

City of Astoria

FINAL - ADOPTED

East Gateway Transportation Plan

Prepared for



**City of Astoria
& ODOT**

June 24, 2005

Prepared in collaboration with
Alta Planning + Design, Inc. and
Angelo Eaton & Associates

CH2MHILL

825 NE Multnomah
Portland, OR 97232-2146

Contents

Executive Summary

Introduction

Plan Policy Review

Goals and Objectives

Existing Facilities and Services

Operational and Safety Analysis

Combined Alternatives

Appendixes

ORDINANCE NO. 07- 01

AN ORDINANCE AMENDING THE ASTORIA DEVELOPMENT CODE BY THE ADDITION OF SECTIONS CONCERNING TRANSPORTATION SYSTEM PLANS

THE CITY OF ASTORIA DOES ORDAIN AS FOLLOWS:

Section 1. Astoria Development Code Section 1.245 pertaining to the Port/Uniontown Transportation Refinement Plan is hereby added to read as follows:

"1.245. PORT/UNIONTOWN TRANSPORTATION REFINEMENT PLAN.

There is hereby adopted by this reference, the Port/Uniontown Transportation Refinement Plan, adopted by the City Council on February 20, 2007, the original document of which is on file in the office of the Community Development Director of the City of Astoria."

Section 2. Astoria Development Code Section 1.250 pertaining to the East Gateway Transportation System Plan is hereby added to read as follows:

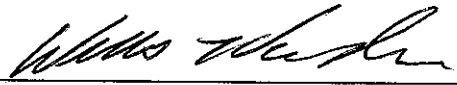
"1.250. EAST GATEWAY TRANSPORTATION SYSTEM PLAN.

There is hereby adopted by this reference, the East Gateway Transportation System Plan, adopted by the City Council on February 20, 2007, the original document of which is on file in the office of the Community Development Director of the City of Astoria."

Section 3. Effective Date. This ordinance and its amendment will be effective 30 days following its adoption and enactment by the City Council.

ADOPTED BY THE COMMON COUNCIL THIS 20TH DAY OF FEBRUARY, 2007.

APPROVED BY THE MAYOR THIS 20TH DAY OF FEBRUARY, 2007.



Mayor

ATTEST:



Paul Benoit, City Manager

ROLL CALL ON ADOPTION:		YEA	NAY	ABSENT
Commissioner	Compere	X		
	Warr			X
	Henningsgaard	X		
	Roscoe	X		
Mayor Van Dusen		X		

Executive Summary

CITY OF ASTORIA - EAST GATEWAY TRANSPORTATION PLAN

EXECUTIVE SUMMARY

Background

The City of Astoria (City) applied for and received a Transportation and Growth Management grant from the Oregon Department of Land Conservation and Development (DLCD). The grant was administered by the Oregon Department of Transportation (ODOT). The purpose of the grant is to study existing and forecasted transportation needs of the City and develop a plan that identifies short and long term transportation improvements that may be readily implemented as funding becomes available. These improvements are intended to enhance transportation efficiency and encourage and promote development that meets the needs of the citizens and while potentially creating new employment opportunities. The process of identifying, describing, and evaluating these improvements is presented in the City of Astoria East Gateway Transportation Plan (Plan).

Expected Plan Benefits

Implementation of the improvements recommended by the Plan is expected to result in the following benefits:

- Provide adequate planned transportation facilities to support planned land uses over the next 20 years;
- Provide certainty and predictability for the siting of new streets, roads, highway improvements, and other planned transportation improvements;
- Provide predictability and incentive for land development, and
- Help reduce the cost and maximize the efficiency of public spending on transportation facilities and services by coordinating land use and transportation decisions.

Specific Plan Objectives

The following is a statement of the Plan objectives:

1. Support the planned land use as defined in City planning documents for Business Parks, Industrial Sites, and Residential Sites.
2. Encourage development of commercial and industrial sites so as to provide more opportunity for employment within the City.
3. Improve vehicular access from industrial/commercial sites to U.S. Highway 30.
4. Improve internal circulation and manage access for vehicular and non-motorized users in industrial sites and local street systems.
5. Improve pedestrian and bicyclist connectivity and safety across U.S. Highway 30.

6. Support the development of a local street network that will reduce reliance on U.S. Highway 30.
7. Provide improved safety and direct access to the River Trail for new developments.
8. Support the extension of the River Trail through the east end of Astoria.
9. Provide all recommended improvements in an environmentally sound and cost effective manner.

Specific Elements to be Considered

The planning area to be studied is along U.S. Highway 30, between 33rd Street and Liberty Lane in eastern Astoria. The Plan is intended to:

- Address improvements necessary to make the area attractive to developers, industrial and port users, nearby residents, and other users of the street and highway system and waterfront.
- Develop a list of short term and long term improvements that will assist both the developers of the Astoria Business Park, North Tongue Point industrial parks, and the Blue Ridge residential subdivision with ready-to-implement solutions for access from Highway 30 as well as internal circulation and local street systems
- Develop a plan for an internal street system that can reduce local use of U.S. Highway 30.
- Develop a plan for crosswalks and signals to enable residents south of U.S. Highway 30 to gain pedestrian access to the River Trail and East Mooring Basin.
- Develop a plan for an extension of the River Trail through the east end of Astoria to the east side of Alderbrook Lagoon to serve the community and visitors
- Prepare a detailed plan for access and circulation for the undeveloped land owned by the Port, Oregon State University (OSU), and private landowners including the Astoria Business Park and North Tongue Point, including an access management plan and an internal circulation plan for the industrial lands.

Plan Development Methodology

Development of the Plan was accomplished through the combined efforts of representatives from the City staff, ODOT managerial and technical staff, Clatsop County Planning, DLCD, representatives from commercial interests and private citizens, and a team of private consultants. The project Statement of Work is provided in the appendix.

The process was directed through the creation of a Project Management Team (PMT) that exercised technical and procedural oversight and a Citizens' Advisory Committee (CAC) that represented the interests of the community. A listing of the membership of these groups is provided in the appendix. Each of these groups met four times at various stages of the Plan development to review the work performed to date and provide constructive input and direction to the process. The project schedule is also provided in the appendix.

Categories of Improvements

Very early in the process, it became apparent that due to the diversity of the improvements that were to be studied, it would be desirable to divide the potential transportation improvements into three distinct types, according to the type of land use or activity served. A fourth category focused on the River Trail Extension. This was done so that alternative recommended improvements could be rationally compared within each group. The individual categories of improvements are as follows:

- Industrial/Commercial Sites
- Residential Sites
- Pedestrian/Cyclist Enhancement
- River Trail Extension

It also became apparent that due to the diverse nature of the categories, not all of the objectives described above could be applied to each of the categories. Accordingly, a custom list of objectives and evaluation criteria was developed for each of the categories. Development of objectives and evaluation criteria was accomplished in conjunction with review and comment by the PMT and CAC. The selection criteria list is provided in the appendix.

Plan and Policy Review

Before undertaking development of a plan of this nature, consideration was given to the applicable laws, regulations, plans, ordinances, regulatory policies, prior studies, etc. This activity was accomplished early on in the planning process and made available to the team that was developing the recommended alternatives. The results of the plan and policy review are summarized as follows:

State transportation documents guided the composition of the East Gateway Transportation Plan, and provided higher level goals for livability, safety, and economic development and for multimodal transportation planning in the planning area. State documents also specified rules for access to US Highway 30 (a state and national highway), and rules that determined whether new signals are warranted on US Highway 30. The Oregon Highway Plan and Highway Design Manual provided mobility standards for planning and project design purposes, and other state transportation plans provided design guidelines for roadways and bicycle and pedestrian pathways on the highway or highway right-of-way. The US 30 Highway Corridor Plan recommends development of a truck re-route around US Highway 30 through Astoria (the Astoria Bypass). The Corridor Plan also includes recommended maintenance projects and intersection improvements on US Highway 30 in and around the East Gateway study area.

Local land use plans, transportation plans, overlay zones, master plans, and studies done in and around the planning area emphasize pedestrian improvements to US Highway 30 and local streets, capacity improvements for US Highway 30, new local roads, and preservation and promotion of the city's natural assets and historic style. As highlighted by the City's TSP, the type and degree of improvements on US Highway 30 will vary greatly with whether a US 30/ Astoria Bypass is constructed south of Astoria. A planning effort sponsored by ODOT is currently underway to examine the need for a bypass based on

updated regional traffic models and forecasts. However, due to the uncertain nature of the bypass becoming a reality, it was not considered in the traffic forecasts.

Local plans also call for new routes parallel to US Highway 30 in the Gateway District. While these roads may not connect directly to development in the planning area, they may reduce some of the vehicle traffic on US Highway 30 and thus affect business, industrial, and residential development in the planning area.

Other plans that address transportation facilities that can be continued into the planning area were also considered. Plans such as the Gateway Master Plan and the Gateway Transportation and Growth Management Plan recommend extending and making better connections to multi-use, non-motorized paths like Riverwalk (also referred to as the River Trail). These plans lay the groundwork for one of the objectives of the East Gateway Transportation Plan – extending a riverside multi-use trail around to the east side of the Alderbrook Lagoon. This complements part of the City's comprehensive plan for a park east of the Alderbrook Lagoon meant to serve the residential neighborhoods of the Alderbrook area, including the anticipated Blue Ridge subdivision, as well as other residents of Astoria and the region.

Some existing local plans conflict – for example, the Gateway Master Plan calls for bike lanes on Marine Drive (US Highway 30) while the Gateway Transportation and Growth Management Plan calls for removal of bike lanes in favor of shared lanes on Marine Drive. It was the goal of the Gateway Transportation Plan to incorporate the common direction shared by prior planning efforts.

Existing Conditions

To understand what transportation improvements would benefit the study area, existing transportation facilities were identified and documented. The review of existing conditions was prepared in two segments; 1) multimodal transportation facilities that served both motorized and non-motorized needs and 2) extension of the River Trail.

The extent and condition of the following existing transportation facilities were provided:

- Local streets and sidewalks
- Identification of truck traffic/generation sources
- Bicycle facilities
- Pedestrian facilities
- Public transportation and other alternative modes
- Rail/Pipelines/Others

Existing River Trail facility elements documented include the following:

- Rail corridor jurisdiction
- Existing River Trail

- Adjacent land uses
- U.S. Highway 30 bicycle and pedestrian facilities
- Trail connections across U.S. Highway 30
- Existing pedestrian and bicyclist use
- Public rights-of-way in the Alderbrook neighborhood

Operational and Safety Analysis

The primary purpose of the Operational and Safety Analysis was to determine where deficiencies exist today and where they will likely exist in the future based on forecast growth and development. Based on this analysis, recommendations for transportation improvements were identified.

The operation analysis addressed existing traffic volumes, intersection operations, existing (2004) deficiencies, future land use, forecast trip generation, future (2024) conditions, and future deficiencies.

The safety analysis addressed the most recent available (1999-2003) crash history in the study area. The predominant crash type along U.S. Highway 30 in the past five years has been rear-end collisions. Not yielding the right-of-way was the most common cause reported for all crashes. There was one pedestrian-involved crash during the study period.

The data analyzed validated the concerns expressed by members of the Citizens' Advisory Committee that three intersections along U.S. Highway 30 that should be studied due to accidents and safety concerns; 37th Street, 39th Street and 45th Street.

The following recommendations were made as a result of the Operational and Safety Analysis:

Locations that are to be addressed in the alternatives evaluation and analyses include:

- U.S. Highway 30/33rd Street
- U.S. Highway-30/Tongue Point Job Corp Access Road/Nimitz Road
- U.S. Highway 30/37th Street
- U.S. Highway 30/39th Street
- U.S Highway 30/45th Street

Alternatives for these locations may include provision of turn pockets with adequate storage length, active prohibition of parking, traffic calming measures, median refuge lanes, increasing sight distance, improving the pedestrian crossings amenities and traffic signal control.

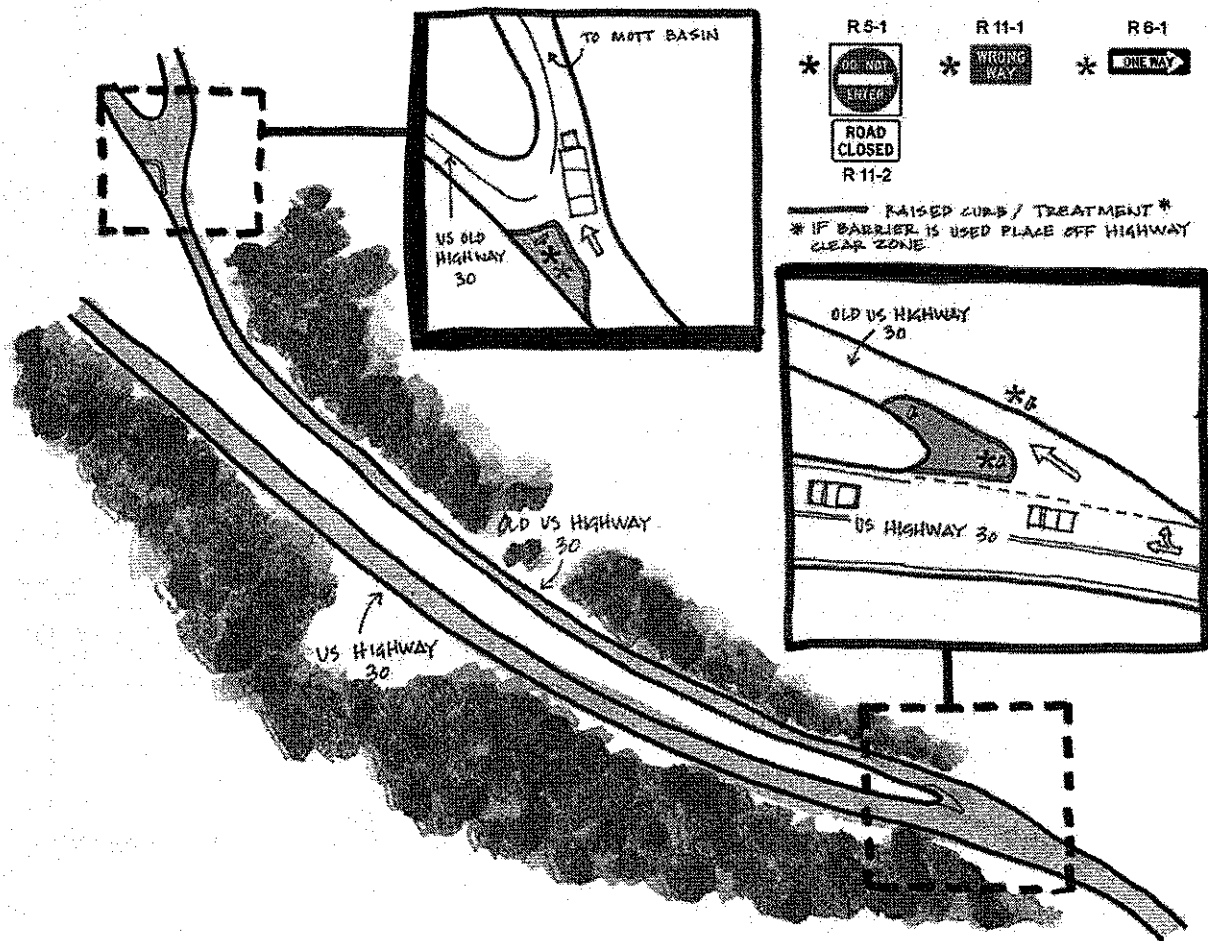
Alternative Improvements and Preferred Alternative

The evaluation of alternatives was performed on a point scale basis. Improvements were compared in groups containing projects relating to the various and distinct characteristics of the study area. Four distinct groups were identified for the Astoria East Gateway area; Industrial/Commercial Sites, Residential Sites, Pedestrian/Cyclist Enhancement and River Trail Extension. The evaluation criteria reflect the goals of the project identified in the early stages of this study.

The East Gateway Transportation Plan PMT and CAC examined all of the potential infrastructure improvements. Guided by the compilation of existing and forecast data, operations analyses, evaluation scoring and local knowledge, preferred alternatives were developed for each of the distinct categories.

Industrial/Commercial - The industrial/commercial sites focused on the area north of U.S. Highway 30 between 36th and 39th Streets as well as North and South Tongue Point. Five preferred alternatives were identified. The preferred alternatives generally focused on the long-term infrastructure needs to support the proposed growth within the areas. The following projects outline the preferred alternatives from the highest to lowest importance.

1. (R) In conjunction with the new developments between 36th and 39th Streets, construct a parallel local roadway on the north side of U.S. Highway 30 to accommodate trips within the mixed use areas. The roadway will relieve congestion on U.S. Highway 30 within the study area, and encourage shorter trips between the new residential, commercial and industrial developments. The roadway may also serve as an alternate route to U.S. Highway 30 in case of an emergency.
2. (W) Realign the U.S. Highway 30 at South Tongue Point intersection and provide a left-turn pocket. In addition, the South Tongue Point Master Plan calls for a new intersection approximately a half mile to the east of the existing intersection. These improvements serve as both capacity and safety measures for the South Tongue Point area.
3. (V) Modify the U.S. Highway 30 at Old U.S. Highway (eastern termini) by restricting it to a westbound right-turn in only. This improves the safety of the intersection by removing movements with minimal sight distance and movements that require acute turns due to the topographical constraints of the area.

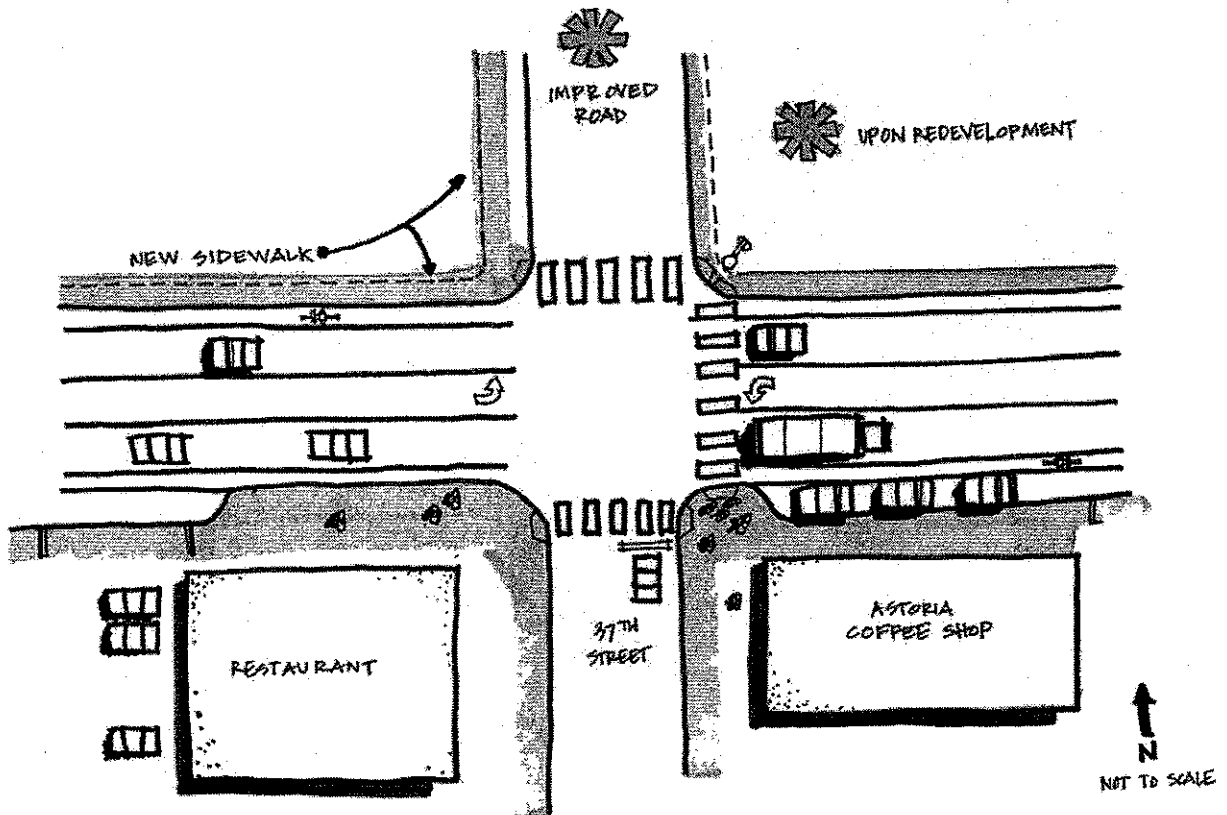


4. (X) Widen the Tongue Point Job Corp Access Roadway to meet the City of Astoria's design guidelines for a major local street (pavement width of 36 feet) to accommodate the projected traffic created by the proposed marine industrial and residential developments.
5. (AG) Extend the P&W rail service to Tongue Point. Rail service to maritime port terminals is desirable for port systems accommodating substantial international and national freight. This would also include construction of additional RR sidings for loading and unloading freight.

Residential - The residential areas included the Blue Ridge, Emerald Heights, Alderbrook and Uppertown Neighborhoods. Six preferred alternatives were identified. The preferred alternatives included both long and short-term safety and capacity related improvements. The following projects outline the preferred alternatives from the highest to lowest importance. The top three preferred alternatives are identified as short-term needs.

1. (A) Address sight distance issues for vehicles traveling northbound on 37th Street to U.S. Highway 30 by constructing bulb-outs. The bulb-outs will improve sight distance for motor vehicles by situating the stop bar closer to the highway and limiting parking activities at the intersection. The extended curbing will also

enhance pedestrian safety by improving pedestrian visibility and reducing the roadway crossing distance.



2. (C) At the U.S. Highway 30 and 45th Street intersection - Address traffic operations and pedestrian safety by one or more of the following: adding eastbound left turn storage lane, provision of additional signing, narrowing of US 30 travel lanes to reduce speeds through the area, adding roadway illumination and/or adding bicycle lanes.
3. (D) Two-way left turn lane - Extend the existing two-way left-turn lane towards the east from 39th to 46th Street. This improvement would be important particularly for the EB direction making a left turn into 45th Street and should be coordinated with the improvements recommended in C. above. It may be possible to construct the 45th Street turn lane improvement as an ODOT maintenance activity.
4. (O) Provide off-street parking in the vicinity of 34th Street & Columbia Field to remove vehicles from U.S. Highway 30 shoulders, which currently create sight distance problems. The City owns right of way behind the Custom House near 34th Street that could possibly be used for this additional parking. Another potential location includes angled parking along 37th Street, south of U.S. Highway 30.
5. (E) At the U.S. Highway 30 and 54th Street intersection, provide alignment, channelization, signing, and striping improvements.







6. (Z) At the 54th Street and Old U.S. Highway 30, widen the roadway to meet the City of Astoria's design guidelines for a minor local street (pavement width of 28 feet) to accommodate the projected traffic created by the proposed residential developments.
7. (Q) In conjunction with the Franklin Street to 43rd Street (or possibly a 44th Street extension to the south) connection required for the Franklin Street bridge rehabilitation project, extend Commercial Street to this new roadway. The extension would provide an alternate route to downtown Astoria from the study area if U.S. Highway 30 were closed during an emergency situation. This project is topographically and geologically challenged but the City has developed preliminary concepts for the connection.

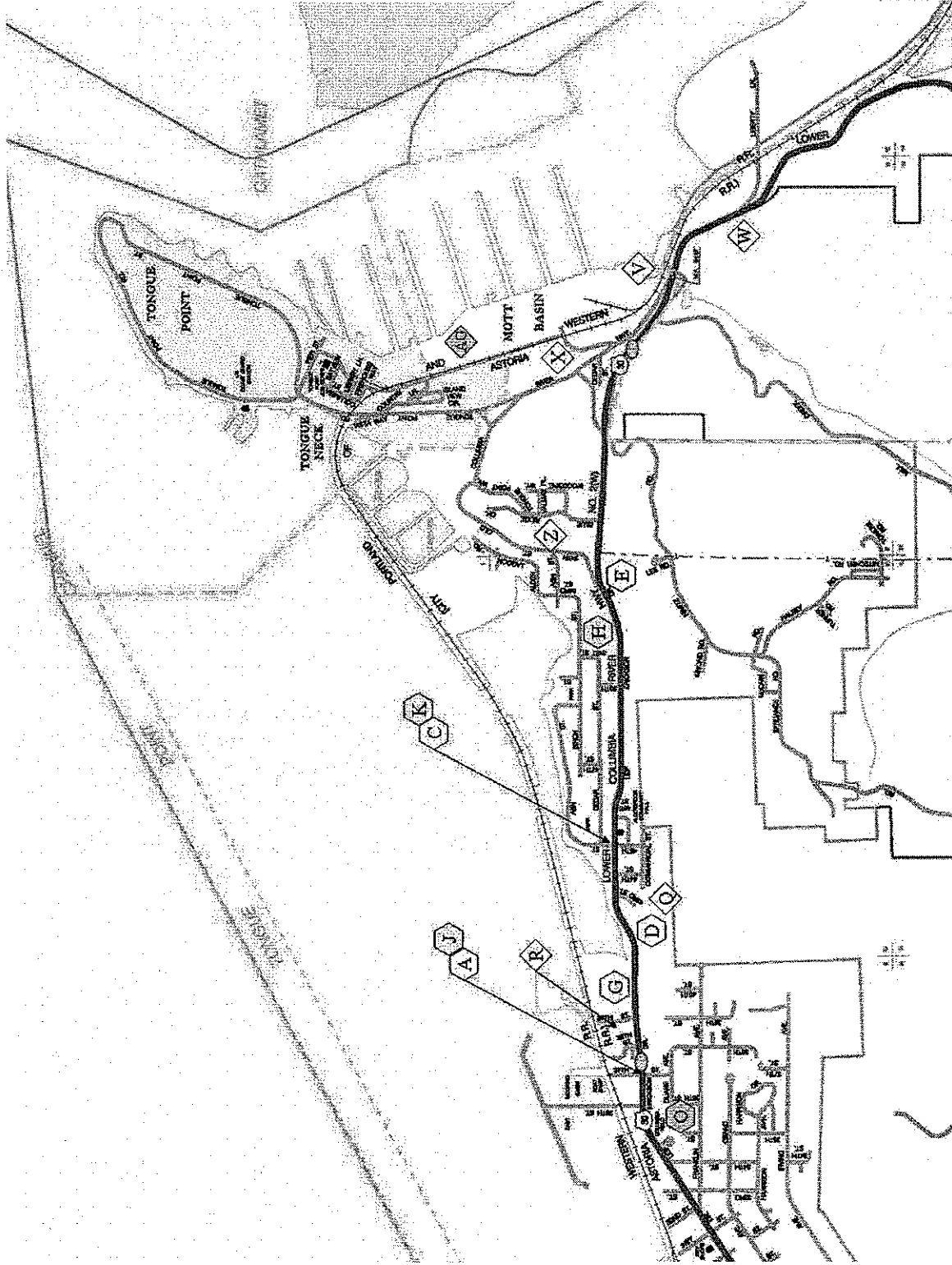
Pedestrian/Cyclist - The pedestrian and cyclist category encompassed the entire study area. Four preferred alternatives were identified. The preferred alternatives were all identified as short-term needs. The following projects outline the preferred alternatives from the highest to lowest importance.

1. (J) Address pedestrian safety issues at the U.S. Highway 30 and 37th Street intersection with one or more of the following: improved intersection lighting, solar powered pedestrian warning signs, vehicle radar/speed signs, intersection bulb outs, and/or median pedestrian crossing area.
2. (G) On U.S. Highway 30, extend the existing striped bicycle lane markings in locations where existing pavement width is available to accommodate the lane, specifically from the existing lanes on the west side of the study area to 47th Street.
3. (H) On U.S. Highway 30, provide a continuous sidewalk along the north side of the highway by building new sidewalks between 35th Street and 37th Street and on the south side of U.S. Highway 30 from 48th Street to Nimitz Road.
4. (K) Address pedestrian safety issues at the U.S. Highway 30 and 45th Street intersection with one or more of the following: improved intersection lighting, solar powered pedestrian warning signs, vehicle radar/speed signs, intersection bulb outs, striping bicycle lanes, and/or median pedestrian crossing area.

The following map shows the location of the preferred roadway improvements.

Legend

-  Short-term Alternative
-  Long-term Alternative
-  Vehicular
-  Bicycle
-  Pedestrian
-  Other Modes



*City of Astoria
East Gateway Transportation Plan
Preferred Alternatives*

River Trail Extension - The purpose of the River Trail Extension is to provide better pedestrian off-U.S. Highway 30 access to the existing River Trail for the Alderbrook subdivision residents and recreational opportunities for all Astoria citizens. A foot bridge connecting the south shore of the lagoon at the end of 45th Street to the railroad was added in response to suggestions from the CAC. The bridge may be used with either of the preferred alignments. The alternative analysis indicated that two of the alignments (No. 2 and No. 3) were very close in ranking. It was agreed that the City staff would seek input from the citizens in the Alderbrook neighborhood before selecting the preferred alignment

During a May 22, 2005 meeting with a few representatives of the Alderbrook Neighborhood, the three alternative alignments through their neighborhood were considered. Their preferred alternative is a "no-build". They understand that people will walk along the streets coming through their neighborhood, but they don't want to make any additional improvements to make it more accessible.

The neighborhood representatives said that both alignments 1 and 2 that go through the park and adjacent to the water are unacceptable. Alignment 3 (existing street right of way) is "OK" but they really want to discourage a walking "loop". In fact, they preferred that the River Trail be constructed to the east end of the lagoon and terminate there. The remainder of the proposed alignments could be reconsidered at a later date when interest in doing so is demonstrated. They were not in favor of the 45th Street foot bridge.

Additionally, they recommended that any connection from the highway to the existing trail on the south side of the lagoon just east of 41st be made at 43rd, not 44th. The topography there is less severe and the proximity to the highway is closer.

Alignment 2 (white circles) is the most direct alignment and also does not gain much elevation. Alignment 2 follows Birch Street from 51st Street to its end at the pump station. The alignment would travel on existing undeveloped public rights-of-way to Violet LaPlante Park and 45th Street. Alignment 2 would then require a connection through private property along the lagoon edge to connect to the existing trail that parallels U.S. Highway 30.

Alignment 3 (white squares) is the least intrusive with regard to private property and environmentally-sensitive areas; it simply avoids them. Due to this, Alignment 3 is also the least direct and gains the most elevation, forcing trail users to walk or bicycle up 45th Street to U.S. Highway 30. Alignment 3 travels on Birch Street from 51st to 47th Street (1) and then utilizes 47th, Cedar (2), and 45th Streets (3) to connect to U.S. Highway 30 and 44th Street. The trail alignment would access the existing trail from the 44th Street right-of-way via stairs or a ramp due to the grade changes (4).

The alternative alignments are shown in the following graphic:

Astoria East Gateway Transportation Plan

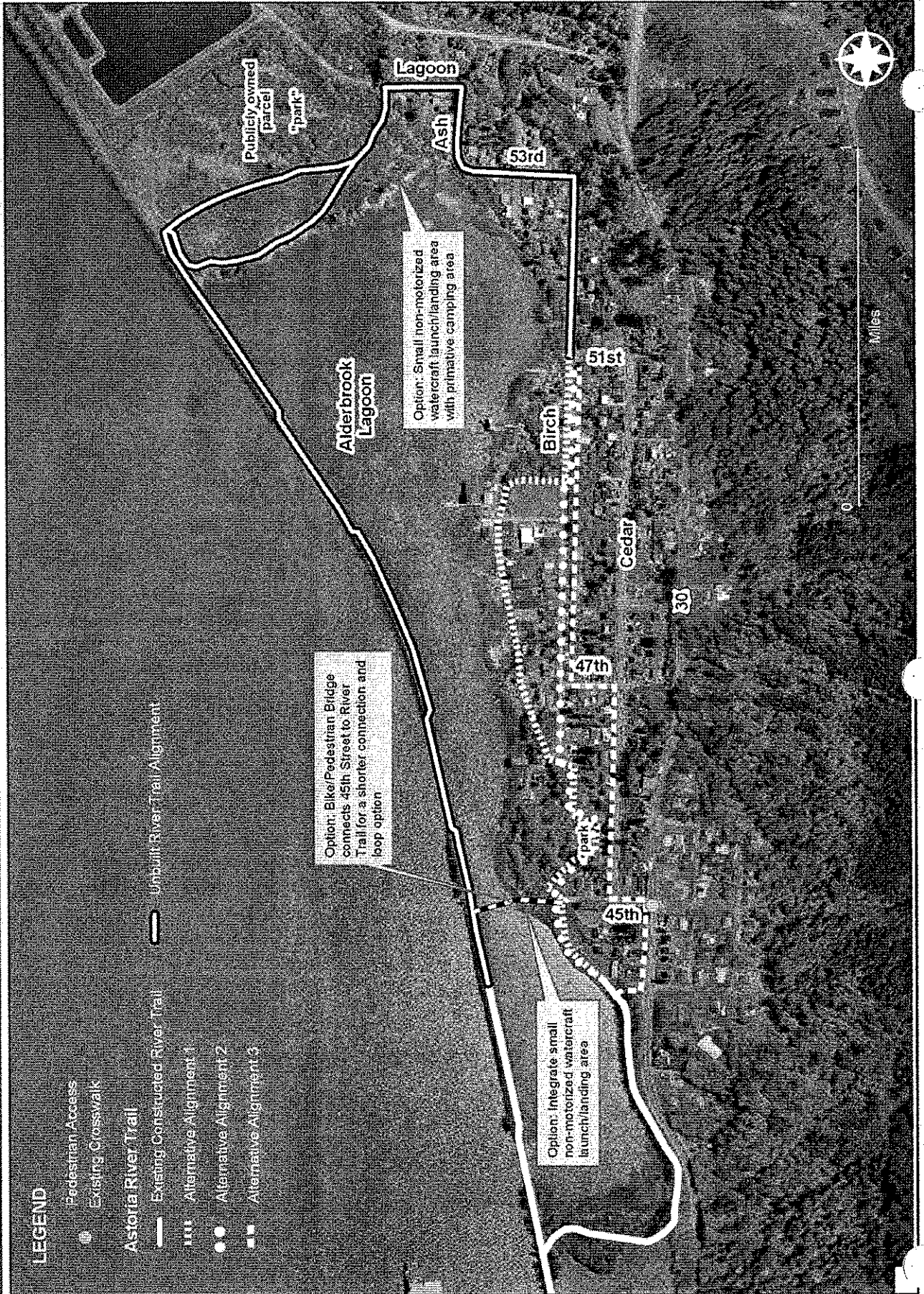
LEGEND

- Pedestrian Access
- Existing Crosswalk

Astoria River Trail

- Existing Constructed River Trail
- Unbuilt River Trail Alignment

- Alternative Alignment 1
- Alternative Alignment 2
- Alternative Alignment 3



Option: Bike/Pedestrian Bridge connects 45th Street to River Trail for a shorter connection and loop option

Option: Integrate small non-motorized watercraft launch/landing area

Option: Small non-motorized watercraft launch/landing area with primitive camping area



Miles

0

Summary and Recommendations

The Astoria East Gateway Transportation Plan identifies many potential improvements to the City's Transportation Infrastructure system. These improvements were developed during a systematic process over several months and are based on observed deficiencies and items of interest to the local residents of Astoria. Consideration should be given to including these improvements in future modifications to the City's Transportation System Plan and development of candidate projects for the State Transportation Improvement Plan.

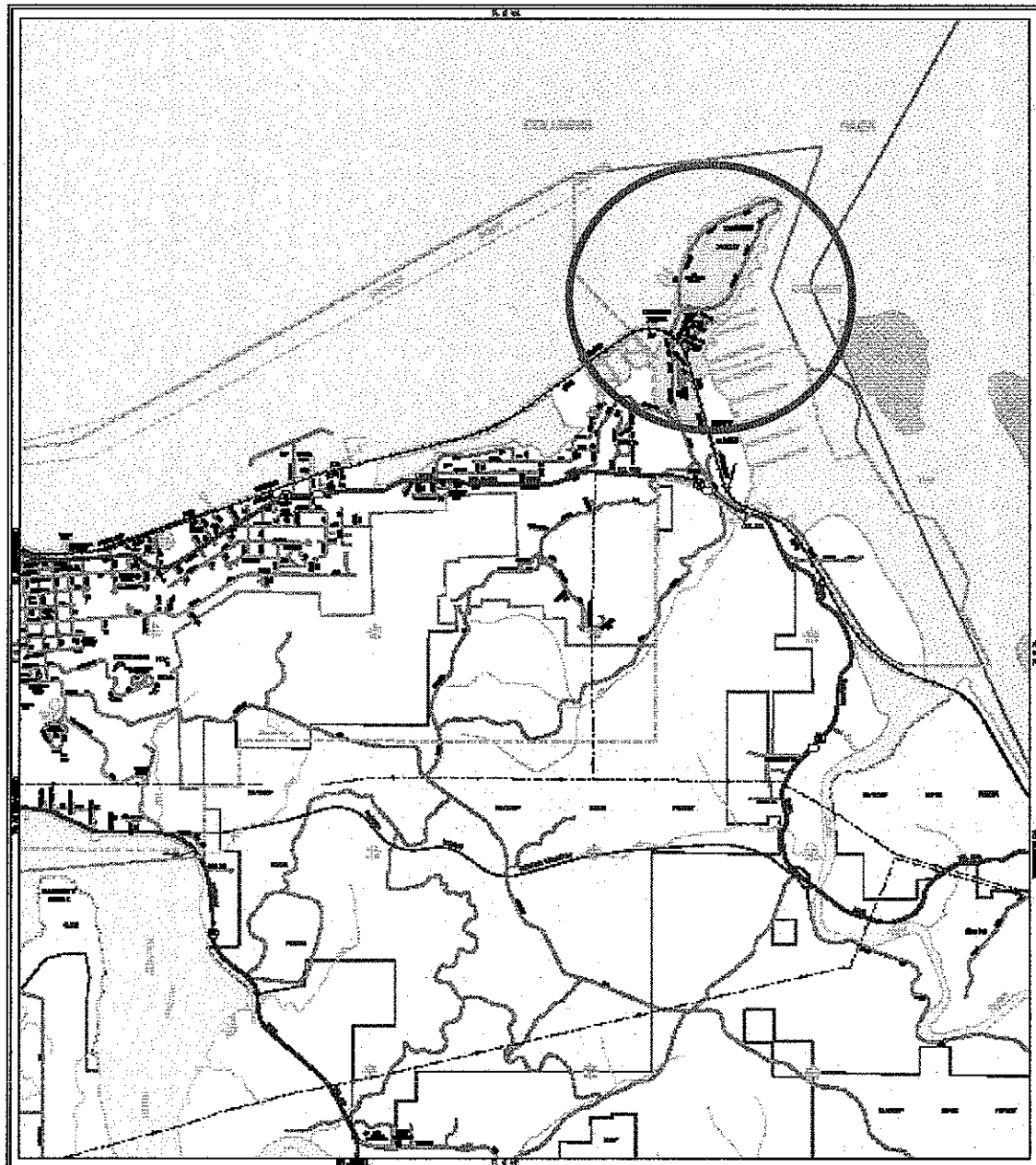
Appendixes

- Technical Memorandum #1
- Appendix - 1

APPENDIX A

ODOT map of eastern Astoria
 Federal lands on Tongue Point

Source: http://gov.oregon.gov/ODOT/TD/TDATA/gis/docs/citymaps/asto_e.pdf



<p>LEGEND</p> <ul style="list-style-type: none"> Property Lines Streets Roads Water Other 	<p>Scale</p> <p>1 inch = 100 feet</p>	<p>North Arrow</p> <p>↑</p>	<p>Disclaimer</p> <p>This map is for informational purposes only and does not constitute a warranty of any kind. The Oregon Department of Transportation (ODOT) is not responsible for any errors or omissions on this map.</p>	<p>JURISDICTION</p> <p>City of Astoria</p>	<p>OREGON TRANSPORTATION MAP</p> <p>Creating Functional Classification of Roads</p> <p>City of</p> <p>ASTORIA</p> <p>CLATSOP COUNTY</p> <p>ASTORIA, OREGON, © 2007 ODOT</p>
---	--	------------------------------------	--	---	---

- Technical Memorandum #1
- Appendix - 2

APPENDIX B

City of Astoria Zoning Districts

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
<p style="text-align: center;">R-2 Medium Density Residential Section 2.060-2.095</p>	<ul style="list-style-type: none"> • Single-family dwelling • Two-family dwelling • Accessory rental unit • Family day care center • Home occupation (per requirements) • Home stay lodging • Manufactured dwelling in approved park • Manufactured home (per requirements) • Residential home 	<ul style="list-style-type: none"> • Bed and breakfast, inn • Boarding, rooming, or other group housing • Congregate care facility • Day care center • Manufactured dwelling park • Multi-family dwelling • Nursing home • Public or semi-public use • Residential facility • Restaurant as accessory to inn • Temporary use meeting (per requirements) • Cluster development (per requirements) 	<ul style="list-style-type: none"> • Single-family dwelling 5,000 sf minimum lot size • Two-family dwelling 7,500 sf minimum lot size • Multi-family dwelling 5,000 sf (first unit) and 2,500 sf (each additional unit) minimum lot size • Minimum lot width 45 ft • Minimum lot depth 90 ft
<p style="text-align: center;">R-3 High Density Residential Section 2.150-2.185</p>	<ul style="list-style-type: none"> • Single-family dwelling • Two-family dwelling • Multi-family dwelling • Accessory rental unit • Family day care center • Home occupation (per requirements) • Home stay lodging • Manufactured dwelling in approved park • Manufactured home (per requirements) • Residential facility • Residential home 	<ul style="list-style-type: none"> • Bed and breakfast, inn • Boarding, rooming, or other group housing • Congregate care facility • Day care center • Manufactured dwelling park • Nursing home • Public or semi-public use • Residential facility • Restaurant as accessory to inn • Temporary use meeting (per requirements) • Cluster development (per requirements) 	<ul style="list-style-type: none"> • Single-family dwelling 5,000 sf minimum lot size • Two-family dwelling 6,500 sf minimum lot size • Multi-family dwelling 5,000 sf (first unit) and 1,500 sf (each additional unit) minimum lot size • Minimum lot width 45 ft • Minimum lot depth 90 ft
<p style="text-align: center;">A-1 Development Aquatic Section 2.500-2.515</p>	<ul style="list-style-type: none"> • Water-dependent commercial or industrial use • Navigational structure • Water-dependent public recreational facility* • Shoreline stabilization • Flowlane disposal of dredged material* • Pipeline, cable, and utility crossing • Storm water and treated wastewater outfall* • Communication facility • Temporary dike 	<ul style="list-style-type: none"> • Mining and mineral extraction • Active restoration • Bridge crossing support structure • Aquaculture • In-water log dump, sorting operation • Exceptions to Estuarine Resources Goal (per comp plan amendment) • Designated dredged material disposal (per comp plan) • Dredging and filling (per 	<p><i>Not all specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p> <ul style="list-style-type: none"> • No height limit for structures

- Technical Memorandum #1
- Appendix - 3

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
<p>A-1 Development Aquatic Section 2.500-2.515 (cont.)</p>	<ul style="list-style-type: none"> • New dike construction* • Dredging and filling (per requirements) • Water-related commercial and industrial uses: boat and/or marine equipment sales; fish or shellfish retail or wholesale outlet; charter fishing office*; sports fish cleaning, smoking, or canning establishment; retail trade facility for products associated with water-dependent uses*; waterfront restaurant or bar associated with water-dependent use; cold storage or ice-processing facility* • Navigation aid • Piling or pile supported structure • Bridge crossing <p><i>*Not permitted in South Tongue Point</i></p>	<p>requirements)</p> <ul style="list-style-type: none"> • Water-related recreation • Water-related commercial and industrial uses not listed as permitted uses • Piling for conditional uses • Temporary uses (per requirements) • Non-water-dependent or -related use in underutilized buildings so long as use does not preclude future water-dependent and -related uses 	
<p>A-3 Conservation Aquatic Section 2.575-2.590</p>	<ul style="list-style-type: none"> • Estuarine enhancement • Riprap (per conditions) • Maintenance and repair of existing structure or facility • Active habitat or water quality restoration • Filling in conjunction with uses above • Dike tidegate installation and maintenance • Dike maintenance dredging • Pipeline, cable, and utility crossing • Water-dependent parts of aquaculture facility (per requirements) • Dredging in conjunction with above uses • Navigation aid • Communication facility • Bridge crossing support structure • Public boat ramp (where navigational access is not needed) • Low-intensity water-dependent recreation 	<ul style="list-style-type: none"> • Aquaculture • Active restoration (aside from habitat, nutrient, wildlife, and scenic resources) • Temporary alteration • Beach nourishment (per comp plan) • Filling in conjunction with above uses • High-intensity water-dependent recreation • Minor navigational improvement • Mining and mineral extraction • Dredging in conjunction with uses above • Low-intensity water-dependent commercial or industrial use on water surface supported by means other than fill • In-water log storage • Piling in conjunction with uses above • Temporary use (per requirements) • In pile supported buildings 	<p><i>Not all specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p> <ul style="list-style-type: none"> • Maximum building height 20 ft above grade

- Technical Memorandum #1
- Appendix - 4

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
<p>A-3 Conservation Aquatic Section 2.575-2.590 (cont.)</p>	<ul style="list-style-type: none"> • Habitat, nutrient, wildlife, scenic resource protection • Research and educational observation • Piling and pile supported structures for uses above • Passive restoration • Bridge crossing 	<p>existing prior to October 1, 2002, non water-dependent or non water-related uses as follows:</p> <p>arts and crafts studios, bed and breakfast, home stay lodging, or inn, home occupation, professional and business office, personal service establishment limited to beauty and barber services and garment alterations, residential home, single-family dwelling, two-family dwelling, multi-family dwelling, (off-street parking requirements for the above uses may be located in the upland zone adjacent to the use; additional landscape requirements may be imposed)</p>	
<p>A-4 Natural Aquatic Section 2.600-2.615</p>	<ul style="list-style-type: none"> • Low-intensity water-dependent recreation • Passive restoration • Navigational aide • Vegetative shoreline stabilization • Emergency repair to existing dike • Marine research and education • Piling installation as necessary for uses above • Bridge crossing 	<ul style="list-style-type: none"> • Maintenance and repair of existing structure or facility • Fill as necessary for use above • Active restoration • Pipeline, cable and utility crossing • Dredging as necessary for uses above • Limited aquaculture facilities • Public boat ramp where navigational access is not needed • Bridge crossing support structure • Piling as necessary for uses above • Temporary alteration • Communication facility 	<p><i>Not all specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p> <ul style="list-style-type: none"> • Maximum building height 20 ft above grade
<p>CRESO Columbia River Estuary Shoreline Overlay District Section 2.750-2.760</p>	<ul style="list-style-type: none"> • Use and activity listed in the underlying zone, subject to the procedure specified in the underlying zone • Accessory use and activity associated with development in adjacent Columbia River Estuary aquatic areas, subject to the procedure specified in the Aquatic Zone 		<p><i>Not specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p>
<p>C-1 Neighborhood Commercial Section 2.300-2.335</p>	<ul style="list-style-type: none"> • Dwelling as an accessory use to a permitted or conditional use • Day care center • Family day care center in 	<ul style="list-style-type: none"> • Automotive service establishment • Eating establishment without drive-through facilities, less than 40 seats 	<ul style="list-style-type: none"> • Minimum yard 15 ft where adjacent to residential • Minimum 20%

- Technical Memorandum #1
- Appendix - 5

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
<p>C-1 Neighborhood Commercial Section 2.300-2.335 (cont.)</p>	<ul style="list-style-type: none"> • existing dwelling • Home occupation in existing dwelling • Personal service establishment • Professional service establishment • Repair service establishment less than 3,000 sf gross floor area • Retail sales establishment less than 3,000 sf gross floor area 	<ul style="list-style-type: none"> • Public or semi-public use • Temporary use (per requirements) 	<ul style="list-style-type: none"> • of lot landscaped • Maximum 60% of lot covered by building • Maximum building height 35 ft above grade
<p>C-3 General Commercial Section 2.385-2.415</p>	<ul style="list-style-type: none"> • Business service establishment • Commercial laundry or dry cleaning establishment • Commercial or public off-street parking lot • Communication service establishment • Construction service establishment • Eating and drinking establishment • Educational service establishment • Family day care center in single-family, two-family, or multi-family dwelling • Home occupation in existing dwelling • Motel, hotel, bed and breakfast, inn, or other tourist lodging facility and associated uses • Multi-family dwelling • Personal service establishment • Professional service establishment • Public or semi-public use • Repair service establishment (not including automotive or heavy equipment) • Residential facility • Retail sales establishment 	<ul style="list-style-type: none"> • Animal hospital or kennel • Automotive sales or service establishment • Day care center • Gasoline service station • Hospital • Light Manufacturing • Recycling establishment • Repair service establishment not outright allowed as permitted use • Temporary use (per requirements) • Wholesale trade or warehouse establishment 	<ul style="list-style-type: none"> • Minimum 10% of lot landscaped • Maximum 90% of lot covered by building • Maximum building height 45 ft above grade

- Technical Memorandum #1
- Appendix - 6

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
C-3 General Commercial Section 2.385-2.415 (cont.)	<ul style="list-style-type: none"> • Single-family and two-family dwelling, located above or below the first floor with commercial facilities • Transportation service establishment • Conference Center. • Indoor family entertainment or recreation establishment 		
S-1 Marine Industrial Shoreland Section 2.650-2.665	<ul style="list-style-type: none"> • Water-dependent industrial use • Water-dependent commercial use • Water-dependent recreational facility* • Other water-dependent commercial and recreational uses* • Shoreline stabilization • Navigational aide • Temporary dike • Water-related commercial and industrial use <p><i>*Not permitted at South Tongue Point</i></p>	<ul style="list-style-type: none"> • Retail trade facility for the sale of products associated with water-dependent use • Waterfront restaurant or bar in conjunction with water-dependent use • Water-related recreational use • Aquaculture facility. • Temporary use (per requirements) • Non-water-dependent and non-water-related use associated with permitted water-dependent and water-related use • Non-water-dependent or -related use in underutilized buildings so long as use does not preclude future water-dependent and -related uses 	<p><i>Not all specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p> <ul style="list-style-type: none"> • No height limit for structures
S-2 General Development Shoreland Section 2.675-2.690	<ul style="list-style-type: none"> • Charter fishing office* • Cold storage and/or ice processing facility • Marina and high intensity water-dependent recreation* • Marine equipment sales establishment • Petroleum receiving, dispensing and storage for marine use* • Seafood receiving and processing • Ship and boat building and repair • Maintenance and repair of existing structure or facility 	<ul style="list-style-type: none"> • Active restoration/resource enhancement • Automobile sales and service establishment* • Contract construction service establishment • Educational establishment • Gasoline service station* • Housing which is secondary to another permitted use • Log storage/sorting yard • Manufactured Dwelling Park (per requirements)* • Single-family residence where such use occupies less than 25% of a structures gross floor area* 	<p><i>Not all specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p> <ul style="list-style-type: none"> • Maximum building height 20 ft above grade

- Technical Memorandum #1
- Appendix - 7

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
<p>S-2 General Development Shoreland Section 2.675-2.690 (cont.)</p>	<ul style="list-style-type: none"> • Navigation aide • Temporary dike • Shoreline stabilization • Public park or recreation area • Water-dependent industrial, commercial and recreational use • Manufactured Dwelling in an approved park* <p><i>*Not permitted at South Tongue Point</i></p>	<ul style="list-style-type: none"> • Multi-family dwelling* • Public or semi-public use • Utility • Business service establishment • Communication service establishment • Personal service establishment • Professional service establishment • Repair service establishment • Research and development laboratory • Shipping and port activity • Wholesale trade, warehouse, and/or distribution establishment (including trucking terminal) • Eating and drinking establishment • Retail sales establishment • Hotel, motel, inn, bed and breakfast* • Indoor amusement, entertainment and/or recreation establishment* • Wood processing • Light manufacturing • Temporary use (per requirements) • Water-related industrial, commercial and recreational uses • Conference Center* <p><i>*Not permitted at South Tongue Point</i></p>	
<p>S-5 Natural Shoreland Section 2.725-2.740</p>	<ul style="list-style-type: none"> • Navigation aide • Vegetative shoreline stabilization • Maintenance and repair of existing structure and facility 	<ul style="list-style-type: none"> • Marine research and/or education facility • Restoration or mitigation, where consistent with the maintenance of natural values • Low-intensity recreation 	<p><i>Not all specified in this section ("All uses shall satisfy applicable Columbia River Estuary Shoreland and Aquatic Area and Activity Standards in Article 4")</i></p> <ul style="list-style-type: none"> • Minimum setback from shoreline 50 ft, except where

- Technical Memorandum #1
- Appendix - 8

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
S-5 Natural Shoreland Section 2.725-2.740 (cont.)			direct water access required for water-dependent use <ul style="list-style-type: none"> • Maximum building height 20 ft above grade
GI General Industrial Section 2.470-2.485	<ul style="list-style-type: none"> • Automotive repair, service, and garage • Business Incubator • Bulk fuel and ice dealer • Cold storage and/or ice processing facility • Commercial testing laboratory • Construction contractor's office and related outdoor storage • Laundry, cleaning, and garment services • Light manufacturing, including but not limited to: <ul style="list-style-type: none"> electrical and electronic machinery, equipment and supplies (except storage batteries); transportation equipment; instruments – photographic, medical and optical goods • Mailing, reproduction, commercial art and photography, and graphic services • Photo finishing laboratory • Printing, publishing and allied industries • Public use compatible with permitted uses within the zone and the surrounding neighborhood • Public utility structures and buildings • Repair service establishment • Research and development laboratories • Transportation, communications, electric, gas, and sanitary services 	<ul style="list-style-type: none"> • Business service establishment • Eating and drinking establishment without drive-through facilities, less than 3,000 sf of gross floor area • Food and kindred products processing • Multi-family dwelling, located above the first floor of new or existing structures, with permitted or conditional use on the first floor • Professional service establishment • Recycling depot • Retail sales establishment less than 3,000 sf of gross floor area proposed as part of a mixed use (with limitations) • Rubber and miscellaneous plastic products • Ship and boat building and repair • Wood processing 	<ul style="list-style-type: none"> • Maximum 90% of lot covered by building • Maximum building height 45 ft above grade

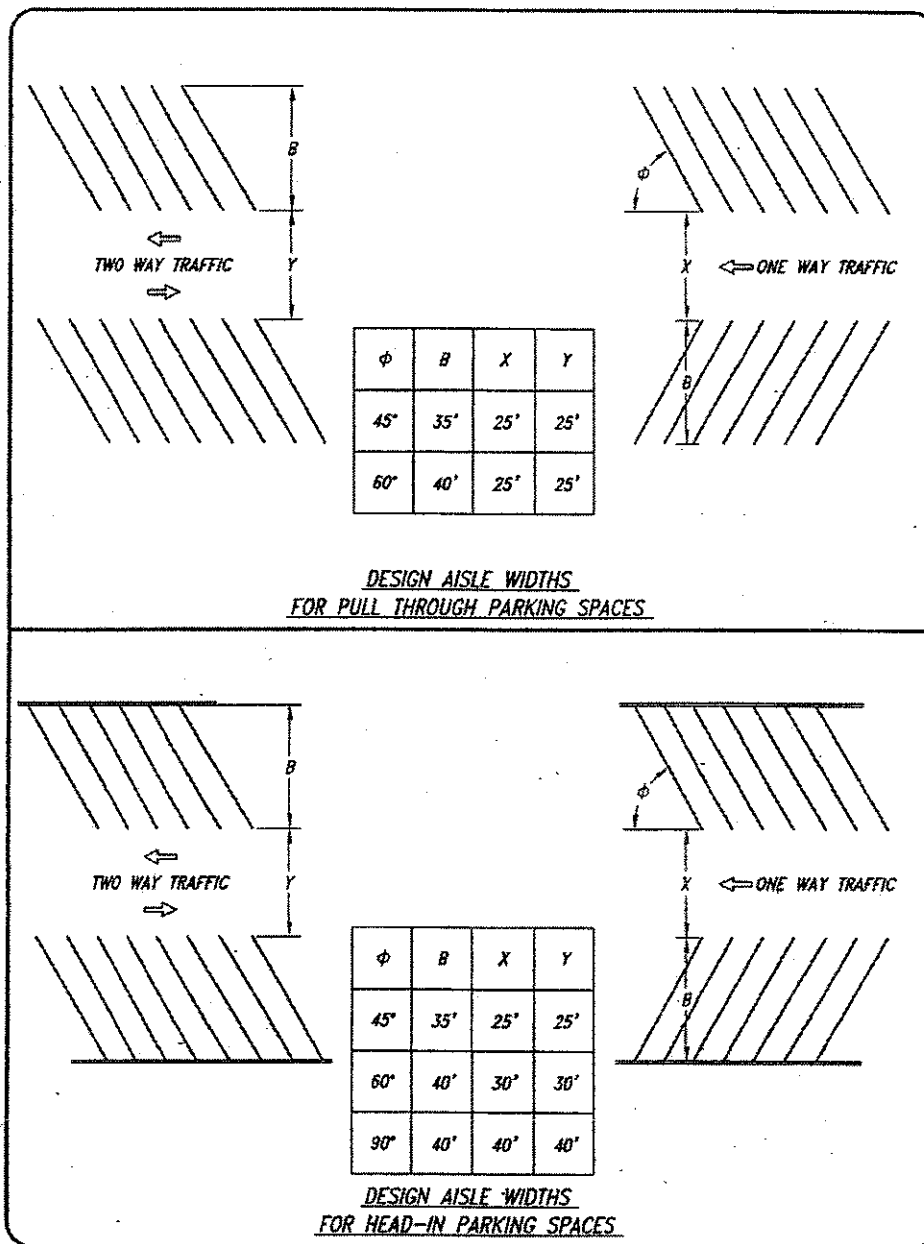
- Technical Memorandum #1
- Appendix - 9

Type of Zoning District	Permitted Use	Conditional Use	Lot Specifications
GI General Industrial Section 2.470-2.485 (cont.)	<ul style="list-style-type: none"> • Truck and equipment storage and parking, and material storage yard • Vocational school except vocational high school • Wholesale trade, warehouse, distribution establishment 		
IN Institutional Section 2.835-2.860	<ul style="list-style-type: none"> • Caretaker dwelling • Community building • Low-intensity recreation • Public parking lot or structure • Public restroom • Public utility shop and yard • Recycling or solid waste transfer facility • Reservoir • School or college • Single-family dwelling on lot where use existed as of January 1, 1990 • Utilities 	<ul style="list-style-type: none"> • High-intensity recreation 	<ul style="list-style-type: none"> • Minimum front yard 20 ft • Minimum 10% of lot landscaped • Maximum building height 45 ft above grade
LR Land Reserve Section 2.870-2.880	<ul style="list-style-type: none"> • Forest management (activities regulated by the Oregon Forest Practices Act) • Public facilities, including water reservoirs and distribution lines, power lines, roads and similar uses • Low-intensity recreation 		<i>Not specified</i>

- Technical Memorandum #1
- Appendix - 10

APPENDIX C

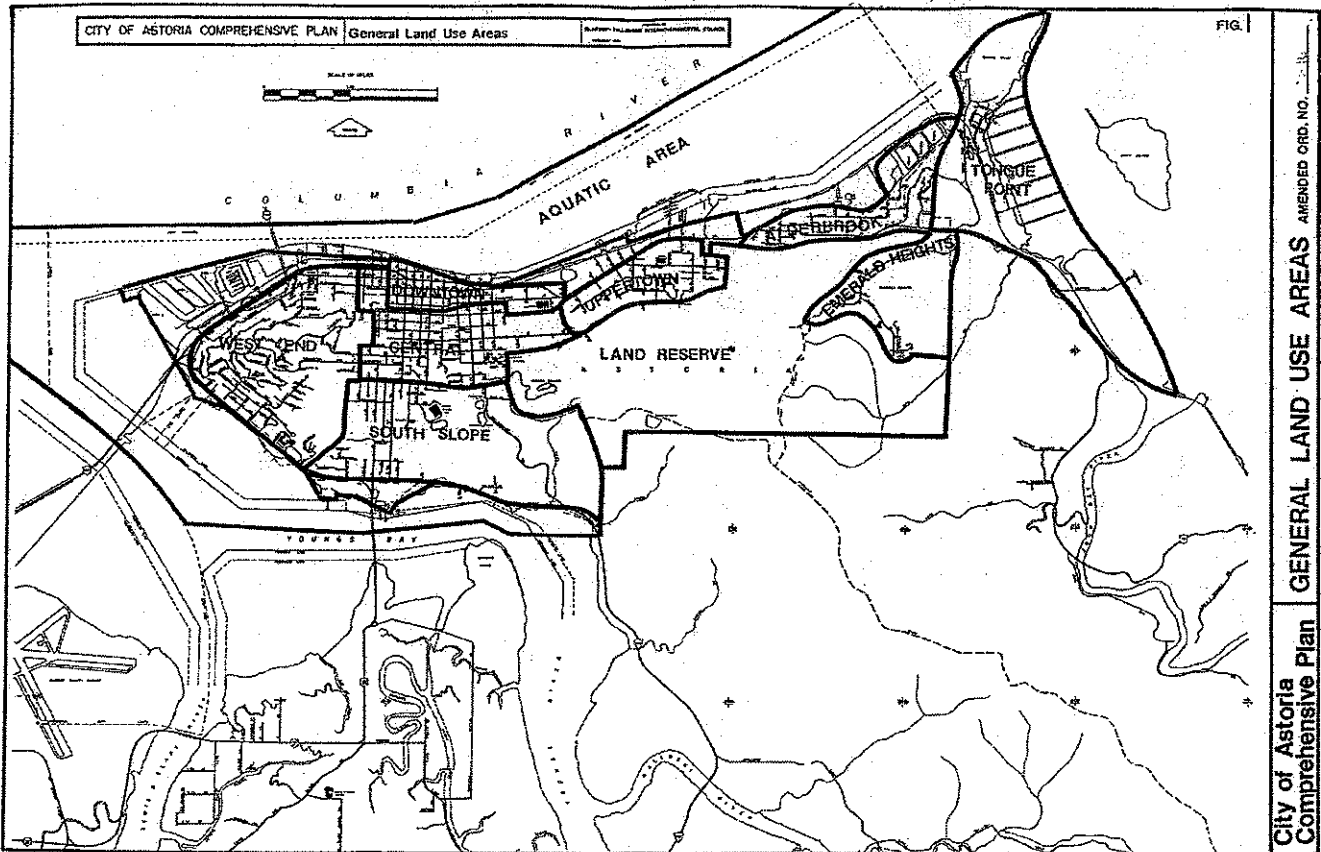
Oregon State Marine Board (OSMB)
 Layout and Design Guidelines for Recreational Boating Facilities, March 2003
 Design Parking Aisle Widths Diagram



- Technical Memorandum #1
- Appendix - 11

APPENDIX D

City of Astoria Comprehensive Plan
General Land Use Areas, Figure 1

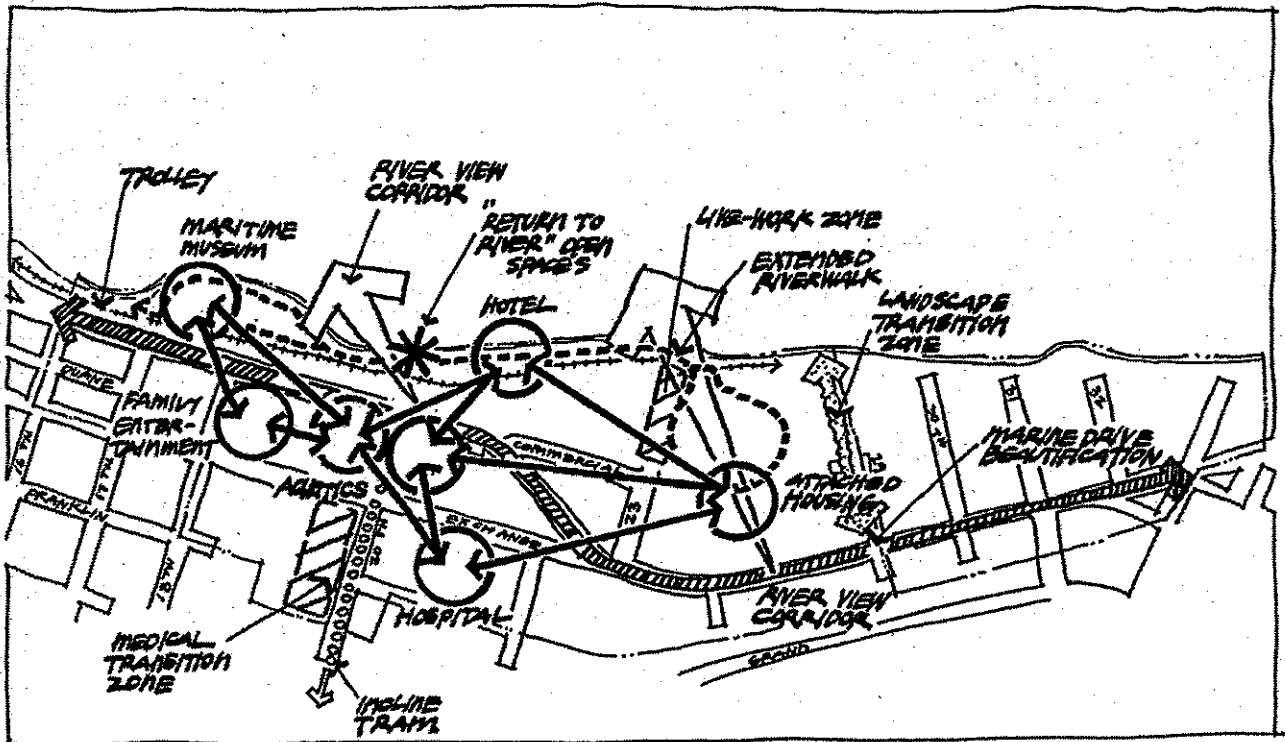


- Technical Memorandum #1
- Appendix - 12

APPENDIX E

Astoria Gateway Master Plan Concept Diagram

CONCEPT DIAGRAM
(Figure 4)

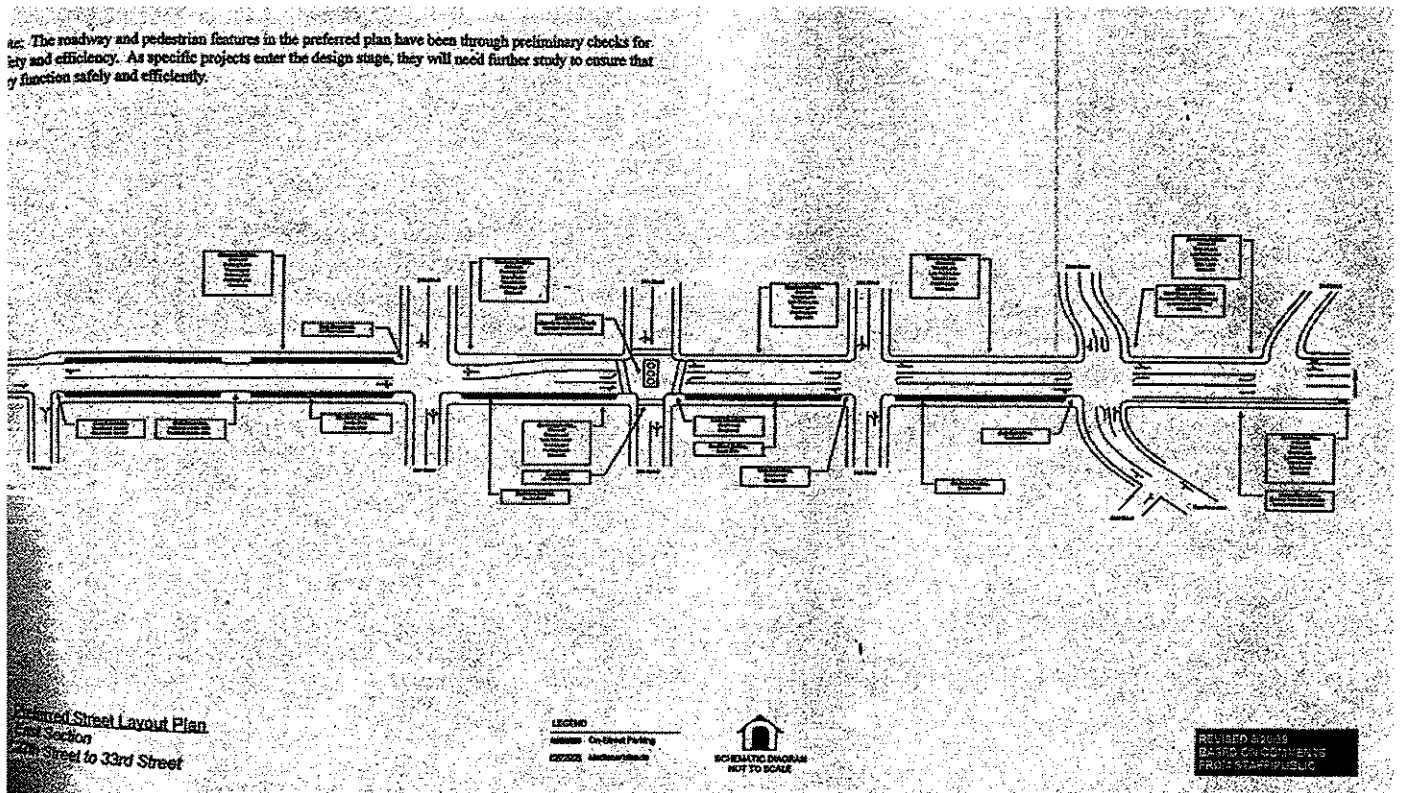


- Technical Memorandum #1
- Appendix - 13

APPENDIX F

Astoria Gateway Area Transportation and Growth Management Plan East Section - Preferred Street Layout Plan

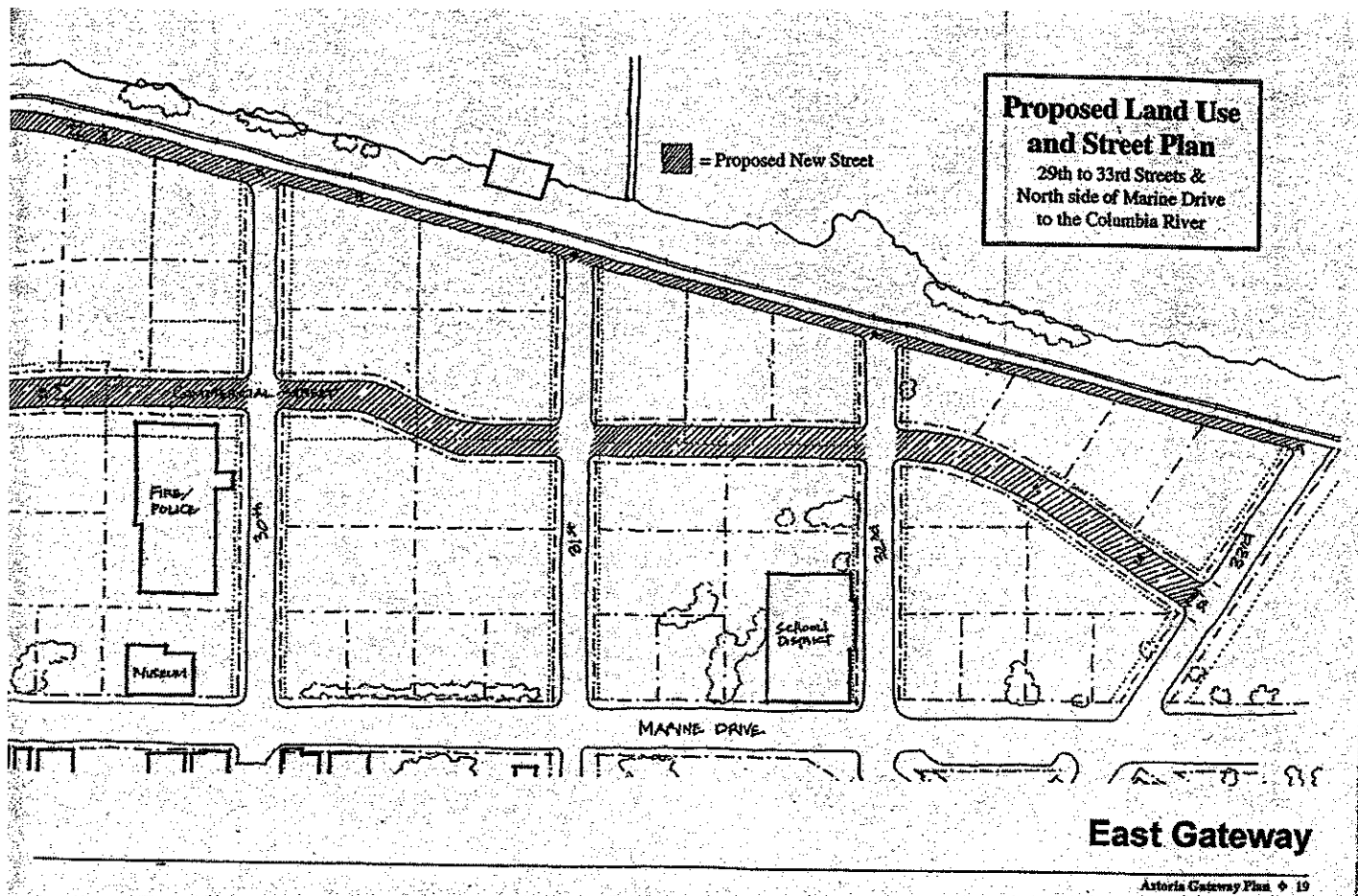
10. The roadway and pedestrian features in the preferred plan have been through preliminary checks for safety and efficiency. As specific projects enter the design stage, they will need further study to ensure that they function safely and efficiently.



