

# City of Manzanita Downtown Transportation Plan

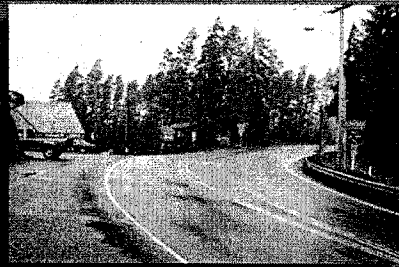
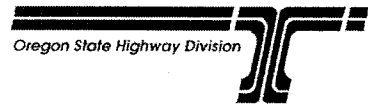
Prepared For:



City of Manzanita

and

Oregon Department of  
Transportation



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# Executive Summary

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The Manzanita Downtown Transportation Plan addresses key transportation issues in the City of Manzanita. These include improvements to the U.S. 101 intersections with Laneda and Manzanita Avenues, north and south extensions of Classic Street, and the Laneda Avenue street design. The plan reflects the goals and vision of Manzanita's community members, who participated through project advisory committee meetings and a public open house.

The plan's goals are:

- Improve mobility, safety, and accessibility for all travel modes,
- Improve pedestrian and bicycle circulation and facilities, and
- Provide for improvements that are implementable and comply with applicable standards.

This plan has four sections: 1) Introduction; 2) Existing Conditions and Future Opportunities; 3) Draft Alternatives and 4) Preferred Alternatives. The preferred alternatives—the transportation changes that are recommended after analysis of a series of options—are the heart of the plan. They are described in detail in Section 4 and summarized below.

## Summary of Recommendations

### U.S. 101 Intersections

- Need: Improve intersection safety and operations.
- Recommendations:
  - U.S. 101/Laneda Avenue: In the short-term, add separate left- and right-turn lanes from Laneda Avenue to U.S. 101 and study pedestrian circulation and access management issues. In the long-term, reconstruct the intersection to improve its alignment and lengthen the left-turn lane from U.S. 101 to Laneda Avenue.
  - U.S. 101/Manzanita Avenue: In the short-term, add separate left- and right-turn lanes from Manzanita Avenue to U.S. 101. In the long-term, add left- and right-turn lanes from U.S. 101 to Manzanita Avenue and close County Road to vehicles to improve intersection safety.

### **Classic Street Extension**

- Need: Improve north-south connectivity in the city.
- Recommendations: Extend Classic Street north of Laneda Avenue to North Avenue and south of Laneda Avenue to Ridge Drive/Nearney City Road. The south extension includes two travel lanes and a pedestrian/bicycle path separated by a landscape buffer.

### **Laneda Avenue Street Design**

- Need: Improve the street to better accommodate vehicles, bicycles and pedestrians; support and enhance the existing downtown character; and provide a framework for the reconstruction of the street anticipated for 2003-2004.
- Recommendations: Laneda should have a two-way cross section with wider sidewalks and on-street parking. Curb extensions and marked crosswalks should be provided at selected locations, with landscaping and access management on private properties.

## SECTION 1

# Introduction

---

The Manzanita Downtown Transportation Plan is a focused effort that addresses key transportation issues in the City of Manzanita (see Figure 1-1). These include improvements to Laneda Avenue street design; the intersections of U.S. 101 with Laneda and Manzanita Avenues; and the extension of Classic Street. These issues were identified as priority issues by the city and confirmed through a review of existing transportation system conditions.

In 2001, the City of Manzanita applied to the Oregon Transportation and Growth Management (TGM) Program for funds to prepare a transportation system plan (TSP), in a joint application with five of the other incorporated cities in Tillamook County. Preparing a TSP would help the city address its long-term transportation needs and also comply with the Oregon Transportation Planning Rule (TPR), which requires most cities to prepare and periodically update a TSP. However, because adequate funds were not available to allow preparation of a full TSP, the focused planning effort documented in this plan was conducted instead. This transportation plan includes preparation of documentation for the city to apply for a TSP exemption based on the city's transportation needs and the issues addressed in this plan.

## Planning Team and Process

### Project Management Team

A project management team (PMT) was formed at the beginning of the planning process to provide overall guidance and policy direction for the transportation plan. The PMT, consisting of city, Oregon Department of Transportation (ODOT) and consultant staff, met initially in October 2002 to kick off the project. Members of the team met subsequently as part of the project advisory committee (PAC) (see below) and otherwise communicated regularly throughout the project.

### Public Involvement

A focused public involvement process was conducted as part of the transportation plan to ensure the substantive participation of Manzanita citizens, stakeholders and other interested parties in the plan. Key components of the public involvement process were two meetings of the city-appointed PAC – made up of elected and appointed officials, agency representatives, business owners and citizens at large – and a public open house.



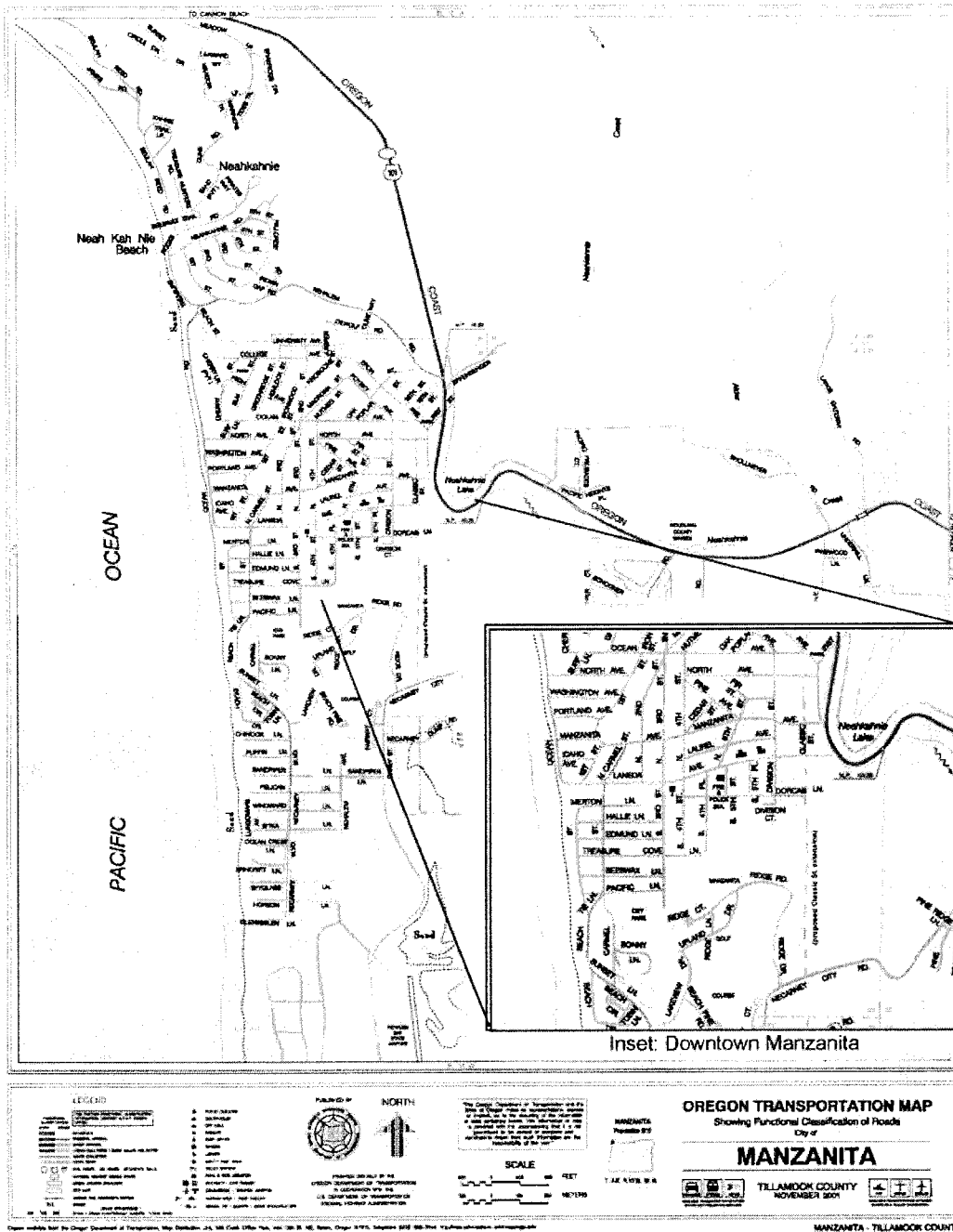


FIGURE 1-1  
City of Manzanita—Location Map

## **Laneda Committee**

In November 2002, voters in Manzanita approved a general obligation bond measure to fund improvements to Laneda Avenue between Division Street and Ocean Road. As a result, the need to conduct implementation planning for the reconstruction of Laneda Avenue (expected to begin in late 2003) coincided with the long-term planning for Laneda Avenue as part of the downtown transportation plan. To coordinate these two efforts, the PAC also functioned as the Laneda Committee, which met under city supervision a number of times to discuss the detailed design of Laneda Avenue. The downtown transportation plan and the Laneda Avenue implementation plan were conducted simultaneously as separate, but coordinated, processes.

## **PAC Meeting 1**

The purpose of the first PAC meeting on Jan. 23, 2003, was to introduce the committee and the project team, provide an overview of the project, and present and discuss background information and draft alternative concepts. Background information included the draft goals and objectives, and the existing conditions and future opportunities memorandum. Draft alternatives were presented for the U.S. 101 intersections, Classic Street extension and Laneda Avenue street design. The agenda and summary notes from PAC Meeting 1 are included in Appendix A.

## **Open House**

About 40 people participated in a public open house held on March 8, 2003, from 9 to 11 a.m. at Pine Grove Community House. The consulting team presented and discussed the draft alternative concepts, which had been revised on the basis of PAC comments. A summary of the open house is included in Appendix A.

## **PAC Meeting 2**

The purpose of the second PAC meeting on April 16, 2003, was to gather comments on the draft plan, including the refined alternatives. The draft plan was mailed in advance of the meeting. The summary notes from PAC Meeting 2 are included in Appendix A.

## **Goals and Objectives**

The PMT developed draft goals and objectives, which the PAC then reviewed. The purpose of the goals and objectives listed below is to create a framework for the transportation plan and help ensure that the plan responds to the needs and desires of the community. Many of the goals and objectives were drawn from existing planning documents for Manzanita, such as the city's comprehensive plan and the Resource Team Report prepared by the Oregon Downtown Development Association (ODDA) in 2000.

## **Goal 1: Mobility, Safety and Accessibility**

Improve mobility, safety and accessibility for all travel modes.

### **Objectives:**

- Improve vehicle circulation, particularly for north-south travel, as well as along Laneda Avenue and side streets.
- Develop and mark new on- and off-street parking areas for auto and recreation vehicle (RV) users at business and recreational destinations downtown.
- Identify intersection improvements (especially at Laneda Avenue/U.S. 101 and Manzanita/U.S. 101) to address circulation, safety and capacity deficiencies.
- Provide detail for the extension of Classic Street to enhance local circulation and encourage local traffic to stay off U.S. 101.
- Provide for improvements to public transportation loading areas and circulation routes.
- Ensure transportation system allows for safe emergency vehicle access and circulation.
- Ensure improvements maintain Manzanita's secluded, restful feel while encouraging business opportunities.
- Develop solutions that balance the needs of motor vehicle and pedestrian/bicycle travel in the downtown area.

## **Goal 2: Pedestrians and Bicycles**

Improve pedestrian and bicycle circulation and facilities.

### **Objectives:**

- Improve crosswalks and maximize pedestrian safety in the downtown area.
- Identify appropriate streetscape improvements, including landscaping, pedestrian-scale lighting, benches and street trees.
- Improve bicycle and pedestrian safety and comfort on Laneda Avenue through the use of traffic calming and other design features.
- Identify opportunities for off-street pedestrian and bicycle facilities, such as shared-use paths, trails and greenways.
- Provide an American with Disabilities Act (ADA)-compliant ramp to the beach at the west end of Laneda Avenue.

### **Goal 3: Implementation**

Provide for improvements that are implementable and comply with applicable standards.

#### **Objectives:**

- Propose new or updated design standards for city streets, in particular to emphasize traffic calming and pedestrian and bicycle travel.
- Develop designs that improve local street connectivity as applicable.
- Ensure that new facilities (and existing facilities as feasible) comply with ADA.
- Develop designs that minimize environmental impacts.
- Develop designs that are cost-effective.
- Develop designs that meet applicable local, county, state and federal plans, standards and criteria.
- Develop a transportation plan with sufficient detail to qualify for funding of engineering and construction phases.

### **Plan and Policy Review**

As an initial step in the planning process, the consultant team reviewed applicable city, county and state plans and policies relevant to the transportation planning process. The purpose of this review was to provide a policy context for the planning effort, help ensure that proposed projects were consistent with existing relevant plans and policies, and aid in the development of implementing ordinances for the transportation plan.

Consulting staff reviewed documents for the jurisdictions that own, regulate or provide public services on the roadways in Manzanita. These jurisdictions include the city, Tillamook County, the Tillamook County Transportation District (TCTD) and the State of Oregon. Results of the plan and policy review are included in Appendix B.

The following documents were reviewed:

#### **Manzanita**

- Comprehensive Plan (Ordinance No. 95-3. Adopted 1975, amendments through March 1996)
- Zoning Ordinance (Ordinance #95-4. Amendments through Aug. 31, 2001)
- Subdivision Ordinance (Ordinance No. 95-5. Adopted March 6, 1996)
- Street Improvement Ordinance (Ordinance No. 91-2. Creating Street Improvement Standards)
- Resource Team Report (ODDA, June 2000)
- Manzanita Transportation Statement (1978, Excerpt, pp. 82-83)

## **Tillamook County**

- Draft Tillamook County Comprehensive Plan (spring 2002)
- Tillamook County Zoning Ordinance (December 2002)
- Tillamook County Land Division Ordinance (December 2002)
- Tillamook County Public Road Improvement Ordinance (1999)
- Urban Growth Area Agreements Between County and Cities (1996)
- Tillamook County Transportation District

## **State of Oregon/ODOT**

- State Planning Goals (1973)
- Transportation Planning Rule (Oregon Administrative Rule [OAR] 660-012)
- Oregon Transportation Plan (1992)
- Oregon Highway Plan (1999)
- Draft Oregon Rail Plan (2001)
- Oregon Public Transportation Plan (1997)
- Oregon Bicycle and Pedestrian Plan (1995)
- Oregon Transportation Safety Action Plan (1995)
- Access Management Rules (OAR 734-051)
- Freight Moves the Oregon Economy (1999)
- Transportation System Planning Guidelines (2001)
- Proposed Oregon Coast Highway Corridor Master Plan (ODOT, 1995)
- Scenic Byway Management Plan for the Nehalem, Tillamook, and Nestucca Regions of the U.S. 101 Corridor in Oregon (ODOT, 1997)
- Pacific Coast Scenic Byway Corridor Management Plan for U.S. 101 in Oregon (ODOT, 1997)

## **United States**

- Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) and Implementing Regulations (23 Code of Federal Regulations [CFR] 450 and 49 CFR 613)

SECTION 2

# Existing Conditions and Future Opportunities

This section describes existing transportation conditions and deficiencies and identifies future opportunities for the focus areas of the plan. The project staff described and evaluated existing conditions, including roadway and intersection geometry, vehicle traffic, public transportation, pedestrian facilities and bicycle facilities. As appropriate, the staff identified future potential opportunities. The information in this section was used to develop proposed alternatives in the subsequent phase of the planning effort.

## Existing Conditions and Deficiencies

### Street Inventory

There are three public agencies (ODOT, Tillamook County and the City of Manzanita) that own the public rights-of-way in the project area. Table 2-1 shows the ownership and functional classification of each street.

TABLE 2-1  
Street Ownership and Functional Classification

Street Name	Right-of-way Ownership	Functional Classification	Right-of-Way Width (feet)
U.S. 101	Oregon Department of Transportation	Statewide Highway – National Highway System (NHS) Scenic Byway Non-Freight Route	60
Classic Street	City of Manzanita	Local	40
Laneda Avenue	Tillamook County	Collector	50 (west of Division Street) 40 (Division Street to U.S. 101)
Manzanita Avenue	City of Manzanita	Local	40

The street geometry in the downtown area of Manzanita consists primarily of a main street (Laneda Avenue) and a secondary arterial (Manzanita Avenue) with connecting local side streets. Manzanita Avenue and Laneda Avenue are parallel to each other, creating the primary connections to U.S. 101. The project staff evaluated the intersections of U.S. 101/Laneda Avenue and U.S. 101/Manzanita Avenue for safety and other needs as part of this project. Classic Street is currently unimproved for motor vehicle travel, but the city is interested in paving it to improve connectivity between North Avenue to the north and Necarney City Road to the south.

## **Manzanita Avenue**

The portion of Manzanita Avenue reviewed for this project is from the intersection of North Carmel Street east to U.S. 101. The posted speed limit is 25 mph. Manzanita Avenue has five four-way intersections and three T-intersections. Intersection geometry is typical of a grid-type street layout. The intersections are generally orthogonal with the exception of two intersections which have a skewed approach from the north (Manzanita Avenue/N. 4th Street/Cedar Street and Manzanita Avenue/N. 5th Street/Pine Avenue).

## **Laneda Avenue**

Laneda Avenue was evaluated for its entire length between Ocean Road and U.S. 101. Laneda Avenue serves as the main street through Manzanita's central business district (CBD). The posted speed limit is 20 mph. There are five four-way intersections and six T-intersections along Laneda Avenue. Two intersections are of importance regarding vehicle circulation to and from the CBD. The intersection of Laneda Avenue/N. Carmel Street provides a connection to the residential areas to the north and south. The intersection of Laneda Avenue/Classic Street provides an unimproved vehicular connection to the south to the Ridge Drive/Necarney City Road intersection.

The field-measured dimensions for each block along Laneda Avenue are provided in Appendix C (Part 1).

## **Classic Street**

As mentioned above, the portion of Classic Street from the Ridge Road/Necarney City Road intersection north to Laneda Avenue is unimproved for motor vehicle access. The right-of-way for this segment of Classic Street is under city ownership. An existing gravel road approximately 20 feet wide provides a connection between downtown Manzanita and Necarney City Road. Vehicles were observed using Classic Street during three different field visits.

Classic Street extends north to Manzanita Avenue from Laneda Avenue. This portion of Classic Street is fully paved as a city street. Right-of-way for the street extends north to North Avenue, but is currently unimproved.

## **U.S. 101**

The City of Manzanita has intersections with U.S. 101 at Laneda Avenue and Manzanita Avenue. *OAR 51: Highway Approaches, Access Control, Spacing Standards, and Medians (Table 3)* shows the acceptable intersection spacing on statewide National Highway System (NHS) highways to be 990 feet for the posted speed limit of 40 mph. The spacing between the U.S. 101/Laneda Avenue intersection and U.S. 101/Manzanita Avenue intersection is currently  $\pm 400$  feet.

The intersection of U.S. 101/Laneda Avenue is a T-intersection on the outside of a superelevated curve. Laneda Avenue approaches the curve from the west at a steep vertical upgrade. This presents both vertical and horizontal sight distance concerns. The private commercial properties on the south side of the intersection have full-access driveways, which add to the complexity of the intersection operations. The intersection is stop-controlled on the Laneda Avenue leg with a flashing red beacon. A flashing yellow beacon

is directed at the northbound and southbound U.S. 101 traffic. The posted speed limit on U.S. 101 through Manzanita is 40 mph.

The intersection of U.S. 101/Manzanita Avenue is a T-intersection located at the bottom of a sag vertical curve. Manzanita Avenue approaches U.S. 101 from the west at a gradual upgrade. Sight distance appears to be acceptable at this location.

### **Motor Vehicle Operations**

The study area was analyzed for motor vehicle operations for the existing condition (2002) and future condition (2022) based on the existing roadway geometry and lane configuration. Accident data were gathered and traffic counts were taken at key intersections to use in this analysis. These data were used to determine roadway capacity, and to identify and address safety concerns in the study area.

### **Study Intersections and Raw Traffic Counts**

The operational analysis of existing (2002) and future, forecasted, no-build conditions (2022) was analyzed at the following study intersections:

- U.S. 101 and Necarney City Road
- U.S. 101 and Laneda Avenue
- U.S. 101 and Manzanita Avenue
- Laneda Avenue and Carmel Street

A traffic count was conducted at the intersection of U.S. 101 with Necarney City Road on November 5, 2002. At the intersection of U.S. 101 with Laneda Avenue, a traffic count was conducted during the Spring Break from school on Friday, March 30, 2001. At the intersections of Laneda Avenue and Carmel Street, and U.S. 101 and Manzanita Avenue, traffic counts were conducted on Sept. 9, 2001. See Appendix C (Part 2) for the raw traffic counts.

The ODOT Future Volume Tables, which are available on the ODOT Web site<sup>1</sup>, were used to determine a projected growth rate of 2.5 percent along U.S. 101 within the city limits. The ODOT Future Volume Tables use historical data to project future average daily traffic (ADT) volumes along state highways. The 2.5 percent growth rate was applied to year 2001 raw count data to determine 2002 projected traffic volumes. See Appendix C (Part 3) for the growth rate calculations.

### **Analysis of the Rockaway Automated Traffic Recorder (ATR)**

ODOT traffic analysis procedures call for 30th-highest-hour traffic volumes to be used to calculate volume to capacity ratios for intersections and street segments. To determine seasonal factors to apply to the raw count data to determine 30th-highest-hour traffic volumes at each intersection, an analysis of the Rockaway ATR site (29-001) was conducted. The Rockaway ATR site was used in the analysis because it is the closest recorder (11 miles south of Laneda Avenue) along U.S. 101 in relation to the study intersections.

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<sup>1</sup> [http://www.odot.state.or.us/tddtpau/papers/2019\\_Future%20\\_Volumes.pdf](http://www.odot.state.or.us/tddtpau/papers/2019_Future%20_Volumes.pdf)



On the Oregon coast, the 30th-highest-hour traffic volumes typically occur during the peak tourist season (weekend afternoons in August). Data from the Rockaway ATR site, also available on the ODOT Web site<sup>2</sup>, were used to determine that the volumes along U.S. 101 measured at the intersection of U.S. 101 and Manzanita Avenue on Sunday, Sept. 9, 2001, were comparable with the through volumes expected along U.S. 101 during the 30th highest hour. Therefore, the September 2001 counts conducted at the intersections of U.S. 101 with Manzanita Avenue and Laneda Avenue at Carmel Street were assumed to be representative of 30th-highest-hour conditions and were not further adjusted for seasonality.

At the intersection of U.S. 101 with Laneda Avenue, the traffic count was conducted during the Spring Break from school in 2001. Using summary data available on the ODOT Web site<sup>3</sup>, the volumes measured during the Spring Break 2001 traffic count were compared with the 30th-highest-hour volumes measured at the Rockaway ATR site. At the Rockaway ATR site, the 30th-highest-hour volume was 15.8 percent of the ODOT ADT volume at the ATR site. Using this same percentage and the ODOT ADT volume for U.S. 101 in Manzanita, a two-way 30th-highest-hour volume of more than 1,000 vehicles east of Laneda Avenue would be expected along U.S. 101. Comparing the turn movement volumes measured during the traffic count with the 30th-highest-hour volume resulted in a seasonal factor of 1.60. This seasonal factor is consistent with data from the seasonal factor table available on the ODOT Web site<sup>4</sup>. A seasonal factor of 1.60 was applied to the count conducted at the intersection of U.S. 101 and Laneda Avenue. Using this factor, the 30th-highest-hour volumes along U.S. 101 used in this analysis are consistent between Manzanita Avenue and Laneda Avenue.

At the intersection of U.S. 101 and Necarney City Road, a traffic count was conducted in November 2002. As directed by ODOT's Transportation Planning Analysis Unit (TPAU), the seasonal factor table available on the ODOT Web site was used to calculate 30th highest hour. A seasonal factor of 1.60 was used to calculate 30th-highest-hour traffic volumes at the November 2002 count location. The through volumes on U.S. 101 then were adjusted further at the intersection of U.S. 101 and Necarney City Road to balance with the other 30th-highest-hour traffic volumes along U.S. 101.

See Appendix C (Part 4) for balanced 2002 30th-highest-hour traffic volumes in Manzanita.

### **Analysis Inputs**

Using the year 2002 30th-highest-hour traffic volumes, an operational analysis of existing conditions was conducted with Synchro, version 5, for the four study intersections. Synchro is based on the *Highway Capacity Manual*, TRB Special Report 209. For each of the intersections, results from the Synchro HCM Unsignalized Report are reported in this transportation plan.

The following inputs were used in the analysis.

- Ideal saturation flow rate: 1,800 vehicles/hour

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<sup>2</sup> [http://www.odot.state.or.us/tdb/traffic\\_monitoring/01tv/atr01\\_29.htm](http://www.odot.state.or.us/tdb/traffic_monitoring/01tv/atr01_29.htm)

<sup>3</sup> [http://www.odot.state.or.us/tdb/traffic\\_monitoring/01tv/atr01\\_29.htm](http://www.odot.state.or.us/tdb/traffic_monitoring/01tv/atr01_29.htm)

<sup>4</sup> [http://www.odot.state.or.us/tdt/pau/papers/2000\\_Seasonal%20\\_Factors.pdf](http://www.odot.state.or.us/tdt/pau/papers/2000_Seasonal%20_Factors.pdf)

- Intersection geometry: Based on observations from the field visit and sketches provided in the traffic counts
- Synchro defaults for the peak hour factor (0.92) and heavy vehicle percentages (2 percent) were used in the analysis. Peak hour factors were developed from the turning movement counts.
- Pedestrians: Minimal, less than 10 per hour across each minor approach
- Grade = 0 percent
- Posted speeds were entered for each segment.
- Lane width: 12 feet
- Right turns on red: Allowed

### State Highway Mobility Standards

Three of the study intersections included in the operational analysis of existing and future forecasted conditions in Manzanita involve a state highway. The *1999 Oregon Highway Plan* (OHP) designates U.S. 101 as a statewide NHS non-freight route. In Manzanita, the posted speed on U.S. 101 is 40 mph<sup>5</sup> and the section of highway is inside the urban growth boundary in a non-metropolitan planning organization (MPO) area. Therefore, the mobility standard designated by OHP for this section of roadway is a volume-to-capacity (v/c) ratio of less than 0.80. Each of the study intersections currently is unsignalized and the minor approaches have speed limits of less than 45 mph. Therefore, OHP designates a maximum v/c ratio of 0.85 for local road approaches within the urban growth boundary (non-MPO areas, speed limit of less than 45 mph).

