak	
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	27-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\MILL-AM.WB	Population<10,000?	YES	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



LEFT-TURN LANE WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 27-Apr-99
Filename: H:\PROJFILE\2890\QPRO\MILL-A

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Mill-Crestline
Conditions (yr, alt., etc.): Existing ~~PM~~ AM Peak
Storage Length/Vehicle: 25 feet

INPUTS & WARRANTS:	EB	WB
Advancing Volume	190	325
Opposing Volume	245	185
Left-Turn Volume	5	80
%Left Turns (L)	2.6%	24.6%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	EB	WB
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	0.96	0.70
Manuever Time (T1)	3.0	3.0
Usable Gaps	123	104
Blocked Time/hr	572.7	439.3
Mean Headway (Ta)	18.95	11.08
Mean Arrival Rate	1.1	21.2
Mean Service Rate	1009.1	1053.6

RESULTS:

Utilization Factor	0.0011	0.0202
LT Lane Warranted?	NO	YES
Storage Length (ft)		75

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

Worksheets for Growth Forecasts, Trip Generation, Trip assignment

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Trip Generation Report

Forecast for

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Range Road D	1.00	New Trips	125.00	150.00	125	150	275	44.4
	Zone 1 Subtotal					125	150	275	44.4
2	Residential	1.00	New Trips	65.00	40.00	65	40	105	16.9
	Zone 2 Subtotal					65	40	105	16.9
3		1.00	Newport Trips	70.00	55.00	70	55	125	20.2
	Zone 3 Subtotal					70	55	125	20.2
4	Yachats	1.00	New Trips	40.00	30.00	40	30	70	11.3
	Zone 4 Subtotal					40	30	70	11.3
5	Alsea	1.00	New Trips	25.00	20.00	25	20	45	7.3
	Zone 5 Subtotal					25	20	45	7.3
TOTAL						325	295	620	100.0

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Trip Distribution Report

Percent Of Trips

Zone	To Gates 1	2	3	4	5
1	0.0	22.0	40.0	22.0	16.0
2	50.0	0.0	25.0	12.0	13.0
3	75.0	25.0	0.0	0.0	0.0
4	75.0	25.0	0.0	0.0	0.0
5	80.0	20.0	0.0	0.0	0.0

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Turning Movement Report

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 US 101/ORE 34													
Base	6	234	156	276	366	1	6	36	12	222	12	120	1447
Added	0	60	59	14	41	0	0	0	0	37	0	10	221
Total	6	294	215	290	407	1	6	36	12	259	12	130	1668
#2 US 101/Norwood/Starr													
Base	0	342	30	18	570	0	0	0	0	48	0	24	1032
Added	0	119	6	0	78	0	0	0	0	0	0	0	203
Total	0	461	36	18	648	0	0	0	0	48	0	24	1235
#3 US 101/Range													
Base	0	336	12	54	414	0	0	0	0	6	0	36	858
Added	0	8	23	74	5	0	0	0	0	33	0	117	258
Total	0	344	35	128	419	0	0	0	0	39	0	153	1116
#4 Highway 34/Cedar													
Base	24	6	102	1	6	24	18	396	48	60	288	1	974
Added	0	0	3	0	0	0	0	73	0	1	47	0	124
Total	24	6	105	1	6	24	18	469	48	61	335	1	1098
#5 Highway 34/Mill													
Base	18	1	18	12	6	30	18	288	18	12	150	2	574
Added	2	0	3	0	0	0	0	75	1	3	46	0	129
Total	20	1	21	12	6	30	18	363	19	15	196	2	703

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 1 US 101/ORE 34	C	18.2	0.546	C	19.2	0.637	+ 1.021 D/V
# 2 US 101/Norwood/Starr	C	0.8	0.000	D	1.0	0.000	+ 0.000 V/C
# 3 US 101/Range	B	0.5	0.000	C	1.8	0.000	+ 0.000 V/C
# 4 Highway 34/Cedar	B	1.6	0.000	C	1.7	0.000	+ 0.000 V/C
# 5 Highway 34/Mill	B	0.9	0.000	B	0.9	0.000	+ 0.000 V/C

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

Intersection #1 US 101/ORE 34

Cycle (sec): 110 Critical Vol./Cap. (X): 0.637
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 53 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	3	10	10	3	10	10	5	5	5	5	5	5
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1! 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	5	195	130	230	305	1	5	30	10	185	10	100
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	6	234	156	276	366	1	6	36	12	222	12	120
Added Vol:	0	60	59	14	41	0	0	0	0	37	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	294	215	290	407	1	6	36	12	259	12	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	7	323	236	318	448	1	7	40	13	285	13	143
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	323	236	318	448	1	7	40	13	285	13	143
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	7	339	248	318	470	1	7	40	13	285	13	143
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.92	0.97	0.97	0.80	0.80	0.80	0.74	0.74	0.83
Lanes:	1.00	1.16	0.84	1.00	1.99	0.01	0.12	0.66	0.22	0.96	0.04	1.00
Final Sat.:	1719	1965	1437	1752	3681	8	177	1014	329	1336	61	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.17	0.18	0.13	0.13	0.04	0.04	0.04	0.21	0.21	0.09
Crit Moves:		****		****							****	
Green/Cycle:	0.03	0.27	0.27	0.28	0.53	0.53	0.33	0.33	0.33	0.33	0.33	0.33
Volume/Cap:	0.15	0.64	0.64	0.64	0.24	0.24	0.12	0.12	0.12	0.64	0.64	0.27
Level Of Service Module:												
Delay/Veh:	33.9	23.9	23.9	24.1	9.1	9.1	16.4	16.4	16.4	22.0	22.0	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.9	23.9	23.9	24.1	9.1	9.1	16.4	16.4	16.4	22.0	22.0	17.3
Queue:	0	9	7	9	8	0	0	1	0	8	1	3

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 US 101/Norwood/Starr

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0	1 0	0 0	0	0 0	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	0	285	25	15	475	0	0	0	0	40	0	20
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	342	30	18	570	0	0	0	0	48	0	24
Added Vol:	0	119	6	0	78	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	461	36	18	648	0	0	0	0	48	0	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	512	40	20	721	0	0	0	0	53	0	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	512	40	20	721	0	0	0	0	53	0	27
Adjusted Volume Module:												
Grade:		0%			0%			0%			-4%	
% Cycle/Cars:	0.00	0.99		0.00	0.98		0.00	0.92		0.00	0.99	
% Truck/Comb:	0.01	0.00		0.02	0.00		0.06	0.02		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.30	0.80	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.00	1.20	
Adj Vol.:	0	512	40	20	721	0	0	0	0	43	0	21
Critical Gap Module:												
MoveUp Time:	xxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	552	xxxx	xxxxx	xxxx	xxxx	xxxxx	1272	xxxx	532
Potent Cap.:	xxxx	xxxx	xxxxx	936	xxxx	xxxxx	xxxx	xxxx	xxxxx	194	xxxx	744
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.96	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	936	xxxx	xxxxx	xxxx	xxxx	xxxxx	187	xxxx	744
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	26.8	xxxx	5.0
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	- LTR	- RT	LT	- LTR	- RT	LT	- LTR	- RT	LT	- LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	249	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	21.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	D	*
ApproachDel:		0.0			0.1			0.0			19.5	

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$\frac{44}{249} = .26$

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 US 101/Range

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	1	0	0 1 0	0	0	0 0 0	0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	280	10	45	345	0	0	0	0	5	0	30
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	336	12	54	414	0	0	0	0	6	0	36
Added Vol:	0	8	23	74	5	0	0	0	0	33	0	117
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	344	35	128	419	0	0	0	0	39	0	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	382	38	142	465	0	0	0	0	43	0	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	382	38	142	465	0	0	0	0	43	0	170
Adjusted Volume Module:												
Grade:		0%			0%			0%			0%	
% Cycle/Cars:	0.00	0.99		0.00	0.98		xxxx	xxxx		0.00	0.99	
% Truck/Comb:	0.01	0.00		0.02	0.00		xxxx	xxxx		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.50	2.00	
Adj Vol.:	0	382	38	143	465	0	0	0	0	44	0	171
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	420	xxxx	xxxxx	xxxx	xxxx	xxxxx	1008	xxxx	401
Potent Cap.:	xxxx	xxxx	xxxxx	1081	xxxx	xxxxx	xxxx	xxxx	xxxxx	276	xxxx	867
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.82	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1081	xxxx	xxxxx	xxxx	xxxx	xxxxx	226	xxxx	867
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	19.7	xxxx	5.2
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	550	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.6	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*
ApproachDel:		0.0			0.9			0.0			8.1	

$\frac{215}{550} = .39$

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Highway 34/Cedar

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0	1 0	1	0	0 1 0
Volume Module:												
Base Vol:	20	5	85	1	5	20	15	330	40	50	240	1
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	24	6	102	1	6	24	18	396	48	60	288	1
Added Vol:	0	0	3	0	0	0	0	73	0	1	47	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	6	105	1	6	24	18	469	48	61	335	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
PHF Volume:	29	7	128	1	7	29	22	571	59	74	409	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	29	7	128	1	7	29	22	571	59	74	409	1
Adjusted Volume Module:												
Grade:		0%			0%			0%			0%	
% Cycle/Cars:	0.00	0.99		0.00	0.99		0.00	0.98		0.00	0.98	
% Truck/Comb:	0.01	0.00		0.01	0.00		0.02	0.00		0.02	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	29	7	129	1	7	29	22	571	59	75	409	1
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1125	1107	601	1174	1136	410	410	xxxx	xxxxx	630	xxxx	xxxxx
Potent Cap.:	236	286	687	221	277	859	1093	xxxx	xxxxx	859	xxxx	xxxxx
Adj Cap:	0.87	0.89	1.00	0.73	0.89	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	205	256	687	162	247	859	1093	xxxx	xxxxx	859	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	20.5	14.5	6.4	22.5	15.0	4.3	3.4	xxxx	xxxxx	4.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	460	xxxxx	xxxx	523	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	12.1	xxxxx	xxxxx	7.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	B	*	*	*	*	*	*	*
ApproachDel:		9.3			7.1			0.1			0.7	