- Technical Memorandum #1
- Appendix - 14

APPENDIX G

Astoria Gateway Area Transportation and Growth Management Plan East Section - Proposed Land Use and Street Plan



Statement of Work

Exhibit A

City of Astoria—East Gateway Transportation Plan Work Order #20—Contract # 23238

Statement of Work

Definitions

Agency/ODOT	Oregon Department of Transportation	Plan	East Gateway Transportation Plan
CAC	Citizen Advisory Committee	PMT	Project Management Team
City	City of Astoria	TGM	Transportation Growth Management, a grant program and related funding source to solve land use and transportation planning problems
Contractor	CH2M HILL		
County	Clatsop County		
DLCD	Oregon Department of Land Conservation and Development	TPAU	ODOT Transportation Planning Analysis Unit
ESU	ODOT Engineering Services Unit		
OAR	Oregon Administrative Rule	TPR	Transportation Planning Rule
OHP	Oregon Highway Plan	TSP	Transportation System Plan
OSU	Oregon State University		

Introduction

The purpose of this project is to develop the City of Astoria (City) East Gateway Transportation Plan (Plan), a Transportation and Growth Management (TGM) funded project that will need to satisfy Transportation Planning Rule Requirements. Plan will need to be approved by the City Council and the Oregon Department of Transportation (Agency or ODOT)), and acknowledged by the Department of Land Conservation and Development (DLCD).

Project Context

This project will produce a Plan for the City, consistent with the requirements of the TPR for incorporated cities with population under 10,000. Preparation and adoption of the Plan for the City will provide the following benefits:

- Provide adequate planned transportation facilities to support planned land uses over the next 20 years;
- Provide certainty and predictability for the siting of new streets, roads, highway improvements and other planned transportation improvements;
- Provide predictability and incentive for land development, and
- Help reduce the cost and maximize the efficiency of public spending on transportation facilities and services by coordinating land use and transportation decisions.

The planning area to be studied is along U.S. Highway 30, between 33rd Street and Liberty Lane in eastern Astoria. The Plan is intended to:

- Address improvements necessary to make the area attractive to developers, industrial and port users, nearby residents, and other users of the street and highway system and waterfront.
- Develop a list of short term and long term improvements that will assist both the developers of the Astoria Business Park, North Tongue Point industrial parks, and the Blue Ridge residential subdivision with

ready-to-implement solutions for access from Highway 30 as well as internal circulation and local street systems

- Develop a plan for an internal street system that can reduce local use of U.S. Highway 30.
- Develop a plan for crosswalks and signals to enable residents south of U.S. Highway 30 to gain pedestrian access to the River Trail and East Mooring Basin.
- Develop a plan for an extension of the River Trail through the east end of Astoria to the east side of Alderbrook Lagoon to serve the community and visitors
- Prepare a detailed plan for access and circulation for the undeveloped land owned by the Port, Oregon State University (OSU), and private landowners including the Astoria Business Park and North Tongue Point, including an access management plan and an internal circulation plan for the industrial lands.

General Assumptions and Requirements

Maps and design drawings will be produced using a combination of MicroStation and hand rendering techniques. The method used will depend on the format of available base map data to be provided to the Contractor. Final deliverables that are in electronic format must be provided to the City in AutoCad.

All Contractor work products must be provided in hard copy and in electronic format (Microsoft Word and Excel), except hand renderings that will be provided in hard copy only.

The Final Plan deliverable must be produced by the Contractor and must be reproducible in black and white. The Plan must include text, maps, and charts to communicate the results and recommendations both to the public and to elected and appointed officials. One copy suitable for reproduction must be unbound. The project budget does not include color copies or large-scale scans or reproductions. Contractor shall provide the City with five (5) copies of the Final Plan. The budget for this project assumes no more than one round of review and comment for each deliverable and that comments on draft products will be provided within 7 to 10 calendar days.

Specific Assumptions and Responsibilities

City shall provide all necessary, available local data, and perform support logistics to Contractor for open houses and advisory committee meetings.

City shall designate a Citizen Advisory Committee (CAC), consisting of citizens and representatives of stakeholder groups to assist the City and Contractor in development of the Plan.

Contractor shall attend up to eight meetings and one open house, make presentations, and respond to questions. To the maximum extent possible, CAC and Project Management Team (PMT) meetings will be scheduled to occur on the same day.

City shall organize and conduct all local Planning Commission, City Council meetings and other meetings, work sessions and public events, including meeting minutes, except for those tasks specifically assigned to the Contractor.

City shall review and comment to Contractor and Agency Project Manager on all deliverables in accordance with project schedule.

Contractor shall be responsible for day-to-day project production, oversight and coordination, and shall perform the main portion of the technical work and document preparation.

Contractor shall provide the City and Agency Project Manager with an opportunity to review and provide input on all Contractor deliverables throughout the course of the project.

Contractor shall make revisions based on professional planning practices in response to City and Agency Project Manager input prior to each deliverable being considered complete.

Agency Project Manager shall coordinate and obtain internal ODOT review (i.e. Transportation Planning and Analysis Unit [TPAU] and/or Engineering Services Unit [ESU]) of project deliverables.

Contractor shall schedule, initiate and maintain monthly communication on project status and issues with City and Agency Project Manager either via a conference call, a written status report (email acceptable), or at a scheduled PMT meeting.

Contractor shall ensure that a registered professional engineer oversees all traffic analysis work and Agency standards must be used for evaluation of all state facilities.

Project Cooperation

This statement of work describes the responsibilities of all entities involved in this cooperative project. In this statement of work the Contractor shall only be responsible for those deliverables assigned to the Contractor. Any tasks or deliverables assigned to a sub-contractor shall be construed as being the responsibility of the Contractor.

Any Contractor tasks or deliverables which are contingent upon receiving information, resources, assistance, or cooperation in any way from another entity as described in this statement of work shall be subject to the following guidelines:

1. At the first sign of non-cooperation, the Contractor shall provide written notice (email acceptable) to Agency Contract Administrator of any deliverables that may be delayed due to lack of cooperation by other entities referenced in the statement of work.
2. Agency Contract Administrator shall contact the non-cooperative entity/s to discuss the matter and attempt to correct the problem and/or expedite items determined to be delaying the Contractor/project.
3. If Contractor has followed the notification process described in item 1, and delinquency of any deliverable is found to be a result of the failure of other referenced entities to provide information, resources, assistance, or cooperation, as described in the statement of work, the Contractor will not be found in breach or default of contract; nor shall Contractor be assessed or liable for any damages. The Agency Contract Administrator will negotiate with Contractor in the best interest of the State, and may amend the delivery schedule to allow for delinquencies beyond the control of the Contractor.

Delivery Schedule: The delivery schedules listed throughout this statement of work refer to months from notice to proceed.

Work Tasks

Task 1. – Project Management

Objective:

The purpose of this task is to lead, manage and control the Contractor's work efforts towards the completion of the Plan.

Methodology:

Contractor shall perform the following activities:

- Attend and lead the Kick-Off Meeting
- Attend and lead monthly Project Team Coordination Meetings
- Attend and lead staff coordination meetings
- Communicate weekly with Agency Project Manager

- Monitor work plans, budgets and schedule
- Lead internal project team meetings
- Prepare progress reports and backup data
- Maintain project files
- Coordinate production and quality control efforts

General coordination and communications, contract administration, and change management are included in this task.

Schedule: Months 1-12 from notice to proceed
 (1) Prepare Project Instructions: Month One of the project
 (2) All other items: Continuous and/or monthly throughout project

Deliverables: TASK 1	Contractor	City	Agency
• Project Instructions	Lead	Support	Support
• Kick-Off Meeting	Lead	Support	Support
• Regular communication with Agency and City project managers including monthly progress reports	Lead	Support	Support
• Monthly Project Team Coordination Meetings	Lead	Support	Support
• Staff coordination meetings (3)	Lead	Support	Support

Task 2. - Establish Project Management Team and Citizen Advisory Committee

Objective:

Advise and guide the project and achieve broad-based community and interagency involvement in the development of Plan.

Methodology:

- A. Establish PMT to provide project direction and oversight. City, Agency Project Manager, ODOT Region 2 Staff, ODOT TPAU, DLCD, Clatsop County, and Contractor shall participate on PMT.

Contractor shall convene and facilitate four (4) PMT meetings at appropriate intervals during the project to report progress, results, and solicit direction and input. Contractor shall produce electronic agenda and attachments for each PMT meeting and provide to City at least seven (7) calendar days in advance of each meeting. Contractor shall provide sufficient copies of handouts for all PMT members at PMT meetings.

City shall provide meeting space, reproduce and distribute meeting agenda and attachments to all PMT members prior to meeting date. City shall mail copies of handouts distributed at meeting to all members not present at that meeting. City shall designate a project manager who shall attend all meetings or insure that an alternate capable of representing City staff is in attendance. To the maximum extent possible, CAC and PMT meetings will be scheduled to occur on the same day.

- B. Establish Citizen Advisory Committee - City shall solicit active participation in the Plan and appoint a CAC comprising City residents, the business community, transportation users, and other local stakeholders which reflects the City's desires and needs.

City shall create a roster of appointed CAC members, including contact information (names, organization name, phone numbers, and e-mail address).

Contractor shall convene and facilitate four (4) CAC meetings at appropriate intervals during the project to report progress, results, and solicit input. All CAC meetings must be open to the public. Contractor shall produce electronic agenda and attachments for each CAC meeting and provide to City at least seven (7) calendar days in advance of each meeting. Contractor shall provide sufficient copies of handouts for all CAC members at CAC meetings.

City shall provide meeting space, reproduce and distribute meeting agenda and attachments to all CAC members prior to meeting date, and post notice of meeting. City shall mail copies of handouts distributed at meeting to all members not present at that meeting. City Project Manager shall attend all meetings or insure that an alternate capable of representing City staff is in attendance. To the maximum extent possible, CAC and PMT meetings will be scheduled to occur on the same day.

- C. Public Open House - Contractor shall design and conduct one (1) open house at the completion of the Plan development for the purpose of informing interested citizens of the proposed Plan.

Contractor shall collaborate with City to determine date, time, location, agenda, advertising mediums, and format of the open house and provide presentation materials. Contractor shall provide advertising materials to City to reproduce and distribute. Contractor shall prepare summary of the open house for distribution to CAC and inclusion in Plan appendix.

City shall provide meeting space for each open house, reproduce and distribute advertising materials, and post notice of each open house. City Project Manager shall attend the open house or insure that an alternate capable of representing City staff is in attendance. City shall reproduce and distribute meeting summaries to CAC following each open house.

- D. Project Notebook - City shall maintain a project notebook available for public review at the City Planning Department and shall keep it updated as additional materials are provided to CAC. City shall include in this public review project notebook one or more pages for members of the public to record comments and contact information for Agency Project Manager.

Schedule: Months 1-12 from notice to proceed

1. Establish PMT and CAC: Month One of the project
2. All other items: Continuous throughout project or as scheduled with PMT

Deliverables: TASK 2	Contractor	City	Agency
• Stakeholder/Public Involvement Program	Lead	Support	Support
• Manage CAC and PMT rosters	Support	Lead	Support
• PMT & CAC meetings (4 each).	Lead	Support	Support
• Open house (1).	Lead	Support	Support
• Project notebook for public review.	Support	Lead	Support

Task 3. - Review of Existing Plans, Standards, Policies, Formulation of Draft Goals and Objectives, and Development of Alternatives Evaluation Criteria

Objectives:

- A. To understand the existing transportation-related documents, recent and on-going planning work affecting this project, determining material to be used to create the East Gate Transportation Plan.
- B. To create an agreed-upon framework within which to organize existing, updated, and new information.
- C. To ensure that this Plan is consistent with adopted County, regional, and state plans, policies and regulations including, the TPR, Oregon Highway Plan (OHP) and the Clatsop County (County) Comprehensive Plan.
- D. To provide results of this task to City, DLCD and ODOT for review and comment, and then collaborate to refine the work tasks outlined in subsequent Tasks 4-8. If a change is proposed to the final Scope of Work, an amendment to the Scope of Work will be executed.

Methodology:

- A. Contractor shall review and summarize relevant local, regional, and state documents, policies, standards and ordinances for consistency as they relate to transportation facilities and services in City. Currently many of the elements for the Plan exist in separate documents and the information needs to be reviewed, updated and compiled into one document. City shall collect and provide Contractor with copies of relevant local/regional documents.

Contractor shall review and summarize up to 25 relevant transportation-related documents in Technical Memorandum #1. Contractor shall meet with City, ODOT, and DLCD to discuss direction of the Plan. Contractor shall perform one round of revisions to Technical Memorandum #1 based on City, DLCD, and ODOT review and comments provided. The following documents or document types have been identified for review:

Local/Regional Documents

- 1979 Astoria Comprehensive Plan,
- 1995-TPR compliance document
- Capital Improvement Plan
- Any Urban Growth Management Agreements between County and City
- Any existing City visioning documents
- Other documents City determines to be relevant to the preparation of the Plan

State Documents

- TPR (Oregon Administrative Rule [OAR] 660-012)
- Access Management Rules (OAR 734-051)
- 1992 Oregon Transportation Plan
- 1992 Oregon Rail Passenger Policy and Plan
- 1994 Oregon Rail Freight Plan
- 1995 Oregon Bicycle and Pedestrian Plan
- 1995 Oregon Transportation Safety Action Plan
- 1997 Oregon Public Transportation Plan
- 1999 Oregon Highway Plan
- 1999 Freight Moves the Oregon Economy
- 2000 Oregon Aviation Plan
- 2003 Highway Design Manual

- Any other state planning documents relevant to preparation of the TSP and Periodic Review documents, including draft documents and information.
3. Goals and Objectives – Contractor shall finalize the goals and objectives based on findings summarized in Technical Memorandum #1. The goals and objectives may need to be modified as the study progresses with stakeholder input.
- C. Evaluation Criteria – Contractor shall develop criteria that can be used to measure the effectiveness of the proposed alternatives against the project goals and objectives. The measures will generally be qualitative.
 - D. Contractor and City shall meet and review potential Plan document formats. Based on this meeting, Contractor shall prepare Technical Memorandum #2 that outlines the preferred Plan document format and details proposed Plan chapters and major subheadings. Subsequent technical memoranda must be drafted in chapter format to facilitate compiling the draft Plan document.

Schedule: By Month 2

Deliverables: TASK 3	Contractor	City	Agency
• Technical Memorandum #1 summarizing consistency of existing plans, policies, standards for development of the Plan.	Lead	Support	Support
• Draft Plan Goals and Objectives	Lead	Support	Support
• Develop Evaluation Criteria	Lead	Support	Support
• Technical Memorandum #2 outlining Plan document format	Lead	Support	Support

Task 4. - Existing Transportation System Analysis

Objective:

To verify, identify, and map existing transportation facilities, including streets, public transportation, bicycle and pedestrian facilities, rail, air, pipeline and water facilities, to provide baseline data needed to support the Plan planning and analysis.

Methodology:

- A. Collect existing available information to complete an update of the inventory of existing transportation system facilities and services as necessary for developing the Plan and decision-making. Contractor shall collect this information for each transportation mode listed below, forming the basis for the Plan chapter designated for each.

City shall provide Contractor with existing relevant local records for compiling Transportation System Facilities Inventory. This includes copies of City’s GIS and CAD databases.

ODOT shall provide Contractor with existing relevant state records for compiling the Transportation System Facilities Inventory update.

The items listed below itemize the types of features that must be included in the East Gate Transportation Plan to comply with TSP guidelines (exclusions to these items must be agreed upon by City, Contractor and ODOT per Task 3):

- Streets & Highways
 - Location
 - Description (number of lanes)
 - Type (paved, unimproved) and condition of pavement (good, fair, poor)
 - Functional classification (state facility type, arterial, collector, local)
 - Signal locations
 - Speed limits
 - Pavement type & condition
 - Locate freight users and local freight routes
 - Major activity centers and other current & probable future land uses which could significantly impact state highways

- Bikeways
 - Location of existing bicycle routes
 - Type (bike lanes, shoulder bikeways, shared roadway, bike path)
 - Surface type (asphalt, concrete, gravel, other)
 - Width (standard, substandard)
 - Conditions (good, fair, poor)
 - Consistency of facilities with state/regional standards

- Pedestrian
 - Location of sidewalks and multi-use trails
 - Locations of major pedestrian trip generators
 - Type & condition (good, fair, poor)

- Public Transportation & other Alternative Modes
 - Public Transportation providers and services, such as bus, dial-a-ride, carpooling & vanpooling
 - Service characteristics, including routes, scheduling and level of public information available.
 - Location of bus stops, terminals, Park & Ride Facilities

- Rail/Pipelines/Other
 - Railroad - including ownership, primary users, frequency and type of operations, train speeds, rail conditions, all railroad crossings and any associated problems.
 - Major regional pipelines- type, ownership, location, future planned use, terminals
 - Any airport facilities located within 5 miles

B. Compile Transportation System Inventory Information - Contractor shall prepare Technical Memorandum #3 / Plan update section to provide an updated inventory of the existing transportation system. Contractor shall use the City's GIS system as a basis for updating and mapping results of Transportation System Inventory process. Contractor shall document Transportation System Inventory information collected as part of sub-task 4 A using maps and tabular data. Contractor may obtain digital base maps at no charge from ODOT Mapping Unit. Contractor and City shall meet and review results of inventory compilation. Based on the extent of available transportation system data and results of compiling the existing Transportation System Inventory, Contractor shall make recommendations for field data collection to supplement the existing inventory. Contractor shall submit Technical Memorandum # 3 to and review with ODOT and the City.

- C. Field Reconnaissance - Based on recommendation resulting from subtask 4.B, Contractor shall spend up to two (2) days performing field inspection and data collection for key facilities and locations impacting Plan development (i.e. geometric design deficiencies, lane configurations, and other information as recommended by the 2001 TSP Guidelines) to fill gaps in the inventory.
- D. Traffic Counts - Contractor shall collect a combination of 16-hour (two intersections) and 3-hour (four intersections) traffic counts. Traffic counts must be obtained on the weekends during the summer months when congestion is highest. The following table outlines the preliminary list of intersections identified for collection and associated count type:

Major Street	Minor Street	Count Type
U. S. Hwy. 30	Old U.S. Hwy. 30	16-hour
U. S. Hwy. 30	Nimitz Drive	16-hour
U. S. Hwy. 30	Blue Ridge Drive	3-hour
U. S. Hwy. 30	39th Street	3-hour
U. S. Hwy. 30	36th Street	3-hour
U. S. Hwy. 30	33rd Street	3-hour

The PMT may modify the suggested list of locations sited above based on new or additional information.

- E. Operational and Safety Analysis - Contractor shall prepare technical analysis of US Highway 30 within Study Area, including the intersections identified in Task 4.D. The analysis must include:
- An assessment, using ODOT provided counts, seasonally adjusted, supplemented by the traffic counts obtained in Task 4.D and ODOT approved methodology - typically the methodology in the Highway Capacity Manual 2000 and the SYNCHRO/SIMTRAFFIC traffic programs - of existing and future conditions. The volume to capacity and 95th percentile storage capacities analysis must be prepared for the 30th highest hour. The 20-year forecast must include a No-Build Scenario (developed applying a growth rate available from the ODOT website at <http://www.odot.state.or.us/tddtpau/SysAnalysis.html#procedures>) and a Build Scenario, (the No Build scenario plus proposed improvements. Trip rates and distribution patterns associated with each development must be based on Institute of Transportation Engineers Trip Generation Manual, 6th Edition or as agreed to by ODOT Contract Administrator. The analysis must include the need for turn lanes, storage requirements, intersection control, and system operations related to the points at which connection to U.S. Highway 30 are proposed.
 - Identification of crash locations and assessment of likely causes based on a 5-year review of ODOT crash database.
 - A summary of the operational and safety analysis in Technical Memorandum #4 with the technical data used in support of Technical Memorandum #4 attached.
 - Data in tabular and graphic form.
 - Work performed by or under the supervision of an engineer licensed by the State of Oregon to perform traffic engineering.

Schedule: By Month 3

Deliverables: TASK 4	Contractor	City	Agency
<ul style="list-style-type: none"> Updated GIS system inventory database (centerline) using ESRI shape file or compatible format. Update existing City GIS layers 	Lead	Support	Support
<ul style="list-style-type: none"> Technical Memorandum #3 describing and illustrating (maps and/or tables) the transportation system elements outlined above. 	Lead	Support	Support
<ul style="list-style-type: none"> Technical Memorandum #4 - Operational and Safety Analysis summary including supporting technical data used to prepare the analysis 	Lead	Support	Support

Task 5. – Develop Improvements and Preferred Alternatives

Objective:

To develop and evaluate improvements and alternatives that addresses the identified transportation needs.

Methodology:

Except where stated otherwise, the Contractor shall be responsible for the work tasks described below.

- A. Develop Improvements – Develop transportation improvements to address the issues identified in Task 4.
 - Address what improvements are necessary to make the area attractive to developers, industrial and port users, nearby residents and other users of the street system and waterfront.
 - Develop a list of short term and long term improvements that can assist both the developers of the Astoria Business Park and North Tongue Point industrial parks, and the developers of the Blue Ridge residential subdivision with ready-to-implement solutions for access from U.S. Highway 30 as well as internal circulation and local street systems. This includes development of off-road street and pedestrian networks. The analysis must identify/investigate the affect of connections to U.S. Highway 30.
 - Develop a plan for an internal street system that can reduce local use of U.S. Highway 30.
 - Develop a plan for crosswalks and signals to enable residents south of U.S. Highway 30 to gain access to the River Trail and East Mooring basin that are north of U.S. Highway 30.
 - Develop a plan for an extension of the River Trail through the east end of Astoria to the east side of Alderbrook Lagoon to serve the community and visitors
 - Prepare a detailed plan for access and circulation for the undeveloped land owned by the Port, OSU, and private landowners including the Astoria Business Park and North Tongue Point, including an access management plan and an internal circulation plan for the industrial lands.
- B. Evaluate Improvements – Evaluate proposed improvements, based on evaluation criteria developed in Task 3.C then develop a table comparing improvements against the evaluation criteria.
- B. Preferred Alternative – Recommend a preferred alternative for each project based on criteria developed in Task 3 CD. Document Alternatives Process – Prepare Technical Memorandum #5 describing the alternatives and the alternatives development and evaluation process.

Schedule: By Month 5

Deliverables: TASK 5	Contractor	City	Agency
<ul style="list-style-type: none"> • Technical Memorandum #5 that identifies and illustrates alternatives (including preferred alternative) and describes alternative evaluation process 	Lead	Support	Support

Task 6. – Prepare Draft and Final Plans

Objective:

To prepare draft and final plans describing the proposed projects from the information developed in Tasks 2-5.

Methodology:

Except where stated otherwise, the Contractor shall be responsible for the work tasks described below.

A. Prepare Draft Plan – Compile information from technical memos previously developed and prepare Draft Plan. The following sections are required:

- Introduction
- Plan and Policy Review
- Goals, Objectives and Evaluation Criteria
- Inventory, Existing Conditions, Future Needs
- Alternatives for each Project
- Preferred Alternatives

Appendices with meeting and any technical memoranda not incorporated into the document must be included. Contractor shall provide one copy (black and white) of Draft Plan for each CAC member for review.

Prepare Final Plan – Following distribution of Draft Plan to PMT/CAC and incorporation of comments, prepare Final Plan incorporating suggested changes.

**Schedule: By Month 10 for Draft
By Month 11 for Final Plan**

Deliverables: Task 6	Contractor	City	Agency
<ul style="list-style-type: none"> • Draft and final versions of the plan describing the proposed projects, including concept illustrations and cross sections where relevant 	Lead	Support	Support

PMT-CAC Contacts

Project Contact Information

Astoria East Gateway Transportation Plan

Project Management Team (PMT)

Name	Agency	Address	Phone Number	E-mail
Nadine Smith	ODOT R2 Planning	455 Airport Road SE, Bldg. B Salem, OR 97301-5395	(503) 986-2836	Nadine.M.SMITH@odot.state.or.us
Valerie Grigg Devis	ODOT R2 Planning	455 Airport Road SE, Bldg. B Salem, OR 97301-5395	(503) 986-5751	Valerie.GRIGGDEVIS@odot.state.or.us
Laren Woolley	DLCD	635 Capitol Street NE, Suite 150 Salem, OR 97301	(541) 563-3745	Laren.WOOLLEY@state.or.us
Dorothy Upton	ODOT TPAU	555 13th Street NE, Suite 2 Salem, OR 97301-4178	(503) 986-4105	Dorothy.UPTON@odot.state.or.us
Kathleen Sellman	Clatsop County	800 Exchange Street Astoria, OR 97103	(503) 325-8611	ksellman@co.clatsop.or.us
Todd Scott	City of Astoria	1095 Duane Street Astoria, OR 97103	(503) 338-5183	tscott@astoria.or.us
John Lowe	CH2M HILL	825 N.E. Multnomah, Suite 1300 Portland, OR 97232-2146	503-736-4384	jlowe1@ch2m.com

Citizens' Advisory Committee (CAC)

Name	Agency	Address	Phone Number	E-mail
Todd Scott	City of Astoria	1095 Duane Street Astoria, OR 97103	(503) 338-5183	tscott@astoria.or.us
Nadine Smith	ODOT R2 Planning	455 Airport Road SE, Bldg. B Salem, OR 97301-5395	(503) 986-2836	Nadine.M.SMITH@odot.state.or.us
Floyd Holcom	Pier 39	100 39th Street Astoria, OR 97103	(503) 325-2502	info@pier39-astoria.com
Bill Cook	Port of Astoria	1 Portway Astoria, OR 97103	(503) 325-4521	bcook@portofastoria.com
Jean Dominey	Resident	3647 Duane Astoria, OR 97103	(503) 325-3059	jmdom@charter.net
Don Webb	Resident	3555 Harrison Drive Astoria, OR 97103	(503) 325-0602	webskx@pacifier.com
Joanie Zielinski	Astoria School District	785 Alameda Avenue Astoria, OR 97103	(503) 325-6441	jzielinski@astoria.k12.or.us
John Lowe	CH2M HILL	825 N.E. Multnomah, Suite 1300 Portland, OR 97232-2146	503-736-4384	john.lowe1@ch2m.com

Astoria East Gateway Schedule

	October	November	December	January	February	March	April	May	June
Task 1: Project Management									
a) Communicate with ODOT PM	12								30
b) Telephonic Kick Off Meeting	13								
c) Project Instructions		5							
Task 2: Establish PMT and CAC									
a) Establish PMT	23								
b) Establish CAC				24					
c) Public Open House									
d) Project Notebook									TBD
Task 3: Review Existing Plans & Policy, Formulate Draft Goals, Develop Alternative Evaluation Criteria									30
a) Review Documents				26					
b) Goals and Objectives				26					
c) Evaluation Criteria				26					
d) Final Plan Format				26					
e) PMT/CAC Meetings #1					9				
Task 4: Existing Transportation System Analysis									
a) Collect Existing Information									
b) Transportation System Inventory Information					25				
c) Field Reconnaissance					25				
d) Traffic Counts									
e) Operational and Safety Analysis									
f) PMT/CAC Meetings #2						15			
Task 5: Develop Improvements and Preferred Alternatives									
a) Develop Improvements:									
Address Improvements									
Short Term and Long Term Improvements							15		
Internal Street System							15		
Crosswalks and Signals							15		
Extension of the River Trail							15		
Access and Circulation for Undeveloped Land							15		
b) Evaluate Improvements									
c) PMT/CAC Meetings # 3 and Preferred Alternative								4	
Task 6: Prepare Draft and Final Plans									
a) Prepare Draft Plan									
b) Review with Traffic Safety Committee									
c) PMT/CAC Meetings # 4								20	
d) Open House									1
e) Prepare Final Plan									22
f) Project Closeout									24
									30
=	Product Deliverable and Approximate Delivery/Meeting Date								

Astoria Evaluation Criteria

CITY OF ASTORIA
EAST GATEWAY TRANSPORTATION PLAN
EVALUATION CRITERIA

4/8/05

INTRODUCTION

During preparation of the Astoria East Gateway Transportation Plan (Plan) Goals and Objectives, it became apparent that comparison of alternative transportation improvements developed during the study would be most meaningful if the improvements were compared in groups containing similar projects rather than comparing all projects together. It is recommended that the alternative improvements be compared within the following groups:

- Industrial/Commercial Sites
- Residential Sites
- Pedestrian/Cyclist Enhancement
- River Trail Extension

The attached spreadsheet provides a sample format for use during the ranking of alternatives and selection of the preferred alternatives. Hypothetical projects are listed for example only and may bear no resemblance to actual projects that are identified and compared.

The first round of evaluation will use the scoring system shown. However, in many cases where alternatives are very similar, this system does not provide sufficient differentiation between alternatives and it becomes necessary to use an expanded ranking process using a point assignment system.

INDUSTRIAL/COMMERCIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
<i>Support the planned land use as defined in City planning documents for Business Parks, Industrial Sites and Residential Sites</i>		
Functional classification and design consistent with the area		
Minimizes commercial/industrial vehicular conflicts within other land use areas		
<i>Encourage development of commercial and industrial sites so as to</i>		
<i>Supports the long-term development plan and infrastructure expansion</i>		
<i>Accommodates forecast traffic volumes</i>		
<i>Improve vehicular access from industrial/commercial sites to U.S.</i>		
30		
<i>Improves safety at existing connections to U.S. 30 (site distance, geometric deficiencies, accidents)</i>		
<i>Improves capacity and/or V/C operations at existing connections to U.S. 30</i>		
<i>Addresses ODOT Standards</i>		
<i>Improve internal circulation and manage access for vehicular users in industrial sites</i>		
<i>Meets local access management guidelines</i>		
<i>Provides alternative travel routes for internal trips</i>		
<i>Meets local congestion management guidelines</i>		
<i>Provide all of the above in an environmentally sound and cost effective manner</i>		
<i>Minimizes impacts to sensitive areas</i>		
<i>Encourages use of alternative travel modes (rail, transit, non-motorized modes)</i>		

INDUSTRIAL/COMMERCIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
Score		
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.		
A score of 1 indicates that the proposed alternative achieves the stated goal/objective		
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect		
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective		

RESIDENTIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
<p>Support the planned land use as defined in City planning documents for Business Parks, Industrial Sites and Residential Sites</p>		
<p>Functional classification and design consistent with the area</p>		
<p>Supports redevelopment opportunities within residential areas</p>		
<p>Improve internal circulation and manage access for vehicular users in the local street systems</p>		
<p>Provides alternative travel routes for internal trips, reducing reliance on U.S. 30</p>		
<p>Discourages industrial traffic interaction with strictly residential areas</p>		
<p>Meets local congestion management guidelines</p>		
<p>Addresses ODOT Standards</p>		
<p>Support the development of a local street network that will reduce reliance on U.S. 30</p>		
<p>Provides or supports new roadway infrastructure parallel to U.S. 30</p>		
<p>Provides or supports new roadway infrastructure connecting to destinations within the residential communities (schools, parks, river trail)</p>		
<p>Improves capacity and/or V/C operations at existing connections to U.S. 30</p>		
<p>Addresses ODOT Standards</p>		
<p>Provide all of the above in an environmentally sound and cost effective manner</p>		
<p>Addresses traffic safety issues</p>		
<p>Minimizes impacts to sensitive areas</p>		
<p>Encourages use of alternative travel modes</p>		

RESIDENTIAL SITES Score	Highway 30 Intersection Improvements	New Circulation Roadway
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.		
A score of 1 indicates that the proposed alternative achieves the stated goal/objective		
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect		
A score of -1 indicates that the alteration has a negative effect or results in a situation contrary to the stated goal/objective		

PEDESTRIAN/CYCLIST ENHANCEMENT	New sidewalks	Highway 30 Crossing
Improve pedestrian and bicyclist connectivity and safety across U.S. 30.		
Facilitate movement of pedestrians across U.S. 30		
Addresses crossing safety issues		
Consistent with design standards		
Provides adequate facilities on both sides of crossing		
Connects desirable land uses		
Addresses ODOT Standards		
Improve internal circulation in industrial sites and local street systems		
Addresses pedestrian safety issues		
Consistent with design standards		
Provides continuous/direct pedestrian access		
Provide improved safety and direct access to the River Trail for new developments (north of U.S. 30)		
Address pedestrian safety issues		
Consistent with design standards		
Provide continuous/direct pedestrian access		
Provide for pedestrian safety along US 30		
43rd and 45th community center and playground		
Provide all of the above in an environmentally sound and cost effective manner		
Minimal impacts to sensitive areas		
Encourage use of alternative travel modes		
Minimal impacts to traffic operations		

	PEDESTRIAN/CYCLIST ENHANCEMENT	New sidewalks	Highway 30 Crossing
Improve pedestrian and bicyclist connectivity and safety across U.S. 30.			
Score			
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.			
A score of 1 indicates that the proposed alternative achieves the stated goal/objective			
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect			
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective			

RIVER TRAIL EXTENSION	Alignment 1	Alignment 2	Alignment 3
Support the extension of the River Trail through the east end of Astoria.			
Address trail user safety issues			
Consistent with design standards			
Provide continuous/direct alignment			
Connects desirable land uses (parks, schools, etc.)			
Provide all of the above in an environmentally sound and cost effective manner			
Minimize impact to sensitive areas			
Minimize impact to private property			
Promotes cost effectiveness			
Score			
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.			
A score of 1 indicates that the proposed alternative achieves the stated goal/objective			
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect			
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective			

Introduction

INTRODUCTION

The purpose of this project was to develop the City of Astoria (City) East Gateway Transportation Plan (Plan), a Transportation and Growth Management (TGM) funded project that will satisfy Transportation Planning Rule Requirements. The Plan will need to be approved by the City Council and the Oregon Department of Transportation (Agency or ODOT), and acknowledged by the Department of Land Conservation and Development (DLCD).

Project Context

This project produced a Plan for the City, consistent with the requirements of the TPR for incorporated cities with population under 10,000. Preparation and adoption of the Plan for the City will provide the following benefits:

- Provide adequate planned transportation facilities to support planned land uses over the next 20 years;
- Provide certainty and predictability for the siting of new streets, roads, highway improvements, and other planned transportation improvements;
- Provide predictability and incentive for land development, and
- Help reduce the cost and maximize the efficiency of public spending on transportation facilities and services by coordinating land use and transportation decisions.

The planning area to be studied was along U.S. Highway 30, between 33rd Street and Liberty Lane in eastern Astoria. The Plan accomplishes the following:

- Addresses improvements necessary to make the area attractive to developers, industrial and port users, nearby residents, and other users of the street and highway system and waterfront.
- Provides a list of short term and long term improvements that will assist both the developers of the Astoria Business Park, North Tongue Point industrial parks, and the Blue Ridge residential subdivision with ready-to-implement solutions for access from Highway 30 as well as internal circulation and local street systems
- Provides a plan for an internal street system that can reduce local use of U.S. Highway 30.
- Provides a plan for crosswalks and signals to enable residents south of U.S. Highway 30 to gain pedestrian access to the River Trail and East Mooring Basin.
- Provides a plan for an extension of the River Trail through the east end of Astoria to the east side of Alderbrook Lagoon to serve the community and visitors
- Provides a concept plan for access and circulation for the undeveloped land owned by the Port, Oregon State University (OSU), and private landowners including the Astoria Business Park and North Tongue Point, including an access management plan and an internal circulation plan for the industrial lands.

Plan Policy Review

City of Astoria East Gateway Plan - Review of Existing Plans, Standards, and Policies

PREPARED FOR: ODOT/City of Astoria
PREPARED BY: Frank Angelo and Shayna Rehberg, Angelo Eaton & Associates
DATE: June 16, 2005

I. Background

This memorandum provides a summary of plans and policies that affect the East Gateway Transportation Plan process and planning area. The East Gateway Transportation Plan is generally intended to address transportation improvements that will prepare the area for redevelopment as well as increase access across US 30 (Marine Drive) and between the highway and the Columbia River for Astoria residents, businesses, and other users. Identifying short-term and long-term projects to improve access from US 30 and internally within the area north of US 30 serving the Astoria Business Park, North Tongue Point Industrial Park, and Blue Ridge subdivision is of particular interest. Planning crosswalks and signals for improved pedestrian access across US 30 (Marine Drive) and an extension of the River Trail through East Astoria to the east side of the Alderbrook Lagoon will also be important aspects of the East Gateway Transportation Plan.

Ultimately the plan should provide the following: adequate planned transportation facilities to accommodate land uses planned for the next 20 years; predictability for the siting of new transportation facilities and improvements; reassurance and incentive for developers; and optimal public investment in planned transportation facilities that have been coordinated with planned land uses.

This Plan and Policy Review highlights the goals, policies, and projects that relate to planning in East Gateway. It is the goal of the Gateway Transportation Plan to incorporate the common direction shared by prior planning efforts as well as resolve any discrepancies among them.

II. Planning Area Description

The planning area for the East Gateway Transportation Plan spans the length of US 30 (Lower Columbia River Highway) from 33rd Street east to Liberty Lane in eastern Astoria. The area is generally characterized by a mixture of port, industrial, commercial, public, and residential uses to the north of the highway and along the Columbia River, and by residential neighborhoods and hillside to the south of the highway.

The planning area predominantly lies within the city limits and Urban Growth Boundary (UGB) of the City of Astoria. The exceptions are a portion of US 30, from milepost 94.67 to Liberty Lane, which falls outside both the city limits and the UGB, and Tongue Neck and Tongue Point, which are located outside city limits but inside the UGB. The land on Tongue Neck and Tongue Point is the site of a Coast Guard facility and Job Corps center and is federally owned. This land is circled on a map of eastern Astoria included as Appendix A.

In terms of zoning, land along US 30 in the western portion of the planning area (the Uppertown and Alderbrook neighborhoods) is mainly zoned medium-density residential and general and neighborhood commercial (R-2, C-3, and C-1). A mixture of higher-density residential (R-3), institutional (IN), industrial and development shoreland (S-1 and S-2), and natural aquatic (A-4) zoning is found along US 30 in the eastern portion of the planning area. Upland of the residential zones to the south of US 30 is a large continuous zone entitled Land Reserve (LR).

Along the Columbia River throughout the planning area, development, conservation, and natural aquatic (A-1, A-3, A-4), industrial, development, and natural shoreland (S-1, S-2, S-5), institutional (IN), and general industrial (GI) zoning predominates. A specialty zone DMD (Dredge Material Disposal) is located between US 30 and the shoreland in South Tongue Point in the eastern portion of the planning area.

Appendix B outlines the permitted and conditional uses and the lot specifications in the Astoria Zoning and Development Code for each of these zones.

III. Applicable Plans and Policies

The purpose of this section is to highlight plans and policies from state and local documents that may have some bearing on the East Gateway Transportation Plan. The documents reviewed for applicable plans and policies include:

State Documents

1. TPR (Oregon Administrative Rule [OAR] 660-012)
2. Access Management Rules (OAR 734-051)
3. Traffic Control Rules (OAR 734-020)
4. 1992 Oregon Transportation Plan
5. 1999 Oregon Highway Plan
6. 2001 Oregon Rail Plan
7. 1995 Oregon Bicycle and Pedestrian Plan
8. 1995 Oregon Transportation Safety Action Plan
9. 1997 Oregon Public Transportation Plan
10. 1999 Freight Moves the Oregon Economy
11. 2000 Oregon Aviation Plan
12. 2003 Highway Design Manual
13. 1999 Portland - Astoria (US 30) Corridor Plan Summary
14. 2003 Oregon State Marine Board Layout and Design Guidelines

Local/Regional Documents

15. 1979 Astoria Comprehensive Plan
16. 1991 Urban Growth Boundary Area Joint Management Agreement (Clatsop County/City of Astoria)
17. Gateway Overlay Zone (GO), Astoria Development Code, Sections 14.005 - 14.340
18. 1999 City of Astoria Transportation System Plan (TSP)
19. 2004 Sunset Empire Transportation City and Regional Bus Service Schedule
20. 1990 Waterfront Planning Study
21. 1997 Astoria Gateway Master Plan
22. 1999 Astoria Gateway Area Transportation and Growth Management Plan
23. 1972 Division of State Lands Tongue Point Study
24. 1989 Tongue Point Naval Engineering Study
25. 1994 South Tongue Point Land Exchange and Marine Industrial Park Development Project, Final Environmental Impact Statement
26. 1999 Master Development Plan for North Tongue Point
27. 2004 Immediate Opportunity Fund Application
28. 2004 Astoria Business Park Platting
29. Capital Improvement Documents

TPR (Oregon Administrative Rule [OAR] 660-012)

OAR 660, Division 12, was adopted in 1991 to implement *Goal 12 Transportation* of Oregon's land use planning program and coordinate land use and transportation planning in the state. The Transportation Planning Rule (TPR) guides transportation planning and project development in Oregon, and requires jurisdictions with populations greater than 2,500 to develop Transportation System Plans (TSPs). The City of Astoria adopted its TSP in 1999, and the East Gateway Transportation Plan is intended to be used as input to a refinement plan that may be developed in the future. Development of the refinement plan is not included in the Statement of Work for the East Gateway Transportation Plan. The TPR defines a refinement plan as an amendment to the TSP, which addresses an issue of transportation facility function, mode, or location that was not foreseen or able to be resolved during development of the TSP.

Modal Elements of a TSP

Given that it may be used as input to a future amendment to the Astoria TSP, the East Gateway Transportation Plan may address some of the modal elements that are required of TSPs. OAR 660-012-0020 outlines these elements, which are summarized in Table 1 below.

Table 1: Elements of a Transportation System Plan (TSP)

Element	Features
1. Determination of transportation needs as provided in OAR 660-012-0030	<ul style="list-style-type: none"> ◦ State, regional, and local needs based on population and employment forecasts and allocations made in comprehensive plan (forecasts and allocations of 20 years or more) ◦ State, regional, and local needs based on measures adopted to reduce automobile reliance

Element	Features
	<ul style="list-style-type: none"> ◦ Needs of transportation disadvantaged ◦ Needs for movement of goods and services
<p>2. A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections</p>	<ul style="list-style-type: none"> ◦ Functional classifications that are consistent with regional/county and state classifications ◦ Layout that allows for safe and convenient walking and bicycling ◦ Layout that abides by appropriate access management standards ◦ Standards for extending existing streets, connecting to existing streets, and connecting to neighborhood destinations
<p>3. A public transportation plan</p>	<ul style="list-style-type: none"> ◦ Needs for transportation disadvantaged ◦ Existing intercity bus and passenger rail terminals and services ◦ Existing or planned transit system and services
<p>4. A bicycle and pedestrian plan</p>	<ul style="list-style-type: none"> ◦ Subject to state statute (ORS 366.514) for funding footpaths and bicycle trails ◦ Measures for connecting destinations, including pathways between cul-de-sacs and adjacent roadways, pathways between buildings, and direct access between adjacent uses
<p>5. An air, rail, water and pipeline transportation plan</p>	<ul style="list-style-type: none"> ◦ Existing and planned facilities, including areas of airport noise contours
<p>6. Policies and land use regulations to implement the plan</p>	
<p>7. Transportation financing program</p>	<ul style="list-style-type: none"> ◦ List of planned transportation improvements ◦ Estimate of timing for improvements ◦ Estimate of cost

The mode elements must include an inventory of the existing and planned system as well as a discussion of each system's capacity, including the assumptions made in calculating capacity. Capacity of state and regional facilities will be subject to state and regional performance standards. The inventories must also rate the condition of the facilities on a scale of very good to very poor.

Each mode element shall also describe planned facilities, services, and other significant improvements, including the type or functional classification of the improvement, the amount of capacity it will provide, its location (map) and dimensions, and the land and right-of-way needed.

Alternatives Analysis

Per OAR 660-012-0035, the transportation system improvements presented in each mode element must undergo an alternatives analysis that considers the following:

1. Improvements to existing facilities and services;
2. New facilities and services including substitutions or combinations across modes;
3. Transportation system management measures;
4. Transportation demand management measures; and
5. A no-build scenario.

The City is also permitted to evaluate alternative land use designations, densities, and design standards in order to accommodate projected transportation need.

Selection of an alternative to be incorporated into the plan shall be based upon transportation facilities and services that:

1. Correspond to the surrounding land use designations;
2. Meet state and federal environmental regulations;
3. Reduce automobile reliance; and
4. Minimize negative economic, social, environmental, and energy effects; and
5. Reduce conflicts between modes.

TSP Implementation and Land Use Regulations

Implementation of a TSP is guided by OAR 660-012-0045. The City must amend its land use regulations if necessary for the implementation of the TSP or its amendments. Section -0045 requires that the City adopt land use and subdivision regulations to protect the safety and performance of transportation facilities, which include:

1. Access management;
2. Standards for roads that serve as transitways or transit corridors;
3. Restricted land uses within public airport noise corridors;
4. Coordinated intergovernmental land use review;
5. A process for applying conditions of approval that minimize impacts on transportation facilities;
6. Notice to other public providers of transportation facilities and services; and
7. Regulations that assure that amendments to City land use designations, densities, or design standards made in order to meet projected transportation need are consistent with the functions, capacities, and performance standards of transportation facilities specified in the TSP.

Section -0045 also lays out the standards that new or amended land use and subdivision regulations must address in order to implement a bicycle and pedestrian system that is safe, convenient, and connects activity centers. Safety and convenience are defined in terms of absence of hazards, lower levels of vehicle traffic, direct routes between destinations, and average trip distances.

Access Management Rules (OAR 734-051)

OAR 734-051 establishes the State's role in managing access to highway facilities in order to maintain and maximize the transportation facility's function and safety. The Rule's purpose is:

to provide a safe and efficient transportation system through the preservation of public safety, the improvement and development of transportation facilities, the protection of highway traffic from the hazards of unrestricted and unregulated entry from adjacent property, and the elimination of hazards due to highway grade intersections (OAR 734-051-0020).

US 30, the most significant transportation facility in the East Gateway Transportation Plan planning area, is a statewide highway and a part of the National Highway System (NHS).

Application for Approaches and Access

Sections -0700, -0800, and -0085 describe the procedure and approval criteria if the City were to apply to the Oregon Department of Transportation (ODOT) for a new approach, a temporary approach, a restricted use approach, or a change in the use of an approach to state Highway 30. The design of approaches to a state highway and mitigation measures that might be required for approaches that do not conform to the design or spacing standards in this rule are governed by Sections -0145 and -0165, which include reference to the 2002 Oregon Highway Design Manual. Sections -0175 to -0265 direct the permitting, construction, and maintenance of approaches.

If approaches are to be removed or access is to be granted or indentured as part of implementing the East Gateway Transportation Plan, the City will need to refer to Sections -0275 (Removal of Approaches) and -0295 to -0355 (Grants and Indentures of Access).

Access Spacing Standards

Section -0115 (Access Management Spacing Standards for Approaches) specifies the spacing standards for approaches to state highways, and Table 2 of Section -0115 summarizes the spacing standards for Private and Public Approaches on Statewide Highways. The standards pertaining to US 30 are represented below.

Table 2: Spacing Standards for Approaches to Statewide Highways

Posted Speed	Spacing in Feet
55 mph or more	1,320
50 mph	1,100
40-45 mph	990
30-35 mph	770
25 mph or less	550

Deviations from the spacing standards may be granted for reasons of safety, operational integrity, consolidation of approaches, necessary access to a property, or conflict with a significant natural or historic feature. Criteria for deviations are specified in Section -0135.

Access Management Plans and Strategies

Section 734-051-0155 encourages the development of Access Management Plans to maintain highway performance and improve safety by improving system efficiency and management before adding capacity. This is consistent with policies set forth in the 1999 Oregon Highway Plan. Per Section -0285, Access Management Plans and Access Management Strategies are to be developed during the project delivery phase of highway and interchange construction, modernization, preservation, operations, or other projects.

Traffic Control Rules (OAR 734-020)

Sections 0400 to 0500 of the state Traffic Control Rules (OAR 734-020) address traffic signals, which may warranted at one or more intersections on US 30 in the study area. Section 0430 establishes the ultimate authority of the State Traffic Engineer to approve new traffic signals, even when the signals have been identified in land use plans, corridor plans, or capital improvement documents approved by ODOT. Signals approved by the State Traffic Engineer are added to a Traffic Signal List maintained by the ODOT Traffic Management Section and prioritized by each ODOT Region. Applicants requesting approval for a new traffic signal at the intersection of a state highway and a public road must submit the following to the State Traffic Engineer, according to Section 0440:

- (a) A letter of concurrence signed by the Region Traffic Engineer which documents discussions with, and support of, affected local agencies; and
- (b) A traffic engineering investigation with considerations as established in OAR 734-020-0460. The traffic engineering investigation shall:
 - (A) Clearly indicate the need for a traffic signal; and
 - (B) Provide documentation of traffic volumes and appropriate signal warrant satisfaction.

Factors that are considered in reviewing the application include:

- (1) A traffic signal shall not be installed unless one or more of the eleven warrants identified in the MUTCD, Part IV, Chapter C, Sections 3 through 10 are met or will be met consistent with the requirements of OAR 734-020-0490. Only MUTCD warrants 1 and 2 may be used to project a future need for a traffic signal. The satisfaction of a warrant or warrants, however, is not in itself justification for a traffic signal.
- (2) Information to determine the need for a traffic signal shall be obtained by means of comprehensive investigation of traffic conditions and physical characteristics of the proposed traffic signal location and compared with the requirements set forth in the traffic signal warrants and appropriate highway design standards.

(3) The traffic engineering investigation shall indicate the installation of a traffic signal would improve the overall safety and operation of the intersection.

(4) Other roadway factors to be considered include, but are not limited to speed, type of highway, grades, sight distance, existing level of service, conflicting accesses, alternate accesses, and effect on existing or future traffic signal systems.

(5) The placement of traffic signals shall conform to the requirements of the 1999 Oregon Highway Plan.

According to Section 0470, signals must be spaced at least one-half mile apart unless a case based on topography, safety, or other arguments can be made. Sections 0480 to 0500 establish measures to monitor whether warrants are met and to remove signals if warrants are not met.

1992 Oregon Transportation Plan

The 1992 Oregon Transportation Plan (OTP) serves as the state's comprehensive transportation plan. The opening section of the OTP entitled "The Vision" states the plan's purpose.

The purpose of the Oregon Transportation Plan is to guide the development of a safe, convenient and efficient transportation system which promotes economic prosperity and livability for all Oregonians.

The Vision also presents benchmarks measuring mobility, livability, and economic prosperity, and sets goals for the benchmarks for the year 2010. It discusses the transportation implications of population growth, economic development and globalization, environmental protection, changing development patterns, and technological advances.

The OTP establishes four sets of goals for the state's transportation system, which apply to statewide highways like US 30 in the planning area.

1. *Characteristics of the System – To enhance Oregon's quality of life and comparative economic advantage by the provision of a transportation system with the following characteristics.*

- *Balance*
- *Efficiency*
- *Accessibility*
- *Environmental Responsibility*
- *Connectivity among Places*
- *Connectivity among Modes and Carriers*
- *Safety*
- *Financial Stability*

2. *Livability – To develop a multimodal transportation system that provides access to the entire state, supports, acknowledged comprehensive land use plans, is sensitive to regional differences, and supports livability in urban and rural areas.*

3. *Economic Development – To promote the expansion and diversity of Oregon's economy through the efficient movement of goods, services and passengers in a safe, energy efficient and environmentally sound manner.*

4. *Implementation – To implement the Transportation Plan by creating a stable but flexible financing system, by using good management practices, by supporting transportation research and technology, and*

by working cooperatively with federal, regional and local governments, Indian tribal governments, the private sector and citizens.

The OTP consists of the five modal elements below, addressed in the following sections.

- 1999 Oregon Highway Plan;
- 2001 Oregon Rail Plan;
- 1995 Oregon Bicycle and Pedestrian Plan;
- 1995 Oregon Transportation Safety Action Plan; and
- 1997 Oregon Public Transportation Plan.

1999 Oregon Highway Plan

The 1999 Oregon Highway Plan (OHP) guides the planning, operations, and financing of ODOT's Highway Division. The OHP policies most relevant to the East Gateway Transportation Plan are:

- Policy 1A: State Highway Classification System,
- Policy 1B: Land Use and Transportation,
- Policy 1C: State Highway Freight System,
- Policy 1E: Lifeline Routes
- Policy 1F: Highway Mobility Standards,
- Policy 1G: Major Improvements,
- Policy 2A: Partnerships,
- Policy 2B: Off-System Improvements,
- Policy 2C: Interjurisdictional Transfers,
- Policy 2D: Public Involvement
- Policy 2F: Traffic Safety,
- Policy 3A: Classification and Spacing Standards,
- Policy 3B: Medians, and
- Policy 4A: Efficiency of Freight Movement.

Policy 1A: State Highway Classification System

The state highway classification system includes five classifications: Interstate, Statewide, Regional, District, and Local Interest Roads. It also establishes four special purpose categories: land use, statewide freight route, scenic byways, and lifeline routes. US 30 in the East Gateway planning area is classified as a statewide highway and part of the National Highway System (NHS). Statewide highways are supposed to provide inter-urban and inter-regional connections to large urban areas, ports, and major recreation areas, and are managed for safe, efficient, high-speed, and continuous flow.

Policy 1B: Land Use and Transportation

Policy 1B calls for coordination between the State and local governments in land use and transportation planning and in transportation system management. This may include collaboration on land use and development ordinances, joint land use application review,

conditions of development approval, and access management. The State should work with local governments in developing a viable local street network, encouraging clustered development of highways, and preparing corridor plans and transportation system plans. Coordination in these arenas is intended to maximize public investment and accomplish the following objectives:

- *Maintain the mobility and safety of the highway system;*
- *Foster compact development patterns in communities;*
- *Encourage the availability and use of transportation alternatives;*
- *Enhance livability and economic competitiveness; and*
- *Support acknowledged regional, city and county transportation system plans that are consistent with this Highway Plan.*

The policy creates Special Transportation Area, Commercial Center, Urban Business Area, and Urban designations to address the interface between statewide highways and local circulation needs. While none of these designations currently apply to the planning area, state and local coordination of land use and transportation in the East Gateway Transportation Plan is critical.

Policy 1C: State Highway Freight System

US 30 is classified as a state freight route. Policy 1C defines a freight route's function in the efficient and through movement of goods, while recognizing the balance that must be struck between freight and other uses of the highway. The policy calls for the consideration of freight timeliness in the development of plans affecting a freight route. Other actions recommended by the policy include the application of performance standards appropriate to freight on freight routes and a study of freight transportation on a statewide level, which were implemented, in part, by the 1999 study entitled *Freight Moves the Oregon Economy*, reviewed later in this memorandum.

Policy 1E: Lifeline Routes

US 30 is a state-designated lifeline route. Policy 1E declares the State's responsibility in ensuring adequate transportation facilities and plans for emergency service response and economic recovery following natural and other disasters. The policy calls for criteria for the determination of lifeline routes as well as funding and partnerships to secure improvements on lifeline routes. Facilities designated as lifeline routes should also receive priority in state system management and investment decisions and in state coordination with local governments for transportation and land use planning. Transportation system and corridor planning should emphasize improvements on lifeline routes that limit the route's own vulnerability to natural hazards and disasters.

According to Astoria's Public Works Director, the City has participated in countywide planning efforts to provide emergency response access and evacuation routes for disasters that may affect Astoria.

Policy 1F: Highway Mobility Standards

Policy 1F sets highway mobility standards in order to “maintain acceptable and reliable levels of mobility on the state highway system.” However, as noted in the 2003 Highway Design Manual, these standards are for planning purposes only, not project design.

Mobility standards in the OHP are given in terms of volume-to-capacity ratios (v/c) for the peak hour (30th highest hour). According to Action 1F.1, standards for statewide highways outside the Portland metropolitan region, outside of Metropolitan Planning Organization (MPO) jurisdiction, inside a UGB, and on non-freeway segments where posted speed limits are 45 mph and greater are 0.70 v/c. Where posted speed limits are less than 45 mph, the standards are 0.75 v/c. These standards will apply to practically all of the planning area. For the small portion of the planning area outside the UGB, the standards for statewide highways are 0.70 v/c.

Actions 1F.3, 1F.5, and 1F.6 suggest alternative standards for situations in which the standards are exceeded including prevention of further degradation of highway mobility when evaluating plan amendments subject to TPR review in areas where mobility standards are already exceeded.

The East Gateway Transportation Plan may be used as input to a refinement and amendment to the City’s Transportation System Plan. Regarding amendments to TSPs, Action 1F.2 states that:

When evaluating highway mobility for amendments to transportation system plans, acknowledged comprehensive plans and land use regulations, use the planning horizons in adopted local and regional transportation system plans or a planning horizon of 15 years from the proposed date of amendment adoption, whichever is greater.

Policy 1G: Major Improvements

Policy 1G states that:

It is the policy of the State of Oregon to maintain highway performance and improve safety by improving system efficiency and management before adding capacity.

The policy proceeds to prioritize the actions that should be taken by transportation system plans, refinement and corridor plans, and project plans, which will apply to the East Gateway Transportation Plan as it is a potential input for a refinement plan.

1. Protect the existing system. The highest priority is to preserve the functionality of the existing highway system by means such as access management, local comprehensive plans, transportation demand management, improved traffic operations, and alternative modes of transportation.

2. Improve efficiency and capacity of existing highway facilities. The second priority is to make minor improvements to existing highway facilities such as widening highway shoulders or adding auxiliary lanes, providing better access for alternative modes (e.g., bike lanes, sidewalks, bus shelters), extending or connecting local streets, and making other off-system improvements.

3. Add capacity to the existing system. The third priority is to make major roadway improvements to existing highway facilities such as adding general purpose lanes and making alignment corrections to accommodate legal size vehicles.

4. Add new facilities to the system. The lowest priority is to add new transportation facilities such as a new highway or bypass.

The East Gateway Transportation Plan should include system efficiency and management measures that could be instituted to avoid the costly construction of additional capacity. The plan will focus on the first two priorities above. Safe highway crossings, improved local street networks, and dedicated trails will help protect and increase the efficiency of the major state facility (US 30) in the planning area while providing better access for alternative modes and supporting recreation and economic development (tourism and industrial development).

Policy 2A: Partnerships

This policy calls for cooperation between the State and other jurisdictions and public agencies in order to "make more efficient and effective use of limited resources to develop, operate, and maintain the highway and road system." The partnership between ODOT and the City of Astoria in developing the East Gateway Transportation Plan is consistent with this policy.

Policy 2B: Off-System Improvements

Policy 2B calls for the State to financially assist local jurisdictions in developing, operating, and maintaining off-system improvements if they are a cost-effective way of maintaining or improving on-system function, safety and capacity, and if the local jurisdiction adopts land use plans and practices protecting the benefit created by the off-system improvements. This may arise with any improvements proposed off of the state Highway 30 system in the East Gateway Transportation Plan.

Policy 2C: Interjurisdictional Transfers

Interjurisdictional transfers may be considered in developing the East Gateway Transportation Plan only if transfers would simplify or lead to greater efficiencies in the management and operations of a particular roadway or corridor. These considerations are part of Policy 2C.

Policy 2D: Public Involvement

Policy 2D describes an effective public involvement program as an essential component of developing policies, plans, programs, and projects that affect state highways. Such a public involvement program should be integrated into the development and review of the East Gateway Transportation Plan.

Policy 2F: Traffic Safety

This policy calls for continually improving the safety of all users of the highway system. The East Gateway Transportation Plan should identify ways in which it will address safety deficiencies in the planning area, as well as ways to measure progress in addressing these deficiencies. Some of these improvements will pertain to crossing from the residential zones south of US 30 to commercial, industrial, and recreational uses north of US 30.

Policy 3A: Classification and Spacing Standards

This policy combines both the highway classification policies of OHP Policy 1A and the access management rules of OAR 734-051. Highways are to be managed for safe, efficient, high-speed continuous flow, and access should be purchased by ODOT, thereby limiting adverse impacts on the highway, whenever the opportunity arises. In essence, granting access to properties adjacent to the highway is secondary to allowing for inter-urban and inter-regional travel to major destinations. Spacing standards for approaches to the highway are included in Appendix C of the OHP, and are the same as those in Table 2 from OAR 734-051 (shown in Table 2 above). Policy 3D and Appendix C address deviations in spacing standards.

Policy 3B: Medians

Medians and openings in medians are to be located so as to increase efficiency and safety along the highway system. They are to be located with consideration for existing and planned uses surrounding the site. Allowing for the crossing from residential uses south of US 30 and commercial, industrial, residential, and recreational uses north of US 30 in the planning area should be accounted for in including any medians or median openings in the East Gateway Transportation Plan.

Policy 4A: Efficiency of Freight Movement

This policy calls for maintaining and increasing the efficiency of freight movement on state highways and improving freight vehicle (truck) connections to intermodal facilities, while balancing the needs of through traffic with local traffic. Identifying highway and roadway barriers to freight vehicles, encouraging the use of Intelligent Transportation Systems (ITS), improving roadways connecting highways and intermodal facilities, developing funding pools specifically to make transportation improvements benefiting freight movement, and working with private partners are all suggested actions for improving freight movement. This will apply

to the existing and planned industrial areas and ports within the East Gateway Transportation Plan planning area.

Policy 4B: Alternative Passenger Modes

It is the policy of the State of Oregon to advance and support alternative passenger transportation systems where travel demand, land use, and other factors indicate the potential for successful and effective development of alternative passenger modes.

This policy will apply to the planning area insofar as trips that may presently be made by vehicle between and within the residential zones to the south of US 30 and commercial, industrial, residential, and recreational uses to the north of US 30 could be made by non-motorized modes. This may be accomplished by implementing bicycle and pedestrian pathways developed as part of the East Gateway Transportation Plan.

Policy 5A: Environmental Resources and Policy 5B: Scenic Resources

Goal 5 of the OHP addresses the protection and improvement of environmental and scenic resources through the development and maintenance of the state highway system. These goals are also addressed in statewide land use planning goals as well as other state and federal environmental and cultural protection regulations. Implementation of these goals through the East Gateway Transportation will rely on an inventory of the environmental and scenic resources found in the planning area and coordination with landowners and other local, state, tribal, and federal public agencies.

2001 Oregon Rail Plan

According to City staff, the railroad corridor and track within Astoria city limits (5.0 miles) was deeded in fee to the City by Burlington Northern in 1996. Conditions of the transfer require the City to keep the corridor intact but do not restrict what the corridor is used for. The City has considered trolley operations and trail construction for the right-of-way. Outside city limits, Burlington Northern deeded the railroad right-of-way to the State of Oregon (ODOT) and sold the track to the Portland & Western shortline Railroad, whose parent company is Genesee and Wyoming Inc.¹ This rail system transports freight only, although it is currently out of service from milepost 73 to 100 in Astoria due to lack of customers. The 2001 Oregon Rail Plan (ORP) suggests that service may be re-established in the wake of industrial development and redevelopment in Astoria.

According to the City's 1999 Transportation System Plan (TSP), passenger rail does not serve Astoria. The closest passenger rail station is in Kelso, Washington, serving Seattle, Portland, and other major cities.

The following is the Vision for both freight and passenger rail service set forth in the 2001 ORP:

¹ A map of Genesee and Wyoming Inc's network in Oregon can be viewed at <http://www.gwrr.com/default.cfm?action=rail§ion=3B4c#>

The State of Oregon will work with carriers, shippers and other groups to maintain and improve access to the national rail freight system, maintain a competitive environment for rail customers, strengthen the retention of local rail service, and assure a level playing field for all modes.

The State of Oregon should have an enhanced intercity rail passenger service as part of a balanced transportation system. The rail passenger system shall operate efficiently, provide access to potential users, and comply with federal and state environmental and land use standards. Convenient connections should be developed with air, intercity bus and transit that integrate trains into a passenger network linking all areas of the state, nation and world.

High safety and compliance standards are required for the operating, construction and maintenance of the Oregon Rail System. The State of Oregon should develop adequate funding sources, both public and private, to finance the modernization of both rail passenger and freight service. Implementation should take place as rapidly as permitted by financial, design, construction, equipment and market considerations.

The State of Oregon will work with other state agencies, regional and local jurisdictions and the general public to integrate rail freight and passenger elements into land use and transportation planning processes. This will include working with private companies and public sector agencies to operate the rail system in safe manner for the users of the system and public in general.

Freight Rail

The East Gateway Transportation Plan may relate to freight rail insofar as new intermodal connections (roadways) to rail are proposed in the planning area, and where other proposed improvements are planned in close proximity to the area's existing railroad (Portland and Western Railroad). Because of ODOT Rail Division's authority to regulate railroad crossing safety, any road work within 500 feet of the railway needs to be coordinated with the Rail Division.

The East Gateway Transportation Plan should accommodate the freight level of service standards pertaining to marine ports and branch lines.

1. Connections to deep draft ports should be available under open access terms to all major railroads and trucking lines in the nearby vicinity of maritime port terminals where feasible (e.g. Astoria, Portland, Coos Bay and Newport).
3. Ports and port systems handling substantial quantities of international and national freight (more than 3 million tons) should have multimodal connections, be able to operate in the international marketplace and have access to rail freight service (e.g. the lower Columbia River and Coos Bay).

5. Branch rail lines within Oregon should be maintained to allow a minimum speed of operation of 25 miles per hour whenever upgrading can be achieved with a favorable cost-benefit ratio.

According to the ORP, the Oregon Transportation Commission (OTC) established the following policies for freight rail in 1994:

Policy 1: Increase economic opportunities for the State by having a viable and competitive rail system.

Policy 2: Strengthen the retention of local rail service where feasible.

Policy 3: Protect abandoned rights-of-way for alternative or future use.

Policy 4: Integrate rail freight considerations into the State's land use planning process.

The East Gateway Transportation Plan should assist in maintaining or improving the efficiency of freight rail service in Astoria in order to promote the region and state's economic competitiveness in the event that the branch line reestablishes service. Local rail service may not currently be viable, but industrial development and redevelopment may reverse this. In the meantime the rail right-of-way has been identified for use as a river bank trail in the City's 1999 TSP.² The East Gateway Transportation Plan should address methods to accommodate both recreation and freight services in the right-of-way, and address any potential conflicts.

Passenger Rail

According to the Passenger Rail Element of the ORP, Astoria is connected to Kelso passenger rail service by existing intercity bus service and to Portland by existing intercity bus (via Tillamook) and by thruway motorcoach. A general rule for extending passenger rail service to an area is the route's ability to average 75 passengers per train on a typically three-car train. There are no plans or recommendations made in the Passenger Rail Element for extension of passenger rail service to Astoria, let alone in the railroad right-of-way located in the East Gateway planning area.

1995 Oregon Bicycle and Pedestrian Plan

Sections of the 1995 Oregon Bicycle and Pedestrian Plan (OBPP) that are applicable to the East Gateway Transportation Plan are found in Parts 1 and 2, "The Policy Action Plan" and "The Planning, Design, Maintenance and Safety of Bikeways and Walkways".

The Policy Action Plan

The program goal set out in The Policy Action Plan is:

² As noted in the ORP, the right-of-way for the Astoria branch is entirely owned by ODOT, donated to the agency when Portland and Western Railroad acquired the track and supporting structures.

To provide safe, accessible and convenient bicycling and walking facilities and support and encourage increased levels of bicycling and walking.

The OBPP urges the integration of bicycling and walking facilities into all the planning, construction, and maintenance work of ODOT and for ODOT to provide financial and technical assistance in incorporating bicycling and walking facilities into local streets. In order to ensure safety and accessibility of bicycling and walking facilities, the OBPP calls for best practices in design standards, clear marking of routes, and maintenance to keep pathways clear of debris and obstructions.

The Policy Action Plan cites OTP policy that emphasizes bicycling and walking as essential modes of transportation:

It is the policy of the State of Oregon to promote safe, comfortable travel for pedestrians and bicyclists along travel corridors and within existing communities and new developments.

Make walkways, pedestrian shelters and bikeways an integral part of the circulation pattern within and between communities to enhance safe interactions between motor vehicles and pedestrians and bicyclists, using techniques such as:

- Renovating arterials and major collectors with bike lanes and walkways and designing intersections to encourage bicycling and walking for commuting and local travel.
- Developing all transit centers near residential areas to be safely and expeditiously accessible to pedestrians and bicyclists.

The Policy Action Plan also addresses ODOT policy passed in 1993 to enhance pedestrian and bicycle facilities in urban areas. The following policies may apply to construction, modernization, preservation, and safety projects proposed in the East Gateway Transportation Plan:

1. ODOT shall include the appropriate bikeways and walkways on modernization projects inside a UGB, except on controlled access freeways, as required by ORS 366.514. Bikeways and walkways are not required if one of these three exceptions is met:
 - a) The establishment of bikeways and walkways is contrary to public safety;
 - b) The cost of establishing bikeways and walkways is excessively disproportionate to the need or probable use; or
 - c) Sparsity of population, other available ways or other factors indicate an absence of any need for bikeways and walkways.

If one or more of these exceptions are met, and bikeways or walkways will not be included on a project, the design shall not preclude their construction in the future. The design of intersections and interchanges shall accommodate bicyclists and pedestrians in a manner that is both safe and convenient.

2. On other projects, such as preservation, 3R (resurfacing, restoration and rehabilitation), operation or safety improvements, ODOT will consider the need for bikeways and walkways.

3. In the development of the State Transportation Improvement Program (STIP), ODOT will consider projects that upgrade the roadway with bikeways and walkways to provide continuity.

4. ODOT may require developers to provide adequate bikeways and walkways.

5. Funding:

a) ODOT will negotiate with a local jurisdiction to share cost.

b) In absence of an agreement, ODOT is obligated to provide bikeways and walkways when constructing, reconstructing or relocating a highway, as required by ORS 366.514.

6. Responsibility for maintenance of bikeways and walkways shall be covered in the agreement with local jurisdiction.

Exceptions for non-inclusion of bikeways and walkways shall be approved by the Region Manager and the Technical Services Managing Engineer. The exceptions shall be documented by the Project Development Team or the Project Development Team Manager, with supporting data that indicates basis for decision.