The highway mobility standards designated in the OHP apply primarily to transportation planning decisions. Separate mobility design standards are contained in ODOT's *Highway Design Manual*. These latter standards would be applied at the time a project is constructed and are not necessarily the same as the planning standards.

### Level of Service Analysis

Level of service (LOS) is a measure of effectiveness for traffic operations at an intersection. Traffic is able to move freely at an intersection operating at LOS A, B or C. Traffic operations become progressively worse as traffic operations move toward LOS D and E. LOS F represents conditions where traffic volumes exceed capacity, resulting in long queues and delays. LOS is based on control delay time at an intersection for unsignalized intersections. Appendix C (Part 5) provides detailed definitions of LOS.

### Operational Analysis of Existing Conditions (30th Highest Hour)

Table 2-2 presents the LOS, OHP mobility standard, v/c ratio and delay time for each intersection analyzed under 2002 30th-highest-hour conditions. Appendix C (Part 6) contains detailed reports for each individual intersection. Table 2-2 presents results for the

<sup>5</sup> An advisory speed of 25 mph is posted through the curve at Laneda Avenue. However, for analysis purposes, the posted speed is still 40 mph.

movement with the worst operating performance on both the major and minor approaches at each of the two-way, stop-controlled (TWSC) intersections (major/minor). The operational performance of the major road is reported to show delay times and LOS experienced by a majority of the traffic moving through an intersection. At the all-way, stop-controlled intersection (AWSC), which is Laneda Avenue at Carmel Street, the intersection delay and LOS are reported. For the v/c ratio at this intersection, the approach with the worst operating conditions is reported.

**TABLE 2-2**  
Operational Analysis of 30th-Highest-Hour Conditions (Year 2002)

Intersection	LOS	OHP Mobility Standard	Maximum V/C Ratio	Delay (seconds)
U.S. 101 and Necarney City Road Critical Movement: Northbound (Minor Approach)	A/C	0.80/0.85	0.05/0.17	1.4/16.9
U.S. 101 and Laneda Avenue Critical Movement: Eastbound (Minor Approach)	A/C	0.80/0.85	0.22/0.53	9.0/20.7
U.S. 101 and Manzanita Avenue Critical Movement: Eastbound (Minor Approach)	A/C	0.80/0.85	0.23/0.48	8.4/21.5
Laneda Avenue and Carmel Street Critical Movement: Westbound	A	0.85	0.22	8.4

Source: Synchro HCM Unsignalized Report.  
OHP = Oregon Highway Plan.  
V/C = volume-to-capacity.

As shown in Table 2-2, all of the study intersections meet mobility standards designated in OHP under existing 30th-highest-hour conditions for 2002.

**Intersection Crash Analysis—Existing Conditions**

A crash analysis was conducted for the four study intersections using data from Jan. 1, 1997, to Dec. 31, 2001, which were obtained from ODOT. Table 2-3 summarizes the number of crashes resulting in property damage only, injuries and fatalities at each of the four intersections, including the entering approaches, from 1997 to 2001. The crash analysis is based on reported accidents only.

Using average ADT volumes for the 5-year period, crash rates were determined for each intersection and are summarized in Table 2-3.

**TABLE 2-3**  
Crash Analysis (Year 1997 to 2001 Data)

Location	Property Damage	Injuries	Fatalities	Crash Rate <sup>1</sup>
U.S. 101 at Necarney City Road	1	0	0	0.08
U.S. 101 at Laneda Avenue	0	0	0	0
U.S. 101 at Manzanita Avenue	1	1	0	0.19
Laneda Avenue at Carmel Street	0	0	0	0

Source: ODOT Crash Data, Years 1997 to 2001.

<sup>1</sup>Crash rate in terms of million entering vehicles.

All intersections have crash rates lower than 0.19 per million entering vehicles, which does not indicate safety deficiencies.

### Segment Crash Rates—Existing Conditions

As described in the 2000 State Highway Crash Rate Tables published by the ODOT Crash Analysis and Reporting Unit, U.S. 101 is considered a non-freeway primary highway. Table 2-4 summarizes the year 2000 crash rate and the 5-year average crash rate (1996 to 2000) along U.S. 101 between Manzanita (milepost [MP] 43.09) and Nehalem (MP 44.73).

**TABLE 2-4**  
Crash Rates Along U.S. 101

Location	Year 2000 Crash Rate <sup>1</sup>	5-year Average Crash Rate <sup>1</sup>
U.S. 101—Manzanita to Nehalem (Rural)	0.00	0.96

Source: 2000 State Highway Crash Rate Table, Crash Analysis and Reporting Unit, ODOT.

<sup>1</sup>Crash rate in terms of million vehicle miles.

On rural sections of primary non-freeway road segments throughout the state, the 5-year statewide average crash rate was 0.87 crashes per million vehicle miles (MVM) and the 2000 statewide average rate was 0.89 crashes per MVM. As shown in Table 2-4, the year 2000 crash rate along U.S. 101 between Manzanita and Nehalem was 0/MVM, which is below average. The 5-year average crash rate along this stretch of U.S. 101 is slightly more than the 5-year statewide average for similar types of roadway.

Between 1996 and 2000, the crash rate for U.S. 101 between Manzanita and Nehalem decreased from 1.69 MVM to 0.00 MVM, according to the 2000 State Highway Crash Rate Tables.

### Turn Lane Warrants—Existing Condition

Turn lane warrants were evaluated at the intersection of U.S. 101 with Manzanita Avenue. Both northbound left and southbound right turn lanes on U.S. 101 are warranted at Manzanita Avenue based on existing traffic volumes. A northbound left-turn lane and

southbound right-turn lane currently exist at Laneda Avenue. Supporting documentation for the turn-lane warrant analysis is included in Appendix C (Part 7).

## **Public Transportation**

The TCTD provides existing public transportation service in Tillamook County. The Tillamook-Manzanita fixed route provides service between the Cities of Tillamook and Manzanita. This route has stops at 2nd Street and Laurel and at Fred Meyer in Tillamook; City Hall in Bay City; at 6th Street and U.S. 101 in Garibaldi; at Anchor Street and 3rd Street in Rockaway Beach; in Wheeler; in Nehalem; and in Manzanita on 5th Street. The transfer point at 2nd Street and Laurel in Tillamook connects with other TCTD routes. The Tillamook-Manzanita route operates Monday through Saturday. On Monday through Friday, there are six round trips and on Saturday there are four round trips between Tillamook and Manzanita. The Tillamook-Manzanita route has the highest ridership of all the routes and serves a high number of commuters.

TCDC also operates a dial-a-ride (DAR) service in Tillamook County. The service operates on weekdays (except for holidays) between 8 a.m. and 5 p.m. These hours can be extended depending on demand and driver availability. DAR service is available to all users, with priority service to seniors and disabled passengers. Riders are asked to call 2 hours in advance to schedule a ride. Currently, the cost is \$1 to ride DAR per one-way trip per zone.

First Student, a private busing company, provides school bus service in Manzanita.

## **Pedestrian Facilities**

Laneda Avenue, as Manzanita's primary arterial and commercial district, has sidewalks that are 5 to 6 feet wide. There are numerous gaps where no sidewalks or substandard sidewalks (less than 4 feet or rough surface) exist. Sidewalks are missing between Classic Street and 5th Street, and between 4th Street and 3rd Street.

Curb extensions with ADA-accessible<sup>6</sup> ramps exist at locations that have been newly developed, such as the bank near the intersection of Laneda Avenue and Classic Street. Curb extensions reduce the pedestrian crossing distance and also increase the visibility of pedestrians crossing the street.

No signalized crossings exist in Manzanita.

One marked, unprotected crosswalk exists in Manzanita on Laneda Avenue in a sag vertical curve between 2nd Street and 3rd Street. This marked crosswalk is a parallel-striped crosswalk.

## **Bicycle Facilities**

U.S. 101 is designated as the Oregon Coast Bike Route and serves thousands of cyclists each year. The bike facility is essentially a paved shoulder that varies between 3 and 8 feet in width. Currently, there is one designated bicycle facility in Manzanita, a striped bike lane on the west side of 3rd Street, between Manzanita Avenue and Ocean Road. Overall, the

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<sup>6</sup> Americans with Disabilities Act standards call for curb ramps with a width of 4 feet, a maximum slope of 8 percent, landing area of 4 feet and a solid, slip-resistant surface.

residential streets in Manzanita provide good bike routes because of their low traffic volumes, but Laneda Avenue contains some hazards because of on-street parking, relatively higher vehicular traffic volume and vehicular turning movements.

There are no adequate bicycle parking facilities in Manzanita. Secure bike parking can take various forms, as long as it provides an immovable and stable fixture compatible with common 'U'-type locks and accommodates the locking of bicycle wheels and frames.

### **Bicycle and Pedestrian Circulation Issues**

The land use, retail development, and roadway network in Manzanita is conducive to walking and bicycling. The active storefront development along Laneda Avenue, with a wealth and variety of destinations and services, contributes to Laneda's function as a "main street" for Manzanita. Citizens and visitors to Manzanita can easily walk among destinations on Laneda Avenue, which also provides a direct connection to the beach, a major destination in Manzanita. The relatively low traffic volume and traffic speeds allow for pedestrian crossings on Laneda Avenue. However, the sidewalk network on Laneda Avenue is incomplete and many of the sidewalks and curb ramps are not accessible to people in wheelchairs.

### **Intermodal Travel**

Passengers using the TCTD transit system also have the opportunity to make connections with other modes of travel. TCTD provides service from Manzanita to downtown Portland, from which passengers have access to the Portland transit system, the Portland airport, Amtrak rail service, and Greyhound bus service.

## **Future Conditions and Opportunities**

### **Motor Vehicles**

#### **Year 2022 Traffic Volumes**

Year 2022 future, forecasted, no-build, 30th-highest-hour traffic volumes were developed to evaluate future operating conditions in Manzanita at each of the study intersections. A projected growth rate of 2.5 percent, as calculated using the ODOT Future Volume Tables, was used in the analysis of future, forecasted, no-build, 30th-highest-hour conditions. The 2.5 percent growth rate was applied to year 2002 30th-highest-hour volumes to calculate year 2022 future, forecasted, 30th-highest-hour traffic volumes.

See Appendix C (Part 8) for 2022 future, forecasted, 30th-highest-hour traffic volumes at each of the study intersections.

#### **Operational Analysis of Future Conditions (30th Highest Hour)**

Table 2-5 presents the LOS, OHP mobility standard, v/c ratio and delay time for each of the TWSC intersections analyzed under 2022 future, forecasted, 30th-highest-hour conditions. At the AWSC intersection, which is Laneda Avenue at Carmel Street, the intersection delay and LOS are reported. For the v/c ratio at this intersection, the approach with the worst operating conditions is reported. Appendix C (Part 9) contains detailed reports for each

individual intersection. Intersections that will not meet OHP mobility standards under future, forecasted, 30th-highest-hour conditions are shown in bold, italic text.

**TABLE 2-5**  
Operational Analysis of 30th-Highest-Hour Conditions (Year 2022)

Intersection	LOS	OHP Mobility Standard	Maximum V/C Ratio	Delay (seconds)
U.S. 101 and Necarney City Road Critical Movement: Northbound (Minor Approach)	A/E	0.80/0.85	0.10/0.52	2.7/45.1
<b><i>U.S. 101 and Laneda Avenue</i></b> <b><i>Critical Movement: Eastbound (Minor Approach)</i></b>	<b><i>B/F</i></b>	<b><i>0.80/0.85</i></b>	<b><i>0.34/1.44</i></b>	<b><i>10.7/253.1</i></b>
<b><i>U.S. 101 and Manzanita Avenue</i></b> <b><i>Critical Movement: Eastbound (Minor Approach)</i></b>	<b><i>A/F</i></b>	<b><i>0.80/0.85</i></b>	<b><i>0.35/1.25</i></b>	<b><i>9.4/188.0</i></b>
Laneda Avenue and Carmel Street Critical Movement: Westbound	A	0.85	0.34	9.6

Source: Synchro HCM Unsignalized Report.

LOS = level of service.

OHP = Oregon Highway Plan.

V/C = volume-to-capacity.

As shown in Table 2-5, two of the four study intersections will meet mobility standards designated in the OHP under future, forecasted, 30th-highest-hour conditions. The eastbound movements at the intersections of U.S. 101 and Laneda Avenue and U.S. 101 and Manzanita Avenue will not meet OHP mobility standards under future, forecasted conditions during the peak tourist season. As measured during the counts at each of these intersections, there is currently a high number of left-turn movements from the minor approaches onto U.S. 101 at each of these intersections during 30th-highest-hour conditions. Using the 2.5 percent growth rate, operations become worse under 2022 forecasted 30th-highest-hour conditions. Both of these approaches are shared left/right-turn lanes.

Because both intersections with U.S. 101 operate deficiently during the 2022 design year, steps should be taken to evaluate the intersection geometry and operations. An additional lane separating the right- and left-turn movements on the minor leg should be considered to provide additional capacity on that approach. Consideration also must be given to the storage length required for vehicles to queue for each movement. This suggestion provides some relief to the v/c ratios shown in Table 2-5. At U.S. 101/Laneda Avenue, the v/c ratios become 0.87 and 0.56 for the left and right turns, respectively. At U.S. 101/Manzanita Avenue, the v/c ratios become 0.94 and 0.32 for the left and right turns, respectively. This is a significant improvement over the existing lane configuration at these intersections, however, it does not meet ODOT mobility standards.

It should be noted that separate mobility design standards are contained in ODOT's *Highway Design Manual*. These latter standards would be applied at the time a project is constructed and are not necessarily the same as the planning standards.

The Classic Street extension will be considered for its merits on purpose and need for local traffic to bypass the intersections of U.S. 101/Laneda Avenue, U.S. 101/Manzanita Avenue, and U.S. 101/Necarney City Road. This will provide an alternative access between downtown Manzanita and the residential areas to the north and south. With fewer local trips accessing U.S. 101, mobility at these intersections should improve. The purpose and need for the extension of Classic Street is evaluated as part of the alternatives development portion of this project.

### **Turn Lane Warrants—Future Condition**

Turn lane warrants have been evaluated at both U.S. 101 intersections for the proposed future lane configuration recommendations in Section 4. Both northbound left-turn and southbound right-turn lanes on U.S. 101 are warranted at Manzanita Avenue based on future traffic volumes. The existing northbound left-turn lane at Laneda Avenue is still warranted in the future and should be lengthened to provide a longer refuge for waiting traffic.

### **Bicycle and Pedestrian**

With respect to improving pedestrian conditions, the city has the opportunity to complete the sidewalk network and, if funding allows, construct improvements, such as curb extensions and marked crosswalks on Laneda Avenue. Sidewalks will be added as part of the Laneda Avenue street reconstruction bond measure approved by voters in November 2002.

Beyond completing the basic sidewalk network, additional streetscape features potentially could be incorporated in the future if funding is available. Crossings at selected intersections could be demarcated using pavers or stamped and dyed asphalt. These improvements would add to improved pedestrian safety and comfort along and across Laneda Avenue. The marked crossings also would indicate to drivers that pedestrians might be present. Pedestrian conditions could be improved by adding amenities, such as street furniture (benches, etc.), which would improve the aesthetic appearance of Laneda Avenue while also acting as visual cues that serve to slow vehicular travel speeds. Street furniture can provide a buffer for pedestrians from vehicular noise and pollution. In selected locations where space allows, street trees or other vegetation also could be added, providing additional benefits to the pedestrian environment.

A typical on-street bicycle facility consists of striped bicycle lanes 4 to 6 feet wide. However, bicycle lanes may not be feasible on Laneda Avenue because of the constrained space and the desire to retain on-street parking. Instead, bicycle conditions on Laneda Avenue could be improved using traffic calming features (for example, curb ramps, marked crosswalks, street amenities) that slow the speed of vehicular traffic. Under this scenario, Laneda Avenue would function as a "shared-use" roadway and be signed as such. For the Classic Street extension south of Laneda Avenue, several options exist within the 50 feet of right-of-way to allow for a safe north-south connection for bicyclists: striped bicycle lanes, marked shoulders, sidewalks, or a separate two-way shared use (bicyclists and pedestrians) path on one side of the road.



## SECTION 3

# Draft Alternatives

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Following the development of goals and objectives and the review of existing conditions and future opportunities with the PMT and the PAC, the consultant team developed a set of draft alternatives for presentation and review with the PMT and PAC at their meeting on Jan. 23, 2003. The draft concepts, which addressed the three focus areas (U.S. 101 intersections, Classic Street extension and Laneda Avenue street design), were revised on the basis of discussions at that meeting. In February 2003, the consultant team presented the U.S. 101 intersection concepts to a group of ODOT staff members for their review and comment. Based on input from those meetings, the consultant team revised the concepts and presented them at a public open house on March 8, 2003. Subsequently, the consultant team wrote the draft transportation plan and presented it for a final review to the PMT, PAC and ODOT staff.

The discussion that follows describes the draft alternatives developed by the consultant team and presented to the PAC. It indicates which alternatives were rejected and which were supported for further development.

## U.S. 101 Intersections

The consultant team initially developed three alternatives to improve the U.S. 101/Manzanita Avenue and U.S. 101/Laneda Avenue intersections with respect to safety and function. Currently, the angles and differing grade of the roadways contribute to poor vertical and horizontal sight distances at the Laneda Avenue intersection. According to traffic forecasts, in the future both intersections will fail to meet the mobility standards set by the OHP.

### **Alternative A: Improve the Laneda Avenue and Manzanita Avenue Intersections with U.S. 101**

- Add left-turn lanes to Laneda and Manzanita Avenues at U.S. 101 to increase the capacity of the intersections and allow right-turning (southbound) vehicles to turn without waiting for left-turning (northbound) vehicles
- Add right-turn pocket on southbound U.S. 101 approaching Manzanita Avenue
- Close County Road at Manzanita Avenue

The PAC supported this option and it was developed further (see Section 4).

### **Alternative B: One-Way Circulation: Laneda Avenue In/ Manzanita Avenue Out**

- Convert Manzanita and Laneda Avenues to one-way streets at their intersections with U.S. 101. Based on the turning movements and existing sight distance issues, Laneda Avenue would serve westbound vehicles and Manzanita Avenue would provide for eastbound travel.

- The one-way configuration could provide more room for wider sidewalks and bike lanes.
- One-way circulation would allow for increased vehicular capacity and would improve pedestrian crossing safety
- Drawbacks include the potential to increase “out-of-direction” travel, reduce the vehicular exposure in front of certain businesses and possibly increase travel speeds.

Because of the drawbacks listed above, PAC rejected this option and it was not developed further.

### **Alternative C: Close Laneda Avenue/U.S. 101 Intersection, Improve Manzanita Avenue Intersection**

- Close Laneda Avenue at U.S. 101 to address the limited sight distance for turning movements to and from Laneda Avenue.
- Manzanita Avenue would become the primary entrance to downtown from U.S. 101 and Classic Street and/or Division Street would be improved to provide access to Laneda Avenue.
- Drawbacks of this option include the concentration of traffic on the cross streets between Manzanita Avenue and Laneda Avenue (for example, Division Street, Classic Street) and the potential need to improve these intersections to accommodate increased traffic volumes, likely increase in traffic on the residential portion of Manzanita Avenue, and possible decrease in vehicular exposure for some businesses on Laneda Avenue.

Because of the drawbacks listed above, PAC rejected this option and it was not developed further.

## **Classic Street Extension**

When completed, the Classic Street extension to the north and south will provide a north-south connection between Laneda Avenue and Necarney City Road. This will provide access to newer residential developments as well as through-access for local traffic. It will reduce out-of-direction travel and also reduce the demand at the U.S. 101/Laneda Avenue and U.S. 101/Manzanita Avenue intersections. The consulting team presented an initial cross-section design (Option 1) for the new Classic Street extension south of Laneda Avenue. Based on discussion with PAC, a second design (Option 2) was developed. A cross section for Classic Street north of Laneda Avenue also was developed (see Section 4).

### **Initial Alternative (South of Laneda Avenue): Cross Section with Bike Lanes and Sidewalk**

- Typical street cross section would include two 10-foot-wide vehicle lanes, two 6-foot-wide bike lanes and a sidewalk on one side only.
- PAC members were concerned that the large expanse of pavement would encourage high speeds, that the bicycle volumes were not sufficient to justify bicycle lanes, and the proposed design was not appropriate to the setting and location of the street outside the downtown area.

Based on the concerns listed above, the PAC rejected this option and it was not developed further.

### **Revised Alternative (South of Laneda Avenue): Cross Section with Separated Bicycle/Pedestrian Pathway**

- Typical street cross section would provide two 12-foot-wide vehicle lanes, a 6-foot-wide vegetative buffer and a 10-foot-wide shared bike/pedestrian path on one side.
- The shared-use path would provide a safe and comfortable nonmotorized option because of the absence of intersecting streets and the buffer from vehicular traffic.

The PAC supported this option and it was incorporated into the Classic Street design (see Section 4).

## **Laneda Avenue Street Design**

The consultant team initially developed several cross-section design options for Laneda and Manzanita Avenues. These included various widths for the roadway, sidewalk and on-street parking. The existing right-of-way for Laneda Avenue is 50 feet between Division Street and Ocean Road, but only 40 feet between Division Street and U.S. 101. The initial options also included recommendations for one-way circulation in some parts of downtown.

### **One-Way Circulation**

#### **Initial Alternatives**

- These alternatives would have resulted in one-way traffic on various portions of Laneda and/or Manzanita Avenues.
- The one-way streets would allow for wider sidewalks and bike lanes in the downtown area and additional capacity for motor vehicles.
- Drawbacks of the one-way circulation concepts include routing additional traffic through the residential portion of Manzanita Avenue, higher speeds, concerns about reduced vehicular exposure to businesses, and a change in the current character of the affected streets.

For the reasons listed above, the PAC rejected all of the one-way circulation concepts and they were not considered further.

### **Cross Sections**

After the one-way cross sections were eliminated from consideration, the options for changes in the existing right-of-way were fewer. Several combinations were reviewed with the PAC.

#### **Initial and Revised Alternatives: Lane Widths, On-Street Parking, Sidewalks, Bike Lanes**

- Various configurations that would fit within the limited 50-foot right-of-way were considered, including:

- 11-foot-wide travel lanes, 7-foot-wide parking and 7-foot-wide sidewalks
- 10-foot-wide travel lanes, 8-foot-wide parking and 7-foot-wide sidewalks
- 11-foot-wide travel lanes, 8-foot-wide parking and 6-foot-wide sidewalks
- Some PAC members expressed interest in diagonal parking. However, because diagonal parking requires significantly more space, this would result in the elimination of other desirable features (for example, opposite side parking, wide sidewalks) and was not considered further.
- The consultant team and PAC recommended the option with the widest possible sidewalks and slightly wider on-street parking (10-foot-wide travel lanes, 8-foot-wide parking and 7-foot-wide sidewalks) for the length of Laneda Avenue from Division Street to Ocean Road.
- Bike lanes were not recommended because of space constraints. (See additional discussion in Section 4.)

The PAC supported the cross section described above, which was incorporated into the Laneda Avenue Preferred Alternative (see Section 4).

## **Curb Extensions (Bump Outs)**

### **Initial and Revised Alternatives: Suggested Locations**

- The consultant team developed initial recommendations for curb extensions (bump outs) based on pedestrian destinations, the desire to preserve on-street parking, safety and overall enhancement of pedestrian characteristics.
- Minor changes to the recommendations were made based on PAC input and preferences.

The PAC supported the initial alternative with revisions. This alternative is discussed further in Section 4.

## **Cross Sections for Other Streets**

The consultant team proposed a cross section for other 40-foot-wide streets that intersect with Laneda Avenue. The primary purpose would be to provide additional marked on-street parking and sidewalks. The proposal was as follows:

- Other 40-foot-wide Streets: Two 10-foot-wide travel lanes, 7-foot-wide parking lanes on both sides and a 6-foot-wide sidewalk on one side only. This cross section would apply to downtown streets such as Carmel Street, 2nd Street, etc. As streets such as Carmel Street leave downtown, on-street parking is not necessarily a requirement, but at least one sidewalk is desirable.

At its meeting on April 16, 2003, the PAC recommended against this cross section. The PAC's preference is for the side streets to Laneda Avenue to remain "informal," without sidewalks or marked parking. The recommendation was based on concerns that this type of urban treatment, although appropriate on Laneda Avenue, was not appropriate on the side streets at this time.