$\frac{165}{460} = .36$

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Highway 34/Mill

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0		
Volume Module:												
Base Vol:	15	1	15	10	5	25	15	240	15	10	125	2
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	18	1	18	12	6	30	18	288	18	12	150	2
Added Vol:	2	0	3	0	0	0	0	75	1	3	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1	21	12	6	30	18	363	19	15	196	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	22	1	23	13	7	33	20	399	21	16	216	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	22	1	23	13	7	33	20	399	21	16	216	3
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.97		0.00	0.99		0.00	0.98		0.00	0.98	
% Truck/Comb:	0.03	0.00		0.01	0.00		0.02	0.00		0.02	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	22	1	23	13	7	33	20	399	21	16	216	3
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	682	663	409	674	672	217	219	xxxx	xxxxx	419	xxxx	xxxxx
Potent Cap.:	427	490	859	431	484	1075	1349	xxxx	xxxxx	1082	xxxx	xxxxx
Adj Cap:	0.93	0.97	1.00	0.95	0.97	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	398	473	859	408	468	1075	1349	xxxx	xxxxx	1082	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	9.6	7.6	4.3	9.1	7.8	3.5	2.7	xxxx	xxxxx	3.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	547	xxxxx	xxxx	684	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	7.2	xxxxx	xxxxx	5.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		6.9			5.4			0.1			0.2	

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$\frac{46}{547} = .08$

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Turning Movement By Zone Report

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 US 101/ORE 34													
[Base(LOS=C,Del=18.2,V/C=0.546)]							[Future(LOS=C,Del=19.2,V/C=0.637)]						[+1.021 D/V]
Base	5	195	130	230	305	1	5	30	10	185	10	100	1206
Growth	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
InitBs	6	234	156	276	366	1	6	36	12	222	12	120	1447
Zn 1	0	60	51	0	0	0	0	0	0	0	0	0	111
Zn 2	0	0	0	0	0	0	0	0	0	23	0	10	33
Zn 3	0	0	0	14	41	0	0	0	0	0	0	0	55
Zn 4	0	0	8	0	0	0	0	0	0	0	0	0	8
Zn 5	0	0	0	0	0	0	0	0	0	14	0	0	14
Added	0	60	59	14	41	0	0	0	0	37	0	10	221
Future	6	294	215	290	407	1	6	36	12	259	12	130	1668
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	6	294	215	290	407	1	6	36	12	259	12	130	1668
#2 US 101/Norwood/Starr													
[Base(LOS=C,Del=0.8,V/C=0.000)]							[Future(LOS=D,Del=1.0,V/C=0.000)]						[+0.000 V/C]
Base	0	285	25	15	475	0	0	0	0	40	0	20	860
Growth	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
InitBs	0	342	30	18	570	0	0	0	0	48	0	24	1032
Zn 1	0	111	6	0	0	0	0	0	0	0	0	0	117
Zn 2	0	0	0	0	23	0	0	0	0	0	0	0	23
Zn 3	0	0	0	0	41	0	0	0	0	0	0	0	41
Zn 4	0	8	0	0	0	0	0	0	0	0	0	0	8
Zn 5	0	0	0	0	14	0	0	0	0	0	0	0	14
Added	0	119	6	0	78	0	0	0	0	0	0	0	203
Future	0	461	36	18	648	0	0	0	0	48	0	24	1235
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	461	36	18	648	0	0	0	0	48	0	24	1235

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#3 US 101/Range													
[Base(LOS=B,Del=0.5,V/C=0.000)]							[Future(LOS=C,Del=1.8,V/C=0.000)]			[+0.000 V/C]			
Base	0	280	10	45	345	0	0	0	0	5	0	30	715
Growth	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
InitBs	0	336	12	54	414	0	0	0	0	6	0	36	858
Zn 1	0	0	0	0	0	0	0	0	0	33	0	117	150
Zn 2	0	0	0	18	5	0	0	0	0	0	0	0	23
Zn 3	0	0	0	41	0	0	0	0	0	0	0	0	41
Zn 4	0	8	23	0	0	0	0	0	0	0	0	0	30
Zn 5	0	0	0	14	0	0	0	0	0	0	0	0	14
Added	0	8	23	74	5	0	0	0	0	33	0	117	258
Future	0	344	35	128	419	0	0	0	0	39	0	153	1116
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	344	35	128	419	0	0	0	0	39	0	153	1116
#4 Highway 34/Cedar													
[Base(LOS=B,Del=1.6,V/C=0.000)]							[Future(LOS=C,Del=1.7,V/C=0.000)]			[+0.000 V/C]			
Base	20	5	85	1	5	20	15	330	40	50	240	1	812
Growth	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
InitBs	24	6	102	1	6	24	18	396	48	60	288	1	974
Zn 1	0	0	3	0	0	0	0	51	0	0	0	0	54
Zn 2	0	0	0	0	0	0	0	0	0	1	33	0	34
Zn 3	0	0	0	0	0	0	0	14	0	0	0	0	14
Zn 4	0	0	0	0	0	0	0	8	0	0	0	0	8
Zn 5	0	0	0	0	0	0	0	0	0	0	14	0	14
Added	0	0	3	0	0	0	0	73	0	1	47	0	124
Future	24	6	105	1	6	24	18	469	48	61	335	1	1098
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	24	6	105	1	6	24	18	469	48	61	335	1	1098
#5 Highway 34/Mill													
[Base(LOS=B,Del=0.9,V/C=0.000)]							[Future(LOS=B,Del=0.9,V/C=0.000)]			[+0.000 V/C]			
Base	15	1	15	10	5	25	15	240	15	10	125	2	478
Growth	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
InitBs	18	1	18	12	6	30	18	288	18	12	150	2	574
Zn 1	0	0	3	0	0	0	0	54	0	0	0	0	57
Zn 2	2	0	0	0	0	0	0	0	0	1	32	0	35
Zn 3	0	0	0	0	0	0	0	14	0	0	0	0	14
Zn 4	0	0	0	0	0	0	0	7	1	0	0	0	8
Zn 5	0	0	0	0	0	0	0	0	0	2	14	0	16
Added	2	0	3	0	0	0	0	75	1	3	46	0	129
Future	20	1	21	12	6	30	18	363	19	15	196	2	703
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	20	1	21	12	6	30	18	363	19	15	196	2	703

Future Conditions Analysis Worksheets for

Level of Service,
Left-Turn Lane Warrants,
Signal Warrants

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Turning Movement Report

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 US 101/ORE 34													
Base	1	215	115	175	195	1	10	15	1	125	5	155	1013
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	215	115	175	195	1	10	15	1	125	5	155	1013
#2 US 101/Norwood/Starr													
Base	0	325	25	5	300	0	0	0	0	25	0	15	695
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	325	25	5	300	0	0	0	0	25	0	15	695
#3 US 101/Range													
Base	0	275	10	30	175	0	0	0	0	10	0	55	555
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	275	10	30	175	0	0	0	0	10	0	55	555
#4 Highway 34/Cedar													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
#5 Highway 34/Mill													
Base	75	10	15	5	5	15	5	100	85	80	240	5	640
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	75	10	15	5	5	15	5	100	85	80	240	5	640

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 US 101/ORE 34	C	18.0	0.353	C	18.0	0.353	+ 0.000 D/V
# 2 US 101/Norwood/Starr	B	0.4	0.000	B	0.4	0.000	+ 0.000 V/C
# 3 US 101/Range	A	0.7	0.000	A	0.7	0.000	+ 0.000 V/C
# 5 Highway 34/Mill	B	1.9	0.000	B	1.9	0.000	+ 0.000 V/C

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #1 US 101/ORE 34

Cycle (sec):	110	Critical Vol./Cap. (X):	0.353	
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	18.0	
Optimal Cycle:	33	Level Of Service:	C	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	3	10	10	3	10	10	5	5	5	5	5	5
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1! 0	0	0 1	0	0 1
Volume Module:												
Base Vol:	1	215	115	175	195	1	10	15	1	125	5	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	215	115	175	195	1	10	15	1	125	5	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	1	224	120	182	203	1	10	16	1	130	5	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	224	120	182	203	1	10	16	1	130	5	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	1	235	126	182	213	1	10	16	1	130	5	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.90	0.94	0.94	0.79	0.79	0.79	0.82	0.82	0.83
Lanes:	1.00	1.30	0.70	1.00	1.99	0.01	0.37	0.59	0.04	0.96	0.04	1.00
Final Sat.:	1719	2238	1200	1703	3568	17	557	892	56	1492	57	1568
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.11	0.06	0.06	0.02	0.02	0.02	0.09	0.09	0.10
Crit Moves:		****		****								****
Green/Cycle:	0.14	0.30	0.30	0.30	0.46	0.46	0.29	0.29	0.29	0.29	0.29	0.29
Volume/Cap:	0.00	0.35	0.35	0.35	0.13	0.13	0.06	0.06	0.06	0.30	0.30	0.35
Level Of Service Module:												
Delay/Veh:	26.4	19.7	19.7	19.5	11.0	11.0	18.2	18.2	18.2	19.7	19.7	20.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.4	19.7	19.7	19.5	11.0	11.0	18.2	18.2	18.2	19.7	19.7	20.1
Queue:	0	6	3	4	4	0	0	0	0	3	0	4

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Detailed Computation Report
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1! 0	0	0 1	0	0 1
Lane Group:	L	RT	RT	L	RT	RT	LTR	LTR	LTR	LT	LT	R
#LnsInGrps:	1	2	2	1	2	2	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
% Hev Veh:		5			6			0			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < <			Other		> > > > > > > > > > > > > > >						
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(rt) and f(lt) Adj Case Module:												
f(rt) Case:	xxxx	5	5	xxxx	5	5	7	7	7	xxxx	xxxx	2
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	5	5	5	5	5	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.95	0.95	0.95	0.94	0.94	0.94	1.00	1.00	1.00	0.97	0.97	0.97
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.95	0.95	xxxx	1.00	1.00	0.89	0.89	0.89	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.89	0.89	0.89	0.84	0.84	xxxxx
HCM Sat Adj:	0.90	0.90	0.90	0.90	0.94	0.94	0.79	0.79	0.79	0.82	0.82	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.90	0.90	0.90	0.94	0.94	0.79	0.79	0.79	0.82	0.82	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < <			No		> > > > > > > > > > > > > > >						
Signal Type:	< < < < < < < < < < < < <			Actuated		> > > > > > > > > > > > >						
DelAdjFctr:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	110	110
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	31.99	31.99
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	31.99	31.99
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	31.99	31.99
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	10	130
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.37	0.96
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	0.37
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	0.31	3.97
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	135	27
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	4.13	0.82
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.00	1.00
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	4.00	4.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	17.27	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.71	0.71
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	2.33	0.00
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	14.72	31.99
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	0.00
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	0.63
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.79	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.37	0.96
Through-car Equivalents, el1:	xxxxxx	xxxxxx	1.83	1.21
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	0.00
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.09	0.12
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.89	0.84
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.89	0.84