The Planning, Design, Maintenance and Safety of Bikeways and Walkways

OBPP's Four Principles of Bikeway and Walkway Planning propose the following strategies in creating effective bikeway and walkway networks:

1. Accommodating bicyclists and pedestrians on arterial and collector streets;
2. Providing appropriate facilities;
3. Creating and maintaining a system of closely spaced, interconnected local streets; and
4. Overcoming barriers such as freeway crossings, intersections, rivers and canyons.

The Planning, Design, Maintenance and Safety of Bikeways and Walkways also provides facility design standards for the following, any of which may be employed in developing the East Gateway Transportation Plan:

- on-road bikeways,
- restriping existing roadways for bike lanes,
- bicycle parking,
- walkways,
- street crossing,
- multi-use paths,
- intersections,
- signing and marking, and
- traffic calming.

A multi-use path along the Columbia River will be a key element of the East Gateway Transportation Plan. Multi-use path standards include balancing limited crossings at roadways

and driveways with accessibility, providing lighting and ample sight distance, keeping well-maintained, and including bicycle and pedestrian facilities (wide shoulders, bike lanes, and sidewalks) on nearby roadways. The design standards suggest 10 feet (3m) of width, 10 feet (3m) of overhead clearance, and 3 feet (1m) of graded shoulder on each side of the path. The standards also guide path geometry, grading, crossings, pavement structure, crossings, fencing and barriers, drainage, and vegetation.

1995 Oregon Transportation Safety Action Plan

A safe transportation system is a common goal in transportation planning. In the four overarching goals presented in the OTP, safety is specified as a critical element of a transportation system that provides for the quality of life and economic well-being of Oregonians. Further, Policies 1G and 2F of the OTP explicitly address the priority of safety improvements in transportation system development, urging the creation of a Safety Action Plan as implementation of these policies.

Of the largely enforcement, education, and programmatic Actions proposed in the 1995 Oregon Transportation Safety Action Plan (OTSAP), those dealing with facility design have the most direct bearing on the East Gateway Transportation Plan. The Actions include:

Action 19 - Consider the roadway, human, and vehicle elements of safety in modal, corridor and local system plan development and implementation. These plans should include the following:

- Involvement in the planning process of engineering, enforcement, and emergency service personnel as well as local transportation safety groups.
- Safety objectives.
- Resolution of goal conflicts between safety and other issues.
- Application of access management standards to corridor and system planning.

Action 20 - In planning and project development, consider access management techniques which show significant improvements in safety for the roadway user. Access management techniques which may be used individually or in various combinations include the following:

- Appropriate access and public street spacing and design.
- Proper spacing and coordination of traffic signals.
- Installation of non-traversable medians.
- Proper spacing and design of median openings.
- Provision of lanes for turning traffic.

- Interparcel circulation.
- Use of city and county road infrastructure as an alternative to increased access.
- Protection of the functional area of an intersection.
- Proper spacing of interchanges.

Action 21 - Consider safety—including the special needs of motorcyclists, bicyclists, and pedestrians—in all road maintenance functions.

Action 22 - With consideration to the scenic quality of the roadway, use vegetation management techniques to accomplish the following:

- Reduce ice on roadway.
- Increase visibility in deer crossing areas.
- Eliminate “tunnel like” corridors and provide variation along roadway edges to keep drivers alert.
- Remove clear zone hazards.
- Remove hazard trees.
- Improve visibility of signs and roadway markings.
- Improve sight distance at intersections.

1997 Oregon Public Transportation Plan

Sunset Empire Transportation District coordinates transit service in Astoria. The district contracts for both demand response (dial-a-ride) and fixed route service. Routes and stops shown in the City's 1999 TSP are organized into West, South, and East Loops. In the East Gateway Transportation Plan planning area, the East Loop runs along portions of 33rd Street, Franklin Street, Cedar Street, Old Columbia River Highway, and US 30 (Leif Erickson Drive). The area features five stops.³ Pierce Pacific Stage Lines offers intercity service between Astoria and Portland, one trip daily in each direction.

Goals 1 and 2 of the 1997 Oregon Public Transportation Plan (OPTP) apply most directly to the East Gateway Transportation Plan. Goal 1, *Purpose of the Public Transportation System*, reads:

The public transportation plan should provide mobility alternatives to meet daily medical, employment educational, business and leisure needs without dependence on single-

³ Routes and stops are illustrated in Figure 3-6 of the Astoria Transportation System Plan, July 1999.

occupant vehicle transportation. The system should enhance livability and economic opportunities for all Oregonians, and lessen the transportation system's impact on the environment. The public transportation system should provide services and meet transportation needs in a coordinated, integrated and efficient manner.

Transportation planning for the East Gateway area will address connections to new industrial, business, residential, and recreational development in the city, and public transportation should be considered as a way to link residents to these resources. Clustering these uses in the planning area will help make public transportation more viable, as will improving bicycle and pedestrian facilities. Maintaining and improving the City's current transit services can also play a part in protecting valuable shoreline habitat, water quality, and air quality in the planning area. An effective transit system in the East Gateway planning area may also free up roadway capacity for developing industry in the area.

Goal 2, *The Components of a Public Transportation System*, addresses public transportation in small cities:

Public transportation should be provided in small cities and towns in a manner appropriate for their size, density and locally identified needs. At a minimum, public transportation should serve the transportation disadvantaged with rideshare, volunteer programs, taxis, or minibus services.

The East Gateway Transportation Plan should outline ways in which development and redevelopment in the planning area, and the transportation infrastructure planned to serve it, will be made accessible to the transportation disadvantaged.

1999 Freight Moves the Oregon Economy

Historically, Astoria has provided intermodal connections between marine, rail, and vehicle freight transportation. Other statewide plans reviewed in this memorandum have already addressed US 30 in the planning area as a national highway and freight route. Freight rail in the planning area is currently defunct, but may be reactivated with industrial development and redevelopment in the area. The 1999 report *Freight Moves the Oregon Economy* identifies Astoria's deep draft port as part of the city's freight profile.

Because a majority (both in weight and in value) of freight in Oregon moves by vehicle, the report includes proposed performance measures for freight routes.⁴ The measures are shown below in Table 3.

⁴ Table III-1 in Chapter 3, page 58 of *Freight Moves the Oregon Economy*.

Table 3: Proposed Freight Route Performance Measures

Capacity	Safety	Time Delay
Average weekday PM peak hour volume-to-capacity ratio	% of statewide average, annual fatality accident rate for ODOT functional class	Annual truck hours of delay
Intersection average weekday PM peak hour entering volume-to-capacity ratio	% of statewide average, annual injury accident rate for ODOT functional class	Annual truck hours of delay from incidents
Pavement with legal load limitations (Yes/No)	% of statewide average, annual property damage accident rate for ODOT functional class	Presence of an at-grade railroad crossing (Yes/No)
Pavement condition rating	% of statewide average, annual fatality accident rate for intersections for ODOT functional class	Presence of a movable span bridge (Yes/No)
Bridge with posted load limitation	% of statewide average, annual injury accident rate for intersections for ODOT functional class	Suboptimally timed signal progression (Yes/No)
	% of statewide average, annual property damage accident rate for intersections for ODOT functional class	Suboptimal intersection geometrics

Dredging alternatives that have been studied by Army Corps of Engineers and sponsored by the seven ports of the Lower Columbia, including Astoria, are addressed in Chapter 3 of the report. The preferred alternative entails deepening the Columbia River channel from 40 feet to 43 feet, allowing larger ships and more shipping activity at Columbia River ports, and awaits federal funding in order to begin work.

Several of the "Next Steps" recommended in Chapter 4 of the report may have some bearing on the East Gateway area and intermodal freight connections and freight routes there. In terms of policy and planning, the report recommends updating and being more specific about freight performance standards in OTP policies as well as updating the Oregon Rail Plan, and developing an Oregon Marine Freight Plan. Recommendations made for identifying freight needs include continued monitoring of Columbia River issues and development of a State Transportation Improvement Program (STIP) process for prioritizing highway projects where barriers to freight movement exist.

2000 Oregon Aviation Plan

The Regional Astoria Airport provides commercial service, but is located within the city limits of Warrenton. Therefore, aviation facilities and policies have very limited to no bearing on the East Gateway planning area.

2003 Highway Design Manual

The 2003 Highway Design Manual (HDM) provides project delivery and design guidelines for transportation projects from modernization, preservation, bridge, operations, safety, and

maintenance programs (Chapter 2) as well as guidelines for plans, specifications and estimates (Chapter 14).

Modernization projects proposed on US 30 in the East Gateway Transportation Plan would be subject to ODOT 4-R New Urban standards for urban state highways.⁵ For the small rural portion of US 30 that is inside the planning area but outside city limits and the UGB, ODOT 4-R New Rural standards for rural state highways would apply. Likewise, ODOT 3-R Urban standards would apply to preservation projects on the urban portion of US 30 proposed by the East Gateway Transportation Plan and ODOT 3-R Rural standards to preservation projects proposed on the rural portion.

Modernization projects proposed on local roads in the planning area are subject to standards from AASHTO's *A Policy On Geometric Design Of Highways And Streets - 2001*, unless they are under county jurisdiction and the county wishes to set its own standards.⁶ Local government may choose whether preservation projects proposed on local roads within the UGB will comply with AASHTO or ODOT 3-R Urban standards, whereas preservation projects outside the UGB are simply subject to ODOT 3-R Rural standards.

ODOT 4-R New Urban and Rural standards fall with the ranges established in *AASHTO's A Policy On Geometric Design Of Highways And Streets - 2001*, with the addition of the following standards.

- 1) Use spirals on all curves with a degree of curve of 1° or sharper, and use ODOT spiral lengths given in the ODOT Highway Design Manual.
- 2) Superelevation runoffs shall match the ODOT spiral length.
- 3) ODOT minimum vertical clearance on State system shall be 17 feet.
- 4) Use ODOT specific design speeds based on traffic volumes and terrain type.
- 5) Object height for stopping sight distance calculations and vertical curve design shall be 6 inches.

Section 2.2 outlines the standards for the ODOT 3-R Urban and Rural program. These standards are intended to draw significant safety benefits from resurfacing, rehabilitation, and restoration projects.

General design guidelines for speed, sight distance, horizontal and vertical alignment, cross-sections, medians, clearance, barriers, drainage, and miscellaneous fencing, climbing and passing lanes, and stock and equipment and railroad stop lanes are handled in Chapter 5 of the manual.

US 30 in the planning area is a state highway that also serves as a principal arterial for the City of Astoria. Section 8.3 of the manual addresses the general design of Urban Arterials as a subset of Urban Highways (Non-Freeways), including design speed, OHP designations and overlays, existing plans such as corridor plans, refinement plans, and transportation system plans, and transitions, particularly between rural and urban highways.

⁵ Determining which standards apply to which projects is summarized in the Design Selection Matrix in the manual (Table 2-1) in the 2003 *Highway Design Manual*.

⁶ This authority is given to counties by ORS 368.036.

Because US 30 is not classified as a state expressway, Special Transportation Area, Urban Business Area, or Commercial Center in the OHP, it is defined as a "Non-Designated" Urban Highway within Astoria's UGB. Of the three sub-categories of "Non-Designated" (urban fringe, developed, or traditional downtown/central business district), US 30 in the planning area can best be characterized as a mixture of developed and urban fringe. Chapter 8 summarizes design guidelines for developed and urban fringe non-designated urban highways in Table 8.2 and Table 8.4 respectively.⁷ Developed area design guidelines (Section 8.5.2) that are relevant to the East Gateway plan include the following:

- Pedestrian – Sidewalks at least six feet wide are provided, preferably separated from the highway using a buffer strip of three to six feet depending on the landscaping. Sidewalks should be widened to eight feet where buffer strips cannot be provided. Transit stops should be accommodated with bus pullouts. Refer to Chapters 11 and 12 for more information on pedestrian and transit design. At signalized intersections, pedestrians should be able to cross in all directions. Raised curb medians are recommended for mid-block crossings. Intersection turn lanes should be evaluated for the impact they have on pedestrian crossings. Channelization islands are recommended to shorten crossing distances.
- Shoulders/Bike Lanes – Shoulders, typically six feet wide, must be provided in these areas, and should be able to serve bike traffic. The shoulder/bike lane will normally be sited adjacent to the right side travel lane. With one-way couplets, the left shoulder shall include a shy distance beyond the travel lane width, based upon the design speed (see Table 8-3). Left side shy distances shall follow Table 5-8 for one-way couplets designed for other speeds. Another foot of shy distance must be added to the left lane when the one-way couplet is up against a raised curb.
- Parking – On-street parking is usually not appropriate in developed areas with higher traffic speeds and volumes. Nodes or centers of development with limited access to the highway usually have parking located within the node. A major function of highways within these areas is to provide good vehicular mobility. On-street parking reduces capacity and efficiency, and may decrease safety, so on-street parking should not be considered on state highways within these areas.
- Medians – All multi-lane state highways within developed areas, regardless of classification, must have medians, either be traversable or non-traversable. Non-traversable raised curb medians are recommended, particularly for multi-lane highways that are statewide (NHS) highways and regional highways with design speeds greater than 45 mph. A continuous two way left turn lane can be used on multi-lane highways where a non-traversable median is deemed inappropriate. See Section 5.5 and the Oregon Highway Plan Median Policy for more information on median design and location.
- Access Management - Mobility is still a high priority in developed areas, and access management is important in facilitating highway mobility and safety. Appendix C of

⁷ The Highway Design Manual directs non-designated urban highways in developed areas to follow the design guidelines for Urban Business Areas (Section 8.5.2).

the OHP lists access management spacing standards, and Statewide (NHS) Highways are held to a higher standard than Regional or District level highways. Access priority should be given to connections to public roads over private land. Private drives should be directed to public roads and frontage roads instead of state highways. When private drives must access state highways, drives should serve multiple uses when possible and drives should be located directly across from one another when possible. Access rights in these developed areas are purchased only in limited instances, such as at critical intersections. See Section 5.11 for more information on access management objectives, guidelines, and tools and see the Access Management Rule, Oregon Administrative Rule (OAR) Chapter 734, Division 51 for more information on spacing standards.

- Lane Widths – Developed areas have high mobility levels and moderate traffic volumes and speeds. Travel lanes must be 12 feet for all Statewide (NHS) Highways and Freight Routes.

Urban fringe area design guidelines (Section 8.7.1) that are relevant to the East Gateway plan include the following:

- Pedestrian – While pedestrian mobility may not be the main function of highways in the urban fringe, sidewalks at least six feet in width should be provided. Buffers of at least six feet in width should also be provided. When buffers are not feasible, sidewalks should be expanded to be eight feet wide. Signalized intersections should offer crossing in all directions, and raised curb medians are recommended for mid-block crossings. Pedestrian design considerations are expanded upon in Chapter 11 of the manual, and detailed designs are given in the 1995 Oregon Bicycle and Pedestrian Plan.
- Bike lanes and shoulders – While bicycle mobility may not be a primary function of highways in the urban fringe, shoulders of at least six feet in width should be provided. Where vehicle speeds and volumes are higher, the width should be increased to eight feet. Shoulders provide a pathway for bicycles and a safe harbor for distressed vehicles. Bicycle design considerations are expanded upon in Chapter 11 of the manual, and detailed designs are given in the 1995 Oregon Bicycle and Pedestrian Plan.
- Parking – On-street parking is not recommended for state highways in these areas.
- Medians – Non-traversable medians are recommended for multi-lane highways. Raised curb medians in particular help channelize traffic while providing a refuge for crossing pedestrians.
- Access Management – Access on state highways should be limited and is governed by OAR Chapter 734, Division 51. Having private roads and driveways share access and take access from public road connections to state highways is preferable to having them take separate and direct access to the state highway.
- Lane Width – With vehicle mobility a major objective for these highways, travel lane width should be at least 12 feet.

Chapter 9 guides the design of approaches to state highways, based on the surrounding land use and approach peak hour volume. The chapter also addresses design features of intersections in general terms and more specifically for signalized and unsignalized intersections.

Chapter 10 (Table 10-1) includes design-mobility standards for the 20-year horizon. These mobility standards differ slightly from those specified in the 1999 OHP, Action 1F.1. The HDM

attributes this difference to the fact that the OHP is to be used for planning purposes and the HDM for project design purposes. Mobility standards in the HDM are given in terms of volume-to-capacity ratios (v/c) for the peak hour (the 30th highest hour). The design mobility standard for statewide freight routes (NHS) that are outside MPOs and Special Transportation Areas (STAs) and inside a UGB is 0.70 v/c, versus either 0.70 or 0.75 v/c allowed by the OHP according to posted speed. Outside the UGB, the HDM standard is 0.60 v/c, compared to 0.70 v/c allowed by the OHP.

Chapter 12 provides general guidelines for public transportation planning on state highways including design considerations, transit stops, passenger accessibility and amenities, roadway and intersection design for buses, and park-and-ride facilities.

1999 Portland – Astoria (US 30) Corridor Plan Summary

The Portland-Astoria (US 30) Corridor Plan was a collaborative effort between ODOT, other state agencies and committees, local government, interest groups, and the general public. ODOT identified 30 other key corridors in the state for corridor planning, five of which have their origin in ODOT Region 1. The Corridor Plan lays out short- and long-term management strategies for all transportation modes in the corridor and the tradeoffs that will need to occur in order to successfully manage them. Improvements prioritized in the Corridor Plan serve as a basis for project selection for the Statewide Transportation Improvement Program.

The Portland-Astoria (US 30) Corridor Plan characterizes the western portion of the Corridor as:

- A connection to the north Oregon and south Washington coasts, and a quicker but less scenic alternate to Washington State Route 4;
- A place of tourist, recreation, rural, and scenic opportunities;
- A valuable set of natural resources including forest lands and wildlife habitat and sanctuaries; and
- A route for transporting forest products and other freight.

According to the report, the Corridor is one of the most multi-modal corridors in the state, accommodating truck freight, passenger vehicle, air, rail, and shipping traffic. Transportation Demand Management (TDM) measures proposed in the Corridor Plan are intended to relieve US 30 from local traffic where it serves as the main roadway through a community. Better connections to and across US 30 are part of the TDM measures designed to draw more local traffic to local streets.

Projects proposed on US 30 in or near the East Gateway study area include:

From Committed Funding Priority Category

- Project 126 – US 30 near 51st Street (MP 95.2 to 95.7), Maintenance, City of Astoria/Clatsop County, estimated cost \$159,000, in Astoria TSP and Draft 2000-2003 STIP;

- Project 134 – US 30 at Marine and Commercial (MP 97.96 to 98.41), Operations/new signals, City of Astoria and Clatsop County, estimated cost \$1.06 million, in Astoria TSP and to be confirmed whether in Draft 2000-2003 STIP;
- Project B – US 30 at the Old Highway 30 and John Day River Bridge (MP 87.7 to 92.3), Preservation overlay, unincorporated Clatsop County, estimated cost \$1.83 million, in Draft 2000-2003 STIP;
- Project G – US 30 from 32nd to 6th Street (MP 97.07 to 98.41), Preservation overlay, City of Astoria and Clatsop County, estimated cost \$680,000, in Draft 2000-2003 STIP;

From Constrained Funding Priority Category

- Project 39.1 – US 30/ Astoria Truck Route from Fernhill Road to OR 202 (MP 91.3 to new MP), Planning/design of new alignment for US 30 to re-route truck traffic, City of Astoria and Clatsop County, estimated cost \$2 million, Draft Environmental Impact Statement completed;
- Project 120 – US 30 near Maritime Road (MP 94.4), Maintenance/sunken grade repair, unincorporated Clatsop County, Maintenance District Inventory – need to develop scope and cost estimate;
- Project 121 – US 30 at MP 94.5, Maintenance/sunken grade repair, unincorporated Clatsop County, Maintenance District Inventory – need to develop scope and cost estimate;
- Project 129 – US 30 from Hamburg to 32nd Street, Maintenance/deep base repair, City of Astoria and Clatsop County, Maintenance District Inventory – need to develop scope and cost estimate;
- Project 138.2 – US 30 at MP 98 and off-system, Transit/construction of Sunset Empire Transportation District Intermodal Station, City of Astoria and Clatsop County, estimated cost \$2.22 million, exact location and scope to be determined through TEA-21 High Priority Project refinement planning;
- Project 146 – US 30 at John Day River and Fern Hill (MP 91.3 to 92.46), Modernization/passing lane, unincorporated Clatsop County, estimated cost \$9.1 million, dropped from STIP due to land use and environmental issues, county permitting and goal exceptions may be needed; and
- Project 204 – US 30 at John Day River Bridge (MP 92.5), Bridge/Phase 1 Seismic Retrofit, unincorporated Clatsop County, estimated cost \$620,000, from ODOT Bridge Management System.

From Strategic Funding Priority Category

- Project 39.5 – US 30 from John Day River Bridge to OR 202 (MP 91.3 to new MP), Modernization/construct new alignment for US 30 to re-route truck traffic, City of Astoria and Clatsop County, estimated cost \$40 million, Draft Environmental Impact Statement completed;
- Project 122 – US 30 in Tongue Point vicinity (MP 94.6), Operations/new intersection, City of Astoria and Clatsop County, estimated cost \$200,000, in Astoria TSP;

- Project 123 - US 30 and Nimitz Road (MP 95.11), Operations/intersection improvements, City of Astoria and Clatsop County, estimated cost \$100,000, in Astoria TSP;
- Project 125 - US 30 and 54th Street (MP 95.35), Operations/intersection improvements, City of Astoria and Clatsop County, estimated cost \$500,000, in Astoria TSP;
- Project 127 - US 30 and 45th Street (MP 96.12), Operations/intersection improvements, City of Astoria and Clatsop County, estimated cost \$750,000, in Astoria TSP;
- Project 128 - US 30 and 37th Street (MP 96.7), Operations/intersection improvements, City of Astoria and Clatsop County, estimated cost \$50,000, in Astoria TSP;
- Project 130 - US 30 and 16th to 23rd Street (MP 97.48 to 97.96), Operations/center turn refuge, City of Astoria and Clatsop County, estimated cost \$150,000, in Astoria TSP;
- Project 131 - US 30 and 16th to 23rd Street (MP 97.48 to 97.96), Modernization/widen to 5 lanes and add signal, City of Astoria and Clatsop County, estimated cost \$1 million, in Astoria TSP;
- Project 132 - US 30 and Exchange Street (MP 97.52), Operations/intersection improvements, City of Astoria and Clatsop County, estimated cost \$100,000, in Astoria TSP;
- Project 133 - US 30 and Exchange Street (MP 97.52), Operations/intersection improvements and turn lanes, City of Astoria and Clatsop County, estimated cost \$850,000, in Astoria TSP; and
- Project 214 - US 30 at John Day River Bridge (MP 92.5), Bridge/Phase 2 Seismic Retrofit, unincorporated Clatsop County, estimated \$1.52 million, from by ODOT Bridge Management System.

From X-Reconstruct Funding Priority Category

- Project 190 - US 30 at Fern Hill (MP 92.11 to 92.40), Modernization/pavement reconstruction with alignment improvements, unincorporated Clatsop County, estimated \$340,000, low priority - Corridor Plan recommends alternative improvements in lieu of this project.

2003 Oregon State Marine Board Layout and Design Guidelines

The Oregon State Marine Board (OSMB) published revised Layout and Design Guidelines for Recreational Boating Facilities in March 2003. The guidelines apply to access roads and parking lots for waterside recreational facilities. Access roads are those that connect the main thoroughfare to the waterside recreational parking and launch ramp area. In the study area, this may apply to the Pier 39 or other pier areas and access to them from US 30.

According to the guidelines, access road lanes should be a minimum of 12 feet wide for two-way roads and 15 feet wide for one-way roads. Shoulders are not necessarily required. The design standards for access roads are summarized in Table 4.

Table 4. OSMB Access Road Design Guidelines

	Preferred	Minimum	Maximum
Roadway width	24 feet (Two-way) 15 feet (One-way)	20 feet	N/A
Inside Radius of Curves <45 degrees	20 – 35 feet	15 feet	N/A
Inside Radius of Curves 45-90 degrees (Two-way)	20 – 40 feet	15 feet	N/A
Inside/Outside Radii of Curves 45-90 degrees	Inside Radius 27 feet 30 feet 33 feet 36 feet 39 feet 42 feet 45 feet Parallel offset distance	Outside Radius 30 feet 35 feet 40 feet 45 feet 50 feet 55 feet 60 feet 60 feet+	
Access Road Grades	1% - 10%	N/A	17%
Access Road Cross-Slopes	0% - 2%	N/A	5%
Access Road Changes in Grade	1% - 7% (no vertical curve required)	N/A	20% (min. 20 feet vertical curve required if over 7%)

The parking lot design guidelines are summarized in Table 5, and a diagram of design aisle widths is provided in Appendix C.

Table 5. OSMB Access Road Design Guidelines

	Preferred	Minimum	Maximum
Parking Space Angles	60 degrees	45 degrees	90 degrees
Boat Trailer Parking Space Dimensions	10 feet x 40 feet	10 feet x 35 feet	N/A
Boat Trailer Parking Space Type	Pull-through	Head-in (Acceptable)	Parallel (Unacceptable)
Number of Boat Trailer Spaces per Launch Lane (One Lane)	30 spaces	10 spaces	50 spaces
Number of Boat Trailer Spaces per Launch Lane (Two Lanes)	60 spaces	30 spaces	100 spaces
Number of Boat Trailer Spaces per Launch Lane (Three Lanes)	90 spaces	60 spaces	150 spaces

	Preferred	Minimum	Maximum
Number of Boat Trailer Spaces per Launch Lane (Four Lanes)	120 spaces	90 spaces	200 spaces
Single Car Parking Space Dimensions	9 feet x 20 feet	8 feet x 15 feet	N/A
Number of Single Car Parking Spaces Required	30% of boat trailer spaces	10% of boat trailer spaces or 3 spaces	50% of boat trailer spaces
Parking Area Grades	2% - 5%	1%	7%
Parking Area Cross Slopes	1% - 2%	N/A	5%
Boat Trailer Backing Up Grades	0% - 2%	N/A	3%
Parking Lot Aisle Widths	<i>See diagram in Appendix C</i>	<i>5 feet less than values in diagram</i>	<i>Values in diagram</i>
90-Degree Corner Inside Radius	20 feet – 40 feet	15 feet	N/A
Accessible Parking Spaces	Total Parking Spaces		Minimum Number of Spaces
	1 – 25		1
	26 – 50		2
	51 – 75		3
	76 – 100		4
	101 – 150		5
	151 – 200		6
	201 – 300		7
301 – 400		8	
Disabled Parking Space Aisle Widths	Van Accessible Aisle Width 8 feet (At least one aisle for each use shall be van accessible)	Standard Accessible Aisle Width 6 feet (Additional aisles for each use may be standard width)	

1979 Astoria Comprehensive Plan

In order to serve as an input to a refinement of the Astoria Transportation Systems Plan, the East Gateway Transportation Plan will reflect policies established in the City's Comprehensive Plan. The following sub-sections address overall policies as well as policies specific to land use districts and planning topics that relate to the East Gateway planning area.

General Policies

The 1979 Astoria Comprehensive Plan begins with CP.005 *General Plan Philosophy and Policy Statement*. It describes the process through which the Comprehensive Plan was developed, and

establishes the authority the Comprehensive Plan in relation to other locally adopted plans and ordinances:

All city ordinances, policies and actions must be consistent with the comprehensive plan. Where there is a conflict between the plan and the ordinances and other city policies, the plan shall prevail. The comprehensive plan is intended to be consistent with itself and coordinated with other plans. That is, the various policies are intended to interrelate not only with each other, but with those of Clatsop County and special districts within the urban growth boundary.

The Comprehensive Plan makes various policy statements about the City's land and water use goals, natural features, and community growth. The City's overarching land and water use goal reads:

It is the primary goal of the Comprehensive Plan to maintain Astoria's existing character by encouraging compact urban form, by strengthening the downtown core and waterfront areas, and by protecting the residential and historic character of the City's neighborhoods. It is the intent of the plan to promote Astoria as the commercial, industrial, tourist, and cultural center of the area.

Protecting natural vegetation and undeveloped shoreland, streams, and ravines through setbacks and clustered urban development are some of the policies established for the City's natural features. Growth policies target the Gateway Overlay Area, among other areas, for residential growth, the East End Mooring Basin and North Tongue Point and South Tongue Point for port and industrial development, and the Columbia River waterfront for multiple uses. The growth policies also direct the Gateway Overlay Area to be developed according to the Gateway Master Plan, encouraging uses that complement those of downtown.

Land Use Areas and Policies

The East Gateway planning area is comprised of portions of the following Comprehensive Plan General Land Use Areas: Uppertown, Alderbrook, Tongue Point, Emerald Heights, and Land Reserve. The Columbia River, forming the northern border of the planning area, is designated as Aquatic Area in the General Land Use Area system.⁸ The Land Reserve Area is targeted as low priority vacant buildable land.⁹ Other than Uppertown, most of the land south of US 30 in the planning area is shown as publicly owned, as is Tongue Point and the peninsula south/southeast of Tongue Point.¹⁰ A map of the Comprehensive Plan Land Use Areas is attached as Appendix D.

⁸ General Land Use Areas are delineated in Figure 1 of the City of Astoria Comprehensive Plan, adopted by Ordinance 98-04 on May 4, 1998.

⁹ Priority Vacant Buildable Lands (Large Tracts) are illustrated in Figure 2 of the City of Astoria Comprehensive Plan, amended by Ordinance 81-16.

¹⁰ Publicly Owned Lands are shown in Figure 3 of the City of Astoria Comprehensive Plan, amended by Ordinance 81-16.

Gateway Area

The Gateway Overlay Area addressed in CP.057 and CP.058 is expanded upon through subsequent planning efforts – the 1997 Astoria Gateway Master Plan and the 1999 Astoria Gateway Area Transportation and Growth Management Plan. More detailed discussion of the area and these plans will be taken up in later sections of this memo.

As envisioned in the Comprehensive Plan, the Gateway Area stretches from 16th Street to 29th Street (almost the western edge of the East Gateway planning area) and overlaps with the designated Land Use Areas of Downtown and Uppertown. Generally, the Comprehensive Plan policies for the Gateway Area emphasize developing uses that complement established uses in the Downtown area, creating a pedestrian-friendly environment, and showcasing the Columbia River waterfront.

Uppertown

Uppertown borders Downtown and Central Astoria on the east and its eastern half falls within the East Gateway planning area. It is a predominantly residential area south of US 30 (Marine Drive/Leif Erickson Drive) with commercial zones along the highway and industrial zones north of the highway. Historic areas (buildings constructed before 1911) listed in the City's historic inventory are found throughout Uppertown.¹¹ School and park grounds are located in this land use area south of US 30 surrounded by residential neighborhoods.¹² Uppertown is also the site of some recorded earth movement and unstable slopes.¹³

The policies for Uppertown are intended to preserve the area's residential character, to limit access of new commercial and industrial development along the highway directly to the highway, and to explore east-west travel alternatives to the highway in the area.

Alderbrook

Alderbrook is located west of Tongue Point, straddling US 30 with the Columbia River as its northern border. The land use area is wholly within the East Gateway planning area. The area is primarily single and multi-family residential, and is the only residential zone in the city located on the waterfront. The trade-off is that the shore area in Alderbrook is classified as 100-year flood plain.¹⁴ The only other parks in the planning area – aside from the school grounds in Uppertown – are located near the Columbia River shore around 45th Street and 50th Street. The Comprehensive Plan also identifies a potential park on state-owned land near the Columbia River, just southwest of sewage lagoons that are adjacent to Tongue Neck.¹⁵ Several historic areas (buildings constructed before 1911) listed in the City's historic inventory are found in Alderbrook.¹⁶

¹¹ Historic Areas are shown in Figure 8 of the City of Astoria Comprehensive Plan.

¹² Parks and School Areas are shown in Figure 9 of the City of Astoria Comprehensive Plan.

¹³ Natural Hazards are identified in Figure 15 of the City of Astoria Comprehensive Plan.

¹⁴ Natural Hazards are identified in Figure 15 of the City of Astoria Comprehensive Plan.

¹⁵ Parks and School Areas are shown in Figure 9 of the City of Astoria Comprehensive Plan.

¹⁶ Historic Areas are shown in Figure 8 of the City of Astoria Comprehensive Plan.

The policies guiding Alderbrook protect the residential character of the area, subject the flood plain to a Flood Hazard Overlay Zone, limit industrial development to light industrial operations (such as fishing) that are compatible with the waterfront conservation and residential uses, and direct residential growth to the Blue Ridge subarea of Alderbrook and to the Emerald Heights land use area adjacent to it.

Tongue Point

Tongue Point is also the subject of a City Master Plan, which will be discussed later in this memorandum. Internal circulation on Tongue Point and its connection to US 30 will be elements in the East Gateway Transportation Plan. The area has been partially developed with Coast Guard, Army Corps of Engineers, and Job Corps facilities in addition to eight finger piers and paved back-up land. Negotiations over natural resource conservation on Tongue Point have been ongoing. The largest continuous area of forested land, other than the large Land Preserve area to the south of developed Astoria, is located on Tongue Point.¹⁷

The policies for this land use area organize Tongue Point into subareas designated Natural, around the west side to the tip, for recreation and protection of natural, scenic, and historic resources; Conservation, between Natural and Development subareas; and Development, where existing facilities are located.

Land Reserve

The Land Reserve is a large, undeveloped area south and east of downtown Astoria inside the city limits and outside the UGB. The area serves as the southern border for the East Gateway planning area. The land is mostly forested and publicly owned by the City and the State Forestry Department. The land is slated for primarily residential development but will require an UGB amendment and rezoning in order to prepare it for development.

Policies for the area direct activities that must accompany and follow a plan amendment to develop the area, including geologic studies to identify buildable slopes and soils, efficient provision of public utilities, a mixture of housing types planned for development, a limited amount of commercial uses permitted to serve the residents, and a buffer between development and forest practices in the area.

Subarea Plans

Uppertown/Alderbrook Subarea Plan

The Uppertown/Alderbrook Subarea Plan addresses the aquatic area and shoreland from roughly 29th Street to 53rd Street. The subarea plan determines that port development here is not compatible with habitat, scenic, and recreational goals for the area, but otherwise designates the shoreland as Development, with a site west of Alderbrook Cove (between 35th Street and 41st Street) as Water-Dependent Development. Shoreland is generally 50 feet from the Columbia River shoreline. In order to preserve the character of the subarea, policies for the subarea discourage higher-intensity uses.

¹⁷ Forested Lands are identified in Figure 18 of the City of Astoria Comprehensive Plan.

Tongue Point Subarea Plan

The Tongue Point Subarea Plan addresses the aquatic area and shoreland of Tongue Point, which is largely forested land with development serving the Coast Guard, the Job Corps, the Army Corps of Engineers, and former U.S. Navy operations. Shoreland is generally 50 feet from the Columbia River shoreline. Shoreland designations on Tongue Point include:

- Water-Dependent Development for the Coast Guard facilities, land between Mill Creek and Job Corps facilities and portions of South Tongue Point;
- Development for the federal Job Corps Center and portions of South Tongue Point;
- Rural for slopes north of US 30, between Mill Creek and the South Tongue Point entrance, outside Astoria city limits; and
- Natural for Tongue Point north of the Job Corps Center, outside the Coast Guard facilities.

General policies for the subarea acknowledge the sensitive wildlife habitat and steep slopes of the area. In particular, development plans must be coordinated with U.S. Fish and Wildlife and Oregon Department of Fish and Wildlife regarding bald eagle nesting in the area, and engineering studies need to be conducted for development in the area between the railroad tracks and US 30. The general policies also direct new roads to the Mott Basin pier area to limit impacts on residences and unstable slopes nearby.

Subarea policies specifically for North Tongue Point reflect Mediation Panel Agreements and deal mostly with aquatic and channel width/depth issues. They do allow for fill in the aquatic area of the piers in Mott Basin, which would be intended only for water-dependent uses.

Subarea policies for South Tongue Point authorize fill of three forested wetlands extending upland as well as road fill and construction adjacent to the railroad on the river side of the tracks in order to connect South and North Tongue Point, according to exceptions taken to Goal 15 (Estuarine Resources).

Economic Development Element

Policies in the Economic Development Element of the Comprehensive Plan relate to the East Gateway Transportation Plan when they describe areas adjacent or within the planning area and potential industrial, commercial and recreation development in the planning area. Policies address the redevelopment of the Gateway Overlay Area according to the Gateway Master Plan, rezoning the former mill site in the overlay area to accommodate more mixed-uses including housing and commercial. This section of the Comprehensive Plan also records that Burlington Northern Santa Fe Railroad filed to abandon the railroad through Astoria in 1996. In 1997, the Federal Surface Transportation Board assigned "Interim Trail Use Condition" to the seven miles of rail line through the city under the authority of the National Rails-to-Trails Act.

Given the large number of historic buildings in the city and in the planning area, the element urges the formation of historic districts as a way to preserve the unique nature of the city while promoting tourism and other business. The element recommends plan and zone designation changes to allow for more tourist-oriented development on the waterfront where fishing industry has declined. The element also recommends either the expansion of permitted uses in

the Shoreland Development zone or a new zone to allow for manufacturing and industrial uses in certain shoreland areas.

The Comprehensive Plan identifies the first two of the following locations as available future industrial sites, and the last as a potential industrial site:

- the "Bumble Bee Site", north of US 30 and east of 37th Street;
- the Mott Basin, directly east of the Portland and Western Railroad, including the pier system; and
- the peninsula between Mott Basin and the John Day River, east of the railroad and US 30.¹⁸

The Astoria Business Park and North Tongue Point Industrial Park described in this project's statement of work coincide with these locations, and plans for their internal circulation and access management will be part of the East Gateway Transportation Plan.

Housing Element

Housing policies from the Comprehensive Plan apply insofar as the East Gateway Transportation Plan aims to better connect residential development with uses along and on the north side of US 30 (Leif Erickson Drive), and to complement other planning efforts in or adjacent to the planning area (i.e. Gateway Master Plan). General policies include:

All residential areas should be provided with services and facilities necessary for safe, healthful, and convenient urban living.

Planned unit and cluster developments should be encouraged to preserve open space, reduce infrastructure and construction costs, and promote variety in neighborhoods.

Neighborhoods should be protected from unnecessary intrusions of incompatible uses, including large scale commercial, industrial and public uses or activities.

The City encourages the development of higher density residential development at the former Plywood Mill Site consistent with the Gateway Master Plan.

Historic Preservation Element

Historic Preservation policies are of note where they may apply to areas included in or near the East Gateway Transportation planning area, particularly waterfront and forested lands.

Encourage the application of historical considerations in the beautification of Astoria's Columbia River waterfront.

Promote appreciation of Astoria's natural resource base, including wooded areas, marshlands, and water-based sites as elements of the city's historic growth and development.

¹⁸ Future Industrial Sites are identified in Figure 7 of the City of Astoria Comprehensive Plan (Ordinance 81-16).

The City will encourage the preservation of significant historic structures within the Gateway Overlay Area, particularly the former railroad depot located at the foot of 20th Street, and the Svenson Blacksmith Shop located at 1796 Exchange Street.

Parks, Recreation and Open Space Element

Parks, Recreation and Open Space policies apply to neighborhood circulation and trail development aspects of the East Gateway Transportation Plan. The following are supportive policies:

Park planning will recognize the recreation needs of all segments of the population; provide a variety of year-round recreation opportunities; be safe, accessible and of aesthetic value to the city; and contribute to the economic and social well-being of the community.

Ways should be explored for the development of hiking and bike trails along appropriate city streets, railway rights-of-way, utility corridors and park access routes. To the extent possible, such trails will utilize existing city maintained trails and provide linkages to major parklands and other public facilities. Planning for trails must consider such limitations as topography, climate, maintenance and development costs, and should emphasize intensive use areas.

The City will continue its efforts to improve public access to shoreline through:

The construction of public access points, pathways, and street ends;

The encouragement of public access projects in conjunction with private waterfront development actions; and

The protection of street ends and other public lands from vacation or sale where there is the potential for public access to the water.

The City supports the efforts of the Alderbrook Community to develop a neighborhood park on the area west of the sewage lagoons. The park should be used for passive recreation only, including hiking, bicycling, bird watching and other low intensity uses.

Transportation Element

The Transportation Element directly relates to the East Gateway Transportation Plan, although greater detail about transportation planning will be discussed later in the section on the Astoria TSP. The policies in the element that most directly relate include:

The City will continue to support public transportation for all segments of the community.

The City supports the efforts of the State Highway Division to construct the Highway 30 Bypass.

North Tongue Point is in the Urban Growth Boundary as a most suitable site for deep draft cargo handling. South Tongue Point is primarily designated for medium draft, small to medium sized water-dependent uses and limited areas of non-water-dependent uses. Areas of South Tongue Point which are not suited for water-dependent development are designated General Development. The transportation implications of these site designations is significant, in that much of the train and vehicle traffic that would otherwise pass through the City will be diverted to the east.

Access along arterial streets and highways will be limited to existing side streets wherever possible, or to common access points. The clustering of commercial uses will be employed in new larger developments, and proper traffic control will be provided by the developer as the City Engineer may deem necessary.

The shorelands and estuary use designations will take into account those areas that are especially suitable for water-dependent activities, such as port areas. Deep water channels are considered a valuable transportation facility that must be protected.

The city will coordinate any future street construction or realignment affecting the Oregon Loop Bicycle Route, the Trans-American Bike Route, and the Coastal Bike Route with the State Highway Department.

All streets in the city and in the urban growth boundary will be constructed to city standards.

Geologic and Flood Hazards Element

According to the Comprehensive Plan, natural hazards are scattered throughout the planning area.¹⁹ Slopes 30% and greater are found concentrated in the planning area at the junction of the Uppertown, Alderbrook, and Land Reserve Land Use Areas. Other clusters of steep slopes are found north and south US 30 between 51st Street and Nimitz Road, at the junction of the Alderbrook, Land Reserve, Tongue Point, and Emerald Heights Land Use Areas. Areas of recorded earth movement are located throughout the Uppertown and along the borders of the Tongue Point, Alderbrook, Emerald Heights, and Land Reserve Land Use Areas. In terms of flood hazards, the shoreland of the Alderbrook Land Use Area is classified as 100-year flood plain.

Policies of this element are designed to protect against hazards by invoking city ordinances governing flood hazard, geologic hazard, and building codes and by either avoiding further development in hazard zones or subjecting land proposed for development to rigorous mapping and review for hazards.

¹⁹ Geologic Hazards and Steep Slopes are delineated in Figure 15 and Figure 16 of the City of Astoria Comprehensive Plan.

Natural Resources Element

Columbia River shoreline forms the northern border of the planning area and forested land occupies most of Tongue Point and land south of US 30 in the planning area (Land Reserve) where a street network is not established.²⁰

Natural resource policies that apply to these areas include:

- The city recognizes the importance of “trade offs” that must occur in the planning process. Although certain estuary areas have been designated for intensive development, other areas will be left in their natural condition in order to balance environmental and economic concerns.
- The city’s “land reserve” area has been designated as such in order to protect forest lands for forest uses, and to allow for limited, well planned residential development in certain areas. It is intended that forest uses include wildlife habitat, stream or drainage protection, windbreaks, recreation and scenic buffers. By requiring and encouraging techniques such as planned or cluster development, buffering, geologic site investigations, and similar measures, natural values will be protected.

1991 Urban Growth Boundary Area Joint Management Agreement (Clatsop County/City of Astoria)

The Joint Management Agreement signed in July 1991 defines the Urban Growth Boundary Area as the area between the City’s corporate limits and the City’s Urban Growth Boundary (UGB). The agreement states that the City’s Comprehensive Plan shall serve as the UGB Area’s Comprehensive Plan and that the City’s Zoning and Subdivision Ordinances will guide land use actions in the UGB Area. Land use applications are primarily processed through the City in cooperation with the County. Appeals of City land use decisions in UGB Areas are heard by the County Board of Commissioners according to the County’s Land and Water Development and Use Ordinance.

Amendments to the City’s Comprehensive Plan including the UGB and Comprehensive Plan Map, City Zoning Ordinance map and text, and City Subdivision Ordinance must be adopted by ordinance by both the City and the County.

Gateway Overlay Zone (GO), Astoria Development Code, Sections 14.005 – 14.340

The Gateway Overlay Zone was adopted into the Astoria Development Code in April 1998. The zone extends from 15th Street to 29th Street along Marine Drive (US 30), and lies directly west of the East Gateway planning area. Projects recommended in the East Gateway Transportation Plan should complement the vision and uses specified in the overlay zone.

The zone is made up of the following land use zones:

- Maritime Heritage (MH);

²⁰ Forest Areas are shown in Figure 18 of the City of Astoria Comprehensive Plan.

- Family Activities (FA);
- Attached Housing/Health Care (AH-HC);
- Education/Research/Health Care Campus (CA);
- Hospitality/Recreation (HR);
- Local Service (LS); and
- Attached Housing (Mill Pond) (AH-MP).

The code outlines and illustrates the different architectural features considered in design review for development applications in the overlay zone. The code's final section describes other standards including building orientation, building massing, access and parking, landscaping, and utilities. All the design standards emphasize simple forms and historic styles to complement the existing architecture. Buildings should be oriented to the street, and should create an inviting pedestrian environment by having visually continuous storefronts, street trees lining the right-of-way, and parking along the side or back of buildings. Water and hillside views should be capitalized upon when possible.

1999 City of Astoria Transportation System Plan (TSP)

Other Relevant Plans and Studies

The City of Astoria TSP was adopted in July 1999. Plans and studies reviewed in the TSP that apply to the East Gateway planning area include:

- Portland-Astoria (US 30) Interim Corridor Strategy;
- Astoria Bypass Draft Environmental Impact Statement;
- City of Astoria Bicycle Plan;
- Master Development Plan for North Tongue Point; and
- South Tongue Point Master Plan.

Portland-Astoria (US 30) Interim Corridor Strategy

The Interim Corridor Strategy was developed in order to reduce traffic on US 30 and traffic impacts on Astoria's downtown and surrounding neighborhoods. The Strategy recommended:

- Use water and rail to transport more freight instead of trucks;
- Dredge the Lower Columbia River to allow for deep draft ships;
- Use the most restrictive access management standards;
- Mixing land uses and increasing density to reduce automobile travel;
- Prioritize bicycle and pedestrian projects in urban areas to increase and promote alternatives to automobile travel;
- Prioritize port development and other commercial development projects; and
- Prioritize recreation and tourism projects.

Astoria Bypass Draft Environmental Impact Statement

The Astoria Bypass Draft Environmental Impact Statement (DEIS) was published in September 1993. The proposed Astoria Bypass would extend roughly between the John Day River Bridge

and Willamsport Road, south of Astoria and the planning area. The significance for the planning area is that, if completed, the bypass may greatly reduce traffic on the existing US 30 (Leif Erickson Drive/Marine Drive) through the planning area.

City of Astoria Bicycle Plan

The City adopted its Bicycle Plan in October 1992. The plan was developed and incorporated into the TSP in order to fulfill TPR bicycle facility planning requirements. The plan calls for major arterial and collector improvements to include bike lanes when feasible, and has already led to the striping of bike lanes along US 30.

Master Development Plan for North Tongue Point

The Master Development Plan was developed in 1992 upon contract by Oregon Division of State Lands. The plan presents a set of road, transit, water, and rail transportation facilities, with detailed reference to access to existing uses on North Tongue Point. The plan recommends:

- Make Old Highway 30 one-way street to provide access to US 30 to reduce sight distance limitations on US 30.
- Restripe Maritime Road to provide an exclusive turn lane.
- Provide an acceleration lane on US 30 west of Maritime Road.

Comparing Astoria Comprehensive Plan maps to current ODOT city transportation maps, Maritime Road appears to have been renamed Liberty Lane, which constitutes the eastern boundary of the East Gateway Transportation Plan planning area.

South Tongue Point Master Plan

The Master Plan was contracted by the Oregon Division of State Lands in 1991. The plan studied port and water-dependent industrial development in the area as supported by the City's Comprehensive Plan recommendation to reestablish a 25-by-500-foot access channel to South Tongue Point. The plan proposed serving the terminus of the channel with a new road from US 30, which would be grade-separated from the Portland and Western Railroad.

Goals and Objectives of the TSP

Several goals and objectives established in the TSP will be relevant to transportation planning in the East Gateway planning area.

Goal 1: Improve traffic circulation and safety throughout the city.

- Improve cross-town (both north-south and east-west) circulation.

- Accommodate increased tourist traffic through better access to attractors, improved signage measures.
- Identify transportation demand management measures that could reduce peak hour demand.
- Protect residential and commercial areas from air quality, noise, and visual impacts resulting from truck traffic.

Goal 2: Identify roadway system needs to accommodate future population, economic and tourism growth.

- Implement street improvements (versus constructing new streets) as the preferred means to accommodate additional growth.

Goal 3: Promote the increased use of alternative modes.

- Identify measures to resolve physical impediments to circulation for alternative modes.
- Improve pedestrian circulation within and between neighborhoods and commercial centers.
- Identify intersection improvements that enhance pedestrian safety.
- Improve bicycle and pedestrian crossing for US 30, 101 and OR 202.
- Construct riverwalk/bicycle path around the city.
- Identify measures to address the lack of truck facilities.
- Utilize the abandoned Burlington Northern railroad right-of-way for pedestrian/bicycle uses and rail bank it for potential future rail use.

Goal 4: Utilize access management measures to reduce traffic impacts on arterial and collector streets.

- Limit access points on US 30, US 101 and OR 202.
- Investigate restrictions on limiting existing access.
- Investigate the potential for alternative routes in lieu of the arterials for local traffic.

Goal 5: Identify improvements needed to address site-specific transportation issues.

- North and South Tongue Point areas.
- East Mooring Basin Industrial area.
- Burgerson property (39th Street).
- 45th Street left-turn improvements.

Goal 6: Assess the impacts of building and not building the proposed Astoria Bypass on the city's transportation system.

- Evaluate the transfer of US 30 to the city and county if the bypass is constructed.

Proposed Transportation System

The TSP proposes improvements to Astoria's transportation system in the planning area over the TSP planning period (20 years). Two future street classification scenarios are represented in the TSP depending on whether the Astoria Bypass is constructed in the 20-year planning period. The following elements apply in the East Gateway planning area. They differ in that US 30 is a principal arterial in the first scenario and a collector street in the second scenario.

- Scenario 1 (No Bypass): US 30 is a principal arterial (state/city), and portions of 33rd Street, Harrison Avenue, 35th Street, Irving Avenue, Cedar Street, 45th Street, Nimitz Road, and Old Columbia River Highway are major local streets (city/county); all other streets are minor local streets (city).²¹
- Scenario 2 (Bypass): US 30 is a collector street (state/city), and portions of 33rd Street, Harrison Avenue, 35th Street, Irving Avenue, Cedar Street, 45th Street, Nimitz Road, and Old Columbia River Highway are major local streets (city/county); all other streets are minor local streets (city).²²

Design Standards

Table 7-1 in the TSP provides the street standards for the different classifications, reproduced in Table 6 below.

Figures 7-3 through 7-9 in the TSP provide roadway and right-of-way design cross-sections for each classification. The TSP's bicycle element specifies the design of bike lanes as one-way, in the direction of vehicle travel, four to six feet wide, and adjacent to the curb unless there is on-street parking or a right-turn lane in which case the bike lane will be placed in between the parking or turn lane and the vehicle travel lanes.

²¹ Illustrated by Figure 7-1, *Recommended Future Street Classification – No Bypass*, in the 1999 City of Astoria Transportation System Plan (TSP).

²² Illustrated by Figure 7-2, *Recommended Future Street Classification – With Extended Bypass*, in the 1999 City of Astoria Transportation System Plan (TSP).

Table 6: Street Classification Standards

Classification	Pavement Width	Right-of-Way Width
Principal Arterial (US 30 – East Couplet to Nimitz Road)	48 feet	60 feet
Principal Arterial (US 30 – east of Nimitz Road)	52 feet	60 feet
Collector Street	40 feet	60 feet
Major Local Street	36 feet	60 feet
Minor Local Street	28 feet	40 feet

Access Management

General access management standards were developed for the TSP with the cooperation of state, county, and city officials. The standards from Table 7-2 are provided in Table 7.

Table 7: General Access Management Guidelines

Street Classification	Posted Speed	Minimum Spacing Between Driveways and/or Streets	Minimum Spacing between New Traffic Signals
Arterial (Two-way)	25-50 mph	400 feet	2,800 feet
Arterial (One-way)	20-35 mph	200 feet	400 feet
Collector Street	25-35 mph	100 feet	400 feet
Major Local Street	25 mph	Access to each lot permitted	400 feet

Projects

Seven different projects are proposed in the planning area for the 20-year TSP planning period. Moving from west to east, these include:

1. **Project R4 (Roadway):** This improvement relates to the stretch of US 30 between Franklin and 33rd Streets. These intersections meet the highway at oblique angles, creating sight distance, and other safety concerns. These intersections will be redesigned to provide turning refuges on US 30 and potentially closing of one of the intersections or designating them as one-way streets. Restricting turn movements may be another option. Cost: \$300,000.
2. **R5A (Roadway):** 37th and US 30; Channelization, restriping, and parking prohibitions would improve operations for drivers at this intersection. Cost: \$50,000.

3. NM5 (Non-motorized): US 30 Pedestrian Improvements; US 30 has sporadic sidewalks. The following table lists the locations of needed sidewalk improvements. Cost \$250,000.

TABLE 7-5

LOCATIONS OF NEEDED SIDEWALK IMPROVEMENTS

<i>Eastbound</i>	<i>Westbound</i>
<i>MP 96.93 to 96.70</i>	<i>Nimitz Road to 95.12</i>
<i>MP 96.63 to 96.35</i>	<i>MP 96.69 to 97.06</i>
<i>MP 95.73 to Nimitz Road</i>	<i>MP 97.32 to 97.84</i>

Note: On the westbound side, between MP 97.06 and 97.32 the sidewalk has large poles in the middle of the sidewalk, making it difficult to use.

4. R5B (Roadway): 45th and US 30; This project would include signing and the construction of a left-turn lane. Cost: \$700,000.
5. R5C (Roadway): 54th and US 30; Channelization, signing, and striping would be done at this intersection to improvement traffic operations. Cost: \$500,000.
6. R5D (Roadway): Nimitz Road and US 30; Some realignment and striping would be done to improve sight distance and facilitate truck movements including a westbound right-turn acceleration area. Cost: \$100,000.
7. R6 (Roadway): US 30 with South Tongue Point Development; The South Tongue Point Master Plan increased the potential for future higher land use in the South Tongue Point Area. This plan included research stations, industrial uses, US Fish and Wildlife offices and general commercial or industrial uses. This plan created a new road crossing over the BNR tracks and intersection US 30. This would involve a new bridge and a new intersection. If the Astoria Bypass is built, this may not be warranted. The South Tongue Point intersection has a high instance of truck traffic requiring left-turn refuges and intersection widening. South Tongue Point Road also intersects US 30 at an angle, creating turn movement problems for trucks, especially turning onto westbound US 30. If elements of the South and North Tongue Point Master Plans are adopted, this intersection will be a major traffic conduit and may require higher capacity improvements. In addition, the South Tongue Point Master Plan calls for a new intersection approximately a half mile to the east of the existing intersection. This project is for construction of a new intersection. Cost: \$200,000.

According to the City of Astoria Public Works Director, the City has very little budget for transportation projects in the TSP and the TSP is itself somewhat outdated. Only projects that are urgently needed are being built, and they are being funded through various and creative sources. The most significant transportation project being undertaken in the planning area is a series of improvements to 39th Street meant to serve development of the Astoria Business Park. The City secured state Immediate Opportunity Funds to leverage the \$280,000 project. In order

to receive Immediate Opportunity Funds, the developer had to provide a 50% match and guarantee that the business park will supply at least 30 jobs.

The City relies primarily on private developers to build transportation improvements as part of private development projects. If the improvements are built to City standards, then the developer will usually dedicate the transportation facility to the City for maintenance. This acts as the current model for transportation system development in Astoria.

2004 Sunset Empire Transportation City and Regional Bus Service Schedule

The City of Astoria provided a Sunset Empire Transportation City and Regional Bus Service Schedule for Winter 2004. The schedule shows one route, Route 10, running through East Astoria. The route, also referred to as the East Astoria - Red Cedar Route, travels between a Transit Center and Transfer Station downtown north of 9th Street and Marine Drive (US 30) and the Emerald Heights neighborhood south of US 30 and Alderbrook neighborhood north of US 30 in east Astoria. Service runs Monday through Saturday, so that there is no service Sundays or on select holidays. The East Astoria - Red Cedar Route operates hourly from 6:15 in the morning to 6:15 in the evening, making stops in the following order:

1. Transit Center/Transfer Station (downtown)
2. Columbia Memorial Hospital
3. Emerald Heights
4. 51st Street and Birch (Alderbrook neighborhood)
5. Safeway
6. Columbia Memorial Hospital
7. Clatsop Community College
8. Transit Center/Transfer Station (downtown)

Sunset Transportation Empire also provides Dial-a-Ride service on small buses for Clatsop County residents, weekdays from 8 am to 5 pm. Reservations must be made at least 2 days in advance, with priority given to senior and disabled riders. Other services include shuttles between the Port of Astoria and downtown when cruise ships are docked at the Port and free field trip transportation from once to twice monthly for state approved daycare facilities in Clatsop County.

1990 Waterfront Planning Study

The Waterfront Planning Study was conducted by Murase Associates with assistance from the City of Astoria, a Property and Business Owners Committee, a Citizens Advisory Committee, a Technical Advisory Committee, and citizens attending public meetings for the process. The study was commissioned to recommend ways to rejuvenate Astoria's Waterfront for a study area that stretched from 6th Street River Park on the east, to Marine Drive (US 30) on the south, the Maritime Museum on the east (about 18th Street), and the Columbia River on the north. This area lies west of the East Gateway planning area, and while nearby, is not adjacent to it. However, the East Gateway Transportation Plan may share some of its vision, design elements, and project ideas including the trolley and riverside trail.

By developing design guidelines for building heights, setbacks, massing, materials, and architectural character, for signage, streetscapes, bikeways, public spaces, lighting, landscaping, and parking, master planning for the waterfront is intended to:

- Protect the working nature of the waterfront;
- Strengthen the area's visual identity;
- Preserve and improve identified view corridors; and
- Revitalize commercial uses on the waterfront.

Recommendations for the Master Plan were organized into seven phases by priority:

1. Pedestrian pathway along the waterfront, linking the design elements;
2. View areas and outdoor decks to view the Columbia River;
3. Streetscapes where sidewalks are resurfaced, lighting is standardized, street trees are planted, street furniture is added, and parking is provided;
4. Restrooms added throughout the waterfront study area and areas around parking lots landscaped to screen the lots from the waterfront;
5. More parking, an improved plaza, and landscaping at the Maritime Museum and deck and roof improvements at the Brix Maritime Corporation Building to provide event space and free up parking space;
6. Streetscape improvements focused on Astor Street, and promoting retail/commercial development at 10th Street and Astor; and
7. A trolley between 6th Street River Park and the Maritime Museum.

1997 Astoria Gateway Master Plan

The Gateway Master Plan, adopted in 1997, arose from the desire to create a unified vision for development in the Gateway area. Development proposals in the area for an aquatics facility, Oregon State University Seafood Lab and Consumer Center, a riverside hotel, and renovations to the Columbia Memorial Hospital and Maritime Museum helped drive the master planning. The master plan area covers the area between downtown and the Uppertown commercial/light industrial area (16th Street to 29th Street), and between the Columbia River and the foot of the wooded hills above town (along and just south of US 30/Marine Drive). This area lay immediately west of the East Gateway planning area, and projects planned for East Gateway should complement the vision and projects included in the Gateway Master Plan. A conceptual drawing of the master plan is included in this memo as Appendix E.

Objectives for the master plan include the following:

1. *Support Downtown Astoria* - with uses that complement rather than compete with retail, office, and other uses that are best sited downtown.
2. *Enhance Major Existing Uses;*
3. *Promote New Land Uses;*
4. *Link Land Uses* - with other districts surrounding the Gateway District using view corridors, gateways, walkways, and continuous roads;
5. *Create a "Pedestrian-Friendly" Environment;*
6. *Create Investor Interest; and*
7. *Develop Implementation Tools.*

The master plan concepts emphasize the river and natural environment, existing uses, historic elements, transit, and walking. Proposed design guidelines recommending Historic "Cannery Row" Industrial, Astoria Railroad Vernacular, and Historic Victorian or Craftsman architectural styles reinforce, in particular, the natural environment and historic themes.

The master plan organizes the Gateway District into several subdistricts such as Maritime Heritage, Family Activity, Attached Housing/Health Care, Medial, Education/Research/Health Care Campus, Hospitality Recreation, Local Service, and Attached Housing, and Commercial/Light Industrial Influence Area. The Commercial/Light Industrial Influence Area (from 29th Street to 34th Street) refers specifically to the transition of the Gateway district to the Uppertown riverside area, which constitutes the western portion of the East Gateway Transportation Plan planning area. The master plan targets the Influence Area for commercial and light industrial development, including the preservation and improvement of existing uses, exempts the area from master plan design guidelines, and recommends street trees, sidewalks, and pedestrian-scaled lighting for Marine Drive (US 30).

New or improved infrastructure proposed in the master plan that extends toward or into the East Gateway planning area includes the Riverwalk, a trolley, and improvements to Marine Drive (US 30). The master plan proposes to extend the Riverwalk from downtown to and around the Mill Pond in the Gateway District, and to design it to accommodate bicycles. The trolley is envisioned as running on the former Burlington Northern railroad tracks (now Portland and Western Railroad) between downtown and the Maritime Museum and the hotel, proposed on the riverfront near the Mill Pond. Ideally Marine Drive would have no new direct access driveways from adjacent properties, and would maintain its bicycle lanes. Proposed Marine Drive street section and plans feature:

- two 13-foot-wide vehicle travel lanes;
- two six-foot-wide bicycle lanes;
- 12-foot-wide sidewalk and planting strip areas;
- continuous street trees;
- curb extensions on approach streets and on one side of Marine Drive at intersections with Marine Drive;
- flowering trees behind the curb extensions;
- eight-foot-wide on-street parking bays behind the planting areas and curb extensions on Marine Drive; and
- special paving on the crosswalks between intersection corners.

The master plan's implementation section discusses collaboration between ODOT and the City as necessary to make capacity improvements on Marine Drive as identified in the City's TSP, and to make the improvements listed above to beautify and enhance the roadway's pedestrian environment.

1999 Astoria Gateway Area Transportation and Growth Management Plan

The Astoria Gateway Area Transportation and Growth Management (TGM) Plan was developed to define a preferred set of specific strategies to balance the needs of vehicle traffic mobility and urban vitality and accessibility in an area with geographic and right-of-way constraints. The plan was undertaken during the final development phases of the City's TSP

and following the adoption of the Gateway Master Plan. The East Gateway Transportation Plan literally picks up where the TGM Plan leaves off – at 33rd Street. So East Gateway should literally and figuratively connect to the projects and goals included in the TGM Plan.

The Marine Drive (US 30) corridor between 16th Street and 33rd Street forms the plan area. Transportation goals for the plan area include:

- improve traffic circulation and safety;
- identify needs associated with population, economic, and tourism growth;
- use access management to limit traffic impacts on arterials and collectors; and
- promote transportation alternatives to automobiles.

Land use goals include improving existing land uses, promoting new land uses, connecting land uses visually and physically, and creating pedestrian-friendly environments.

The Preferred Plan breaks the plan area down into sections, and the East Section of the plan area is adjacent to the East Gateway planning area. Transportation improvements for Marine Drive (US 30) in the East Section include increasing roadway capacity by adding left-turn lanes, maintaining some of the existing on-street parking, and providing for pedestrian crossing of Marine Drive, shown in Appendix F of this memo. In particular, the plan proposes:

- maintaining on-street parking on Marine Drive from 27th to 29th Street on the north and south sides, and from 29th to 32nd Street on the south side;
- adding left-turn lanes at Marine Drive intersections from 30th to 33rd Street;
- realigning Franklin Avenue and 32nd Street as a single intersection;
- closing the 33rd Street approach to Marine Drive from the south, and modifying the 33rd Street approach from the north to form a T intersection;
- replacing bike lanes, starting west of 33rd Street, with shared travel lanes once Riverwalk is established and is connected to Marine Drive as an alternative bike route;
- adding curb extensions for pedestrian crossing at the intersections of blocks where on-street parking is provided;
- adding mid-block curb extensions for pedestrian crossing between 27th and 29th Street;
- upgrading the signal at 30th Street to be actuated by both vehicles and pedestrians; and
- widening sidewalks to at least 10 feet, particularly on the north side of Marine Drive where there are fewer conflicts between buildings and creating additional right-of-way.

Of note, there is a discrepancy here between the Gateway Master Plan and the TGM Plan. The Gateway Master Plan calls for bike lanes on Marine Drive (US 30) while the Gateway TGM Plan calls for removal of bike lanes in favor of shared lanes on Marine Drive. This should be resolved by the East Gateway Transportation Plan.

The TGM Plan also defines its own East Gateway area along the north side of Marine Drive between 29th and 33rd Streets, which is adjacent to but does not coincide with the planning area for the East Gateway Transportation Plan. The plan acknowledges the area's significant redevelopment potential due to its flat and vacant land, proximity to the highway and downtown, and great views. The plan proposes a new east-west route parallel to Marine Drive (US 30) between 29th and 33rd Streets in order to provide an alternative to and relieve congestion on Marine Drive, and to improve connections for all modes between Marine Drive and the Columbia River and Riverwalk. The plan is illustrated in Appendix G of this memo. In particular, the plan recommends:

- a new east-west, mid-block street between 29th and 33rd Streets, with 50 feet of right-of-way and 28 to 30 feet of paved roadway, bisecting the City Public Works and Brugh properties and connecting to a new street proposed from 23rd to 29th Street as part of the Mill Pond Development;
- a new 20-foot-wide, two-way, east-west lane between 29th and 30th Street, running along the southern edge of the Portland and Western Railroad right-of-way; and
- a new 12-foot-wide, one-way, west-bound lane between 30th and 33rd Streets on the southern edge of the Riverwalk in 50-foot railroad right-of-way owned by the City, connecting to the lane proposed between 29th and 30th Street.

1972 Division of State Lands Tongue Point Study

The Oregon Division of State Lands conducted a study of Tongue Point in the early 1970s. However, a thorough search was not able to recover the document.

1989 Tongue Point Naval Engineering Study

It is expected that a good deal of the development in Astoria over the next ten years will occur at Tongue Point and will be industrial in nature. Engineering units of the Navy, a major landowner on Tongue Point, assessed the area for the siting of a potential mine sweeper facility. While the study itemizes improvements to be made to the site in order to bring it up to Navy standards, it does not address transportation improvements or access from the proposed facility to US 30.

1994 South Tongue Point Land Exchange and Marine Industrial Park Development Project, Final Environmental Impact Statement

South Tongue Point is located along the Columbia River, east across US 30 from the Emerald Heights neighborhood, south of the finger piers 1 through 5 of North Tongue Point, and directly north of the John Day River mouth. The 1994 South Tongue Point Final Environmental Impact Statement (FEIS) analyzes the impacts of three development alternatives in the South Tongue Point area:

- 1) Alternative A - conveying 130 acres of land administered by the Army Corps of Engineers in South Tongue Point to the Oregon Division of State Lands in exchange for 3,930 acres of state-owned land in the Lewis and Clark National Wildlife Refuge, and developing a moderate-draft marine industrial park on the property in South Tongue Point;
- 2) Alternative B - Alternative A with the addition of Phase 2, construction of a road from South Tongue Point to North Tongue Point, where there would be expansion of marine industrial and port development if needed.
- 3) Alternative C - the No Action Alternative, in which South Tongue Point would remain undeveloped with the exception of the existing Army Corps Field Station.

Alternatives A and B would use 50 acres of upland area in developing seven to ten parcels designed for medium-sized marine industrial tenants. The site can accommodate moderate-

and shallow-draft water-dependent uses. Site plans are provided for Alternatives A and B in the FEIS Figures 2-4 and 2-5 respectively. The plans divide the site into four different development uses, for a total of about 65 developed acres:

- 1) MERTS, a Marine and Environmental Research and Training Station and collaborative effort between Clatsop County Community College and other research agencies, approximately 12 acres;
- 2) Other water-dependent development, approximately 42 acres;
- 3) Non-water-dependent development, approximately 4.5 acres; and
- 4) The existing Army Corps of Engineers Field Station, approximately 6.5 acres.

The FEIS assesses impacts to the physical environment, social and cultural environment, and biological environment. None of the alternatives are expected to cause significant physical impacts on South Tongue Point. Alternatives A and B are projected to increase employment and tax revenue for the city, which are direct and indirect economic benefits that would not be generated by Alternative C.

In terms of biological environment, Alternatives A and B are expected to adversely affect bald eagles in the area. Both of the alternatives would convert 50 acres of wildlife habitat to development. Alternative A would convert 0.57 acres of wetlands and Alternative B 4.57 acres of wetlands. While mitigation measures under Alternative A could reduce adverse impacts to insignificant levels, impacts to bald eagles in the area would remain significant even with mitigation measures under Alternative B. Only Alternative B is expected to have what the FEIS classifies as "unavoidable adverse impacts" on bald eagles and wetlands because of the Phase 2 road proposed from South Tongue Point to North Tongue Point. Other impacts to vegetation, fish, and wildlife on South Tongue Point are not expected for any of the alternatives.

The FEIS establishes that the tenants would share the cost of "infrastructure extension and improvements" for the new parcels. The site would require new access to US 30 for truck traffic and employee traffic. Priority in the FEIS was given to access scenarios that avoided local streets and conflicts with local traffic and other modes such as railroad crossings. Figures 2-4 and 2-5 show the existing service road from US 30 to the Army Corps Field Station as a secondary access for use by pedestrians, bicyclists, and utilities. A new, primary access would be constructed as a signalized intersection with turn lanes at US 30 south of the existing access. The new road leading from this intersection to the center of the site would include an overpass to cross the existing railroad, two travel lanes, shoulders, and a left-turn lane at the intersection, and would be 44 feet wide and 700 feet long. The FEIS proposes a new local service road for the site, which would have two lanes and shoulders, and would be 36 feet wide and 2,700 feet long. Constructing the access and local service road accounts for part of the 0.57 total acres of wetlands to be filled under Alternative A. Rail access - a spur from the Burlington Northern Line that runs west of the site to the center of the site - is depicted in the development concepts (Figure 2-2) but not in the site plans.

1999 Master Development Plan for North Tongue Point

North Tongue Point encompasses Piers 1 through 5, which can serve moderate-draft vessels, and about 36 acres of land on the southeast base of Tongue Point. Crestmont, Inc. prepared the Master Development Plan in 1999 after a successful lease bid to landowner Oregon Division of

State Lands. Master planning in North Tongue Point is intended to guide redevelopment of underutilized land and facilities for water-dependent industry.

The plan divides proposed development into three phases. Phase 1 proposes general infrastructure improvements in addition to construction and improvement of facilities and equipment specific to marine vessels and dredging activities. Infrastructure improvements include construction of roads and installation of power lines, potable and sanitary water systems, and sewage line upgrades between Piers 1 and 3. Phase 2 recommends the extension of Burlington-Northern (currently Portland and Western) rail to a point south of Pier 2. Phase 3 calls for paving of acreage between Piers 1 and 3 to use as laydown area.

According to a representative of Washington Group, land managers in the Tongue Point area, the 1999 Master Development Plan still guides development in the area. Development there is still intended to be marine industrial in nature, and the Washington Group representative believes that any improvements to US 30 will benefit development in Tongue Point.