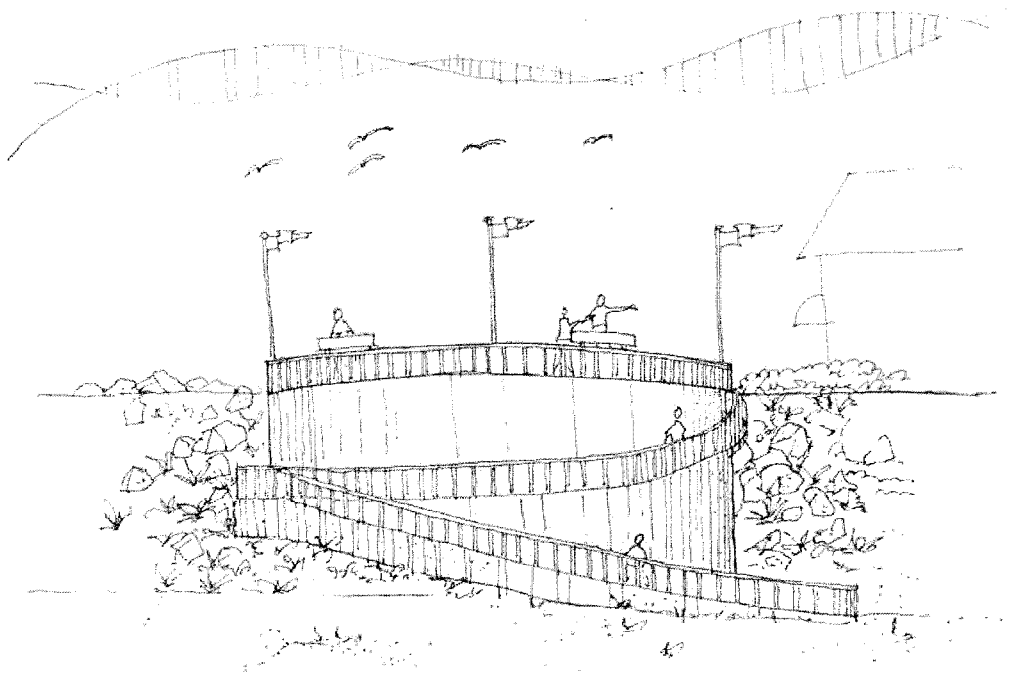
## Beach Access from Laneda Avenue and Ocean Road

Although beach access was not a primary focus of the transportation plan, the PAC was interested in improving pedestrian access to the ocean beach from the end of Laneda Avenue at Ocean Road. An improved access would serve to complement the improved Laneda Avenue street design. The consultant team developed an initial beach access concept and presented it at the public open house on March 8, 2003.

### Initial Alternative: Cylindrical Bulkhead Design with Ramp (see Figure 3-1)

- The concept, which would be ADA-accessible, is for a cylindrical lookout area that has a ramp leading down to a landing area at the base of the structure.
- The slope of the ramp would need to be less than 5 percent and a “bulkhead-type” structure would be needed to hold up to the natural forces of the tide.
- The open house audience, including PAC members, was very supportive of an improved beach access, but some expressed concerns about the aesthetics and the structural design of the proposed concept.
- There was a general conclusion among those present that the design and details of this concept would need to be determined in a separate process.

The beach access concept was tabled until a future process and was not developed further.



**FIGURE 3-1**  
Conceptual Plan for Laneda Avenue Beach Access

## SECTION 4

# Preferred Alternatives

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This section describes in detail the preferred alternatives recommended by the project stakeholders, including the PMT, PAC and the general public, and how the preferred alternatives were evaluated to document their consistency with the project goals and objectives.

## U.S. 101 Intersections

Two major intersections on U.S. 101 provide a direct connection to downtown Manzanita. The U.S. 101 and Laneda Avenue intersection is Manzanita's main street and provides a direct route through downtown to the ocean beach. The U.S. 101 and Manzanita Avenue intersection provides a secondary route connected via local cross-streets to the downtown area. Recommendations for short-term (1 to 3 years) and long-term (4 to 10 years) intersection improvements are proposed to address mobility and safety issues.

### Recommendations

#### Short-Term (1 to 3 years) (see Figure 4-1)

##### *Laneda Avenue*

- Minor pavement widening and re-striping on the eastbound Laneda Avenue approach to U.S. 101 to accommodate separate left- and right-turn lanes.
- Study pedestrian safety and access control issues along the southwest side of U.S. 101 in front of the commercial land uses. Study need for deceleration lane and/or sidewalk on west side of U.S. 101 between Laneda and Manzanita Avenues. As redevelopment and/or highway improvement or preservation occurs, address conformance to OHP access management standards.
- Coordinate with ODOT regarding upcoming U.S. 101 surface overlay for this location. This may allow earlier opportunity to implement the above mentioned minor widening and striping improvement, sidewalk and access control changes.
- In conjunction with implementation of short-term options, consider opportunities for implementing long-term options at the same time.
- For any changes at this location, minimize impacts on existing vegetation, aesthetics, parking and commercial viability.

##### *Manzanita Avenue*

- Re-stripe the eastbound Manzanita Avenue approach to U.S. 101 to accommodate separate left- and right-turn lanes.

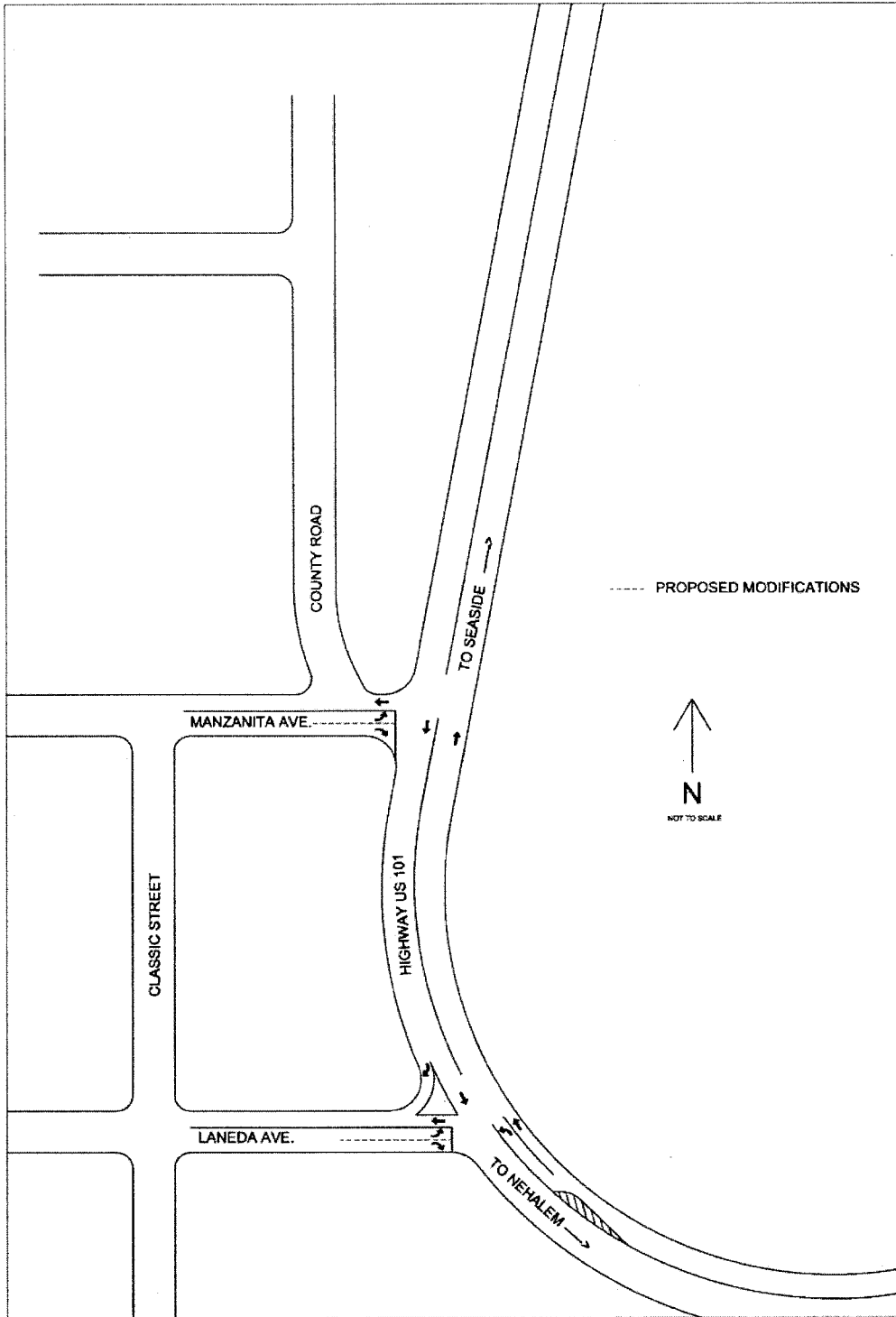


FIGURE 4-1  
Short-Term Lane Configuration Concepts at U.S. 101

**Other Intersections**

- For U.S. 101 intersections outside of the study area (for example, Necarney City Road, Nehalem Road), the PAC would like to review intersection safety issues. These efforts should be coordinated with any needs or projects identified in the Tillamook County TSP.

**Long-Term (4 to 10 years) (see Figure 4-2)****Laneda Avenue**

- Reconstruct the horizontal and vertical alignment of Laneda Avenue with U.S. 101. This includes raising the intersection approach and re-orienting the street to meet U.S. 101 at a right angle. Also assess possibility of adjusting super-elevation through U.S. 101 curve to improve sight distance.
- Lengthen the northbound U.S. 101 left-turn lane storage length.
- Implement Laneda Avenue cross-section recommendations (see below), including widening Laneda Avenue right-of-way to 50 feet between Division Street and U.S. 101.

**Manzanita Avenue**

- Add northbound left-turn lane on U.S. 101.
- Add southbound right-turn lane on U.S. 101.
- Close vehicle access to Manzanita Avenue from County Road (maintain pedestrian/bike access). Contingent on extending Classic Street to the north to provide connection with closed portion of County Road. Purpose of street closure is to increase safety of U.S. 101 intersection.

**Other Options**

The consultant team also explored several other suggestions for improving safety at the U.S. 101 intersections, including signage, speed limits and flashing lights or signals. Preliminary input from ODOT indicated these options would not meet policy guidelines and/or were unlikely to correct the problems. However, the PAC and the city would like to explore these options further.



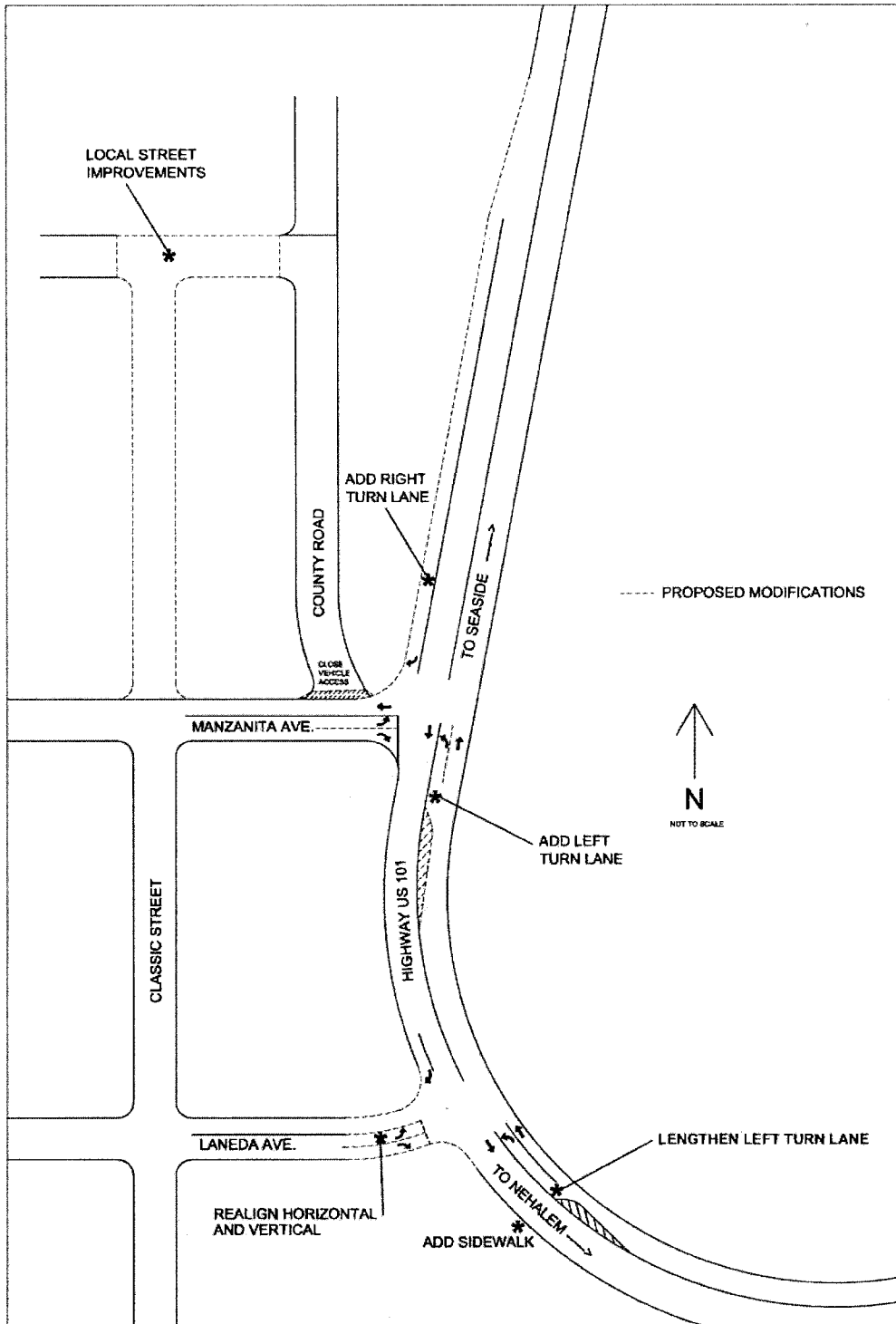


FIGURE 4-2  
Long-Term Lane Configuration/Intersection Concepts at U.S. 101

## Classic Street Extension

Public right-of-way for the extension of Classic Street from Laneda Avenue to Ridge Drive has been dedicated to the City of Manzanita. This portion of Classic Street is currently unpaved, but has been rough-graded to accommodate the extension. Right-of-way from Manzanita Avenue to North Avenue also is owned by the city, but is currently unpaved.

### Purpose and Need

The Classic Street extension to the south would provide a north-south connection for local traffic between Necarney City Road and Laneda Avenue. It also would provide secondary access to Nehalem Bay State Park from downtown Manzanita, bypassing U.S. 101. The extension of Classic Street to the north from Manzanita Avenue to North Avenue would improve vehicle circulation from downtown and points south to the northern part of the city. The extensions in both directions are recommended to address the following needs:

- The road extension would provide a key north-south route through the city, connecting growing residential areas to the south with downtown.
- Today, local north-south traffic uses either Carmel Street or U.S. 101. Carmel Street is currently the only north-south road internal to Manzanita that connects the residential development to the south with downtown. U.S. 101 in the project area contains substandard intersections that present safety and mobility problems. ODOT policy recommends removing local traffic from the state highway, both for the safety of the users and to preserve the state highway for through traffic.
- The existing transportation network overburdens U.S. 101 between Necarney City Road and Laneda Avenue with local traffic.
- Within the project area, roadways are substandard, in particular U.S. 101 access and safety for use by local traffic in Manzanita.

## Recommendations

### Cross Section

#### *South of Laneda Avenue*

The preferred cross section for the Classic Street extension includes two 12-foot-wide travel lanes and a 10-foot-wide shared-use bicycle/pedestrian path separated from the roadway by a 6-foot-wide landscaped buffer (see Figure 4-3, Illustration C).

The PAC made the following recommendations for access management: no private driveways entering this segment of Classic Street, a limited number of local street connections, and functional classification as a collector street.

#### *North of Laneda Avenue*

North of Laneda Avenue, a 40-foot-wide cross section is recommended that would include two 10-foot-wide travel lanes, an 8-foot-wide parking lane on one side and a 6-foot-wide sidewalk on either side (see Figure 4-3, Illustration B). The location of the north extension of

Classic Street is shown in Figure 4-4. Options for extending Classic Street farther north should be explored in the future.

### **South Terminus Intersection (Classic Street/Ridge Drive/Necarney City Road)**

The south terminus of the proposed Classic Street south extension currently intersects Ridge Drive. Ridge Drive continues at the thoroughfare south to connect with Necarney City Road. Two intersection options are possible here (see Figure 4-5). The options should be studied further before construction to determine which would be preferable. At the April 16, 2003, meeting, the PAC expressed a preference for Option 2.

#### ***Option 1***

Realign the intersection with Ridge Drive and connect Classic Street directly to the east-west portion of Necarney City Road. Ridge Drive would become the minor street of this intersection, with Classic Street being the thoroughfare to Necarney City Road.

#### ***Option 2***

Connect Classic Street to the north-south portion of Necarney City Road/Garey Street so that the east-west portion of Necarney City Road would become the minor leg of a T-intersection with the north-south major leg of Classic/Necarney streets. This configuration would enhance the design of Classic Street as a major north-south route for the city.

### **Laneda Avenue/Classic Street Intersection**

The configuration of this intersection will need to be addressed during the design process. Specifically, existing and future traffic operations should be reviewed to determine whether turn lanes are needed. Of particular concern is the left turn from Laneda Avenue to Classic Street.

A

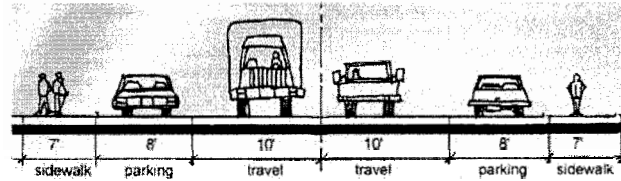
50' Right-Of-Way

Laneda Avenue, west of Division

Alternative options:

=6' sidewalks, 11' travel lanes

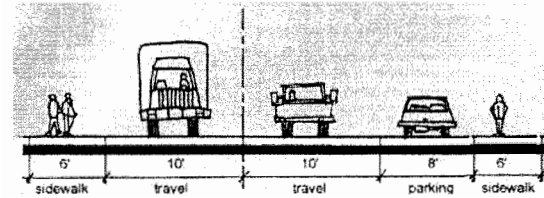
=7' parking lanes, 11' travel lanes



B

40' Right-Of-Way

Laneda Avenue (between Division and 101),  
Manzanita Avenue, & Classic Street North  
of Laneda



C

40' Right-Of-Way

Classic Street Extension (south of Laneda)

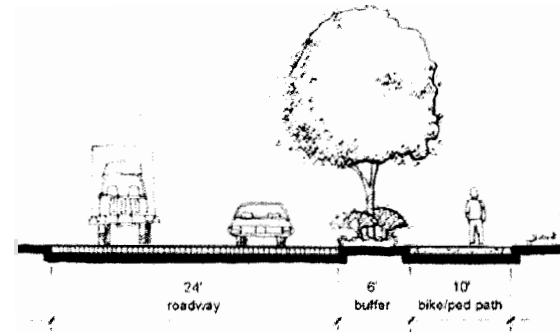
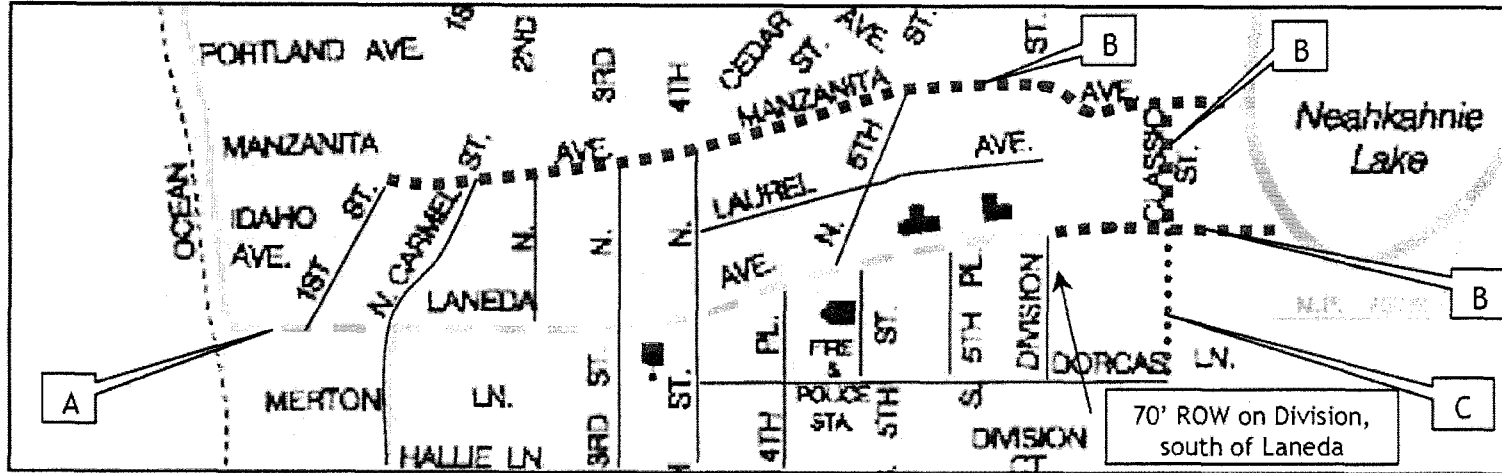


FIGURE 4-3  
Recommended Street Cross Sections



Section	ROW	Recommended Streets	Features
A	50'	Laneda Ave. (west of Division)	Narrow travel lanes and wider sidewalks
B	40'	Laneda (east of Division), Manzanita, Classic St. north of Laneda	Narrow travel lanes, parking on one side and sidewalks on both sides
C	40'	New Classic St. extension, south of Laneda	Separate bike/ped path

FIGURE 4-4  
Recommended Street Cross Section Index Map

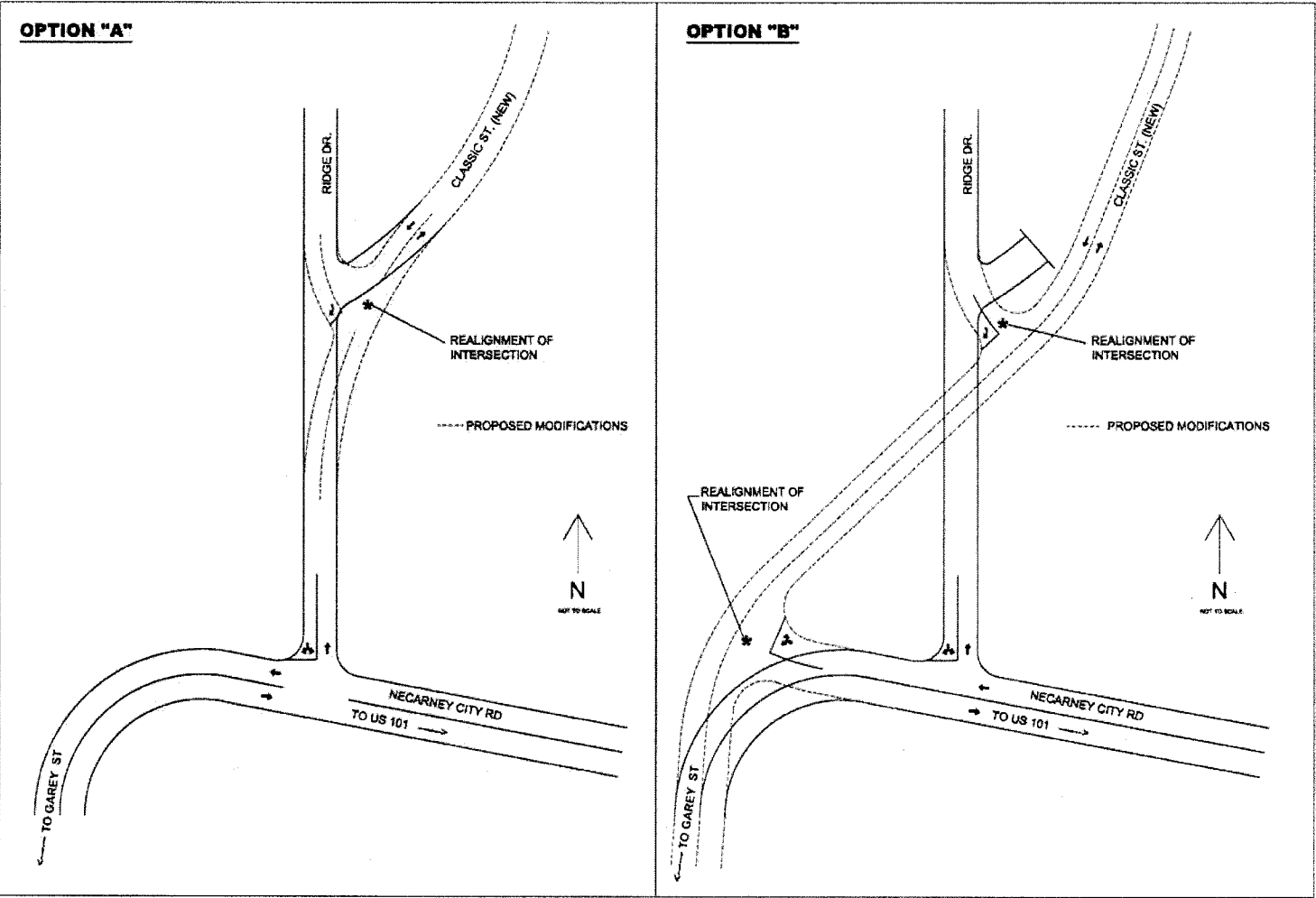


FIGURE 4-5  
Intersection Realignment Concepts: Classic Street/Necarney City Road

## Laneda Avenue Street Design

A street design was developed that would accommodate vehicles, bicycles and pedestrians, and support and enhance the existing downtown character of Manzanita. Various design elements are incorporated in the recommendations below, including appropriate-width vehicle lanes, wider sidewalks, marked on-street parking, curb extensions, marked crosswalks and bicycle parking facilities. These features combine to slow the speed of vehicular traffic and allow for safer and more pleasant pedestrian use and crossing of the street. The design features flow from the PAC's desire to create a superior walking and shopping environment, balanced with vehicular circulation needs for businesses and visitors.