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 US 101/Norwood/Starr

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	325	25	5	300	0	0	0	0	25	0	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	325	25	5	300	0	0	0	0	25	0	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	349	27	5	323	0	0	0	0	27	0	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	349	27	5	323	0	0	0	0	27	0	16
Adjusted Volume Module:												
Grade:		0%			0%			0%			-4%	
% Cycle/Cars:	0.00	0.95		0.00	0.96		xxxx	xxxx		0.00	0.99	
% Truck/Comb:	0.05	0.00		0.04	0.00		xxxx	xxxx		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.30	0.80	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.00	1.20	
Adj Vol.:	0	349	27	5	323	0	0	0	0	22	0	13
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	376	xxxx	xxxxx	xxxx	xxxx	xxxxx	691	xxxx	363
Potent Cap.:	xxxx	xxxx	xxxxx	1134	xxxx	xxxxx	xxxx	xxxx	xxxxx	421	xxxx	907
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.99	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1134	xxxx	xxxxx	xxxx	xxxx	xxxxx	419	xxxx	907
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	4.0
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	525	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	7.5	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:		0.0			0.1			0.0			7.3	

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 US 101/Range

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	275	10	30	175	0	0	0	0	10	0	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	275	10	30	175	0	0	0	0	10	0	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	306	11	33	194	0	0	0	0	11	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	306	11	33	194	0	0	0	0	11	0	61
Adjusted Volume Module:												
Grade:		0%			0%			0%			0%	
% Cycle/Cars:	0.00	0.95		0.00	0.97		xxxx	xxxx		0.00	0.98	
% Truck/Comb:	0.05	0.00		0.03	0.00		xxxx	xxxx		0.02	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.50	2.00	
Adj Vol.:	0	306	11	34	194	0	0	0	0	11	0	62
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	317	xxxx	xxxxx	xxxx	xxxx	xxxxx	539	xxxx	311
Potent Cap.:	xxxx	xxxx	xxxxx	1211	xxxx	xxxxx	xxxx	xxxx	xxxxx	516	xxxx	963
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.97	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1211	xxxx	xxxxx	xxxx	xxxx	xxxxx	500	xxxx	963
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	4.0
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	843	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:		0.0			0.5			0.0			4.5	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday AM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Highway 34/Mill

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	75	10	15	5	5	15	5	100	85	80	240	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	10	15	5	5	15	5	100	85	80	240	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	84	11	17	6	6	17	6	112	96	90	270	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	84	11	17	6	6	17	6	112	96	90	270	6
Adjusted Volume Module:												
Grade:		0%			0%			0%			0%	
% Cycle/Cars:	0.00	0.95		0.00	0.96		0.00	0.91		0.00	0.97	
% Truck/Comb:	0.05	0.00		0.04	0.00		0.09	0.00		0.03	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	86	12	17	6	6	17	6	112	96	91	270	6
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	539	531	160	542	576	272	275	xxxx	xxxxx	208	xxxx	xxxxx
Potent Cap.:	516	574	1149	514	544	1008	1267	xxxx	xxxxx	1365	xxxx	xxxxx
Adj Cap:	0.92	0.93	1.00	0.92	0.93	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	475	533	1149	471	505	1008	1267	xxxx	xxxxx	1365	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	9.2	6.9	3.2	7.7	7.2	3.6	2.9	xxxx	xxxxx	2.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	527	xxxxx	xxxx	706	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	8.7	xxxxx	xxxxx	5.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		8.1			5.2			0.1			0.7	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Turning Movement Report

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 US 101/ORE 34													
Base	5	195	130	230	305	1	5	30	10	185	10	100	1206
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	195	130	230	305	1	5	30	10	185	10	100	1206
#2 US 101/Norwood/Starr													
Base	0	285	25	15	475	0	0	0	0	40	0	20	860
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	285	25	15	475	0	0	0	0	40	0	20	860
#3 US 101/Range													
Base	0	280	10	45	345	0	0	0	0	5	0	30	715
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	280	10	45	345	0	0	0	0	5	0	30	715
#4 Highway 34/Cedar													
Base	20	5	85	1	5	20	15	330	40	50	240	1	812
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	20	5	85	1	5	20	15	330	40	50	240	1	812
#5 Highway 34/Mill													
Base	15	1	15	10	5	25	15	240	15	10	125	2	478
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	15	1	15	10	5	25	15	240	15	10	125	2	478

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 US 101/ORE 34	C	17.3	0.447	C	17.3	0.447	+ 0.000 D/V
# 2 US 101/Norwood/Starr	C	0.6	0.000	C	0.6	0.000	+ 0.000 V/C
# 3 US 101/Range	A	0.4	0.000	A	0.4	0.000	+ 0.000 V/C
# 4 Highway 34/Cedar	B	1.3	0.000	B	1.3	0.000	+ 0.000 V/C
# 5 Highway 34/Mill	B	0.8	0.000	B	0.8	0.000	+ 0.000 V/C

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #1 US 101/ORE 34

Cycle (sec):	110			Critical Vol./Cap. (X):			0.447					
Loss Time (sec):	12 (Y+R = 4 sec)			Average Delay (sec/veh):			17.3					
Optimal Cycle:	38			Level Of Service:			C					

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	3	10	10	3	10	10	5	5	5	5	5	5
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0	1 0	0 1
Volume Module:												
Base Vol:	5	195	130	230	305	1	5	30	10	185	10	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	195	130	230	305	1	5	30	10	185	10	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	5	214	143	253	335	1	5	33	11	203	11	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	214	143	253	335	1	5	33	11	203	11	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	5	225	150	253	352	1	5	33	11	203	11	110
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.92	0.97	0.97	0.84	0.84	0.84	0.78	0.78	0.83
Lanes:	1.00	1.20	0.80	1.00	1.99	0.01	0.10	0.68	0.22	0.95	0.05	1.00
Final Sat.:	1719	2041	1361	1752	3679	10	162	1069	356	1414	77	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.14	0.10	0.10	0.03	0.03	0.03	0.14	0.14	0.07
Crit Moves:		****		****							****	
Green/Cycle:	0.03	0.25	0.25	0.32	0.54	0.54	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.11	0.45	0.45	0.45	0.18	0.18	0.10	0.10	0.10	0.45	0.45	0.22
Level Of Service Module:												
Delay/Veh:	33.8	22.9	22.9	19.4	8.2	8.2	16.9	16.9	16.9	19.6	19.6	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	22.9	22.9	19.4	8.2	8.2	16.9	16.9	16.9	19.6	19.6	17.6
Queue:	0	6	4	6	5	0	0	1	0	5	0	2

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Detailed Computation Report
1994 HCM Operations Method
Base Volume Alternative

Intersection #1 US 101/ORE 34

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0	1 0	0 1
Lane Group:	L	RT		L	RT		LTR	LTR		LT	LT	R
#LnsInGrps:	1	2		1	2		1	1		1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
% Hev Veh:	5			3			0			2		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < <			Other			> > > > > > > > > > > > > > >					
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(rt) and f(lt) Adj Case Module:												
f(rt) Case:	xxxx	5	5	xxxx	5	5	7	7	7	xxxx	xxxx	2
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	5	5	5	5	5	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hev Veh Adj:	0.95	0.95	0.95	0.97	0.97	0.97	1.00	1.00	1.00	0.98	0.98	0.98
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.00	1.00	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	0.94	0.94	xxxx	1.00	1.00	0.87	0.87	0.87	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.96	0.96	0.96	0.80	0.80	xxxxx
HCM Sat Adj:	0.90	0.90	0.90	0.92	0.97	0.97	0.84	0.84	0.84	0.78	0.78	0.83
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.90	0.90	0.92	0.97	0.97	0.84	0.84	0.84	0.78	0.78	0.83
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < <			No			> > > > > > > > > > > > > > >					
Signal Type:	< < < < < < < < < < < < <			Actuated			> > > > > > > > > > > > >					
DelAdjFctr:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Detailed Computation Report (Permitted Left Turn Sat Adj)
1994 HCM Operations Method
Base Volume Alternative

****

Intersection #1 US 101/ORE 34

****

Approach:	North	South	East	West
Cycle Length, C:	xxxxxx	xxxxxx	110	110
Actual Green Time Per Lane Group, G:	xxxxxx	xxxxxx	35.42	35.42
Effective Green Time Per Lane Group, g:	xxxxxx	xxxxxx	35.42	35.42
Opposing Effective Green Time, go:	xxxxxx	xxxxxx	35.42	35.42
Number Of Opposing Lanes, No:	xxxxxx	xxxxxx	1	1
Number Of Lanes In Lane Group, N:	xxxxxx	xxxxxx	1	1
Adjusted Left-Turn Flow Rate, Vlt:	xxxxxx	xxxxxx	5	203
Proportion of Left Turns in Lane Group, Plt:	xxxxxx	xxxxxx	0.10	0.95
Proportion of Left Turns in Opp Flow, Plto:	xxxxxx	xxxxxx	xxxxxx	0.10
Left Turns Per Cycle, LTC:	xxxxxx	xxxxxx	0.15	6.20
Adjusted Opposing Flow Rate, Vo:	xxxxxx	xxxxxx	214	49
Opposing Flow Per Lane Per Cycle, Volc:	xxxxxx	xxxxxx	6.54	1.50
Opposing Platoon Ratio, Rpo:	xxxxxx	xxxxxx	1.00	1.00
Lost Time Per Phase, tl:	xxxxxx	xxxxxx	4.00	4.00
Eff grn until arrival of left-turn car, gf:	xxxxxx	xxxxxx	23.20	0.00
Opposing Queue Ratio, qro:	xxxxxx	xxxxxx	0.68	0.68
Eff grn blocked by opposing queue, gq:	xxxxxx	xxxxxx	6.06	0.45
Eff grn while left turns filter thru, gu:	xxxxxx	xxxxxx	12.21	34.96
Max opposing cars arriving during gq-gf, n:	xxxxxx	xxxxxx	xxxxxx	0.23
Proportion of Opposing Thru & RT cars, ptho:	xxxxxx	xxxxxx	xxxxxx	0.90
Left-turn Saturation Factor, fs:	xxxxxx	xxxxxx	0.74	xxxxxx
Proportion of Left Turns in Shared Lane, pl:	xxxxxx	xxxxxx	0.10	0.95
Through-car Equivalents, el1:	xxxxxx	xxxxxx	2.36	1.33
Single Lane Through-car Equivalents, el2:	xxxxxx	xxxxxx	xxxxxx	0.24
Minimum Left Turn Adjustment Factor, fmin:	xxxxxx	xxxxxx	0.06	0.11
Single Lane Left Turn Adjustment Factor, fm:	xxxxxx	xxxxxx	0.96	0.80
Left Turn Adjustment Factor, flt:	xxxxxx	xxxxxx	0.96	0.80