2004 Immediate Opportunity Fund Application

In spring 2004, the City of Astoria applied for a grant from the state's Immediate Opportunity Fund to pay half the cost of the transportation improvements needed to finalize a development deal for the Astoria Business Park and Pier 39. The requested state funds would be used to pay for construction of a fully improved 39th Street and a deceleration lane on US 30 leading up to 39th Street. According to the application, the amount requested (\$278,628) reflects half the anticipated cost of preparing and constructing an internal street, Abby Road, and improving 39th Street. The developers of the Astoria Business Park and Pier 39 agreed to construct Abby Road to city standards with the intent of dedicating it to the City.

The development site consists of 12 acres of industrially zoned land and two acres of pier structure on the Columbia River. Businesses agreeing to locate at this site are doing so contingent upon the US 30, 39th Street, and Abby Road improvements. Immediate Opportunity Funds were designed for this purpose; the joint program between the Oregon Economic and Community Development Department and ODOT offers emergency funds for transportation improvements that will retain existing or secure new employment and economic development opportunities. Pier 39 - Astoria, developers of the Hanthorn/Bumble Bee Cannery site at the foot of 39th Street, reported 100% occupancy of the planned Phase 1 office development for the site in March 2004. Companies that have signed leases for the Astoria Business Park and Pier 39 include:

- Windward Canvas, manufacturing company, 4 employees
- Northwest Smoke Fisheries, manufacturing company, 4 employees
- Heirloom Hardwoods, manufacturing company, 2 employees
- IBIS Group LLC, service company, 2 employees
- Salmon 4 All, service company, 2 employees
- Northwest Sentencing Alternatives, service company, 2 employees
- Michael Autio, Attorney, 1 employee

- Myriad Commercial Properties, service company, 2 employees
- Pier 39 – Astoria Fisherman Suites, service company, 4 employees
- Mary Ann Murk, Attorney, 2 employees.

2004 Astoria Business Park Plat Plan

A June 2004 plat plan of Astoria Business Park depicts a portion of the East Gateway study area between 39th and vacated 41st Street, and between the railroad right-of-way and US 30. The plan shows eight separate lots from roughly one-half to two acres in size. The proposed local road Abbey Lane almost completely divides the southern Lots 1, 2, 3, and 4 from northern Lots 5, 6, 7, and 8 except that it terminates in a cul-de-sac between Lots 3, 4, and 5. Paved right-of-way on Abbey Lane is planned to as 25 feet for each travel lane, and a cul-de-sac of 50 feet in radius. 39th Street is shown as having 74 feet of paved right-of-way, with 37 feet in each travel lane.

Capital Improvement Documents

The City of Astoria Public Works Department has prepared Combined Sewer Overflow (CSO), Water Supply, and Water Distribution Plans. After discussing these plans with the Public Works Director, it appears these plans and projects have very little direct bearing on the East Gateway Transportation Plan and planning area. Water systems in East Astoria and the Gateway area were recently updated, and no other major projects are scheduled for the area in the planning horizon (approximately next 20 years).

IV. Summary

Development and redevelopment of residential, industrial, and employment uses in the East Gateway planning area will rely, in part, on strategic transportation improvements for their success. Transportation improvements in the East Gateway Transportation Plan planning area will be influenced by an array of existing plans and policies. State transportation documents will guide the composition of the East Gateway Transportation Plan, and provide higher level goals for livability, safety, and economic development and for multimodal transportation planning in the planning area. State documents also specify rules for access to US 30 (a state and national highway), and rules that will determine whether new signals are warranted on US 30. The Oregon Highway Plan and Highway Design Manual present mobility standards for planning and project design purposes, and other state transportation plans provide design guidelines for roadways and bicycle and pedestrian pathways on the highway or highway right-of-way. The US 30 Corridor Plan recommends development of a truck re-route around US 30 through Astoria (the Astoria Bypass). The Corridor Plan also includes recommended maintenance projects and intersection improvements on US 30 in and around the East Gateway study area.

Local land use plans, transportation plans, overlay zones, master plans, and studies done in and around the planning area emphasize pedestrian improvements to US 30 and local streets,

capacity improvements for US 30, new local roads, and preservation and promotion of the city's natural assets and historic style. As highlighted by the City's TSP, the type and degree of improvements on US 30 will vary greatly with whether a US 30/Astoria Bypass is constructed south of Astoria. A planning effort sponsored by ODOT is currently underway to examine the need for a bypass based on updated regional traffic models and forecasts. The East Gateway Transportation Plan should coordinate with that project if possible.

Local plans also call for new routes parallel to US 30 in the Gateway District. While these roads may not connect directly to development in the planning area, they may reduce some of the vehicle traffic on US 30 and thus affect business, industrial, and residential development in the planning area.

Other plans do address transportation facilities that can be continued into the planning area. Plans such as the Gateway Master Plan and the Gateway Transportation and Growth Management Plan recommend extending and making better connections to multi-use, non-motorized paths like Riverwalk (also referred to as the River Trail). These plans lay the groundwork for one of the objectives of the East Gateway Transportation Plan – extending a riverside multi-use trail around to the east side of the Alderbrook Lagoon. This complements part of the City's comprehensive plan for a park east of the Alderbrook Lagoon meant to serve the residential neighborhoods of the Alderbrook area, including the anticipated Blue Ridge subdivision, as well as other residents of Astoria and the region.

Some existing local plans conflict – for example, the Gateway Master Plan calls for bike lanes on Marine Drive (US 30) while the Gateway Transportation and Growth Management Plan calls for removal of bike lanes in favor of shared lanes on Marine Drive. It is the goal of the Gateway Transportation Plan to incorporate the common direction shared by prior planning efforts as well as resolve any discrepancies among them.

Goals and Objectives

PUBLIC AND AGENCY INVOLVEMENT

The Astoria East Gateway Transportation Plan (Plan) has been developed with the active participation of both city and state agencies as well as local business and citizen involvement. Two groups were formed in the fall of 2004. Members were identified by ODOT and the City. These groups were the key to the successful incorporation of agency and public issues and desires throughout the Plan development.

The **Project Management Team (PMT)** consisted of representatives from the Oregon Department of Transportation (ODOT), Oregon Department of Land Conservation and Development (DLCD), the City of Astoria (City), Clatsop County, and the consultant team of CH2M HILL, Angelo Eaton & Associates, and Alta Planning + Design, Inc.

The **Citizen Advisory Committee (CAC)** consisted of representatives of ODOT, the City, a diverse group of residents, business owners, and organizations including the Astoria School District, Port of Astoria, the developers of Pier 39, and the consultant team.

The PMT served primarily in a technical oversight role while the CAC provided input representing the interests/preferences of the community. The goal of the planning process was to have a collaborative effort in which stakeholders were given an opportunity to participate in the decision making process in which consensus was maximized.

Meetings were generally held on the same day and followed the same agenda. Members of the PMT were also encouraged to participate in the CAC meetings to provide input and clarification on agency plans and procedures.

Four PMT and CAC meetings were held throughout the plan development:

- Meeting 1 - February 9, 2005 focused on an overview of the project scope and schedule, and allowed the teams to develop the initial project goals, objectives and evaluation criteria. A summary of rules, regulations, ordinances, etc. that govern development of the Plan were reviewed.
- Meeting 2 - March 15, 2005 focused on the review of the existing transportation system, operational and safety analyses.
- Meeting 3 - May 4, 2005 focused on the review and evaluation of alternative recommended improvements, and selection of preferred alternatives.
- Meeting 4 - June 1, 2005 focused on the review of the final plan documents.

Open House - On June 22, 2005 an Open House was conducted to present the preferred Plan alternatives to the general public. - The Open House was conducted in an unstructured format with members of the PMT and CAC available to explain the various elements of the Plan.

Meeting summaries are provided in the Appendix.

CITY OF ASTORIA
EAST GATEWAY TRANSPORTATION PLAN
GOALS AND OBJECTIVES

2/01/05

INTRODUCTION

As part of the grant application and award process, the Department of Land Conservation and Development (DLCD), the Oregon Department of Transportation (ODOT), and the City of Astoria (City) identified certain transportation infrastructure improvements that would be beneficial. In general, the identification of and planning for these improvements are intended to provide an improved system of transportation. Specifically, the improvements are intended to reduce congestion, enhance safety, and encourage development of industrial/commercial and residential sites in a manner that will benefit both vehicular and pedestrian/cyclist travel.

The scope of work includes development of several distinctly different types of transportation improvements. As the work has proceeded, four broad groups of improvements emerged:

- Industrial/Commercial Sites
- Residential Sites
- Enhancement of pedestrian/cyclist access from residential areas to the River Trail
- River Trail Extension

The diverse nature of the four types of projects made development of "goals and objectives" for the East Gateway Transportation Plan (Plan) somewhat complex. Accordingly, the overall goals and objectives were broadened to encompass all four of the types of projects, with the understanding that not all goals and objectives will apply to all proposed improvements.

PLAN GOALS AND OBJECTIVES

The following is a statement of what the Plan is expected to accomplish:

1. Support the planned land use as defined in City planning documents for Business Parks, Industrial Sites, and Residential Sites.
2. Encourage development of commercial and industrial sites so as to provide more opportunity for employment within the City.
3. Improve vehicular access from industrial/commercial sites to U.S. 30.
4. Improve internal circulation and manage access for vehicular and non-motorized users in industrial sites and local street systems.
5. Improve pedestrian and bicyclist connectivity and safety across U.S. 30.

6. Support the development of a local street network that will reduce reliance on U.S. 30.

7. Provide improved safety and direct access to the River Trail for new developments.

8. Support the extension of the River Trail through the east end of Astoria.

9. Provide all recommended improvements in an environmentally sound and cost effective manner.

These goals and objectives may need to be modified as the study progresses with stakeholder input.

CITY OF ASTORIA
EAST GATEWAY TRANSPORTATION PLAN
EVALUATION CRITERIA

4/8/05

INTRODUCTION

During preparation of the Astoria East Gateway Transportation Plan (Plan) Goals and Objectives, it became apparent that comparison of alternative transportation improvements developed during the study would be most meaningful if the improvements were compared in groups containing similar projects rather than comparing all projects together. It is recommended that the alternative improvements be compared within the following groups:

- Industrial/Commercial Sites
- Residential Sites
- Pedestrian/Cyclist Enhancement
- River Trail Extension

The attached spreadsheet provides a sample format for use during the ranking of alternatives and selection of the preferred alternatives. Hypothetical projects are listed for example only and may bear no resemblance to actual projects that are identified and compared.

The first round of evaluation will use the scoring system shown. However, in many cases where alternatives are very similar, this system does not provide sufficient differentiation between alternatives and it becomes necessary to use an expanded ranking process using a point assignment system.

INDUSTRIAL/COMMERCIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
Support the planned land use as defined in City planning documents for Business Parks, Industrial Sites and Residential Sites		
Functional classification and design consistent with the area		
Minimizes commercial/industrial vehicular conflicts within other land use areas		
Encourage development of commercial and industrial sites so as to		
Supports the long-term development plan and infrastructure expansion		
Accommodates forecast traffic volumes		
Improve vehicular access from industrial/commercial sites to U.S. 30		
Improves safety at existing connections to U.S. 30 (site distance, geometric deficiencies, accidents)		
Improves capacity and/or V/C operations at existing connections to U.S. 30		
Addresses ODOT Standards		
Improve internal circulation and manage access for vehicular users in industrial sites		
Meets local access management guidelines		
Provides alternative travel routes for internal trips		
Meets local congestion management guidelines		
Provide all of the above in an environmentally sound and cost effective manner		
Minimizes impacts to sensitive areas		
Encourages use of alternative travel modes (rail, transit, non-motorized modes)		

INDUSTRIAL/COMMERCIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
Score		
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.		
A score of 1 indicates that the proposed alternative achieves the stated goal/objective		
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect		
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective		

RESIDENTIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
Support the planned land use as defined in City planning documents for Business Parks, Industrial Sites and Residential Sites		
Functional classification and design consistent with the area		
Supports redevelopment opportunities within residential areas		
Improve internal circulation and manage access for vehicular users in the local street systems		
Provides alternative travel routes for internal trips, reducing reliance on U.S. 30		
Discourages industrial traffic interaction with strictly residential areas		
Meets local congestion management guidelines		
Addresses ODOT Standards		
Support the development of a local street network that will reduce reliance on U.S. 30		
Provides or supports new roadway infrastructure parallel to U.S. 30		
Provides or supports new roadway infrastructure connecting to destinations within the residential communities (schools, parks, river trail)		
Improves capacity and/or V/C operations at existing connections to U.S. 30		
Addresses ODOT Standards		
Provide all of the above in an environmentally sound and cost effective manner		
Addresses traffic safety issues		
Minimizes impacts to sensitive areas		
Encourages use of alternative travel modes		



RESIDENTIAL SITES	Highway 30 Intersection Improvements	New Circulation Roadway
Score		
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.		
A score of 1 indicates that the proposed alternative achieves the stated goal/objective		
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect		
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective		

PEDESTRIAN/CYCLIST ENHANCEMENT	New sidewalks	Highway 30 Crossing
Improve pedestrian and bicyclist connectivity and safety across U.S. 30.		
Facilitate movement of pedestrians across U.S. 30		
Addresses crossing safety issues		
Consistent with design standards		
Provides adequate facilities on both sides of crossing		
Connects desirable land uses		
Addresses ODOT Standards		
Improve informal circulation in industrial sites and local street systems		
Addresses pedestrian safety issues		
Consistent with design standards		
Provides continuous/direct pedestrian access		
Provide improved safety and direct access to the River Trail for new developments (north of U.S. 30)		
Address pedestrian safety issues		
Consistent with design standards		
Provide continuous/direct pedestrian access		
Provide for pedestrian safety along US 30		
43rd and 45th community center and playground		
Provide all of the above in an environmentally sound and cost effective manner		
Minimal impacts to sensitive areas		
Encourage use of alternative travel modes		
Minimal impacts to traffic operations		

PEDESTRIAN/CYCLIST ENHANCEMENT Improve pedestrian and bicyclist connectivity and safety across U.S. 30.	New sidewalks	Highway 30 Crossing
Score		
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project		
A score of 1 indicates that the proposed alternative achieves the stated goal/objective		
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect		
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective		

RIVER TRAIL EXTENSION	Alignment 1	Alignment 2	Alignment 3
Support the extension of the River Trail through the east end of Astoria.			
Address trail user safety issues			
Consistent with design standards			
Provide continuous/direct alignment			
Connects desirable land uses (parks, schools, etc.)			
Provide all of the above in an environmentally sound and cost effective manner			
Minimize impact to sensitive areas			
Minimize impact to private property			
Promotes cost effectiveness			
Score			
Each alternative will be scored with a 1, 0 or -1 value to characterize how the proposed alternative meets the goals and objectives of the project.			
A score of 1 indicates that the proposed alternative achieves the stated goal/objective			
A score of 0 indicates that the alternative does not impact the goal/objective or has a neutral effect			
A score of -1 indicates that the alternative has a negative effect or results in a situation contrary to the stated goal/objective			



Existing Facilities and Services

City of Astoria

East Gateway Transportation Plan

Inventory of Existing Transportation System Facilities and Services

PREPARED FOR: Oregon Department of Transportation/City of Astoria, OR

PREPARED BY: Cheryl Yoshida, Eric Shimizu, Tim Newkirk/CH2M HILL
Allison Wildman, George Hudson/Alta Planning + Design, Inc.

DATE: May 9, 2005

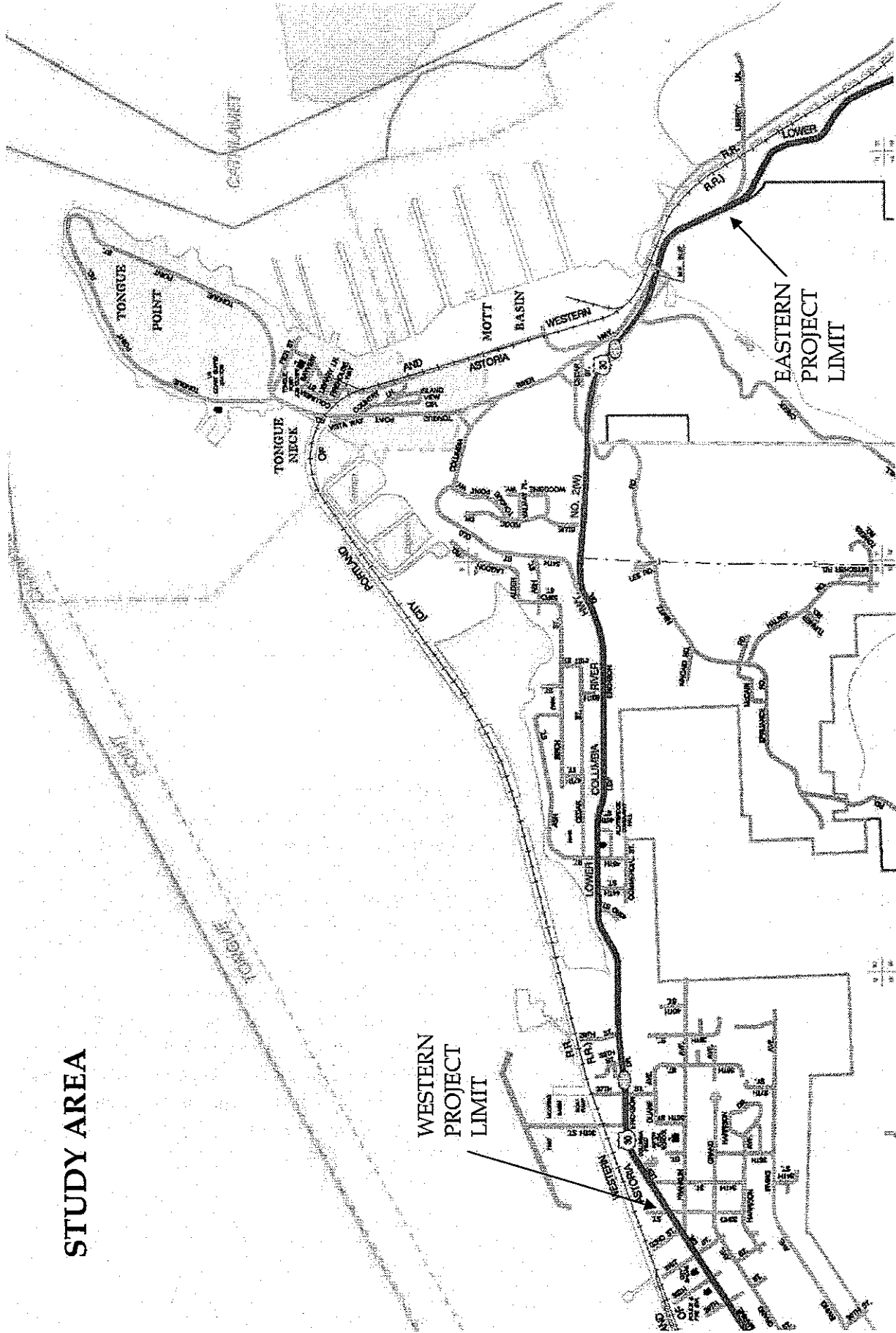
The existing transportation system facilities and services have been catalogued in this Technical Memorandum. Physical as well as operational characteristics of the roadways, intersections, and transportation services are described. The study area encompasses the eastern limits of the City of Astoria, along U.S. Highway 30 between Liberty Lane on the east and 33rd Street on the west. The study area includes the Uppertown residential area on the south side of U.S. Highway 30, the mixed residential/commercial areas on the west side, and the Alderbrook neighborhood, Blue Ridge, Tongue Point Job Corps Center and North Tongue Point areas on the north. A map of the study area is provided on page 2.

Vehicular Facilities

U.S. Highway 30 is the only roadway classified as an arterial within the study area. East of Old U.S. Highway 30 (the easterly most intersection with U.S. Highway 30), the highway is classified as a rural principal arterial, while the remainder of the highway is classified as an urban principal arterial. The highway is also classified as a National Highway System (NHS) freight route. The posted speed limit is 45 mph within the eastern portion of the study area and reduces to 35 mph west of 46th Street. Attachments 1 and 2 show the roadway database maintained by the Oregon Department of Transportation.

East of 39th Street, the pavement width of U.S. Highway 30 is approximately 32 feet wide, consisting of two twelve-foot travel lanes with paved shoulders on each side. A recent (2005) roadway project has widened U.S. Highway 30 to include a 500 foot westbound right-turn pocket at 39th Street. From 39th Street to the western project limits, U.S. Highway 30 consists of three lanes, including a median left-turn lane. The highway surface is asphalt concrete throughout the entire study area. Pavement conditions are rated as being "good" based on the *Oregon State Highway System 2003 Pavement Condition Map (12/2003)*.

STUDY AREA



Currently there are no signalized intersections within the study area. U.S. Highway 30 is uncontrolled, while all side streets are stop-controlled. A flashing warning beacon is, however, provided at the intersection of U.S. Highway 30 and Nimitz Road/Tongue Point Job Corp Center Access Roadway. A signalized intersection is being constructed at the intersection of U.S. Highway 30 and 33rd Street.

Several of the U.S. Highway 30 access points occur at skewed intersections, including, Liberty Lane, Old U.S. Highway 30, Tongue Point Job Corp Center Access Roadway and 54th Street. Due to geometric constraints, turning movements and sight distances are affected at these locations.

On-street parking on U.S. Highway 30 is largely prohibited, but is tolerated at the following locations; at Columbia Field (36th Street) during sports games, on the south side of the highway east of 37th Street where there is a widened section of roadway, and in front of the residences in the vicinity of 42nd Street.

There are no defined collector roadways in east Astoria; however several major local street routes exist. On the west side of the study area, 33rd Street, Harrison Avenue and 35th Street connect to Irving Avenue which is south of and runs parallel to U.S. Highway 30. Irving Avenue is identified as the emergency route for U.S. Highway 30 in event of a closure. Franklin Avenue, 36th Street, Duane Avenue and 37th Street provides a short parallel route to the highway and direct access to John Jacob Astor School, as well as a connection to Irving Avenue. In the central section of the study area, Cedar Street is also a major local roadway running parallel to the highway. On the eastern end of the study area, Nimitz Road and a portion of Old U.S. Highway 30 connect U.S. Highway 30 with Emerald Heights and North Tongue Point, respectively. Table 1 provides a summary of the roadway characteristics along major local streets in the east Astoria area. Examples of Pavement Condition are provided in "Roadway Conditions Examples" following Table 1.

Table 1 Local Street Inventory

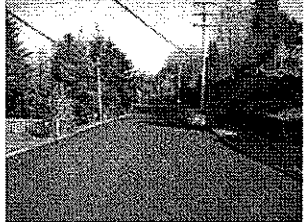
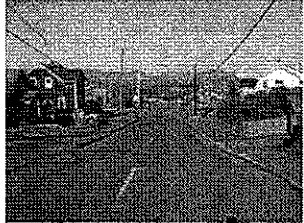

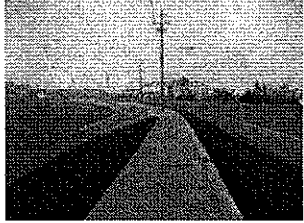
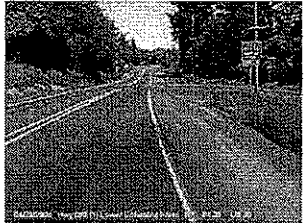
Local Street	Pavement Type	Pavement Condition	Pavement Width	Edge Treatment	Local Street Speed Limit
Tongue Point Job Corp Center Access Roadway (north of U.S. Highway 30)	Asphalt	Poor	Varies 22' & 27'	Gravel/dirt shoulder	25 mph
Birch Street (parallel to U.S. Highway 30)	Asphalt	Fair/Poor	Varies 16' & 32'	Gravel/grass shoulder & 5' concrete sidewalk	25 mph
Cedar Street (parallel to U.S. Highway 30)	Asphalt	Good	28'	Curb & 5' concrete sidewalk	25 mph
Nimitz Road (south of U.S. Highway 30)	Asphalt	Fair	22'	Intermittent grass shoulder & 5' concrete	20 & 25 mph


CITY OF ASTORIA
EAST GATEWAY TRANSPORTATION PLAN
INVENTORY OF EXISTING TRANSPORTATION SYSTEM FACILITIES AND SERVICES

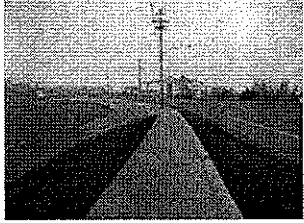
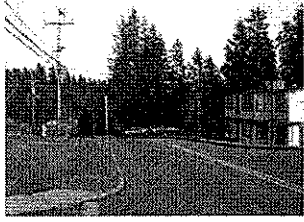

Local Street	Pavement Type	Pavement Condition	Pavement Width	Edge Treatment	Local Street Speed Limit
				sidewalk	
Old US 30 (north of U.S. Highway 30)	Asphalt	Poor	20'	Grass	25 mph
Blue Ridge Drive (north of U.S. Highway 30)	Asphalt	Fair/Poor	16'	Grass	25 mph
54 th Street (north of U.S. Highway 30)	Concrete	Poor	16'	Grass	25 mph
45 th Street (crosses U.S. Highway 30)	Asphalt	Good	28'	Curb & 5' concrete sidewalk	25 mph
33 rd Street (crosses U.S. Highway 30)	Asphalt	Poor	23'	Curb & 5' concrete sidewalk	25 mph
Harrison Avenue (parallel to U.S. Highway 30)	Asphalt	Good/Fair	23'	Curb & 5' concrete sidewalk	25 mph
35 th Street (north of U.S. Highway 30)	Asphalt	Poor	24'	Curb & 5' concrete sidewalk	25 mph
Franklin Avenue (parallel to U.S. Highway 30)	Concrete/ Asphalt	Poor/ Good	Varies 22' to 26'	Curb & 6' concrete sidewalk	25 mph
36 th Street (south of U.S. Highway 30)	Asphalt	Poor	30'	Curb & 5' concrete sidewalk	20 & 25 mph
37 th Street (crosses U.S. Highway 30)	Asphalt	Poor	32'	Curb & 5' concrete sidewalk	25 mph
39 th Street (north of U.S. Highway 30)	Asphalt	Good	36'	Curb & 6' sidewalk on east side of the roadway	25 mph
Duane Avenue (parallel to U.S. Highway 30)	Asphalt	Good	38'	Curb & 5' concrete sidewalk	25 mph
Ash Street (parallel to U.S. Highway 30)	Asphalt	Good/Fair	Varies 18' & 20'	Curb	25 mph

Source: CH2M HILL, February 2005

Roadway Condition Examples

Pavement Conditions	Description of Condition	Photo
Good	Smooth surface, without cracks, ruts or potholes	
Fair	Relatively smooth surface with minor rutting, cracking or patching present.	
Poor	Rough surface. Numerous potholes and/or alligator cracking	
Shoulder Conditions	Description of Condition	Photo
Good	Striped and paved shoulder with smooth surface, and smooth interface between travel lane and shoulder	
Fair	Paved shoulder with some cracks and/or gravel present. Grass/Gravel shoulder with adequate clear width and grade for emergency use.	

Shoulder Conditions	Description of Condition	Photo
Poor	Narrow grass/gravel shoulders. Distinct grade difference between roadway and shoulder. Potholes, ponding, steep grades and/or drop-offs.	

Sidewalk Conditions	Description of Condition	Photo
Good	Smooth surface, without cracks. ADA compliant width and grades	
Fair	Fairly smooth surface, with some cracks and uneven settling of sidewalk panels. ADA compliant width and grades.	
Poor	Rough surface, with numerous cracks and severe settlement. Non ADA compliant.	

Currently, between 37th Street and 45th Street, there is no alternative route to U.S. Highway 30 for east/west travel. However, funding for replacement of the Franklin Street Bridge has been obtained. This project requires an extension of Franklin Street to 43rd Street to maintain access between residences and the highway during construction, which would reduce the limits of U.S. Highway 30 that has no alternative route. The current extension would be constructed in an area that is prone to landslides.

The majority of local truck traffic is generated by the following industries, shown in Table 2. Regular, but minimal truck traffic traversing the study area is also generated by deliveries to the new Safeway at U.S. Highway 30 and 33rd Street (USF Reddaway), Harvey Gilmore, Georgia Pacific, Heavy Hauling, and Fred Meyer – Warrenton as well as Costco – Warrenton.

Table 2. Truck Traffic

Company	Description
TP Freight Lines Inc. – Astoria, OR 2190 Marine Drive	<ul style="list-style-type: none"> • Mostly local truck deliveries (vs. pick-ups) • Average of 30 trucks operate daily within the City of Astoria – usually 18-foot vans – and delivery time varies. • Average of 30 trucks daily each way to Seaside on US 101. Trucks typically depart at about 8am on weekdays. • Average of 20 trucks daily each way across the Astoria Bridge to the State of Washington on US 101. Trucks typically depart about 9am on weekdays.
Weyerhaeuser Corporate – Seaside, OR 550 NE Skipanon Drive	<ul style="list-style-type: none"> • Weyerhaeuser deals with individual loggers who hire their own contractors for delivery purposes.
Warrenton Fiber – Warrenton, OR 389 Northwest 13th Street	<ul style="list-style-type: none"> • Trucks travel to and from logging sites in Longview, WA, and Warrenton, OR daily • An average of 10 trucks daily each way through the City of Astoria at about 8am and early afternoon.
	<ul style="list-style-type: none"> •
	<ul style="list-style-type: none"> •
Port of Astoria Bergerson Construction – 33 Portway West Bay Marketing – 49 Portway, Pier 2 Astoria Pacific Seafoods – 49 Portway, Pier 2 Red Lion Hotel – 400 Industry	<ul style="list-style-type: none"> • The Port of Astoria currently does not generate any truck traffic of its own. Several businesses situated within the Port generate a minimal amount of regular truck traffic; Bergerson Construction, West Bay Marketing, Astoria Pacific Seafoods and Red Lion Hotel. Between June and October, the seafood processing businesses have increased truck traffic volumes (West Bay – 20 trucks/day (30 trucks/day by the design year) and Astoria Pacific – 9 trucks per day)
Source: City of Astoria, March 2005.	

Bicycle Facilities

U.S. Highway 30 is designated as a state bicycle route. A portion of the Northwest Oregon Coast Bicycle Route and the Lewis and Clark Bicycle Touring Route traverses the study area along this roadway.

At the very western end of the study area, between 33rd and 37th Streets, striped bicycle lanes or wide shoulders are present. Bicycling conditions within this area are fair to good. On the south side of U.S. Highway 30, shoulders are not striped between 37th and 50th Street, but the pavement provides fair conditions for bicyclists. East of 50th Street, shoulders vary in width and also vary from fair to poor conditions. Shoulders are striped on the north side of U.S. Highway 30 and conditions are fair to poor for bicycle use. Examples of the shoulder conditions are shown in the "Roadway Condition Examples" above.

Pedestrian Facilities

Sidewalks along U.S. Highway 30 are intermittently provided along the central and western portions of the study area. The approximate locations of the sidewalks on the south side of U.S. Highway 30 are between 33rd to 38th Streets and 43rd to MP 95.70 (approximately 48th Street). On the north side of the highway, sidewalks are located between 33rd and 35th Streets as well as 37th and 45th Streets. Sidewalks are at least 5 feet wide, concrete, and in fair to good condition.

There are two formal pedestrian crossing locations within the study area. A striped crosswalk with flashing warning lights is located at 37th Street, and a striped crosswalk is located at 45th Street. Roadway approaches to the marked crosswalks are signed with the standard pedestrian warning signs, MUTCD W11A-2 and W11-2. Pedestrian warning signs are also present on the U.S. Highway 30 approaches to Blue Ridge Drive, but there is no marked crosswalk at this location.



W11A-2



W11-2

The local street system's sidewalk inventory is summarized in Table 1, under the "Edge Treatment" heading. Generally, conditions were observed to range from fair to poor. Worn surfaces and cracks in the concrete were common features of the existing

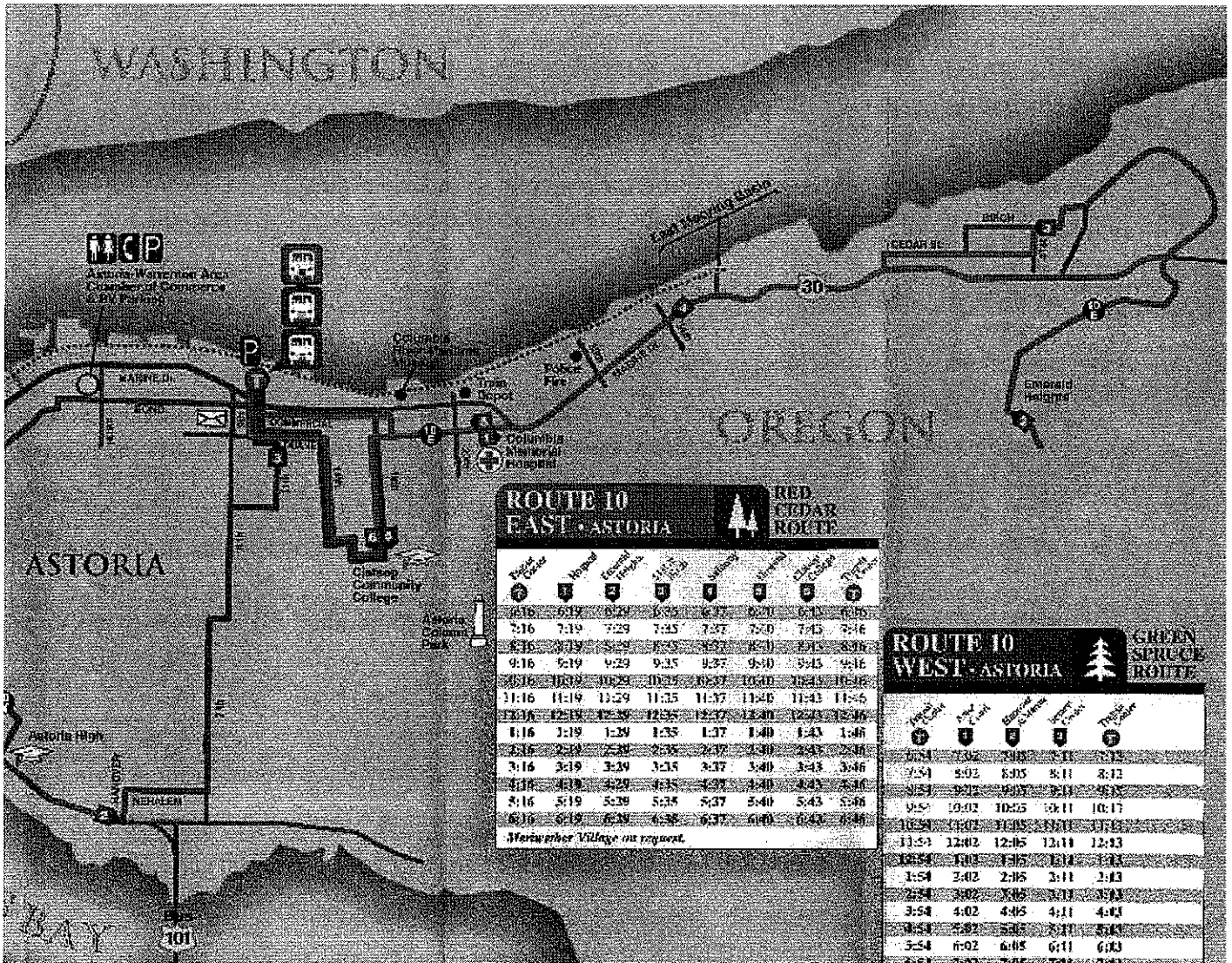
pedestrian facilities. Examples of the sidewalk conditions are provided in the "Roadway Condition Examples" above.

Public Transportation & Other Alternative Modes

The study area is directly served by the Sunset Empire Transit System. Both fixed route and Dial-a-Ride service is available from the transit service provider. Route 10 East runs on an hourly headway between the hours of 6:00 am and 6:00 pm, Monday through Saturday. This route connects the Alderbrook Neighborhood, North Tongue Point and Emerald Heights areas with downtown Astoria. Route 10 East begins outside of the project area in downtown Astoria. The route services the Astoria Transit Center and Hospital prior to traversing U.S. Highway 30 to Emerald Heights. The route crosses the highway to North Tongue Point and travels along Old U.S. Highway 30 to 51st and Birch Streets, following Cedar Street back to U.S. Highway 30, and downtown Astoria. Currently there are no signed bus stops or shelters along the route.

Sunset Empire Transit

Route 10 East Route and Schedule



The Dial-a-Ride service provides door to door transport by appointment on shared-ride basis utilizing small buses. Trips for senior citizens and disabled persons are a priority on the service. Dial-a-Ride service is provided Monday through Friday between 8:00 am and 5:00 pm. Service is provided as far south as Manzanita and as far north as Westport.

Sunset Empire Transit service information is available on-line at <http://ridethebus.org> and by telephone 503-861-RIDE or toll free at 1-800-776-6406. Printed materials are also located at the Astoria Transit Center (9th Street and Marine Street).

Regional public transit access is available by transferring to other routes or providers at the Astoria Transit Center, including Pacific Transit System's route to Washington State's Pacific County.

Private transit service connections are also provided at the transit center by AMTRAK motorcoach. AMTRAK runs between Portland and Astoria once daily, departing Astoria at 8:00 am.

Rail/Pipelines/Others

Railroad tracks parallel the Columbia River coast through the project area. The railroad tracks are owned by Portland and Western which operates a regional system of over 500 miles in northwestern Oregon. The company's rail lines are concentrated principally in the Willamette Valley from Portland along the Columbia River to Tongue Point, Astoria. Currently, Portland and Western runs once daily freight service only to Rainier (approximately 40 miles east of Astoria).

The Lewis and Clark passenger train operates one roundtrip excursion daily from Portland to Astoria during the months of May through September. The train will continue through the 2005 season, but beyond that, service is uncertain.

At-grade railroad crossings occur at the North Tongue Point site, 36th Street, 37th Street and 39th Street. All at-grade crossings are compliant with the current Class 2 railroad operations at 25 mph train speeds.

One major regional pipeline traverses the study area. Astoria is served by a natural gas distribution line which parallels U.S. Highway 30 from Portland. The pipeline is operated by Northwest Natural Gas. Currently, pipeline service is provided to the Job Corps Center, but not to North Tongue Point. There are no major regional water or oil pipelines through the project area.

There are no airports within 5 miles of the project site. The closest facility is the Astoria Regional Airport, located in the Warrenton city limits, approximately 10 minutes drive south of Astoria. The airport has two active runways. The airport related businesses includes;

Lektro – builder of industrial and aircraft tow vehicles

Runway Café – on-site restaurant facility

Twiss Air Service – provider of aircraft maintenance, flight instruction, charters and rentals. Hours of operation are Monday through Saturday, 8:00 am to 5:00 pm.

United Parcel Service – provides twice daily airfreight services, and also has a regional terminal on Port of Astoria property nearby.

A private airport is also located approximately 15 miles east of the project area on Old U.S. Highway 30, just west of Knappa High School (Knappa High School is located at 41535 Old Highway 30).

The closest airport with regularly scheduled flights to major destinations is the Portland International Airport, approximately 100 miles southeast of the study area.

Astoria River Trail

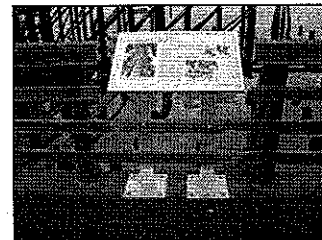
The Astoria River Trail is the eastern extension of the Astoria Riverwalk which is a dynamic shared use trail and boardwalk fronting the Columbia River. The following Memorandum “Existing Conditions – Opportunities and Constraints: Astoria River Trail” prepared by Alta Planning and Design provides an extensive discussion of the east Astoria portion of the trail and it’s relationship to the study area.

Existing Conditions

Project Setting

In 1977, the Astoria Chamber of Commerce introduced the visionary idea of constructing a trail along the Columbia River waterfront. Today, the Astoria Riverwalk is a dynamic shared use trail and boardwalk fronting the Columbia River from 6th Street to 17th Street that successfully commingles recreation, transportation, tourism and the waterfront industry. The trail is used by community residents and visitors throughout the year, and connects many of Astoria’s waterfront attractions and destinations, as well as many of the city’s working seafood canneries and processing facilities.

The Astoria River Trail is an extension of the popular Riverwalk, which travels west from the Riverwalk to the Port of Astoria and east to the Alderbrook neighborhood. Though the two trails were identified separately at one time, the terms have evolved and are now used interchangeably. For the purpose of this document, the trail will be referred to as the River Trail. The study area for the trail corridor extends from 27th Street east to the wastewater lagoons within the larger East Gateway study area.



Information placard on the Astoria Riverwalk



Astoria Riverwalk

Existing Trail Conditions

Rail Corridor Jurisdiction

The River Trail follows the former Burlington Northern Santa Fe (BNSF) railroad corridor which, including track, was deeded in fee to the City of Astoria in 1996¹. The City is responsible for keeping the corridor intact but is not restricted to how it can be used within city limits. The corridor's current uses include the River Trail, a vintage trolley that runs from the Port of Astoria to the East Mooring Basin, and an excursion train - the Lewis and Clark Explorer - which makes a single round-trip journey from Linnton to Astoria each day during the summer

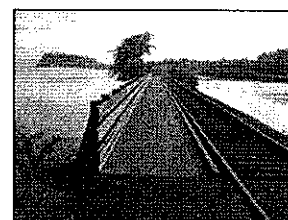
months. ODOT is responsible for the corridor outside of city limits. Portland and Western Railroad, a subsidiary of Genesee and Wyoming, owns the railroad tracks from just north of Portland to Tongue Point and has trackage rights from Tongue Point to the Port of Astoria. Freight rail may be reactivated with industrial development and redevelopment in the area.²



River Trail and railroad tracks

River Trail

The City has constructed over 4.2 miles of trail since 1996. The trail surface varies from asphalt to wooden boardwalk over waterways. All surfaces are currently ADA-accessible. The standard trail width is ten feet for most of the corridor, but narrows in constrained areas, particularly over Alderbrook Lagoon where it is as narrow as four feet. The trail is completely separated from public road right-of-way in the study area. The River Trail ends abruptly approximately 2260-feet from the first trestle in Alderbrook Lagoon.



River Trail on the railroad trestle

Perhaps the most unique feature of the River Trail is its proximity to the rail line itself. A study of other rails-with-trails in the United States revealed that the average setback (the distance between the paved edge of the trail and the centerline of the closest active railroad track) for trails with active railroad lines ranges from ten feet for low-volume, slow speed corridors to 50 feet or more for a trail along a high-speed, high-volume rail corridor. Over 80% of the trails were separated from the railway with a physical barrier.³



River Trail abruptly ends on the railroad berm over Alderbrook Lagoon

The existing setback for the River Trail is one to three feet from the nearest rail to the edge of the trail and has no barrier. There have been no reported incidences of trail user-train conflicts despite its high level of trail use. The River Trail is successful from a safety standpoint because the volume and speed of train traffic are extremely low.

¹ W.M. Mitchum, City of Astoria Public Works Director, Personal communication, October 29, 2004

² Oregon Department of Transportation, "Freight Moves the Oregon Economy" (July, 1999)

³ FHWA, "Rails with Trails: Lessons Learned" (August, 2002)

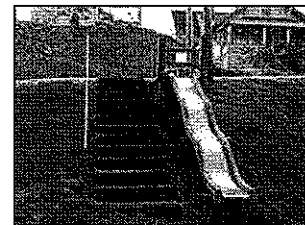
Land Uses

Zoning. The trail corridor traverses a variety of existing land uses and zoning districts, including aquatic development, general commercial, general industrial, residential neighborhoods (including Attached Housing – Mill Pond (AH-MP), a design overlay), and conservation aquatic. Current zoning precludes trail development at South Tongue Point due to Federal security restrictions. The City has also concurred that there is no interest in extending the River Trail to Tongue Point for reasons of security and challenging topography.⁴ In the East Gateway Transportation study area, the River Trail passes notable landmarks, including a new Safeway grocery store, the Mill Pond housing development, the East Mooring Basin, and a new mixed-use development in the Columbia River at the end of 39th Street.

Residential. The River Trail will likely travel through the Alderbrook neighborhood, a small cove of single-family residences encircling Alderbrook Lagoon. Through streets in the area include 45th, Cedar, Birch, 51st, 53rd, and parts of Ash Street. Sidewalks are intermittently present and in varied conditions. Narrow sidewalks exist on 45th, Cedar, and Birch from 51st to 53rd. All other streets in the neighborhood do not have sidewalks. Traffic volume in this area is very low but the presence of traffic calming (speed humps) and resident-produced signs on Cedar and Birch indicate that speeding may be problematic. On-street parking is prevalent throughout the neighborhood.

The former military residential area overlooking Alderbrook along Blue Ridge Drive is a prime redevelopment opportunity. The area has unparalleled views of the Columbia River, Astoria, and coastal mountains and has good access to U.S. Highway 30. While steep slopes preclude direct connection to the River Trail from Blue Ridge Drive, there are opportunities to improve Tongue Point Way and Old Columbia Highway/54th Street to provide pedestrian access to Lagoon Road and the River Trail. Currently, a demand trail exists from Old Columbia Highway/54th Street to Lagoon Road down the hillside. There are opportunities to formalize this connection and use stairs to make a direct connection to the River Trail if/when the area redevelops.

Parks and Open Space. There are three parks in the study area: Columbia Field, Violet LaPlante Park, and an unnamed tract of river dredge material located on the east end of the Alderbrook Lagoon that serves as local open space. Columbia Field is a developed park located on the south side of U.S. Highway 30 at 36th Street. It has ball fields and tennis courts, and is the site of an innovative approach to public seating. A new sidewalk along U.S. Highway 30 will step down to bleacher-style seating for residents and visitors who wish to watch the sports teams.



Park access and part of the play equipment

⁴ W. M. Mitchum, City of Astoria Public Works Director, Personal communication, October 29, 2004.

Violet LaPlante Park is located in the Alderbrook neighborhood and consists of picnic facilities and playground equipment, including a slide that uses the natural slope of the hillside. The stairs access both the park and the slide. The park provides an excellent opportunity for the River Trail alignment through the Alderbrook neighborhood.

The unnamed tract of land on the east end of Alderbrook Lagoon is fraught with Scotch broom and other invasive plants that thrive in disturbed areas. There are abundant wildlife viewing opportunities. Neighborhood residents perform general maintenance (trimming brush and removing garbage) for the two demand trails that travel across the tract. A small campsite and non-motorized watercraft launch have been site planned by a University of Oregon landscape architecture student on the westernmost edge of the tract. The Parks, Recreation, and Open Space element of the Astoria Comprehensive Plan (1979) encouraged the development of this area as a neighborhood park to emphasize passive recreation. Aligning the River Trail through this area is both desirable and logical.



Existing trail on the land east of Alderbrook Lagoon

Trail-Roadway Intersections

Due to the position of the trail and railroad corridor along the river bank, the trail currently crosses the public right-of-way where it extends into the river on private property: 36th and 39th. Bollards are used on the trail to indicate the intersection and prevent motor vehicles from driving on the trail. Vehicles crossing the railroad tracks and trail are stop controlled. From 39th east, there are no trail-roadway intersections.

U.S. Highway 30 Bicycle and Pedestrian Facilities

Average daily traffic for U.S. Highway 30 in the study area fluctuates between 12,000 and 15,000 vehicles. The highway is the only road that makes a complete connection through the study area, making it a vital transportation link for residents and employees in the East Gateway area. The highway is also a designated state bicycle route, concludes Adventure Cycling Association's Lewis and Clark bicycle touring route, and marks the beginning of the Oregon Coast Bicycle Route.

Existing bicycle and pedestrian facilities along U.S. Highway 30 in the study area are intermittent. Sidewalks do not exist from 53rd to the eastern boundary of the study area. Sidewalks are generally in fair condition, though there are areas that are not in compliance with the Americans with Disabilities Act (ADA). Bicycle lanes or wide shoulders are present in the study area from 33rd to 37th; shoulders are intermittent from 37th to the study area boundary.

Trail Connections Across U.S. Highway 30

Due to the location of the River Trail on the bank of the Columbia, most residents have to cross U.S. Highway 30 to access the trail. Currently, four signed and marked crosswalks exist in the study area:

- 27th - 28th Street: signed and marked mid-block crossing; curb extension on the north side of the roadway
- 29th Street: signalized marked crossing on all legs of the intersection
- 37th Street: signed (flashing overhead sign) and marked on two legs of the intersection
- 45th Street: signed and marked on three legs of the intersection

All of the roadway approaches to the marked crosswalks are signed with the standard pedestrian warning signs (MUTCD W11A-2 and W11-2). Pedestrian warning signs are also present on the U.S. Highway 30 approaches to Blue Ridge Drive, but there is no marked crosswalk or other pedestrian crossing facility at this location.

Existing Pedestrian and Bicyclist Use

The City of Astoria has not conducted any formal counts or studies of pedestrians and bicyclists using or accessing the River Trail. Based on site visits, local knowledge, and Astoria's seasonal tourist economy, it is assumed that the River Trail used moderately throughout the year with its heaviest use occurring in the summer months.

The best method for determining where pedestrian and bicycle trips originate is to identify pedestrian and bicycle trip origins and destinations within the corridor. Existing pedestrian origins and destinations in the River Trail – U.S. Highway 30 corridor include:

Origins	Destinations
Alderbrook neighborhood	River Trail
Neighborhoods on the north side of U.S. Highway 30 from 37 th Street west	Astoria Trolley stop
Astor Elementary School	East Mooring Basin
Hotel (Comfort Suites)	Safeway (33 rd Street)
Astoria Trolley stops (three in project area)	Downtown Astoria shops and attractions
Mill Pond neighborhood	Astor Elementary School
	Columbia Field
	Commercial land uses on the south side of U.S. Highway 30
	Tongue Point – Federal Job Corp.

Due to the topography of the neighborhoods south of U.S. Highway 30 and existing access points to the River Trail, there are some logical crossing locations along the corridor. They include:

- 33rd Street – entrance to Safeway
- 36th Street at Columbia Field and East Mooring Basin
- 37th Street – existing marked crossing
- 45th Street – existing marked crossing

Public Rights-of-Way in the Alderbrook Neighborhood

The River Trail provides an important transportation connection and recreational opportunity for the Alderbrook neighborhood. Currently, the only connection to downtown Astoria and points west from the neighborhood is on intermittent sidewalks and bicycle lanes on U.S. Highway 30. The River Trail would provide a safer, more comfortable route for pedestrians and bicyclists traveling west, as well as provide local recreational opportunities.

The Alderbrook neighborhood has a number of unbuilt public rights-of-way that could provide excellent opportunities for a trail alignment through the neighborhood (Figure 1). Further study of these rights-of-way should reveal alignments for the River Trail that will allow residents of the neighborhood to access the trail.

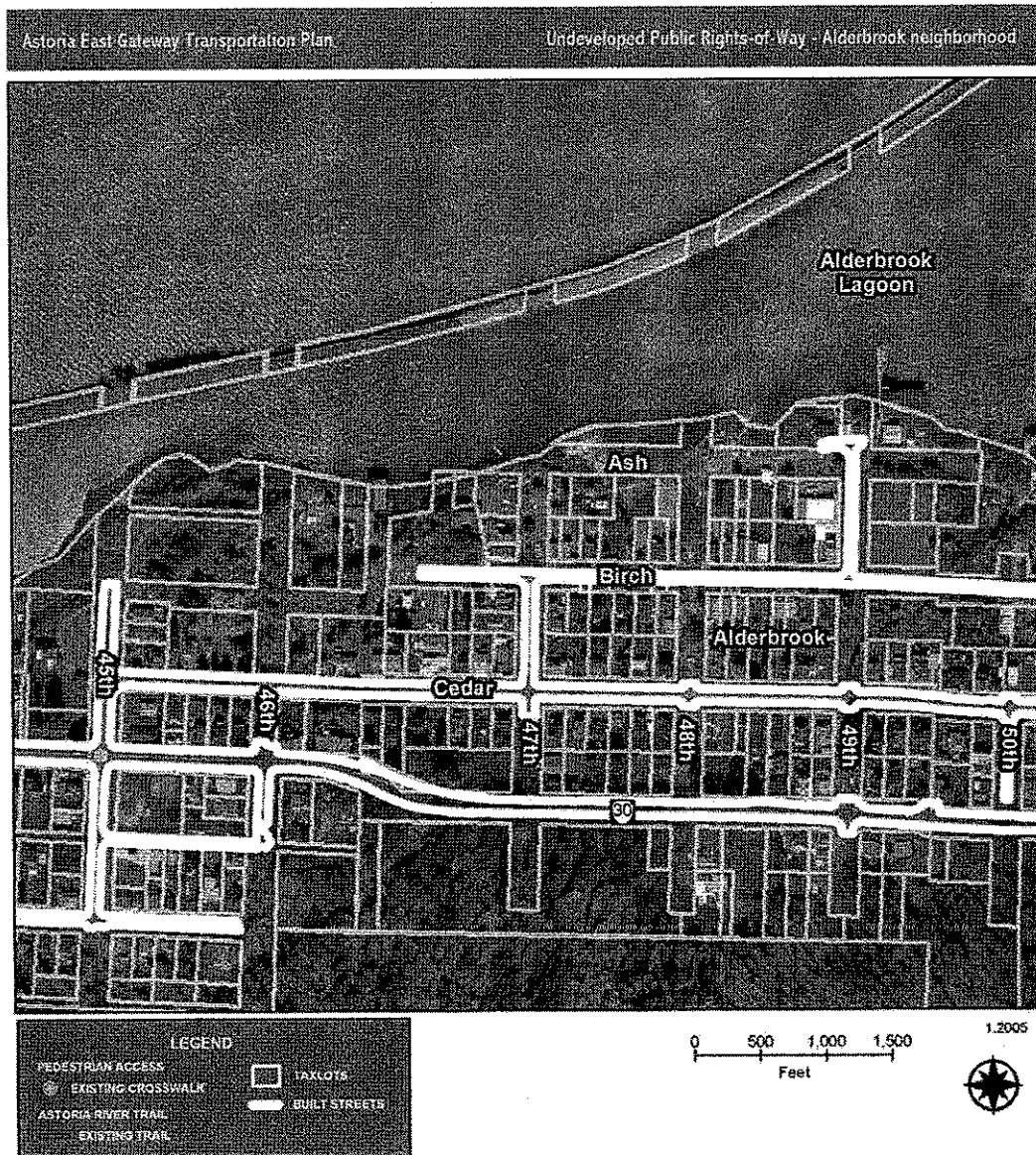


Figure 1. Undeveloped public rights-of-way: Alderbrook Neighborhood

Encroachment into the public right-of-way appears to be normative in this neighborhood, particularly on the north-south streets, north of Cedar and Birch Streets. It is unclear where the right-of-way for Ash Street falls in this area, as the access road is not aligned with the formal right-of-way.

Existing Conditions – Opportunities and Challenges

The following map and table present existing conditions as well as opportunities and challenges for trail development in the study area. The overriding challenges for bicyclists and pedestrians in the study area are the speed and number of motor vehicles, particularly trucks, on U.S. Highway 30.

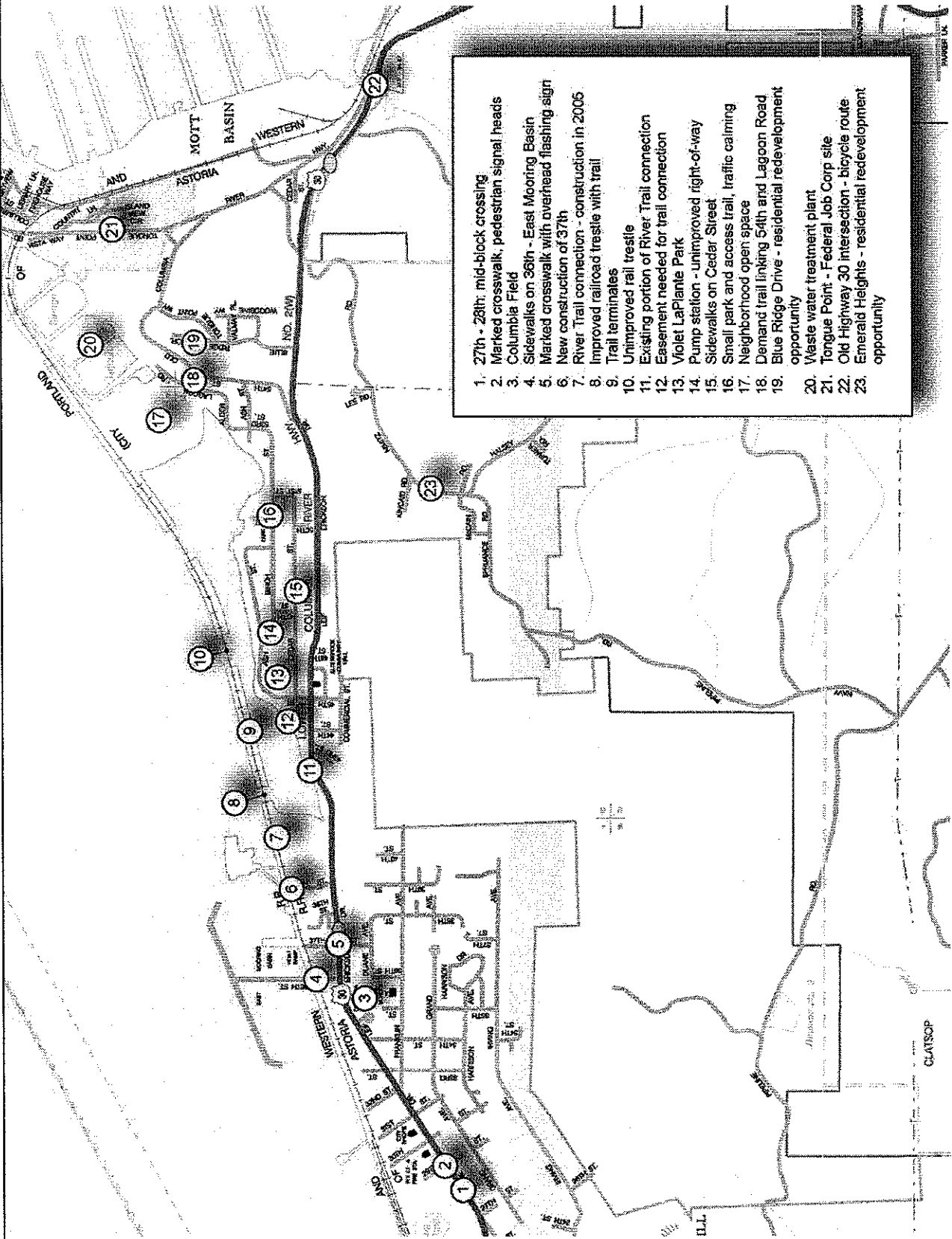


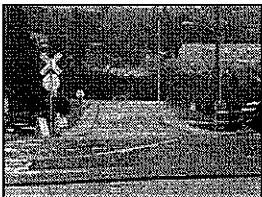
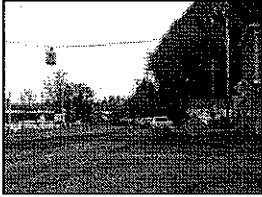
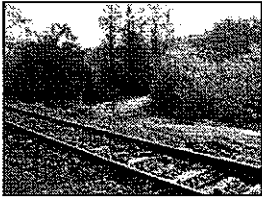
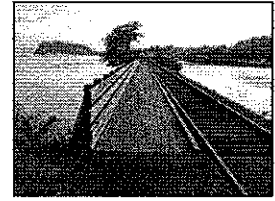


Figure 2. Existing Conditions summary map

#	Location	Description of Condition	Photo
1	27th – 28th pedestrian crossing	Mid-block crossing connects to Mill Pond development; curb extension exists on the north side of the highway.	
2	29th pedestrian crossing	Signalized intersection with marked crosswalks and pedestrian signal heads.	<i>No photo available.</i>
3	Columbia Field	Bicycle and pedestrian attractor. Elementary school is on the hillside above the park.	
4	35th sidewalks	Existing sidewalks on 35th provide access to the River Trail and U.S. Highway 30. No sidewalks exist on the north side of U.S. Highway 30 at this location.	
5	36th pedestrian crossing	Marked crosswalk with overhead flashing sign at 36th intersection. Curb extensions would improve pedestrian safety and visibility at this intersection.	
6	39th - New roadway	A new roadway is currently being constructed in the 39th Street right-of-way. Roadway will provide access to River Trail, as well as new development.	<i>No photo available.</i>
7	Trail connection alignment	Access to the existing trail along U.S. Highway 30, connecting to the Alderbrook neighborhood. Construction is slated for spring/summer 2005.	

8 Improved trestle crossing

The improved railroad trestle has a wide, wooden walkway on the north side of the railroad tracks.



9 Trail termination

The River Trail abruptly terminates approximately 2260 feet from the improved railroad trestle. The trail was extended as far as funds would allow.



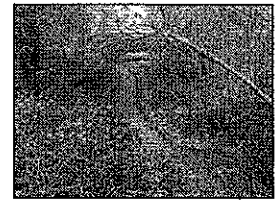
10 Unimproved trestle crossing

The unimproved railroad trestle is usable but dangerous due to slippery, rotten planks.



11 Existing trail connection

A paved trail extends east approximately 3500 feet from the 44th Street right-of-way below U.S. Highway 30.



12 Trail easement needed

Existing trail leads to private property along Alderbrook Lagoon. An easement is needed to continue the trail to 45th Street.



13 Violet LaPlante Park

Developed park in Alderbrook with playground equipment and picnic space. Great opportunity for a trail alignment through the park.



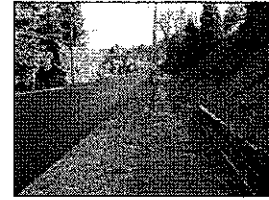
14 Waste water pump station

Fenced parcel provides access to undeveloped right-of-way behind the station. Possible trail alignment opportunity.

No photo available.

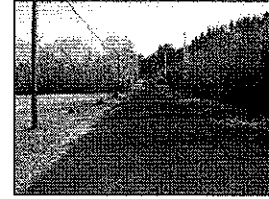
15 Cedar Street sidewalks

Narrow sidewalks with a generous setback exist on Cedar Street in the Alderbrook neighborhood. Some sidewalk areas will need spot repair.



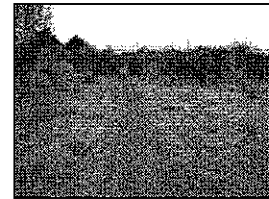
16 Birch Street

No pedestrian facilities on Birch but very low volume roadway. Traffic calming, small local park (ball field) and a demand trail leading to the park.



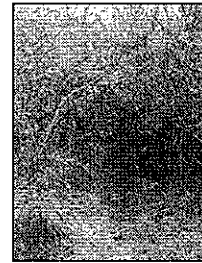
17 Dredge fill parcel

Publicly owned tract of land used by the Alderbrook neighborhood as open space. Two demand trails traverse the area.



18 Trail access from 54th

A demand trail (footpath) exists on the slope. Consider formalizing for a connection up the hillside when/if Blue Ridge Drive redevelops.



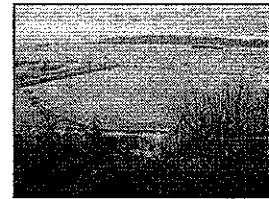
19 Blue Ridge Drive residential area

Former military housing area that has been condemned and vacated. Development potential – excellent river and mountain views to the north and up and down the Columbia River.



20 Waste water treatment facility

City-owned treatment facility for waste water. Not considered a desirable trail destination – boundary of River Trail alignment.



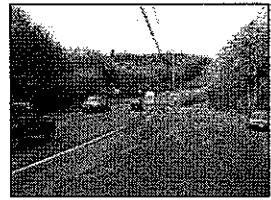
21 Tongue Point – Federal Job Corp site

Restricted-access facility.

No photo available.

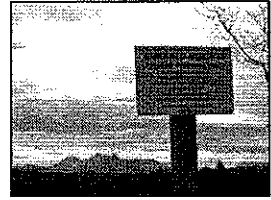
22 Old U.S. Highway 30 entrance

Challenging intersection – consider closing to vehicles but leaving open for bicyclists. Alternative route into city center for bicyclists.



23 Emerald Heights

Former military housing that currently offers Astoria residents affordable housing opportunities. Future high-end housing development potential – excellent mountain views.



Attachments

1. Oregon DOT Highway 30 Data
2. Bikeway, Sidewalk, & Crosswalk Report

Attachment 1

Oregon DOT Highway 30 Data

Functional Classification and National Highway System Status on Oregon State Highways

HWY	Beg MP	End MP	NHS	Functional Classification	Notes	HPMS AREA	City
72	3.34	5.19	No	14-Urban Principal Arterial - Other		3	Salmon
72	5.19	7.52	Yes	14-Urban Principal Arterial - Other		3	Salmon
72	7.52	8.48	Yes	12-Urban Principal Arterial- Other Fwy or Exp		3	Salmon
73	0.00	2.77	No	14-Urban Principal Arterial - Other		2	Roseburg
73	2.77	26.01	No	05-Rural Minor Arterial		1	
81	-6.02	-4.01	Yes	14-Urban Principal Arterial - Other		4	Portland
81	-4.01	0.54	No	14-Urban Principal Arterial - Other		4	Portland
81	0.54	5.46	Yes	14-Urban Principal Arterial - Other		4	Portland
81	5.46	15.04	No	14-Urban Principal Arterial - Other		4	Portland
81	15.04	19.25	No	05-Rural Minor Arterial		1	
81	19.25	22.03	No	14-Urban Principal Arterial - Other		2	Gresham
81	22.03	30.67	No	05-Rural Minor Arterial		1	
81	30.67	33.62	No	14-Urban Principal Arterial - Other		2	Woodburn
81	33.62	44.34	No	05-Rural Minor Arterial		1	
81	44.34	46.49	No	14-Urban Principal Arterial - Other		3	Salmon
91	-5.76	-4.75	No	16-Urban Minor Arterial		4	Portland
91	-0.44	-0.06	No	16-Urban Minor Arterial		4	Portland
91	0.65	1.57	No	16-Urban Minor Arterial		4	Portland
91	1.57	7.28	No	14-Urban Principal Arterial - Other		4	Portland
91	7.28	12.40	Yes	14-Urban Principal Arterial - Other		4	Portland
91	12.40	21.53	Yes	02-Rural Principal Arterial - Other		1	
91	21.53	24.29	Yes	14-Urban Principal Arterial - Other		2	Newberg
91	24.29	29.79	Yes	02-Rural Principal Arterial - Other		1	
91	29.79	34.56	No	05-Rural Minor Arterial		1	
91	34.56	39.35	No	14-Urban Principal Arterial - Other		2	McMinnville
91	39.35	62.31	No	05-Rural Minor Arterial		1	
91	62.31	63.25	No	14-Urban Principal Arterial - Other		2	McMinnville Independence
91	63.25	74.59	No	05-Rural Minor Arterial		1	
91	74.59	87.71	No	14-Urban Principal Arterial - Other		3	Corvallis
91	87.71	114.84	No	05-Rural Minor Arterial		1	
91	114.84	115.84	No	16-Urban Minor Arterial		3	Eugene
91	115.84	117.04	No	14-Urban Principal Arterial - Other		3	Eugene
91	117.04	125.81	Yes	14-Urban Principal Arterial - Other		3	Eugene
91	125.81	126.37	No	14-Urban Principal Arterial - Other		3	Eugene
92	0.55	1.57	Yes	12-Urban Principal Arterial- Other Fwy or Exp		4	Portland
92	1.57	9.58	Yes	14-Urban Principal Arterial - Other		4	Portland
92	9.58	25.51	Yes	02-Rural Principal Arterial - Other		1	
92	25.51	30.40	Yes	14-Urban Principal Arterial - Other		2	St. Helens
92	30.40	45.88	Yes	02-Rural Principal Arterial - Other		1	
92	45.88	48.75	Yes	14-Urban Principal Arterial - Other		2	Rainier
92	48.75	54.67	Yes	02-Rural Principal Arterial - Other		1	
92	54.67	89.24	Yes	14-Urban Principal Arterial - Other		2	Astoria
100	0.00	1.14	No	16-Urban Minor Arterial		4	Portland
100	1.14	22.25	No	07-Rural Major Collector		1	
100	22.25	30.00	Yes	01-Rural Principal Arterial-Interstate	Common with Hwy 2	1	
100	30.00	31.29	No	05-Rural Minor Arterial		1	
100	31.29	34.49	No	07-Rural Major Collector		1	
100	34.49	47.54	Yes	1-Rural Principal Arterial-Interstate	Common with Hwy 2	1	



Prepared by the Road Inventory and Classification Services Unit
 of the Oregon Department of Transportation
 (503) 986-4385
 10/26/2004

Attachment 2

OTMS - Bikeway, Sidewalk, & Crosswalk Report

Bikeway, Sidewalk, & Crosswalk Report

Oregon Department of Transportation

Bike Inventory Program. Please call Michael Ronkin at (503) 986-3555 if you have any questions.

Data source refreshed on 10/19/2004.

Roadway	Mileage Type	Overlap Code	Beginning Milepoint	Ending Milepoint	Misc Code	Width
---------	--------------	--------------	---------------------	------------------	-----------	-------

Highway #: 092 LOWER COLUMBIA RIVER Hwy

Type: Crosswalks

1			96.01	96.01	C	0
1			96.04	96.04	C	0
1			96.93	96.93	C	0
1			97.00	97.00	C	0
1			97.07	97.07	C	0
1			97.14	97.14	C	0
1			97.27	97.27	C	0
2			97.96	97.96	C	0

Type: Left Bikeways

1			96.01	96.93	SH	5
1			97.20	97.98	BL	5

Type: Left Sidewalks

1			95.74	99.34	WARRANT	0
1			96.01	96.15	CU3N	5
1			96.62	96.70	CU3N	5
1			96.93	97.00	CU3N	5
1			97.03	97.14	CU3N	10

http://www.odot.state.or.us/transportation/highwayreports/bikeway_report.cfm (1 of 2) 10/20/2004 12:18:55 AM

OTMS - Bikeway, Sidewalk, & Crosswalk Report

1	97.14	97.27	CU3N	6
1	97.27	97.30	CU3N	10
1	97.30	97.58	CU3N	5
1	97.58	97.85	CU3N	6
1	97.85	97.89	CU3N	5
1	97.89	98.39	CU3N	12
2	97.98	98.45	WARRANT	0

Type: Right Bikeways

1	96.01	96.04	SH	4
1	96.15	97.14	SH	5
1	97.14	97.20	SH	8
1	97.20	97.98	BL	5
1	97.98	98.40	BL	5
2	97.98	98.40	BL	5

Type: Right Sidewalks

1	95.55	99.34	WARRANT	0
1	96.04	96.70	CU3N	5
1	97.07	97.30	CU3N	5
1	97.27	97.47	CU1N	10
1	97.48	97.58	CU3N	5
1	97.64	97.70	CU1N	6
1	97.70	97.90	CU1N	10
1	97.85	97.89	CU3N	5
2	97.98	98.05	CU3N	10
2	97.98	98.45	WARRANT	0

http://www.cdot.state.or.us/transportation/reports/bikeway_report.cfm (2 of 2) 10/20/2004 12:18:55 AM

Operational and Safety Analyses

City of Astoria

East Gateway Transportation Plan

Operational and Safety Analyses

PREPARED FOR: Oregon Department of Transportation/City of Astoria, Oregon

PREPARED BY: Cheryl Yoshida, Tim Newkirk, Eric Shimizu /CH2M HILL

DATE: May 9, 2005

Technical Memorandum #4 includes an assessment of traffic volumes and operations along U.S. Highway 30 for existing conditions and a 20-year forecast for the design year. Traffic data collection, analysis methodologies, forecast assumptions and recent crash locations and potential causes along U.S. Highway 30 are also included in this technical memorandum.