### Recommendations

#### Cross Sections

Figure 4-3 (Illustrations A and B) shows the recommended street cross sections for Laneda Avenue and associated downtown streets. Figure 4-4 shows their locations in the city. The following cross sections are recommended:

- Laneda Avenue, west of Division Street (see Figure 4-3, Illustration A): Current right-of-way is 50 feet wide. Two 10-foot-wide travel lanes, two 8-foot-wide foot parking lanes and two 7-foot-wide sidewalks are recommended. If possible, wider sidewalks up to 10 feet wide are desirable. As private development occurs, property owners should be encouraged to set back properties to allow for wider sidewalks outside the existing right-of-way.
- Laneda Avenue (between Division Street and U.S. 101), Manzanita Avenue, Classic Street north of Laneda Avenue (Figure 4-#, Illustration B): Current right-of-way is 40 feet wide. Two 10-foot-wide travel lanes, an 8-foot-wide parking lane (north side only) and two 6-foot-wide sidewalks are recommended.
- Classic Street Extension (south of Laneda Avenue) (see Figure 4-3, Illustration C): A 40-foot-wide right-of-way. Two 12-foot-wide travel lanes (24-foot-wide roadway), 6-foot-wide landscaped buffer and 10-foot-wide shared bicycle/pedestrian path.
- Long-Term Cross Section, Laneda Avenue between Division Street and U.S. 101: The current Laneda Avenue cross section between Division Street and U.S. 101 is 40 feet wide, whereas the cross section from Division Street to Ocean Road is 50 feet wide. As shown in the cross-section illustrations, the 50-foot-wide cross section allows for parking and sidewalks on both sides while the 40-foot-wide cross section does not. This means that under current conditions, Laneda Avenue cannot have both continuous parking and sidewalks for its entire length. In the future, the city, county and/or ODOT should acquire additional right-of-way from Division Street to U.S. 101 to allow for a full 50 feet, thus allowing sidewalks and parking on both sides of the street. This could be accomplished through dedications or exactions as part of future development or redevelopment. This would allow for a continuous and consistent cross section on Laneda Avenue for its entire length and would address parking needs and facilitate pedestrian circulation for the entire length of the street. The long-term cross section would be the same as that in Figure 4-3, Illustration A.

**Curb Extensions (Bump Outs)**

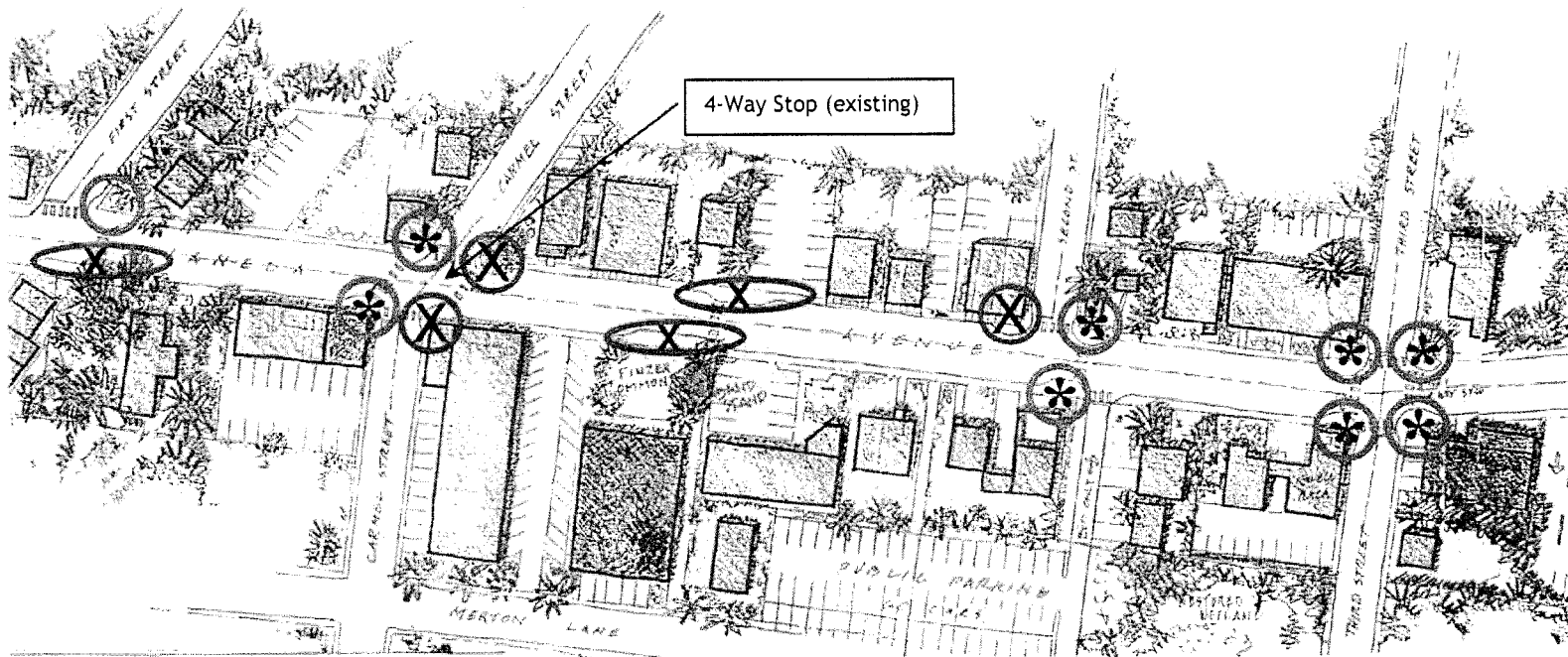
Curb extensions benefit pedestrians and drivers in many ways, including:

- Reducing the effective crossing distance of the street
- Increasing the visibility for pedestrians and drivers
- Protecting parked cars from vehicular traffic
- Providing additional space for streetscape amenities, such as benches, lighting and planters
- Visually narrowing the street to encourage slower vehicular speeds




The primary drawback to curb extensions is that each curb extension may require the removal of one to two parking spaces, depending on the size and locations of the extension. Often, no parking spaces will need to be removed because on-street parking generally does not extend all the way to the intersection corner. Curb extensions also may make some turning movements difficult for trucks or larger vehicles.

Recommended curb extension locations are illustrated in Figures 4-6 and 4-7 and are shown in Table 4-1. The base for the figures is an illustration from the June 2000 Resource Team Report prepared for Manzanita by the Oregon Downtown Development Association (ODDA). The ODDA report recommended curb extensions at most intersections downtown; however, not all of these were considered feasible or desirable by the PAC. To reduce potential adverse impacts, the consulting team and PAC reviewed recommended curb extension locations for potential impacts on parking and turning movements, as described previously. The locations also were prioritized in the event that immediate funds are not available to construct all of them or if other issues are raised during the final design of Laneda Avenue. If all of the top priority and second priority curb extensions were constructed, about 15 on-street parking spaces would be lost.





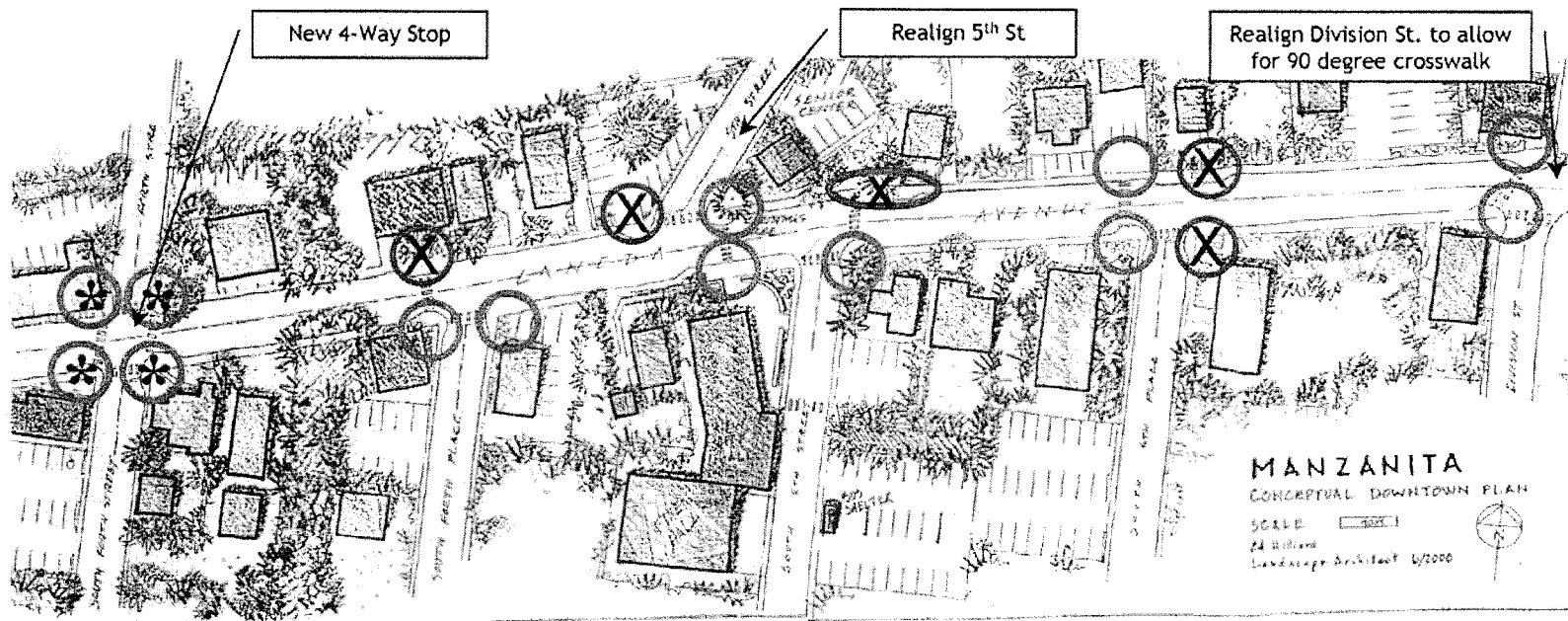
Bump-out recommendations based on pedestrian destinations, City desire to retain on-street parking, safety, and desire to enhance pedestrian characteristics.

-  Bump-out recommended - Top priority
-  Bump-out recommended - Secondary priority
-  Bump-out NOT recommended




Priority locations:

- Carmel St.    • 3<sup>rd</sup> St.
- 2<sup>nd</sup> St.      • 4<sup>th</sup> St.

FIGURE 4-6  
Recommended Bump-Out Locations: First Street to Third Street



Bump-out recommendations based on pedestrian destinations, City desire to retain on-street parking, safety, and desire to enhance pedestrian characteristics.

-  Bump-out recommended - Top priority
-  Bump-out recommended - Secondary priority
-  Bump-out NOT recommended

Priority locations:

- Carmel St.     •3<sup>rd</sup> St.
- 2<sup>nd</sup> St.        •4<sup>th</sup> St.

FIGURE 4-7  
Recommended Bump-Out Locations: Fourth Street to Division Street

**TABLE 4-1**  
Recommended Curb Extension Locations on Laneda Avenue

Cross Street	Corner			
	NW	NE	SE	SW
1st Street	No	Yes	No	No
Carmel Street	Yes	No	No	Yes
N. 2nd Street	No	Yes	Yes	No
3rd Street	Yes	Yes	Yes	Yes
4th Street	Yes	Yes	Yes	Yes
4th Place	No	No	Yes	Yes
N. 5th Street	No	Yes	Yes	No
S. 5th Street	No	No	No	Yes
S. 5th Place	Yes	No	No	Yes
Division Street	Yes	No	No	Yes

### Pedestrian Crossings

Marked pedestrian crossings (crosswalks) demarcate specific locations for pedestrians to cross and alert drivers of the presence of pedestrians, and their legal obligation to yield when pedestrians are in the crosswalk area. Marked crosswalks would be effective on Laneda Avenue because of the slow travel speeds and the narrow roadway width.

To further improve pedestrian crossing of Laneda Avenue and based on input from the PAC, marked crosswalks are recommended in all locations where curb extensions are recommended on both sides of Laneda Avenue: Carmel Street, 2nd Street, 3rd Street, 4th Street, 5th Street, S. 5th Place and Division Street. Crosswalks also are recommended in locations where the curb extension is located on only one side of the street.

The most inexpensive way to mark a crosswalk is through the use of paint. Zebra-type crosswalks (that is, a series of lines parallel to the roadway) are highly visible to drivers and pedestrians. A more aesthetic treatment would involve the use of concrete pavers or stamped or colored asphalt. Stamped and dyed asphalt is the more inexpensive of the two, but would not last as long as concrete pavers. Both of these treatments provide a color and texture change that would enhance the appearance of the roadway.

### Stop Signs

The consultant team did not specifically review stop signs or make recommendations for Laneda Avenue, preferring to leave this decision to the city. However, the PAC recommended that four-way stops be installed at 4<sup>th</sup> Street and that the existing four-way stop at Carmel Street be maintained, as illustrated in Figures 4-6 and 4-7.

## **Bicycle Improvements**

Given Laneda Avenue's function as a main street for the city, good bicycle access is desirable. However, space constraints do not allow for both bicycle lanes and on-street parking. Based on the interests of the PAC and the community at large, parking is understood to be a higher priority in this location. Instead of using bike lanes, bicyclists will share the roadway space with motor vehicles. This is an appropriate solution given the narrow street width and proposed traffic calming features, such as curb extensions, which encourage slow vehicular speeds and allow for safe shared usage. Signs that indicate shared bicyclist usage are recommended.

Secure bicycle parking racks should be installed as feasible along Laneda Avenue. "Staple-type" racks provide secure parking for two standard bicycles. These racks should be placed at frequently visited destinations, such as the post office, markets and restaurants, as space allows.

## **Access Management**

In the long term, the city should review opportunities to reduce the number of access points (for example, driveways) on Laneda Avenue. Opportunities include moving driveways from Laneda Avenue to side streets when feasible and combining driveways to adjacent businesses as redevelopment occurs. Reducing the number of driveways would improve safety (in particular for pedestrians) by reducing potential conflict points. This is consistent with the goal of improving the function of Laneda Avenue as a pedestrian-friendly main street.

## **Evaluation Criteria and Results**

As part of the alternatives development and review process, both the draft and preferred alternatives were qualitatively evaluated using criteria based on the plan goals and objectives (see Section 1). The criteria were developed by the consulting team and reviewed by the PMT and PAC at their meeting on Jan. 23, 2003.

The purpose of the evaluation was to document the features of the draft and preferred alternatives and to ensure that the preferred alternatives were consistent with the plan goals and objectives. Table 4-2 presents the evaluation criteria and results.

## **Implementation**

### **Costs**

#### **U.S. 101 Intersections**

The short-term improvements to the U.S. 101 intersections with Laneda and Manzanita Avenues would be relatively inexpensive, requiring only minor pavement widening and re-striping. As mentioned above, some of these improvements potentially could be incorporated into the upcoming overlay of this roadway section.

**TABLE 4-2**  
Evaluation Criteria and Results for Draft and Preferred Alternatives

**Goal 1: Mobility, Safety and Accessibility**

Improve mobility, safety and accessibility for all travel modes.

Objective	Rating*	Criterion	U.S. 101 Intersections			Classic Street Extension		Laneda Avenue Street Design				
			Alternative A (Improve Laneda Avenue and Manzanita Avenue Intersections) <b>PREFERRED</b>	Alternative B (One-way Circulation: Laneda Avenue In/Manzanita Avenue Out)	Alternative C (close Laneda Avenue/U.S. 101 intersection, improve Manzanita Avenue intersection)	Initial Cross Section (travel lanes, bike lanes, sidewalk)	Revised Cross Section (travel lanes, pedestrian/bike trail separated by buffer) <b>PREFERRED</b>	One-Way Circulation Options	Cross Sections (initial alternative)	Cross Sections (revised alternatives) <b>PREFERRED</b>	Curb Extensions (initial alternative)	Curb Extensions (revised alternative) <b>PREFERRED</b>
1. Vehicle Circulation	+	Improves vehicle circulation, particularly for north-south travel, as well as along Laneda and side streets.										
	0	Does not change vehicle circulation.	0	-	-	+	+	-	0	0	0	0
	-	Adversely affects vehicle circulation.										
2. Parking	+	Increases net on/off street parking supply and/or future opportunities for parking downtown										
	0	Does not change net parking supply and/or future opportunities downtown.	0	0	0	0	0	+	-	0	-	0
	-	Decreases net parking supply and/or opportunities downtown										
3. Identify U.S. 101 Intersection Improvements	+	Proposed U.S. 101 intersection improvements address circulation, safety and operations.										
	0	N/A	+	+	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	-	Proposed improvements do not address circulation, safety or operations.										
4. Classic Street Extension	+	Proposed Classic Street extension enhances local circulation by providing an alternate route to U.S. 101 for local traffic.										
	0	N/A	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	N/A
	-	Proposed Classic Street extension does not enhance local circulation by providing an alternate route to U.S. 101 for local traffic.										

**TABLE 4-2**  
Evaluation Criteria and Results for Draft and Preferred Alternatives

**Goal 1: Mobility, Safety and Accessibility**

Improve mobility, safety and accessibility for all travel modes.

Objective	Rating*	Criterion	U.S. 101 Intersections			Classic Street Extension		Laneda Avenue Street Design				
			Alternative A (Improve Laneda Avenue and Manzanita Avenue Intersections) <b>PREFERRED</b>	Alternative B (One-way Circulation: Laneda Avenue In/Manzanita Avenue Out)	Alternative C (close Laneda Avenue/U.S. 101 intersection, improve Manzanita Avenue intersection)	Initial Cross Section (travel lanes, bike lanes, sidewalk)	Revised Cross Section (travel lanes, pedestrian/bike trail separated by buffer) <b>PREFERRED</b>	One-Way Circulation Options	Cross Sections (initial alternative)	Cross Sections (revised alternatives) <b>PREFERRED</b>	Curb Extensions (initial alternative)	Curb Extensions (revised alternative) <b>PREFERRED</b>
5. Public Transportation	+	Improves public transportation loading areas and/or circulation.	0	0	0	0	0	0	0	0	0	0
	0	Does not change public transportation loading areas or circulation.										
	-	Adversely affects public transportation loading or circulation.										
6. Emergency Vehicles	+	Allows for emergency vehicle access and circulation.	+	+	+	+	+	+	+	+	+	+
	0	N/A										
	-	Adversely affects emergency vehicle access or circulation.										
7. Maintain Restful Feel while Encouraging Business	+	Proposed improvements maintain Manzanita's secluded, restful feel while encouraging business opportunities.	+	-	-	N/A	N/A	-	-	+	-	+
	0	N/A										
	-	Proposed improvements do not maintain Manzanita's secluded, restful feel and/or do not encourage business opportunities.										
8. Balance Motor Vehicle and Pedestrian/ Bike Travel	+	Proposed solutions balance the needs of motor vehicle and pedestrian/bicycle travel in the downtown area.	+	+	+	N/A	N/A	+	+	+	+	+
	0	N/A										
	-	Proposed solutions do not balance the needs of motor vehicle and pedestrian/bicycle travel.										

\*Rating:  
+ = Positive                      0 = Neutral                      - = Negative

## Goal 2: Pedestrians and Bicycles

Improve pedestrian and bicycle circulation and safety.

Objective	Rating*	Criterion	U.S. 101 Intersections			Classic Street Extension		Laneda Avenue Street Design				
			Alternative A (Improve Laneda Avenue and Manzanita Avenue intersections) <b>PREFERRED</b>	Alternative B (One-way Circulation: Laneda Avenue In/ Manzanita Avenue Out)	Alternative C (close Laneda Avenue/U.S. 101 intersection, improve Manzanita Avenue intersection)	Initial Cross Section (travel lanes, bike lanes, sidewalk)	Revised Cross Section (travel lanes, pedestrian/bike trail separated by buffer) <b>PREFERRED</b>	One-Way Circulation Options	Cross Sections (initial alternative)	Cross Sections (revised alternatives) <b>PREFERRED</b>	Curb Extensions (initial alternative)	Curb Extensions (revised alternative) <b>PREFERRED</b>
1. Improve Crosswalks and Pedestrian Safety	+	Proposed designs improve crosswalks and maximize pedestrian safety in the downtown area.										
	0	Proposed designs do not change crosswalks or pedestrian safety	0	+	0	+	+	+	+	+	+	+
	-	Proposed designs adversely affect crosswalks and/or pedestrian safety.										
2. Streetscape Improvements	+	Enhances streetscape by providing for features such as landscaping, lighting, benches, street trees.										
	0	Does not change streetscape features.	0	0	0	+	+	+	+	+	+	+
	-	Adversely affects streetscape features.										
3. Bicycle and Pedestrian Safety on Laneda Avenue	+	Improves bicycle and pedestrian safety and comfort on Laneda Avenue through the use of traffic calming and other design features.										
	0	Does not change bicycle and pedestrian safety and comfort on Laneda Avenue.	0	+	0	0	0	+	+	+	+	+
	-	Adversely affects bicycle and pedestrian safety and comfort on Laneda Avenue.										

Objective	Rating*	Criterion	U.S. 101 Intersections			Classic Street Extension		Laneda Avenue Street Design					
			Alternative A (Improve Laneda Avenue and Manzanita Avenue Intersections) <b>PREFERRED</b>	Alternative B (One-way Circulation: Laneda Avenue In/Manzanita Avenue Out)	Alternative C (close Laneda Avenue/U.S. 101 intersection, improve Manzanita Avenue intersection)	Initial Cross Section (travel lanes, bike lanes, sidewalk)	Revised Cross Section (travel lanes, pedestrian/bike trail separated by buffer) <b>PREFERRED</b>	One-Way Circulation Options	Cross Sections (initial alternative)	Cross Sections (revised alternatives) <b>PREFERRED</b>	Curb Extensions (initial alternative)	Curb Extensions (revised alternative) <b>PREFERRED</b>	
4. Off-Street Pedestrian and Bicycle Facilities	+	Provides facilities or opportunities to improve off-street pedestrian and bicycle travel.											
	0	Does not change facilities or opportunities for off-street pedestrian or bicycle travel.	N/A	N/A	N/A	+	+	N/A	N/A	N/A	N/A	N/A	N/A
	-	Adversely affects facilities or opportunities for off-street pedestrian or bicycle travel.											
5. ADA-Compliant Ramp to Beach	+	Provides for Americans with Disabilities Act (ADA)-compliant ramp to beach at west end of Laneda Avenue.											
	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	-	Does not provide for ADA-compliant ramp to beach at west end of Laneda Avenue.											

\*Rating:  
 + = Positive                      0 = Neutral                      - = Negative



### Goal 3: Implementation

Provide for improvements that are implementable and comply with applicable standards.

Objective	Rating*	Criterion	U.S. 101 Intersections			Classic Street Extension		Laneda Avenue Street Design					
			Alternative A (Improve Laneda Avenue and Manzanita Avenue Intersections) <b>PREFERRED</b>	Alternative B (One-way Circulation: Laneda Avenue In/Manzanita Avenue Out)	Alternative C (close Laneda Avenue/U.S. 101 intersection, improve Manzanita Avenue intersection)	Initial Cross Section (travel lanes, bike lanes, sidewalk)	Revised Cross Section (travel lanes, pedestrian/bike trail separated by buffer) <b>PREFERRED</b>	One-Way Circulation Options	Cross Sections (initial alternative)	Cross Sections (revised alternatives) <b>PREFERRED</b>	Curb Extensions (initial alternative)	Curb Extensions (revised alternative) <b>PREFERRED</b>	
1. Street Design Standards	+	Proposed street design standards emphasize traffic calming, pedestrian and bicycle travel.											
	0	Does not change standards with respect to traffic calming, pedestrian and bicycle travel.	N/A	N/A	N/A	N/A	N/A	+	+	+	N/A	N/A	
	-	Proposed standards adversely affect traffic calming, pedestrian and bicycle travel.											
2. Local Street Connectivity	+	Proposed designs improve local street connectivity as applicable.											
	0	Proposed designs do not change local street connectivity.	0	-	0	+	+	-	0	0	0	0	0
	-	Proposed designs adversely affect local street connectivity.											
3. Comply with ADA	+	Proposed designs and facilities comply with the ADA.											
	0	N/A	+	+	+	+	+	+	+	+	+	+	
	-	Proposed designs and facilities do not comply with the ADA.											
4. Environmental Impacts	+	Proposed designs preserve or enhance environmentally significant areas or natural or historic features.											
	0	Proposed designs do not impact environmentally significant areas or natural or historic features.	0	0	0	0	0	0	0	0	0	0	0
	-	Proposed designs adversely affect environmentally significant areas or natural or historic features.											