****

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #2 US 101/Norwood/Starr

****

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	1	0	0 1 0	0	0	0 0 0	0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	285	25	15	475	0	0	0	0	40	0	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	285	25	15	475	0	0	0	0	40	0	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	317	28	17	528	0	0	0	0	44	0	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	317	28	17	528	0	0	0	0	44	0	22
Adjusted Volume Module:												
Grade:		0%			0%			0%			-4%	
% Cycle/Cars:	0.00		0.99	0.00		0.98	0.00		0.92	0.00		0.99
% Truck/Comb:	0.01		0.00	0.02		0.00	0.06		0.02	0.01		0.00
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50		1.00	0.50		1.00	0.50		1.00	0.30		0.80
Trck/Cmb PCE:	1.50		2.00	1.50		2.00	1.50		2.00	1.00		1.20
Adj Vol.:	0	317	28	17	528	0	0	0	0	36	0	18
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	344	xxxx	xxxxx	xxxx	xxxx	xxxxx	875	xxxx	331
Potent Cap.:	xxxx	xxxx	xxxxx	1175	xxxx	xxxxx	xxxx	xxxx	xxxxx	330	xxxx	942
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.98	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1175	xxxx	xxxxx	xxxx	xxxx	xxxxx	323	xxxx	942
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.9	xxxx	3.9
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	- LTR	- RT	LT	- LTR	- RT	LT	- LTR	- RT	LT	- LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	413	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*
ApproachDel:		0.0			0.1			0.0			9.9	

****

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #3 US 101/Range

****

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	1	0	0 1 0	0	0	0 0 0	0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	280	10	45	345	0	0	0	0	5	0	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	280	10	45	345	0	0	0	0	5	0	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	311	11	50	383	0	0	0	0	6	0	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	311	11	50	383	0	0	0	0	6	0	33
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00		0.99	0.00		0.98	xxxx		xxxx	0.00		0.99
% Truck/Comb:	0.01		0.00	0.02		0.00	xxxx		xxxx	0.01		0.00
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50		1.00	0.50		1.00	xxxx		xxxx	0.50		1.00
Trck/Cmb PCE:	1.50		2.00	1.50		2.00	xxxx		xxxx	1.50		2.00
Adj Vol.:	0	311	11	51	383	0	0	0	0	6	0	34
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	322	xxxx	xxxxx	xxxx	xxxx	xxxxx	750	xxxx	317
Potent Cap.:	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	390	xxxx	957
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	368	xxxx	957
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.9	xxxx	3.9
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	779	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:		0.0			0.4			0.0			4.8	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #4 Highway 34/Cedar

****

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	20	5	85	1	5	20	15	330	40	50	240	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	20	5	85	1	5	20	15	330	40	50	240	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
PHF Volume:	24	6	104	1	6	24	18	402	49	61	293	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	24	6	104	1	6	24	18	402	49	61	293	1
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00		0.99	0.00		0.99	0.00		0.98	0.00		0.98
% Truck/Comb:	0.01		0.00	0.01		0.00	0.02		0.00	0.02		0.00
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50		1.00	0.50		1.00	0.50		1.00	0.50		1.00
Trck/Cmb PCE:	1.50		2.00	1.50		2.00	1.50		2.00	1.50		2.00
Adj Vol.:	25	6	104	1	6	25	18	402	49	62	293	1
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	815	800	427	854	824	293	294	xxxx	xxxxx	451	xxxx	xxxxx
Potent Cap.:	357	415	842	339	403	983	1242	xxxx	xxxxx	1045	xxxx	xxxxx
Adj Cap:	0.91	0.93	1.00	0.82	0.93	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	325	385	842	277	374	983	1242	xxxx	xxxxx	1045	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	12.0	9.5	4.9	13.1	9.8	3.8	2.9	xxxx	xxxxx	3.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	627	xxxxx	xxxx	697	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	7.3	xxxxx	xxxxx	5.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		6.4			5.3			0.1			0.6	

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Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
1998 Existing Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Highway 34/Mill

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 1!	0	0	0 0 1!	0	0	1 0	0	1 0
Volume Module:												
Base Vol:	15	1	15	10	5	25	15	240	15	10	125	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	1	15	10	5	25	15	240	15	10	125	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	16	1	16	11	5	27	16	264	16	11	137	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	16	1	16	11	5	27	16	264	16	11	137	2
Adjusted Volume Module:												
Grade:	0%			0%			0%			0%		
% Cycle/Cars:	0.00	0.97		0.00	0.99		0.00	0.98		0.00	0.98	
% Truck/Comb:	0.03	0.00		0.01	0.00		0.02	0.00		0.02	0.00	
PCE Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00	xxxx	1.00	1.00
Cycl/Car PCE:	0.50	1.00		0.50	1.00		0.50	1.00		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		1.50	2.00		1.50	2.00	
Adj Vol.:	17	1	17	11	6	28	17	264	16	11	137	2
Critical Gap Module:												
MoveUp Time:	3.4	3.3	2.6	3.4	3.3	2.6	2.1	xxxx	xxxxx	2.1	xxxx	xxxxx
Critical Gp:	6.5	6.0	5.5	6.5	6.0	5.5	5.0	xxxx	xxxxx	5.0	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	454	439	272	447	446	138	140	xxxx	xxxxx	280	xxxx	xxxxx
Potent Cap.:	578	642	1008	584	636	1178	1471	xxxx	xxxxx	1261	xxxx	xxxxx
Adj Cap:	0.95	0.98	1.00	0.97	0.98	1.00	1.00	xxxx	xxxxx	1.00	xxxx	xxxxx
Move Cap.:	551	628	1008	563	622	1178	1471	xxxx	xxxxx	1261	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	6.7	5.7	3.6	6.5	5.8	3.1	2.5	xxxx	xxxxx	2.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	709	xxxxx	xxxx	851	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	5.3	xxxxx	xxxxx	4.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	A	*	*	*	*	*	*	*
ApproachDel:		5.2			4.3			0.1			0.2	

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LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	25-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-ST

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	US 101/Starr-Norwood
Conditions (yr, alt., etc.):	Existing PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	NB	SB
Advancing Volume	310	490
Opposing Volume	475	310
Left-Turn Volume	0	15
%Left Turns (L)	0.0%	3.1%
Speed (mph)	60	60
Storage Probability	0.00000100	0.00000100
Warrant Utilization (3-veh)	0.0100	0.0100
4-vehicle	0.0316	0.0316
5-vehicle	0.0631	0.0631
6-vehicle	0.1000	0.1000
7-vehicle	0.1389	0.1389
8-vehicle	0.1778	0.1778
9-vehicle	0.2154	0.2154
10-vehicle	0.2512	0.2512
11-vehicle	0.2848	0.2848
12-vehicle	0.3162	0.3162

CALCULATIONS:	SB
Critical Gap (Gc)	5.0
Exit Time (Te)	1.9
Wait Time (Tw)	1.25
Manuever Time (T1)	3.0
Usable Gaps	132
Blocked Time/hr	718.3
Mean Headway (Ta)	7.35
Mean Arrival Rate	9.3
Mean Service Rate	960.6

RESULTS:

Utilization Factor	0.0097
LT Lane Warranted?	NO
Storage Length (ft)	

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 25-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-STA

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Starr-Norwood
Conditions (yr, alt., etc.): Existing PM Peak

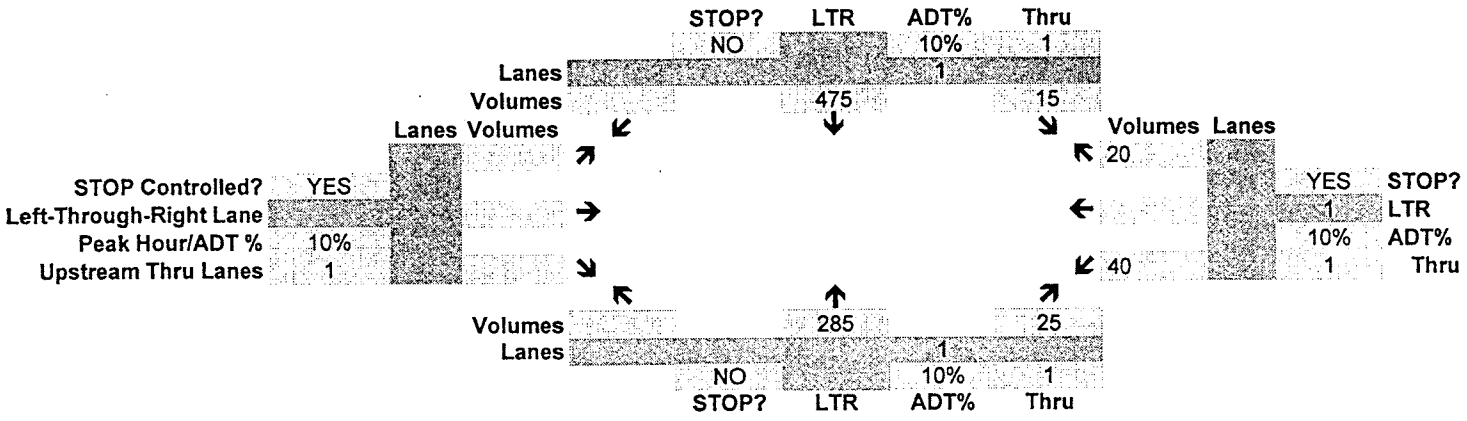
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	800 vph
Highest minor approach:	60 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	YES
Warrant Factor	70%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	350	105	800	60	640	36	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	525	52.5	800	60	640	36	NO
WARRANT 11 Peak Hour Volume	1	1	800	115	800	60	800	60	NO