Existing Conditions

Traffic Volumes

Manual turning movement counts were collected at six intersections along U.S. Highway 30 (Oregon Highway 92) on Saturday, September 11, 2004. Counts were performed on Saturday to match the travel patterns of a weekend, which is the peak travel period during the summer. Seasonal factors (methodology described below) were applied to the traffic counts to simulate the peak summer volumes. The duration of each intersection count is shown below:

- *U.S. Highway 30 and Tongue Point Job Corp Access Road/Nimitz Road:* Counted for 16 hours from 6 AM to 10 PM.
- *U.S. Highway 30 and Blue Ridge Drive:* Counted for 6 hours from 6 AM to 9 AM and 4 PM to 7 PM.
- *U.S. Highway 30 and Old Columbia River Highway:* Counted for 16 hours from 6 AM to 10 PM.
- *U.S. Highway 30 and 39th Street:* Counted for 6 hours from 6 AM to 9 AM and 4 PM to 7 PM.
- *U.S. Highway 30 and 36th Street:* Counted for 6 hours from 6 AM to 9 AM and 4 PM to 7 PM.
- *U.S. Highway 30 and 33rd Street:* Counted for 6 hours from 6 AM to 9 AM and 4 PM to 7 PM.

These intersections were included in the scope of work to represent traffic operations on U.S. Highway 30 for the various types of neighborhoods within the study area; including industrial, residential, and mixed use. Based upon comments from the February 12, 2005 Citizen's Advisory Committee (CAC) meeting, the intersection of 37th Street and U.S. Highway 30 should also have been included as a representative count location, however, the operations at this intersection are adequately characterized by the adjacent intersections. The full turning

movement data is compiled in Attachment 1.

The peak hour turning movement counts were seasonally adjusted to represent the 30th Highest Hour design volumes based on three of ODOT's permanent Automatic Traffic Recorder (ATR) stations, in the vicinity of the City of Astoria.

- Gearhart (#04-001), located on U.S. Highway 101 at milepost 15.90
- Astoria Bridge (#04-004), located on U.S. Highway 101 at milepost 3.80
- Rainier (#05-006), located on U.S. Highway 30 at milepost 53.33

The turning movement counts were conducted on September 11, 2004, less than one month after the highest count seasonal factor occurred on August 15th. Table 1 shows the variation in the traffic volumes by season as it relates to the count date at the three ATR stations used. The 30th Highest Hour Factor was derived by dividing the Highest Count Seasonal Factor (August 15) by the Traffic Count Seasonal Factor (September 11).

TABLE 1
 Variation in Seasonal Factors by ATR Station
 Gearhart, Astoria Bridge and Rainier ATR Stations

ATR Station	Lowest Count Seasonal Factor (Date)	Highest Count Seasonal Factor (Date)	Traffic Count Seasonal Factor (Date)	30th Highest Hour Factor
Gearhart (04-001)	1.2220 (January 15)	0.7861 (August 15)	0.9015 (September 11)	1.1468
Astoria Bridge (04-004)	1.3188 (January 15)	0.7257 (August 15)	0.8946 (September 11)	1.2327
Rainier (05-006)	1.1768 (January 15)	0.8155 (August 15)	0.8818 (September 11)	1.0813

Source: ODOT Seasonal Factors Tables

An average of the seasonal factors¹ from the three ATR stations was utilized to derive the project area's seasonal adjustment factor. The average seasonal factor was calculated to be 1.15.

The derived 30th Highest Hour design volumes were then balanced along U.S. Highway 30 between adjacent study intersections. The directional traffic volumes were adjusted until the difference between them was less than 10 percent. The derived traffic volumes at the study intersections are shown in Figure 1.

Intersection Operations

A Synchro traffic operations model was constructed for the study area based on traffic counts and field observations. Traffic volume parameters, such as peak hour factors, truck percentages, and number of pedestrians, were collected from hourly turning movement counts.

¹ The 2003 seasonal factor tables from the ODOT website were used.

These traffic counts were adjusted to the 30th Highest Hour and balanced between adjacent intersections. This model was used to assess existing traffic operations within the study area.

The Synchro model uses the methodology in the 2000 Highway Capacity Manual to analyze both signalized and stop-controlled intersections. The model also computes the volume-to-capacity (V/C) ratio necessary to determine whether the intersection meets the applicable mobility standards from the Oregon Highway Plan.

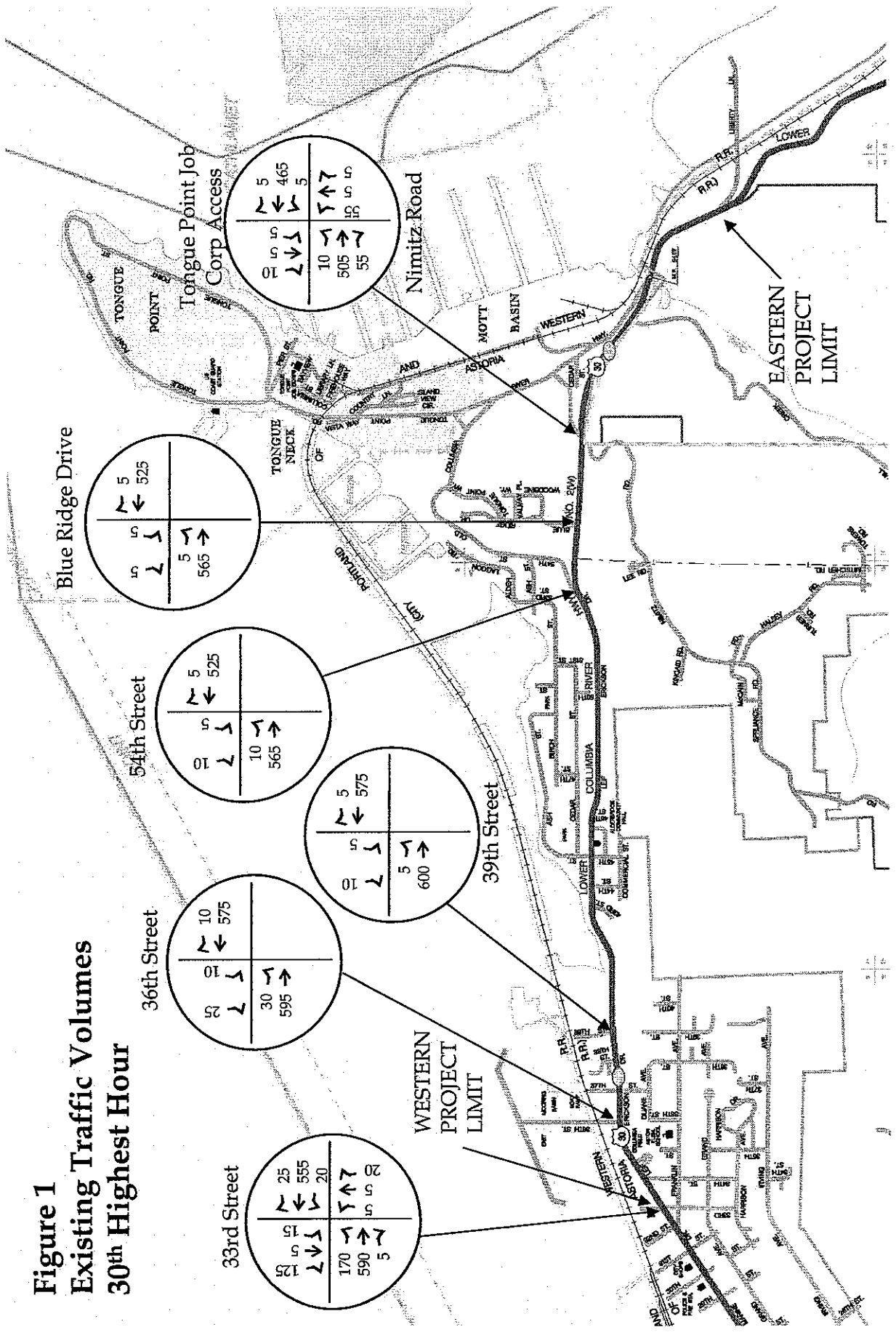
Performance Measures

The Oregon Highway Plan outlines specific performance measures to be maintained along ODOT facilities as part of their Mobility Standards. These standards are aimed at maintaining mobility along important roadway sections and vary according to functional classification, location, and role within the National Highway System.

The following mobility standards are applicable for the study intersections:

- **U.S. Highway 30, from milepost 94.39 to milepost 95.93:** Volume-to-capacity ratio of 0.70 given its categorization as a Statewide, National Highway System, Freight Route and Inside Urban Growth Boundary, Non-MPO outside of STAs where non-freeway speed limit ≥ 45 mph.

Figure 1
Existing Traffic Volumes
30th Highest Hour



- **U.S. Highway 30, from milepost 95.93 to milepost 97.06:** Volume-to-capacity ratio of 0.75 given its categorization as a Statewide, National Highway System, Freight Route and Inside Urban Growth Boundary, Non-MPO outside of STA's where non-freeway speed limit <45 mph.
- **33rd Street, 36th Street, 39th Street, Blue Ridge Drive, 54th Street (Old Columbia River Highway), and Nimitz Road:** Volume-to-capacity ratio of 0.85 given their categorization as District/Local Interest Roads and Inside Urban Growth Boundary, non-MPO outside of STA's where non-freeway speed limit <45 mph.

Existing (2004) Operations

Existing (2004) V/C ratios and vehicle queues were computed for the six study intersections based on the 30th Highest Hour design volumes. Table 2 shows these results and compares them to the applicable mobility standards. Attachment 2 includes the traffic operations worksheets for the existing 30th Highest Hour conditions.

TABLE 2
 Existing Intersection Analysis Summary
 2004 30th Highest Hour Design Volumes

Intersection	U.S. Highway 30 Approaches			Cross Street Approaches		
	V/C Ratio	Mobility Standard	Queue (veh) ²	V/C Ratio	Mobility Standard	Queue (veh)
U.S. Highway 30 at Tongue Point Job Corp Access Road/Nimitz Road ¹	0.38	0.70	1	0.50	0.85	3
U.S. Highway 30 at Blue Ridge Drive ¹	0.37	0.70	0	0.15	0.85	1
U.S. Highway 30 at 54th Street ¹	0.34	0.70	1	0.13	0.85	1
U.S. Highway 30 at 39th Street ¹	0.38	0.75	0	0.04	0.85	1
U.S. Highway 30 at 36th Street ¹	0.37	0.75	1	0.10	0.85	1
U.S. Highway 30 at 33rd Street ¹	0.38	0.75	1	0.37	0.85	2

Note: Results are reported for the movement with the highest V/C Ratio. For V/C < 0.70, 95th percentile queues reported.

¹Unsignalized intersection

²Vehicle queues on U.S. Highway 30 result from left-turn movements

Existing Deficiencies

The results of the Existing (2004) operational analysis show that each intersection approach meets the applicable mobility standard. The highest V/C Ratio occurs on Nimitz Road and equals 0.50, which remains under the 0.85 standard. Vehicle queues are also calculated to be minimal throughout the majority of the study area.

Forecast Conditions

Future Land Use

Potential developments which could impact the study area include residential, commercial and industrial developments within eastern Astoria. Table 3 summarizes the developments that are likely to occur within the study's 20-year planning horizon, and Figure 2 shows the location of the developments.

TABLE 3
 Potential Developments in East Astoria

Site	Zoning	Potential Development Description
37th to 39th Street	Marine Industrial	Mixed Use
Astoria Business Park	General Industrial	Mixture of Light Industrial and Condominiums
Pier 39 Redevelopment	Aquatic Development	Mixture of Commercial, Office, Tourist, Restaurant and Hotel
Blue Ridge	High Density Residential	Residential Units
Barendse	High Density Residential	Residential Units
Triangle Site	Medium Density Residential	Residential Units
North Tongue Point	Marine Industrial & Aquatic Development	Marine Related Commercial and Industrial

Note: Potential Developments based upon information obtained from the City of Astoria Planning Department and individual planning documents that are summarized in TM#1.

Trip Generation

Trip generation estimates for the potential developments were determined based on the Institute of Transportation Engineers, 7th Edition, (ITE) Trip Generation Manual for similar land uses using the average trip rate. Table 4 shows the estimated trips for each of the land developments planned within the study area. All developments were assumed to be fully built and occupied by Year 2024 to represent the highest potential traffic impacts. Attachment 3 details the trip generation calculations and land use assumptions.

Figure 2
Potential Development
Sites

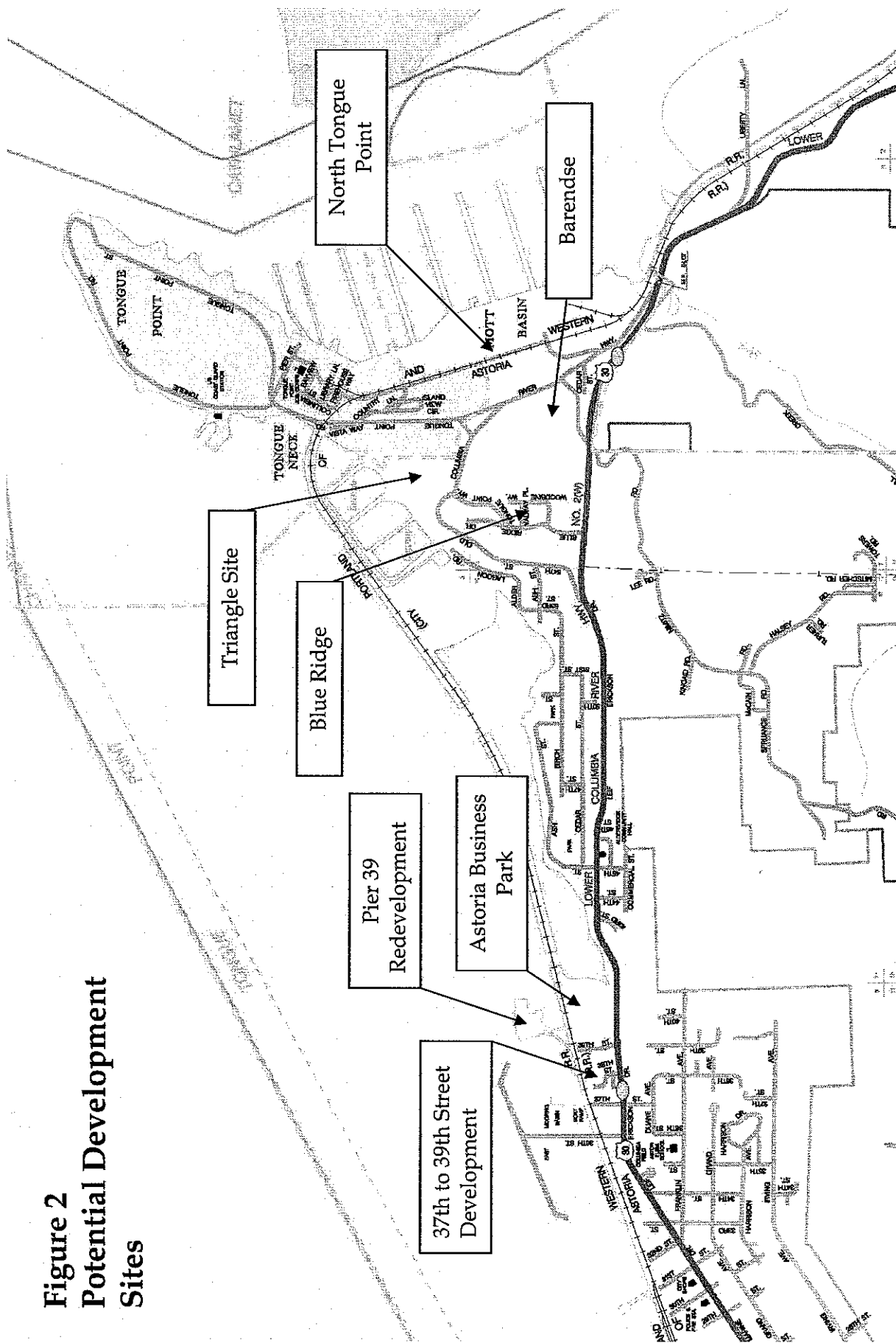


TABLE 4
 Peak Hour Trip Generation

Site	Total Trips	Trips In	Trips Out
37th to 39th Street	20	13	7
Astoria Business Park	126	41	85
Pier 39 Redevelopment	192	77	115
Blue Ridge	43	29	14
Barendse	51	34	17
Triangle Site	93	61	32
North Tongue Point	144	63	81

Note: Potential Developments based upon City of Astoria Planning Department and individual planning documents.

As indicated in Table 4, the potential developments will generate approximately 670 trips, during the design hour. Peak hour trip generation generally has an unequal directional flow, thus Trips In and Trips out do not balance. As an example, there would be a higher percentage of trips into an office building during the morning peak, while a higher percentage would be traveling out during the evening peak.

Trip Distribution

Trip distribution of generated traffic onto the roadway system was estimated based on the location of the site in respect to the current traffic distribution during the design hour. The trip distribution for the future developments is assumed to emulate existing travel patterns, with a few manual adjustments. The adjustments included an assumed internal capture of trips for areas that are characterized by mixed retail, commercial and residential land use. The internal capture assumed that ten percent of the trips would be accomplished without the use of a vehicle as a result of the proximity to land uses that attract trips (e.g. restaurants, shopping). The residential areas were also adjusted to reflect the limited number of attractors (1 to 3 percent).

The trip distribution for the potential developments is shown in Table 5.

TABLE 5
 Trip Distribution

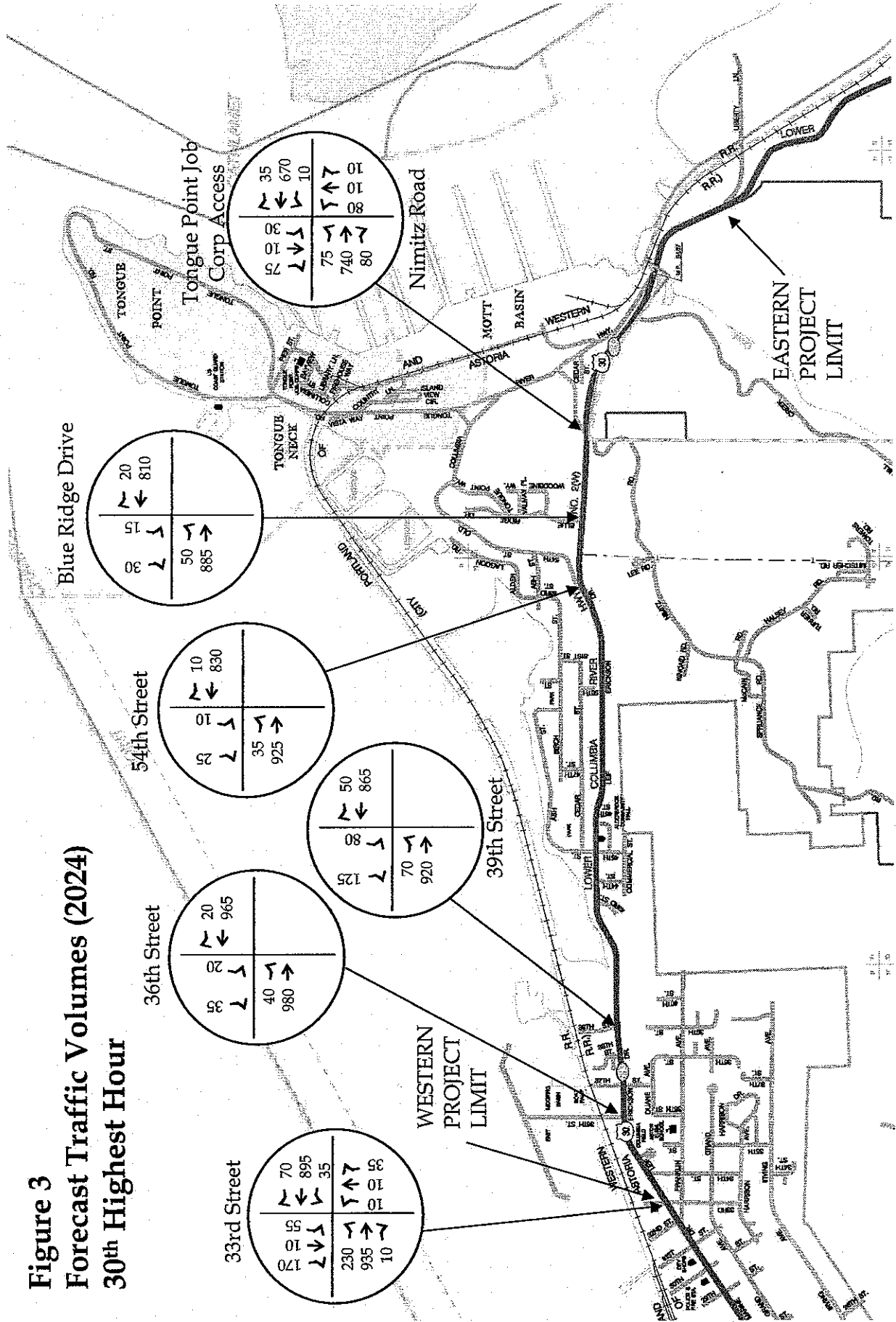
Origin/Destination	Potential Developments – Percentage of Total Generated Trips						
	37th to 39th Street	Astoria Business Park	Barendse	Blue Ridge	North Tongue Point	Pier 39	Triangle
Internal Capture	0	10	0	0	0	10	0
U.S. Highway 30, West End	49	41	47	48	46	41	47
U.S. Highway 30, East End	33	28	32	32	31	28	32
33rd Street, S of U.S. Highway 30	2	2	2	2	2	2	2
Emerald Heights	1	4	1	1	4	4	1
36th Street, N of U.S. Highway 30	0	2	2	2	2	2	2
Job Corp Access	1	1	1	1	1	1	1
Safeway	12	10	11	11	11	10	11
54th Street, N of U.S. Highway 30	1	1	1	1	1	1	1
39th Street, N of U.S. Highway 30	1	1	1	1	1	1	1
Blue Ridge	0	1	1	0	1	1	1

Future Background Traffic Forecasts

The Future Volume Tables developed by ODOT were used to determine the expected background traffic growth rate of 1.7 percent per year. This growth rate was applied for twenty years to the balanced 2004 30th Highest Hour design volumes to calculate the 2024 background traffic growth.

The traffic generated by the potential developments, shown in Tables 3 through 5, was added to the background traffic volumes to derive a cumulative 2024 forecast. Cumulative volumes are shown in Figure 3.

Figure 3
Forecast Traffic Volumes (2024)
30th Highest Hour



Future Traffic Roadway Network

Various recommendations for roadway improvements, including the Astoria Bypass, have been recommended in existing planning documents that would affect the east Astoria area. Funding, however, has not been secured for implementation. Thus the future “No Action” traffic roadway network will remain similar to the existing infrastructure with the exception of three projects;

- 1) U.S. Highway 30 at 33rd Street - a traffic signal will be installed at the intersection during the summer of 2005.
- 2) U.S. Highway 30 at 39th Street - a westbound right-turn lane will be built on U.S. Highway 30 during the spring of 2005.
- 3) Franklin Avenue will be extended to 43rd Street in conjunction with the Franklin Avenue bridge rehabilitation project.

Future Traffic Operations

Future (2024) No Action V/C ratios and vehicle queue lengths were computed for all six study intersections based on the projected cumulative design volumes and future roadway network. Table 6 shows the resulting operations and compares them to the applicable mobility standards. Attachment 4 includes the operations worksheets.

TABLE 6
 Future No Action Intersection Analysis Summary
 2024 Projected Cumulative Design Hour Volumes

Intersection	U.S. Highway 30 Approaches			Cross Street Approaches		
	V/C Ratio	Mobility Standard	Queue (veh) ²	V/C Ratio	Mobility Standard	Queue (veh)
U.S. Highway 30 at Tongue Point Job Corp Access Road/Nimitz Road ¹	0.51	0.70	1	>1	0.85	4
U.S. Highway 30 at Blue Ridge Drive ¹	0.51	0.70	1	0.28	0.85	2
U.S. Highway 30 at 54th Street ¹	0.52	0.70	1	0.20	0.85	1
U.S. Highway 30 at 39th Street ¹	0.57	0.75	1	0.52	0.85	3
U.S. Highway 30 at 36th Street ¹	0.61	0.75	1	0.43	0.85	2
U.S. Highway 30 at 33rd Street (3-phase signalized intersection)	0.83	0.75	45	N/A	N/A	5

Note: Results are reported for the movement with the highest V/C Ratio. For V/C < 0.70, 95th percentile queues reported, for V/C >= 0.70, queues calculated with the AASHTO 2-minute rule. 95th percentile queues are reported for the signalized intersection at 33rd Street based upon an average of five Simtraffic runs.

¹Unsignalized intersection

²Vehicle queues on U.S. Highway 30 (unsignalized intersections) result from left-turn movements

Future Deficiencies

The results of the Future (2024) No Action operational analysis show that traffic volumes will be increasing along U.S. Highway 30, but will remain within the V/C Mobility Standards set by ODOT, except at the intersections of U.S. Highway 30 at 33rd Street and U.S. Highway 30 at Nimitz Road/Tongue Point Job Corp Access.

The projected V/C ratio of 0.83 represents the overall operations at the 33rd Street signalized intersection. Extensive queuing of up to 45 vehicles is projected for the westbound through/right turn movement along U.S. Highway 30. Queues of up to 5 vehicles are also projected to occur on the Safeway approach to the intersection.

The future traffic signal control at 33rd Street was analyzed utilizing ODOT guidelines for a three-phase traffic signal which requires a 90 second cycle length. The actual cycle length would likely be longer, providing more green time to U.S. Highway 30, thus lowering the V/C ratio at this location. Dedicated turn lanes for all movements may also be required to achieve the required mobility levels at the intersection.

The cross-street approaches associated with the major industrial/marine development in the east Astoria area will exceed their capacity, at the Tongue Point Job Corp Access Road/Nimitz Road intersection. Dedicated turn lanes and/or traffic signalization will be investigated to mitigate operations to meet the required mobility standards.

The remainder of the unsignalized cross streets would continue to operate within the ODOT standards.

Crash and Safety Analysis

Five-year vehicle crash data for the section of U.S. Highway 30 from milepost 94.39 to milepost 97.06 was analyzed for the years 1999 to 2003². The crash data was analyzed to determine where, when, how, and how often the collisions took place. The following discussion will reveal the crash rates and the important patterns that emerged from the analysis.

A total of 35 crashes were reported for the five-year period along the study section of U.S. Highway 30. Of the total, 21 crashes resulted in an injury, 14 resulted in property damage only, and no fatalities were reported. One pedestrian related accident was recorded at the 45th Street intersection.

Generally, most crashes occurred during dry, clear conditions in daylight. The roadway surface and weather conditions, primarily in wet conditions (present with about 40% of all crashes), appears to have played a role in the reported crashes. More often, as most likely in this corridor, the role that weather plays in crashes is more attributed to reduced visibility than an inability to stop due to pavement friction. Pavement conditions are good based on the Oregon State Highway System 2003 Pavement Conditions Map (12/2003). Table 7 shows that 14 of the crashes occurred on "Wet" pavement while 13 occurred in the "Rain."

² The ODOT Crash Analysis and Reporting Unit provided the data.

TABLE 7
 Conditions during Reported Crashes on U.S. Highway 30
 January 1, 1999 through December 31, 2003

Condition	Number of Accidents	Percentage (100.0 Total)
Light		
Day	20	57.1
Dimly Lit	6	17.1
Dark	4	11.4
Dusk	3	8.6
Dawn	2	5.7
Roadway Surface		
Dry	18	51.4
Wet	14	40.0
Ice	2	5.7
Snow	1	2.9
Weather		
Clear	21	60.0
Rain	13	37.1
Snow	1	2.9

The predominant crash type along U.S. Highway 30 in the past five years has been rear-end collisions. Not yielding the right-of-way was the most common cause reported for ALL crashes. Table 8 summarizes both the collision type and cause of the crash.

TABLE 8
 Collision Type and Cause for Reported Crashes on U.S. Highway 30
 January 1, 1999 through December 31, 2003

Description	Number of Accidents	Percentage (100.0 Total)
Collision Type		
Rear End	17	48.6
Turning	10	28.6
Fixed Object	4	11.4
Sideswipe	2	5.7
Struck at Angle	1	2.9
Pedestrian	1	2.9
Crash Cause		
Did not yield right-of-way	11	31.4
Other - improper driving	10	28.6
Speed too fast for conditions	7	20.0
Followed too closely	3	8.6
Other - not improper driving	2	5.7
Made improper turn	1	2.9
Alcohol or Drug involved	1	2.9

Details of the single pedestrian accident occurring during the study period are as follows. The pedestrian accident occurred at the 45th Street intersection at dawn with clear weather and wet pavement conditions. The driver was traveling westbound on U.S. Highway 30 and failed to yield right-of-way to the pedestrian.

The crash data was also used to investigate crashes by month, day-of-week, and time-of-day. Twenty of the 35 crashes (57%) occurred in a four-month period between October and January. Crashes were distributed evenly throughout the week, although Friday had the most with eight. Crashes occurred least on weekend days, increased throughout the week and climaxed on Friday. And between the hours of 2 PM and 7 PM, nineteen crashes occurred (54%). These crashes most likely correlated with the highest amount of daily traffic given that the peak-hour counts showed 4 PM to 5 PM as the most traveled hour.

Twenty of the 35 crashes occurred in a one-mile segment between 46th Street and 32nd Street. And nineteen crashes occurred at either a controlled intersection or an uncontrolled driveway. The highest number of crashes at one location occurred at two non-study intersections and each had six crashes in the immediate vicinity. They were at 45th Street and 37th Street.

This data is consistent with the concerns of the Citizen's Advisory Committee (CAC). During the orientation meeting for this study, the CAC indicated three intersections along U.S.

Highway 30 that should be studied due to accidents and safety concerns; 37th Street, 39th Street and 45th Street.

Crash Rates

Crash rates, expressed in "crashes per million vehicle-miles traveled," are used to compare the crash experience of one roadway segment to another. This rate expresses how many crashes might be expected of vehicles traveling through a particular section of roadway for a cumulative total of one million miles.

The study section of U.S. Highway 30 was divided into mostly half-mile segments (the first and last segments were slightly longer) in order to quantify the crash rate. The crash rate was computed for each segment and for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 9. Attachment 6 provides a cross reference between mileposts and U.S. Highway 30 cross streets.

TABLE 9
 Five-Year U.S. Highway 30 Crash History
 January 1, 1999 to December 31, 2003

Period Description	Milepost (Vicinity)		Segment Length (Miles)	2001 Average Annual Daily Traffic (AADT)	Total Crashes	Average Annual Crash Rate (Crashes per Million Vehicle-Miles)
	From	To				
5 Years (Average Annual)	94.39	95.00	0.61	10,200	6	0.53
	(Liberty Lane/Tongue Point Road)				1.2	
5 Years (Average Annual)	95.00	95.50	0.50	10,200	3	0.32
	(Blue Ridge Drive)				0.6	
5 Years (Average Annual)	95.50	96.00	0.50	10,200	6	0.64
	(Alderbrook)				1.2	
5 Years (Average Annual)	96.00	96.50	0.50	11,700	9	0.84
	(45th Street)				1.8	
5 Years (Average Annual)	96.50	97.06	0.56	15,300	11	0.70
	(Uppertown)				2.2	
Total/Overall 5 Years (Average Annual)	94.39	97.06	2.67	11,600	35	0.62
					7.0	

The section of U.S. Highway 30 from between mileposts 96.00 and 97.06 (45th Street – Uppertown) has the highest incidence of crashes in the last five years when compared to the entire length. However, when these crash rates are compared to roadways with the same functional classification U.S. Highway 30 compares favorably.

The study section of U.S. Highway 30 is classified as an Urban Principal Arterial for all but the easternmost 0.28 miles, which is classified as a Rural Principal Arterial. ODOT has computed a statewide crash rate of 2.73 for all urban principal arterials and 1.35 for all rural principal arterials. The overall study section crash rate of 0.62 is more than four times smaller than the urban statewide crash rate and over two times smaller than the rural statewide crash rate.

Safety Prioritization Index System (SPIS)

In addition to crash rates, ODOT also assesses roadway safety via the Safety Prioritization Index System (SPIS). The SPIS system can be used to calculate a relative score that takes into account crash frequency, crash rate, and crash severity. SPIS scores are computed for tenth-of-a-mile sections. The scores for different roadway segments can be compared to determine where safety improvement funds might best be spent. Typically, ODOT places the highest priority locations where SPIS scores fall within the top 10 percent in the entire state.

There were no sites within the study section that appeared in the top 10 percent of the SPIS scoring between 2000 and 2003. Although, there was one site in the top 10 percent located two miles west of the study section, between mileposts 99.06 and 99.16, in the vicinity of Columbia Avenue.

Recommendations

Based upon the year 2024 forecast operations analyses, traffic volumes will remain within capacity along U.S. Highway 30 through most of the study area. Two locations that will be addressed in the alternatives evaluation and analyses include:

1. U.S. Highway 30/33rd Street
2. U.S. Highway-30/Tongue Point Job Corp Access Road/Nimitz Road

Alternatives for these locations may include provision of turn pockets with adequate storage length, median refuge lanes, acceleration lanes and/or traffic signal control. In addition, alternative circulation paths may be investigated to accommodate the forecast demand.

The accident analyses indicated several locations that will also be focused on in the alternatives evaluation:

1. U.S. Highway 30/37th Street
2. U.S. Highway 30/39th Street
3. U.S Highway 30/45th Street

Alternatives for these locations may include provision of turn pockets with adequate storage length, active prohibition of parking, traffic calming measures, median refuge lanes, increasing sight distance and/or improving the pedestrian crossings amenities.

Alternatives addressing these deficiencies as well as future circulation within the study area will be described and evaluated within Technical Memorandum #5, "Alternative Improvements and Preferred Alternative".

Attachments

1. Traffic Count Data
2. Existing Operations Analyses
3. Trip Generation
4. Future Operations Analyses

7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	1	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	1	0	0	0	0	0	0	0

BIKES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION: US 30 AT NIMITZ DRIVE
 DATE: 09/11/2004
 DAY OF WEEK: SAT
 START TIME: 9:00:00

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
TOTAL VEHICLES													
9:00	9:05	1	0	0	0	28	0	0	8	0	2	0	0
9:05	9:10	3	0	2	0	29	0	1	20	2	2	0	0
9:10	9:15	1	0	0	0	25	1	0	16	2	1	0	0
9:15	9:20	3	0	2	0	16	0	1	17	0	1	0	1
9:20	9:25	0	0	0	1	16	0	1	13	2	5	0	0
9:25	9:30	3	0	0	1	19	0	0	21	1	4	1	1
9:30	9:35	1	0	0	0	23	0	0	14	0	3	0	2
9:35	9:40	0	0	0	0	41	0	1	13	2	3	0	0
9:40	9:45	0	0	0	0	27	1	3	16	1	0	0	0
9:45	9:50	1	0	0	0	37	0	1	19	1	3	0	0
9:50	9:55	1	0	0	0	28	0	1	25	2	2	0	2
9:55	10:00	0	0	0	0	43	1	2	17	0	1	0	0
10:00	10:05	1	0	1	1	36	0	3	16	0	1	0	0
10:05	10:10	2	0	0	1	36	0	0	17	0	4	0	0
10:10	10:15	1	0	0	0	33	0	3	19	1	1	0	0
10:15	10:20	0	0	0	0	23	0	1	27	1	0	0	0
10:20	10:25	1	0	0	0	28	0	4	19	4	3	0	1
10:25	10:30	0	0	0	0	34	0	2	21	1	3	1	0
10:30	10:35	0	0	0	1	27	0	3	18	3	3	1	1
10:35	10:40	1	0	0	0	39	0	1	29	3	3	0	0
10:40	10:45	2	0	0	0	54	0	2	28	1	2	0	0
10:45	10:50	2	0	0	0	16	0	1	20	2	3	0	0
10:50	10:55	0	0	0	0	37	0	1	18	2	5	0	0
10:55	11:00	0	0	0	0	43	0	1	25	1	4	0	1

LIGHT TRUCKS (SINGLE UNIT TRUCK-2 AXLES)

10:15	10:30	0	0	0	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	0	1	0	0	0	0

LOCATION: US 30 AT NIMITZ DRIVE
DATE: 09/11/2004
DAY OF WEEK: SAT
START TIME: 11:00:00

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
TOTAL VEHICLES													
11:00	11:05	4	0	0	0	41	0	1	30	4	2	0	0
11:05	11:10	0	0	0	0	39	0	0	22	1	4	1	0
11:10	11:15	1	0	0	0	42	0	1	28	3	1	0	0
11:15	11:20	1	0	0	0	43	0	0	35	2	2	0	0
11:20	11:25	1	1	0	0	29	2	1	22	5	1	0	0
11:25	11:30	2	0	0	0	37	0	1	38	0	2	0	0
11:30	11:35	1	0	0	0	39	0	2	25	0	4	0	0
11:35	11:40	1	0	1	1	64	0	1	17	2	2	0	0
11:40	11:45	1	0	0	0	50	0	0	26	4	3	0	0
11:45	11:50	1	0	0	0	68	0	1	20	2	1	0	0
11:50	11:55	1	0	0	0	33	1	1	20	4	2	0	0
11:55	12:00	2	0	0	0	60	0	2	29	3	1	0	1
12:00	12:05	1	0	0	1	40	0	3	29	1	1	0	0
12:05	12:10	4	0	0	0	48	0	3	34	7	2	0	0
12:10	12:15	0	0	1	0	55	1	2	33	2	3	0	1
12:15	12:20	2	0	0	0	40	0	1	21	4	2	0	0
12:20	12:25	2	0	0	0	30	0	1	26	4	2	0	1
12:25	12:30	4	0	0	1	51	0	0	25	4	2	0	0
12:30	12:35	0	0	0	0	48	0	0	28	1	4	1	0
12:35	12:40	1	0	0	0	42	0	4	25	2	1	0	0
12:40	12:45	1	0	0	0	39	1	1	27	1	5	0	0
12:45	12:50	1	0	0	0	39	0	1	23	3	3	0	1
12:50	12:55	0	0	1	1	31	1	1	27	1	1	0	0
12:55	13:00	3	0	0	0	40	0	1	18	2	2	0	0

LIGHT TRUCKS (SINGLE UNIT TRUCK--2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
11:00	11:15	0	0	0	0	1	0	1	1	1	0	0	0
11:15	11:30	0	1	0	0	0	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	1	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0	1	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0	0	0	0	0	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0	0	0	0	0	0

HEAVY TRUCKS

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
--	--	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

8:45 9:00		0	0	0	0	0	0	0	0	0	0	0	0
BIKES		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION: US 30 AT NIMITZ DRIVE
DATE: 09/11/2004
DAY OF WEEK: SAT
START TIME: 16:00:00

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
TOTAL VEHICLES													
16:00	16:05	1	0	0	0	43	0	0	41	5	5	0	1
16:05	16:10	2	0	0	0	46	0	2	37	4	4	0	0
16:10	16:15	0	0	0	0	23	1	0	45	4	2	0	0
16:15	16:20	1	0	0	0	36	0	0	34	4	4	0	0
16:20	16:25	1	0	0	0	30	1	1	47	4	7	0	0
16:25	16:30	1	0	0	0	28	0	1	41	7	4	0	0
16:30	16:35	0	0	0	0	23	0	1	32	3	2	1	0
16:35	16:40	0	0	0	0	33	1	1	19	1	8	0	0
16:40	16:45	0	0	0	0	33	0	1	23	2	1	0	0
16:45	16:50	0	0	0	0	27	0	2	34	4	1	0	0
16:50	16:55	1	0	0	0	24	0	0	41	4	3	0	1
16:55	17:00	0	1	0	0	23	0	0	37	3	6	0	1
17:00	17:05	2	0	1	0	28	0	1	29	1	3	0	0
17:05	17:10	0	1	0	0	35	0	1	44	4	2	0	0
17:10	17:15	0	0	0	0	18	0	4	40	5	2	0	0
17:15	17:20	1	0	0	0	33	3	4	25	3	3	0	0
17:20	17:25	2	0	1	0	17	0	0	36	8	0	0	0
17:25	17:30	1	0	0	0	30	0	1	34	4	6	0	0
17:30	17:35	2	0	1	1	28	1	3	31	2	6	1	0
17:35	17:40	1	0	0	0	28	0	4	32	2	2	0	1
17:40	17:45	0	0	1	0	22	0	0	29	5	4	0	0
17:45	17:50	1	1	0	0	20	1	2	34	4	3	0	0
17:50	17:55	2	0	0	0	22	1	2	24	4	3	0	1
17:55	18:00	3	1	0	1	27	0	0	36	3	2	0	0

LIGHT TRUCKS (SINGLE UNIT TRUCK-2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	1	0	0	0	0

17:00	17:15	0	0	0	0	0	0	0	1	1	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	1	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0

HEAVY TRUCKS

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS

		SOUTH X-WALK		WEST X-WALK		EAST X-WALK		NORTH X-WALK	
16:00	16:15		0		0		0		0
16:15	16:30		0		0		0		0
16:30	16:45		0		0		0		0
16:45	17:00		0		0		0		0
17:00	17:15		0		0		0		0
17:15	17:30		0		0		0		0
17:30	17:45		0		0		0		0
17:45	18:00		0		0		0		0

STOPPED BUSES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	1	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	1	0	0	0	0
16:30	16:45	1	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	1	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	1	0	0	0	0
17:30	17:45	1	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	1	0	0	0	0	0

BIKES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	2	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	1	0	0	1	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	1	0	0	0	0	0	0	0

LOCATION: US 30 AT NIMITZ DRIVE

19:15	19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:30	19:45	0	0	0	0	0	0	0	0	0	0	0	0
19:45	20:00	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS

		SOUTH X-WALK	WEST X-WALK	EAST X-WALK	NORTH X-WALK
18:00	18:15	0	0	0	0
18:15	18:30	0	0	0	0
18:30	18:45	0	0	0	0
18:45	19:00	0	0	0	0
19:00	19:15	0	0	0	0
19:15	19:30	0	0	0	0
19:30	19:45	0	0	0	0
19:45	20:00	0	0	0	0

STOPPED BUSES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
18:00	18:15	0	0	0	0	0	0	0	1	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	1	0	0	0	1	0	0	0	0
18:45	19:00	0	0	0	0	1	0	1	0	0	0	0	0
19:00	19:15	0	0	0	0	0	0	0	0	0	0	0	0
19:15	19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:30	19:45	1	0	0	0	0	0	0	0	0	0	0	0
19:45	20:00	0	0	0	0	2	0	1	0	0	0	0	0

BIKES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0
19:00	19:15	0	0	0	0	0	0	0	0	0	0	0	0
19:15	19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:30	19:45	0	0	0	0	0	0	0	1	0	0	0	0
19:45	20:00	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION: US 30 AT NIMITZ DRIVE
 DATE: 09/11/2004
 DAY OF WEEK: SAT
 START TIME: 20:00:00

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
TOTAL VEHICLES													
20:00	20:05	2	0	0	0	11	0	1	23	2	2	0	0
20:05	20:10	3	0	0	0	11	0	0	21	2	0	0	0
20:10	20:15	0	0	0	1	6	0	0	24	3	2	0	1
20:15	20:20	1	0	0	0	7	0	0	20	2	1	0	0
20:20	20:25	0	0	0	0	25	0	0	15	1	1	0	0
20:25	20:30	0	1	0	0	10	0	2	17	0	2	0	0
20:30	20:35	0	0	0	0	8	0	0	14	1	1	0	0
20:35	20:40	1	0	0	0	15	0	0	16	3	2	0	0
20:40	20:45	2	0	0	0	13	0	0	18	2	2	0	0
20:45	20:50	0	1	0	0	7	0	4	23	1	2	0	0
20:50	20:55	0	1	1	0	9	0	1	15	1	0	0	0
20:55	21:00	2	0	0	0	20	0	0	21	3	1	0	1
21:00	21:05	0	0	0	0	12	0	0	21	4	2	0	1
21:05	21:10	0	0	0	0	11	1	3	29	2	2	0	0
21:10	21:15	1	0	0	0	10	3	0	17	1	0	0	1

18:30	18:35	0	22	0	0	0	0	0	0	0	0	27	0
18:35	18:40	0	28	0	0	0	0	0	0	0	0	19	0
18:40	18:45	0	28	0	0	0	0	0	0	0	0	13	0
18:45	18:50	0	22	0	0	0	0	0	0	0	0	20	0
18:50	18:55	0	25	0	0	0	0	0	0	0	0	24	0
18:55	19:00	0	33	0	0	0	0	0	0	0	0	22	0

LIGHT TRUCKS (SINGLE UNIT TRUCK--2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	1	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	1	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	2	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	1	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0

HEAVY TRUCKS

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS

SOUTH WEST EAST NORTH

6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION: US 30 AT OLD US 30
DATE: 09/11/2004
DAY OF WEEK: SAT
START TIME: 9:00:00

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
TOTAL VEHICLES													
9:00	9:05	0	12	0	1	0	0	0	0	0	0	28	0
9:05	9:10	0	18	0	1	0	0	0	0	0	0	26	0
9:10	9:15	0	19	0	1	0	0	0	0	0	0	36	1
9:15	9:20	0	19	1	1	0	0	0	0	0	0	25	0
9:20	9:25	0	20	0	0	0	0	0	0	0	0	23	0
9:25	9:30	0	21	0	1	0	0	0	0	0	0	26	1
9:30	9:35	0	13	0	0	0	0	0	0	0	0	29	0
9:35	9:40	0	16	0	1	0	0	0	0	0	0	33	0
9:40	9:45	1	25	1	0	0	0	0	0	0	0	35	0
9:45	9:50	0	23	0	1	0	0	0	0	0	0	40	0
9:50	9:55	0	24	0	0	0	0	0	0	0	0	36	0
9:55	10:00	0	19	0	1	0	0	0	0	0	0	40	0
10:00	10:05	0	20	0	0	0	0	0	0	0	0	42	0
10:05	10:10	0	18	0	1	0	0	0	0	0	0	40	0
10:10	10:15	0	28	0	1	0	0	0	0	0	0	33	0
10:15	10:20	0	26	0	2	0	0	0	0	0	0	29	0
10:20	10:25	0	23	0	2	0	0	0	0	0	0	33	0
10:25	10:30	0	27	0	0	0	0	0	0	0	0	37	0
10:30	10:35	0	25	0	0	0	0	0	0	0	0	33	0
10:35	10:40	0	31	0	0	0	0	0	0	0	0	35	0
10:40	10:45	0	31	0	0	0	0	0	0	0	0	55	1
10:45	10:50	0	26	0	0	0	0	0	0	0	0	38	1
10:50	10:55	0	23	0	2	0	0	0	0	0	0	43	1

LIGHT TRUCKS (SINGLE UNIT TRUCK-2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0
9:15	9:30	0	1	0	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0	0	0	0
10:15	10:30	0	1	0	0	0	0	0	0	0	0	1	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
--	--	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

11:05	11:10	0	25	2	0	0	0	0	0	0	0	42	1
11:10	11:15	0	31	0	1	0	0	0	0	0	1	46	0
11:15	11:20	0	38	0	0	0	0	0	0	0	0	47	0
11:20	11:25	0	29	0	0	0	0	0	0	0	0	29	0
11:25	11:30	0	37	0	1	0	0	0	0	0	0	42	0
11:30	11:35	0	24	0	1	0	0	0	0	0	0	45	0
11:35	11:40	0	24	0	0	0	0	0	0	0	0	57	0
11:40	11:45	0	29	0	2	0	0	0	0	0	0	58	0
11:45	11:50	0	24	0	1	0	0	0	0	0	0	54	1
11:50	11:55	0	26	0	0	0	0	0	0	0	0	57	0
11:55	12:00	0	36	1	1	0	0	0	0	0	0	57	0
12:00	12:05	0	32	0	0	0	0	0	0	0	0	38	0
12:05	12:10	0	43	0	2	0	0	0	0	0	0	62	0
12:10	12:15	0	43	0	0	0	0	0	0	0	0	55	0
12:15	12:20	0	22	0	1	0	0	0	0	0	0	48	0
12:20	12:25	0	31	2	1	0	0	0	0	0	0	30	0
12:25	12:30	0	30	0	0	0	0	0	0	0	0	63	1
12:30	12:35	0	29	2	0	0	0	0	0	0	0	50	1
12:35	12:40	0	30	1	0	0	0	0	0	0	0	30	0
12:40	12:45	0	25	1	0	0	0	0	0	0	0	60	0
12:45	12:50	0	26	3	0	0	0	0	0	0	0	48	0
12:50	12:55	0	33	1	0	0	0	0	0	0	0	33	0
12:55	13:00	0	19	1	0	0	0	0	0	0	0	28	0

LIGHT TRUCKS (SINGLE UNIT TRUCK-2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
11:00	11:15	0	2	0	0	0	0	0	0	0	0	3	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	1	0
11:30	11:45	0	0	0	0	0	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:15	12:30	0	1	0	0	0	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0	0	0	0	0	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0	0	0	0	0	0

HEAVY TRUCKS

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0
11:30	11:45	0	0	0	0	0	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0	0	0	0	0	0
12:00	12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	0	0	0	0	0	0
12:30	12:45	0	0	0	0	0	0	0	0	0	0	0	0
12:45	13:00	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS

18:40	18:45	0	30	4	1	0	0	0	0	0	0	13	0
18:45	18:50	0	20	1	1	0	0	0	0	0	0	17	0
18:50	18:55	0	22	1	0	0	0	0	0	0	0	26	1
18:55	19:00	0	36	0	0	0	0	0	0	0	0	18	0
19:00	19:05	0	30	2	0	0	0	0	0	0	0	20	0
19:05	19:10	0	26	0	0	0	0	0	0	0	0	22	0
19:10	19:15	0	33	0	0	0	0	0	0	0	0	28	0
19:15	19:20	0	28	2	0	0	0	0	0	0	0	26	0
19:20	19:25	0	26	0	0	0	0	0	0	0	0	24	0
19:25	19:30	0	21	1	0	0	0	0	0	0	0	27	0
19:30	19:35	0	40	1	0	0	0	0	0	0	0	18	1
19:35	19:40	0	35	2	0	0	0	0	0	0	0	24	1
19:40	19:45	0	24	0	0	0	0	0	0	0	0	26	0
19:45	19:50	0	20	0	0	0	0	0	0	0	0	19	0
19:50	19:55	0	20	2	1	0	1	0	0	0	0	14	0
19:55	20:00	0	33	0	1	0	0	0	0	0	0	16	0

LIGHT TRUCKS (SINGLE UNIT TRUCK--2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0
19:00	19:15	0	0	0	0	0	0	0	0	0	0	0	0
19:15	19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:30	19:45	0	0	0	0	0	0	0	0	0	0	0	0
19:45	20:00	0	0	0	0	0	0	0	0	0	0	0	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0
19:00	19:15	0	0	0	0	0	0	0	0	0	0	0	0
19:15	19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:30	19:45	0	0	0	0	0	0	0	0	0	0	0	0
19:45	20:00	0	0	0	0	0	0	0	0	0	0	0	0

HEAVY TRUCKS

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0
19:00	19:15	0	0	0	0	0	0	0	0	0	0	0	0
19:15	19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:30	19:45	0	0	0	0	0	0	0	0	0	0	0	0
19:45	20:00	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS

		SOUTH X-WALK	WEST X-WALK	EAST X-WALK	NORTH X-WALK
18:00	18:15	0	0	0	0
18:15	18:30	0	0	0	0
18:30	18:45	0	0	0	0
18:45	19:00	0	0	0	0
19:00	19:15	0	0	0	0
19:15	19:30	0	0	0	0

20:15	20:30	0	0	0	0	0	0	0	0	0	0	0	0
20:30	20:45	0	0	0	0	0	0	0	0	0	0	0	0
20:45	21:00	0	0	0	0	0	0	0	0	0	0	0	0
21:00	21:15	0	0	0	0	0	0	0	0	0	0	0	0
21:15	21:30	0	0	0	0	0	0	0	0	0	0	0	0
21:30	21:45	0	0	0	0	0	0	0	0	0	0	0	0
21:45	22:00	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION: US 30 AT 39TH ST.
DATE: 09/11/2004
DAY OF WEEK: SAT
START TIME: 6:00:00

TOTAL VEHICLES		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:05	0	3	0	0	0	0	0	0	0	0	3	0
6:05	6:10	0	7	2	0	0	0	0	0	0	0	10	0
6:10	6:15	0	3	0	0	0	1	0	0	0	0	14	0
6:15	6:20	0	9	0	0	0	0	0	0	0	0	10	0
6:20	6:25	0	6	0	0	0	0	0	0	0	0	13	0
6:25	6:30	0	1	0	0	0	0	0	0	0	0	8	0
6:30	6:35	0	5	0	0	0	0	0	0	0	0	14	0
6:35	6:40	0	12	0	0	0	0	0	0	0	0	16	0
6:40	6:45	0	9	0	0	0	0	0	0	0	0	16	0
6:45	6:50	0	5	1	0	0	0	0	0	0	0	19	0
6:50	6:55	0	2	0	0	0	1	0	0	0	0	9	0
6:55	7:00	0	8	0	0	0	0	0	0	0	0	18	0
7:00	7:05	0	11	0	0	0	0	0	0	0	0	21	0
7:05	7:10	0	11	0	0	0	0	0	0	0	0	18	0
7:10	7:15	0	7	0	0	0	0	0	0	0	0	15	0
7:15	7:20	0	16	1	0	0	0	0	0	0	0	22	0
7:20	7:25	0	9	0	0	0	0	0	0	0	0	16	0
7:25	7:30	0	14	0	1	0	0	0	0	0	0	25	0
7:30	7:35	0	9	0	0	0	0	0	0	0	0	16	0
7:35	7:40	0	13	0	0	0	0	0	0	0	0	24	0
7:40	7:45	0	9	0	0	0	0	0	0	0	0	23	0
7:45	7:50	0	11	0	0	0	0	0	0	0	0	29	0
7:50	7:55	0	13	0	0	0	0	0	0	0	0	17	0
7:55	8:00	0	6	0	0	0	0	0	0	0	0	26	0
8:00	8:05	0	12	0	0	0	0	0	0	0	0	23	0
8:05	8:10	0	19	0	0	0	0	0	0	0	0	12	0
8:10	8:15	0	10	0	0	0	0	0	0	0	0	19	0
8:15	8:20	0	15	1	0	0	0	0	0	0	0	31	0
8:20	8:25	0	22	1	0	0	0	0	0	0	0	22	0
8:25	8:30	0	12	0	0	0	0	0	0	0	0	22	0
8:30	8:35	0	12	1	0	0	0	0	0	0	0	33	0
8:35	8:40	0	20	1	0	0	0	0	0	0	0	23	0
8:40	8:45	0	15	0	0	0	0	0	0	0	0	33	0
8:45	8:50	0	14	0	0	0	0	0	0	0	0	30	0
8:50	8:55	0	14	0	0	0	0	0	0	0	0	33	0
8:55	9:00	0	9	0	0	0	0	0	0	0	0	25	0

LIGHT TRUCKS (SINGLE UNIT TRUCK--2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	2	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	1	0
8:30	8:45	0	1	0	0	0	0	0	0	0	0	1	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	1	0

MEDIUM TRUCKS (SINGLE UNIT TRUCK - MORE THAN 2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0

HEAVY TRUCKS

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIANS

		SOUTH X-WALK	WEST X-WALK	EAST X-WALK	NORTH X-WALK
6:00	6:15	0	0	0	0
6:15	6:30	0	0	0	0
6:30	6:45	0	0	0	0
6:45	7:00	0	0	0	0
7:00	7:15	0	0	0	0
7:15	7:30	0	0	0	0
7:30	7:45	0	0	0	0
7:45	8:00	0	0	0	0
8:00	8:15	0	0	0	0
8:15	8:30	0	0	0	0

18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0
-------	-------	---	---	---	---	---	---	---	---	---	---	---	---	---

PEDESTRIANS		SOUTH			WEST			EAST			NORTH		
		X-WALK			X-WALK			X-WALK			X-WALK		
16:00	16:15		0			0			0			0	
16:15	16:30		0			0			0			0	
16:30	16:45		0			0			0			0	
16:45	17:00		0			0			0			0	
17:00	17:15		0			0			0			0	
17:15	17:30		0			0			0			0	
17:30	17:45		0			0			0			0	
17:45	18:00		0			0			0			0	
18:00	18:15		0			0			0			0	
18:15	18:30		0			0			0			0	
18:30	18:45		0			0			0			0	
18:45	19:00		0			0			0			0	

STOPPED BUSES		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	1	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	1	0
16:45	17:00	0	3	0	0	0	0	0	0	0	0	1	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	1	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	2	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	1	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	1	0
18:45	19:00	0	1	0	0	0	0	0	0	0	0	0	0

BIKES		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	1	0	0	0	0	0	0	0	0	2	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	1	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	2	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	2	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION: US 30 AT 33RD ST.
 DATE: 9/11/2004
 DAY OF WEEK: SAT
 START TIME: 6:00:00

W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

TOTAL VEHICLES

6:00	6:05	0	0	0	0	3	0	0	7	0	0	0	0
6:05	6:10	0	0	0	0	10	1	0	7	0	0	0	1
6:10	6:15	0	0	0	0	5	0	0	12	0	0	0	0
6:15	6:20	0	0	0	0	9	0	0	11	1	0	0	1
6:20	6:25	0	0	0	0	7	3	0	9	1	0	0	0
6:25	6:30	0	0	0	0	3	0	0	9	2	0	0	2
6:30	6:35	0	0	0	0	7	1	0	11	1	1	0	2
6:35	6:40	0	1	0	0	14	4	1	17	2	0	0	0
6:40	6:45	0	0	0	0	14	4	0	12	0	0	0	4
6:45	6:50	0	0	1	0	9	3	0	11	1	0	0	4
6:50	6:55	0	0	0	0	3	1	2	17	0	0	0	2
6:55	7:00	0	0	0	0	6	7	0	17	2	1	0	2
7:00	7:05	2	0	0	0	13	2	0	16	1	0	0	5
7:05	7:10	0	0	0	0	11	3	0	18	1	1	0	1
7:10	7:15	0	0	0	0	10	5	0	22	1	1	0	2
7:15	7:20	0	0	0	0	13	1	1	18	0	1	0	2
7:20	7:25	0	0	0	0	10	2	0	23	0	1	0	0
7:25	7:30	0	0	0	0	18	1	0	16	0	0	0	1
7:30	7:35	0	0	0	0	13	1	0	27	0	0	0	4
7:35	7:40	0	0	1	0	14	2	0	23	2	1	0	2
7:40	7:45	1	0	0	0	11	3	0	21	0	0	0	5
7:45	7:50	1	0	1	0	12	4	0	27	1	0	0	3
7:50	7:55	0	0	0	0	14	2	0	23	1	0	0	6
7:55	8:00	2	0	1	0	9	7	1	21	0	0	0	3
8:00	8:05	1	0	0	0	15	4	1	21	1	0	0	2
8:05	8:10	0	0	0	0	18	2	0	20	0	0	0	3
8:10	8:15	0	0	0	0	14	2	0	18	3	1	0	0
8:15	8:20	1	0	0	0	14	2	0	27	0	0	0	4
8:20	8:25	0	1	1	0	20	3	0	22	0	0	0	3
8:25	8:30	0	0	0	0	14	1	0	33	0	0	0	0
8:30	8:35	1	0	0	0	14	2	1	24	2	0	0	1
8:35	8:40	1	0	0	0	22	4	0	29	2	0	1	3
8:40	8:45	0	0	0	0	17	3	0	32	1	1	0	4
8:45	8:50	1	0	0	0	15	4	1	29	0	1	0	4
8:50	8:55	1	1	1	0	18	3	2	30	2	0	1	2
8:55	9:00	0	0	0	0	15	7	1	32	2	0	0	3

LIGHT TRUCKS (SINGLE UNIT TRUCK-2 AXLES)

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	1
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	1	0	0	0	0
7:30	7:45	0	0	1	0	0	0	0	1	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	1	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	1	0	0	0	0

7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	1	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	1	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	1	0	0	0	0

BIKES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
6:00	6:15	0	0	0	0	0	0	0	0	0	0	0	0
6:15	6:30	0	0	0	0	0	0	0	0	0	0	0	0
6:30	6:45	0	0	0	0	0	0	0	0	0	0	0	0
6:45	7:00	0	0	0	0	0	0	0	0	0	0	0	0
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	1	0	0	0	0

LOCATION: US 30 AT 33RD ST.

DATE: 09/11/2004

DAY OF WEEK: SAT

START TIME: 16:00:00

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
TOTAL VEHICLES													
16:00	16:05	0	0	0	0	49	9	1	45	3	1	1	11
16:05	16:10	1	1	0	1	45	9	0	52	2	1	0	14
16:10	16:15	1	0	0	0	43	7	3	42	2	2	0	10
16:15	16:20	2	0	0	0	46	14	2	38	0	1	0	5
16:20	16:25	2	0	0	0	50	11	2	47	0	2	1	3
16:25	16:30	1	1	0	0	43	11	1	47	1	1	0	15
16:30	16:35	0	0	0	1	32	16	2	33	4	0	0	9
16:35	16:40	1	0	0	0	43	12	1	45	3	1	0	7
16:40	16:45	1	0	0	0	41	13	1	47	1	1	0	8
16:45	16:50	2	0	1	0	38	14	3	46	1	0	0	12
16:50	16:55	1	0	0	0	58	15	0	33	3	2	0	7
16:55	17:00	2	0	0	0	46	17	1	34	1	1	0	7
17:00	17:05	1	2	1	0	40	8	3	40	0	1	0	7
17:05	17:10	1	0	0	0	48	3	4	43	1	0	0	5
17:10	17:15	1	0	0	0	48	10	0	49	3	0	0	8
17:15	17:20	2	1	0	0	40	13	0	29	1	2	0	8
17:20	17:25	1	0	1	0	52	4	3	40	2	0	2	12
17:25	17:30	2	0	1	0	41	13	1	47	2	2	0	7
17:30	17:35	1	0	0	0	36	14	3	38	2	1	1	7
17:35	17:40	0	0	0	0	46	13	1	46	2	0	0	5
17:40	17:45	0	1	0	0	38	14	2	29	4	2	1	4
17:45	17:50	0	1	0	0	41	9	0	41	2	3	1	4
17:50	17:55	1	0	1	0	40	7	1	39	0	0	0	6

PEDESTRIANS

		SOUTH X-WALK	WEST X-WALK	EAST X-WALK	NORTH X-WALK
16:00	16:15	0	0	0	0
16:15	16:30	0	0	0	0
16:30	16:45	0	0	0	0
16:45	17:00	0	0	0	0
17:00	17:15	0	0	0	0
17:15	17:30	0	0	0	0
17:30	17:45	0	0	0	0
17:45	18:00	0	0	0	0
18:00	18:15	0	0	0	0
18:15	18:30	0	0	0	0
18:30	18:45	0	0	0	0
18:45	19:00	0	0	0	0

STOPPED BUSES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	1	0	0	0
16:15	16:30	0	0	0	0	1	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	1	0	0	0
16:45	17:00	0	0	0	0	1	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	1	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	1	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	1	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	1	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	1	0	0	0	0	0	0	0

BIKES

		W-S	W-E	W-N	N-W	N-S	N-E	S-W	S-N	S-E	E-S	E-W	E-N
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	2	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	1	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	1	0	0	0	0
17:00	17:15	0	0	0	0	1	0	0	1	0	0	0	0
17:15	17:30	0	0	0	0	0	1	0	0	0	0	0	1
17:30	17:45	0	0	0	0	0	0	0	0	1	0	0	0
17:45	18:00	0	0	0	0	0	0	0	1	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	1	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	1	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	1	0	0	0	0

Attachment 2 - Existing Operations Analyses

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 7: US 30 & 33rd Street 3/30/2006

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔			↔			↔			↔			
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			-5%			2%			
Volume (veh/h)	170	590	5	20	555	25	5	5	20	15	5	125	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.71	0.71	0.71	0.77	0.77	0.77	
Hourly flow rate (vph)	187	648	5	22	610	27	7	7	28	19	6	162	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							TWLT	TWLT					
Median storage (veh)							1	1					
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	637			654			1844	1708	851	1721	1895	824	
vC1, stage 1 conf vol							1025	1025		888	868		
vC2, stage 2 conf vol							819	681		1054	1027		
vCu, unblocked vol	637			654			1844	1708	851	1721	1895	824	
tC, single (s)	4.1			4.1			7.1	6.5	8.2	7.1	6.5	8.2	
tC, 2 stage (s)							8.1	5.5		8.1	5.5		
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	80			98			84	85	94	88	96	87	
cM capacity (veh/h)	946			933			44	148	469	135	186	485	
Direction Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2					
Volume Total	187	654	22	637	7	35	19	189					
Volume Left	187	0	22	0	7	0	19	0					
Volume Right	0	5	0	27	0	28	0	162					
cSH	946	1700	933	1700	44	327	135	452					
Volume to Capacity	0.20	0.38	0.02	0.37	0.16	0.11	0.14	0.37					
Queue Length 95th (ft)	18	0	2	0	13	9	12	43					
Control Delay (s)	9.7	0.0	9.0	0.0	101.0	17.3	36.2	17.6					
Lane LOS	A		A		F	C	E	C					
Approach Delay (s)	2.2		0.3		31.3		19.6						
Approach LOS					D		C						
Intersection Summary													
Average Delay			4.1										
Intersection Capacity Utilization			60.8%		ICU Level of Service		B						
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 2: US 30 & 36th Street 3/30/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	30	595	575	10	10	25
Peak Hour Factor	0.95	0.95	0.96	0.96	0.84	0.84
Hourly flow rate (vph)	32	626	599	10	12	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type TWLTL						
Median storage (veh) 1						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	609				1284	604
vC1, stage 1 conf vol					604	
vC2, stage 2 conf vol					688	
vCu, unblocked vol	609				1284	604
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)					5.4	
IF (s)	2.2				3.5	3.3
pQ queue free %	97				98	94
cM capacity (veh/h)	989				312	498
Direction, Lane #						
	EB 1	EB 2	WB 1	SB 1		
Volume Total	32	626	609	42		
Volume Left	32	0	0	12		
Volume Right	0	0	10	30		
cSH	989	1700	1700	426		
Volume to Capacity	0.03	0.37	0.36	0.10		
Queue Length 95th (ft)	3	0	0	8		
Control Delay (s)	8.8	0.0	0.0	14.4		
Lane LOS	A			B		
Approach Delay (s)	0.4		0.0	14.4		
Approach LOS				B		
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			43.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
4: US 30 & 39th Street

Astoria East Gateway Transportation Plan
3/30/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↵	↑	↶		↷	
Sign Control		Free	Free		Stop	
Grade		0%	0%		5%	
Volume (veh/h)	5	600	575	5	5	10
Peak Hour Factor	0.94	0.94	0.90	0.90	0.88	0.88
Hourly flow rate (vph)	5	638	639	6	6	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type TWLTL						
Median storage (veh) 1						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	644				1291	642
vC1, stage 1 conf vol					642	
vC2, stage 2 conf vol					649	
vCu, unblocked vol	644				1291	642
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	96
cM capacity (veh/h)	941				319	474

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	638	644	17
Volume Left	5	0	0	6
Volume Right	0	0	6	11
cSH	941	1700	1700	408
Volume to Capacity	0.01	0.38	0.38	0.04
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	8.8	0.0	0.0	14.2
Lane LOS	A			B
Approach Delay (s)	0.1		0.0	14.2
Approach LOS				B

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization	43.3%		ICU Level of Service A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 17: US 30 & Old US 30 3/30/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	565	525	5	5	10
Peak Hour Factor	0.83	0.83	0.83	0.83	0.36	0.36
Hourly flow rate (vph)	12	681	585	5	14	28
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	570				1272	567
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	570				1272	567
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	99				92	85
cM capacity (veh/h)	1003				183	523
Direction/Lane #						
	EB 1	WB 1	SB 1			
Volume Total	693	570	42			
Volume Left	12	0	14			
Volume Right	0	5	28			
cSH	1003	1700	323			
Volume to Capacity	0.01	0.34	0.13			
Queue Length 85th (ft)	1	0	11			
Control Delay (s)	0.3	0.0	17.8			
Lane LOS	A		C			
Approach Delay (s)	0.3	0.0	17.8			
Approach LOS			C			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		49.8%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 16: US 30 & Blue Ridge Drive 3/30/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Sign Control		Free	Free		Stop	Stop
Grade		-7%	7%		-3%	-3%
Volume (veh/h)	5	555	525	5	5	5
Peak Hour Factor	0.88	0.88	0.85	0.85	0.25	0.25
Hourly flow rate (vph)	6	642	618	6	20	20
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	624				1274	621
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	624				1274	621
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				89	96
cM capacity (veh/h)	958				184	488
Direction, Lane #						
	EB 1	WB 1	SB 1			
Volume Total	648	624	40			
Volume Left	6	0	20			
Volume Right	0	6	20			
cSH	958	1700	267			
Volume to Capacity	0.01	0.37	0.15			
Queue Length 95th (ft)	0	0	13			
Control Delay (s)	0.2	0.0	20.8			
Lane LOS	A		C			
Approach Delay (s)	0.2	0.0	20.8			
Approach LOS			C			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			45.6%	ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 23: US 30 & Nimitz Road 3/30/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑		↵	↑			↑			↑	
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	10	505	55	5	465	5	55	5	5	5	5	10
Peak Hour Factor	0.87	0.87	0.87	0.82	0.82	0.82	0.85	0.85	0.85	0.67	0.67	0.67
Hourly flow rate (vph)	11	580	63	6	567	6	65	6	6	7	7	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	573		644		1233		1220		612		1195	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	573		644		1233		1220		612		1195	
tC, single (s)	4.1		4.1		7.1		6.5		6.2		7.1	
tC, 2 stage (s)												
tF (s)	2.2		2.2		3.5		4.0		3.3		3.5	
pD queue free %	99		99		55		97		99		95	
cM capacity (veh/h)	1000		941		142		177		493		155	
Direction, Lane #												
	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	11	644	6	573	76	30						
Volume Left	11	0	6	0	65	7						
Volume Right	0	63	0	0	6	15						
cSH	1000	1700	941	1700	153	247						
Volume to Capacity	0.01	0.38	0.01	0.34	0.50	0.12						
Queue Length 95th (ft)	1	0	0	0	60	10						
Control Delay (s)	8.8	0.0	8.8	0.0	50.0	21.5						
Lane LOS	A		A		F	C						
Approach Delay (s)	0.2		0.1		50.0		21.5					
Approach LOS					F		C					
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			48.7%		ICU Level of Service		A					
Analysis Period (min)			15									

Attachment 3 Trip Generation

East Gateway Transportation Plan Trip Generation Summary

Generator	Total Trips	Trips In	Trips Out
Houseboats	20	13	7
Astoria BP	127	41	85
Pier 39	192	77	115
Blue Ridge	43	28	14
Barandise	51	34	17
N Tongue Pt	144	63	81
Triangle	93	61	32
	670	318	351

Note: Totals may not sum correctly due to rounding.

East Gateway Transportation Plan: Trip Generation Houseboats Development

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 8 p.m.