Objective	Rating*	Criterion	U.S. 101 Intersections			Classic Street Extension		Laneda Avenue Street Design				
			Alternative A (Improve Laneda Avenue and Manzanita Avenue Intersections) <b>PREFERRED</b>	Alternative B (One-way Circulation: Laneda Avenue In/Manzanita Avenue Out)	Alternative C (close Laneda Avenue/U.S. 101 intersection, improve Manzanita Avenue intersection)	Initial Cross Section (travel lanes, bike lanes, sidewalk)	Revised Cross Section (travel lanes, pedestrian/bike trail separated by buffer) <b>PREFERRED</b>	One-Way Circulation Options	Cross Sections (initial alternative)	Cross Sections (revised alternatives) <b>PREFERRED</b>	Curb Extensions (initial alternative)	Curb Extensions (revised alternative) <b>PREFERRED</b>
5. Cost-Effectiveness	+	Proposed designs are cost-effective and fundable	+	+	+	+	+	+	+	+	+	+
	0	N/A										
	-	Proposed designs are not cost-effective or fundable										
6. Meet Applicable Plans, Standards, Criteria	+	Designs comply with applicable local, county, state and federal plans, standards and criteria	+	+	+	+	+	+	+	+	+	+
	0	N/A										
	-	Designs do not comply with applicable plans, standards and/or criteria										
7. Sufficient Detail for Funding	+	Proposed projects are developed to sufficient detail to qualify for funding of engineering and construction phases	+	N/A	N/A	N/A	+	N/A	N/A	+	N/A	+
	0	N/A										
	-	Proposed projects are not developed to sufficient detail to qualify for funding of engineering and construction phases										

\*Rating:  
 + = Positive                      0 = Neutral                      - = Negative

The long-term improvements to the U.S. 101 intersections would be substantive projects that would require significant state transportation funds. The results of a planning level cost estimate for the construction of these improvements is as follows:

- US 101/Laneda Avenue: The estimated cost is \$645,000 (including 60 percent contingency). This estimate assumes reconstruction of Laneda Avenue between US 101 and Classic Street with an average of 4 feet of embankment material along the entire length with a 36-foot pavement cross section; curb, sidewalk and storm drainage on both sides; lengthening the northbound US 101 left turn lane; and re-striping the roadway for new intersection configuration.
- US 101/Manzanita Avenue: The estimated cost is \$235,000 (including 60 percent contingency). This estimate assumes widening southbound US 101 to include a 600-foot long right turn lane that is 12 feet wide; curb and storm drain improvements; striping the northbound US 101 left turn lane and incidental shoulder widening for through lanes; and restriping the roadway for new intersection configuration.

### **Classic Street Extension**

A planning level cost estimate for the construction of the Classic Street extension (to the north and south) was conducted on the basis of the preferred alternatives. The cost estimate does not include right-of-way, major structures (for example, retaining walls), engineering, wetland or utility relocation costs.

The portion of Classic Street from Necarney City Road to Laneda Avenue is a two-lane road approximately 2,600 feet long with curb, sidewalk, drainage, landscaping and a separated bike/pedestrian path. The cost estimate also includes the intersection realignment of Classic Street and Ridge Drive. The total project construction cost for this segment of Classic Street is estimated at \$1.6 million (including 60 percent contingency). The portion of Classic Street from Manzanita Avenue to North Avenue is two-lane road approximately 600 feet long with parking on one side, curb, sidewalk and drainage. The total project construction cost for this segment of Classic Street is estimated at \$250,000 (including 60 percent contingency).

### **Laneda Avenue Street Design**

In November 2002, Manzanita voters approved a \$740,000 general obligation bond measure to fund improvements to Laneda Avenue between Division Street and Ocean Road. Based on the city's estimate, this would be the cost for basic improvements to the street (that is, pavement, curbs, sidewalks, storm drainage). Additional features (such as curb extensions, textured or colored pavement treatments, street furniture) would be in addition to this amount.

### **Funding**

A variety of local, state, regional and federal funding sources can be used to improve the transportation system. Most of the federal, state and regional programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs and benefits. Local funding for the projects in this transportation plan typically would come from the city, Tillamook County and/or potential future bond or other local revenues. Other local funding sources might include grants and private funds.

Table 4-3 summarizes some potential public funding sources for Manzanita's bicycle, pedestrian and roadway improvements. Some of these funds are restricted to the type of improvements that qualify for assistance. Typically, state and federal funds require projects to comply with current ADA guidelines for accessibility.

**TABLE 4-3**  
Potential Funding Sources

Source	Description	Eligible Projects	Funding Cycle
Oregon State Transportation Improvement Program (STIP)	Administered by Oregon Department of Transportation (ODOT). The STIP provides funding for capital improvements on federal, state, county and city transportation systems. Projects must be regionally significant.	Roadway, public transportation, bicycle, pedestrian, air, freight, bridge	4 Years
Oregon Transportation Investment Act (OTIA)	Passed by the 2001 Oregon legislature. Projects were selected with extensive input from local communities and other stakeholders.	Pavement conditions, lane capacity, bridges	N/A
Transportation Enhancements	Must serve transportation need.	Bike/pedestrian/trail	2 Years
Oregon Bike/Pedestrian Grants	Administered by ODOT's Bike Program Project. Must be in public right-of-way.	Bike/pedestrian	2 Years
System Development Charges (SDCs)	Fees on new construction allocated for parks, streets and public improvements. Where available, funds can be used for right-of-way acquisition and trail construction.	Bike/pedestrian/roadway	Varies
Local/Regional bond measures approved by voters	Funds can be used for right-of-way acquisition, engineering, design and construction.	Bike/pedestrian/roadway	Varies
Local Improvement Districts (LIDs)	Districts typically are created by local property owners, imposing a "new tax" to fund improvements. Funds can be used for right-of-way acquisition and construction.	Bike/pedestrian/roadway	Varies
State Parks Recreational Trails Fund	Construction funds for trail projects	Off-roadway bike/pedestrian	Annual
Beach Access Fund	Construction funds for beach access improvements	Beach access	Varies

## TSP Exemption

Cities in Oregon are required under the state TPR to prepare and periodically update a TSP. Because Manzanita has not had the need or opportunity to conduct a full TSP and because this downtown transportation plan fulfills only some of the TPR requirements, documentation to aid in the city in requesting a TSP exemption has been prepared as part of this plan and provided to the city.

APPENDIX A

# **Public Involvement Documentation**

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**Project Advisory Committee  
Meeting #1**  
Manzanita Downtown Transportation Plan

**Agenda**

Thursday, January 23, 2003, 1:00-4:00 P.M.  
Manzanita City Hall

- 1:00 Introductions, Review Agenda
- 1:10 Project Overview
- Purpose
  - Tasks and schedule
  - Roles and responsibilities
- 1:20 Documents for Review – Brief Discussion  
*(to be mailed prior to meeting; comments requested by February 3)*
- Goals and Objectives and Draft Evaluation Criteria
  - Existing Conditions and Future Opportunities Memo
- 1:40 Alternatives: Review and Comment on Draft Concepts
- US 101 intersections
  - Classic Street connector
  - Laneda and Manzanita Avenues
- 2:55 Next Steps
- Refine and evaluate draft alternatives
  - Input from broader community
- 3:00 Break - *Consultant portion of the meeting will end at 3:00.*
- 3:10 PAC to continue discussion of Laneda Avenue improvements
- 4:00 Adjourn

## **PAC Meeting #1: Manzanita Downtown Transportation Plan**

**ATTENDEES:** PAC members and public  
Jerry Taylor, City of Manzanita  
Tim Burkhardt, CH2M HILL  
Mia Birk, Alta Planning + Design  
Lidwien Rahman, ODOT  
Steve Jacobson, ODOT  
Bill Holmstrom, Tillamook  
County  
Aaron Suko, Tillamook County

**FROM:** Tim Burkhardt

**LOCATION:** Manzanita City Hall

**DATE:** January 23, 2003

### **Introductions, Review Agenda**

The consultants and members of the PAC introduced themselves, as did the agency representatives and members of the public. Tim Burkhardt reviewed the agenda; no changes were made.

### **Project Overview**

Tim reviewed the project purpose, tasks and schedule and roles and responsibilities of the various entities involved, including the consultants (CH2M HILL and Alta Planning + Design), ODOT, the City and County, the PAC and the general public. The schedule for completing the project is June 30 (this is the ODOT deadline for project funding) but the goal is to complete the project before that time.

### **Documents for Review**

The PAC was provided two draft documents prior to the meeting: Goals and Objectives and the Existing Conditions and Future Opportunities memo. Tim briefly reviewed the Goals and Objectives document and also passed out a new document called Draft Evaluation Criteria.

There was some discussion regarding Goal 1, Objective 7. In general, the PAC and audience expressed a desire to maintain the existing character of Manzanita and its streets and to not make changes that would result in more or faster vehicle traffic or "too much" vehicle circulation. The group clarified that there is already a tension between the secluded feel of the city and the desire for increased business opportunities. Tim said he thought the goals and objectives and evaluation criteria as a whole reflected these concerns but that changes in the language could still be made at a later time.

Tim briefly reviewed the Existing Conditions and Future Opportunities document and summarized the traffic analysis, which shows that separated right and left turn lanes would

be needed in the future at both Manzanita and Laneda Avenues for traffic turning onto US 101.

Other comments during this portion of the meeting:

- Classic Street connection: If this connection is made, will the intersection with Laneda become a major bottleneck in 20 years?
- Ocean Avenue is a County Road and should be reviewed as part of overall circulation
- Nehalem Avenue is an emergency access route for Manzanita
- The 30<sup>th</sup> highest hour conditions are uncommon within Manzanita and using this number overstates the traffic problems
- 3<sup>rd</sup> Street has just been repaved—will this change traffic patterns? 3<sup>rd</sup> is now a “zoom road”-wide and smooth- don’t want more of these in the city, no longer feels like a neighborhood street. Will intersection of 3<sup>rd</sup> and Laneda now be a problem?

### **Alternatives: Review and Comment on Draft Concepts**

Mia Birk passed out concept drawings for alternatives for the US 101 intersections, Classic Street, and Laneda and Manzanita Avenues. Key comments and discussion are as follows:

#### **US 101 Intersections**

- Proposed closure of Epoh: A PAC member clarified that the access lost by closing the south end could be enhanced by building on un-built right-of-way to the north and by extending Classic Street north of Laneda.
- Make US 101 traffic slow down: Hard to change speed limits and doing so would not necessarily slow traffic. Instead, could put up “congested area” sign; add flashing yellow light at Manzanita (similar to light now at Laneda).
- General interest in making Manzanita Ave intersection more “attractive” as an entrance to the city to divert some traffic from Laneda intersection. Could include signage to encourage southbound traffic to enter at Manzanita Ave instead of Laneda. Also add turn right-hand turn lane/deceleration lane on US 101 southbound at Manzanita Ave; add left-hand turn lane to northbound 101 at Manzanita.
- Make current left-hand turn lane at Laneda longer (space for more cars).
- Re-align Laneda intersection to 90 degrees. City owns some right-of-way at NW corner of intersection (currently undeveloped). Also, fix grade at Laneda.

#### **Laneda and Manzanita Avenues**

- The group favored the two-way cross sections for Laneda and Manzanita Avenues. The Laneda cross section would include one travel lane in each direction, parking and sidewalks on both sides west of Division. Between Division and US 101, where the right-of-way is only 40 feet, there would be parking only on one side. The Manzanita Avenue cross-section would vary depending on whether it was the commercial or residential section. The commercial section (Division to US 101) would be treated similar to Laneda; the residential section would be treated similar to other residential streets.



- The group rejected the concept of one-way streets on Laneda or Manzanita based on a number of issues including impacts to the residential area and circulation to and from US 101. There was a suggestion to show these at the open house anyway but indicate that PAC had rejected them.
- Curb extensions/bump-outs: The group is in favor of having curb extensions/bump outs on Laneda in the downtown area but wants to prioritize where they would be located to minimize parking impacts. Good locations include intersections with 4<sup>th</sup>, 2<sup>nd</sup> and at the post office.
- Between Division and US 101, expand right-of-way from 40 feet to 50 feet through development conditions; this would provide for full cross-section and safer, better operations at intersection
- The city was interested in restricting RVs from downtown but this would be hard to enforce.
- Parking: The ODDA plan does a good job at identifying potential off-street parking locations. Could the city acquire the lot near 3<sup>rd</sup> and Laneda?
- Traffic calming: Speed bumps would not be appropriate on Laneda but raised intersections could be, although not part of the funded improvements. Stamped/colored asphalt could be a cost-effective way to treat some of the crossings on Laneda.

### **Classic Street**

- The group preferred a cross section that would include a travel lane in each direction, a six foot landscape buffer, and a 10-foot shared use off road path for pedestrians and bicycles. The 34-foot paved area shown in the other cross section is too wide and would encourage fast speeds.
- Classic Street will become a main route to the state park once it is improved. Review signage and other means to encourage non-local traffic to access the park via Necarney.
- What is best intersection configuration at south end of Classic? Three-way intersection with Necarney/Classic/Ridge?
- Suggestion for expanding right-of-way to 50 feet (preserve space for future urban section)
- Turning radius between Laneda and Classic to the south- lots of RV traffic will go this way to the state park. Need space for them to turn.

### **Next Steps**

The next steps for the consultant team include revising and refining the draft alternatives based on the input from today's meeting, and evaluating them using the criteria passed out at the meeting.

The group agreed a public open house was an appropriate next step. A Saturday morning in about one month would be a preferred time. The PAC would like a brief presentation at the beginning to provide background information to the attendees. The consultant team will do

a presentation at the start of the open house. Jerry will check availability of the meeting space and work with Tim to schedule the meeting and notify the PAC.

## Manzanita Downtown Transportation Plan: Public Open House Summary (March 8, 2003)

TO: File  
FROM: Tim Burkhardt  
DATE: March 15, 2003

### Summary

As part of the Manzanita Downtown Transportation Plan, a public open house was held on Saturday, March 8, 2003, from 9:00 – 11:00 a.m. at Pine Grove Community House in Manzanita, Oregon.

The purpose of the open house was to present the draft concepts for the U.S. 101 intersections, Classic Street Extension, and the downtown area (Laneda Avenue in particular) to the general public and to receive comments on them. The concepts had previously been presented to the Project Advisory Committee/Laneda Committee. The meeting was advertised by the Manzanita City Manager through flyers and through word of mouth to the Laneda Committee, elected officials, and other interested parties.

The meeting consisted of brief presentation by consulting planners and engineers (Tim Burkhardt, CH2M HILL; Jim Wilburn, CH2M HILL; and Mia Birk, Alta Planning + Design) followed by discussion and questions and answers. About 25 people were present at 9:30 when the presentation began and about 40 were present at about 10:30. Twenty-six people signed the sign-in sheets. In addition to citizens, agency members present included Jerry Taylor, City of Manzanita; Bill Holmstrom, Tillamook County Planning; Pat Oakes, Tillamook County Public Works; and Lidwien Rahman, ODOT.

### Key Comments

Although formal notes were not taken at the meeting, the following discussion points were noted.

#### US 101 Intersections

- Add sidewalks on US 101 (west side) between Manzanita and Laneda
- Concerns about whether adding turn lane to Laneda at US 101 would cause access problems to Manzanita Lumber
- Verify that there is enough space currently to add turn lanes
- Concerns about closing County Road – is closing really the best solution?
- Interest in using 21<sup>st</sup> Street as access to US 101 (beyond scope of this plan)

- Funding for intersection work would be at least six years out—need to use this plan to get projects onto the STIP
- For US 101 concepts, need to clarify (in years) what is short term and what is long term. Also, people would like to see the new and extended left turn bays on US 101 as part of the short term concept.

### **Classic Street**

- The sooner the better in terms of making improvements
- At south end, another concept would be for Classic to line up with the north-south part of Necarney and for Necarney to “t” into Classic

### **Laneda Avenue Concepts**

- In plan, show 50 foot right-of-way in the future all the way to US 101; would mostly need to acquire on the south side
- Bump-outs: With respect to the bump-outs or curb extensions, the only changes suggested to the concept drawings were at Second Street. The bump-out at the NW shown as an “X” should be shown as a second priority. The bump-outs at the NE and SW corners should be changed from top priority to second priority.
- At the NE corner of 5<sup>th</sup> Street, the triangular corner could be acquired to improve the alignment of the intersection with Laneda. Also, closing the driveway at the NW corner from the property onto Laneda should be explored, assuming the driveway is moved to 5<sup>th</sup> Street.
- The group was interested in improving local streets that intersect with Laneda. 5<sup>th</sup> Street was identified as a top priority. The 40-foot cross section shown as cross section “B” could be applied here.
- Bump-outs in general should all be the same size but they can be tailored to specific locations if needed.

### **Laneda Avenue Design Details**

- There was extensive discussion about a number of design details that are beyond the scope of the downtown plan including curb design, drainage, and crosswalk locations.

### **Laneda Beach Access**

- There were a number of comments that the concept was not attractive, not the right look and an agreement that this concept would need debate and refinement more than can happen with the current plan
- There were questions about the structure type; it was explained that a bulkhead –type design was needed to hold up to the waves and tides

## PAC Meeting #2: Manzanita Downtown Transportation Plan

**ATTENDEES:** PAC members and public  
Jerry Taylor, City of Manzanita  
Tim Burkhardt, CH2M HILL  
Arif Khan, Alta Planning +  
Design  
Bill Holmstrom, Tillamook  
County  
Dale Jordan, DLCD

**FROM:** Tim Burkhardt

**LOCATION:** Manzanita City Hall

**DATE:** April 16, 200, 2:00-4:00 p.m.

### Meeting Purpose

Jerry Taylor opened the meeting and welcomed the group. Tim Burkhardt explained that the purpose of the meeting was to get comments from the PAC and the public on the draft plan, which was mailed on April 2, 2003.

### Discussion

Most of the comments related to the Preferred Alternatives section of the document (Section 4). Tim and Arif marked up the draft plan and/or presentation posters in response to the discussion. Key points are as follows:

- Move "Other Options" section for US 101 from Draft Alternatives to Preferred Alternatives. The PAC would like to recommend these be further explored.
- Classic Street extension: Clarify that the purpose of this is to provide a north-south connection for the entire city, not just south of Laneda Avenue. Do not specify an intersection option at the south end but present the two alternatives. Also, the PAC made recommendations for access control on Classic, which are documented in the revised plan.
- Cross Sections for Other 40-Foot Streets: The PAC did not wish to implement this cross-section but would rather these streets remain "informal" as they are today. Move this section to "draft alternatives" and indicate that it has been rejected by the PAC.
- Laneda Avenue intersection: Do not specify solution for sidewalk and access control but indicate that it should be studied. Recommend earlier implementation of long-term alternatives if feasible. Indicate that other US 101 intersections should be studied and/or coordinated with County TSP. Also, the PAC added language to the plan concerning avoiding adverse impacts of any highway widening that might occur at the intersection.

- Laneda Avenue Street Design: Changes/corrections to bump-out locations. PAC recommended two locations for 4-way stops.

Additional suggestions and comments were recorded in the marked-up version of the draft document.

### **Next Steps**

Tim Burkhardt said that the comments from today's meeting would be incorporated into the document. A revised version of the document would be provided to the Planning Commission for review at a public hearing in May. Assuming recommendation of the plan by the Planning Commission at that meeting, the plan would be finalized and placed before the City Council for approval in June.

APPENDIX B

**Plan and Policy Review  
Technical Memorandum**

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# City of Manzanita Transportation Plan: Plan and Policy Review Summary

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## 1. Introduction

This document summarizes selected city, county, and state plans and policies relevant to the City of Manzanita Downtown Transportation Plan. Relevant documents were reviewed for the jurisdictions that own, regulate, or provide public services on the roadways within the city and the plan area. These jurisdictions include the city itself plus Tillamook County, the Tillamook County Transportation District (TCTC), and the State of Oregon. The following documents were reviewed:

### **Manzanita**

- Comprehensive Plan (Ordinance No. 95-3. Adopted 1975, amendments through March 1996)
- Zoning Ordinance (Ordinance #95-4. Amendments through August 31, 2001.)
- Subdivision Ordinance (Ordinance No. 95-5. Adopted March 6, 1996.)
- Street Improvement Ordinance (Ordinance No. 91-2. Creating Street Improvement Standards)
- Resource Team Report (ODDA, June 2000)
- Manzanita Transportation Statement (1978, Excerpt, pp. 82-83)

### **Tillamook County**

- Draft Tillamook County Comprehensive Plan (Spring 2002)
- Tillamook County Zoning Ordinance (December 2002)
- Tillamook County Land Division Ordinance (December 2002)
- Tillamook County Public Road Improvement Ordinance (1999)
- Urban Growth Area Agreements between County and Cities (1996)
- Tillamook County Transportation District

### **State of Oregon/ODOT**

- State Planning Goals (1973)
- Transportation Planning Rule (OAR 660-012)
- Oregon Transportation Plan (1992)
- Oregon Highway Plan (1999)
- Draft Oregon Rail Plan (2001)
- Oregon Public Transportation Plan (1997)
- Oregon Bicycle and Pedestrian Plan (1995)
- Oregon Transportation Safety Action Plan (1995)
- Access Management Rules (OAR 734-051)
- Freight Moves the Oregon Economy (1999)



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- Transportation System Planning Guidelines (2001)
  - Proposed Oregon Coast Highway Corridor Master Plan (ODOT, 1995)
  - Scenic Byway Management Plan for the Nehalem, Tillamook, and Nestucca Regions of the U.S. 101 Corridor in Oregon (ODOT, 1997)
  - Pacific Coast Scenic Byway Corridor Management Plan for U.S. 101 in Oregon (ODOT, 1997)

#### **United States**

- Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) and Implementing Regulations (23 CFR 450 and 49 CFR 613)

## **2. City Manzanita**

### **2.1 Manzanita Comprehensive Plan**

(Ordinance No. 95-3. Adopted 1975, amendments through March 1996)

#### **Summary and Relevance to Proposed Plan**

- Standard Comprehensive Plan. Goals per State Planning Goals.

#### **Relevant Policies and Recommendations**

- Transportation Policies
  - Reduce speed on Laneda Avenue; accommodate bicycle traffic (pavement width, bike facilities); use city traffic management plan as a guide for signs, crosswalks; crosswalks are a high priority downtown; limit accesses onto US 101; coordinate with ODOT re: improvements to US 101. (p.22)
- Street Policies
  - Includes polices regarding cost-sharing and funding for new streets; requirement of asphaltic concrete pavement; storm drainage; use of street right-of-way. (p. 27)
- Land Use
  - Land use policies are broad and do not appear highly relevant to transportation plan. Comprehensive plan land use and zoning designations are the same. (p. 5)

#### **Data Gaps and Policy Issues**

- None identified

### **2.2 Manzanita Zoning Ordinance**

(Amendments through August 31, 2001)

#### **Article 1. Introductory Provisions.**

Article 1 includes definitions for the following terms that are relevant to transportation planning and improvements: access, alley, parking space, recreational vehicle, street.

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## **Article 2. Basic Provisions.**

Article 2 divides land in Manzanita into the following use zones:

- Medium Density Residential (R-2)
- High Density Residential (R-3)
- High Density Residential/Limited Commercial (R-4)
- Special Residential/Recreational (SR-R)
- Residential Manufactured Dwelling (RMD)
- Commercial (C-1)
- Limited Commercial (LC)

## **Article 3. Use Zones.**

The code sections pertaining to the use zones were reviewed for provisions directly relating to transportation standards, facilities, circulation, safety, etc. No such provisions were identified.

## **Article 4. Supplemental Provisions.**

The supplementary provisions were reviewed for text directly affecting transportation standards, facilities, circulation, safety, etc. The following provisions were identified:

- Section 4.010. Access Requirement. Requires every lot to abut a street or alley for at least 25 feet or have vehicular access by means of an easement.
- Section 4.020. Clear Vision Areas. Requires a clear vision area at the corner of properties at the intersection of two streets.
- Section 4.080. Off-Street Parking and Off-Street Loading Requirements. Establishes requirements enforceable when a new structure is erected or an existing structure is changed or enlarged. Includes general requirements.
- Section 4.0090. Off-Street Parking Requirements. Establishes parking ratios by land use type.

## **2.3 Manzanita Subdivision Ordinance**

(Adopted March 6, 1996)

- Section 4 (Definitions): Includes definitions for pedestrian way, right-of-way, road, roadway, sidewalk, street (including alley, arterial, collector). See illustration.
- Section 39 (Streets): For new streets, includes provisions for street widths, alignment, street extension, intersection angles, grades and curves, etc.

## **2.4 Manzanita Street Improvement Ordinance**

(Ordinance No. 91-2. Creating Street Improvement Standards.)

### **Summary and Relevance to Proposed Plan**

- Ordinance is intended to provide for orderly and safe street design, construction and repair. Defines street widths and construction standards for arterial, collector and residential streets.

- 
- Transportation plan should incorporate and/or refer to these standards

### **Relevant Policies and Recommendations**

- Defines street widths and construction standards for arterial, collector and residential streets.

### **Data Gaps and Policy Issues**

- Assume that updates to street design standards would require amendment of this ordinance.

## **2.5 Manzanita Resource Team Report**

(ODDA, June 2000)

### **Summary and Relevance to Proposed Plan**

- Report has three main sections or goals: strengthening downtown's image and sense of community, design of public space, and design of private space. Design recommendations include both architectural elements and bigger picture (e.g., circulation) elements. Because of the primary goal of strengthening downtown's image, there is extensive appendix material on storefront architecture and design and façade improvements.
- Contains detailed recommendations regarding traffic and transportation issues, including relation of downtown to US 101; traffic circulation/intersection improvements; parking; pedestrian circulation and amenities; streetscape improvements. (p.8-9)

### **Relevant Policies and Recommendations**

- Strengthening Downtown's Image and Sense of Community
  - Tourists and shoppers will appreciate public amenities including pedestrian lighting, bike racks. (p.3)
  - Continuous, easy to maintain sidewalks along primary shopping streets will add to comfort and safety of pedestrians. (p.3)
- Design Recommendations: Public Space
  - Opportunity exists to create better pedestrian Linkages along and across Laneda Avenue. Bikes should continue to use downtown streets making it unnecessary to develop special bike paths. Traffic calming measures should be adequate to allow safe passage for bikes and cars. (p.3-4)
  - Laneda Avenue should be engineered to standards of 1989 engineering report. ODDA recommends narrower lanes (10-foot travel lanes), 8-foot parking lanes, and 7-foot sidewalks to promote slower speeds, lower costs, etc. Suggest four-way stop at 3<sup>rd</sup> and Laneda to slow traffic, allow safe pedestrian crossing. (p.4)
  - Regulated public parallel parking should be encouraged in the commercial areas. Other recommendations for expanding existing public parking. (p.4)

- 
- Pedestrian amenities should include trash cans, benches, drinking fountains, awnings for wind and rain protection, a bandstand shelter, covered bus stops, and easy to find public bathrooms.
  - Downtown has non-continuous sidewalks, in poor condition. Laneda Avenue improvements are #1 on County road repair list; include storm drainage, curb and sidewalks at same time. (p.4)
  - Detailed recommendations regarding relation of downtown to US 101; traffic circulation/intersection improvements; parking; pedestrian circulation and amenities; streetscape improvements (including lighting, sidewalks, curbs, drainage, landscaping, street furnishings). (p.8-9)
- Appendix A: Conceptual Downtown Plan
    - Illustrates proposed changes to Laneda Avenue and cross streets, including conceptual street design. See also Appendix B (architectural plan), E and F (Laneda Avenue concept drawings).