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	US 101/Starr-Norwood	
Project Number:	2890	Conditions (year, alt.):	Existing PM Peak	
Analyst:	JAG	Major Street Direction:	NS	(NS or EW)
Date:	25-Apr-99	Major Street Speed:	55	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-STARR.W	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	25-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-CE

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	ORE 34/Cedar
Conditions (yr, alt., etc.):	Existing PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**EB**	**WB**
Advancing Volume	385	292
Opposing Volume	242	370
Left-Turn Volume	15	50
%Left Turns (L)	3.9%	17.1%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	**EB**	**WB**
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	0.94	1.54
Manuever Time (T1)	3.0	3.0
Usable Gaps	121	145
Blocked Time/hr	565.7	851.4
Mean Headway (Ta)	9.35	12.33
Mean Arrival Rate	6.6	17.3
Mean Service Rate	1011.4	916.2

RESULTS:

Utilization Factor	0.0065	0.0189
LT Lane Warranted?	NO	NO
Storage Length (ft)		

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 25-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-CED

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Cedar
Conditions (yr, alt., etc.): Existing PM Peak

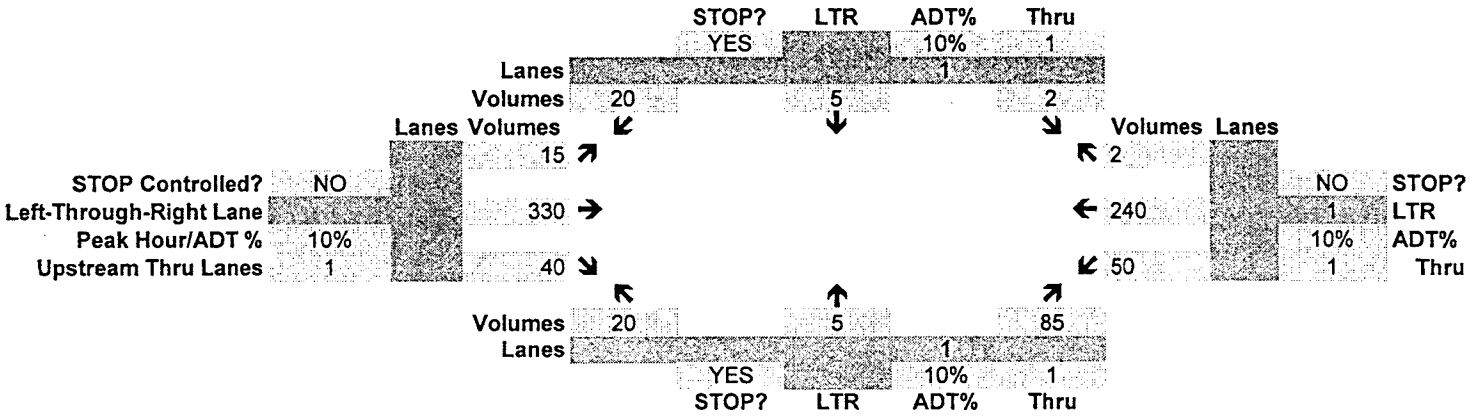
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	677 vph
Highest minor approach:	110 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	NO
Warrant Factor	100%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	677	110	541.6	66	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	677	110	541.6	66	NO
WARRANT 11 Peak Hour Volume	1	1	677	340	677	110	677	110	NO

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Cedar
Project Number:	2890	Conditions (year, alt.):	Existing PM Peak
Analyst:	JAG	Major Street Direction:	EW (NS or EW)
Date:	25-Apr-99	Major Street Speed:	40 mph
Filename:	H:\PROJFILE\2890\QPRO\LT-CEDAR.	Population<10,000?	NO (YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:	
		Major Street:	80%
		Minor Street:	60%
		Peak Hour Factor:	90%



SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-MILL

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Mill-Crestline
Conditions (yr, alt., etc.): Existing PM Peak

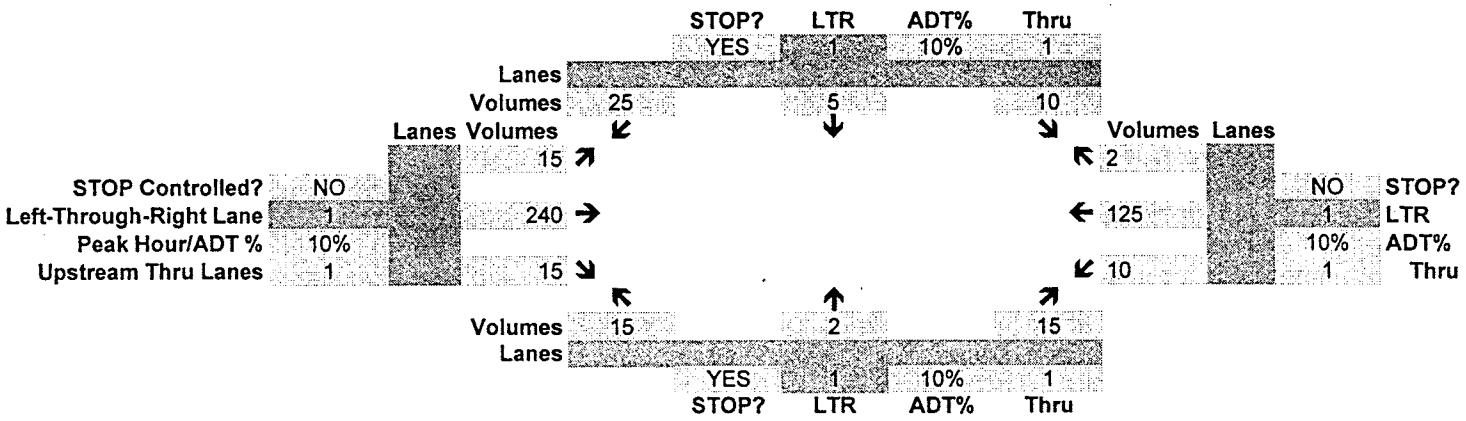
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	407 vph
Highest minor approach:	40 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	NO
Warrant Factor	100%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	407	40	325.6	24	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	407	40	325.6	24	NO
WARRANT 11 Peak Hour Volume	1	1	407	NA	407	40	407	40	NO

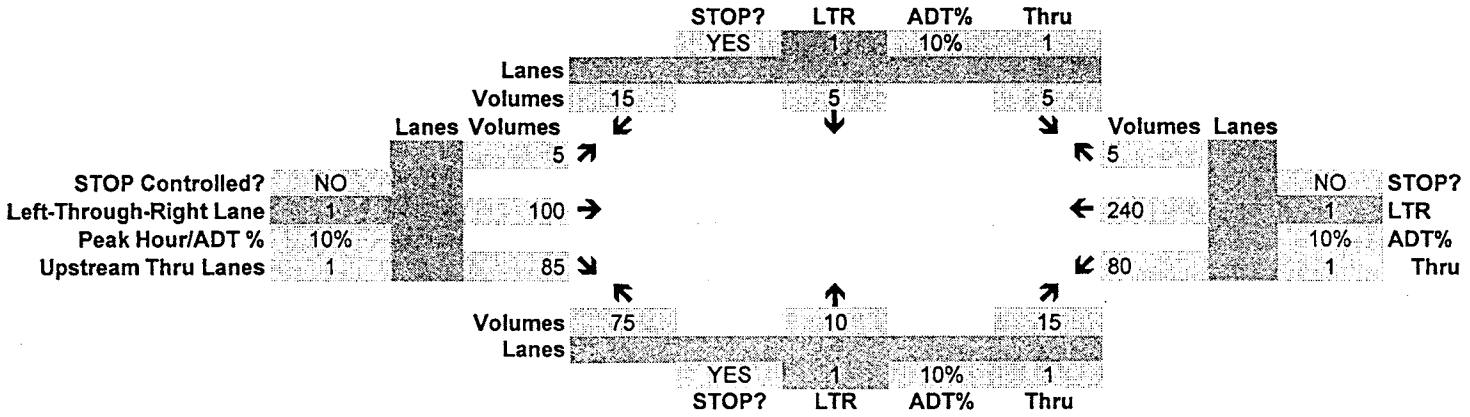
UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Mill-Crestline	
Project Number:	2890	Conditions (year, alt.):	Existing PM Peak	
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	26-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-MILL.WB	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Mill-Crestline	
Project Number:	2890	Conditions (year, alt.):	Existing ~~PM~~ Peak	AM
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	27-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\MILL-AM.WB	Population<10,000?	YES	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	27-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\MILL-A

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	ORE 34/Mill-Crestline
Conditions (yr, alt., etc.):	Existing ~~PM~~ Peak AM
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**EB**	**WB**
Advancing Volume	190	325
Opposing Volume	245	185
Left-Turn Volume	5	80
%Left Turns (L)	2.6%	24.6%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	**EB**	**WB**
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	0.96	0.70
Manuever Time (T1)	3.0	3.0
Usable Gaps	123	104
Blocked Time/hr	572.7	439.3
Mean Headway (Ta)	18.95	11.08
Mean Arrival Rate	1.1	21.2
Mean Service Rate	1009.1	1053.6

RESULTS:

Utilization Factor	0.0011	0.0202
LT Lane Warranted?	NO	YES
Storage Length (ft)		75

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #3 US 101/Range

****

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	1	0	1 0	1	0 0	0 0	0	0 0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	0	280	10	45	345	0	0	0	0	5	0	30
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	8	23	74	5	0	0	0	0	33	0	117
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	344	35	128	419	0	0	0	0	39	0	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	382	39	142	466	0	0	0	0	43	0	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	382	39	142	466	0	0	0	0	43	0	170
Adjusted Volume Module:												
Grade:		0%			0%			0%			0%	
% Cycle/Cars:	0.00	0.99		0.00	0.98		xxxx	xxxx		0.00	0.99	
Truck/Comb:	0.01	0.00		0.02	0.00		xxxx	xxxx		0.01	0.00	
PCE Adj:	xxxx	1.00	1.00	xxxx	1.00	1.00	1.10	1.10	1.10	xxxx	xxxx	xxxxx
Cycl/Car PCE:	0.50	1.00		0.50	1.00		xxxx	xxxx		0.50	1.00	
Trck/Cmb PCE:	1.50	2.00		1.50	2.00		xxxx	xxxx		1.50	2.00	
Adj Vol.:	0	382	39	144	466	0	0	0	0	44	0	171
Critical Gap Module:												
MoveUp Time:	xxxxx	xxxx	xxxxx	2.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.4	xxxx	2.6
Critical Gp:	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	5.5
Capacity Module:												
Conflict Vol:	xxxx	xxxx	xxxxx	421	xxxx	xxxxx	xxxx	xxxx	xxxxx	1009	xxxx	402
Potent Cap.:	xxxx	xxxx	xxxxx	1080	xxxx	xxxxx	xxxx	xxxx	xxxxx	276	xxxx	867
Adj Cap:	xxxx	xxxx	xxxxx	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.87	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxxx	1080	xxxx	xxxxx	xxxx	xxxx	xxxxx	239	xxxx	867
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	3.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.4	xxxx	5.2
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	565	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*
ApproachDel:		0.0			0.9			0.0			7.8	