Land Use Code	Land Use Description	Trip Ends Versus		Number of Studies	Average # of Units	K ²	Standard Deviation	Trip Rate Average	Trips Generated Average		Directional Distribution		Average	
		Entering	Exiting						Entering	Exiting	Entering	Exiting		
210	Single-Family Detached Housing	0	0	302	2.74	0.91	1.05	1.09	20	63%	37%	15	7	

East Gateway Transportation Plan: Trip Generation

Astoria Business Park

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 70

Land Use Code	Land Use Description	Trip Ends Versus 1000 ft ²	Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution Entering	Directional Distribution Exiting	Average Entering	Average Exiting
110	General Light Industrial	1000 ft ²	26	357	0.89	1.16	0.96	69	12%	58%	6	62

AND

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 60

Land Use Code	Land Use Description	Trip Ends Versus Dwelling Units	Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution Entering	Directional Distribution Exiting	Average Entering	Average Exiting
210	Residential Condominium/Townhouse	Dwelling Units	62	262	0.89	0.75	0.52	31	87%	33%	21	10

AND

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 10

Land Use Code	Land Use Description	Trip Ends Versus 1000 ft ²	Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution Entering	Directional Distribution Exiting	Average Entering	Average Exiting
814	Specialty Retail Center	1000 ft ²	5	63	0.98	1.83	2.74	27	44%	56%	12	15

East Gateway Transportation Plan: Trip Generation

Pier 39

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 128

Land Use Code	Land Use Description	Trip Ends Versus 1000 ft ²	Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution Entering	Directional Distribution Exiting	Average Entering	Average Exiting
730	Office Park	1000 ft ²	31	373	0.91	1.82	1.80	192	14%	86%	27	165

Information for additional units came from website www.pier39astoria.com and confirmed by Ryan Holcomb, Pier 39 Manager. (40) and exiting (80) adjusted to account for more mixed use (retail, restaurants, leisure) adjacent to this development.

East Gateway Transportation Plan: Trip Generation

Blue Ridge

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 32

Land Use Code	Land Use Description	Trip Ends Versus Dwelling Units	Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution Entering	Directional Distribution Exiting	Average Entering	Average Exiting
230	Residential Condominium/Townhouse	Dwelling Units	62	205	0.80	0.75	0.92	43	67%	33%	29	14

East Gateway Transportation Plan: Trip Generation

Barndise

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 96

Land Use Code	Land Use Description	Trip Ends Versus		Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution		Average	
		Dwelling Units	Other							Entering	Exiting	Entering	Exiting
220	Residential Condominium/Townhouse	62	205	0.60	0.75	0.52	57	67%	33%	54	17		

East Gateway Transportation Plan: Trip Generation

North Tongue Point

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 408

Land Use Code	Land Use Description	Trip Ends Versus		Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution		Average	
		Employees	Other							Entering	Exiting	Entering	Exiting
140	Manufacturing	45	711	0.66	0.62	1.22	142	42%	58%	63	81		

East Gateway Transportation Plan: Trip Generation

Triangle

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Additional Units 34

Land Use Code	Land Use Description	Trip Ends Versus		Number of Studies	Average # of Units	R ²	Standard Deviation	Trip Rates Average	Trips Generated Average	Directional Distribution		Average	
		Acres	Other							Entering	Exiting	Entering	Exiting
210	Single-Family Detached Housing	124	70	N/A	2.55	2.74	95	69%	31%	81	32		

Attachment 4 Future Operations Analyses

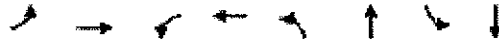
HCM Signalized Intersection Capacity Analysis
101: US 30 & 33rd Street

Astoria East Gateway Transportation Plan
4/10/2005

	↖		→		↗		↖		→		↗	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SEB	SEB
Lane Configurations	↖	↖		↖	↖		↖	↖		↖	↖	↖
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Grade (%)		0%			0%			-5%			2%	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Fit	1.00	1.00		1.00	0.92		1.00	0.88		1.00	0.86	
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1676	1580		1676	1738		1718	1584		1660	1495	
Fit Permitted	0.99	1.00		0.16	1.00		0.42	1.00		0.73	1.00	
Satd. Flow (perm)	156	1580		265	1738		754	1584		1268	1495	
Volume (vph)	226	933	7	34	898	71	7	7	33	54	7	168
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	240	982	7	36	943	75	8	8	39	64	8	199
RTOR Reduction (vph)	0	0	0	0	3	0	0	35	0	0	176	0
Lane Group Flow (vph)	240	989	0	36	1015	0	8	12	0	64	30	0
Bus Blockages (#/hr)	0	1	0	0	1	0	0	0	0	0	0	0
Parking (#/hr)		0	0									
Turn Type	pm+pt		pm+pt		Perm		Perm		Perm		Perm	
Protected Phases	5	2		1	8		8				4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	67.8	62.1		53.8	52.1		9.8	9.8		9.8	9.8	
Effective Green, g (s)	67.8	62.1		53.8	52.1		9.8	9.8		9.8	9.8	
Actuated g/C Ratio	0.79	0.73		0.83	0.61		0.11	0.11		0.11	0.11	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp. Cap. (vph)	332	1149		207	1060		85	178		143	168	
v/s Ratio Prot	c0.10	c0.63		0.00	c0.58			0.01			0.02	
v/s Ratio Perm	0.47			0.11			0.01			c0.05		
v/c Ratio	0.72	0.86		0.17	0.98		0.09	0.07		0.45	0.18	
Uniform Delay, d1	26.0	8.5		19.7	15.6		34.0	33.9		35.4	34.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.6	6.8		0.4	18.1		0.5	0.2		2.2	0.5	
Delay (s)	32.6	15.3		20.1	33.7		34.5	34.1		37.6	34.9	
Level of Service	C	B		C	C		C	C		D	C	
Approach Delay (s)		18.8			33.2			34.1			35.5	
Approach LOS		B			C			C			D	
Intersection Summary												
HCM Average Control Delay	26.7		HCM Level of Service		C							
HCM Volume to Capacity ratio	0.83											
Actuated Cycle Length (s)	85.4		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	89.0%		ICU Level of Service		E							
Analysis Period (min)	15											

Queues
101: US 30 & 33rd Street

Astoria East Gateway Transportation Plan
4/10/2005



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	240	988	36	1018	8	47	64	208
w/c Ratio	0.85	0.84	0.20	0.94	0.10	0.22	0.44	0.60
Control Delay	52.1	18.8	7.2	31.9	34.3	16.1	38.8	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	18.8	7.2	31.9	34.3	16.1	38.8	10.8
Queue Length 50th (ft)	76	342	3	433	4	4	32	4
Queue Length 95th (ft)	#224	#778	11	#829	18	31	67	54
Internal Link Dist (ft)		338		1057		101		59
Turn Bay Length (ft)	150		150					
Base Capacity (vph)	284	1172	179	1092	110	300	213	418
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced w/c Ratio	0.85	0.84	0.20	0.93	0.07	0.16	0.30	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 102: US 30 & 36th Street 4/10/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑		↘	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	40	980	986	20	19	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.85	0.85
Hourly flow rate (vph)	42	1032	1017	21	22	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
pQ queue free %						
cM capacity (veh/h)						

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	42	1032	1038	62
Volume Left	42	0	0	22
Volume Right	0	0	21	40
cSH	670	1700	1700	147
Volume to Capacity	0.06	0.61	0.61	0.42
Queue Length 95th (ft)	5	0	0	47
Control Delay (s)	10.7	0.0	0.0	48.5
Lane LOS	B			E
Approach Delay (s)	0.4		0.0	48.5
Approach LOS				E

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		84.9%	ICU Level of Service C
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 103: US 30 & 39th Street 4/10/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	76	971	909	52	91	145
Peak Hour Factor	0.95	0.95	0.95	0.95	0.85	0.85
Hourly flow rate (vph)	76	971	909	52	91	145
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTTL					
Median storage (veh)	1					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	981				2032	909
vC1, stage 1 conf vol					909	
vC2, stage 2 conf vol					1122	
vCu, unblocked vol	981				2032	909
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)					5.4	
IF (s)	2.2				3.5	3.3
p0 queue free %	89				48	57
cM capacity (veh/h)	716				173	333
Direction Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	76	971	909	52	91	145
Volume Left	76	0	0	0	91	0
Volume Right	0	0	0	52	0	145
cSH	716	1700	1700	1700	173	333
Volume to Capacity	0.11	0.57	0.53	0.03	0.52	0.43
Queue Length 95th (ft)	9	0	0	0	65	53
Control Delay (s)	10.6	0.0	0.0	0.0	46.5	23.9
Lane LOS	B				E	C
Approach Delay (s)	0.8		0.0		32.6	
Approach LOS					D	
Intersection Summary						
Average Delay	3.8					
Intersection Capacity Utilization	88.7%					
ICU Level of Service	C					
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 104: US 30 & 54th Street

Astoria East Gateway Transportation Plan
 4/10/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Sign Control		Free	Free		Stop	Stop
Grade		0%	0%		0%	0%
Volume (veh/h)	36	924	827	7	7	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.85	0.85
Hourly flow rate (vph)	36	973	871	7	8	28
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	878				1918	874
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878				1918	874
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				88	82
cM capacity (veh/h)	789				71	349
Direction Lane #						
	EB 1	WB 1	SB 1			
Volume Total	1009	878	36			
Volume Left	36	0	8			
Volume Right	0	7	28			
cSH	789	1700	185			
Volume to Capacity	0.05	0.52	0.20			
Queue Length 95th (ft)	4	0	18			
Control Delay (s)	1.4	0.0	29.2			
Lane LOS	A		D			
Approach Delay (s)	1.4	0.0	29.2			
Approach LOS			D			
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			90.4%	ICU Level of Service	E	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 105: US 30 & Blue Ridge Drive 4/10/2005



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Sign Control		Free	Free		Stop	
Grade		-7%	7%		-3%	
Volume (veh/h)	47	884	807	17	12	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.85	0.85
Hourly flow rate (vph)	49	831	849	18	14	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	867				1888	658
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	867				1888	658
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
pD queue free %	94				81	81
cM capacity (veh/h)	776				73	367

Direction Lane #	EB 1	WB 1	SB 1
Volume Total	980	867	48
Volume Left	49	0	14
Volume Right	0	18	32
cSH	776	1700	162
Volume to Capacity	0.08	0.51	0.28
Queue Length 95th (ft)	5	0	28
Control Delay (s)	1.8	0.0	35.8
Lane LOS	A		E
Approach Delay (s)	1.8	0.0	35.8
Approach LOS			E

Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization		99.6%	ICU Level of Service F
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis Astoria East Gateway Transportation Plan
 106: US 30 & Nimitz Road 4/10/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Sign Control	Free						Stop					
Grade	0%						0%					
Volume (veh/h)	76	740	80	7	670	32	78	10	7	28	11	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.65	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	80	779	84	7	705	34	92	12	8	33	13	88
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	739			863			1798	1735	821	1690	1760	722
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	739			863			1798	1735	821	1690	1760	722
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
pC queue free %	91			99			0	85	88	44	83	79
cM capacity (veh/h)	887			779			40	79	374	59	76	427

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	80	863	7	739	112	134
Volume Left	80	0	7	0	92	33
Volume Right	0	84	0	34	8	88
cSH	887	1700	779	1700	45	144
Volume to Capacity	0.09	0.51	0.01	0.43	2.48	0.93
Queue Length 95th (ft)	8	0	1	0	297	183
Control Delay (s)	9.0	0.0	9.7	0.0	886.3	118.8
Lane LOS	A		A		F	F
Approach Delay (s)	0.8		0.1		886.3	118.8
Approach LOS					F	F

Intersection Summary		
Average Delay	58.7	
Intersection Capacity Utilization	71.8%	ICU Level of Service C
Analysis Period (min)	15	

Combined Alternatives

City of Astoria

East Gateway Transportation Plan

Alternative Improvements and Preferred Alternative

PREPARED FOR: Oregon Department of Transportation/City of Astoria, OR

PREPARED BY: Cheryl Yoshida, Eric Shimizu, Tim Newkirk, Andrew Barash/CH2M HILL
Allison Wildman, George Hudson/Alta Planning + Design, Inc.

DATE: May 20, 2005

This Technical Memorandum outlines, evaluates, and recommends transportation infrastructure improvements for the East Astoria area.

Develop Alternative Improvements

The development of alternatives was based upon existing operational and safety deficiencies and forecast needs. Deficiencies were found both by analytical means and observations provided by the local PMT and CAC members. Alternatives also address future circulation needs of the potential development areas within the study area.

Potential alternatives were divided into short and long-term categories and further subdivided by mode of transportation. Generally, short-term projects address existing deficiencies, while long-term address deficiencies that arise by the forecast year.

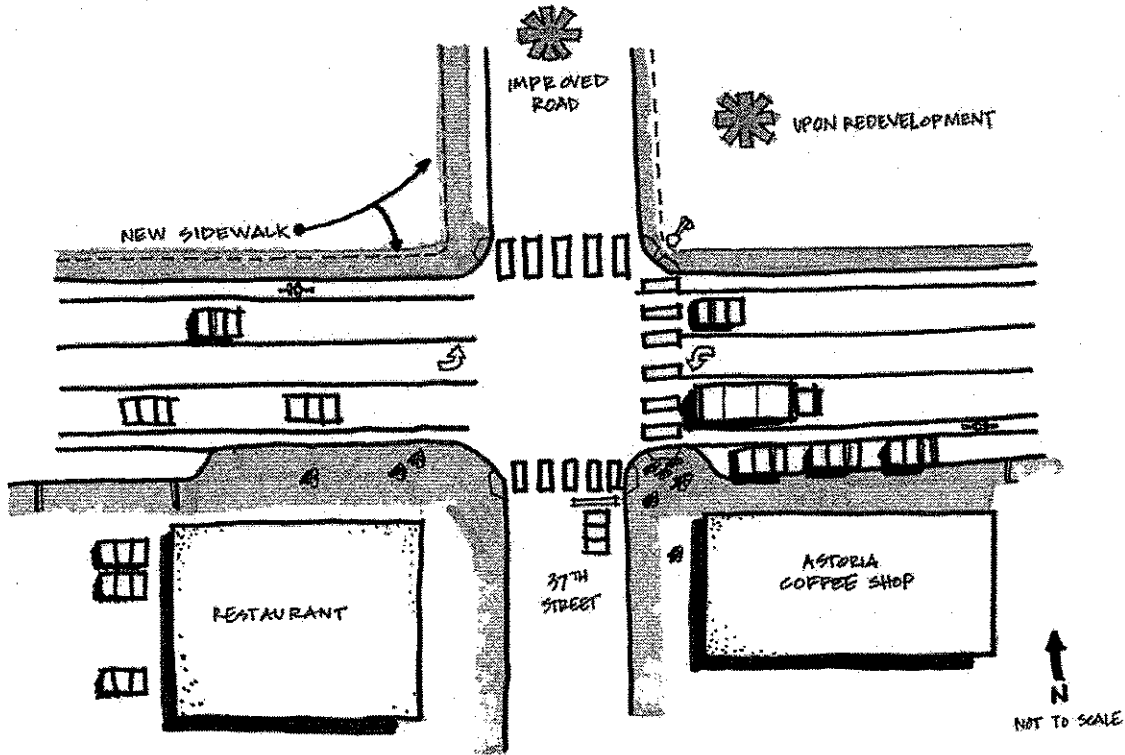
The location of the improvements designated by the letter assigned to each is shown on the study area map at the end of this section.

Short Term

Short term improvement projects will be classified as projects taking 1 - 5 years to develop and implement.

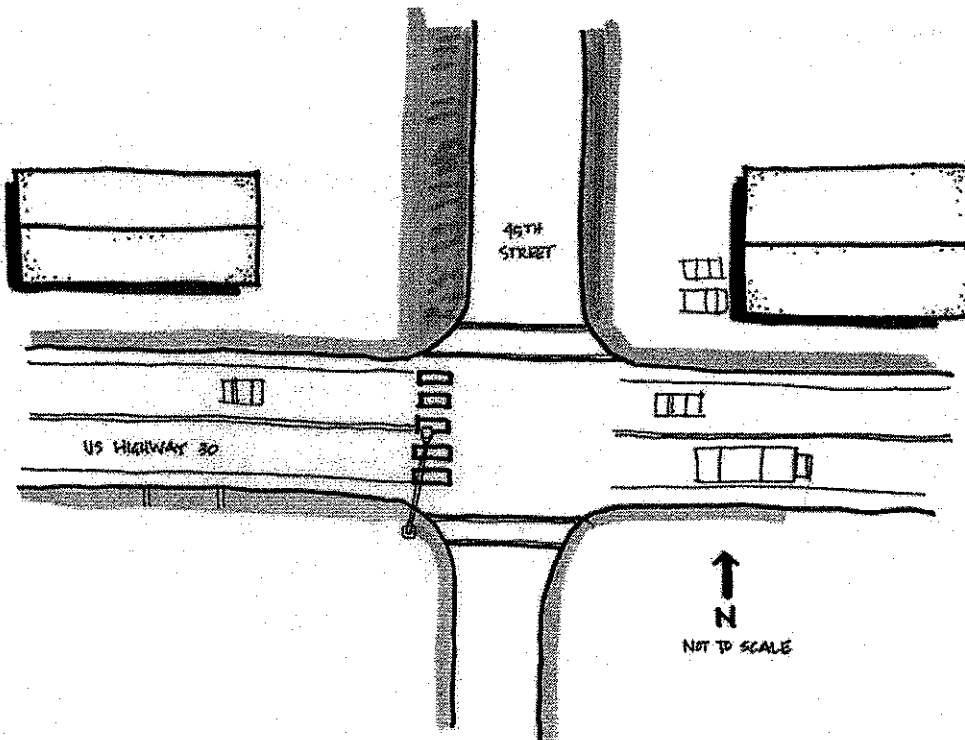
Vehicular

A. U.S. Highway 30 @ 37th Street - Address sight distance issues for vehicles traveling northbound on 37th Street by one or more of the following: enforcement of parking prohibitions, narrowing of U.S. Highway 30 travel lanes to reduce speeds through the area, construction of bulb-outs (additional curbing) to allow the 37th Street stop bar to be situated closer to the highway and physically restrict parking, add bicycle lanes, and/or turn-lane refuge.



B. U.S. Highway 30, west of 43rd Street - Improve horizontal/vertical alignment of highway to improve sight distance.

C. U.S. Highway 30 @ 45th Street - Address traffic operations and pedestrian safety by one or more of the following: adding eastbound left turn storage lane, provision of additional signing,



narrowing of US 30 travel lanes to reduce speeds through the area, adding roadway illumination and/or adding bicycle lanes.

D. Two-way left turn lane - Extend the existing two-way left-turn lane towards the east from 39th to 46th Street. This improvement would be important particularly for the EB direction making a left turn into 45th Street and should be coordinated with the improvements recommended in C. above. It may be possible to construct the 45th Street turn lane improvement as an ODOT maintenance activity.

E. U.S. Highway 30 @ 54th Street - Provide alignment, channelization, signing, and striping improvements. Motel traffic is currently conflicting with 54th Street.

F. U.S. Highway 30 @ Nimitz Road/Tongue Point Job Corp Access - Provide realignment, striping, and wider shoulders to facilitate truck movements.

Bicycle

G. U.S. Highway 30 - Extend the existing striped, channelized bicycle lane markings in locations where existing pavement width is available to accommodate the lane, specifically from the existing lanes on the west side of the study area to 47th Street.

Pedestrian

H. U.S. Highway 30 - Provide a continuous sidewalk along the north side of U.S. Highway 30 by building new sidewalks between 35th Street and 37th Street and on the south side of U.S. Highway 30 from 48th Street to Nimitz Road.

I. U.S. Highway 30 near Columbia Field - Install new marked pedestrian crossing near Columbia Field that is connected to Astor Elementary by an asphalt trail. This alternative should be implemented only when there is a demonstrated need for pedestrians to make this crossing and cannot be otherwise encouraged to use more suitable crossing points. Consideration should be given to parking improvements elsewhere to reduce the demand for crossing the highway at this location, see option O.

J. U.S. Highway 30 @ 37th Street - Address pedestrian safety issues with one or more of the following: improved intersection lighting, solar powered pedestrian warning signs, vehicle radar/speed signs, left-turn lanes, intersection bulb outs, and/or median pedestrian crossing area.

K. U.S. Highway 30 @ 45th Street - Address pedestrian safety issues with one or more of the following: improved intersection lighting, solar powered pedestrian warning signs, vehicle radar/speed signs, striping bicycle lanes, intersection bulb outs, and/or median pedestrian crossing area.

L. School Speed Zone (20 mph when children present) - Consider a school speed zone between 35th and 37th Streets. *The City or school district would need to request a school speed zone study from ODOT.* Added enforcement along with an automated speed reader/sign would help to reduce speed. These techniques combined with a narrowing of the U.S. Highway 30 travel lanes would help to reduce speeds through this section of roadway. A discussion between the city, school and ODOT would need to occur if this were to continue on as a preferred alternative.

M. Reducing speed limit - West of Old U.S. Highway 30, reduce posted speed to 35 mph. And west of 46th Street, reduce posted speed to 25 mph. Reduction in the posted speed limit would

be more suitable for the highway within the residential neighborhood, especially in the areas bordering Columbia Field, Astor Elementary, and Alderbrook Community Center. *Currently a speed study is being conducted in the Alderbrook neighborhood (54th to 45th Street) by ODOT. The study is projected to be completed in the summer of 2005. As a follow-up to this study, the City of Astoria should review results and recommendations with ODOT.*

N. Traffic calming - Apply traffic calming techniques to slow vehicles. This may include bulb outs, lane narrowing, speed radar/indication signs, improved delineation, and median refuges (coordinated with left turn storage at intersections).

**Public Transportation/Alternative Travel Modes
Other Facilities (Rail, Pipelines, Airports)**

O. Parking - Provide off-street parking in the vicinity of 34th Street & Columbia Field to remove vehicles from U.S. Highway 30 shoulders, which currently create sight distance problems. The City owns right of way behind the Custom House near 34th Street that could possibly be used for this additional parking.

P. Boat trailer parking - Provide off-street parking for boat trailers that currently use the U.S. Highway 30 shoulders in the vicinity of 36th and 37th Streets.

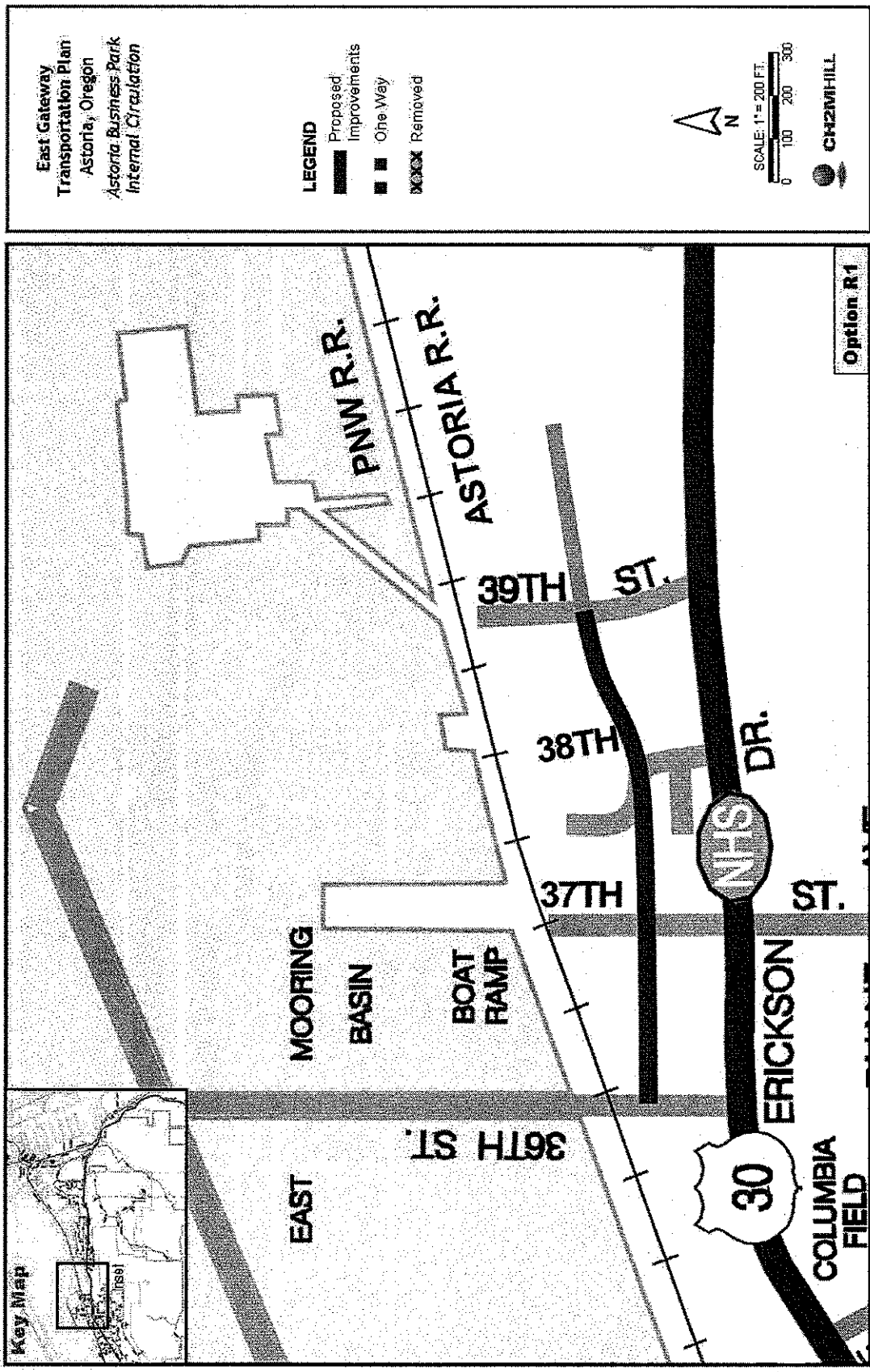
Long Term

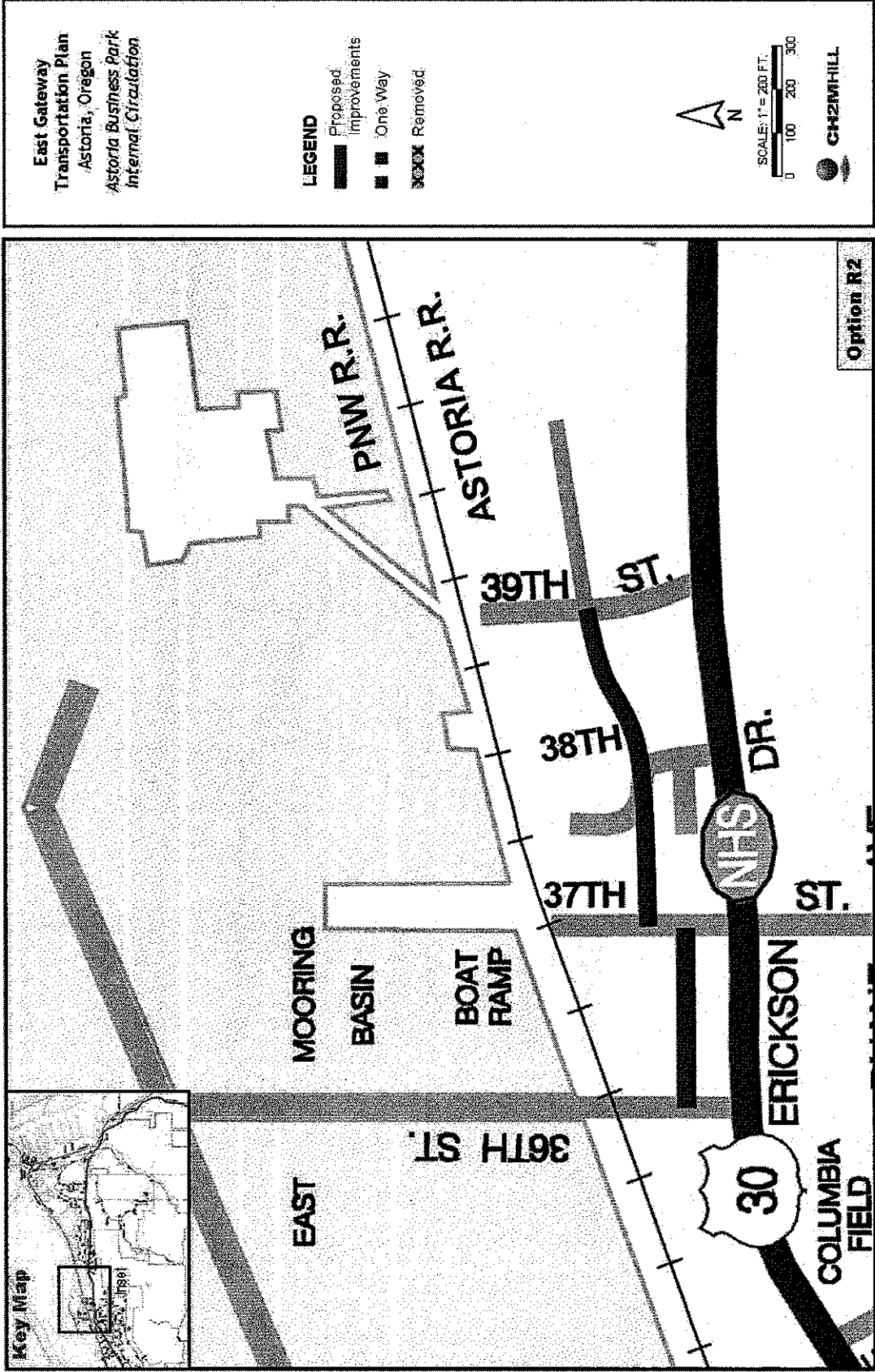
Long term improvement projects will be classified as projects taking over 5 years to develop and implement.

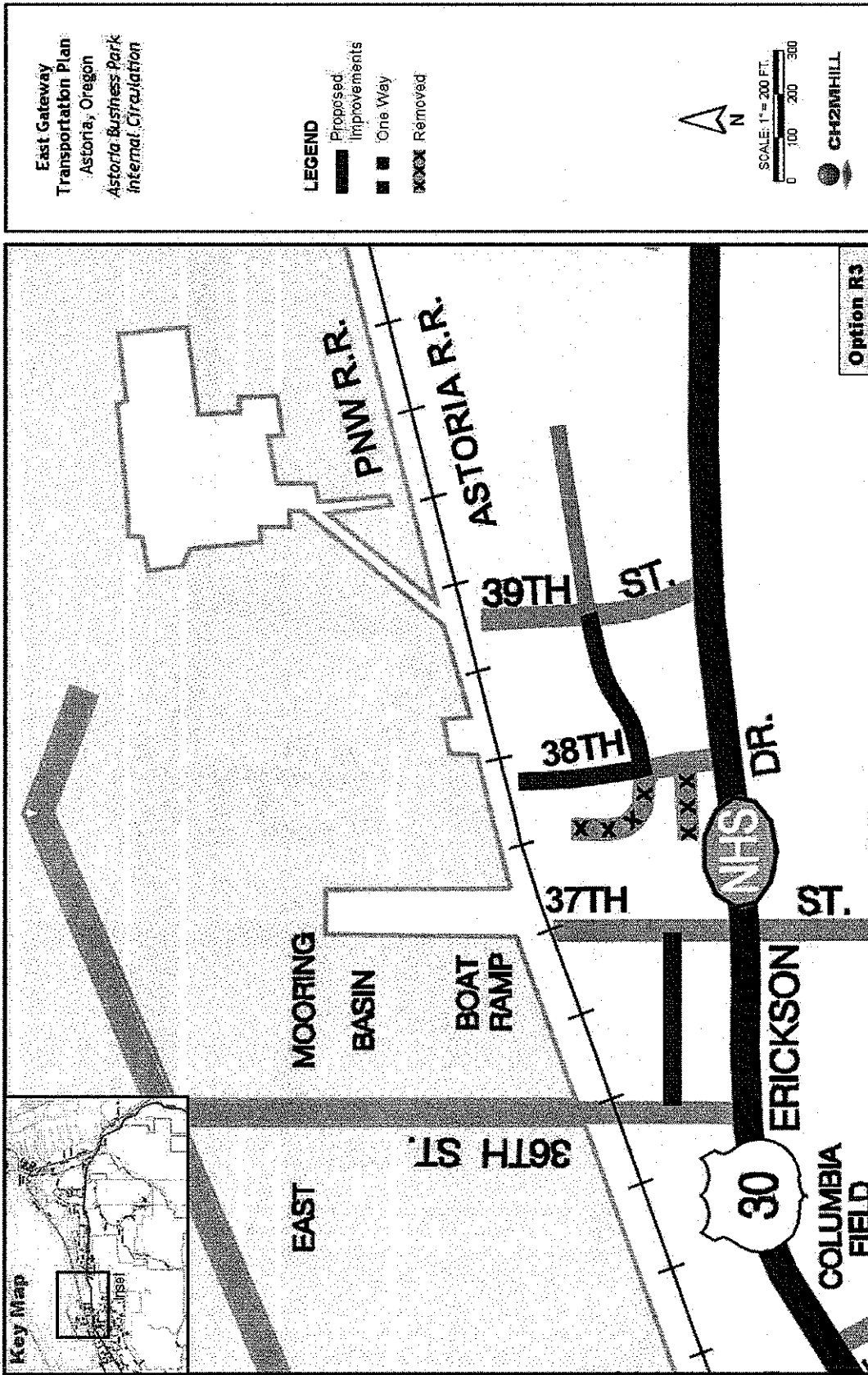
Vehicular

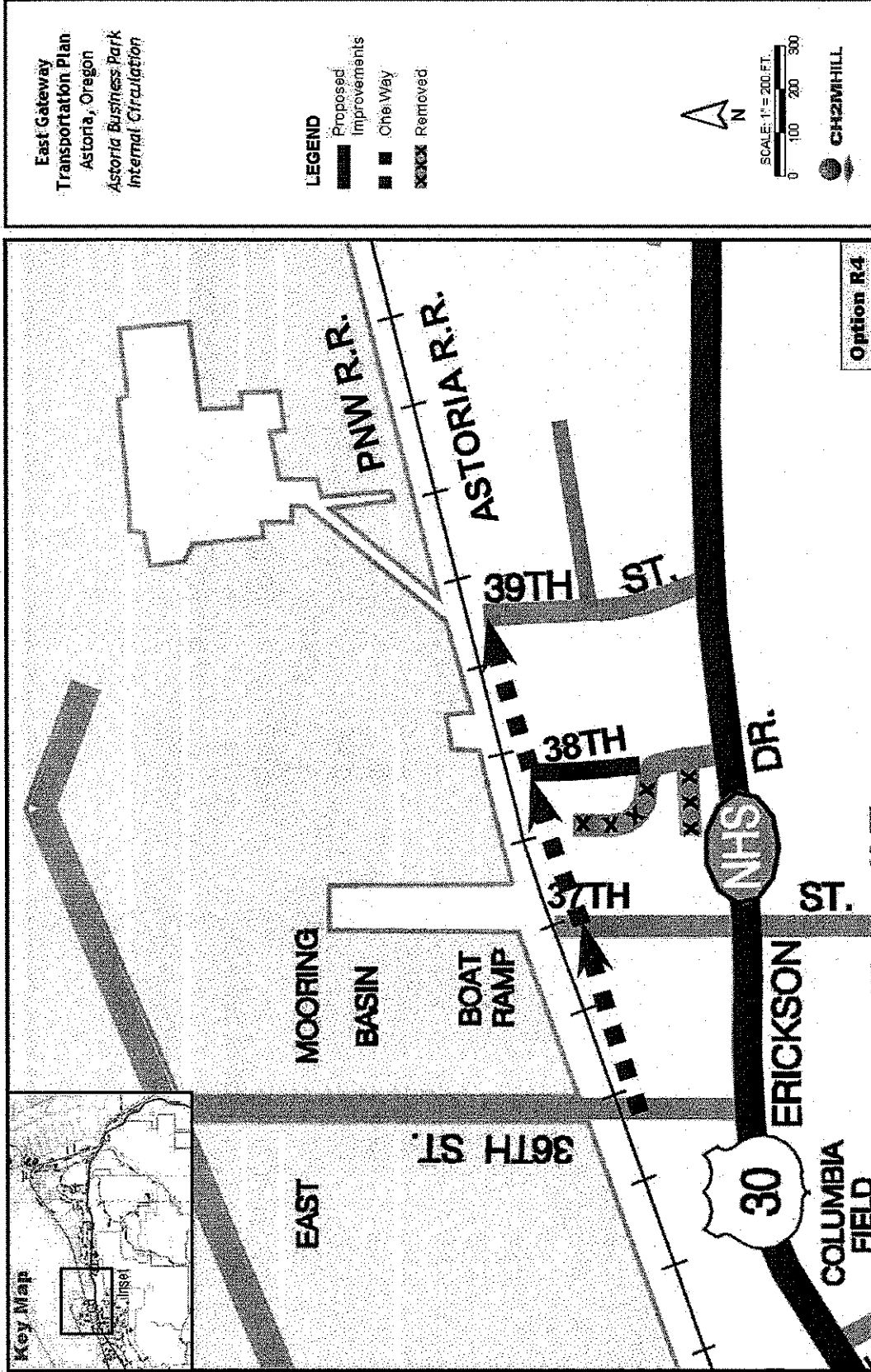
Q. Alternative 1 to U.S. Highway 30 - In conjunction with the Franklin Street to 43rd Street (or possibly a 44th Street extension to the south) connection required for the Franklin Street bridge rehabilitation project, extend Commercial Street to this new roadway. This would provide an alternate route to Astoria from the study area if US-30 were closed during an emergency situation. This project is topographically and geologically challenged but the City has developed preliminary concepts for the connection.

R. Alternative 2 to U.S. Highway 30 - In conjunction with the new developments between 36th and 39th Streets, construct a parallel local roadway to accommodate trips within the mixed use areas.







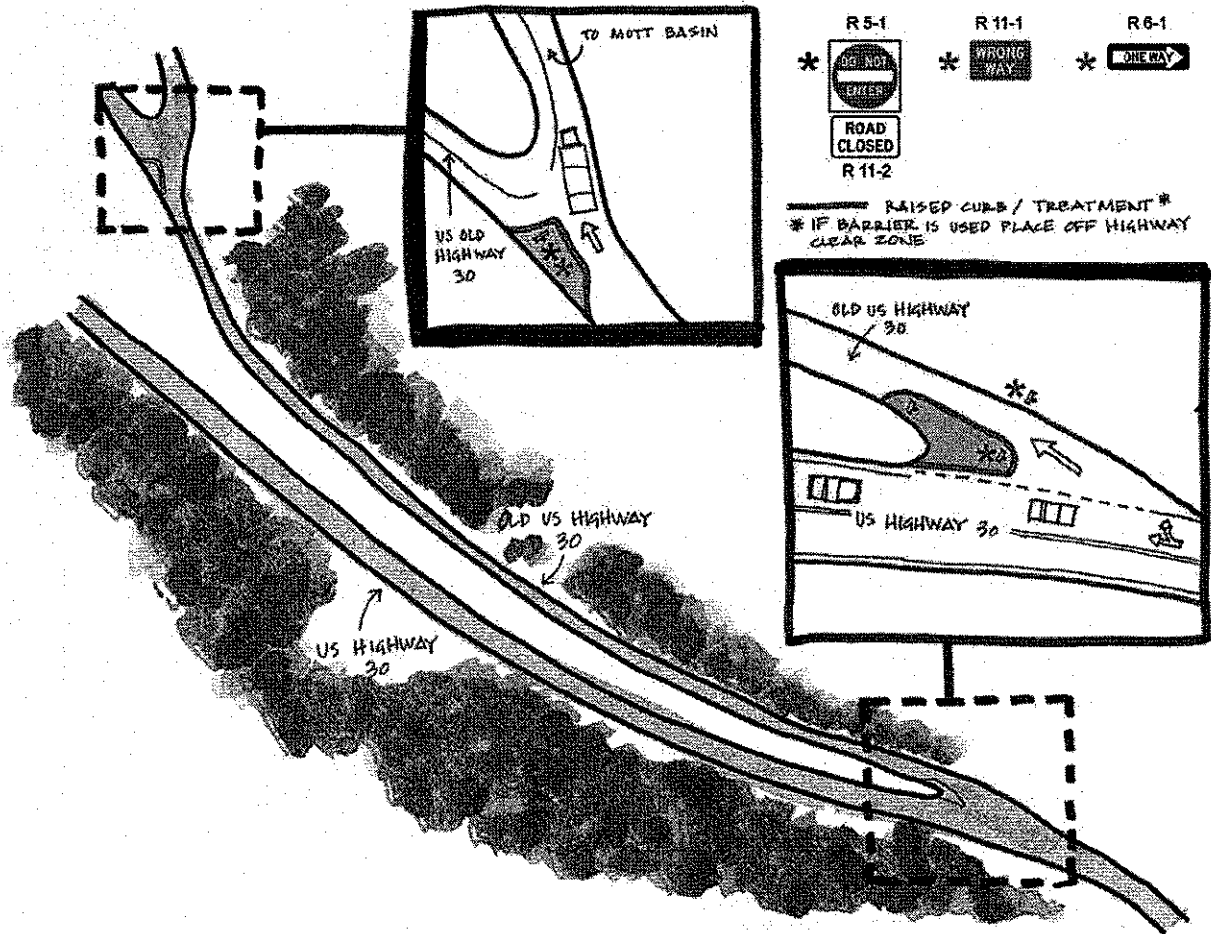


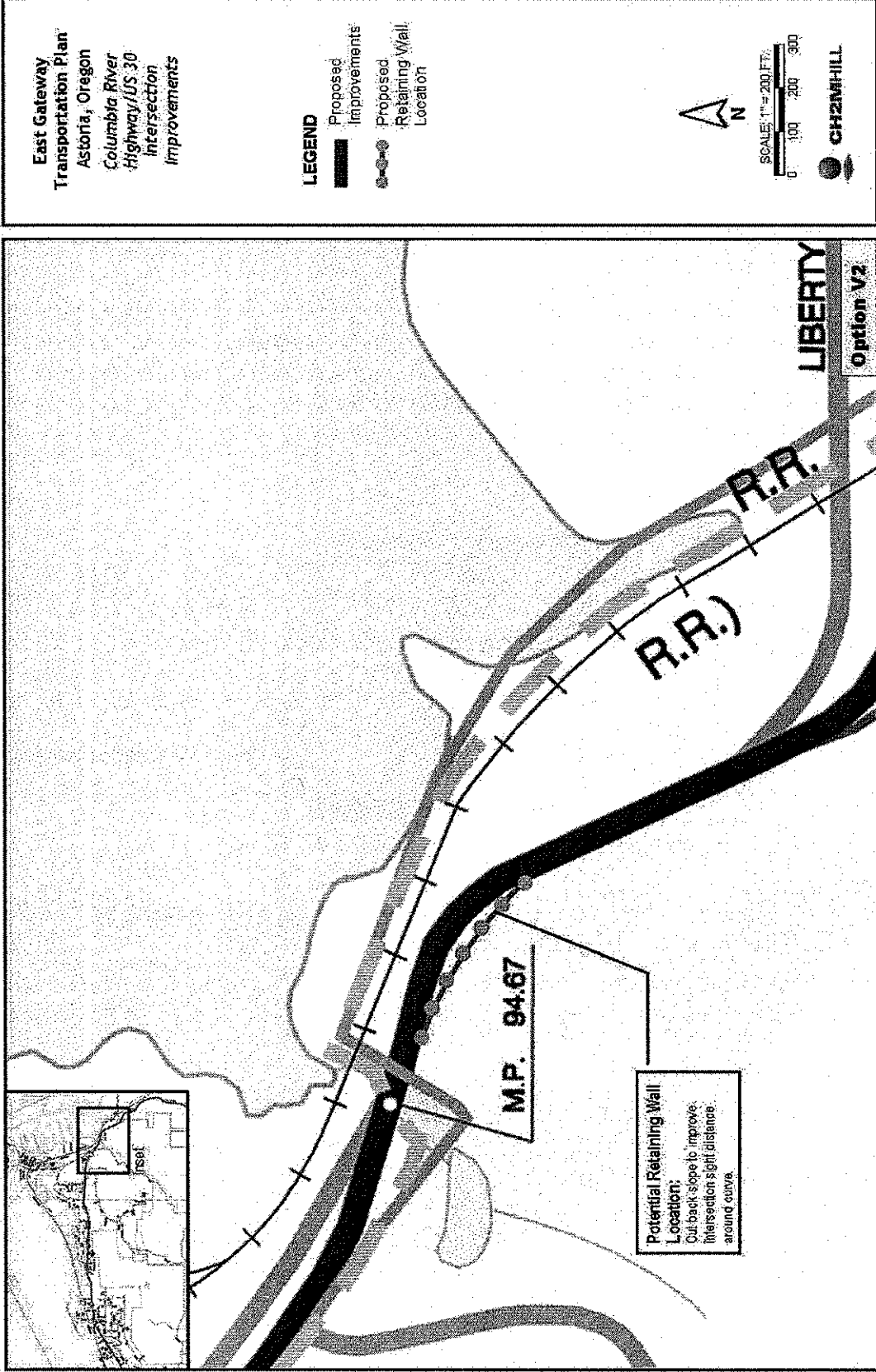
S. Alternative 3 to U.S. Highway 30 - Extend Irving Road to the Emerald Heights area for provision of an alternate Route to U.S. Highway 30.

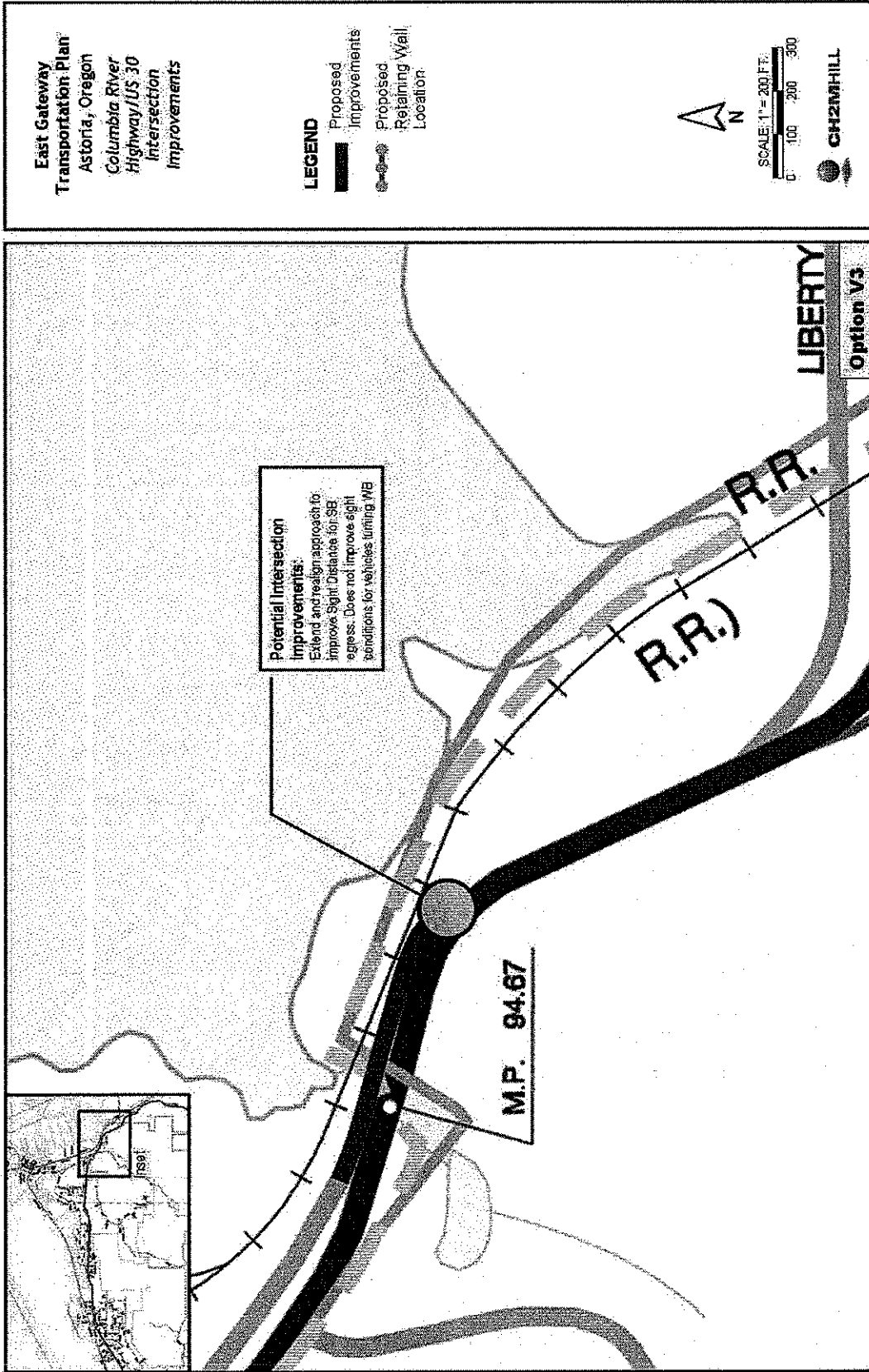
T. U.S. Highway 30 @ Blue Ridge Drive - In conjunction with redevelopment of a compatible community, remove direct access from U.S. Highway 30, provide access via Old Highway 30 along northern boundary of property.

U. U.S. Highway 30 @ Nimitz Road/Tongue Point Job Corp Access - Provide intersection improvements to facilitate truck movements or install traffic signal to accommodate potential future traffic volumes.

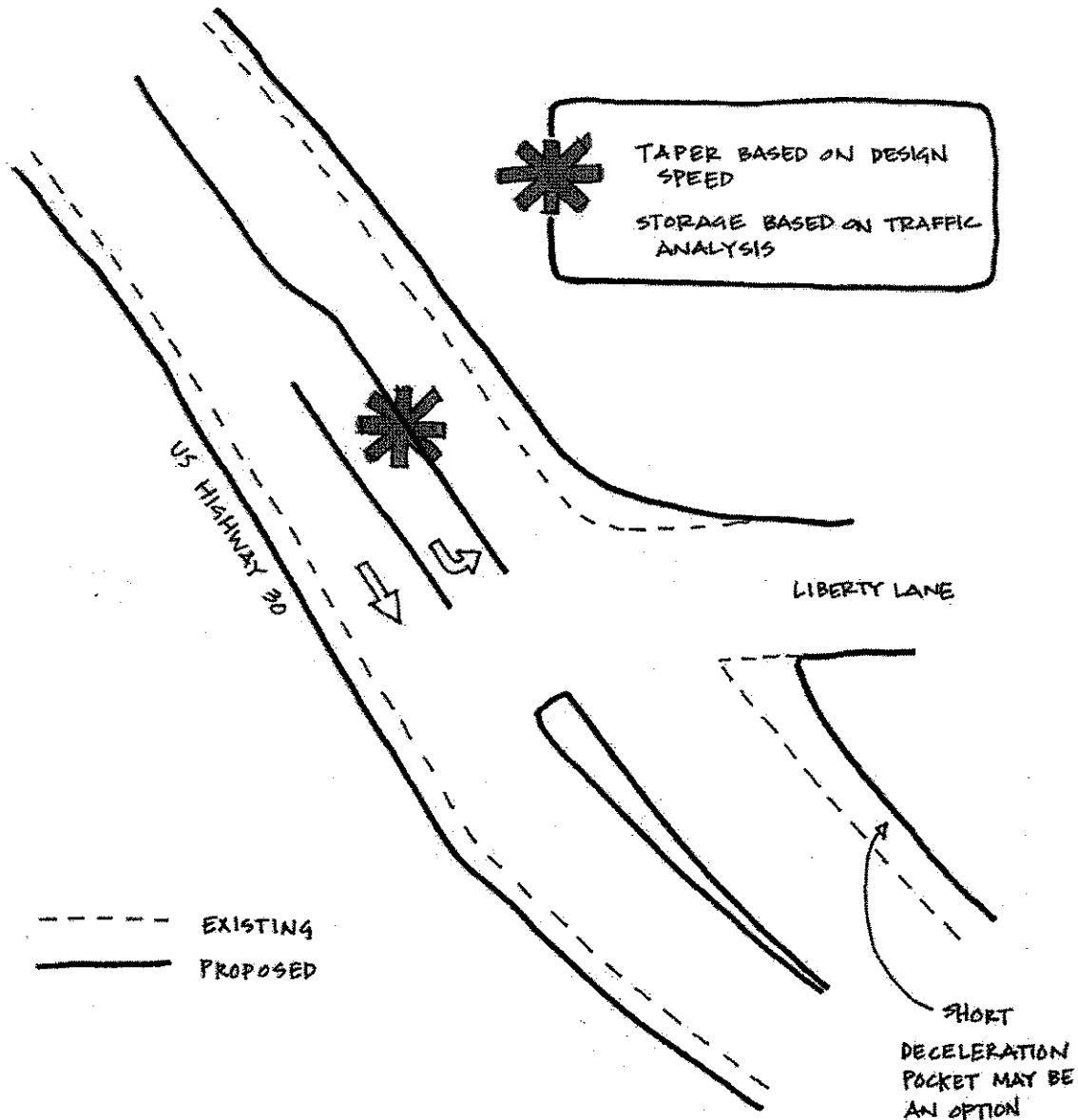
V. U.S. Highway 30 @ Old U.S. Highway 30 (east) - Improve intersection safety by restricting movements at the intersection to right-in only (shown in the graphic below) , improve alignment to reduce acute approach angle and/or improve sight distance by cutting back/retaining the slope on the south side of the highway. Any of the physical improvements to this intersection would be topographically challenging.







W. U.S. Highway 30 @ South Tongue Point - Realignment of intersection and provision of left-turn pocket. In addition, the South Tongue Point Master Plan calls for a new intersection approximately a half mile to the east of the existing intersection. Mitch Mitchum thought that this option should be a high safety priority for ODOT. Floyd commented that there was study known as the Mine Sweeper Relocation Study provided in the area by NW Naval Engineering in Poulsbo, WA.

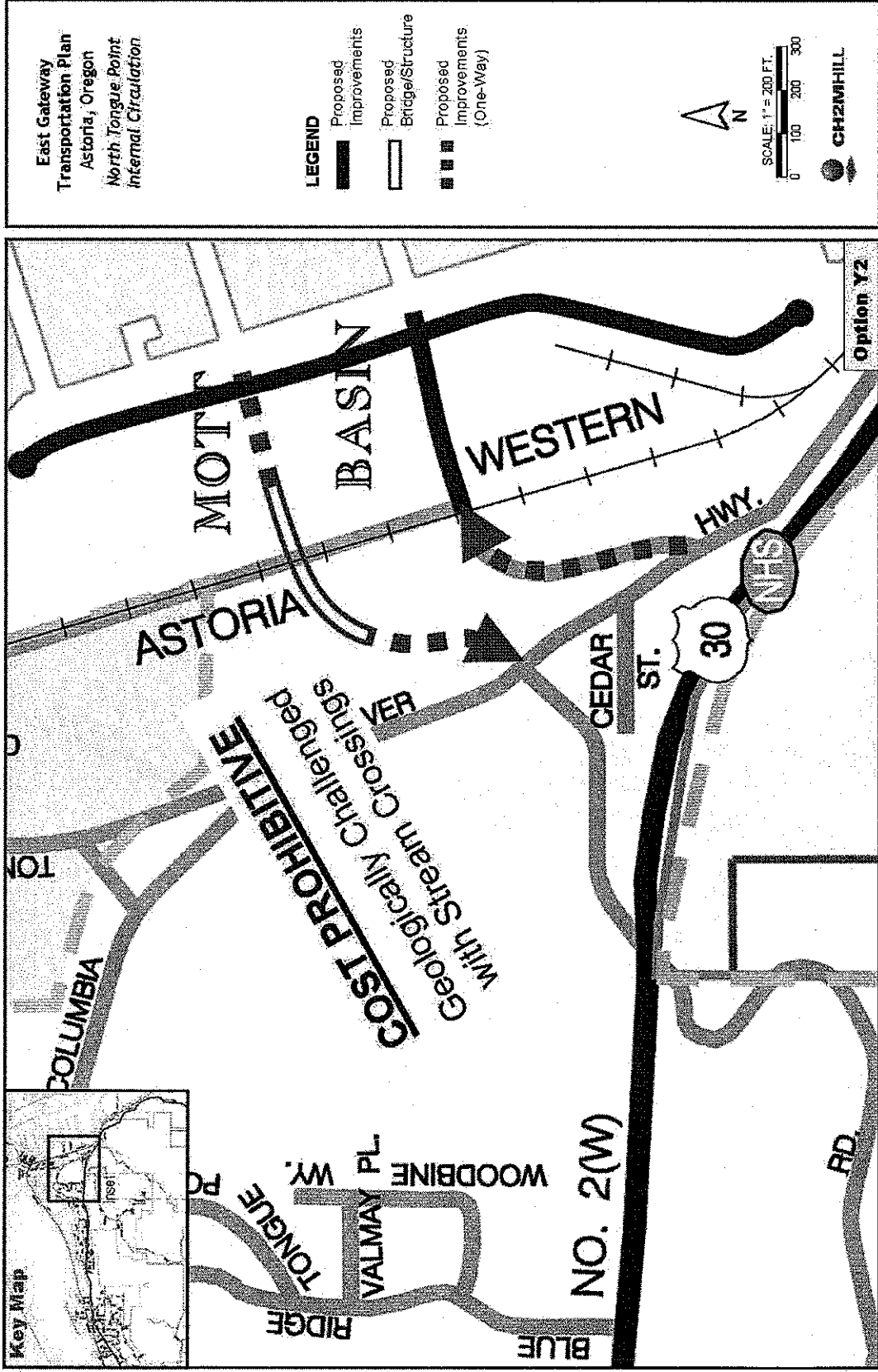


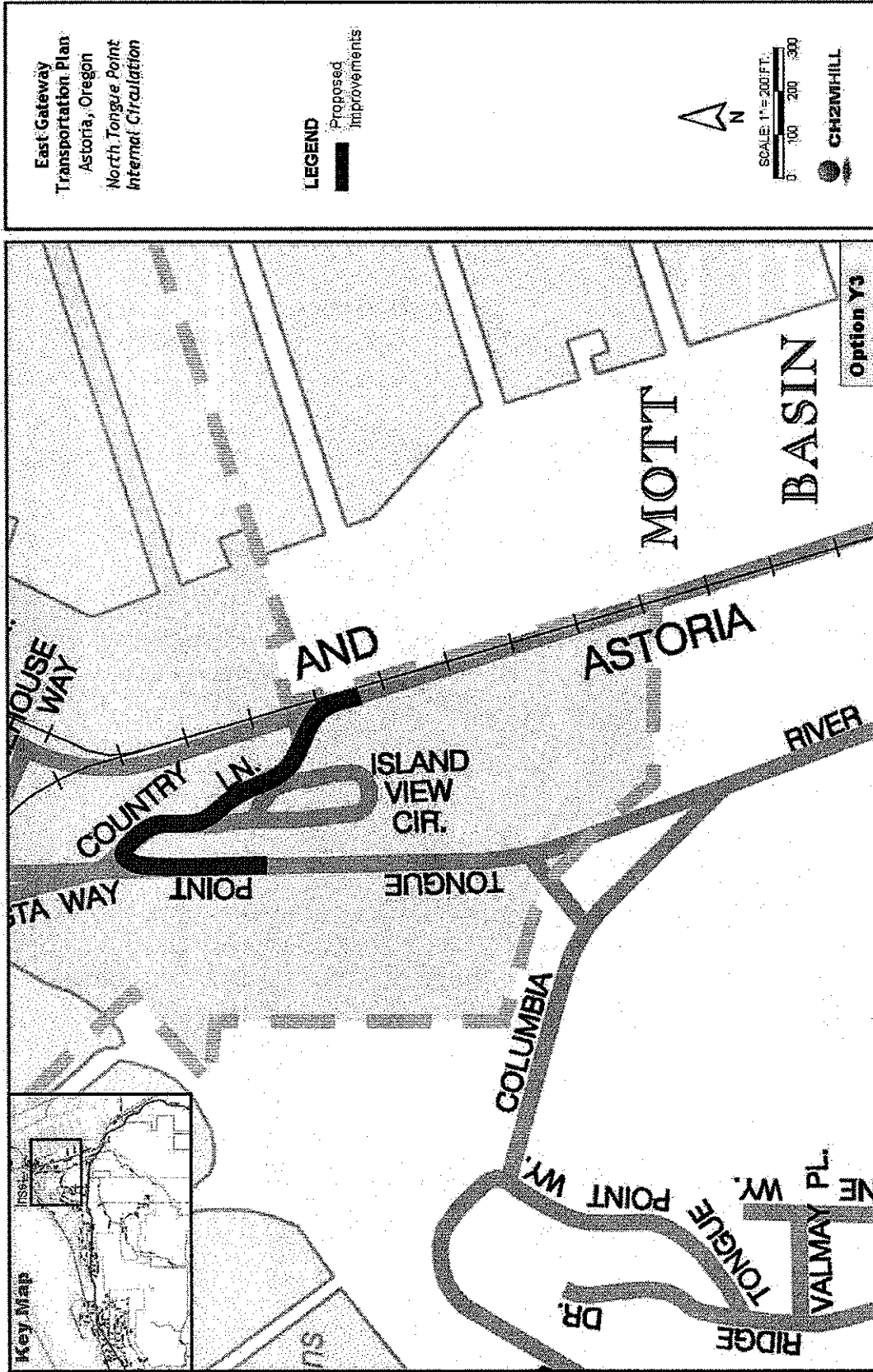
X. Tongue Point Job Corp Access Road - Widen roadway to meet the City of Astoria's design guidelines for a major local street (pavement width of 36 feet) to accommodate the projected traffic created by the proposed marine industrial and residential developments.

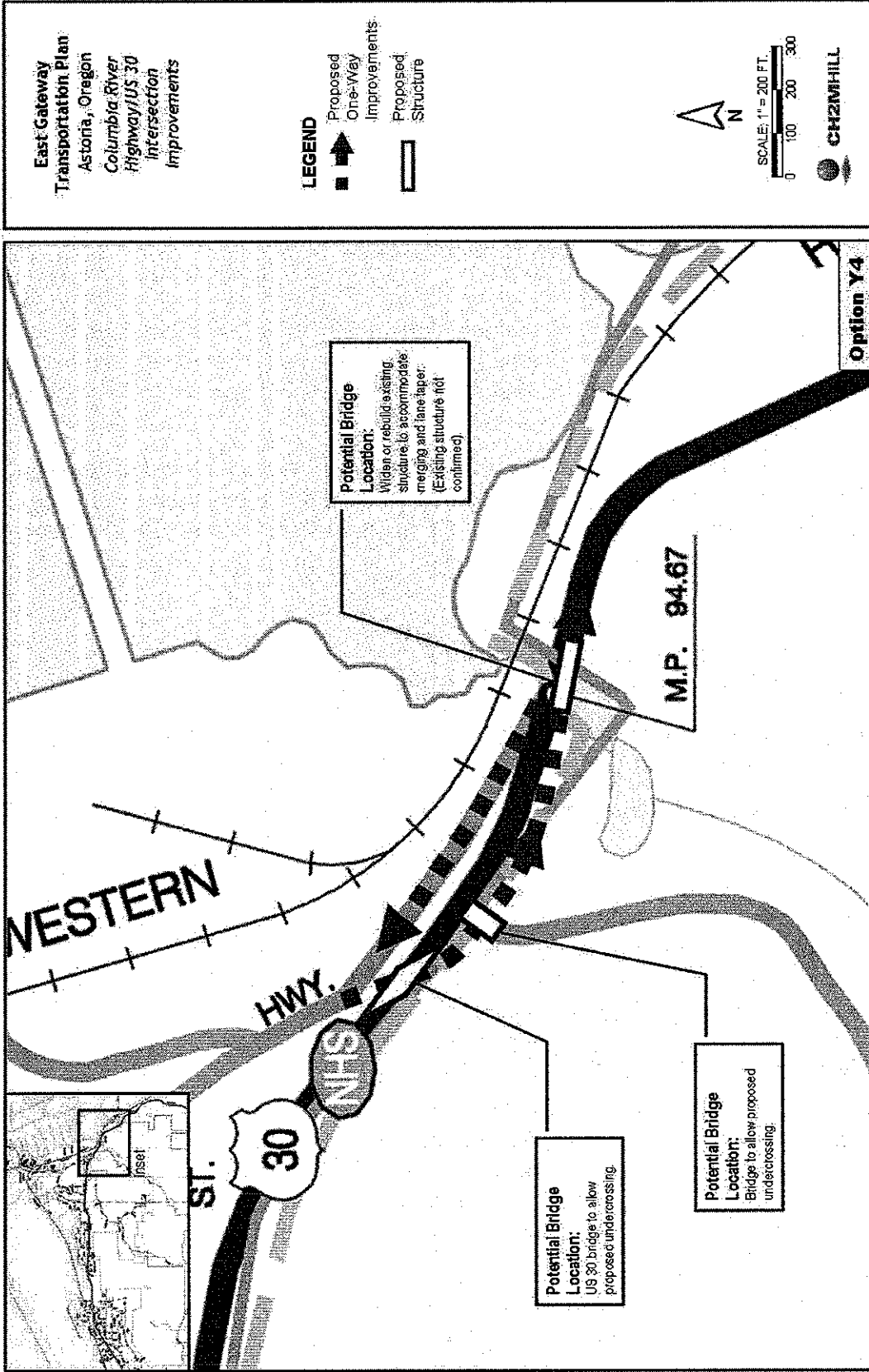
Y. North Tongue Point Access - Provide additional access to/from North Tongue Point along Old U.S. Highway 30 for improved accessibility to the site. Floyd Holcolm said that the Austin

Group studied options in this area and that As-builts could be obtained from Steve Purchase who works at the State Division of Land Management in Salem. One option is a one way up the hill along Country lane that accesses Tongue Point. Another design option is a one way eastbound road from Old Highway 30 that goes under U.S. Highway 30, elevates and crosses an existing bridge over the creek and then ties into U.S. Highway 30 eastbound.









Z. 54th Street/Old U.S. Highway 30 - Widen roadway to meet the City of Astoria's design guidelines for a minor local street (pavement width of 28 feet) to accommodate the projected traffic created by the proposed residential developments.

Bicycle

AA. U.S. Highway 30 – Provide continuous bicycle lanes along the highway. Current highway shoulders are unusable in areas. The project would consist of upgrading shoulders in various locations along both sides of the highway.

Pedestrian

AB. U.S. Highway 30 @ 37th Street – Address pedestrian safety issues with installation of a traffic signal with pedestrian accommodations. Signal warrant analyses would need to be performed at the time this alternative is pursued. ODOT “quick fix” funds may be available for this improvement.

AC. U.S. Highway 30 @ 45th Street – Address pedestrian safety issues with installation of a traffic signal with pedestrian accommodations. Signal warrant analyses would need to be performed at the time this alternative is pursued. ODOT “quick fix” funds may be available for this improvement.

Public Transportation/Alternative Travel Modes

AD. Waterfront Trolley - Extend trolley to Pier 39 (~750 ft longer than existing run).

AE. Waterfront Trolley - Add a second trolley to the system and split into two runs, which would allow more frequent service.

AF. Sunset Empire Transit - Expand public transit service to new housing and industrial developments.

Other Facilities (Rail, Pipelines, Airports)

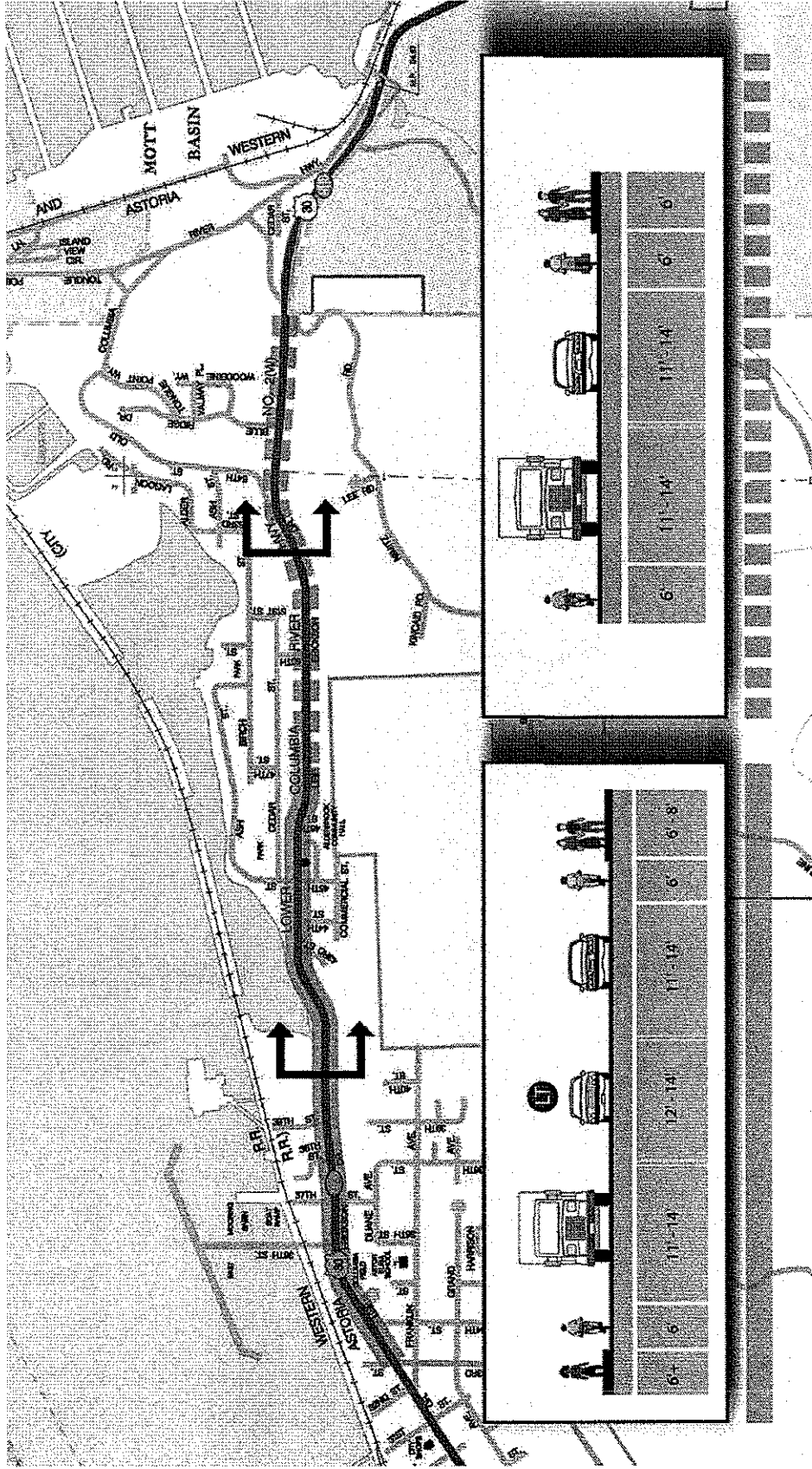
AG. Extension of P&W rail service to Tongue Point – Provide rail service connection to maritime port terminals where multimodal connections are desirable for port systems accommodating substantial international and national freight. This would also include construction of additional RR sidings for loading and unloading freight.