#### **Data Gaps and Policy Issues**

- Downtown transportation plan will attempt to clarify/validate level of public acceptance and technical feasibility of these concepts (ODDA plan is not an officially adopted document).

## **2.6 Manzanita Transportation Statement**

(1978, Excerpt, pp. 82-83)

#### **Summary and Relevance to Proposed Plan**

- Outlines general policies regarding transportation priorities including speed limits, sidewalks, and bicycle facilities.
- Assuming they are still valid, transportation plan should incorporate and/or refer to these policies.

#### **Relevant Policies and Recommendations**

- Recommends increase on Laneda from 25 mph to 30 mph
- Bicycling is important to Manzanita because of its role as a resort community; bike routes not needed due to lack of traffic
- Sidewalks not important on residential streets because of lack of traffic but are generally required in commercial areas
- Traffic on Laneda Ave is heaviest in City
- Most important concern is the maintenance of streets
- Automobile is major form of transportation in Manzanita; walking and bicycling are important but limited to a few months of the year

#### **Data Gaps and Policy Issues**

- Portions of this document may be outdated

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## 3. Tillamook County

### 3.1 Draft Tillamook County Comprehensive Plan

#### (Spring 2002 draft) Summary and Relevance to Proposed Plan

Standard comprehensive plan organized according to the statewide planning goals. Relevant information from Goal 12 (Transportation) is summarized below.

#### Relevant Policies and Recommendations

- Transportation (Goal 12):
  - Provide additional through traffic lanes and left turn “refuge” lanes in areas with existing strip development (p. 5)
  - Encourage public transportation use (p. 5)
  - Arterial road networks should be given preferential treatment over collector and local roads (p. 6)
  - Establish road improvement standards (p. 9)
  - Identifies functional classification and intended purpose of numerous roads in county (p. 9-14)
  - Existing driveways along arterial roads should be minimized and consolidated (p. 15)
  - Designated spacing distances for access cross streets, driveways, and intersections (p. 15)
  - Disapprove establishment of State Coast Highway bike route until improvements made to increase safety, develop County-wide Bikeway Plan (p. 17)
  - Road improvements will include provisions for pedestrian safety near school, parks and playgrounds (p. 18)
  - Roadway and Traffic Safety Management Plan (1981) identifies improvement projects for County (p. 19)
  - Encourage maintenance and expansion of existing intercity bus service (p. 26)
  - Adopt County airport overlay zones and zoning compatible with air service (p. 27)
  - County support of navigation and jetty improvements in Tillamook Bay and Nehalem Bay (p. 28)
  - County support of rail transportation to Wheeler, Rockaway, Garibaldi, Bay City and Tillamook (p. 28)

#### Data Gaps and Policy Issues

- Tillamook County is currently updating their Transportation System Plan (TSP). This update likely will result in changes to the transportation section of the Comprehensive Plan.
- Verify that roadway functional classifications from the County plan are incorporated into city plan with the same identity, future use, and priority for improvement.
- Are access spacing distances in plan in agreement with ODOT specifications and recommendations?

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## **3.2 Tillamook County Zoning Ordinance**

(December 2002)

The Tillamook County Zoning Ordinance contains the following sections: Article I, Introductory Provisions; Article II, Provisions for Zones; Article III, Zone Regulations; Article IV, Supplementary Regulations; Article V, Property Use Requirements and Exceptions; Article VI, Conditional use Procedures and Criteria; Article VII, Nonconforming Uses; Article VIII, Variance Procedure and Criteria; Article IX, Amendment; Article X, Administrative Provisions; Article XI, Compliance and Penalties; Article XII, Miscellaneous Provisions; Article 16, 17 & 18, Nehalem Ordinances.

### **Article 1. Introductory Provisions**

Definitions are provided for the following transportation-related terms: Access; Alley; Development, Parking Space, Road, Road, County, Road, Public, Roadway, Street, Street line.

### **Article 3. Zone Regulations**

Lands in the County are classified into a large number of use or intensity zones, including some specific zones for the unincorporated area of Pacific City/Woods. Article III describes regulations and permitted uses for each zone.

### **Article 4. Supplementary Regulations**

Transportation related uses or standards are addressed as follows in this section of the code.

- Section 4.030, Off-Street Parking and Off-Street Loading Requirements describes the off-street parking requirements for development within Tillamook County.
- Sections 4.040-065 address the standards and procedures for review of manufactured and mobile homes and home parks.
- Section 4.080, Requirements for Protection of Water Quality and Streambank Stabilization. This section establishes areas for riparian vegetation. Transportation-related standards in this section include the requirement that all development shall be located outside of the areas, but allows for development of bridge crossings or direct water access in conjunction with a water dependent use. In addition, vegetation may be removed for construction of a "minor highway" within an existing right-of-way.

### **Article 5. Property Use Requirements and Exceptions**

Sub section 5.060, Access includes the following standard: "Every lot and parcel shall abut a street other than an alley, an approved private way or an approved private access easement for at least 25 feet." No other transportation related policies are included in this Article.

### **Article 6. Conditional Use Procedures and Criteria**

Article 6 addresses Conditional Use Procedures and Criteria. Transportation facilities are addressed as follows:

- Section 6.040, Review Criteria includes adequacy of public facilities and services as a criteria when reviewing conditional use permits.

- 
- Section 6.060, Conditions of Approval, includes controlling the location and number of access points as a potential condition of approval.

### **Article 7. Non Conforming Uses and Structures**

Article 7 addresses the standards and review procedures for non conforming uses. Transportation related facilities are addressed during a Minor Review land use application. Specifically, Section 7.020.10 identifies an application criteria as "A request for the number and types of vehicle trips to the site."

### **Article 8. Variance Procedures and Criteria**

Article 8 includes the standards and review process for variances to Tillamook County's code. Transportation facilities are not addressed as part of the review process or criteria.

### **Article 9. Amendments**

Article 9 describes the process and criteria for map amendments to Tillamook County's zoning map. Review of traffic circulation and the availability of public facilities and services are included as criteria for the land use review.

## **3.3 Tillamook County Land Division Ordinance**

(December 2002)

The Tillamook County Land Division Ordinance establishes standards for the division of land and the development of public facilities improvements outside of Urban Growth Boundaries of cities within Tillamook County. Sections of the ordinance relevant to transportation are summarized as follows.

### **Section 2. Definitions**

The following transportation-related definitions are used within the ordinance: access; alley; pedestrian way; private street or road; right-of-way; road; road, County; road, public; roadway; street; street functional classification; arterial; collector; local street; turnaround.

### **Section 40. Improvement Procedures**

This section identifies the process for approving improvements in conjunction with the Public Works Department.

### **Section 41. Improvement Requirements**

- Section 41 (1) (c) and (d) specify that the developer is responsible for street construction, that improvements shall be made to the specifications of the Public Works Department and that all parcels or lots shall obtain access by abutting a street other than an alley for a minimum of 25 feet at a point which can be developed for safe access.
- Section 41 (3) states that, when required by the density or the character of the development, developments may be required to install "pedestrian ways" which are defined as a sidewalk not less than five feet wide.

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### **Section 42. Improvement Standards**

- Section 42 (A) Streets, reviews the general standards for development of streets; Section (2) Roadway Width and Alignment Standards, reviews the standards for ADT (Average Daily Traffic); that roadways other than Minimum Local Streets and Minor Local Streets shall be paved. Roadway standards generally follow AASHTO guidelines. Section (3) Minimum Right-of-Way widths are based on the functional classification of the roadways as follows:

Arterials and Collectors---Width of 60 feet

Major Local--- Width of 60 feet

Minor Local---Width of 50 feet

Minimum Local---Width of 25 feet

- Section 42 also contains the standard that any right-of-way width less than 50 feet wide shall be a private street and be dedicated as an easement. Section (4) Dead End Streets, allows dead end streets if the following conditions are met: the street is a Minor Local Street or a Minimum Local Street and the street is not more than 2,000 feet in length and the street serves no more than 18 dwellings. Section (5) through (11) discuss standards for future extension of streets, intersections, improvements to existing streets, street names, frontage streets, alleys and features prohibited in public streets.
- Section 42 B, Blocks, contains a block size standard of no greater than 1,000 feet in length between street corner lines unless it is adjacent to an arterial street or unless topography or the location of other streets require other connections. The recommended minimum length of blocks along an arterial is 2,000 feet.

### **Section 43. Improvement Specifications**

This section specifies that the County Public Works Department shall prepare specifications to supplement the standards in this ordinance. (See Tillamook County Public Road Improvement Ordinance.)

## **3.4 Tillamook County Public Road Improvement Ordinance**

(1999)

The purpose of the Tillamook County Public Road Improvement Ordinance is to provide standards for road development located outside of established Urban Growth Boundaries but within Tillamook County. The Ordinance identifies the following documents as reference documents:

- County Road Acceptance Ordinance
- Regulations for Utilities in Tillamook County Public Road Rights-of-Way
- Road Approach Ordinance

Relevant sections of the ordinance are summarized as follows:



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## **Section 2. Definitions**

This section includes definitions related to transportation facilities and improvements as the following: Average Daily Traffic (ADT); Private Road or Street; Public Road; Right-of-Way; Road (including street, highway, lane, alley, place, way, avenue or similar designation); road approach; roadway; sidewalk.

## **Section 11. Standards**

This section specifies standards for development of roadways identified in the Road Improvement Standard Roadway Section, including the standards for Average Daily Traffic per roadway type, Minimum Roadway Section, Materials Specifications, Signage, Drainage, Road Approach standards, Future Land Divisions, Utilities, Acceptance as a County Maintained Road, City limits and Urban Growth Boundaries and Additional Standards.

## **Section 12. Variance**

Describes criteria for a variance from the roadway standards.

## **Exhibits A and B. Roadway Section**

Exhibits A and B of this Ordinance are illustrations of a "Standard Roadway Section" and a "Minimum Roadway Section," respectively. The Standard Roadway Section would be constructed to the standards of the AASHTO (American Association of State Highways and Transportation Officials) Manual.

## **3.5 Tillamook County Urban Growth Management Agreements**

(Adopted December 1996)

### **Summary and Relevance to Proposed Plan**

Tillamook County has adopted Urban Growth Management Agreements with each of the seven incorporated cities in the County. The purpose of the agreements are to provide for coordination of services in the City-County "mutual interest area," defined as the unincorporated lands within the each city's urban growth boundary. These are "urbanizable" lands located in unincorporated Tillamook County. By definition, these lands are: 1) determined to be necessarily and suitable for future urban area; 2) can be served by public facilities and services; and 3) are needed for the expansion of the urban area.

### **Relevant Policies and Recommendations**

- Section 4(A): County Actions. The County shall coordinate with and seek comments from the City regarding the following items, for which the County has ultimate decision making authority and which affect land use within the Mutual Interest Area:
  - Major improvement projects sponsored by the County for transportation, drainage or solid waste improvements.
  - County road vacations

- 
- Section 4(B): City Actions. The City shall coordinate with and seek comments from the County regarding the following items, for which the City has ultimate decision making authority, and which affect land use within the Mutual Interest Area.
    - Major improvement projects sponsored by the City for transportation, drainage or solid waste improvements.
    - Proposal for the extension of any City service, utility or facility or their respective service areas.
  - Section 6: City Annexations.
    - B. Upon annexation the County shall retain jurisdiction of the County road unless jurisdiction is transferred under a separate road transfer agreement between the City and County.
  - Section 10: Issues to Be Evaluated.
    - The County and the City agree to evaluate the following issues by June 1996: A. The respective City and County road, street and storm drainage standards to determine the feasibility of adopting either: 1) A common policy about which standards (City or County) will be used under different circumstances; or 2) A common set of road, street and storm drainage standards to be used within the Mutual Interest Area.

#### **Data Gaps and Policy Issues**

- Determine whether there are updated agreements for the other six cities and to what extent the road standards issue was further evaluated as called for in the ordinance.
- Clarify how these agreements do or don't affect connectivity standards

### **3.6 Tillamook County Transportation District (TCTD)**

TCTD provides bus service to the incorporated cities in Tillamook County. Bus route, schedule and facilities information will be reviewed as part of the development of the transportation plan. However, TCTD does not currently have a master plan or similar document available for review.

## **4. State of Oregon/ODOT**

State plans relating to transportation planning are summarized below, along with notes on their relevance to the downtown plans for Bay City, Manzanita, Nehalem, and Rockaway Beach. The relevance of the state plans to the local plans relates primarily to the presence of state owned facilities (such as US 101) in each of the cities.

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## **4.1 State Planning Goals (1973)**

### **Summary**

Since 1973, Oregon has maintained a strong statewide program for land use planning. The foundation of that program is a set of 19 statewide planning goals. The goals address citizen involvement, land use planning, agriculture, natural resources and open space, economic development, public facilities and services, transportation, energy conservation, and urbanization. The statewide goals are achieved through local comprehensive planning, of which transportation system plans must be made a part.

### **Relevance**

The Transportation Planning Rule and the transportation system plans identified therein are results of implementation of the transportation goal (Goal 12), which reads: "Provide and encourage a safe, convenient and economic transportation system."

## **4.2 Transportation Planning Rule (OAR 660-012, adopted 1991)**

### **Summary**

OAR 660 Division 12, the Transportation Planning Rule (TPR), implements Oregon's Statewide Planning Goal 12 (Transportation) and promotes the development of safe, convenient, and economic transportation systems that reduce reliance on the automobile. The TPR requires the preparation of regional transportation systems plans by metropolitan planning organizations (MPOs) or counties and local TSPs by counties and cities. TSP requirements vary by type (regional vs. local) and community size. Through TSPs, the TPR provides a means for regional and local jurisdictions to identify long-range (20-year) strategies for the development of local transportation facilities and services for all modes, to integrate transportation and land use, to provide a basis for land use and transportation decision-making, and to identify projects for the State Transportation Improvement Program. TSPs need to be consistent with the State Transportation Plan and its modal and multimodal elements.

### **Relevance**

The downtown transportation plans will be generally consistent with the TPR. These plans are being prepared in lieu of full transportation system plans (TSPs), focusing instead on the most critical issues for each city. Because of their small size, each of the cities is eligible for an exemption from preparing a TSP. TSP exemptions will be prepared as part of each plan.

## **4.3 Oregon Transportation Plan (1992)**

### **Summary**

The Oregon Transportation Plan (OTP) is a policy document developed by ODOT in response to federal and state mandates for systematic planning for the future of Oregon's transportation system. It recognizes the need to integrate all modes of transportation and encourages the use of the mode that is the most appropriate for each type of travel. The Plan defines goals, policies and actions for the state for the next 40 years. The Plan's System Element identifies a coordinated multimodal transportation system, to be developed over the next 20 years, which is intended to implement the goals and policies of the Plan. The

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goals and policies of the OTP cover a broad range of issues. The goals and policies are as follows:

- Goal 1: Characteristics of the System
  - Policy 1A – Balance
  - Policy 1B – Efficiency
  - Policy 1C – Accessibility
  - Policy 1D – Environmental Responsibility
  - Policy 1E – Connectivity among Places
  - Policy 1F – Connectivity among Modes and Carriers
  - Policy 1G – Safety
  - Policy 1H – Financial Stability
- Goal 2: Livability
  - Policy 2A – Land Use
  - Policy 2B – Urban Accessibility
  - Policy 2C – Relationship of Interurban and Urban Mobility
  - Policy 2D – Facilities for Pedestrians and Bicyclists
  - Policy 2E – Minimum Levels of Service
  - Policy 2F – Rural Mobility
  - Policy 2G – Regional Differences
  - Policy 2H – Aesthetic Values
- Goal 3: Economic Development
  - Policy 3A – Balanced and Efficient Freight System
  - Policy 3B – Linkages to Markets
  - Policy 3C – Expanding System Capacity
  - Policy 3D – Intermodal Hubs
  - Policy 3E – Tourism
- Goal 4: Implementation
  - Policy 4A – Adequate Funding
  - Policy 4B – Efficient and Effective Improvements
  - Policy 4C – Cost and Benefit Relationships
  - Policy 4D – Flexibility
  - Policy 4E – Achievement of State Goals
  - Policy 4F – Equity
  - Policy 4G – Management Practices
  - Policy 4H – Research and Technology Transfer
  - Policy 4I – State Responsibilities
  - Policy 4J – MPO and Other Regional Responsibilities
  - Policy 4K – Local Government Responsibilities
  - Policy 4L – Federal and Indian Tribal Governmental Relationships
  - Policy 4M – Private/Public Partnership
  - Policy 4N – Public Participation
  - Policy 4O – Public Information and Education

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## Relevance

The primary relevance of the OTP to local plans is consistency. This is stated in Policy 4K – Local Government Responsibilities as follows:

- Local governments shall define a transportation system of local significance adequate to meet identified needs for the movement of people and goods to local destinations within their jurisdictions; and
- Local government transportation plans shall be consistent with regional transportation plans and adopted elements of the state transportation system plan.

## 4.4 Oregon Highway Plan (1999)

### Summary

The 1999 Oregon Highway Plan (OHP) is the highway modal element of the Oregon Transportation Plan. The OHP defines the policies and investment strategies for Oregon's state highway system over the next 20 years. Regional and local transportation system plans (TSPs) must be consistent with the State Transportation System Plan, which includes the OHP. Goal 1 addresses System Definition, Goal 2 System Management, Goal 3 Access Management, and Goal 4 Travel Alternatives. OHP policies under each of these Goals, potentially applicable to the downtown transportation plans, are as follows:

- **Policy 1A: State Highway Classification System.** The state highway classification system includes six classifications: Interstate, Statewide, Regional, District, Local Interest Roads, and Expressways. US 101 is designated a Statewide NHS highway.
- **Policy 1B: Land Use and Transportation.** This policy recognizes the role of both state and local governments regarding the state highway system and calls for a coordinated approach to land use and transportation planning. The policy identifies the designation of highway segments as Special Transportation Areas (STAs), Commercial Centers, and Urban Business Areas (UBAs). Within STAs and UBAs, highways may be managed to provide a greater level of access to businesses and residences than might otherwise be allowed. Commercial Centers encourage clustered development with limited access to a state highway.
- **Policy 1C: State Highway Freight System.** This policy calls for balancing the need to move freight with other highway users by minimizing congestion on major truck routes. US 101 is not a designated State freight route.
- **Policy 1D: Scenic Byways.** This policy promotes the preservation and enhancement of scenic byways by considering aesthetic and design elements along with safety and performance considerations on designated byways. US 101 is a National Scenic Byway.
- **Policy 1F: Highway Mobility Standards Access Management Policy.** This policy provides specific mobility standards for the state highway sections, signalized intersections, and interchanges. Alternative standards are provided for certain locations and under certain conditions. Inside Urban Growth Boundaries, maximum Volume to Capacity (V/C) Ratios for US 101, a Statewide non-freight route, are 0.90 within a

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designated STA , 0.80 where the speed limit is under 45 mph, and 0.75 where the speed limit is over 45 mph.

- **Policy 1G: Major Improvements.** This policy identifies the state’s priorities for responding to highway needs: protect the existing system and improve efficiency and capacity of existing system before adding capacity to the existing system.
- **Policy 2B: Off-System Improvements.** This policy recognizes that the state may provide financial assistance to local jurisdictions to make improvements to local transportation systems if the improvements would provide a cost-effective means of improving the operations of the state highway system.
- **Policy 2F: Traffic Safety.** This policy emphasizes the state’s efforts to improve safety of all users of the state highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues.
- **Policy 2G: Rail and Highway Compatibility.** This policy emphasizes increasing safety and efficiency through reduction and prevention of conflicts between railroad and highway users. Action items call for eliminating or reducing at grade rail crossings.
- **Policy 3A: Classification and Spacing Standards.** This policy addresses the location, spacing and type of road and street intersections and approach roads on state highways. It includes standards for each highway classification, including specific standards for Special Transportation Areas (STAs) and Urban Business Areas (UBAs).
- **Policy 3B: Medians.** This policy establishes the state’s criteria for the placement of medians.
- **Policy 4A: Efficiency of Freight Movement.** This policy emphasizes the need to maintain and improve the efficiency of freight movement on the state highway system.
- **Investment Policy:** This policy identifies ODOT’s priority to invest in managing and preserving the existing highway system and maintaining its safety.

A separate document, the Oregon Highway Plan Implementation Handbook, contains information interpreting the application of policies and actions in the OHP, particularly relating to land use and transportation policy. It includes tables and figures illustrating the OHP access management policies and the Access Management Rule (OAR 734-051). The Handbook does not provide any policy direction not contained in other plans, policies, or rules.

### **Relevance**

Any proposed changes to US 101 must be consistent with the OHP. As noted above, the OHP describes requirements and process for establishing STAs and other special highway designations on state facilities, and sets forth standards for the performance, design, and access management of State Highways.

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## 4.5 Draft Oregon Rail Plan (2001)

### Summary

The 2001 Draft Oregon Rail Plan identifies federal and state policies applicable to passenger and freight rail planning. However, the plan does not identify any additional policies specific to the plan. The freight element describes existing conditions in the different regions of the state and improvements that are needed. It also identifies issues that should be considered in rail planning during local land use and transportation planning, such as preparation of Comprehensive Plan policies to support a Transportation System Plan.

The passenger element identifies the need or feasibility of certain passenger and commuter rail improvements. The plan identifies the following funding needs for the Port of Tillamook Bay rail line: tunnel repair, bridge repair, rail renewal, locomotive acquisition, debt refinance, maintenance equipment acquisition. The plan also suggests criteria for determining if an area could support a commuter rail line.

### Relevance

Where rail lines are possibly affected, the downtown plans should reflect the importance of maintaining the freight and passenger rail system.

## 4.6 Oregon Public Transportation Plan (1997)

### Summary

The Oregon Public Transportation Plan (OPTP) forms the transit modal plan of the Oregon Transportation Plan. The vision guiding the plan is as follows:

- A comprehensive, interconnected and dependable public transportation system, with stable funding, that provides access and mobility in and between communities of Oregon in a convenient, reliable and safe manner that encourages people to ride
- A public transportation system that provides appropriate service in each area of the state, including service in urban areas that is an attractive alternative to the single-occupant vehicle, and high-quality, dependable service in suburban, rural, and frontier (remote) areas
- A system that enables those who do not drive to meet their daily needs
- A public transportation system that plays a critical role in improving the livability and economic prosperity for Oregonians.

The plan contains goals, policies, and strategies relating to the whole of the state's public transportation system. The plan is intended to provide guidance for ODOT and public transportation agencies regarding the development of public transportation systems. The OPTP also identifies minimum levels of service, by size of jurisdiction, for fulfilling its goals and policies.

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## **Relevance**

Transit service in Tillamook County is provided by the Tillamook County Transportation District; the level of service of this system will be addressed at the County level (e.g., in the County Transportation System Plan). Public transportation facilities (i.e., bus stops) will be reviewed for each of the downtown plans.

## **4.7 Oregon Bicycle and Pedestrian Plan (1995)**

### **Summary**

The Oregon Bicycle and Pedestrian Plan provides guidance to regional and local jurisdictions for the development of safe, connected bicycle and pedestrian systems. The plan is a modal element of the Oregon Transportation Plan. The plan includes two major sections: policies and implementation strategies; and design, maintenance and safety information. The plan also outlines the elements of the bicycle and pedestrian plan required for transportation system plans. The goal of the plan is "To provide safe, accessible and convenient bicycling and walking facilities and to support and encourage increased levels of bicycling and walking."

### **Relevance**

This Bicycle and Pedestrian Plan applies to state-owned facilities in Tillamook County, such as US 101, which is a designated State Bike Route. Any changes to the state bike route must be consistent with ODOT policies.

## **4.8 Oregon Transportation Safety Action Plan (1995)**

### **Summary**

The Oregon Transportation Safety Action Plan forms the safety element of the Oregon Transportation Plan (OTP). The intent of the plan is to improve safety on Oregon's highways for all users. The plan was prepared in response to the safety policy (Policy 1G) in the OTP: "It is the policy of the State of Oregon to improve continually the safety of all facets of statewide transportation for system users including operators, passengers, pedestrian, recipients of goods and services, and property owners."

The plan contains 70 actions that form a 20-year safety agenda. Many of the actions are programmatic in nature and may not be reasonably addressed through local transportation plans.

### **Relevance**

The following actions potentially could be relevant to the downtown transportation plans:

- Action 19 – Safety Considerations in Transportation Planning Documents
- Action 20 – Access Management
- Action 64 – Rail Crossing Safety
- Action 66 – Pedestrian Safety



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## **4.9 Access Management Rules (OAR 734-051)**

### **Summary**

The stated purpose of these rules is to govern the issuance of permits for approaches onto state highways. The rules promote the protection of emerging developed areas rather than the retrofit of existing built-up roadways. The rules also provide access management spacing standards for approaches for various types of state roadways and for interchanges. OAR 734-051-0190 specifies that these standards are to be used in planning processes involving state highways, including corridor studies, refinement plans, state and local TSPs, and local comprehensive plans. The access management rules also include provisions for UBAs, and STAs, as discussed in the OHP. The access management rules describe the development of access facility management plans and interchange area management plans.