Kittelson & Associates, Inc. -- Project 2890
City of Waldport TSP
2020 Forecast Conditions -- Weekday PM Peak Hour

Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)

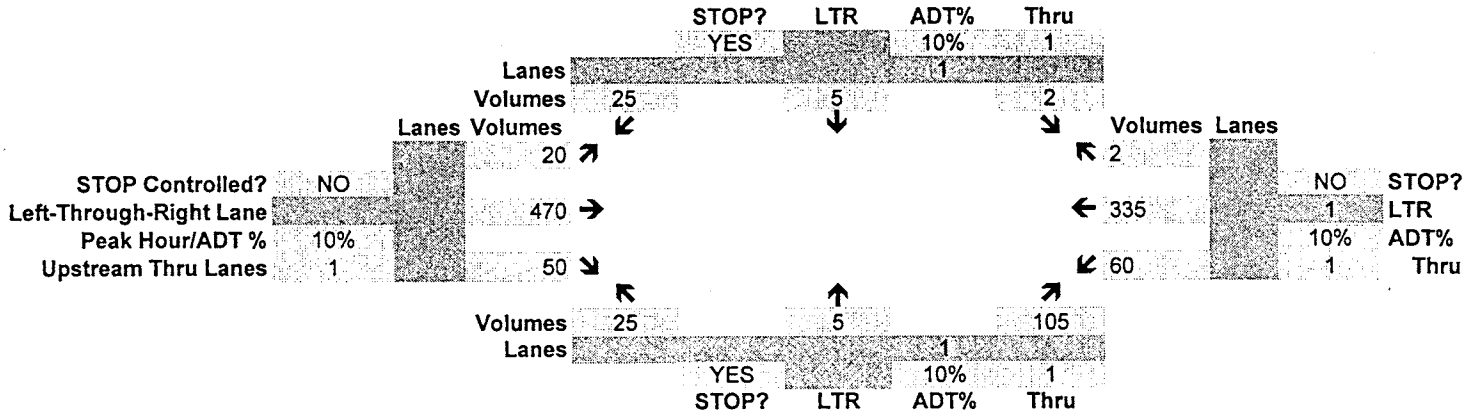
Intersection #3 US 101/Range

Cycle (sec):	60	Critical Vol./Cap. (X):	0.453
Loss Time (sec):	6 (Y+R = 4 sec)	Average Delay (sec/veh):	7.3
Optimal Cycle:	24	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0
Volume Module:												
Base Vol:	0	280	10	45	345	0	0	0	0	5	0	30
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	8	23	74	5	0	0	0	0	33	0	117
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	344	35	128	419	0	0	0	0	39	0	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	382	39	142	466	0	0	0	0	43	0	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	382	39	142	466	0	0	0	0	43	0	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	382	39	142	466	0	0	0	0	43	0	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.99	0.99	0.95	1.00	1.00	1.00	1.00	1.00	0.97	1.00	0.85
Lanes:	1.00	0.91	0.09	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1900	1707	174	1805	1900	0	0	1900	0	1843	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.08	0.25	0.00	0.00	0.00	0.00	0.02	0.00	0.11
Crit Moves:		****		****								****
Green/Cycle:	0.00	0.49	0.49	0.17	0.67	0.00	0.00	0.00	0.00	0.23	0.00	0.23
Volume/Cap:	0.00	0.45	0.45	0.45	0.37	0.00	0.00	0.00	0.00	0.10	0.00	0.45
Level Of Service Module:												
Delay/Veh:	0.0	6.6	6.6	15.1	2.9	0.0	0.0	0.0	0.0	11.7	0.0	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Del/Veh:	0.0	6.6	6.6	15.1	2.9	0.0	0.0	0.0	0.0	11.7	0.0	13.4
Queue:	0	4	1	2	3	0	0	0	0	1	0	3

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Cedar	
Project Number:	2890	Conditions (year, alt.):	20-Year Forecast PM Peak	
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	26-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-CED-F.W	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-CED

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Cedar
Conditions (yr, alt., etc.): 20-Year Forecast PM Peak

GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	937 vph
Highest minor approach:	135 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	NO
Warrant Factor	100%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	937	135	749.6	81	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	937	135	749.6	81	NO
WARRANT 11 Peak Hour Volume	1	1	937	230	937	135	937	135	NO

LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	26-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-CE

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	ORE 34/Cedar
Conditions (yr, alt., etc.):	20-Year Forecast PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**EB**	**WB**
Advancing Volume	540	397
Opposing Volume	337	520
Left-Turn Volume	20	60
%Left Turns (L)	3.7%	15.1%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	**EB**	**WB**
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	1.38	2.33
Manuever Time (T1)	3.0	3.0
Usable Gaps	137	168
Blocked Time/hr	777.8	1178.3
Mean Headway (Ta)	6.67	9.07
Mean Arrival Rate	14.2	35.7
Mean Service Rate	940.7	807.2

RESULTS:

Utilization Factor	0.0151	0.0442
LT Lane Warranted?	NO	YES
Storage Length (ft)		75

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-CED

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Cedar
Conditions (yr, alt., etc.): 20-Year Forecast PM Peak

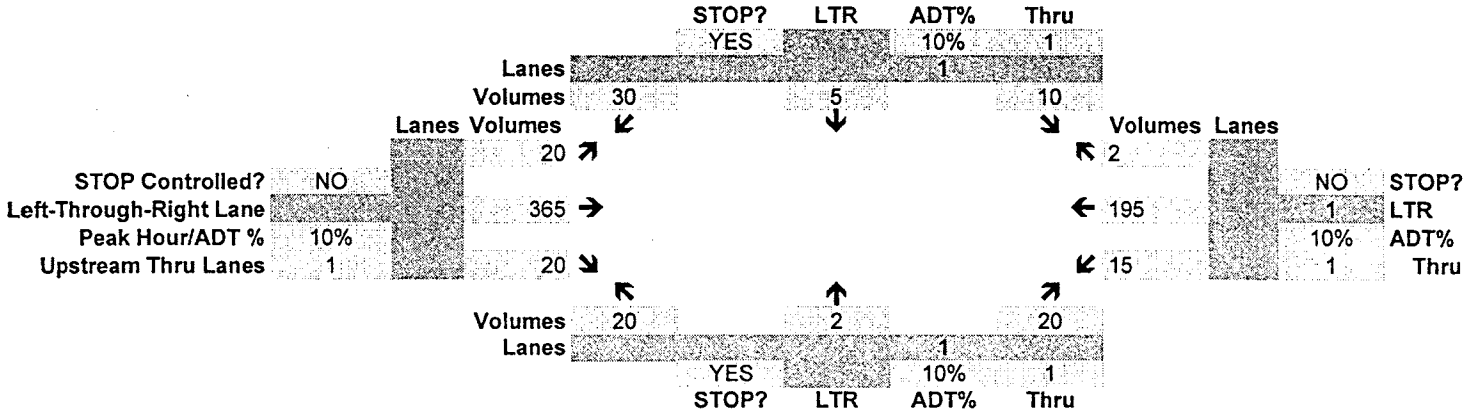
GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:		
Major approach:	1	
Minor approach:	1	
Peak Hour Approach Volumes*:		
Sum of major approaches:	937	vph
Highest minor approach:	135	vph
Factor Peak Hour --> 8th Highest Hour		
Major approach:	80%	(60-80% acceptable)
Minor approach:	60%	(60-80% acceptable)
Is the population < 10,000 or speed > 40	NO	
Warrant Factor	100%	

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	937	135	749.6	81	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	937	135	749.6	81	NO
WARRANT 11 Peak Hour Volume	1	1	937	230	937	135	937	135	NO

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	ORE 34/Mill-Crestline	
Project Number:	2890	Conditions (year, alt.):	20-Year Forecast PM Peak	
Analyst:	JAG	Major Street Direction:	EW	(NS or EW)
Date:	26-Apr-99	Major Street Speed:	40	mph
Filename:	H:\PROJFILE\2890\QPRO\LT-MIL-F.WB	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	



SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-MIL-

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: ORE 34/Mill-Crestline
Conditions (yr, alt., etc.): 20-Year Forecast PM Peak

GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	617 vph
Highest minor approach:	45 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	NO
Warrant Factor	100%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	500	150	617	45	493.6	27	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	750	75	617	45	493.6	27	NO
WARRANT 11 Peak Hour Volume	1	1	617	375	617	45	617	45	NO

LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	26-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-MIL

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	ORE 34/Mill-Crestline
Conditions (yr, alt., etc.):	20-Year Forecast PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**EB**	**WB**
Advancing Volume	405	212
Opposing Volume	197	385
Left-Turn Volume	20	15
%Left Turns (L)	4.9%	7.1%
Speed (mph)	40	40
Storage Probability	0.00000800	0.00000800
Warrant Utilization (3-veh)	0.0200	0.0200
4-vehicle	0.0532	0.0532
5-vehicle	0.0956	0.0956
6-vehicle	0.1414	0.1414
7-vehicle	0.1870	0.1870
8-vehicle	0.2306	0.2306
9-vehicle	0.2714	0.2714
10-vehicle	0.3092	0.3092
11-vehicle	0.3441	0.3441
12-vehicle	0.3761	0.3761

CALCULATIONS:	**EB**	**WB**
Critical Gap (Gc)	5.0	5.0
Exit Time (Te)	1.9	1.9
Wait Time (Tw)	0.75	1.61
Manuever Time (T1)	3.0	3.0
Usable Gaps	111	144
Blocked Time/hr	467.8	884.5
Mean Headway (Ta)	8.89	16.98
Mean Arrival Rate	8.5	4.3
Mean Service Rate	1044.1	905.2