Evaluate Alternative Improvements

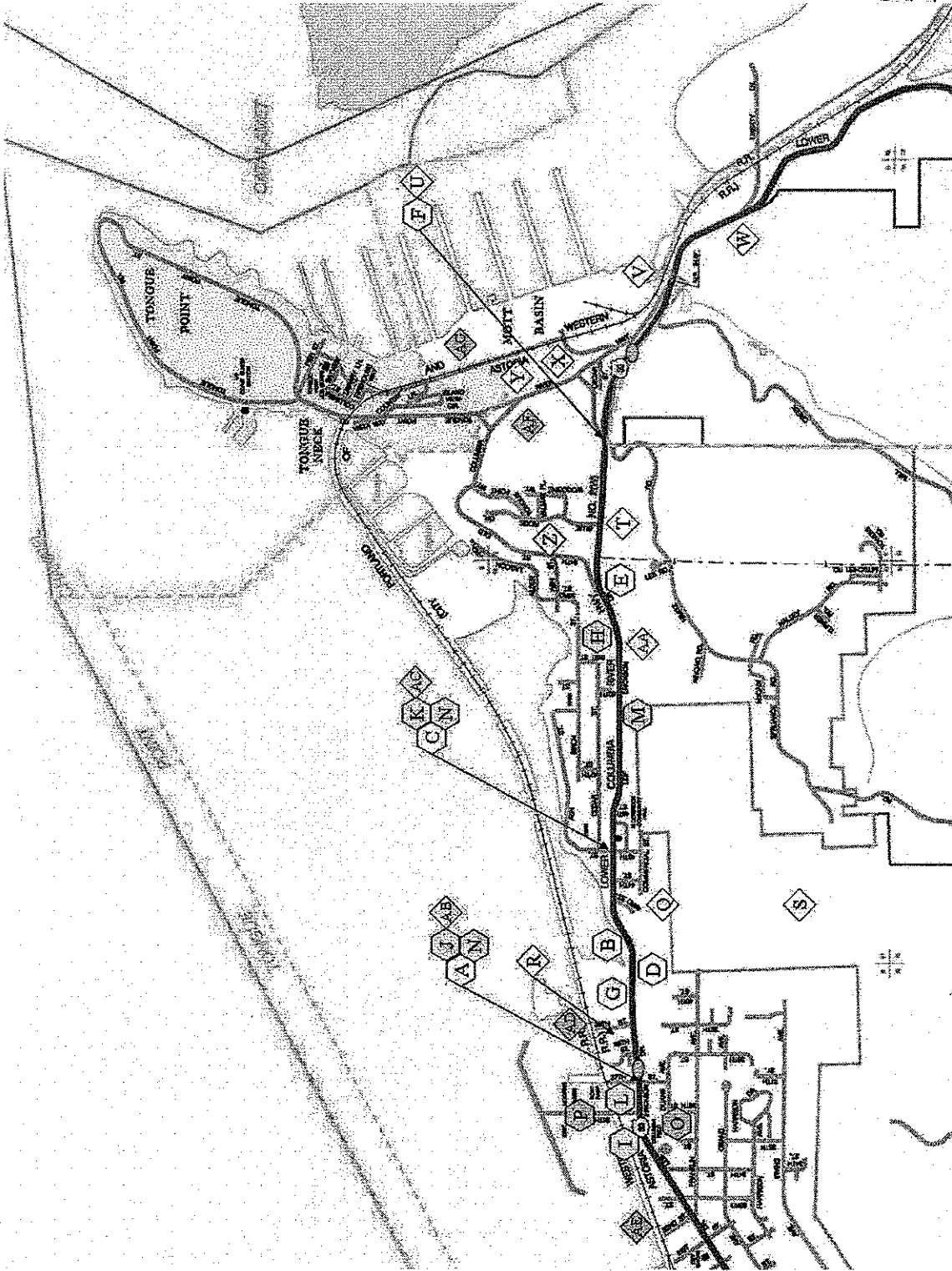
The evaluation of alternatives was performed on a point scale basis. Improvements were compared in groups containing projects relating to the various and distinct characteristics of the study area. Four distinct groups were identified for the East Astoria area; Industrial/Commercial Sites, Residential Sites, Pedestrian/Cyclist Enhancement and River Trail Extension. The evaluation criteria reflect the goals of the project identified in the early stages of this study.

The following matrices evaluate the alternatives for the above areas, with the exception of the River Trail Extension. The River Trail Extension alternatives are described and evaluated following the discussion of the preferred roadway infrastructure alternatives.

CITY OF ASTORIA
 EAST GATEWAY TRANSPORTATION PLAN
 ALTERNATIVE IMPROVEMENTS AND PREFERRED ALTERNATIVE



CITY OF ASTORIA
 EAST GATEWAY TRANSPORTATION PLAN
 ALTERNATIVE IMPROVEMENTS AND PREFERRED ALTERNATIVE



Legend

- Short-term Alternative:
- Long-term Alternative:
- Vehicular:
- Bicycle:
- Pedestrian:
- Other Modes:

*City of Astoria
 East Gateway Transportation Plan
 Alternative Improvements*

Preferred Alternatives

The East Gateway Transportation Plan Project Management Team and Citizen Advisory Committee examined all of the potential infrastructure improvements. Guided by the compilation of existing and forecast data, operations analyses, evaluation scoring and local knowledge, preferred alternatives were developed for each of the distinct categories.

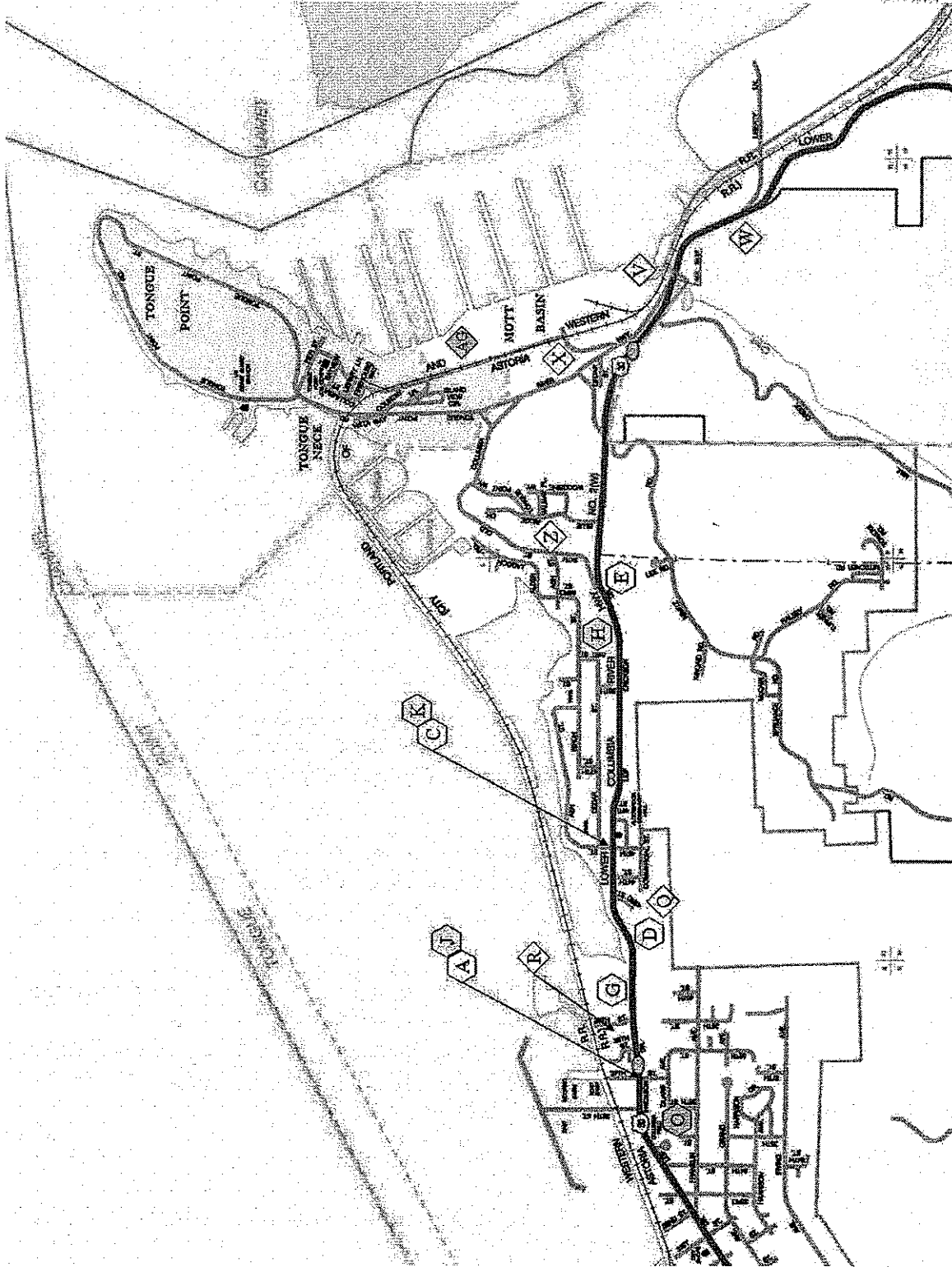
Industrial/Commercial - The industrial/commercial sites focused on the area north of U.S. Highway 30 between 36th and 39th Streets as well as North and South Tongue Point. Five preferred alternatives were identified. The preferred alternatives generally focused on the long-term infrastructure needs to support the proposed growth within the areas. The following projects outline the preferred alternatives from the highest to lowest importance.

1. (R) In conjunction with the new developments between 36th and 39th Streets, construct a parallel local roadway to accommodate trips within the mixed use areas. The roadway will relieve congestion on U.S. Highway 30 within the study area, and encourage shorter trips between the new residential, commercial and industrial developments. The roadway may also serve as an alternate route to U.S. Highway 30 in case of an emergency.
2. (W) Realign the U.S. Highway 30 at South Tongue Point intersection and provide a left-turn pocket. In addition, the South Tongue Point Master Plan calls for a new intersection approximately a half mile to the east of the existing intersection. These improvements serve as both capacity and safety measures for the South Tongue Point area.
3. (V) Modify the U.S. Highway 30 at Old U.S. Highway (eastern termini) by restricting it to a westbound right-turn in only. This improves the safety of the intersection by removing movements with minimal sight distance and movements that require acute turns due to the topographical constraints of the area.
4. (X) Widen the Tongue Point Job Corp Access Roadway to meet the City of Astoria's design guidelines for a major local street (pavement width of 36 feet) to accommodate the projected traffic created by the proposed marine industrial and residential developments.
5. (AG) Extend the P&W rail service to Tongue Point. Rail service to maritime port terminals is desirable for port systems accommodating substantial international and national freight. This would also include construction of additional RR sidings for loading and unloading freight.







Residential - The residential areas included the Blue Ridge, Emerald Heights, Alderbrook and Uppertown Neighborhoods. Six preferred alternatives were identified. The preferred alternatives included both long and short-term safety and capacity related improvements. The following projects outline the preferred alternatives from the highest to lowest importance. The top three preferred alternatives are identified as short-term needs.

1. (A) Address sight distance issues for vehicles traveling northbound on 37th Street to U.S. Highway 30 by constructing bulb-outs. The bulb-outs will prohibit parking activities at the intersection, improving sight distance for vehicles. The extended curbing

CITY OF ASTORIA
 EAST GATEWAY TRANSPORTATION PLAN
 ALTERNATIVE IMPROVEMENTS AND PREFERRED ALTERNATIVE



Legend

- Short-term Alternative:  A
- Long-term Alternative:  X
- Vehicular: 
- Bicycle: 
- Pedestrian: 
- Other Modes: 

City of Astoria
 East Gateway Transportation Plan
 Preferred Alternatives

will also enhance pedestrian safety by improving pedestrian visibility and reducing the roadway crossing distance.

2. (C) At the U.S. Highway 30 and 45th Street intersection - Address traffic operations and pedestrian safety by one or more of the following: adding eastbound left turn storage lane, provision of additional signing, narrowing of US 30 travel lanes to reduce speeds through the area, adding roadway illumination and/or adding bicycle lanes.
3. (D) Two-way left turn lane - Extend the existing two-way left-turn lane towards the east from 39th to 46th Street. This improvement would be important particularly for the EB direction making a left turn into 45th Street and should be coordinated with the improvements recommended in C. above. It may be possible to construct the 45th Street turn lane improvement as an ODOT maintenance activity.
4. (O) Provide off-street parking in the vicinity of 34th Street & Columbia Field to remove vehicles from U.S. Highway 30 shoulders, which currently create sight distance problems. The City owns right of way behind the Custom House near 34th Street that could possibly be used for this additional parking. Another potential location includes angled parking along 37th Street, south of U.S. Highway 30.
5. (E) At the U.S. Highway 30 and 54th Street intersection, provide alignment, channelization, signing, and striping improvements.
6. (Z) At the 54th Street and Old U.S. Highway 30, widen the roadway to meet the City of Astoria's design guidelines for a minor local street (pavement width of 28 feet) to accommodate the projected traffic created by the proposed residential developments.
7. (Q) In conjunction with the Franklin Street to 43rd Street (or possibly a 44th Street extension to the south) connection required for the Franklin Street bridge rehabilitation project, extend Commercial Street to this new roadway. The extension would provide an alternate route to downtown Astoria from the study area if U.S. Highway 30 were closed during an emergency situation. This project is topographically and geologically challenged but the City has developed preliminary concepts for the connection.

Pedestrian/Cyclist - The pedestrian and cyclist category encompassed the entire study area. Four preferred alternatives were identified. The preferred alternatives were all identified as short-term needs. The following projects outline the preferred alternatives from the highest to lowest importance.

1. (J) Address pedestrian safety issues at the U.S. Highway 30 and 37th Street intersection with one or more of the following: improved intersection lighting, solar powered pedestrian warning signs, vehicle radar/speed signs, left-turn lanes, intersection bulb outs, and/or median pedestrian crossing area.
2. (G) On U.S. Highway 30, extend the existing striped bicycle lane markings in locations where existing pavement width is available to accommodate the lane, specifically from the existing lanes on the west side of the study area to 47th Street.
3. (H) On U.S. Highway 30, provide a continuous sidewalk along the north side of the highway by building new sidewalks between 35th Street and 37th Street and on the south side of U.S. Highway 30 from 48th Street to Nimitz Road.

4. (K) Address pedestrian safety issues at the U.S. Highway 30 and 45th Street intersection with one or more of the following: improved intersection lighting, solar powered pedestrian warning signs, vehicle radar/speed signs, left-turn lanes, intersection bulb outs, and/or median pedestrian crossing area.

Astoria Riverside Trail Extension

Introduction

The purpose of this technical memo is to present trail alignment alternatives for the extension of the Astoria River Trail and conduct an analysis to help determine the most appropriate alignment for the trail. In order to find the best alignment for the River Trail extension, it is important to look closely at the most feasible alignments and assess the advantages and disadvantages of each with guidance from the established project goals and objectives.

Below are goals and objectives established for the River Trail through the overall planning process for the East Gateway Transportation Plan.

Goal 8. Support the extension of the River Trail through the east end of Astoria

Objectives

- Address trail user safety issues
- Ensure that the trail is built to the best available design standards
- Provide a continuous and direct alignment
- Connect to desirable land uses (i.e., parks, schools, commercial areas)

Goal 9. Provide all recommended improvements in an environmentally sound and cost effective manner

Objectives

- Minimize impact to sensitive areas
- Minimize impact to private property
- Promote cost effectiveness

Conceptual Alignment Evaluation Summary

The River Trail conceptual alignments presented in this memo all travel through the Alderbrook neighborhood. The logical extension of the built portion of the River Trail is to continue the trail from its termination point on the railroad trestle to the publicly-owned parcel (park) at the east end of Alderbrook. Due to limited on-street options, the extension alignment follows Lagoon Road, Alder Street and 53rd to Birch Street and 51st (*Map 1*). Lagoon Road is a dead end road that leads to the limited access sewage lagoons. Alder Street, 53rd and Birch Street are low volume residential roadways with intermittent sidewalks that are in variable condition. This extension alignment is considered a “given” due to the existing topographic and built conditions. The trail

alignment alternatives focus on the portion of the River Trail through the Alderbrook neighborhood.

There are several trail alignment opportunities through the Alderbrook neighborhood, most of them using the existing street network. The options discussed in the following section examine the alternative trail alignments from approximately 51st Street to 44th Street (*Map 2*). Each alignment is summarized with regard to its relative advantages, disadvantages, and whether it has a potential fatal flaw. A fatal flaw is a constraint that may preclude feasibility, regardless of how well the alignment meets other criteria and goals. It is important to note that the final alignment of the River Trail through Alderbrook may not be solely one of the following alignments but an amalgam, combining the most effective parts from each alignment to create the most desirable alignment.

Evaluation criteria and a scoring system was developed for project alternatives and reviewed by the PMT/CAC early in the Astoria East Gateway Transportation planning process. However, the established methodology revealed limitations when it was applied to the trail alignments. All of the alignments produced the same "score" and it became difficult to differentiate the nuances of each alignment. Instead, a supplementary scoring system was developed specifically for the River Trail alignment analysis. The same goals and objectives were used, but instead of applying a "+", "-", or neutral value to each alternative, a numeric scale was applied. The three conceptual alignments and their relative scores are presented in Table 1. Each alignment option was given a score based on the conditions of the proposed treatments. A higher score indicates a more desirable alternative. The potential score for each factor is shown in Table 2, with a maximum 20 points possible for each factor, with the exception of land use which allocates 10 points for each land use the alignment connects.

Table 1. River Trail Alignment Scoring

		Alignment 1	Alignment 2	Alignment 3
Support the extension of the River Trail through the east end of Astoria				
1	Address trail user safety issues	15	10	5
2	Provide continuous/direct alignment	15	20	5
3	Connects desirable land uses (parks, schools, etc.)	30	30	30
Provide all of the above in an environmentally sound and cost effective manner				
4	Minimize impact to sensitive areas	5	8	15
5	<u>MINIMIZE IMPACT TO PRIVATE PROPERTY</u>	5	10	20
6	Promotes cost effectiveness	20	20	20
	Score	90	98	95

Table 2. River Trail Alignment Scoring detail

1. Trail User Safety

- 20 completely separated from traffic
- 15 low-volume road, sidewalks/shoulder
- 10 low-volume road, no sidewalks/shoulder
- 5 moderate volume road, sidewalks/shoulder
- 2 moderate volume road, no sidewalks/shoulder
- 0 high volume road, sidewalks/shoulder
- 10 high volume road, no sidewalks/shoulder

low volume = 400 vehicles or fewer per day

mod. volume = 400 - 3000 vehicles per day

high volume = 3000+ vehicles per day

2. Continuity / Directness

- 20 No out of direction travel
- 15 Minor out of direction travel
- 10 Some out of direction travel
- 5 Significant out of direction travel

3. Land Use

- 10 points for each land use connected

4. Environment

- 20 Avoids sensitive areas completely
- 10 Previously disturbed site
- 5 Travels through sensitive / unstable area

5. Private Property Impact

- 20 No private property impacts
- 10 Minor private property impacts
- 5 Significant private property impacts

6. Cost Effectiveness

- 20 Low cost - at or below cost for normal trail implementation
- 10 Moderate cost - over cost for normal trail implementation
- 5 High cost - significantly over cost for normal trail implementation, requires costly line items like bridges, tunnels, boardwalks, etc.

All of the trail alignments scored very closely with one another indicating that all of the alignments would be suitable for a River Trail connection through the neighborhood.

The ultimate alignment will likely depend on the details of the trail alignment, the willingness of private property owners, and the desires of the City.

Using the scoring system presented above, Alignment 2 best meets the goals and objectives established in this plan. It scored lowest in trail user safety due to its use of Birch Street, which currently is a low volume residential roadway that is suitable for walking and bicycling without sidewalks or dedicated facilities, but has speed humps which indicates that speeding on the roadway may be a problem. Alignment 3 met most of the goals and objectives of the plan, but failed to provide a direct route to the existing portions of the River Trail and is least safe due to its proximity to U.S. Highway 30. Alignment 3 would also require stairs or an ADA-compliant ramp to connect to the existing River Trail extension at 44th Street due to the change in grade. Alignment 1 scored least favorably due to its impact on private property and its impact on sensitive areas.

During a May 22, 2005 meeting with a few representatives of the Alderbrook Neighborhood, the three alternative alignments through their neighborhood were considered. Their preferred alternative is a "no-build". They understand that people will walk along the streets coming through their neighborhood, but they don't want to make any additional improvements to make it more accessible.

The neighborhood representatives said that both alignments 1 and 2 that go through the park and adjacent to the water are unacceptable. Alignment 3 (existing street right of way) is "OK" but they really want to discourage a walking "loop". In fact, they preferred that the River Trail be constructed to the east end of the lagoon and terminate there. The remainder of the proposed alignments could be reconsidered at a later date when interest in doing so is demonstrated. They were not in favor of the 45th Street foot bridge.

Additionally, they recommended that any connection from the highway to the existing trail on the south side of the lagoon just east of 41st be made at 43rd, not 44th. The topography there is less severe and the proximity to the highway is closer.

Trail Alignments

Alignment 1 (white half-dash) is a trail alignment that stays closest to the river and lagoon for the longest distance. Due to this, the trail does not gain much elevation. Alignment 1 follows Birch Street from 51st Street (1) to the small existing park at the intersection of Birch and Ash Streets (2). The alignment would travel through the park to the Ash Street right-of-way and follow the unimproved street to existing undeveloped public rights-of-way (3) to Violet LaPlante Park (4) and 45th Street. Alignment 1 would then connect through private property along the lagoon edge to the existing trail that parallels U.S. Highway 30 (5).

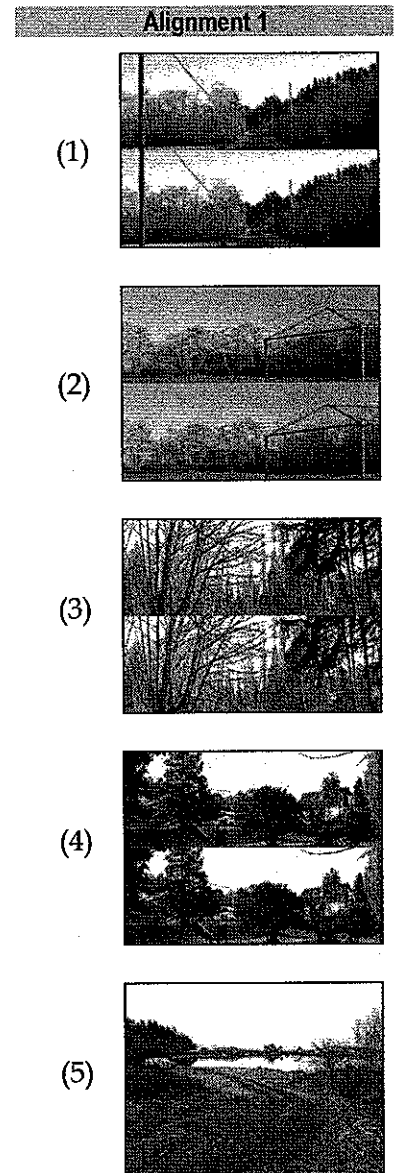
Analysis Summary

Alignment 1 is a desirable alignment for the River Trail, because it stays closest to the river and utilizes very low volume roadways. It is one of the safest alignments because it is mostly separated from developed roadways.

Alignment 1 scored the lowest among the three alignments due to the impact it *may* have on private property. The exact location and nature of the public right-of-way along Ash Street is unclear. Additionally, the trail would travel on private property along the lagoon from 45th Street to the existing trail paralleling Highway 30. Another private property issue surrounds the pump station facility at the end of Birch Street. While there is ample undeveloped public right-of-way behind the pump station, it is unclear whether the access to the pump station is public or private. The City would need easements across these properties in order to connect the River Trail.

Alignment 1 has some environmental impacts due to its proximity to the lagoon, its location in the floodplain, and aligning the trail through a wooded area. The corridor has been disturbed and is currently developed with low density residential housing, but the unbuilt public right-of-way has mature trees and shrubs and would require removing some of them. Much of the impact to this area can be mitigated by limiting where the trail would travel, striving to keep mature trees, and removing invasive plant species like Himalayan blackberry and English Ivy.

The potential fatal flaw for alignment 1 is the amount of private property it must negotiate.



Alignment 2 (white circles) is the most direct alignment and also does not gain much elevation. Alignment 2 follows Birch Street from 51st Street (1) to its end at the pump station. The alignment would travel on existing undeveloped public rights-of-way (2) to Violet LaPlante Park (3) and 45th Street. Alignment 2 then connects through private property along the lagoon edge to the existing trail that parallels U.S. Highway 30 (4).

Analysis Summary

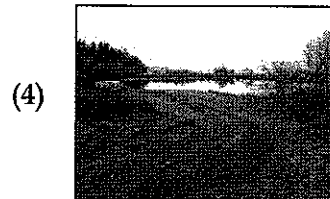
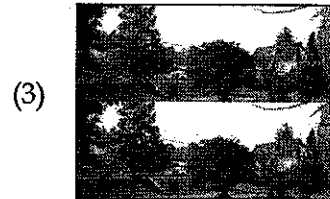
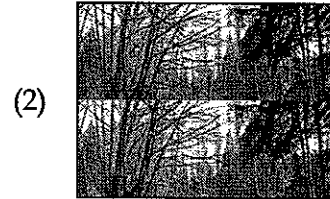
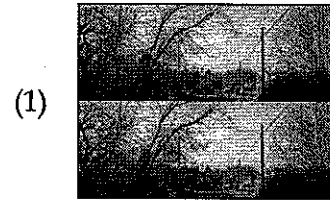
Alignment 2 avoids the majority of the private property issues by staying in the public right-of-way on Birch Street. There are currently no pedestrian or bicycle facilities on Birch but the roadway has very little traffic. The only indication that the roadway may be unsafe for users is the presence of speed humps, which may mean that a speeding problem exists.

The same private property issues surrounding the pump station facility and the private property between 45th Street and the existing trail in Alignment 1 exist for Alignment 2. An easement will be needed to cross these properties.

Alignment 2 also travels through the same unbuilt public right-of-way as Alignment 1, necessitating the removal of vegetation for the trail. The trail can be aligned to mitigate some of these impacts by removing invasive plants and preserving mature trees.

The fatal flaw for Alignment 2 is negotiating the private property between 45th Street and the existing trail.

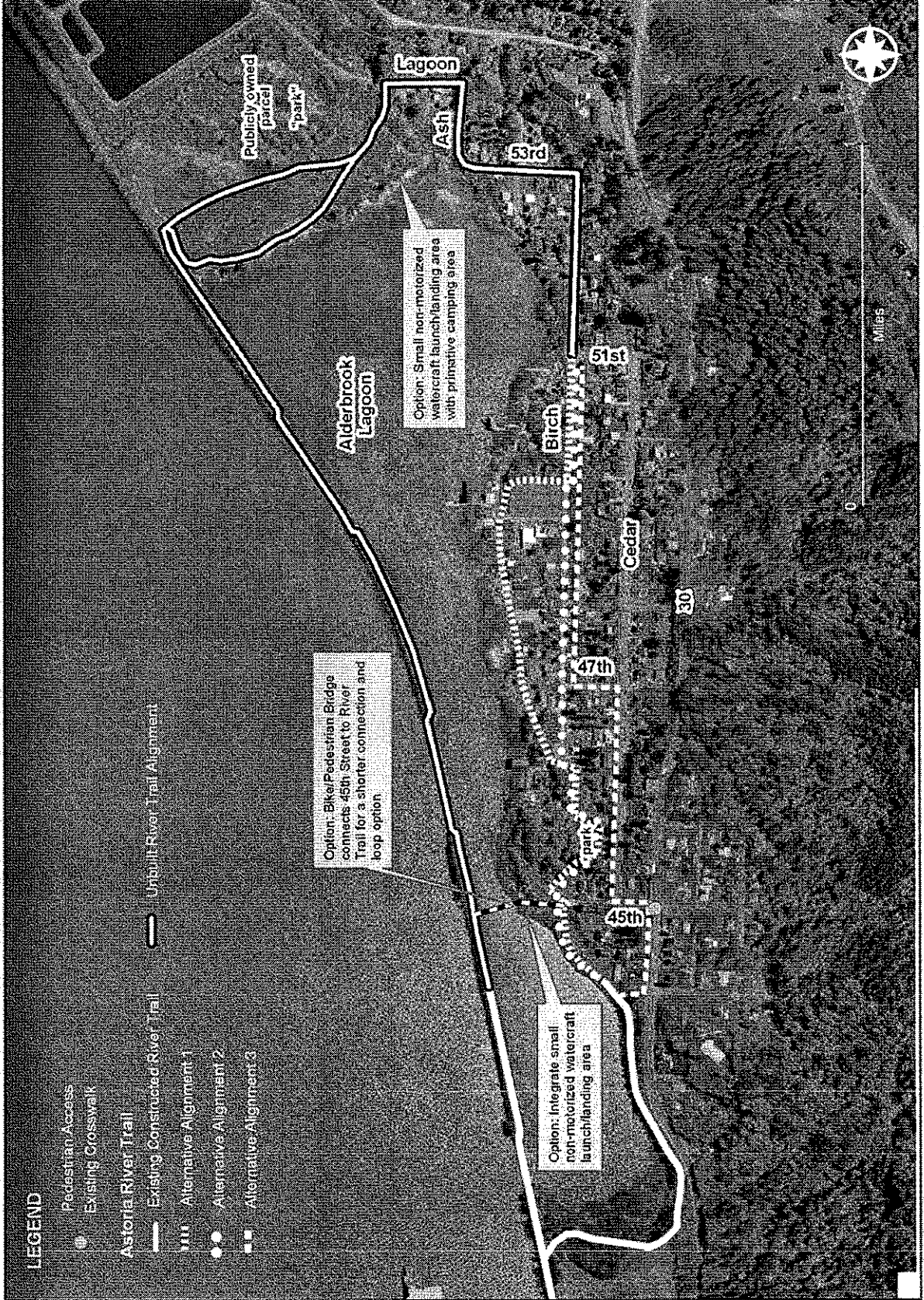
Alignment 2



Astoria East Gateway Transportation Plan

LEGEND

- Pedestrian Access
- Existing Crosswalk
- Astoria River Trail**
- Existing Constructed River Trail
- Unbuilt River Trail Alignment
- Alternative Alignment 1
- Alternative Alignment 2
- Alternative Alignment 3



Map 1: River Trail Conceptual Alignments

Alignment 3 (white squares) is the least intrusive with regard to private property and environmentally-sensitive areas; it simply avoids them. Due to this, Alignment 3 is also the least direct and gains the most elevation, forcing trail users to walk or bicycle up 45th Street to Highway 30. Alignment 3 travels on Birch Street from 51st to 47th Street (1) and then utilizes 47th, Cedar (2), and 45th Streets (3) to connect to U.S. Highway 30 and 44th Street. The trail alignment would access the existing trail from the 44th Street right-of-way via stairs or a ramp due to the grade changes (4).

Analysis Summary

Alignment 3 is the most achievable trail alignment, particularly in the short term, but is the least desirable from a user standpoint due to the circuitous nature of the alignment. Many portions of the sidewalk along Cedar and 45th are in disrepair, overgrown with grass and weeds, cracking, heaving, and missing curb ramps. Regardless, Birch, 47th, Cedar and 45th are relatively low volume roadways and are suitable for pedestrians and bicyclists.

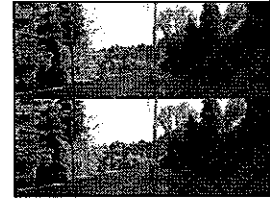
The fatal flaw for Alignment 3 is accessing the existing River Trail portion from 44th Street. Stairs are the most cost-efficient measure but are difficult for bicyclists and pedestrians with disabilities. Ramps can be very expensive.

Alignment 3

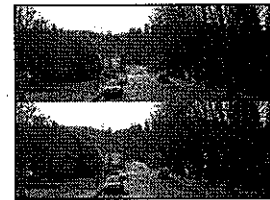
(1)



(2)



(3)



(4)



River Trail Enhancements

There are several opportunities to enhance the River Trail throughout the study area. These enhancements would improve connectivity, provide multi-use recreational opportunities, and enhance the character of the Alderbrook neighborhood. Possible enhancements include a pedestrian and bicycle bridge connecting the 45th Street right-of-way to the railroad track and future trail, integrating a non-motorized small watercraft launch at the end of 45th Street, and developing a comprehensive trail network and primitive camping area on the public parcel at the east end of the lagoon.

A bicycle and pedestrian bridge that connects 45th Street and the trail serves several purposes. First, it provides a more direct connection from the Alderbrook neighborhood to the future and existing River Trail. Second, it provides an opportunity to frame views of the lagoon and the neighborhood, accenting and enhancing the maritime character of the area. Third, it provides additional opportunities for recreational loops from downtown Astoria and within the neighborhood. It is recommended that the City of Astoria consider this connection as part of the River Trail Master Plan for these reasons.

There is also an opportunity to develop a small non-motorized watercraft launch at the end of 45th Street. This would enable canoeists and kayakers to access the lagoon and Columbia River without having to compete for access with the motor boats being launched at the boat ramp between 36th and 37th Streets. It is recommended that the City of Astoria study this opportunity further and develop a site plan at the 45th Street location.

A similar launch and primitive camping area has been master planned for the public parcel located on the east end of the Alderbrook Lagoon. This area would be further enhanced by a comprehensive trail network through the park. The River Trail would serve as the principal trail for all uses and connect the railroad and the Lagoon Road. Secondary and tertiary trails, both paved and unpaved, should crisscross the parcel to highlight sections of the park. Master planning the site would enhance the property and negate some of the undesirable uses that have been mentioned by residents, like campfires and underage drinking.

River Trail Design Guidelines

Trail Construction

The existing portions of the River Trail are constructed of asphalt and vary in width, generally ten feet wide throughout the corridor. Asphalt is a logical and economical surface choice. Two-foot wide soft shoulders should be provided on both sides of the trail. This provides a setback or “shy distance” from fixed objects along the trail edge and also serves as a tactile warning device for anyone inadvertently swaying off of the trail. Wood planer shavings or ¾” minus crushed aggregate are both suitable materials for the trail shoulders. Vertical clearance along the trail should be a minimum of ten feet (eight feet on the portion over the Alderbrook Lagoon) and horizontal clearance should extend two feet beyond the trail shoulders.

Future sections of the River Trail should meet or exceed these standards, as outlined in Table X. The River Trail is a very popular destination for residents and visitors in Astoria and its use will continue to grow. It is important to recognize this growth and accommodate the potential for higher use now.

Table X. Summary of Design Guidelines for the River Trail

River Trail Section	Minimum width	Desirable width	Surface	Notes
Western-most trestle to public parcel (“Alderbrook Park”)	8’	10’	Asphalt / wood	Constrained conditions will dictate the usable width of the trail in this segment. The trail should be built as wide as possible to serve multiple users and to provide emergency and maintenance vehicle access. Substandard sections should be upgraded as part of new trail construction.
Alderbrook Park	10’	12’	Asphalt	The trail should provide ADA-compliant access for multiple users, as well as be wide enough for emergency and maintenance vehicles. Trail construction should be of the highest standard due to the non-native sandy soil in this area. A geotechnical report will determine the best construction practices. Particular attention should be paid to the sub-base and drainage.
Alderbrook Park bridge	10’	12’	Wood	A new bridge will need to be constructed to connect to the Lagoon Road. The bridge will need to be able to accommodate motor vehicles so that the park is accessible to emergency and maintenance vehicles. Motor vehicle access should be restricted through the use of removable bollards.

Table X. Summary of Design Guidelines for the River Trail

River Trail Section	Minimum width	Desirable width	Surface	Notes
Lagoon Road to pump station (end of Birch)	n/a	n/a	Asphalt / Concrete	Trail users will use on-street facilities
Pump station (end of Birch) to 45th Street	10'	10'	Asphalt	
45th Street to existing trail	10'	12'	Asphalt	
45th Street Pedestrian Bridge	12'	14'	Wood	This bridge is intended for non-motorized use. The recommended width is to accommodate trail users as well as people who will want to fish off the bridge or stop and admire the view. Another connection alternative is a floating bridge/dock which would eliminate the need for trusses and footings.

Structural Section and Surface

Trail construction will be conducted in a similar manner as roadway construction. Sub-base thickness will be determined by soil conditions. Expansive soil types require special structural sections. Use of geotextiles should be encouraged (depending on subsurface soil type and drainage) to provide stability and aid drainage to subsurface soils). Minimum asphalt thickness should be three inches of Type A or Type B ODOT Asphalt Mix, with 3/4" minus crushed aggregate-base, four inches in depth.

Although there has been interest in a more "environmentally-friendly" asphalt mix (ODOT standard Class F) to achieve permeability, use of this mix is not recommended due to the lack of any historical data showing the Class F can maintain its permeability over time and that it is economical to maintain, particularly in areas where flooding is probable. In lieu of use of a permeable pavement, the trail should be cross-sloped at least 2% to direct water to a subdrainage or swale which then directs the water to the nearest water body. This will provide a pretreatment opportunity for storm water.

Accessibility (ADA)

The River Trail should strive to be as accessible as possible for all users, particularly those with mobility challenges. The recommended maximum gradient of the trail is 5%. Steeper grades can be tolerated for short distances (up to about 500 feet) if they are accompanied by level landings. The River Trail corridor is nearly flat for most of the alignment. The only area requiring special attention to grade is the transition from the railroad track to the public parcel (Alderbrook Park). Consult the ADA Accessibility Guidelines (ADAAG) for specific accessibility requirements for ramps and handrails. ADA guidelines do not need to be met for the on-street portions of the trail alignment.

Signage

The River Trail should use a comprehensive signage system that includes three types of sign types: directional, regulatory and interpretive. Signage style and imagery should be consistent throughout the trail to provide the trail user with a sense of continuity, orientation, and safety. As a general rule, caution should be exercised to not “over sign” the trail. Incorporation of signage into planned trailside vertical elements such as bollards should be encouraged. This will avoid “visual pollution” of too many signs along the trail and an excessive number of sign poles.

Regulatory Signage

The Manual of Uniform Traffic Control Devices clearly spells out how regulatory signage should be incorporated into the trail. Since trailheads and access points will serve people that may not be as familiar with the trail, information signage should be provided that includes a “You Are Here” map and trail etiquette signs. A trail etiquette sign should clearly spell out proper rules and customs for trail users. This should be based on national standards and accepted trail practices.

Directional Signage

Directional signage provides orientation to the trail user and emphasizes the continuity of the trail. Street names, mileage markers, and place names are key elements that should be called out along the trail. Street names should be called out at all trail intersections with roadways. Mileage markers should be based on the railroad mileposts, with mileage call outs at quarter-mile increments. In addition to providing trail users with a distance reference, mileage markers are an attraction to joggers and walkers that target exercise for set distances. Directional signage should be used to call out key destinations along the trail route and include the following:

- Schools
- Parks
- Downtown Astoria
- Neighborhoods

Directional signs will be particularly important in the Alderbrook neighborhood where trail users will be using the existing street network. Signs should clearly mark the preferred route for the trail so that users can navigate the area without using a map.



Sample trail logo for directional signage

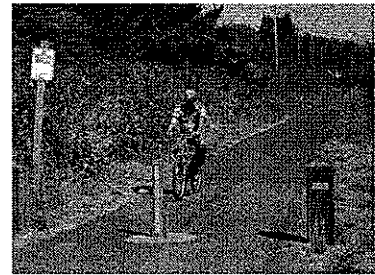
Interpretive Signage

Interpretive signage provides enrichment to the trail user experience, strengthening the uniqueness of the local community, and providing educational opportunities. Key interpretive opportunities include:

- Alderbrook Lagoon and park: how it came to be
- Columbia River: water fowl, fish, aquatic ecosystems, water quality
- Astoria Trolley information
- Historic Neighborhood Development: Alderbrook neighborhood/company town
- Land Settlement Patterns/Place name history: Alderbrook, Blue Ridge, pier off 39th Street, former uses between 36th and 39th Streets
- Working Shoreline: Pier off 36th Street
- Railroad and trail construction (how the trail came to be): trail terminus, on trestle over Alderbrook Lagoon
- Geology and landforms

Bollards

Posts or bollards at roadway/trail intersections and trail entrances will be necessary to keep vehicles from entering sections of the River Trail. Posts should be designed to be visible to bicyclists and others, especially at nighttime, with reflective materials and appropriate striping. Posts should be designed to be removable by emergency vehicles.



Bollard sample

- Fixed bollards: Should be used at roadway/trail intersections. Bollards should be heavy timber structures and spaced at 5-foot or 6-foot on center, depending on the trail width and its relationship to the railroad track. If the railroad track has train traffic, the bollard will need to be in the clear zone of the train so that it isn't damaged by the train.
- Removable bollards: Install center removable bollards at intersections that can be keyed and locked to allow maintenance and emergency service vehicle access to the trail. Recommend use of metal.

Appendix

Appendix

1. Schedule
2. Meeting Summaries
3. PMT/CAC Contact Information
4. TGM Grant Award Letter and Application
5. Technical Memorandum #2

Astoria Transportation and Growth Management Study - Scoping Meeting

ATTENDEES: Todd Scott/Astoria
Mitch Mitchum/Astoria
Valerie Grigg Devis/ODOT
Nadine Smith/ODOT
John Lowe/CH2M HILL

FROM: John Lowe

DATE: April 16, 2004

The purpose of the meeting was to provide study participants an opportunity to become oriented to the project, determine the areas of special interest to the City, and review the activities listed in the April 2, 2004 grant announcement letter to the City. The Transportation and Growth Management Study (TGM) is intended to be used to begin updating the City's 1999 Transportation System Plan (TSP).

Mitch Mitchum mentioned that implementation of the TGM recommendations could be funded by an Immediate Opportunity Fund (IOF) grant if proper justification could be established. The Governor's Economic Revitalization Team is also involved. Involvement by the OECD should also be sought.

General Discussion

Todd Scott provided a map of the City and identified the area to be studied as being from 33rd Street easterly to Liberty Lane, including primarily the area North (on the Columbia River side) of U.S. Highway 30.

Industrial Sites

The land adjacent to the East Mooring Basin is available for industrial development and should be considered for transportation improvements that will make that development more attractive.

The 39th Street Industrial/Business Park has applied for an IOF grant and the matter will be decided at an April 28, 2004 meeting. This development is currently under construction.

Much of the discussion was focused on the development of the Tongue Point area.

- The U.S. Coast Guard has a station at the extreme north end of the Point.
- The Job Corps (U.S. Department of Labor) runs a maritime school for about 550 students just south of the Coast Guard station.
- To the south, Washington Group subsidiary Washington Development Company (Washington Site) own about 28 acres of usable concrete uplands with a system of piers, railroad access and two WWII seaplane hangers. An economic study for the site was done about 6-7 years ago and the City can make it available along with a master plan

that was done. The City has installed a 12" water line loop on the site. The Washington site is currently for sale but are also attempting to lease portions for industrial sites. Road access to the Washington Site is along Old Route 30 and is not considered to be suitable for industrial traffic ingress/egress.

- To the south of the Washington Site is property owned by the U.S. Army Corps of Engineers. The USACE site is for sale as well.

Pedestrian Access

Three areas of pedestrian access were suggested as possibilities for the TGM:

1. Extension easterly of the River Trail from its eastern terminus at about 43rd Street to the Wastewater Treatment Facility.
2. Develop a pedestrian loop around the Alderbrook Lagoon that would provide residents south of the Alderbrook Lagoon access to the River Trail and East Mooring Basin.
3. Develop a plan for crosswalks and signals to enable residents living south of U.S. Highway 30 to have access to the River Trail and East Mooring Basin.

Residential Areas

The Blue Ridge Subdivision was discussed briefly. It is located on the north side of U.S. Highway 30 between 54th Street and the entrance to Tongue Point. Some improvements that will make this subdivision more easily developed should be addressed. Consideration to additional residential development on the south side of U.S. Highway 30 from the Blue Ridge Subdivision should be considered.

It was suggested that effort/priority be given to the above potential transportation improvements according to the following:

- 2/3 Industrial sites
- 1/6 Pedestrian access
- 1/6 Residential Areas

It was suggested that the Economic Development Director and the City Engineer, Mike Caccabano be involved in the study.

It is anticipated that only one open house be considered at the end of the study. The City/ODOT can provide the name of a minority subconsultant for public facilitation if one is needed to meet ODOT DBE goals.

The consultant will not need to plan to attend City Council meeting to present the study.

The study must be completed by the end of June 2005.

Following the meeting, Rosemary Johnson, Astoria Planner provided or agreed to send copies of the 1999 TSP and TGM. Shelly Kirby, Astoria GIS Department, agreed to send GIS information including recent aerial photo, property maps, etc.

Astoria East Gateway Transportation Plan - Project Management Team (PMT) - Orientation and Review of Draft Plan Elements

ATTENDEES: Nadine Smith/ODOT
Valerie Grigg Devis/ODOT (T)
Todd Scott/City of Astoria
Mitch Mitchum/City of Astoria
Shayna Rehberg/Angelo-Eaton & Associates
John Lowe/CH2M HILL
Eric Shimizu/CH2M HILL (T)
Cheryl Yoshida/CH2M HILL (T)

(T) indicates attended telephonically

FROM: John M. Lowe, Jr.
DATE: February 12, 2005
PROJECT NUMBER: 321519.20.02

Participants and Introductions

The following Project Management Team (PMT) and Project Design Team members participated in the PMT meeting. Their interests in the project are as follows:

- Mitch Mitchum, City of Astoria Public Works Director: interested in "building it after you figure out what it's going to be"
- Nadine Smith, ODOT/DLCD TGM grant manager: wants the project to be "a great success"
- Todd Scott, City of Astoria Community Development Director: looks forward to improving the highway and local streets for pedestrian, bicycle, and vehicle access and circulation
- Valerie Grigg Devis, ODOT Region 2 Area Manager: wants highway improvements that are sensitive to the area and comply with standards
- John Lowe, CH2M Hill Project Manager: wants to meet contractual needs of the project, improve connectivity for pedestrians, and facilitate the development of potential employment sites
- Eric Shimizu and Cheryl Yoshida, CH2M Hill project engineers: want to find solutions to the issues of concern with the best engineering designs
- Shayna Rehberg, Angelo Eaton & Associates project planner: wants to provide everyone a sense of the different policies and standards with which the Plan should be complementary and compliant

An important note was given during introductions that everything presented today is in draft form. All documents are open to comment and change.

Scope of Work

John outlined the steps of the Scope of Work (SOW). Those steps, in brief, are as follows:

1. Forming PMT and CAC
2. Plan and policy review
3. Existing system analysis
4. Developing improvements alternatives for review by committees
5. Selecting preferred alternatives
6. Draft plan
7. Open house

Goals and Objectives

Improvements sought for the East Gateway study area are grouped into four categories:

1. Industrial/commercial sites
2. Residential sites
3. Pedestrian/cyclist access
4. River Trail extension

There are competing goals and objectives that will need to be reconciled during the East Gateway Transportation Plan process. For example, access to Highway 30 will need to be balanced with reduced reliance on US 30 and allowing safer crossing.

It was suggested that one objective be added: improvements that support quality residential development. This recommendation was made in reference to properties at Blue Ridge and adjacent 18-acre Barnsey property.

Issues that will need to be addressed in order to serve the objectives include determining ownership of Old Highway 30 and considering that the Barnsey property adjoins the entrance to Tongue Point, a private federal road. Old Highway 30 forms the northern border of the Blue Ridge residential area, and may be able to provide internal circulation for residences, but not a throughway or viable parallel alternate route to US 30.

Evaluation Criteria

Sample projects are shown in the column headings of the draft evaluation criteria matrix, and will act as placeholders until actual improvement alternatives are generated. The matrix serves as a starting point, and it is understood that the criteria and scoring may be modified as project alternatives emerge.

Industrial/Commercial Sites

The team would like to explicitly add "addresses ODOT standards". "Meets" the standards was considered, but if design exceptions are needed, then "addresses" would be the more appropriate term.

Residential Sites

- Todd asked that the criterion relating to limiting industrial traffic in residential areas be re-worded. Because there is mixed use in the west end of the planning area¹, the objective could be modified to limit industrial traffic through *strictly* residential areas.
- Residential sites in the Blue Ridge subdivision can take access from US 30 to the south, but also may be able to take access from Old Highway 30 to the north. This potential alternate access helped convince the Blue Ridge developer, who originally wanted a gated community, to proceed with plans for high-end housing in the area.
- The amount of future pass-through traffic in the study area and in its residential neighborhoods may be significantly affected by whether a US 30 bypass is constructed. Valerie Grigg Devis referred to an ODOT project that is currently underway and is expected to be completed within the next 14 to 18 months that will develop a traffic model that will be useful in resolving the question of the bypass.
- The possibility of extending Irving Road to the Emerald Heights subdivision (old Navy housing) is slim, but Irving Road is already used by locals as a back route.
- The study area presents options for internal circulation but few to no options for a full alternate route to US 30.
- As an example, if a grant application to rebuild a 1904 bridge at Franklin Street is approved, the City will need to provide alternate access for the neighborhood (through land zoned as Land Reserve). The area is flat enough and city-owned, and could accommodate a punch-through road using 38th Street and 43rd Street.

Pedestrian/Cyclist

- Currently residents cross US 30 at 37th Street to get to 36th Street/East Mooring Basin.
- Job Corps center on Tongue Point hosts 550 students and 140 faculty, and needs pedestrian facilities to downtown. The center does not want River Trail to extend into its campus, but project criteria probably needs to address pedestrian safety treatments along US 30, in addition to across US 30.
- River Trail is intended to extend to the east end of the Alderbrook lagoon and loop around into the Alderbrook neighborhood. At 41st Street, an existing connector trail links the neighborhood back to the River Trail.
- Valerie asked if a location of a potential new crossing of US 30 had been identified. Todd responded that it had not been specifically identified but would be in the vicinity of 37th Street.
- Add objective: pedestrian safety along US 30, with attention to areas like 43rd and 45th Street where there is a community center and playground
- Add objective: addresses ODOT standards

River Trail

- There are at least one or two private properties still to negotiate with for the trail south of the Alderbrook lagoon.

¹ In the west end, there is an approved development for 74 condominiums in Astoria Business Park, with light industrial on the ground floor and housing above. The developer might take the buildings from four stories down to three to help meet earthquake code. Access to the development is provided by a new street that has been improved to a full standard road, at a cost of \$600,000 paid for through an Immediate Opportunity Development grant. The north half of the Astoria Business Park platting is mixed use, and the south half is warehousing.

Plan and Policy Review

Some documents and matters to follow up with include:

- Include the US 30 Corridor Study
- Move the summary of applicable Astoria Development Code from the Planning Area Description to the Applicable Plans and Policies
- Talk to Mitch about Inner City bus service and four documents he might have for the project
- Consider including the street design plan included in the City's Immediate Opportunity Fund (IOF) application, and the South Tongue Point EIS (from Nadine/ODOT). It was noted that the US Army Corps of Engineers is no longer using the South Tongue Point facility. The Marine Environmental Research and Training Station should be considered in improvement planning.
- The possibility for roadway between 29th and 33rd Street proposed in the Gateway Transportation and Growth Management (TGM) Plan has been eliminated by the development of the Safeway shopping center and excursion passenger rail
- The roadway proposed in the 2004 Astoria Business Park Plat Plan (Abbey Lane) has been completed (Page 42)
- Valerie suggested that Standards for Pedestrian activities be included. Michael Ronkin/ODOT is a source of such standards.
- It was noted that the North Tongue Point area is federally owned and therefore not included in areas controlled by the 1991 Urban Growth Boundary Area Joint Management Agreement (Page 32)

Document Format

The Plan format will be by chapters that are basically a combination of the various Technical Memoranda that are generated as part of the Plan development process.

Project Schedule

John reviewed the draft proposed schedule for execution of the remainder of the project. Some conflicts were noted with PMT member's schedules for proposed subsequent PMT meeting dates. These will be resolved to accommodate as many members as possible.

Review Draft Comments

Comments on draft materials reviewed during this meeting are due to John by February 15.

Astoria East Gateway Transportation Plan - Citizens' Advisory Committee (CAC) - Orientation and Review of Draft Plan Elements

ATTENDEES: Nadine Smith/ODOT
Todd Scott/City of Astoria
Floyd Holcom/Pier 39
Bill Cook/Port of Astoria
Jean Dominey/Resident
Don Webb/Resident

Jonnie Zielinski/ Astoria School District
John Lowe/CH2M HILL
Cheryl Yoshida/CH2M HILL (T)
Shayna Rehberg/Angelo-Eaton & Associates

(T) indicates attended telephonically

FROM: John M. Lowe, Jr.

DATE: February 12, 2005

PROJECT NUMBER: 321519.20.02

Participants and Introductions

The following Citizens' Advisory Committee (CAC) and Project Design Team members participated in the CAC meeting. Their interests in the project are as follows:

- Jean Dominey, resident since 1955, particularly concerned about 37th intersection and crossing US 30
- Don Webb, lifetime resident, 25 years experience in traffic safety studies and advocacy, concerned about section of US 30 (Leif Erickson) within project boundaries
- Bill Cook, Deputy Director of the Port of Astoria, interested in access at 35th, 36th, and 37th Street, which access waterfront property owned by the Port
- Joanie Zielinski, Transportation Coordinator for Astoria School District, recommended to the committee by the school district superintendent, concerned about the intersections at 33rd and 37th Street
- Floyd Holcom, Facility Director for Pier 39, interested in transportation planning
- Todd Scott, Community Development Director for the City of Astoria
- John Lowe, Project Manager from CH2M Hill
- Shayna Rehberg, project planner from Angelo Eaton & Associates
- Nadine Smith, TGM grant manager for ODOT

Scope of Work

- John reviewed CH2M HILL's Scope of Work and identified the study area as stretching from 33rd Street on the west to Liberty Lane on the east
 - The study area is generally characterized by mixed commercial and industrial in the western portion; established and developing residential that needs internal circulation options, access across US 30, and connections to the River Trail in the center portion; and developing and redeveloping industrial areas that will need internal circulation and access to US 30 in the eastern portion
 - The location of Liberty Lane was clarified by explaining that it is the road that accesses the Marine Environmental Research and Training Station (MERTS) property
 - Tongue Point is outside the urban growth boundary (UGB) and city limits of Astoria
 - Don has concerns with the width of sidewalk on US 30 (the Gateway Transportation and Growth Management (TGM) Plan recommended 10 feet), because pavement space is needed for left-turn lanes
 - Floyd added that a Department of Navy study commissioned by City of Astoria might provide helpful background for the project
 - Nadine mentioned that the Plan will be the first step toward bringing about the transportation infrastructure improvements but will need to be followed by getting the improvements included in the various funding mechanisms before they will be built.

Goals and Objectives

In discussing the Goals and Objectives, the following points came up:

- The Port of Astoria is a major landowner in the study area. At the East Mooring Basin there are 85 slips with the capacity for 1,000 slips, which has the potential to generate almost one vehicle per slip. The Port is considering floating homes and other ideas for the East Mooring Basin.
- Given potential marine development in the area, Marine Board and other state and federal standards might apply to the study area. (Ask Bill and Floyd.)
- Visibility along Leif Erickson is poor, and crosswalks alone are dangerous without signals. There is not enough traffic to warrant traffic signals at 37th and 39th Street, but accidents occur at there and at 45th Street
- Will the plan and recommendations accommodate future growth, especially in the East Mooring Basin? Yes, the plan will assume development of all of the areas capable of development within the study area.
- The Port of Astoria should be included as a stakeholder for the Regional Refinement Plan that is addressing the Astoria Bypass?

Jean Dominey provided a memorandum identifying her concerns and requests dated 2/9/05 and a copy of a letter from Mayor Van Dusen to ODOT dated 5/1/02 requesting a traffic signal at the US 30 and 37th Street intersection. These documents are attached for committee member's consideration.

Although traffic counts have been taken at 36th Street in order to establish existing conditions, Jean believes – and some other committee members concur – that 37th Street may

serve a higher volume of vehicles and that count data from 37th Street may be more helpful than from 36th Street (ask coffee shop owners). John said that if additional traffic counts are required on the project, 37th Street will be included.

Evaluation Criteria

John reviewed the evaluation criteria that are proposed for evaluating the various recommended improvements and identifying the preferred alternatives.

Plan and Policy Review

The following points were presented during the Plan and Policy Technical Memorandum review:

- Consider interviewing Mr. Crowley from Washington Group about existing conditions and future plans for Tongue Point
- Coordinate with Floyd about Navy and possibly Army Corps of Engineers studies for Tongue Point
- Rail issues include passenger/recreation rail between downtown and 36th Street (trolley) and parallel tracks between 20th and 36th Street (Lewis & Clark excursion train), as well as freight rail into Tongue Point; determine whether Federal Rail Association standards, particularly for crossings, will need to apply to project once alternatives are developed
- State Highway Design Manual specifications blend AASHTO and state standards

Document Format

John explained that the Plan format will be by chapters that are basically a combination of the various Technical Memoranda that are generated as part of the Plan development process.

Project Schedule

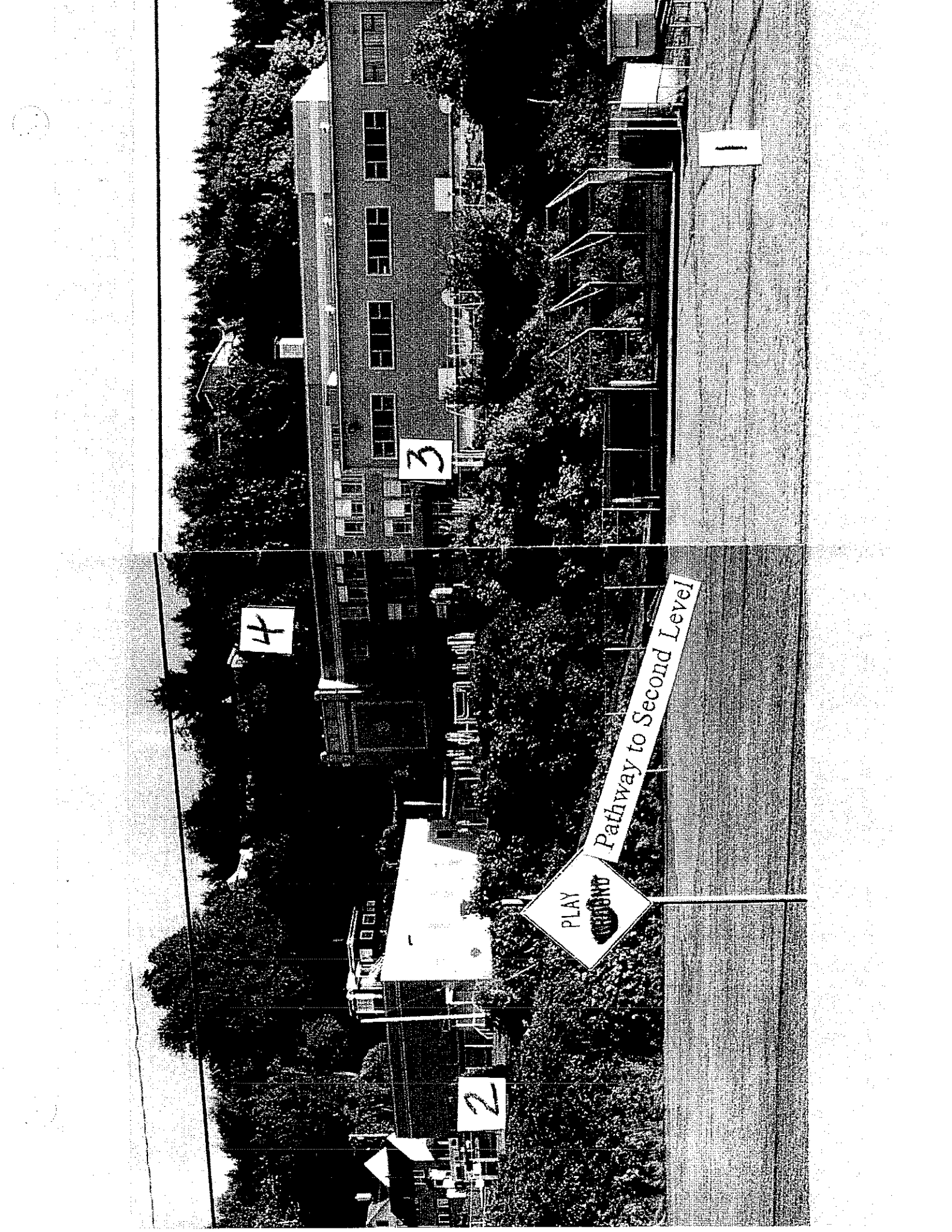
John reviewed the draft proposed schedule for execution of the remainder of the project. Some conflicts were noted with PMT member's schedules for proposed subsequent PMT meeting dates. These will be resolved to accommodate as many members as possible and will likely be during the same week shown in the schedule. The CAC meetings will be scheduled, at 2:00 PM on the same day as the PMT meetings.

Next Steps

John will provide copies of hand out material for all attendees at future CAC meetings. Todd will provide hard copies of meeting materials of this meeting to CAC members before the next meeting. There has been a conflict with the proposed March 7 PMT/CAC meeting date, but the meeting will still probably be held during the same week.

Review Draft Comments

Comments on draft materials reviewed during this meeting are due to John by February 15.



1

3

4

2

PLAY
Pathway to Second Level

Wednesday, February 09, 2005

From: Jean M. Dominey, CAC to John Lowe/CH2M Hill

re: 37th and Hwy 30 Intersection in Astoria, Oregon

CONCERNS

1. Six lanes intersecting in intersection noted above
2. Excessive speeding through intersection.
3. Lack of visibility entering intersection from 37th South.
4. Children and School pedestrian and vehicle traffic.
5. Distracting signs at intersection and prior to intersection.
6. Pedestrian signs improperly placed.
7. 6 accidents at intersection observed at intersection subsequent to Geno's extension.
8. Failure of police officials to enforce speed limits and No Parking signs.
9. Additional boat trailer traffic entering Port or Astoria property from boat launching facilities, and then into 37th intersection on Hwy 30.
10. Additional traffic through intersection as a result of developments and Lewis and Clark Bi-Centennial.

REQUESTS

1. Equalize 25 mile an hour speed limit at EACH end of Astoria.
This would distribute the flow to a more even pace out of the 20 mile an hour zone in downtown. As it is now, people see the 35 mph and pick up speeds, accelerating to as much as 50-55 through the 37th intersection.
2. Install a trip light, or full traffic light at 37th and Hwy 30. cf. Mayor Willis Van Dusen's letter of May 1, 2002 to ODOT.
3. Improve access road on 37th north of Hwy 30 for pedestrian and bicycle safety. cf. Citizen letter of April 14, 2003 to Astoria Planning Commission (attached)

Thank you for your consideration,

Jean M. Dominey

Jean M. Dominey, CAC participant
jmdom@charter.net



CITY OF ASTORIA
OFFICE OF THE CITY MANAGER

May 1, 2002

Mr. Christopher Lloyd
Oregon Department of Transportation
350 W. Marine Drive
Astoria OR 97103

Dear Mr. Lloyd:

The intersection of 37th Street and Highway 30 is not safe. Heavy traffic makes it difficult for drivers to access the highway from 37th Street. In addition, 37th Street is one of only two accesses from the Uppertown neighborhood to the highway.

The City of Astoria would like ODOT to place a traffic signal at the intersection of 37th Street and Highway 30. The light would make it safer for residents of the Uppertown neighborhood and students at Astor School to get on the highway. It would also improve access for pedestrians and cyclists from the neighborhood to the river.

We would request that you consider the City's request. The safety of pedestrians and drivers is of the utmost importance. If you need any further information, please telephone my office.

Sincerely,

THE CITY OF ASTORIA


Willis L. Van Dusen
Mayor

WLVD:jl

C:\MAYOR\ODOT LTR

Monday, April 14, 2003

Astoria City Planning Commission

Re: CU03-01

Dear Members of the Commission,

This specific request poses questions pursuant to **11.030 A. 2. An adequate site layout will be used for transportation activities.** The application shows no sidewalk provisions for pedestrian safety, nor is bicycle access safety addressed. Prior to granting the use, LUBA mandates that these issues be addressed: **cf. 12 OR LUBA 230(1984), Ash Creek Neighborhood Ass'n v. City of Portland.** Further, The omission of provisions for pedestrian and bicycle safety affect compliance with **ORS** directives that all pertinent site information needs to be provided seven days prior to the hearing in order that the public have opportunity to prepare remarks concerning the application.

Attached is a copy of a letter sent from Mayor Willis Van Dusen to **ODOT**, on May 1, 2002. This letter admits to 37th as an "access for pedestrians and cyclists from the neighborhood to the river." 37th north to the river is an unimproved road. On April 9, 2003, two classes of school youngsters used this access to the river. The students filled the unimproved narrow roadway.

Under **ORS227.090 Powers and Duties (1)(a)(A)** the Planning Commission is charged with "the laying out, widening, extending and location of public throughfares, parking of vehicles, relief of traffic congestion..." We believe that the Astoria Planning Commission has a role to play in protecting pedestrian, bicycle, and vehicle safety. The intersection at 37th and Lief Erikson Drive has had at least two vehicle accidents documented by the neighborhood watch since the new construction in August of 2002, on the southeast corner. Now, added ingress and egress from the north side of the intersection is proposed without having input from **ODOT** which has jurisdiction.

We ask the Planning Commission to address the above issues, as well as that of the City of Astoria's liability in regard to tourists crossing the railroad tracks in order to access the proposed drive-through.

At this time, we would also like to point out for the record, the safety issues raised by the proposed signage on the north side of the highway at the intersection in question. The steep rise-to-run inclination of the roadway, and no existing sidewalks, may well result in impaired vision for vehicle drivers.

We ask your conscientious consideration of the points we have raised.

Sincerely,

Jean M. Dominey
Carl A. Dominey
Diana M. O'Leary

Frank S. Long
Judith P. Niland

Intersection hazards rise residents' hiccups

By TRISTAN BAURICK
The Daily Astorian

The intersection of 37th Street and Erikson Drive has "always been a bit chancy," said Astoria City Engineer Mike Caccavano.

But now, it may be the most lethal intersection in town, said 37th Street resident Robert Oesterling.

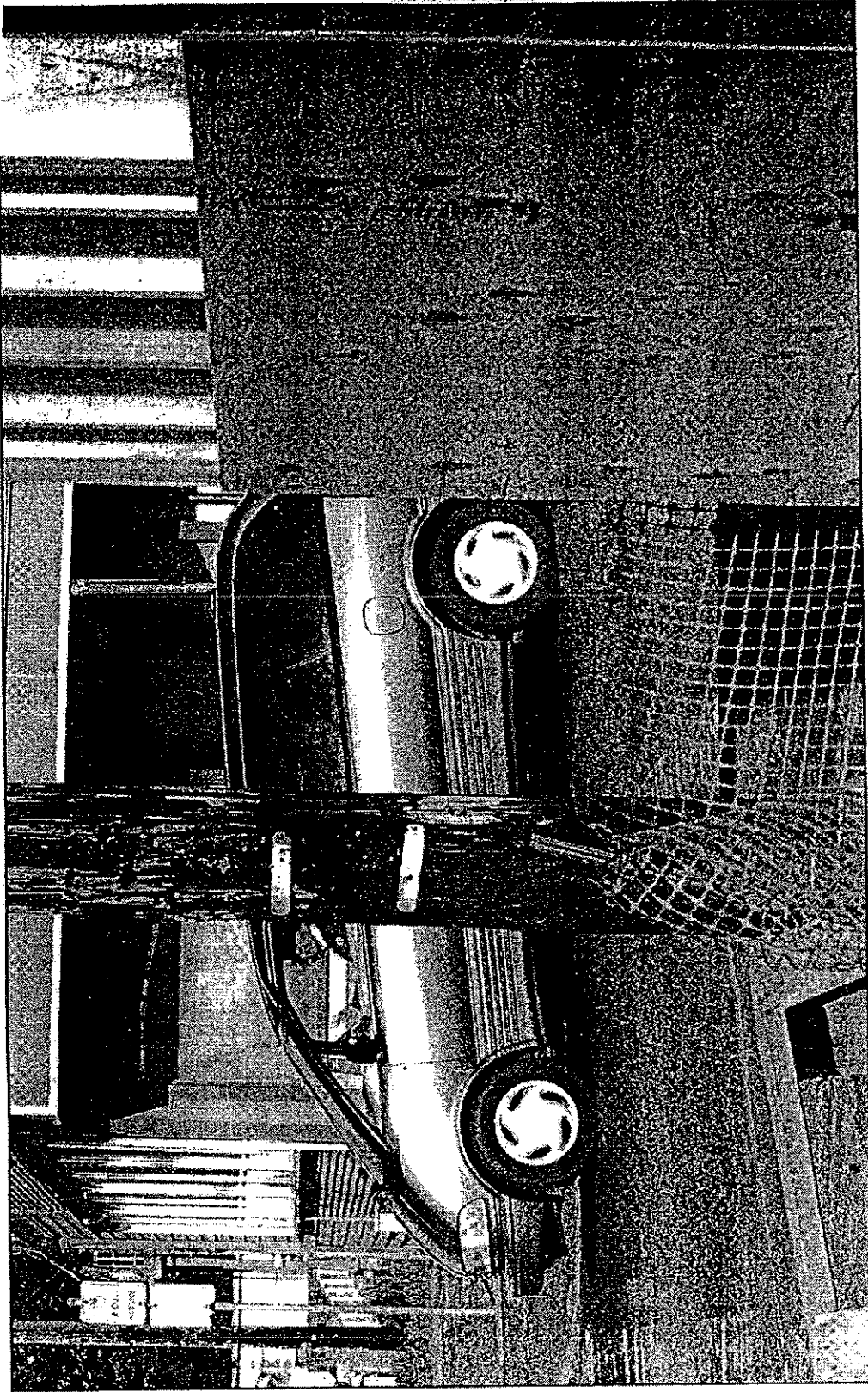
Tightly lined with large trucks and other vehicles that frequented Ferrell's Burger Basket, residents entering Lief Erikson Drive from 37th Street are used to a measure of guesswork when making a left turn. Now with the Ferrell's building expanding closer to the edge of Marine Drive to make way for a new restaurant, many residents say a bad situation has gotten much worse.

"It's clearly a danger to the public," Oesterling said. Now the space between the building and the parked cars has closed so tightly, guesswork is the only tool drivers have — unless they want to pull 10 feet out into Marine Drive, he said.

About two weeks ago, Geno's hometown Pizza Company began its transition from downtown to its new home in the former Burger Basket on the east edge of Astoria. But before it could move, owner Jason Thiel wanted to renovate and expand the Lief Erikson site to accommodate more seating and expanded service.

When a new wall took shape and merging onto Lief Erikson got harder, residents raised a ruckus. Some said Thiel's expansion violated zoning or line-of-sight rules that protect motorists' right to see what's coming. Not so, said Caccavano. Zoned for commercial use, Thiel can build up to his property line, he said. Though it's tough to see traffic to the west, the building does not break line-of-sight rules, he added.

The Oregon Department of Transportation, which oversees Lief Erikson



A driver checks for traffic before turning left from 37th St to Lief Erikson Drive.

Oesterling welcomes the parking restriction and said he doesn't understand why the city hasn't approved it sooner — before the building expansion began.

Until red paint coats the curb, Oesterling said he's put at risk every time he embarks on a car trip. "I can't see 'til I'm 10 feet out into the road," he said. "I'm breaking the law, but I have no choice."

Should an accident happen when he pokes the nose of his car out into

driver's right-of-way.

"If I get smacked by a truck, it's my fault," he said. Oesterling vows to take on the city if such an accident were to occur. "If I'm smacked, I'll sue the city."

One area resident believes organizing the intersection better could make the area safer.

"I think a traffic light would be a good move," said Rick Murray, who lives above his coffee shop, Astoria Coffee Company, on 37th Street.

LORI ASSA — The Daily Astorian

accidents" a traffic light might be required, he said.

Although many residents are concerned about safety at the intersection, Caccavano said the intersection has seen few dangerous mishaps.

In a 10-year accident history, the intersection didn't rank high compared to other sites in Astoria, he said. "It wasn't one of the top ones."

The volume of traffic using 37th is not high enough to meet stat



Astoria East Gateway Transportation Plan - Project Management Team (PMT) - Review of Draft Technical Memoranda #3 and #4

ATTENDEES: Nadine Smith/ODOT (T) Allison Wildman/Alta Planning
Kathleen Sellman/Clatsop + Design, Inc. (T)
County John Lowe/CH2M HILL
Todd Scott/City of Astoria Eric Shimizu/CH2M HILL (T)
Mitch Mitchum/City of Astoria

(T) indicates attended telephonically

FROM: John M. Lowe, Jr.