### **Relevance**

Because these rules apply to all roadways under state jurisdiction, they are of critical importance for the downtown plans, all of which include US 101 in their study areas. Any changes to access onto US 101 (including consideration of STAs) must be consistent with the Access Management Rules. These plans should include measures to implement the Access Management Rule.

## **4.10 Freight Moves the Oregon Economy (1999)**

### **Summary**

This plan's stated purpose is to demonstrate the importance of freight to the Oregon economy and identify concerns and needs regarding the maintenance and enhancement of current and future mobility in the state of Oregon. The plan discusses the relationship among freight, the economy, and transportation planning, as well as road, rail, waterway, and pipeline facilities, and intermodal facilities. It does not identify specific freight policies to be addressed by transportation system plans or facility plans.

### **Relevance**

The primary north-south through freight route in Oregon is I-5. US 101 serves regional and local freight needs. This plan suggests the importance of maintaining efficient through traffic movement on US 101.

## **4.11 Proposed Oregon Coast Highway Corridor Master Plan**

(ODOT, January 1995)

### **Summary and Relevance to Proposed Plan**

- A vision to develop an aesthetic corridor with utilitarian purposes. A route to be admired by tourists and recreational users, while remaining the principle route for commercial and industrial traffic along the coast.
- Goals of the plan include:
  - Develop a plan that integrates interests of ODOT, communities, and other jurisdictions
  - Manage future transportation needs and useful life of the highway

- Incorporate inherent scenic resources of the area with the highway
- Support individual character of communities adjacent to the highway
- Support sustainable economic diversity and responsibility

### **Relevant Policies and Recommendations**

- The following are corridor-wide recommendations:
  - Intercity Services: commercial bus service provided to all cities with a population over 2,500, or a group of communities located within five miles of one another and a combined population greater than 2,500, with at least one daily stop in each direction (p. II 1-2)
  - Intermodal Services: direct connections between inter-city buses and air service; provide natural gas every 100-150 miles to support alternative fuel use (p. II 2-3)
  - Road Capacity: manage capacity through access management and lane construction; provide additional capacity in urban areas of population growth; in designated Special Highway Landscape areas construct only if project has a positive impact on scenic resources; operate at level of service B or better in off-peak periods (p. II 4)
  - Access Management: motorists should be made aware of the most efficient route between the coast and inland destinations; better informing of travel distances and speeds to motorists (p. II 7-8)
  - Resources: Resources: development of a vegetation management plan; include vegetation to enhance community streetscapes; develop "gateways" to each city (p. II 8-9)
  - Bicycle and Pedestrian Facilities: future projects should have a bike lane in each direction; integrate bicycle facilities with community systems; improve pedestrian access (p. II 10-11)
  - Other Improvement Activities: bypasses/alternative routes; parking plans; interpretive centers; scenic overlooks/loops; exploring transit, rail, and air services (p. II 15-23)
- The following are recommendations for Tillamook County:
  - Manzanita to Wheeler: improve safety of Manzanita junction; improve local parallel street system; improve transit system; develop access management plan; develop a plan to incorporate parking, pedestrian, landscape, and signage needs (p. II 39-40)
  - South Wheeler, Rockaway, and Garibaldi: develop access management plan; identify scenic areas; improve Brighton slide area stability; develop a plan to incorporate parking, pedestrian, landscape, bicycle, and signage needs; use frontage road in Rockaway as additional travel lanes; improve transit system; in Garibaldi investigate Miami River Road as a possible bypass and access management (p. II 41-42)
  - South Garibaldi, Bay City, and north Tillamook: identify passing lane locations; investigate access management, turn lanes, and local street system improvements in Bay City; improve transit system; incorporate pedestrian and bicycle use (p. II 43)
  - Tillamook: investigate access management; incorporate pedestrian and bicycle use; create Coast Highway interpretive center; develop byway to the east; develop frontage road system; develop a plan to incorporate parking, pedestrian, landscape, bicycle, and signage needs; improve junction of US 101 and Highway 6 (p. II 44-45)
- The following are implementation strategies for the plan:
  - Bicycle and pedestrian improvements will be included with all capacity improvements (p. III 2)

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- ODOT will prepare a Visual Resource Plan, identifying potential scenic features and signing programs (p. III 2)
  - Improvements will enhance the environment adjacent to the highway (p. III 3)

#### **Data Gaps and Policy Issues**

- For each city, identify priorities among the following common themes:
  - Parking, pedestrian, bicycle, landscaping, and signage needs
  - Investigation of access management
  - Improved transit system

### **4.12 Pacific Coast Scenic Byway Corridor Management Plan for US 101 in Oregon**

(ODOT, December 1997)

#### **Summary and Relevance to Proposed Plan**

- Benefits of the plan include:
  - Improved coordination between agencies working to improve visitor experience and quality of life
  - Identification and prioritization of improvement projects
  - Utility as a resource for information
  - Serve as an application for designation as a National Scenic Byway
- Mission to develop a community-based plan that will maintain or enhance characteristics that are essential to the Pacific Coast Scenic Byway experience
- This document is the guidance manual for separate regional management plan documents

#### **Relevant Policies and Recommendations**

- Nehalem Region (p. 47-52):
  - Nine *defining features* that are valued most while travelling the corridor
  - Eleven *contributing features* that significantly add to the regional experience
  - Six *recognized features* that enhance the overall regional experience
- Tillamook Region (p. 53-58):
  - Seven *defining features*
  - Twelve *contributing features*
  - Sixteen *recognized features*
- The features described for each region are described in greater detail in the regional management plan discussed below.

#### **Data Gaps and Policy Issues**

- None identified

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## 4.13 Scenic Byway Management Plan for the Nehalem, Tillamook, and Nestucca Regions of the U.S. 101 Corridor in Oregon

(ODOT, December 1997)

### Summary and Relevance to Proposed Plan

- Presents detailed descriptions of the features outlined in the *Pacific Coast Scenic Byway Corridor Management Plan for U.S. 101 in Oregon*
- Management strategies and suggested projects are described
- Identification of priority projects

### Relevant Policies and Recommendations

The following recommendations are associated with the *defining features* within the city limits for the cities addressed by these projects. Many of the features identified in the scenic byway plan are state or county parks; it is assumed that recommendations in the plan for these facilities are generally outside the city's jurisdictions.

- Nehalem Region
  - City of Nehalem (p. 32-33):
    - Provide signage and tourist documents
    - Inventory, document, and develop interpretive panels for historic sites
  - View at Nehalem River Bridge (p. 34-35):
    - Provide signage and turnouts
  - City of Rockaway Beach (p. 41-44):
    - Selectively remove vegetation to improve view and implement streetscape plan
    - Identify roadway runoff problems
    - Improve public amenities
    - Reduce US 101 speed in town and improve north-south streets for local traffic
    - Design roadway features (lighting, retaining walls, guard rails) consistent with community
    - Designate US 101 from south Garibaldi to Nehalem Bridge as natural corridor
    - Design interpretive signs and kiosks with interpretive trails
    - Provide off-highway parking, pedestrian access, and turnoffs for resources
  - Nehalem bay and estuaries wildlife viewing (p. 55-56)
    - Provide parking and turnout areas
    - Provide interpretive signs or kiosks
  - Priority or selected projects (p. 65-67):
    - Nehalem bay and estuary wildlife viewing improvements
    - Nehalem River Bridge viewing improvements
- Tillamook Region
  - Tillamook County Pioneer Museum and Cultural Center, Bay City site (p. 94-96)
    - Provide parking facilities and signage
    - Develop turning lane over railroad tracks

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### **Data Gaps and Policy Issues**

As previously indicated, only *defining features* are discussed above. Other *contributing* or *recognized features* exist in the area and although their contribution to scenic qualities of US 101 is less significant, they are additional resources to consider in policy development.

## **5. United States**

### **5.1 Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) and Implementing Regulations (23 CFR 450 and 49 CFR 613)**

Federal transportation planning requirements, such as those in the TEA-21 and its implementing regulations, are addressed through state and local plans (see above).

APPENDIX C

# **Existing Conditions and Traffic Data**

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**Part 1**  
**Field Measurements**

# Field Measurements

## Manzanita Street Inventory

Street	Cross Street	Roadway Cross Section			Pedestrian Amenities	Notes
		Shoulder/Parking Lane (ft)	Westbound Lane (ft)	Eastbound Lane (ft)	Sidewalks (ft)	
<b>Laneda</b>						
	<at Bank>	8	14	11	5	
	Classic		20			
	W. Classic of		19.5			
	Division		10	10		
	W. Division of					
	5th	8	11	10	5	
	4th Pl.	9	10.5	10	5	
	3rd		33.5			
	2nd	8	10	11	6	
	Carmel	8	11	10	6	
	1st	8	11	10	6	
<b>Division</b>	N. Laneda of		24			
	S. Laneda of		22			
<b>5th</b>	N. Laneda of		14			
<b>4th</b>	N. Laneda of		18.5			
	S. Laneda of	8	18		5	
<b>3rd</b>	N. Laneda of		X			
	S. Laneda of		22			
<b>2nd</b>	N. Laneda of		24			
<b>Carmel</b>	N. Laneda of		20.5			
	S. Laneda of		25.5			
<b>First Street</b>			20			



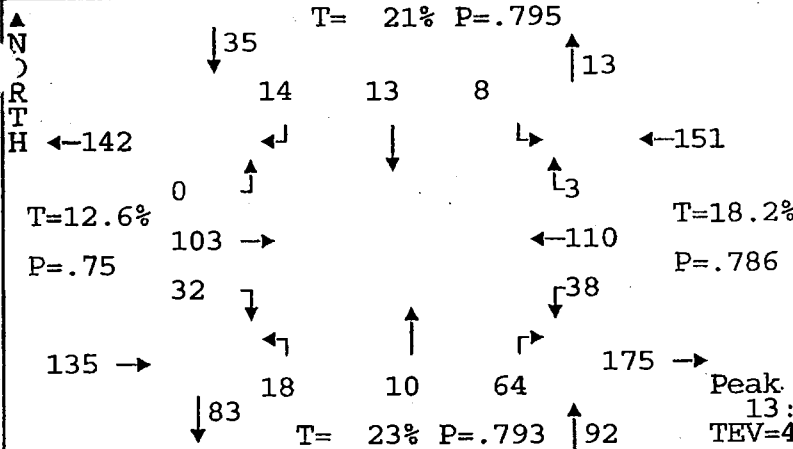
**Part 2**  
**Raw Traffic Counts**

**INTERSECTION TURN MOVEMENT COUNT SUMMARY REPORT**  
**CARMEL @ LANEDA**

DATE OF COUNT: 09/09/01  
 DAY OF WEEK: SUN  
 TIME STARTED: 12:00  
 TIME ENDED: 15:00

TEV=TOTAL ENTRY VOLUME  
 T=%TRUCKS BY APPROACH  
 P=PHF BY APPROACH

V3BE

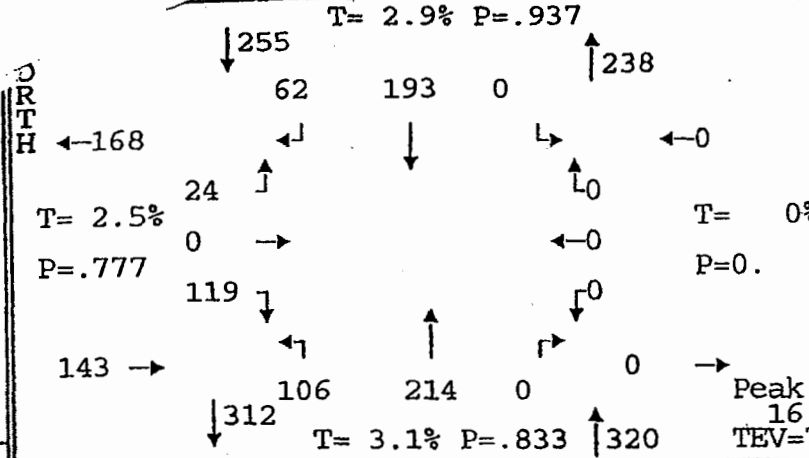


Peak Hour  
 13:35-14:35  
 TEV=413

Traffic Smithy  
 (503) 641-6333

TIME PERIOD FROM - TO	EAST BOUND			SOUTH BOUND			NORTH BOUND			WEST BOUND			ALL
	↓	→	↑	←	↓	↘	←	↑	↗	↓	←	↑	
12:00-12:05	0	6	0	0	0	0	2	1	6	2	7	1	25
12:05-12:10	2	10	0	0	0	2	2	0	8	3	7	2	36
12:10-12:15	3	8	2	0	0	1	2	1	7	3	10	1	38
12:15-12:20	2	5	0	0	1	0	1	1	7	6	9	1	33
12:20-12:25	0	1	0	0	0	0	1	2	3	3	9	2	21
12:25-12:30	2	3	0	0	1	0	1	1	2	4	9	1	24
12:30-12:35	2	8	0	0	1	0	2	0	5	3	10	0	31
12:35-12:40	2	11	0	0	0	0	1	1	0	5	7	0	27
12:40-12:45	0	10	0	1	1	0	2	1	3	3	6	0	27
12:45-12:50	1	4	0	1	0	0	3	0	4	1	8	0	22
12:50-12:55	1	6	0	0	0	0	3	0	4	2	6	1	23
12:55-13:00	3	3	0	1	0	0	1	0	5	3	6	0	22
13:00-13:05	1	6	0	2	1	0	3	0	8	3	4	0	28
13:05-13:10	1	4	0	0	0	0	5	0	4	2	7	0	23
13:10-13:15	0	8	0	1	1	0	2	0	3	3	7	0	25
13:15-13:20	0	4	0	0	1	0	2	2	7	3	6	0	25
13:20-13:25	1	4	0	0	0	0	3	0	7	2	7	1	21
13:25-13:30	2	5	0	1	0	0	0	2	6	5	9	0	30
13:30-13:35	3	5	0	1	2	1	3	0	3	3	12	1	34
13:35-13:40	4	11	0	1	1	0	4	1	2	4	4	0	32
13:40-13:45	2	5	0	2	0	0	1	1	4	1	13	0	29
13:45-13:50	0	10	0	2	1	3	2	0	7	2	6	0	33
13:50-13:55	0	8	0	0	1	1	3	0	6	6	9	0	34
13:55-14:00	1	7	0	1	0	1	0	3	8	3	6	0	30
14:00-14:05	3	9	0	1	0	0	1	1	7	3	6	0	29
14:05-14:10	3	7	0	2	2	2	1	0	6	4	15	0	42
14:10-14:15	3	13	0	1	3	0	0	2	0	2	14	0	38
14:15-14:20	3	10	0	0	1	0	1	1	1	4	9	0	30
14:20-14:25	6	10	0	0	1	0	2	1	5	6	5	0	36
14:25-14:30	3	10	0	1	2	1	2	0	9	0	8	1	37
14:30-14:35	6	3	0	3	1	0	1	0	9	3	15	2	43
14:35-14:40	4	7	0	0	2	0	0	0	10	0	5	0	28
14:40-14:45	1	8	0	0	1	0	3	3	6	1	4	0	27
14:45-14:50	0	6	0	0	1	0	0	1	4	4	7	0	23
14:50-14:55	2	6	1	2	0	0	4	0	3	3	6	1	28
14:55-15:00	3	6	0	0	0	0	2	1	2	0	8	0	22
<b>Total Survey</b>	<b>68</b>	<b>247</b>	<b>3</b>	<b>24</b>	<b>26</b>	<b>12</b>	<b>66</b>	<b>27</b>	<b>177</b>	<b>105</b>	<b>286</b>	<b>15</b>	<b>1056</b>
<b>PHF</b>	<b>.53</b>	<b>.78</b>	<b>0</b>	<b>.7</b>	<b>.54</b>	<b>.4</b>	<b>.64</b>	<b>.63</b>	<b>.7</b>	<b>.79</b>	<b>.72</b>	<b>.25</b>	<b>.890</b>
<b>% Trucks</b>	<b>14.7</b>	<b>12.1</b>	<b>0</b>	<b>16.7</b>	<b>26.9</b>	<b>16.7</b>	<b>21.2</b>	<b>29.6</b>	<b>22.6</b>	<b>19</b>	<b>18.2</b>	<b>13.3</b>	<b>17.9</b>
<b>Stopped Buses</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Peds</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Hourly Totals</b>													
12:00-13:00	18	75	2	3	4	3	21	8	54	38	94	9	329
12:15-13:15	15	69	0	6	6	0	25	6	48	38	88	5	306
12:30-13:30	14	73	0	7	5	0	27	6	52	35	83	2	304
12:45-13:45	19	65	0	10	6	1	30	6	53	32	89	3	314
13:00-14:00	15	77	0	11	8	6	28	9	61	37	90	2	344
13:15-14:15	20	88	0	12	11	8	20	12	59	38	107	2	377
13:30-14:30	29	105	0	12	14	9	20	10	58	38	107	2	404
13:45-14:45	31	102	0	11	15	8	16	11	74	34	102	3	407
14:00-15:00	35	95	1	10	14	3	17	10	62	30	102	4	383

INTERSECTION TURN MOVEMENT COUNT SUMMARY REPORT  
HWY 101 AT LANEDA AVENUE



DATE OF COUNT: 03/30/01  
DAY OF WEEK: FRI  
TIME STARTED: 16:00  
TIME ENDED: 18:00

TEV=TOTAL ENTRY VOLUME  
T=%TRUCKS BY APPROACH  
P=PHF BY APPROACH

Traffic Smithy  
(503) 641-6333

Peak Hour  
16:15-17:15  
TEV=718

V1YH

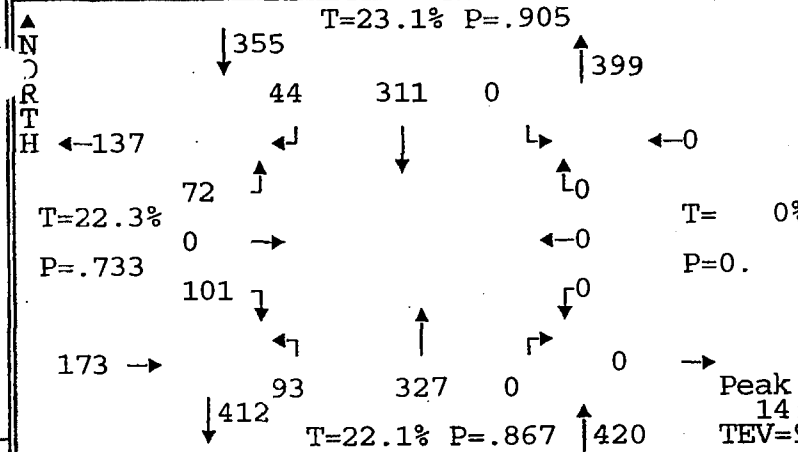
TIME PERIOD FROM - TO	EAST BOUND			SOUTH BOUND			NORTH BOUND			WEST BOUND			ALL
	↓	→	↑	←	↓	↳	←	↑	↳	↓	←	↑	
16:00-16:05	12	0	4	6	22	0	13	14	0	0	0	0	71
16:05-16:10	10	0	2	12	21	0	3	18	0	0	0	0	66
16:10-16:15	11	0	1	2	21	0	5	12	0	0	0	0	52
16:15-16:20	7	0	1	2	21	0	11	24	0	0	0	0	66
16:20-16:25	6	0	0	3	21	0	4	21	0	0	0	0	55
16:25-16:30	5	0	5	1	17	0	16	20	0	0	0	0	64
16:30-16:35	14	0	5	6	16	0	7	11	0	0	0	0	59
16:35-16:40	13	0	4	4	15	0	5	19	0	0	0	0	60
16:40-16:45	8	0	2	6	20	0	7	16	0	0	0	0	59
16:45-16:50	12	0	1	6	11	0	7	19	0	0	0	0	56
16:50-16:55	8	0	0	9	13	0	10	17	0	0	0	0	57
16:55-17:00	9	0	0	6	12	0	8	11	0	0	0	0	46
17:00-17:05	17	0	1	9	19	0	11	19	0	0	0	0	76
17:05-17:10	11	0	1	2	11	0	9	25	0	0	0	0	59
17:10-17:15	9	0	4	8	17	0	11	12	0	0	0	0	61
17:15-17:20	17	0	1	3	11	0	5	13	0	0	0	0	50
17:20-17:25	7	0	1	4	15	0	8	10	0	0	0	0	45
17:25-17:30	6	0	1	4	15	0	8	10	0	0	0	0	44
17:30-17:35	10	0	1	4	15	0	4	12	0	0	0	0	46
17:35-17:40	7	0	2	6	17	0	8	10	0	0	0	0	50
17:40-17:45	7	0	0	8	19	0	9	10	0	0	0	0	53
17:45-17:50	3	0	3	2	17	0	11	9	0	0	0	0	45
17:50-17:55	12	0	2	8	13	0	9	11	0	0	0	0	55
17:55-18:00	11	0	1	8	10	0	3	9	0	0	0	0	42
<b>Total Survey</b>	<b>232</b>	<b>0</b>	<b>43</b>	<b>129</b>	<b>389</b>	<b>0</b>	<b>192</b>	<b>352</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1337</b>
PHF	.8	0	.43	.65	.82	0	.85	.82	0	0	0	0	.915
% Trucks	2.6	0	2.3	.8	3.6	0	.5	4.5	0	0	0	0	2.9
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Hourly Totals</b>													
16:00-17:00	115	0	25	63	210	0	96	202	0	0	0	0	711
16:15-17:15	119	0	24	62	193	0	106	214	0	0	0	0	717
16:30-17:30	131	0	21	67	175	0	96	182	0	0	0	0	671
16:45-17:45	120	0	13	69	175	0	98	168	0	0	0	0	643
17:00-18:00	117	0	18	66	179	0	96	150	0	0	0	0	626

**INTERSECTION TURN MOVEMENT COUNT SUMMARY REPORT**  
**HIGHWAY 101 @ MANZANITA AVENUE**

DATE OF COUNT: 09/09/01  
 DAY OF WEEK: SUN  
 TIME STARTED: 12:00  
 TIME ENDED: 15:00

TEV=TOTAL ENTRY VOLUME  
 T=%TRUCKS BY APPROACH  
 P=PHF BY APPROACH

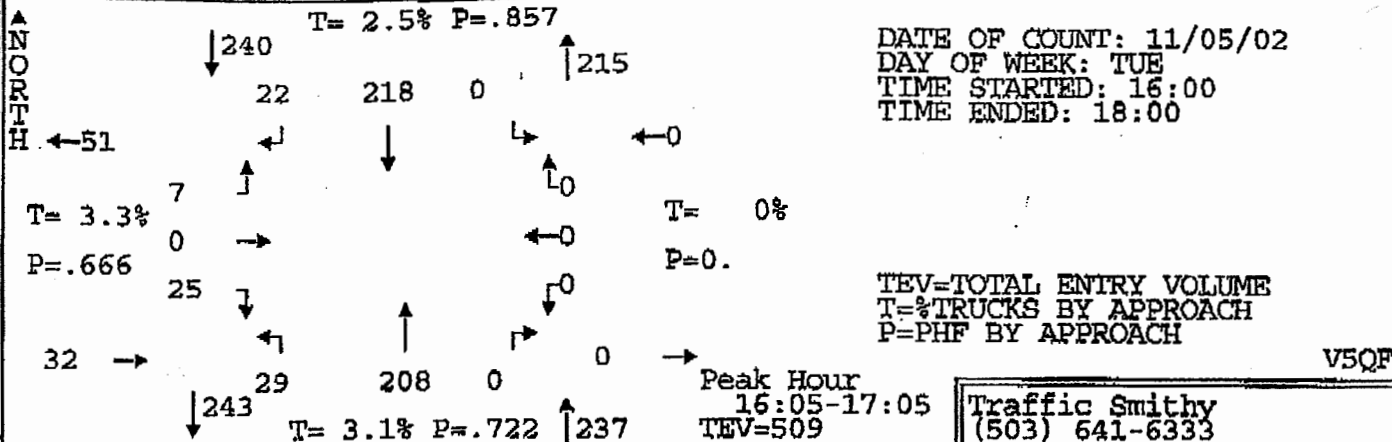
V3BJ



TIME PERIOD FROM - TO	EAST BOUND			SOUTH BOUND			NORTH BOUND			WEST BOUND			ALL
	↓	→	↑	←	↓	↳	←	↑	↳	↓	←	↑	
12:00-12:05	8	0	2	2	24	0	12	26	0	0	0	0	74
12:05-12:10	7	0	8	2	15	0	7	26	0	0	0	0	65
12:10-12:15	8	0	7	10	25	0	12	28	0	0	0	0	90
12:15-12:20	3	0	7	3	11	0	4	21	0	0	0	0	49
12:20-12:25	8	0	3	3	31	0	15	28	0	0	0	0	88
12:25-12:30	15	0	2	6	21	0	10	15	0	0	0	0	69
12:30-12:35	11	0	2	2	22	0	7	27	0	0	0	0	71
12:35-12:40	9	0	4	1	18	0	9	28	0	0	0	0	69
12:40-12:45	13	0	5	3	20	0	8	23	0	0	0	0	72
12:45-12:50	4	0	4	7	15	0	14	28	0	0	0	0	72
12:50-12:55	8	0	3	5	22	0	10	23	0	0	0	0	71
12:55-13:00	7	0	1	2	18	0	3	30	0	0	0	0	61
13:00-13:05	8	0	3	2	20	0	9	33	0	0	0	0	75
13:05-13:10	1	0	6	1	14	0	6	24	0	0	0	0	52
13:10-13:15	11	0	2	4	24	0	7	19	0	0	0	0	67
13:15-13:20	6	0	6	7	19	0	5	37	0	0	0	0	80
13:20-13:25	5	0	5	5	19	0	3	33	0	0	0	0	70
13:25-13:30	5	0	4	4	23	0	8	26	0	0	0	0	70
13:30-13:35	12	0	3	2	23	0	12	20	0	0	0	0	72
13:35-13:40	7	0	3	2	30	0	12	18	0	0	0	0	72
13:40-13:45	6	0	4	4	21	0	8	30	0	0	0	0	73
13:45-13:50	16	0	1	4	26	0	5	23	0	0	0	0	75
13:50-13:55	6	0	7	4	25	0	7	19	0	0	0	0	68
13:55-14:00	14	0	7	5	27	0	5	17	0	0	0	0	75
14:00-14:05	4	0	3	3	29	0	13	37	0	0	0	0	89
14:05-14:10	11	0	4	3	36	0	13	34	0	0	0	0	101
14:10-14:15	17	0	8	3	24	0	9	15	0	0	0	0	76
14:15-14:20	6	0	5	7	11	0	7	33	0	0	0	0	69
14:20-14:25	12	0	11	6	30	0	8	25	0	0	0	0	92
14:25-14:30	7	0	10	4	23	0	4	34	0	0	0	0	82
14:30-14:35	4	0	6	4	28	0	4	23	0	0	0	0	69
14:35-14:40	8	0	8	2	17	0	2	22	0	0	0	0	59
14:40-14:45	8	0	4	1	37	0	6	27	0	0	0	0	83
14:45-14:50	11	0	6	3	19	0	6	31	0	0	0	0	76
14:50-14:55	7	0	3	3	26	0	6	22	0	0	0	0	67
14:55-15:00	6	0	4	5	31	0	15	24	0	0	0	0	85
<b>Total Survey</b>	<b>299</b>	<b>0</b>	<b>171</b>	<b>134</b>	<b>824</b>	<b>0</b>	<b>291</b>	<b>929</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2648</b>
PHF	.72	0	.67	.65	.87	0	.66	.89	0	0	0	0	.890
% Trucks	27.8	0	12.9	15.7	24.3	0	29.6	19.8	0	0	0	0	22.5
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0