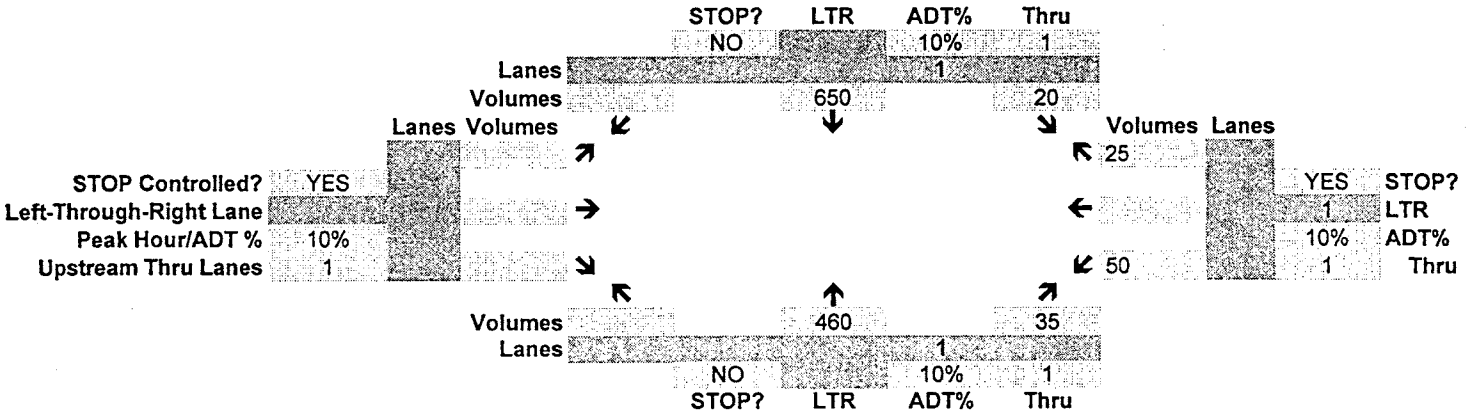
RESULTS:

Utilization Factor	0.0081	0.0048
LT Lane Warranted?	NO	NO
Storage Length (ft)		

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	US 101/Starr-Norwood
Project Number:	2890	Conditions (year, alt.):	20-Year Forecast PM Peak
Analyst:	JAG	Major Street Direction:	NS (NS or EW)
Date:	26-Apr-99	Major Street Speed:	45 mph
Filename:	H:\PROJFILE\2890\QPRO\LT-STA-F.W	Population<10,000?	NO (YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:	
		Major Street:	80%
		Minor Street:	60%
		Peak Hour Factor:	90%



SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 26-Apr-99
Filename: H:\PROJFILE\2890\QPRO\LT-STA

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Starr-Norwood
Conditions (yr, alt., etc.): 20-Year Forecast PM Peak

GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	1165 vph
Highest minor approach:	75 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
Is the population < 10,000 or speed > 40	YES
Warrant Factor	70%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	350	105	1165	75	932	45	NO
WARRANT 2 Interruption of Continuous Traffi	1	1	525	52.5	1165	75	932	45	NO
WARRANT 11 Peak Hour Volume	1	1	1165	75	1165	75	1165	75	NO

LEFT-TURN LANE WARRANT ANALYSIS

Project Name:	Waldport TSP
Project Number:	2890
Analyst:	JAG
Date:	26-Apr-99
Filename:	H:\PROJFILE\2890\QPRO\LT-ST

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection:	US 101/Starr-Norwood
Conditions (yr, alt., etc.):	20-Year Forecast PM Peak
Storage Length/Vehicle:	25 feet

INPUTS & WARRANTS:	**NB**	**SB**
Advancing Volume	495	670
Opposing Volume	650	495
Left-Turn Volume	0	20
%Left Turns (L)	0.0%	3.0%
Speed (mph)	50	50
Storage Probability	0.00000338	0.00000338
Warrant Utilization (3-veh)	0.0150	0.0150
4-vehicle	0.0429	0.0429
5-vehicle	0.0805	0.0805
6-vehicle	0.1225	0.1225
7-vehicle	0.1653	0.1653
8-vehicle	0.2070	0.2070
9-vehicle	0.2466	0.2466
10-vehicle	0.2837	0.2837
11-vehicle	0.3181	0.3181
12-vehicle	0.3500	0.3500

CALCULATIONS:	**SB**
Critical Gap (Gc)	5.0
Exit Time (Te)	1.9
Wait Time (Tw)	2.19
Manuever Time (T1)	3.0
Usable Gaps	164
Blocked Time/hr	1122.9
Mean Headway (Ta)	5.37
Mean Arrival Rate	22.2
Mean Service Rate	825.7

RESULTS:

Utilization Factor	0.0268
LT Lane Warranted?	YES
Storage Length (ft)	75

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

SIGNAL WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 23-Apr-99
Filename: H:\PROJFILE\2890\QPRO\UNSIG.

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Range Road
Conditions (yr, alt., etc.): 20-year Forecast PM Peak

55 mph

GENERAL INPUT PARAMETERS:

Number of lanes for moving traffic:	
Major approach:	1
Minor approach:	1
Peak Hour Approach Volumes*:	
Sum of major approaches:	926 vph
Highest minor approach:	192 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	80% (60-80% acceptable)
Minor approach:	60% (60-80% acceptable)
's the population < 10,000 or speed > 40	YES
Warrant Factor	70%

	REQUIRED				ACTUAL VOLUMES		8TH HIGHEST HOUR		
	# LANES MAJOR STREET	# LANES MINOR STREET	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	WARRANT MET ?
WARRANT 1 Minimum Vehicular Volume	1	1	350	105	926	192	740.8	115.2	YES
WARRANT 2 Interruption of Continuous Traffi	1	1	525	52.5	926	192	740.8	115.2	YES
WARRANT 11 Peak Hour Volume	1	1	926	85	926	192	926	192	YES

LEFT-TURN LANE WARRANT ANALYSIS

Project Name: Waldport TSP
Project Number: 2890
Analyst: JAG
Date: 23-Apr-99
Filename: H:\PROJFILE\2890\QPRO\UNSIG

KITTELSON & ASSOCIATES, INC.
610 SW Alder, Suite 700
Portland, Oregon 97205
(503) 228-5230
Fax: (503) 273-8169

Intersection: US 101/Range Road
Conditions (yr, alt., etc.): 20-year Forecast PM Peak
Storage Length/Vehicle: 25 feet

INPUTS & WARRANTS:	NB	SB
Advancing Volume	379	547
Opposing Volume	419	379
Left-Turn Volume	0	128
%Left Turns (L)	0.0%	23.4%
Speed (mph)	60	60
Storage Probability	0.00000100	0.00000100
Warrant Utilization (3-veh)	0.0100	0.0100
4-vehicle	0.0316	0.0316
5-vehicle	0.0631	0.0631
6-vehicle	0.1000	0.1000
7-vehicle	0.1389	0.1389
8-vehicle	0.1778	0.1778
9-vehicle	0.2154	0.2154
10-vehicle	0.2512	0.2512
11-vehicle	0.2848	0.2848
12-vehicle	0.3162	0.3162

CALCULATIONS:	SB
Critical Gap (Gc)	5.0
Exit Time (Te)	1.9
Wait Time (Tw)	1.58
Manuever Time (T1)	3.0
Usable Gaps	142
Blocked Time/hr	870.8
Mean Headway (Ta)	6.58
Mean Arrival Rate	77.8
Mean Service Rate	909.7

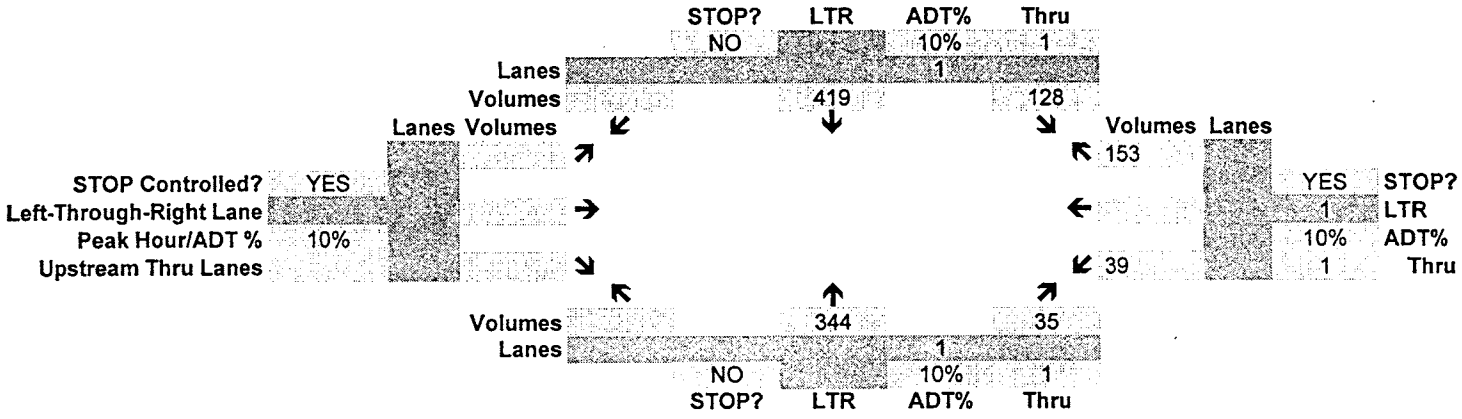
RESULTS:

Utilization Factor	0.0855
LT Lane Warranted?	YES
Storage Length (ft)	125

Source: M.D. Harmelink, "Volume Warrants for Left-Turn Storage at Unsignalized Grade Intersections", Highway Research Record 211.