Hourly Totals													
12:00-13:00	101	0	48	46	242	0	111	303	0	0	0	0	851
12:15-13:15	98	0	42	39	236	0	102	299	0	0	0	0	816
12:30-13:30	88	0	45	43	234	0	89	331	0	0	0	0	830
12:45-13:45	80	0	44	45	248	0	97	321	0	0	0	0	835
13:00-14:00	97	0	51	44	271	0	87	299	0	0	0	0	849
13:15-14:15	109	0	55	46	302	0	100	309	0	0	0	0	921
13:30-14:30	118	0	66	47	305	0	103	305	0	0	0	0	944
13:45-14:45	113	0	74	46	313	0	83	309	0	0	0	0	938
14:00-15:00	101	0	72	44	311	0	93	327	0	0	0	0	948

INTERSECTION TURN MOVEMENT COUNT SUMMARY REPORT  
HIGHWAY 101 @ NECARNEY ROAD



TIME PERIOD FROM - TO	EAST BOUND			SOUTH BOUND			NORTH BOUND			WEST BOUND			ALL
	↓	→	↑	←	↓	↘	←	↑	↗	↓	←	↑	
16:00-16:05	2	0	0	1	14	0	3	12	0	0	0	0	32
16:05-16:10	3	0	0	3	15	0	6	27	0	0	0	0	54
16:10-16:15	2	0	1	2	17	0	2	17	0	0	0	0	41
16:15-16:20	3	0	2	2	19	0	2	28	0	0	0	0	56
16:20-16:25	3	0	0	0	20	0	0	8	0	0	0	0	31
16:25-16:30	1	0	3	1	11	0	3	16	0	0	0	0	35
16:30-16:35	1	0	0	3	22	0	4	13	0	0	0	0	43
16:35-16:40	2	0	0	2	20	0	1	16	0	0	0	0	41
16:40-16:45	2	0	1	1	20	0	2	16	0	0	0	0	42
16:45-16:50	2	0	0	2	10	0	2	22	0	0	0	0	39
16:50-16:55	3	0	0	1	18	0	3	21	0	0	0	0	46
16:55-17:00	1	0	0	3	18	0	1	15	0	0	0	0	38
17:00-17:05	2	0	0	2	28	0	2	9	0	0	0	0	43
17:05-17:10	2	0	1	0	17	0	2	14	0	0	0	0	37
17:10-17:15	3	0	3	0	16	0	3	19	0	0	0	0	44
17:15-17:20	1	0	0	2	22	0	2	11	0	0	0	0	38
17:20-17:25	2	0	1	4	14	0	3	7	0	0	0	0	31
17:25-17:30	0	0	0	3	18	0	0	12	0	0	0	0	33
17:30-17:35	0	0	2	1	15	0	0	15	0	0	0	0	33
17:35-17:40	3	0	1	2	14	0	2	21	0	0	0	0	43
17:40-17:45	0	0	1	0	16	0	4	16	0	0	0	0	37
17:45-17:50	4	0	0	2	12	0	3	17	0	0	0	0	38
17:50-17:55	2	0	0	2	7	0	1	9	0	0	0	0	21
17:55-18:00	0	0	0	0	17	0	0	10	0	0	0	0	27

Total Survey	44	0	16	39	400	0	53	371	0	0	0	0	923
PHF	.78	0	.35	.79	.85	0	.73	.72	0	0	0	0	.842
% Trucks	4.5	0	0	5.1	2.3	0	1.9	3.2	0	0	0	0	2.8
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	1	0	0	0	0	0	0	0	0

Hourly Totals													
16:00-17:00	25	0	7	21	204	0	30	211	0	0	0	0	498
16:15-17:15	25	0	10	17	219	0	27	197	0	0	0	0	495
16:30-17:30	21	0	6	23	223	0	27	175	0	0	0	0	475
16:45-17:45	19	0	9	20	206	0	26	182	0	0	0	0	462
17:00-18:00	19	0	9	18	196	0	23	160	0	0	0	0	425

**Part 3**  
**Growth Rate Calculations**

Growth Rate Calculations - Source: ODOT Website Transportation Volume Tables

<b>Hwy 101 - Manzanita</b>						
MP	1997 ADT	2019 ADT	Number of years	Factor for 22 years	1 year growth	
43.08	4600	6600	22	1.43	0.020	
43.19	5800	9600	22	1.66	0.030	
<b>Average Growth Rate</b>					<b>0.025</b>	

<b>Hwy 101 - Nehalem</b>						
MP	1997 ADT	2019 ADT	Number of years	Factor for 22 years	1 year growth	
44.73	5800	9500	22	1.64	0.029	
44.97	5900	8900	22	1.51	0.023	
44.99	5900	8800	22	1.49	0.022	
45.53	5500	7400	22	1.35	0.016	
<b>Average Growth Rate</b>					<b>0.023</b>	

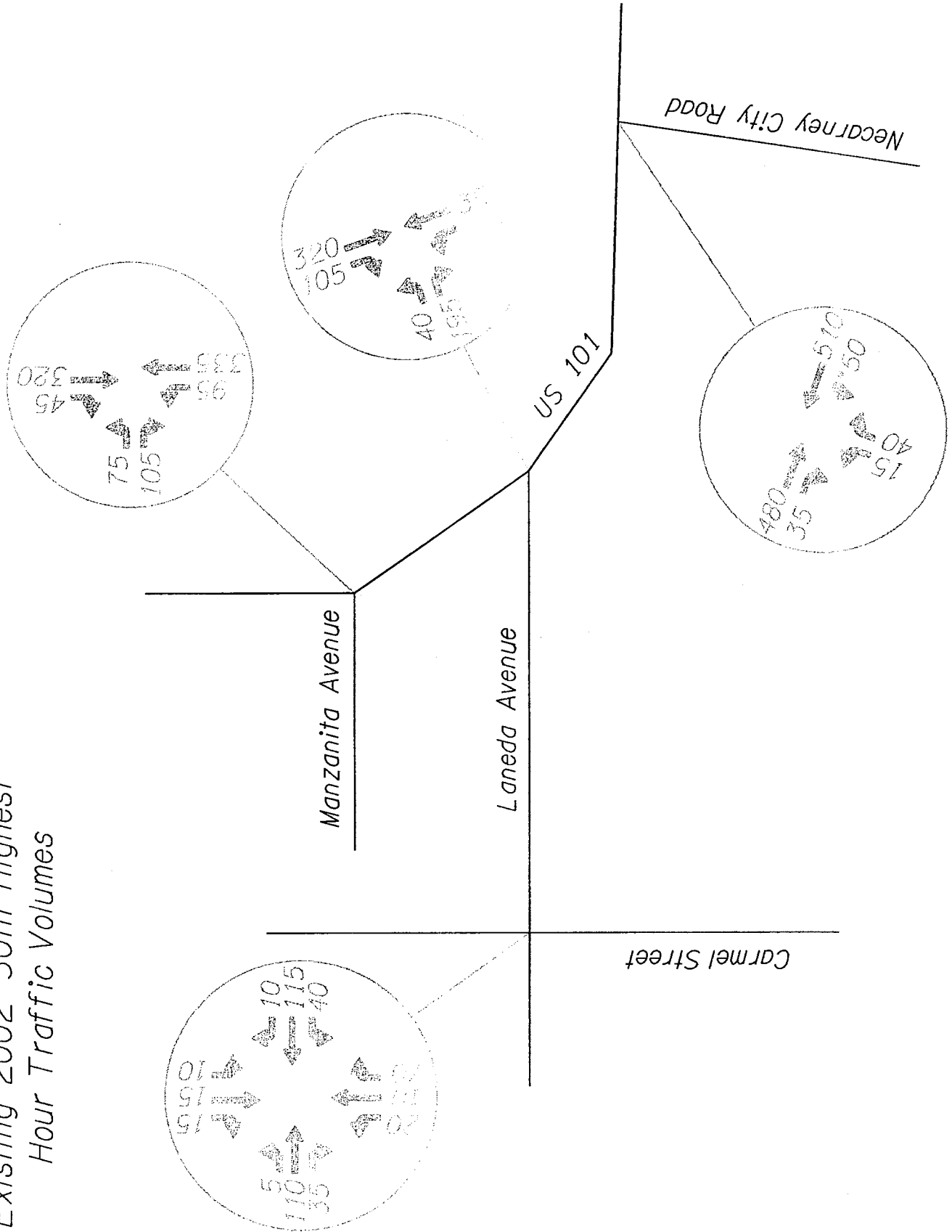
<b>Hwy 101 - Rockaway Beach</b>						
MP	1997 ADT	2019 ADT	Number of years	Factor for 22 years	1 year growth	
49.26	4900	5500	22	1.12	0.006	
50	5300	7000	22	1.32	0.015	
50.86	6100	8400	22	1.38	0.017	
50.88	6700	8700	22	1.30	0.014	
51.77	6500	8600	22	1.32	0.015	
<b>Average Growth Rate</b>					<b>0.013</b>	

<b>Hwy 101 - Bay City</b>						
MP	1997 ADT	2019 ADT	Number of years	Factor for 22 years	1 year growth	
59.21	8800	14800	22	1.68	0.031	
59.89	8700	14200	22	1.63	0.029	
60.08	8800	14100	22	1.60	0.027	
60.1	9900	11800	22	1.19	0.009	
60.34	9800	13300	22	1.36	0.016	
61.07	9800	14000	22	1.43	0.019	
<b>Average Growth Rate</b>					<b>0.022</b>	

**Part 4**  
**Existing 2002 30th-Highest-Hour Traffic Volumes**



*Manzanita Downtown Plan  
Existing 2002 30th Highest  
Hour Traffic Volumes*



**Part 5**  
**Level of Service Definitions**

# Level-of-Service Definitions

Level of Service, based on average control delay, is defined for the intersection as a whole. Control delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the deceleration and acceleration delay, the stopped delay, the green ratio, and the v/c ratio for the lane group or approach in question. See below for traffic flow characteristics and delay ranges for each LOS.

Level of Service	Traffic Flow Characteristics
A	Level of service A describes operations with very low delay. This occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Level of service B describes operations with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Level of service C describes operations with slightly higher delays that may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Level of service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	Level of service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios (those over 1.00) with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

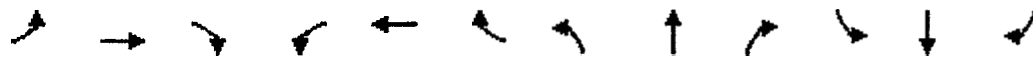
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LOS	Unsignalized Intersections (Control delay in seconds)	Signalized Intersections (Control delay in seconds)
A	$\leq 10$	$\leq 10$
B	$> 10$ and $\leq 15$	$> 10$ and $\leq 20$
C	$> 15$ and $\leq 25$	$> 20$ and $\leq 35$
D	$> 25$ and $\leq 35$	$> 35$ and $\leq 55$
E	$> 35$ and $\leq 50$	$> 55$ and $\leq 80$
F	$> 50$	$> 80$

**Part 6**  
**Existing Conditions Operational Analysis (Year 2002)**

HCM Unsignalized Intersection Capacity Analysis  
 18: Laneda Ave. & Carmel St.

01/16/2003



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	5	110	35	40	115	10	20	10	70	10	15	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	5	120	38	43	125	11	22	11	76	11	16	16

Direction Lane #	EBL	WBL	NBL	SBL
Volume Total (vph)	163	179	109	43
Volume Left (vph)	5	43	22	11
Volume Right (vph)	38	11	76	16
Head (s)	0.1	0.0	0.3	0.1
Departure Headway (s)	4.3	4.5	4.3	4.6
Degree Utilization %	0.20	0.22	0.13	0.05
Capacity (veh/h)	800	773	772	716
Control Delay (s)	8.4	8.7	8.0	7.9
Approach Delay (s)	8.4	8.7	8.0	7.9
Approach LOS	A	A	A	A

Intersection Summary	
Delay	8.4
HCM Level of Service	A
Intersection Capacity Utilization	36.8%
ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis  
 19: Laneda Ave. & US 101 (Manzanita)

01/16/2003



Movement	EBL	EBR	NBL	NBT	SBT	SEB
Lane Configurations	T		↑		↑	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	40	195	175	350	320	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	43	212	190	380	348	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1109	348	462			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1109	348	462			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
f (s)	3.5	3.3	2.2			
p0 queue free %	77	70	83			
CM capacity (veh/h)	192	695	1099			

Direction Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	255	190	380	348	114
Volume Left	43	190	0	0	0
Volume Right	212	0	0	0	114
cSH	481	1099	1700	1700	1700
Volume to Capacity	0.58	0.17	0.22	0.20	0.07
Queue Length (ft)	77	16	0	0	0
Control Delay (s)	20.7	9.0	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	20.7	3.0		0.0	
Approach LOS	C				

Intersection Summary	
Average Delay	5.4
Intersection Capacity Utilization	54.3%
ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis  
 24: US 101 (Manzanita) & Necarney City Road

01/16/2003



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T		T		T	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	480	35	50	510	15	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	522	38	54	554	16	43
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			560		1204	541
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			560		1204	541
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.9
p0 queue free %			95		92	92
cM, capacity (veh/h)			1011		192	541

Direction Lane #	EBT	WBT	NBT
Volume Total	560	609	60
Volume Left	0	54	16
Volume Right	38	0	43
cSH	1700	1011	362
Volume to Capacity	0.33	0.05	0.17
Queue Length (ft)	0	4	15
Control Delay (s)	0.0	1.4	16.9
Lane LOS		A	C
Approach Delay (s)	0.0	1.4	16.9
Approach LOS			C

<b>Intersection Summary</b>		
Average Delay		1.5
Intersection Capacity Utilization	75.5%	ICU Level of Service
		C



HCM Unsignalized Intersection Capacity Analysis  
 28: Manzanita Avenue & US 101 (Manzanita)

01/16/2003



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘ ↙		↖ ↗		↑ ↓	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	75	105	95	335	320	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	82	114	103	364	348	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	943	372	397			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	943	372	397			
tC, single (s)	6.1	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	83	91			
cM capacity (veh/h)	266	674	1162			
<b>Direction Lane #</b>	<b>EB 1</b>	<b>NB 3</b>	<b>SB 1</b>			
Volume Total	196	103	364	397		
Volume Left	82	103	0	0		
Volume Right	114	0	0	49		
cSH	411	1162	1700	1700		
Volume to Capacity	0.48	0.09	0.21	0.23		
Queue Length (ft)	62	7	0	0		
Control Delay (s)	21.5	8.4	0.0	0.0		
Lane LOS	C	A				
Approach Delay (s)	21.5	1.9		0.0		
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay				4.8		
Intersection Capacity Utilization				48.5%	CU Level of Service	A

**Part 7**  
**Turn Lane Warrant Analysis**

## Left and Right Turn Lane Criteria - 30th Highest Hour Volumes

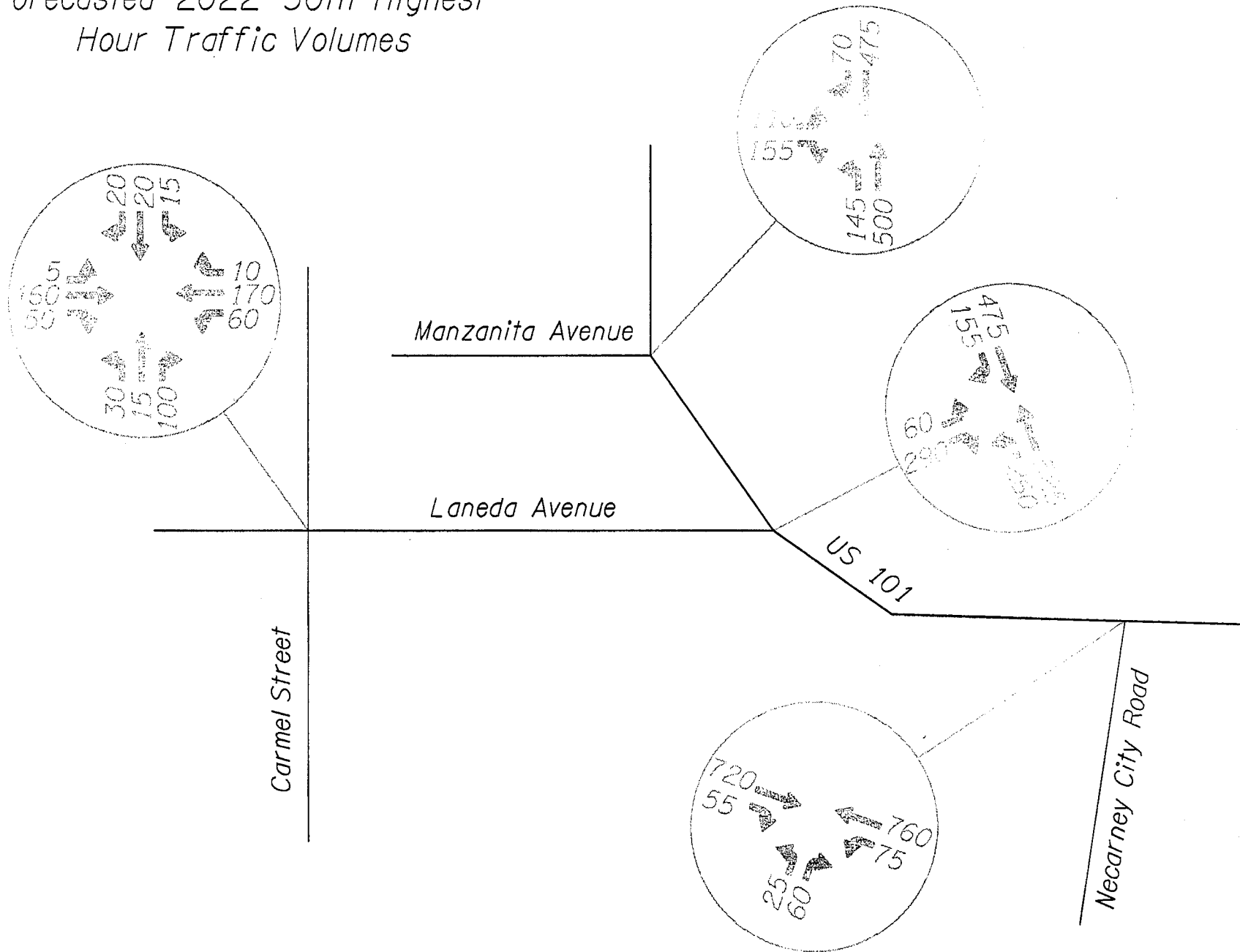
Project: Manzanita Downtown Plan

Major Street/Minor Street	Direction	Left Turn Lane Analysis		Right Turn Lane Analysis	
		Warrant Met 2002	Warrant Met 2022	Warrant Met 2002	Warrant Met 2022
US 101/Manzanita Avenue	Northbound US 101	Y	Y	-	-
	Southbound US 101	-	-	Y	Y

Major Street/Minor Street	Speed	Direction	Year	Left Turn Lane Analysis				Right Turn Lane Analysis	
				Advancing Volume	Opposing Volume	Y-Axis	X-Axis	Total Volume	Right Turn Volume
US 101/Manzanita Avenue	70 kph	Northbound US 101	2002	430	365	795	95	-	-
		Southbound US 101		-	-	-	-	365	45
US 101/Manzanita Avenue	70 kph	Northbound US 101	2022	545	545	1090	145	-	-
		Southbound US 101		-	-	-	-	545	70

**Part 8**  
**Forecasted 2022 30th-Highest-Hour Traffic Volumes**

Manzanita Downtown Plan  
 Forecasted 2022 30th Highest  
 Hour Traffic Volumes



**Part 9**  
**Future Conditions Operational Analysis (2022)**

HCM Unsignalized Intersection Capacity Analysis  
 18: Laneda Ave. & Carmel St.

01/16/2003



Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Stop			Stop		
Volume (veh/h)	5	160	50	60	170	10	30	15	100	15	20	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	5	174	54	65	185	11	33	16	109	16	22	22

Direction	EB	WB	NB	SB
Volume Total (vph)	234	261	158	60
Volume Left (vph)	5	65	33	16
Volume Right (vph)	54	11	109	22
Head (s)	0.5	0.1	0.3	0.1
Departure Headway (s)	4.6	4.7	4.8	5.1
Degree Utilization	0.30	0.34	0.21	0.08
Capacity (veh/h)	734	723	695	633
Control Delay (s)	9.6	10.2	9.0	8.6
Approach Delay (s)	9.6	10.2	9.0	8.6
Approach LOS	A	B	A	A

Intersection Summary	
Delay	9.6
HCM Level of Service	A
Intersection Capacity Utilization	52.8%
ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis  
 19: Laneda Ave. & US 101 (Manzanita)

01/16/2003



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↑		↑	↑	↑	↑
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	60	290	260	525	475	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	65	315	283	571	516	168
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1652	516	685			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1652	516	685			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	13	44	69			
cM capacity (veh/h)	75	559	909			
Direction Lane #	EBL	EBR	NBL	NBT	SBT	SBR
Volume Total	380	283	571	516	168	
Volume Left	65	283	0	0	0	
Volume Right	315	0	0	0	168	
cSH	265	909	1700	1700	1700	
Volume to Capacity	1.44	0.31	0.31	0.30	0.10	
Queue Length (ft)	530	33	0	0	0	
Control Delay (s)	253.1	10.7	0.0	0.0	0.0	
Lane LOS	F	B				
Approach Delay (s)	253.1	3.6		0.0		
Approach LOS	F					
<b>Intersection Summary</b>						
Average Delay	51.8					
Intersection Capacity Utilization	75.9%					
ICU Level of Service	F					



HCM Unsignalized Intersection Capacity Analysis  
 24: US 101 (Manzanita) & Necarney City Road

01/16/2003



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖		↗		↘	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	720	55	75	760	25	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	783	60	82	826	27	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			842		1802	812
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			842		1802	812
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
fP (s)			2.2		3.5	3.3
p0 queue free %			90		65	83
cM capacity (veh/h)			793		79	379

Direction	Lane #	EB	WB	NB
Volume Total		842	908	92
Volume Left		0	82	27
Volume Right		60	0	65
cSH		1700	793	178
Volume to Capacity		0.50	0.10	0.52
Queue Length (ft)		0	9	65
Control Delay (s)		0.0	2.7	45.1
Lane LOS			A	E
Approach Delay (s)		0.0	2.7	45.1
Approach LOS				E

Intersection Summary	
Average Delay	3.6
Intersection Capacity Utilization	108.3%
ICU Level of Service	F

HCM Unsignalized Intersection Capacity Analysis  
 28: Manzanita Avenue & US 101 (Manzanita)

01/16/2003



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙		↕		↘	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volumes (veh/h)	110	155	145	500	475	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	120	168	158	543	516	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1413	554	592			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1413	554	592			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tE (s)	3.5	3.3	2.2			
p0 queue free %	6	68	84			
cM capacity (veh/h)	128	532	983			
	EBL	NBL	NBT			
Volume Total	288	158	543	592		
Volume Left	120	158	0	0		
Volume Right	168	0	0	76		
cSH	230	983	1700	1700		
Volume to Capacity	1.25	0.16	0.32	0.35		
Queue Length (ft)	367	14	0	0		
Control Delay (s)	188.0	9.4	0.0	0.0		
Lane LOS	F	A				
Approach Delay (s)	188.0	2.1		0.0		
Approach LOS	F					
Average Delay				35.2		
Intersection Capacity Utilization				67.5%	ICU Level of Service	B