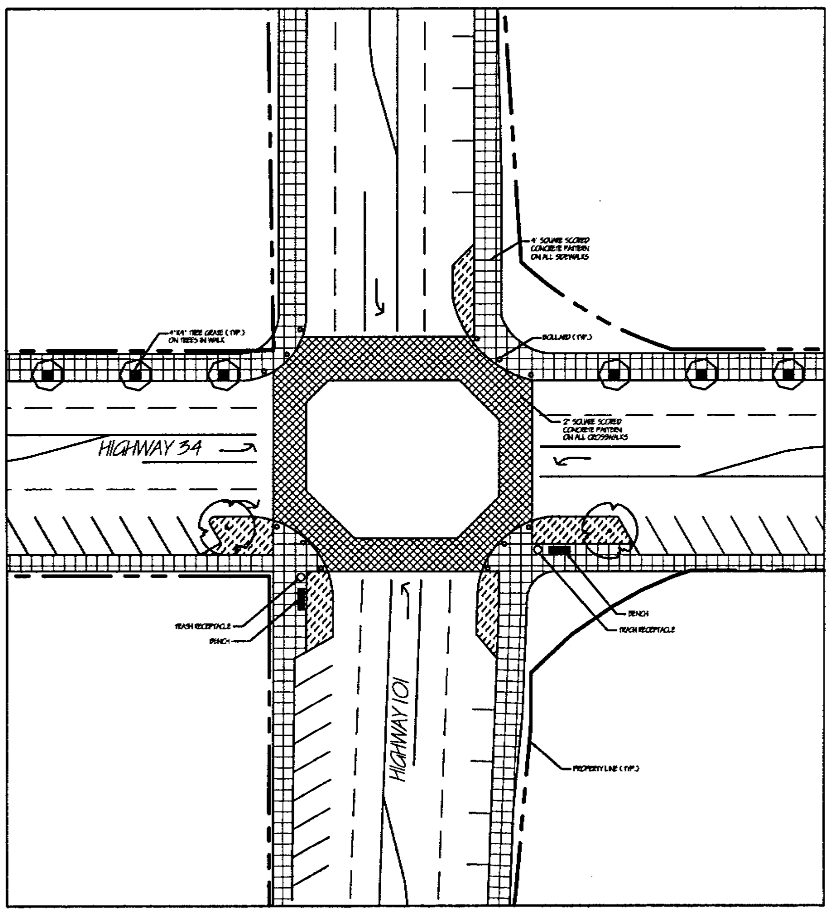
UNSIGNALIZED INTERSECTION ANALYSIS

Project Name:	Waldport TSP	Intersection:	US 101/Range Road	
Project Number:	2890	Conditions (year, alt.):	20-year Forecast PM Peak	
Analyst:	JAG	Major Street Direction:	NS	(NS or EW)
Date:	23-Apr-99	Major Street Speed:	55	mph
Filename:	H:\PROJFILE\2890\QPRO\UNSIG.WB2	Population<10,000?	NO	(YES or NO)
		Factor Peak Hour -> 8th-Highest Hour:		
		Major Street:	80%	
		Minor Street:	60%	
		Peak Hour Factor:	90%	

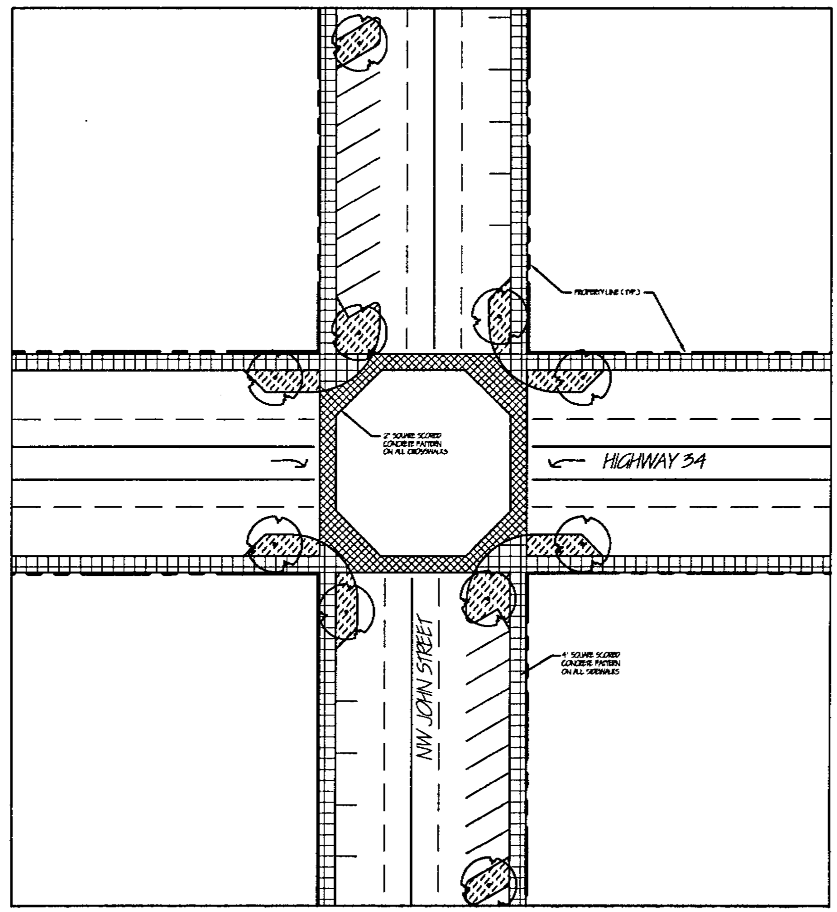


LEGEND

- PROPERTY LINE
- MEDIUM SCALE STREET TREE
- COLUMNAR STREET TREE
- SHRUB PLANTING AREA
- TREE GRATE
- BENCH
- TRASH RECEPTACLE
- BOLLARD



HIGHWAY 101 & HIGHWAY 34



HIGHWAY 34 & NW JOHN STREET

NORTH

SCALE: 1" = 20'

MACDONALD
ENVIRONMENTAL PLANNING, PC

Landscape Architecture
Site Planning
Recreational Planning

HIGHWAY 101 & 34
WALDPORT, OREGON

REGISTERED LANDSCAPE ARCHITECT OREGON

CONCEPTUAL INTERSECTION LAYOUTS

L.1

H: \PROJECT\97038\Drawings\9921.L1.dwg Wed Jun 30 15: 05: 01 1999 RFB

Additional Comments

Thank you for your time and opinion!

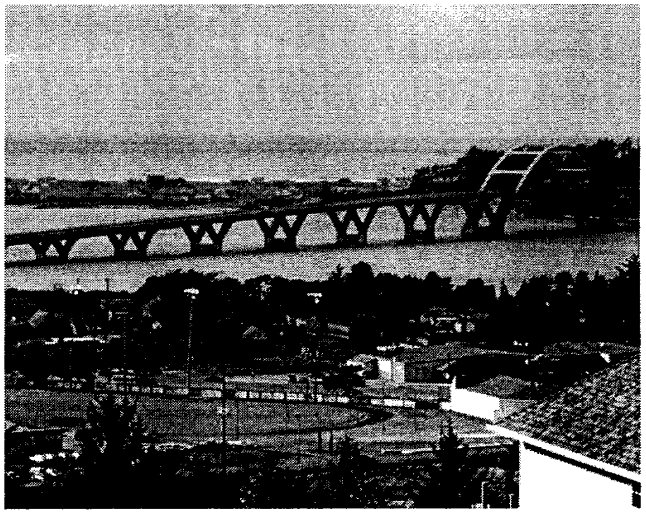
Name_____
(Optional)

Please fold, seal, stamp and mail by April 2, 1999 to:

TriLand Design Group
10260 SW Nimbus Avenue, M4
Tigard, OR 97223

Place Stamp Here

TriLand Design Group
10260 SW Nimbus Avenue, M4
Tigard, OR 97223



Waldport
Transportation System Plan

QUESTIONNAIRE

An important opportunity for citizens and visitors to provide input regarding future transportation improvements in Waldport.

Introduction

The Transportation and Growth Management Program* is funding a plan that will identify automobile, pedestrian, bicycle, and other transportation improvements in Waldport over the next 20-years.

The purpose of this questionnaire is to solicit input from citizens and visitors. We would appreciate your opinion regarding transportation concerns and ideas for improving the Waldport transportation system.

Please duplicate this questionnaire if you need extra copies for your household or friends.

Next Steps

The results of this questionnaire, along with results of interviews and initial input received at a transportation advisory group meeting, will be used to develop alternative transportation system diagrams. The alternative diagrams will identify:

- Improvements to existing streets;
- Potential new streets;
- Bicycle and pedestrian systems;
- Needed intersection improvements;
- Public parking improvements;
- Access management on major streets;
- Streetscape improvements;
- Gateway improvements;
- Other transportation-related issues and ideas that you have identified in this questionnaire.

Citizens and visitors will be invited to review and provide input on the alternative transportation system diagrams at a **Community Open House** scheduled June 3, 1999 from 4:30 – 5:30 p.m.

* jointly funded by the Oregon Dept. of Transportation and Dept. of Land Conservation & Development

1. Are you a:

_____ Resident of Waldport?
_____ Resident of Surrounding Area?
_____ Visitor?

2. What are your transportation needs and desires?

Transportation Mode/Facility	Do you currently use?	Would you use if facilities were provided or improved?	Should facilities be added or expanded?
Automobile (streets)			
Walk/Run (sidewalk/path)			
Bicycle (bike lane, path)			
Transit (bus service)			
Other _____			

Other could be skateboarding, rollerblading, electric cart, etc.

3. How important are these potential transportation improvements?

Please circle one number. 1=Most Important, 2=More Important, 3=Important, 4=Minimally Important, 5=Not Important

Potential Improvement	Importance
Safe and connected community-wide bicycle/pedestrian system	1 2 3 4 5
Safe pedestrian/bicycle crossings on Hwy. 101 and Hwy. 34	1 2 3 4 5
Improve access to local businesses (parking, walking, driveways)	1 2 3 4 5
Additional public parking	1 2 3 4 5
Improve the Hwy. 101/Hwy. 34 intersection	1 2 3 4 5
Improve the Hwy. 34/Cedar Street intersection	1 2 3 4 5
Improve the Hwy. 34/Crestline Drive (High School Rd.) intersection	1 2 3 4 5
Improve the Hwy. 101/Starr St. intersection	1 2 3 4 5
Improve the Hwy. 101/Range Dr. intersection	1 2 3 4 5
Traffic speed enforcement	1 2 3 4 5
Safe pedestrian/bicycle facilities on Crestline Drive	1 2 3 4 5
Safe pedestrian/bicycle facilities on Range Drive	1 2 3 4 5
Bicycle/pedestrian connections between downtown and Crestline Dr.	1 2 3 4 5
Additional or improved public transportation (i.e. bus service)	1 2 3 4 5
Other_____	1 2 3 4 5
Other_____	1 2 3 4 5

4a. What is the single most important transportation improvement needed?

_____

_____

4b. What is the 2nd most important transportation improvement needed?

_____

_____

5. What other transportation-related improvements would you like that will make Waldport a better place to live in and visit?

_____

_____