DATE: March 15, 2005

PROJECT NUMBER: 321519.20.02

Eric Shimizu reviewed the methodology and development of the Tech Memo.

Mitch said that the speed limit throughout the City is 25 mph unless posted otherwise. On-street parking on U.S. Highway 30 is largely prohibited but tolerated at the park during Little League games, on the south side, east of 37th Street where there is a widened section of roadway, and in front of housing near 42nd Street.

Between 37th and 45th Streets, there is no alternative to U.S. Highway 30 for east/west travel along the corridor. East of 45th Street, it is possible to go east almost to Liberty Lane.

Mitch advised that the City has recently heard from ODOT that funding for replacement of the Franklin Bridge has been obtained. This will require that Franklin Street be extended to 43rd Street.

Table 1, annotate the table to show that some intersections with U.S. Highway 30 have only a north or south access - . 36th Street (North), 37th Street (south) and add 39th Street (north).

Table 2, Mitch is working on a Regional Refinement Plan that will identify more truck generation activities and will forward the information to Eric.

The City recently completed a new sidewalk on the south side of U.S. Highway 30 between 33rd and 38th Streets.

Public Transportation, Greyhound now longer serves Astoria and the Lewis and Clark train service will continue through the 2005 season but service beyond that date is uncertain.

The absence of rail service to Tongue Point is considered as an opportunity for potential development activity.

Mitch said that Pacific Coast Barge Builders has opened a facility at the Washington Group site and will employ 25 people. They are using the site and the docks.

Allison Wildman reviewed the River Trail portion of the tech memo.

Mitch offered to send Allison a write-up about the Riverfront Trolley and suggested that the write-up be included in the tech memo.

An additional location at which the River Trail is crossed by a roadway will be 39th Street.

A sidewalk that is continuous along the north side of U.S. Highway 30 would be a desirable transportation system improvement.

On page 15, it was suggested that it should be clarified that the "Origins" are located on the south side of U.S. Highway 30.

Mitch said that ODOT has awarded a contract to construct the traffic signal at 33rd Street and that it will be constructed in 2005.

On page 18, item 6 will be changed to 39th.

Allison pointed out that on page 19, item 2 is 30th, item 4 is 36th, and item 5 is 37th. These will be revised along with the corresponding text.

Mitch advised that the City Parks Department has received a grant from the National Park Service to develop an Urban Trails Master Plan. The project is being worked on by representatives from the Columbia River Estuary Study Task Force and the Upward Bound student organizations in cooperation with the Parks Department. Mitch will provide contact information to Allison. Kevin Beck is the Parks Department Director.

Review of Tech Memo #4 – Operational and Safety Analysis

Eric Shimizu reviewed the tech memo with the group.

Mitch pointed out that the turning movements presented on Page 3 do not appear to be consistent with that which he has observed. Eric agreed to take another look at the data provided by the traffic count subcontractor and revise as appropriate. If the traffic count data is found to need revision, the Existing Deficiencies section of the tech memo should also be revisited.

Table 2, Mitch commented that some of the land between 37th and 39th may be developed into a mid-range development as part of the Astoria Business Park and that the zoning for Astoria Business Park may cover that area.

Table 3, Mitch said that it would be beneficial to contact the developers of the Pier 39 and Astoria Business Park to confirm the anticipated traffic generation which as presented appears to be incorrect. Pier 39 seems optimistic and the Astoria Business Park is scheduled to include 74 condominium units which may not have been given proper consideration. Mitch also questioned that there were an uneven number of Trips In and Trips Out. Eric explained that the projections are based on peak hour activity during which there is an unequal directional flow. It was agreed that this explanation should be added to the text.

Tables 4 and 5, possible revisions to the turning movements mentioned above may also affect the information presented in this table.

Mitch commented that unless creatively programmed, the signal at 33rd Street may degrade the capacity of the intersection. Left turns out of Safeway may impact signal operation and capacity.

Mitch offered to provide contact information for the Pier 39 developer so that the Queue shown in Table 5 for the 39th Street intersection may be evaluated.

Table 8 and SPIS write-up, add correlation between MP and street designation.

Recommendations, possible revisions to the turning movements mentioned above may also affect the information presented in this table.

Allison asked when the 37th to 39th Street development is scheduled to occur. Mitch estimated that it would be in the 5 to 10 year range.

Regarding potential recommendations for improved safety for pedestrians crossing U.S. Highway 30, Mitch suggested that consideration should be given to in-pavement lighting and intersection lighting.

It was suggested that Michael Ronkin/ODOT be involved in the development of the recommended improvement alternatives.

Review Draft Comments

Comments on draft materials reviewed during this meeting are due to John by March 23, 2005.



Astoria East Gateway Transportation Plan - Citizens' Advisory Committee (CAC) - Review of Draft Technical Memoranda #3 and #4

ATTENDEES:

Nadine Smith/ODOT (T)
Todd Scott/City of Astoria
Jean Dominey/Resident
Don Webb/Resident
John Lowe/CH2M HILL
Eric Shimizu/CH2M HILL (T)
Allison Wildman/Alta Planning + Design, Inc. (T)

(T) indicates attended telephonically

FROM: John M. Lowe, Jr.
DATE: March 15, 2005
PROJECT NUMBER: 321519.20.02

Review of Tech Memo #3, Inventory of Existing Transportation System Facilities and Services

Eric Shimizu reviewed the methodology and development of the Tech Memo.

Don mentioned that consideration of a connecting roadway for Franklin to 43rd Street should include the fact that this is in a landslide prone area.

Irving Avenue was identified as the emergency east-west route west of 37th Street if U.S. Highway 30 is blocked. Access to Irving Avenue is gained by entering taking 37th south to Duane, west to 36th, south to Franklin, west to 33rd, south to Harrison, east to 36th and south to Irving. Access may also be gained by taking 33rd south off of U.S. Highway 30 and proceeding as described above.

On Table 1, add "Side Street" to the far right column that provides posted speed limits.

Don said that attempts to lower the speed limit to 25 mph west of 46th Street have not been successful. Eric added that better results are frequently obtained from traffic calming additions to give the driver a sense that speed should be reduced.

Jean suggested that the area in front of the school (35th to 37th Streets) should be posted with a 20 mph speed limit as in a school zone. The school in Seaside was sited as an example.

The real problem seems to be created by westbound vehicles wanting to be turning left on to 37th Street.

Don mentioned that the 45th Street crossing is hazardous for school children.

Jean identified northbound 37th Street turning left on to U.S. Highway 30 is difficult due to visibility problems caused by the building in the southwest corner and cars that park along the south side of the street, west of the intersection.

Data for 39th Street should be added to Table 1.

Table 2 should include freight trucks going to Costco and triple-trucks as well as gasoline trucks making deliveries to the Fred Meyer store.

The observation was made that bicycle use of U.S. Highway 30 is at best fair due to topographical constraints.

There are only a few places along U. S. Highway 30 at which pedestrian have a reasonable place to cross. Eric and Allison added that this will be addressed in the recommendations.

Don added that motorists regularly ignore the pedestrian crossing signage - they simply get used to seeing the flashing sign when there are no pedestrians present to get into the habit of not looking for pedestrians.

It was mentioned that on the Bike Path near the East Mooring Basin, there are instructions for cyclists to use the River Trail. This can be hazardous to pedestrians when the bikes go too fast. Allison replied that the Trail should be used by recreational cyclists while commuter cyclists should use U.S. Highway 30.

Regarding public transportation, Don mentioned that Cowlitz no longer operates in Astoria.

Don suggested that reference be made to the private airport that is located about 15 miles east of the project area on Old U.S. Highway 30, just west of Nappa High School.

Allison Wildman reviewed the portion of the Tech Memo that addresses the River Trail and the extension thereof as well as other pedestrian access matters.

Since the railroad has the right to take back the railroad corridor if it cares to and close the River Trail, pedestrian access along U.S. Highway 30 should be maintained.

A trail master plan is being developed and the study will coordinate with the group preparing the master plan.

Potential crossings of U.S. Highway 30 include 33rd Street, 36th Street, Columbia Field, the East Mooring Basin access, 37th Street and 45th Street.

Don mentioned that between 49th and 51st Streets on Birch at one time in the past had been a wooden street on piling.

Jean mentioned that there is an area near the Columbia Field (owned by the School District but maintained by the City) that could be a potential pedestrian access point. There is an asphalt trail that connects Columbia Field to the elementary school so it would be very easy to walk from the school, across the field to the new sidewalk on Highway 30. Jean also provided the attached color photo of the school site for use in considering the matter.

Boat trailer parking on Highway 30 in the 36th to 37th Street area creates congestion that should be eliminated possibly with some signage directing boaters where to park. Jean mentioned that trucks with boat trailers park on Highway 30 in the shoulder, which isn't designated parking, nor wide enough for the trailers, and create hazardous conditions along the roadway.

Don asked where there was access to the Trail from 54th Street to which Allison replied that it was accessible from the Old Columbia River Highway on an informal hiking trail. Allison said that we are looking to opportunities to formalize this trail for a legitimate connection. At 39th Street, there is a trail that crosses private property to get to 45th Street.

Don mentioned the gas pipeline extension at 42nd that goes up the hill.

Review of Tech Memo #4 – Operational and Safety Analysis

Eric Shimizu reviewed the tech memo with the group.

Don commented that ODOT formerly required 24 hour traffic counts and asked why 16-hour counts were used for the study. Eric explained that ODOT has now changed to the 16-hour counts and extrapolates to 24 hour equivalent counts.

Jean opined that traffic counts taken on Saturday morning were not representative of traffic experienced during the work week. Eric explained that the goal had been to approximate the peak traffic experienced during the summer months as specified by ODOT. However, a delayed start of the project, that was not possible but that by using the ODOT seasonal adjustment factor protocol, we were able to estimate the 30th highest hour traffic volume for planning purposes. The seasonal adjustment factors used were provided by Dorothy Upton (ODOT) as part of the scope of work.

Don observed that the information regarding pedestrian traffic doesn't warrant a 10' sidewalk anywhere along the U.S. Highway 30 corridor. Allison responded that the low pedestrian count may be a result of not having good sidewalk facilities for pedestrians and that the sidewalk matter should be viewed in a broader context of multiple users.

Jean and Don both noted that there was a pedestrian crash at 45th and this was confirmed by the crash analysis.

Jean noted that when vehicles (soccer moms or fishermen's vehicles) are parked west of 37th, it makes it increasingly difficult to make a left turn when coming out northbound. Sight is restricted so much, vehicles have to turn into the oncoming traffic lane before heading westbound.

Jean questioned how traffic counts at 36th and 39th Streets would be representative of what was happening at 37th Street. Eric explained that having the counts on both side of 37th street, provides the ability to determine what is happening in between them. If for instance there were a large number of vehicles coming off of 37th street heading either west or east it

would show up as in the east/west movements at either 39th street or 36th street – but this did not occur.

Eric mentioned that the figures in Table 3 would be revisited after further consultation with developers of the Astoria Business Park and Pier 39.

Don suggested that a left turn lane at 45th Street for westbound U.S. Highway 30 traffic would be desirable. Having a continuous left turn storage lane from 39th to 46th Street would be desirable. . Don was concerned about the sight visibility problem due to both horizontal (s-curve) and vertical geometry on U.S. Highway 30 just west of 43rd street. Jean commented that she's heard the trucks rev' their engines as they speed up their vehicles in that area.

Jean commented that many drivers create a hazard when they use the left storage lane as an acceleration lane to get into the through traffic on U.S. Highway 30.

Don suggested that lowering the speed limit west of the Old Highway 30 intersection to 35 mph and then to 25 mph at 46th Street would be beneficial. Eric added that traffic calming techniques would probably be more effective. However, ODOT would be making the final decision on any structural changes.

Review Draft Comments

Comments other than those made at the meeting on draft materials are due to John by March 23, 2005.

Astoria East Gateway Transportation Plan - Project Management Team (PMT) - Review of Draft Technical Memorandum #5, Alternative Improvements and Preferred Alternative

ATTENDEES: Nadine Smith/ODOT
Valerie Grigg Devis/ODOT
Kathleen Sellman/Clatsop
County (T)
Todd Scott/City of Astoria
Mitch Mitchum/City of Astoria

Allison Wildman/Alta Planning
+ Design, Inc.
John Lowe/CH2M HILL
Eric Shimizu/CH2M HILL

(T) indicates attended telephonically

FROM: John M. Lowe, Jr.

DATE: May 4, 2005

PROJECT NUMBER: 321519.20.02

Meeting attendees were introduced.

John summarized earlier work and explained that the objective of the meeting was to review various recommended improvements and identify the preferred alternatives in each of the four categories.

Eric reviewed the recommended roadway alternatives.

Valerie suggested that definition of short and long term improvements be inserted with the heading for each. It was generally agreed that short term would be 1-5 years and those related to currently identified deficiencies. Long term would be beyond 5 years and generally would occur in response to growth. It was suggested and CH2M HILL agreed that more graphics would be added to better explain some of the options, particularly the preferred alternatives.

The following is a summary of discussion/comments listed by the letter designation of the improvements in the technical memorandum:

A The visibility problem became noticeably worse when Geno's expanded out to US 30. This problem is worsened by vehicles parking along the south side of US 30 in front of Geno's. Mitch suggested and all agreed that something should be done to physically impede parking at that location. Eric added that a bulb-out widening the sidewalk could

provide such a restriction while at the same time allow the stop bar to be moved further north for better visibility.

E. Mitch indicated that side street traffic at the intersection is easily confused because there currently isn't a hierarchy for the merge between the side street and the Motel access. It was suggested that a stop bar or yield sign be considered for Motel traffic to reduce driver confusion.

Between E. and F. If compatible with the development of Blue Ridge, 54th should be closed. Communities, per the cities standards, will not be allowed direct access to or from the main highway. Access would need to be designed and accommodated from Old US 30.

Q. The construction of the new bridge will require that a new access road be provided while the bridge is being replaced so that the local residents will have access to their property. This alternative is topographically challenged and the connection may likely be off of 44th Street. Mitch Mitchum said that they have preliminary designs developed that would extend 44th south and then tie into the Franklin Street extension.

R. Change 37th to 36th. Add design option between 36th and 39th to provide for a one way EB connection between 36th and 39th, adjacent to the RR.

O. and P. Mitch said that the City owns right of way behind the Customs House (vicinity of 34th street) that could be used for ball field parking, putting the pedestrians on the same side of the street as the ball field. Boat trailers could be parked next to the coffee shack on 37th.

T. Mitch requested that "gated community" be deleted from the text and say "compatible with City planning objectives"

U. Mitch indicated that this improvement is probably not warranted today but may become so as traffic volumes increase. It was mentioned that providing acceleration lanes on roadways with one lane in each direction is generally not accepted by ODOT.

V. Mitch commented that the best option would be to prohibit traffic from making a left turnout. Barricades could be placed near the hanger to keep vehicles from heading south towards US 30. Valerie suggested and CH2M HILL agreed that a graphic of this concept would be helpful.

W. Mitch said that this recommended improvement should be very high on ODOT's priority as there is a lot of left turn traffic into MERTS at this point.

Y. Mitch said that this area is geologically challenged, already exhibiting settlement and grade changes. Consideration should be given to minor modifications to the switch back rather than the much more costly overpass option. Also, the overpass would consume a lot of valuable developable space. Consider taking trucks entering the Tongue Point area from the east U.S. 30 entrance down Old US 30 and look for minor improvements for the truck exiting configuration. An EB exit that would tunnel under US 30 and cross over an existing bridge (if structurally validated and accepted) which would then tie in to EB US 30 traffic was also mentioned.

Long Term Bike Lane Improvements. Graphics showing this recommendation should be added.

H. Mitch suggested that the sidewalk from 45th to Nimitz was not really necessary. Better to put the sidewalk on the south side from 48th to Nimitz.

Valerie asked if Emerald Isle residents had any way other than Nimitz to get to US 30.

Mitch said that a foot trail is planned as part of the City Trail Master Plan that is currently under development.

Todd asked if we really needed a sidewalk on the north side between 35th and 37th since we have the River Trail. Allison replied that the sidewalk is needed because it links portions of existing sidewalk and is needed in case the railroad became active again. Mitch said that even if the railroad became active, the Trail would remain. Allison commented that, in her experience, railroad companies are very concerned about pedestrian/train interaction and safety and might be difficult to work with.

I. Mitch said that mid-block crossings are undesirable and this recommendation should be placed low on a priority list. He added that it would be beneficial if the "constantly on" overhead pedestrian warning signs could be revised to be "pedestrian activated" with a "push-to-activate" button installed at the crossing.

J. Delete in-pavement lighting system that is activated by a pedestrian call because the results of an ODOT test program indicate that in-pavement lighting is not desirable.

K. Graphics would be helpful to explain the scenarios - most likely the information presented for the 37th street improvement will cover the different scenarios. Delete in-pavement lighting system that is activated by a pedestrian call because the results of an ODOT test program indicate that in-pavement lighting is not desirable.

L. Mitch observed that no children cross at this location so it is not likely that this recommendation would be needed but the City will study because of interest expressed by members of the CAC.

AG. A railroad siding addition should be a part of any rail extension into the North Tongue Point area.

Allison Wildman reviewed the three alternative River Trail alignments with the PMT.

Mitch suggested that taking the alignment around the pump station should be considered as the City own some of the property in that area.

Valerie asked if it may be advantageous to split bikes and pedestrians as far as getting approval from property owners. Mitch said that could be an advantage and should be considered.

At completion of discussion, an informal evaluation of the various alternatives in the four main categories yielded the following preliminary preferred alternatives, subject to review by the CAC:

<u>Improvement Category</u>	<u>Preferred Alternatives (preliminary ranking)</u>
Industrial/Commercial Sites	R & W, V1, X and AG
Residential Sites	A2, C1, O, E (long range), Z, and Q
Pedestrian/Cyclists	J, G, H, and K
River Trail Extension	Alternative 1 or 2 ¹

It was agreed that, in the interest of time, the preferred alternatives as identified by the PMT would be the ones on which the CAC meeting review of alternatives would focus initially. The CAC would be invited to discuss other alternatives that were of interest to the attendees.

¹ Todd Scott is going to take the alignment analysis to the Alderbrook neighborhood to get their feedback on which trail alignment would be preferred.

Astoria East Gateway Transportation Plan - Citizens' Advisory Committee (CAC) - Review of Draft Technical Memoranda #5, Alternative Improvements and Preferred Alternative

ATTENDEES:

Nadine Smith/ODOT
Todd Scott/City of Astoria
Bill Cook/Port of Astoria
Jean Dominey/Resident
Floyd Holcomb/Pier 39
Don Webb/Resident
John Lowe/CH2M HILL
Eric Shimizu/CH2M HILL
Allison Wildman/Alta Planning + Design, Inc.

FROM: John M. Lowe, Jr.

DATE: May 4, 2005

PROJECT NUMBER: 321519.20.02

Don had performed speed checks and provided them to the City Engineer. The City Engineer's summary is attached.

Jean shared her pictures and articles along the corridor, particularly related to 37th street and the playground area with the group.

John introduced the attendees.

Allison reviewed the River Trail Extension alternatives indicating that the PMT felt that Alternative No. 1 seemed to best meet the established objectives of the study.

Floyd mentioned that he and other citizens (Darrin Doss and Jim Stauffer) had discussed the possibility of constructing a pedestrian/bike bridge connecting the south edge of the lagoon with the railroad track area along an extension of the 45th Street right away. Allison added that this site could also serve as a small watercraft launch site for canoes and kayaks.

Floyd asked if there had been resistance from homeowners to allowing the proposed River Trail Extension to pass over their property. Todd said that there had been resistance.

Floyd asked if connecting all the public spaces along the proposed River Trail Extension would create a safety problem in that it would provide easier escape routes for those attempting to get away from the police. Todd replied that people are currently using the

park area at the east end of the area near the sewage lagoons so providing better access for emergency vehicles would be a plus.

Bill Cook mentioned that it had always been the intent that the trolley would be extended down to MERTS. Everyone should recognize that the train will no longer run after this year.

There seemed to be consensus that the preferred River Trail Alignment would be Alternative 1, with greater exposure and expanded views of the water, that could be built in two phases if necessary; the first phase could be the extension truncated at the bridge connecting at 45th Street and the second phase completing the loop. We could leave all three alternatives in for now until input from the neighborhood could be obtained. The best way to proceed from this point is to gain input from the neighborhood since Alternative 1 will have a larger impact on the property take than the other alternatives. The neighborhood may also have additional routes which could be considered by the city. The intent of this study was to evaluate 3 possible solutions.

Eric explained the recommended improvements to the transportation system with an emphasis on the ones identified by the CAC in the last meeting. The US 30/37th Street intersection was discussed in detail. The main objective of improvements to this intersection is to improve safety for both motorists and pedestrians. The problem of restricted sight distance resulting from Geno's having been expanded out to the street was discussed. Restricting parking on the south side of US 30 through the use of a bulb out was presented as a potential mitigation as it would allow better visibility and allow the stop bar for northbound 37th Street to be moved further north. This has double a benefit of improving visibility for northbound 37th Street traffic turning westbound on to US 30 and shortening the crossing distance for pedestrian crossing US 30. This would also call for a similar bulbout on the east side of the street in front of the coffee shop.

Jean said that she wanted to be on record as opposing any construction that would hurt the coffee shop business and was concerned that the bulbout in front of the coffee shop would eliminate the coffee shop's only parking.

Todd reminded the CAC that this is a study intended to identify potential transportation improvements, not a final design that was about to be constructed without careful consideration of the impacts on all parties.

Bill added that the owners of both the coffee shop and Geno's should be brought into the process before anything is published.

Todd advised that an open house is planned to explain the recommended improvements before the study is completed.

Nadine said that ODOT has a well established process for determining changes in speed zones, which must be initiated by a request by either the City or School District for the area near the ball park.

Bill indicated that Alternative I was not viewed favorably by him.

Allison asked if crossing at Safeway or 37th Street would be preferred or would it be better to have a crossing closer to where the demand would be.

Bill asked if an underpass below US 30 at the ball park had been considered. Eric said that it had not. Todd added that the police chief would oppose an underpass in that it would become a loitering place that would have to be monitored.

Floyd asked about having a pedestrian activated signal at 37th Street. Eric said that a signal would have to meet the requirements of a warrant study for a signal that would stop traffic.

Don offered that the internal circulation between 36th and 39th Streets should not split the parcels but rather be placed adjacent to the railroad. Bill added that it could be made one-way eastbound.

Floyd stated that the Port of Astoria is building a new boat ramp that will greatly increase traffic in the 36th -37th Street area.

Eric reviewed the family of potential improvements at Tongue Point.

Floyd said that the Division of State Lands did an extensive study of the area in 1972. Steve Purchase, Assistant Director would be the contact. The study included extensive analysis of improvement of access to and from Tongue Point. Floyd had tried but had not been successful in getting a copy of the study.

Floyd said that alternatives Y1 and Y2 were not economically feasible and had some streams through the hillside that create geologically unstable soils. He mentioned that there is an old alignment that used to serve the fire house. There was also a railroad spur that served the Job Corps area that could be a way to go further north where the terrain is not so steep.

Floyd said that a development plan for how to serve a potential mine sweeper facility showed alternative improvements for access to Liberty Lane. This study should be available from Engineering Field Activity, Northwest Naval Engineering Facilities Command/Poulsbo, Washington 98370. Floyd later provided the name of James Bryant, Director of Operations, (360) 396-0900 as a possible contact.

Floyd added that he believes that most of the development in Astoria over the next ten years will occur at Tongue Point and will be industrial in nature.

Eric asked the CAC what were the most important interests in the three general categories of improvements.

Don said that the improvements should not sacrifice safety for the benefits of growth and jobs.

Floyd said that we should be looking at all aspects of how people are getting around from one place to another for all activities. He added that construction of a temporary access for residents during the Franklin Bridge replacement will be a great benefit in that it would provide an alternative to US 30 as well.

The meeting ended without specific identification of preferred alternatives but with some sense that those identified by the PMT during the morning meeting appeared to be reasonably responsive to the interests of the community.



Astoria
ENGINEERING
DIVISION

MEMORANDUM

DATE: May 3, 2005
TO: Traffic Safety Committee
FROM: Mike Caccavano, Astoria City Engineer
SUBJECT: Speed Surveys – Lief Erikson Drive

Don Webb conducted a number of speed surveys on Lief Erikson Drive from 37th to 52nd Streets from April 8 to April 14 2005 with the following results:

Location	Posted Speed	Minimum		Maximum		Average	
		West	East	West	East	West	East
37 th	35	28	25	40	45	32.8	32.9
38 th	35	33	35	47	51	39.2	40.4
44 th	35	28	25	40	42	33.1	33.7
46 th (1)	35	30	-	45	-	38.0	-
46 th (2)	35	30	-	45	-	38.3	-
49 th	45	34	35	53	71	43.1	42.9
52 nd	45	34	36	55	55	44.0	44.7

(1) Survey taken 4/11/05, Eastbound not recorded

(2) Survey taken 4/8/05, Eastbound not recorded

The results generally indicate that speeding may not be a significant problem. Average speeds at 37th, 44th, 46th, 49th and 52nd are below the posted speed. Only 38th Street had average speeds higher than the posted speed. There does not appear to be a significant difference between east and westbound traffic. There are a few vehicles that exceed the posted speed by a substantial amount, especially the motorist traveling 71 mph. It is difficult to prevent this from happening because the driver is obviously paying no attention to the speed signs and not operating the vehicle in a safe or prudent manner. Don Webb observed that the traffic volume could be reducing the speeds.

Astoria East Gateway Transportation Plan - Project Management Team (PMT) - Review of Draft Final Plan

ATTENDEES: Nadine Smith/ODOT
Angela Kargel/ODOT
Dennis Santos/ODOT
Michael Spaeth/ODOT
Kathleen Sellman/Clatsop County (T)
Mitch Mitchum/City of Astoria
John Lowe/CH2M HILL
Eric Shimizu/CH2M HILL (T)

(T) indicates attended telephonically

FROM: John M. Lowe, Jr.
DATE: June 1, 2005
PROJECT NUMBER: 321519.20.02

Meeting attendees were introduced.

John reviewed the recommended alternative improvements (Tech Memo # 5) for the benefit of the ODOT staff that attended the meeting. ODOT and City staff made the following recommendations:

Vehicular Alternative A: Angela suggested that pedestrian cross walks should provide the shortest crossing distance - skewed crossings are discouraged. If a bulb-out is constructed in the southwest corner, there should also be one in the south east corner.

Vehicular Alternative D: Michael said that this improvement could be made as a maintenance activity. He added that the existing shoulders are not strong enough for the truck traffic and would have to be replaced to the same standard as the adjacent travel way pavement and subgrade. Mitch suggested that C and D be linked.

Vehicular Alternative F: Angela suggested that a widened shoulder would be preferable to an acceleration lane.

Pedestrian I: Mitch indicated that there really isn't a need for pedestrians to cross except those that inappropriately park on the north side of the street. Currently, there are no residents that live north of the highway and pedestrians using Safeway should cross at the signalized intersection. A better alternative would be to encourage crossing at an alternative location or use the city right of way and create parking south of U.S. 30 specified in Option O

Pedestrian L: Mitch was not supportive of this alternative but agreed to leave it in, suggesting that "Enforce" be changed to "Consider".

Pedestrian N: Angela suggested that "raised pavement markers" be deleted - perhaps profiled durable line or improved delineation could be substituted. Pedestrian median refuges islands should be coordinated with installation of left turn storage lane requirements.

Vehicular Q: "and geologically" should be added after "topographically".

Pedestrian AB and AC: Angela suggested that consultation with Michael Ronkin/ODOT could be beneficial in that "quick fix" funds could be available for these improvements, thereby avoiding the long wait associated with the STIP process.

Preferred Alternatives - Residential: Mitch suggested that Alternative D be added to the preferred alternative list to be inserted after (C).

River Trail Preferred Alternatives: John reviewed a draft of the text that could be added at the end of the first paragraph on page 27 to address input from the Alderbrook residents regarding River Trail extension. The draft seemed acceptable to the PMT.

Astoria East Gateway Transportation Plan - Citizen Advisory Committee (CAC) - Review of Draft Final Plan

ATTENDEES:

Nadine Smith/ODOT
Todd Scott/City of Astoria
Bill Cook/Port of Astoria
Jean Dominey/Resident
Jennifer Gence/Pier 39
Don Webb/Resident
John Lowe/CH2M HILL

Sandra Swain/The Daily Astorian
Jeff Nelson/Radio Station KAST
Tom Burges/Resident
Roz Edelson/Resident
Carl Dominey/Resident

FROM: John M. Lowe, Jr.

DATE: June 1, 2005

PROJECT NUMBER: 321519.20.02

Jean stated that she would like to have Alternative Vehicular Q removed from the Technical Memorandum #5 list of recommended alternative improvements. Jean explained her reasons for recommending that Alternative Vehicular Q be removed at the meeting and later provided the following text that she requested be part of this Meeting Summary:

Jean explained her reasons for recommending that Alternative Vehicular Q be removed as follows:

- The connecting road proposed by the City should not be built because the soils in the area are known to be unstable. Many homes in the area are already being damaged by inappropriate construction and this will be the same if the City goes ahead with its plans.
- There does not appear to be an immediate need to replace the Franklin Street Bridge.
- The City should not be making plans to construct the connecting roadway without having a public hearing and receiving input from the local homeowners.

Accordingly, Jean wishes to disassociate herself from any recommendation that Alternative Vehicular Q be constructed.

In support of Jean's position, Tom provided the attached letter report prepared by Paul D. See and Associates, Inc. dated November 21, 1993.

Don advised that City records indicate that the property between 41st and 45th Streets that would be required for the Franklin Street connection to the east is owned by the City of Astoria.

Jean asked when the Franklin Street Bridge is scheduled to be replaced. No one present knew the answer to that question. Nadine agreed to inquire of others in ODOT and advise.

Jennifer said that the Pier 39 developers request that consideration be given to an east-west alternative to US 30 through its property that utilizes an existing sanitary sewer easement adjacent to the US 30 right of way. It was also suggested that a connecting turn around between added between 37th and 38th Streets be included.

Prior to the meeting, Don had provided written comments for Technical Memorandum #5. Don's comments and responses made by members of the Project Management Team are attached. The comments were reviewed and the following agreements reached regarding revising Technical Memorandum #5:

Alternative O: Delete angle parking on 37th Street south of US 30.

John mentioned that addressing accommodation of parking for large vehicles at Geno's is beyond the scope of the Plan.

Bill said that he had tested parking in front of the Coffee Shop in the southeast corner of US 30 @ 37th Street as if the recommended bulb-out was in place. Bill indicated that the bulb-out would not be a significant problem for customers wanting to park east of the bulb-out.

Don also suggested that consideration be given to moving the Liberty Lane/US 30 intersection northwesterly to provide better sight distance for westbound Liberty Lane to northwest bound US 30 turning movement.

Todd commented that he appreciated the Trail Guidelines prepared by Alta Planning + Design, Inc. that has been added to Technical Memorandum #5.

Bill commented that he appreciated receiving the Draft Plan in notebook form with all of the parts included. John explained that as the remainder of the Plan is completed (Open House Meeting Summary, etc.), replacement sheets would be sent to all notebook recipients.

The Wednesday, June 22, 2005 open house was discussed. It was agreed that it would be held from 4:00 to 7:00 PM at a location to be identified by the City. CH2M HILL will provide a draft announcement for the City to use in inviting the public. Potential displays could include the Preferred Alternatives Map, River Trail Extension Alternatives Map, 36th to 39th Streets internal circulation street improvements, improvements to the Liberty Lane/US 30 intersection, and improvements to the Tongue Point/US 30 intersection/access.



November 21, 1993

#3113

Robert Ellsberg
1048 Valley
Astoria, OR 97103

COPY

RE: Preliminary geologic inspection, Block 15, Case's Astoria, and Blocks 30, 31 (part), 48, 49, Adair's Port of Upper Astoria.

Dear Bob:

At your request, I inspected the above properties on November 19 to evaluate potential geologic hazards with respect to future development. As understood, this inspection consisted of a very preliminary walk-through to determine general slopes, drainage, and subsoil materials. I also utilized existing topographic, geologic and plat maps for orientation. Following is a summary of my observations, by parcel:

Block 15, Case's Astoria

Because the property corners could only be approximated, observations may be slightly mislocated. The property slopes generally to the south at less than 20 percent, except in the southwestern corner (about lots 17 through 24), where a steep and densely vegetated escarpment drops to the level of 2nd. St. Apparently this is the result of excavation for the street and lots to the south, rather than a natural slope failure. However, the steepness (over 100 percent) and height of the escarpment (about 40 feet) renders the upland portion of the lots at risk of ultimate failure, for a distance of at least 60 feet from the toe of the slope. An intermittent drainage crossing undeveloped 1st. St. west of Hancock does not seem to extend to the subject property.

From limited exposures of bedrock in the near-vicinity of Block 15, subsoil materials are expected to be an irregularly bedded and partially consolidated sandstone, similar to the large cut banks behind the County shops several blocks to the west. Sandstone predominates at this elevation on the southerly slopes of Astoria Hill, and is found at the site of the Middle School where it is chaotically mixed from early mass movement. The upper reaches of this ridge, however, including nearby Shively Park and all of the slopes down to the intersection of Williamsport Road and Highway 202, are underlain by typical mudstones of the Astoria Formation. No outcrops were observed on the subject block. Evidently, the interface between more stable sandstone and the less competent mudstone underlies some part of nearby Block 14.

Historically, the sandstones are considerably less prone to slope failure except where exposed in steep cut banks. They do not tend to glide along bedding and fracture planes as does the mudstone, and they have less tendency to become irregularly saturated at depth. A common indicator of ground creep

See/Ellsberg
11/21/93

in the coastal belt is curvature in the trunks of mature conifers. Only on the steeper slopes of an intermittent stream valley on nearby Block 16 and in the small gully below 2nd. St. were such indicators observed. Distortion of deciduous tree trunks such as alder and maple is generally not related to ground creep.

In summary, and based on very preliminary observations, Block 15 would appear to be very capable of supporting development, except in the limited escarpment area noted above. Road access may be a problem due to the steep bank adjacent to 2nd. St. Assuming Block 14 is ultimately developed, it might be possible to access both blocks via currently unimproved Grant Street. In any event, I would recommend obtaining engineering expertise in street location and design.

Blocks 30, 48, 49, and SE 3/4 Block 31, Adair's Port of Upper Astoria

From a quick walk-through, I am not enthusiastic about the potential for development on this site. The only reasonably level surface is a 150+/- foot wide northeast trending ridge with steep flanks on both sides, dropping at 100 percent slope for some 75 to 100 feet along some parts of the northwesterly side and a similarly sharp canyon on the southeast. All subsoil materials here are typical Astoria Formation mudstones. While there is no evidence of landsliding on the immediate site, several historic ground failures have occurred above this general area east of the Irving Avenue terminus.


Small drainages on the northwesterly slope are deeply incised with a strong potential for sloughing of their embankments if the natural vegetative cover and local runoff is disturbed. Except near the crest of the ridge, conifer trees commonly exhibit trunk curvature indicating ongoing ground creep.

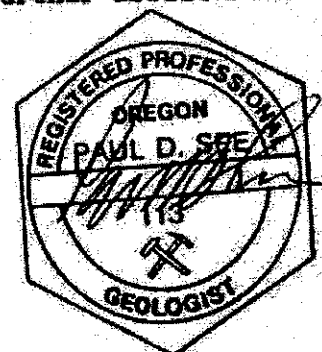
It would not appear that street access to the ridge top could be developed from Franklin Ave., 40th Street or Grand Ave. without encountering numerous stability problems.

Again, these observations result from a quick visual survey of the site and surrounding vicinity and do not represent a thorough geologic investigation of the property. Obviously, with intense engineering any slopes on the Astoria hill could be developed. The limiting factors are the extreme cost of such an effort on this site and the reality that even the best engineering cannot guarantee long-term slope stability in this area. The history of Astoria's north slope attests to nature's tendency to repeatedly outwit human endeavor.

Hopefully, the above remarks have answered your preliminary questions about the two property sites. Please call me if I can be of further assistance.

Sincerely,


Paul D. See



Paul D. Bell report

See Map 8 9 9AD

399-400 MURKIN GREEN & MARY
1017 ENDICOTT
325 25413
301 JOHNSON LEWIS & EUGEN
1019 ENDICOTT
325 25413
BRENHAM AVENUE
4 ft
600
BURNETT'S AND STON LUM
1019 ENDICOTT

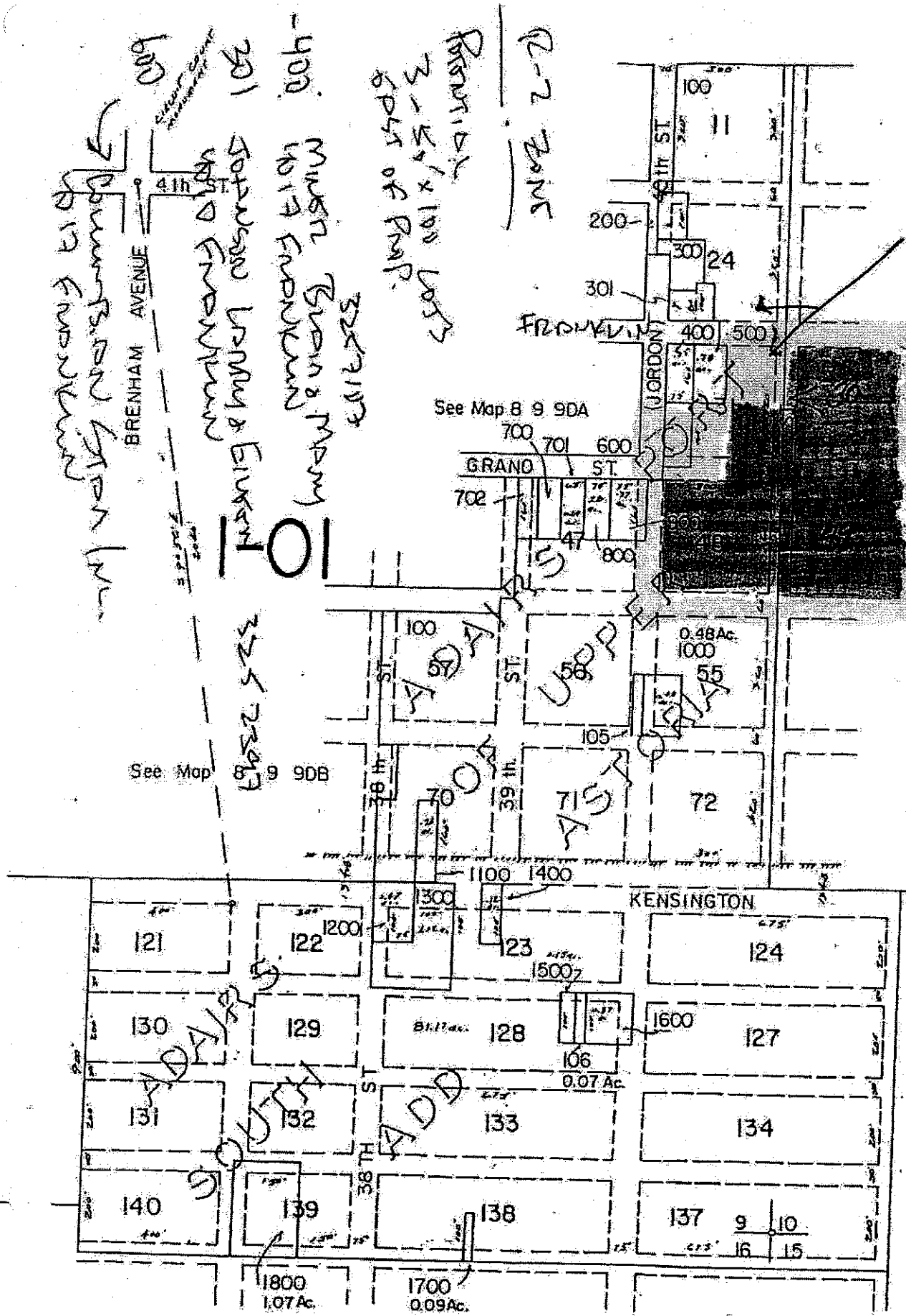
RESIDENTIAL
3-4' x 100' lots
part of MAP.

R-2 ZONE

POSSIBLE
50 x 100' lots

LAND RESERVE BORDEN

See Map 8 9 10



See Map 8 9 9DB

See Map 8 9 9DA

KENSINGTON

1800
1.07Ac.

1700
0.09Ac.

137 9 10
16 15

Astoria East Gateway Transportation Plan - Open House - Review of Draft Final Plan

ATTENDEES: See attached Attendance Roster

FROM: John M. Lowe, Jr.

DATE: June 22, 2005

PROJECT NUMBER: 321519.20.02

The Open House began at 4:00 PM and continued until about 6:45 PM.

Attendees observed the six representative exhibits of the report graphics which included identification of the preferred alternatives, specific recommendation for traffic enhancing improvements and the River Trail Extension. PMT/CAC members were available to discuss the various exhibits and the Plan in general. The exhibits were transferred to Todd Scott/City of Astoria for use when the Plan is reviewed by the Astoria City Council.

The attached Attendee Comment sheet documents the comments of the attendees.

ATTENDEE COMMENTS
Astoria East Gateway Transportation Plan
Open House
6/22/05

Meeting Location: Port of Astoria Conference Room

Purpose of Meeting: Review of Final Plan

NAME	COMMENT
John Decker	In ground strokes are a good option at 37th street cross-walk. Community policing has been supportive.

Technical Memorandum #2

PMT/CAC Contact Information

Astoria East Gateway Transportation Plan

Project Management Team (PMT)

Name	Agency	Address	Phone Number	E-mail
Nadine Smith	ODOT R2 Planning	455 Airport Road SE, Bldg. B Salem, OR 97301-5395	(503) 986-2836	Nadine.M.SMITH@odot.state.or.us
Valerie Grigg Devis	ODOT R2 Planning	455 Airport Road SE, Bldg. B Salem, OR 97301-5395	(503) 986-5751	Valerie.GRIGDEVIS@odot.state.or.us
Laren Woolley	DLCD	635 Capitol Street NE, Suite 150 Salem, OR 97301	(541) 563-3745	Laren.WOOLLEY@state.or.us
Dorothy Upton	ODOT TPAU	555 13th Street NE, Suite 2 Salem, OR 97301-4178	(503) 986-4105	Dorothy.UPTON@odot.state.or.us
Kathleen Sellman	Clatsop County	800 Exchange Street Astoria, OR 97103	(503) 325-8611	ksellman@co.clatsop.or.us
Todd Scott	City of Astoria	1095 Duane Street Astoria, OR 97103	(503) 338-5183	tscott@astoria.or.us
John Lowe	CH2M HILL	825 N.E. Multnomah, Suite 1300 Portland, OR 97232-2146	503-736-4384	jlowe1@ch2m.com

Citizens' Advisory Committee (CAC)

Name	Agency	Address	Phone Number	E-mail
Todd Scott	City of Astoria	1095 Duane Street Astoria, OR 97103	(503) 338-5183	tscott@astoria.or.us
Nadine Smith	ODOT R2 Planning	455 Airport Road SE, Bldg. B Salem, OR 97301-5395	(503) 986-2836	Nadine.M.SMITH@odot.state.or.us
Floyd Holcom	Pier 39	100 39th Street Astoria, OR 97103	(503) 325-2502	info@pier39-astoria.com
Bill Cook	Port of Astoria	1 Portway Astoria, OR 97103	(503) 325-4521	bcook@portofastoria.com
Jean Dominey	Resident	3647 Duane Astoria, OR 97103	(503) 325-3059	jmdom@charter.net
Don Webb	Resident	3555 Harrison Drive Astoria, OR 97103	(503) 325-0602	webskx@pacifier.com
Joanie Zielinski	Astoria School District	785 Alameda Avenue Astoria, OR 97103	(503) 325-6441	jzielinski@astoria.k12.or.us
John Lowe	CH2M HILL	825 N.E. Multnomah, Suite 1300 Portland, OR 97232-2146	503-736-4384	john.lowe1@ch2m.com



Oregon

Theodore R. Kulongoski, Governor

File

Transportation & Growth Management Program

555 13th Street, Suite 2

Salem, OR 97301-4178

(503) 986-4121

(503) 986-4174

Web Address: <http://www.tgcd.state.or.us>

RECEIVED
APR 12 2004
COMMUNITY DEPT.
DEVELOPMENT DEPT.

A Joint Program

of the

Department of

Transportation

and the

Department of

Land Conservation

and

Development

April 9, 2004

Todd Scott, Community Development Director
City of Astoria
1095 Duane Street
Astoria, Oregon 97103

Dear Mr. Scott:

Congratulations, additional money has become available in your area and the Transportation and Growth Management (TGM) Program is now able to award your proposed project. The City of Astoria, East Astoria TGM Study project has been selected to move forward to the statement of work negotiation stage of the TGM grant award process.

Our TGM grant manager for your project is Nadine Smith (503-986-2836; nadine.m.smith@odot.state.or.us). You can expect to hear from Nadine by April 12, 2004. She will work with you to complete the award process and get the project underway.

Conditions of Award

We asked for only a general approach in your grant application so that our staff can work directly with you to work out the project details. The next steps will involve:

- Resolving any specific issues identified from our review of your application,
- Agreeing on a target date for completing the detailed project statement of work (SOW), and
- Negotiating a detailed project SOW.

Please be aware that time is of the essence in reaching agreement. We will need to reach agreement quickly on a project that can be reasonably scoped and completed within the remaining 15 months of the biennium. If negotiations are not complete by the negotiated date, the award may be withdrawn or reduced to fit the time available.

Compliance with Mandates

As you know, TGM grants are intended primarily to help cities and counties respond to state planning requirements, including the Transportation Planning Rule and the Oregon Highway Plan. Our review of the application and further discussions with you indicate that the grant will be used to begin updating your TSP that was adopted in 1997.

Specifically, as the first phase of the update, the area between 33rd and Liberty Lane will be reviewed to examine the impacts of future development and growth in the area. Within this study area, the TSP update must:

- Address what improvements are necessary to make the area attractive to developers, industrial and port users, nearby residents and other users of the street system and waterfront.
- Develop a list of short term and long term improvements that can assist both the developers of the Astoria Business Park and North Tongue Point industrial parks, and the developers of the Blue Ridge residential subdivision with ready-to-implement solutions for access from Highway 30 as well as internal circulation and local street systems.
- Develop a plan for an internal street system that can reduce local use of Highway 30.
- Develop a plan for crosswalks and signals to enable residents south of Highway 30 to gain access to the River Trail and East Mooring basin.
- Develop a plan for an extension of the River Trail through the east end of Astoria to the east side of Alderbrook Lagoon to serve the community and visitors
- Prepare a detailed plan for access and circulation for the undeveloped land owned by the Port, OSSU, and private land owners including the Astoria Business Park and North Tongue Point, including an access management plan and an internal circulation plan for the industrial lands.

Important TGM Grant Recipient Information

Project Management. A local project manager is required for the duration of the project. The local project manager will serve as principal local contact person, monitor and coordinate work (including work by a consultant), work with the TGM grant manager to ensure completion of all work on time and within budget, review consultant work products and payment requests, and prepare progress reports and reimbursement requests.

Intergovernmental Agreements: Awards will be made through intergovernmental agreements (IGAs) between ODOT and your jurisdiction. To expedite IGA approval the TGM Program uses a standard-language IGA for all TGM grant projects.

Consultant Contracts: In order to meet federal contracting requirements, consultants for TGM projects will contract through ODOT. While grantees will not be parties to the contract, you will have a major role in selecting the consultant for your project and in reviewing and approving consultant work.

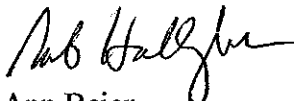
Match: There are new local match requirements for TGM grants for the 2003-2005 biennium. Basically, we will be using local contributions to match federal funds that support TGM grants. To match the requested consultant funding, you must either provide a cash match, or, on a

bimonthly basis, submit match reports detailing your eligible participating costs (see attached list of eligible participating costs). You will need to provide a match of at least 11% of the total cost of the project.

Please remember that costs incurred prior to signing a grant agreement are not eligible as match. This includes the costs of preparing a statement of work for the grant agreement and selecting a consultant.

Congratulations once again. We look forward to working with you on this project.

Sincerely,


for Ann Beier,
TGM Program Manager, DLCD


Barbara Fraser
TGM Program Manager, ODOT

cc: Nadine Smith, TGM
TGM File 2.13 - 03 (2S-03)

**TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM
GRANT APPLICATION FORM
2003-05 Biennium**

Type of Grant:
(Mark the ONE most appropriate category)

- Category 1: Transportation System Planning
- Category 2: Integrated Land Use & Transportation

PROJECT TITLE: EAST ASTORIA TGM STUDY

PRIMARY APPLICANT JURISDICTION: CITY OF ASTORIA

IS THE PERIODIC REVIEW WORK PROGRAM FOR THIS JURISDICTION UP TO DATE?

- Yes
- No

If no, submit a revised, up-to-date periodic review work program or a schedule for updating the work program.

MAILING ADDRESS: 1095 Duane Street

CITY: Astoria

ZIP: 97103

CONTACT PERSON: Mike Morgan, Interim Community Development Director

OTHER JURISDICTIONS INVOLVED IN THE PROJECT: Port of Astoria

TELEPHONE: (503) 338-5183

FAX: (503) 338-6538

EMAIL: mmorgan@astoria.or.us

ODOT REGION: 1 2 3 4 5

SUMMARY DESCRIPTION OF PROJECT: This section must be completed. Do not refer to text within the application form. In 2 or 3 sentences, explain what will be done and what the expected outcome is. (For example: The project will result in an access management plan for Black Spot Highway. The plan will be developed in partnership with ODOT based on an analysis of needs, along with input from community workshops and one-on-one contact with property owners along the highway.)

The Transportation and Growth Management Study will enable the City of Astoria and Oregon Department of Transportation to plan for growth at the East Mooring Basin and the Astoria Business Park, including access points from U.S. Highway 30, pedestrian access across U.S. Highway 30, the potential for signalization at various intersections, sidewalks and bike paths, and other issues. The study will help facilitate the industrial development of the East side while providing for access to the riverfront.

Jurisdiction: CITY OF ASTORIA

Project Title: EAST ASTORIA TGM STUDY

	Grant Amount Requested	Local Contribution*	Total Project Cost
Eligible Grantee Expenses [Labor (salary plus benefits) and Direct Expenses]			\$0
Consultant Personal Services	\$100,000	\$15,000	\$115,000
TOTAL	\$100,000	\$15,000	\$115,000

* This amount could range from 10.27 to 15 percent of the total project budget.

Please list the jurisdictions that will provide match for this project. Only eligible recipients as listed on page 3 can provide match.

CITY OF ASTORIA

Dan Bartlett
Authorized Signature

CITY MANAGER
Title

DAN BARTLETT
Printed Name

Item 8(e): Transportation Growth Management (TGM) Grant Application for East Mooring Basin to 39th Street Area

A memo was received from the Acting Community Development Director, recommending that the City Council consider approving a grant application to the Transportation Growth Management Program administered by the Oregon Department of Transportation and the Department of Land Conservation and Development. Staff thinks that an application that addresses the growth and development potential of the area from the East Mooring Basin to the industrial zone at 41st Street would be very competitive. This could assist the Port and property owners north of Marine Drive in developing their property. The City may contribute to the redevelopment of the area to foster job creation and a business incubator. The state may require a 15% cash match for the grant, which would be \$12,750. In response to questions, Mr. Morgan said the cash match would come from the Community Development department budget. The study would help plan for pedestrian access, traffic lights and zoning issues. This project would be consistent with Astoria's Transportation Systems Plan.

City Council Action: Don Webb, 3555 Harrison Drive, said this project involves State and Port property. He thinks they should share in the matching cost because their properties will benefit. Mr. Morgan said the need for a cash match is not definite at this time. Mr. Bartlett said the City would not need to produce a match until the grant is awarded. He said the City would contact the state and the Port about participation. Motion by Councilor Compere, seconded by Councilor Mathews, to authorize the submission of the grant application. (Motion carried.) Councilors Compere, Morden, Mathews and Mayor Henningsgaard voted yes.

ELIGIBILITY REQUIREMENTS

1. The City of Astoria is eligible to receive a TGM grant. The City received a TGM grant in 1998, which was completed in 1999.
2. The project has a clear transportation relationship and benefit. The proposed study will center around the capacity of Highway 30, a State highway, as well as the need for access management and internal circulation in an industrial area north of the highway.
3. The project will result in adoption of a specific product that directly addresses the project objectives. The products will include Comprehensive Plan amendments, Development Code amendments, possible amendments to the TSP, and recommendations that would enable the City to apply for grants. The project will immediately assist the developer of the Astoria Business Park with intersection improvements and internal circulation street designs.
4. The City is in compliance with TPR requirements, in that it has adopted its Transportation Systems Plan, along with policies and regulations requiring attention to efficient, balanced transportation systems. The city has long supported a multimodal transportation system, including a Bicycle Plan, and a RiverWalk Plan that details improvements along five miles of the Columbia River. The City is supportive of Sunset Empire Transit District's bus system, which is currently constructing an intermodal center in downtown Astoria. The City has developed a waterfront trolley system, and has promoted the development of a passenger train along the Columbia River from Portland to Astoria. The City maintains an extensive trail system through its publicly owned forests.
5. The project has the support of the Mayor and City Council, the Port of Astoria, the OSU Seafood Laboratory, the Columbia River Estuary Study Taskforce (CREST), and local ODOT officials. (See attached letters of support.)

ASTORIA TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM

GRANT APPLICATION

MAY 22, 2003

A. Background

1. General Description of Project Area: The East Astoria industrial area consists of approximately twenty acres of land and seventy acres of water area along Highway 30 in the northeastern area of the City. The water area consists largely of the Port of Astoria's East Mooring Basin and the abandoned Crystal Ocean fish processing plant in the Columbia River estuary. The mooring basin and its breakwater recently underwent a \$20 million dollar renovation program funded by the US Army Corps of Engineers. The land area is generally undeveloped, and includes vacant property owned by the Port, a dilapidated mobile home park, and a vacant industrial park currently used for disposal of construction debris. The area is served by Highway 30, the main arterial linking Astoria and Clatsop County with the Portland metro area. This highway is also the main east-west arterial for the community, and is referred to as Lief Erikson Drive. There is a neighborhood south of the highway with 417 single family homes, several small businesses and a elementary school.

2. Problems, Needs, Opportunities and Issues: There has been a resurgence of growth in Astoria's eastern area spurred largely by the City's successful Brownfields rehabilitation program, in which the former Astoria Plywood Mill has been redeveloped as a mixed use neighborhood, and dilapidated buildings have been restored. Further east, the new 55,000 square foot Safeway store is being constructed on the north side of Highway 30. The area from 16th to 33rd Street was the subject of the 1999 TGM study prepared by DEA and Lennertz Coyle Associates, and has resulted in intersection improvements and the proposed construction of a signalized intersection at 33rd Street and Highway 30. The major problems include the increased amount of traffic along Highway 30 created by intracity and intercity traffic, the inability of local motorists and pedestrians to cross the highway during peak periods, and the potential impact of industrial development on the capacity of the road.

The City's Transportation System Plan (TSP), adopted by the City in 1999, states in part:

"Vehicle occupancy is high compared to most other cities in Oregon. On the State highway system in the Astoria area traffic volumes have increased approximately 40 percent from 1975 to 1995. Two areas that have traffic volume levels near capacity during summer PM peak periods are Smith Point (Highway 101 at Highway 202) and Highway 30 east from the existing one-way couplet (16th Street) to Franklin Street."

Since the TSP was adopted in 1999, development has spread east beyond Franklin Street to the Comfort Suites Inn at 34th Street. The Port property and the area east to 41st Street are

the next, and possibly last available area for large scale economic development west of Tongue Point.

There has been steady growth in traffic counts over the last five years in this area:

TABLE 1
TRAFFIC COUNTS ON HIGHWAY 30 IN EAST ASTORIA, 1997 - 2001

Location	1997	1998	1999	2000	2001
44 th Street	10,400	10,500	10,700	10,900	11,700
33 rd Street	13,900	14,000	14,300	14,600	15,300

Source: ODOT Transportation Volume Tables, 1998-2002

As shown above, traffic counts have increased at 44th Street and Highway 30 by 12.5% over the five year period, 1997 to 2001, and 10% at 33rd Street during this period. The new Safeway store is being constructed at 33rd Street, and is anticipated to create significant increases in traffic volumes. Another commercial development with 20,000 square feet of leased space is under construction at 33rd Street. A traffic signal is planned for the intersection at 33rd Street when the Safeway store is completed. The development between 23rd and 33rd Streets will likely push future development east to the area described above. The City has received many complaints from property owners south and uphill of Highway 30 who experience difficulties entering the highway. At the same time, the City and the Port of Astoria are interested in promoting industrial and commercial development of underutilized lands along the Columbia River. The reconstruction of the East Mooring Basin and the development of the Astoria Business Park will provide a unique opportunity for "development ready" growth in an area that has suffered declines in natural resource employment.

The State highway is the only east-west arterial in this area of the City. A TGM study would evaluate the potential for internal circulation streets that could relieve the State highway of some local traffic, and would determine the traffic impacts of future development of the mooring basin and the industrial park.

The installation of a pedestrian demand signal at the 37th Street intersection could provide access to the RiverWalk and mooring basin for residents south of Highway 30, as well as for students at the Astor Elementary School, and would serve commercial uses at that intersection. However, it would not provide direct access to the mooring basin as a signal at 36th Street would do. In order for a signal at 37th Street to serve the entire area, construction of an internal street system across the OSU property or parallel to the railroad tracks would have to be constructed. The proposed study could sort out these issues.

The preparation of a TGM study is also needed because of the large number of transportation issues involved in the area: commercial fishing, recreational boating, truck access for industrial development, parking for waterfront access, pedestrian access along the water and across Highway 30 for the adjacent neighborhood, and the use of a major State highway by local traffic. Therefore, the project has a clear transportation relationship and benefits. The

City will work with the ODOT Access Management personnel to limit access along Highway 30, through the preparation of an access management plan.

3. Timeliness: The TGM study would be very timely because of the eastward expansion of commercial and industrial development, and the need to provide "development ready" lands for future growth. The supply of developable lands in Astoria is very limited because of the topography of the City. Astoria is built on a steep peninsula of land, with a narrow fringe of filled area where commercial and industrial development is located. Apart from the marine industrial lands at the Port docks and Tongue Point, these twenty acres are the last large area available for growth and general industrial development. The owner of the proposed 13 acre industrial park between 38th and 41st Streets is in the preliminary stages of development. (The site is currently receiving excavated soil, concrete, and asphalt for fill.) There is an immediate need for road circulation and other infrastructure planning on the site. It appears that now is the time to plan for transportation and growth management, since there has been several million dollars in construction east of the downtown area in the last five years. East Astoria will be the next redevelopment zone, with corresponding strains on Highway 30.

The City's TSP identifies the Highway 30 segment from 16th Street to 33rd Street with one of the highest number of access points in the city, with 59 per mile. The area from 33rd Street to the east City Limits has 30 access points per mile, reflecting the relatively undeveloped character of the area. However, this could change dramatically in the future as growth spreads east. Another factor is the intention of the Port of Astoria to commence its master planning effort for the East Mooring Basin area. A TGM study would be coordinated with the Port's master planning effort in examining future demand for moorages, commercial fishing activity, recreational boating activity, and so forth.

The City has adopted its Transportation Systems Plan, and has successfully utilized the TGM process in 1999 to assist in planning for redevelopment of the area east of downtown, including the brownfield site. The TSP and the TGM plans enabled the city to receive a State Local Streets Improvement Grant of \$210,000, which is currently being completed. Most of these street projects were located east of the downtown in the area between 17th and 29th Streets. The TSP projects an increase from 850 trucks per day in 1995 to 1760 trucks per day in 2016, with several projects recommended between 33rd and 45th Streets.

The City of Astoria has the staff capacity to participate in writing a detailed statement of work and doing the day-to-day project tasks and management. The Community Development Department has a staff of four, and the Engineering Department has a staff of six, including the City Engineer and Public Works Director. The City successfully managed the TGM project in 1998-1999. The project is ready to proceed without additional research or other preliminary tasks. The property owners, including the Port of Astoria and Oregon State University, are fully supportive of the application and would participate in the study. The City has contacted every large property owner within the proposed study area to inform them of the application.

B. Objectives

1. Project Objectives:

- a. To prepare a Transportation and Growth Management Plan for the area between 36th and 41st that examines the impacts of the impending commercial and industrial growth in the area.
- b. To plan the improvements necessary to make the area attractive to developers, industrial and port users, nearby residents, and other users of the street system and the waterfront.
- c. To develop a list of short term and long term improvements that can assist the developer of the Astoria Business Park industrial park with ready-to-implement solutions for access to the area from Highway 30, as well as internal circulation and local street systems.
- d. To design an internal street system that can reduce local use of the State Highway.
- e. To design crosswalks and signals to enable residents south of Highway 30 to gain access to the RiverWalk and boat basin.
- f. To design an extension of the RiverWalk through the east end of the Astoria Business Park that would serve the community and visitors.

2. TGM objectives:

- a. To enhance Astoria's multimodal transportation system that incorporates Highway 30, local streets providing access to the City's dwindling supply of industrial land, the RiverWalk, the railroad and trolley tracks, and neighborhood access to the waterfront.
- b. To enhance the "through movement" function of Highway 30 in the area.
- c. To make more efficient use of the Port, OSU, and the privately owned industrial lands north of Highway 30, thereby reducing the need for expansion of the urban growth boundary.

3. TGM Focus Areas:

- a. To assist in making the Astoria Business Park "market ready" for general industrial development in 2003-2004.
- b. To prepare a detailed plan for access and circulation for the undeveloped land owned by the Port, OSU, and private land owners including the Astoria Business Park, all of which front onto Highway 30, including an access management plan, and an internal circulation plan for the industrial lands.

C. Approach:

The City's Community Development Director will work with ODOT/DLCD staff in preparing the scope of work and assisting in choosing a consultant in accordance with ODOT procedures. The Director will assist the consultant group in the formation of a Citizen Advisory Committee that can provide direction in many areas, particularly the public involvement process. The city staff (including engineering/public works) will meet regularly with the consultant group to provide direction, monitor progress, and provide support.

1. Major Tasks:

- Task 1. Develop a public involvement process, including formation of a Citizen Advisory Committee (CAC).

Responsible party: Consultant group, City staff

- Task 2. Research land use and traffic patterns in the subject area.

Responsible party: Consultant group

- Task 3. Prepare an access management plan for area from 36th to 41st Streets.

Responsible party: Consultant group

- Task 4. Prepare an internal circulation plan to serve industrial park and Port property, including the mooring basin.

Responsible party: Consultant group

- Task 5. Examine need for Comprehensive Plan and Zoning Amendments to improve efficiency of land uses north of Highway 30.

Responsible party: Consultant group, City Staff, CAC

- Task 6. Examine and design pedestrian and bike transportation improvements to create a pedestrian and bike friendly environment throughout the area, including industrial areas.

Responsible party: Consultant group, City staff, CAC.

- Task 7. Coordinate with DLCDC and Port to determine if all S-1 Zoned lands (Marine Industrial) are necessary in the East Mooring Basin/OSU area. Propose changes if possible.

Responsible party: Consultant group, City staff.

Task 8. Develop a set of design standards and recommendations for development along the RiverWalk and the Alderbrook lagoon (the eastern area of the Astoria Business Park).

Responsible party: Consultant group, City staff, CAC

Task 9. Develop a final report with a set of recommendations for transportation improvements, including Highway 30 crossings, sidewalks, bike paths, RiverWalk extensions, internal circulation streets, and other improvements consistent with the TSP and the TPR. Prepare implementation measures including zoning amendments, Plan policies, and others.

Responsible party: Consultant group, City staff, CAC.

2. **Public Involvement Process:** The stakeholders in the TGM study will be the property owners north of Highway 30, including the Port of Astoria, OSU Seafood Laboratory, George Brugh, and the owners of the Astoria Business Park LLC. In addition, the Uppertown Neighborhood Association and business owners and a representative from Astor School would be involved. These individuals would be represented on the CAC. The CAC would hold monthly meetings to be involved in the progress of the study, or more frequently if needed. General public meetings would be held at the midpoint and end of the planning process to involve the community at large. Public hearings would be held before the Planning Commission and the City Council in order to adopt the study into the Comprehensive Plan, and the zoning ordinance. If needed, the TSP would be amended to incorporate transportation projects.
3. **Potential Conflicts:** The individual property owners may not agree with the consultant or city recommendations. It will be the intention of the city to resolve the conflicts by consensus, but the City Council will be the final arbiter of the policies, recommendations and standards that are included in the City documents.
4. **Data and analyses:** The consultants will be able to review the City's recently completed buildable lands inventory, as well as documents prepared by the Port of Astoria and the US Army Corps of Engineers for the East Mooring Basin project. The 1999 TSP and the TGM data are also available for review. However, some original data gathering and research will be necessary. The City maintains a GIS system with much of the infrastructure included. A recent Transportation Impact Study has been prepared for the Safeway store that is under construction at 33rd Street. City or Port staff will not need to prepare any particular analyses before the proposed TGM project can proceed.

D. Products:

Task 1. **Interim product:** Formation of a CAC, development of a written public involvement process to be used throughout the study.

Final product: A public involvement process in which all stakeholders and affected parties can feel they have been included in the process.

Task 2. Interim product: A land use inventory and traffic analysis that can be used as base data.

Final product: A projection of land use development patterns, potential vehicle counts, and intersection performance.

Task 3. Interim product: With ODOT (TPAU/PDU) staff, preliminary access management plan for Highway 30.

Final product: Final access management plan for the area.

Task 4. Interim product: Preparation of preliminary internal circulation plan for industrial area north of Highway 30, present to CAC.

Final product: Preparation of final circulation plan.

Task 5. Interim product: Preparation of interim Comp Plan and Zoning Amendments for area; presentation to stakeholders and DLCD staff.

Final product: Preparation of proposed amendments for adoption by City.

Task 6. Interim product: Preparation of list of impediments to bicycle and pedestrian circulation for the area, discuss with ODOT and CAC.

Final product: Preparation of conceptual design for improved bike lanes/paths and sidewalks, including possible pedestrian activated signal at 37th Street.

Task 7. Interim product: Discussion with DLCD to determine if the Marine Industrial lands east of the mooring basin can be developed with non marine dependent uses in accordance with the preliminary Port Master Plan.

Final product: Preparation of recommendations for rezoning/designation of some areas.

Task 8. Interim product: Work with stakeholders and CAC to develop a set of design guidelines for development along the RiverWalk and Alderbrook lagoon.

Final product: Final set of design guidelines and recommendations to be incorporated into the City code.

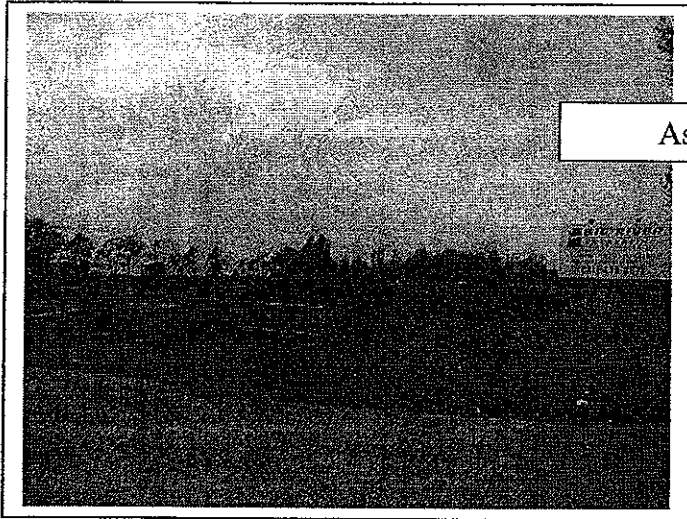
Task 9. Interim product: Prepare draft final report for review by CAC, stakeholders, ODOT, DLCDD, etc.

Final product: Prepare final report document, present action to City Council.

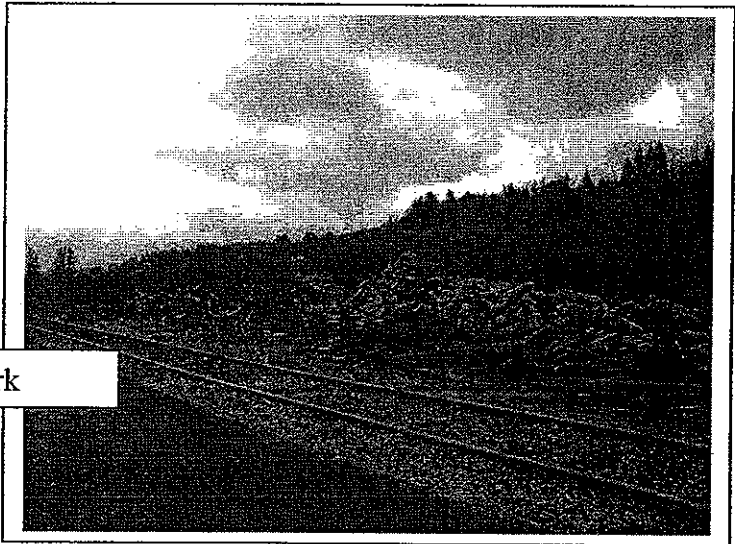
E. Budget:

**TABLE 2
PROJECT BUDGET**

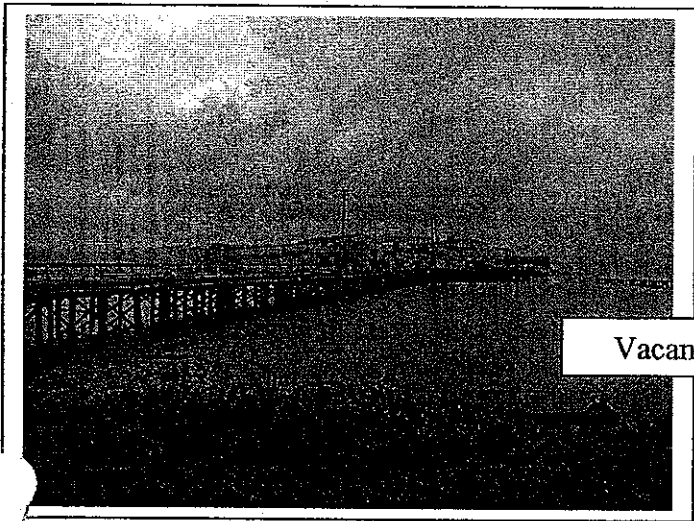
TASK	TGM BUDGET	MATCH	TOTAL
1	\$10,000	\$1,500	\$11,500
2	\$10,000	\$1,500	\$11,500
3	\$15,000	\$2,250	\$17,250
4	\$10,000	\$1,500	\$11,500
5	\$5,000	\$750	\$5,750
6	\$10,000	\$1,500	\$11,500
7	\$5,000	\$750	\$5,750
8	\$15,000	\$2,250	\$17,250
9	\$20,000	\$3,000	\$23,000
TOTAL:	\$100,000	\$15,000	\$115,000



Astoria Business Park



Astoria Business Park



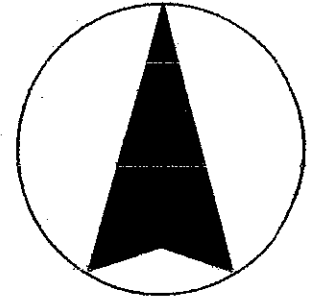
Vacant Fish Processing Plant

ASTORIA TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM

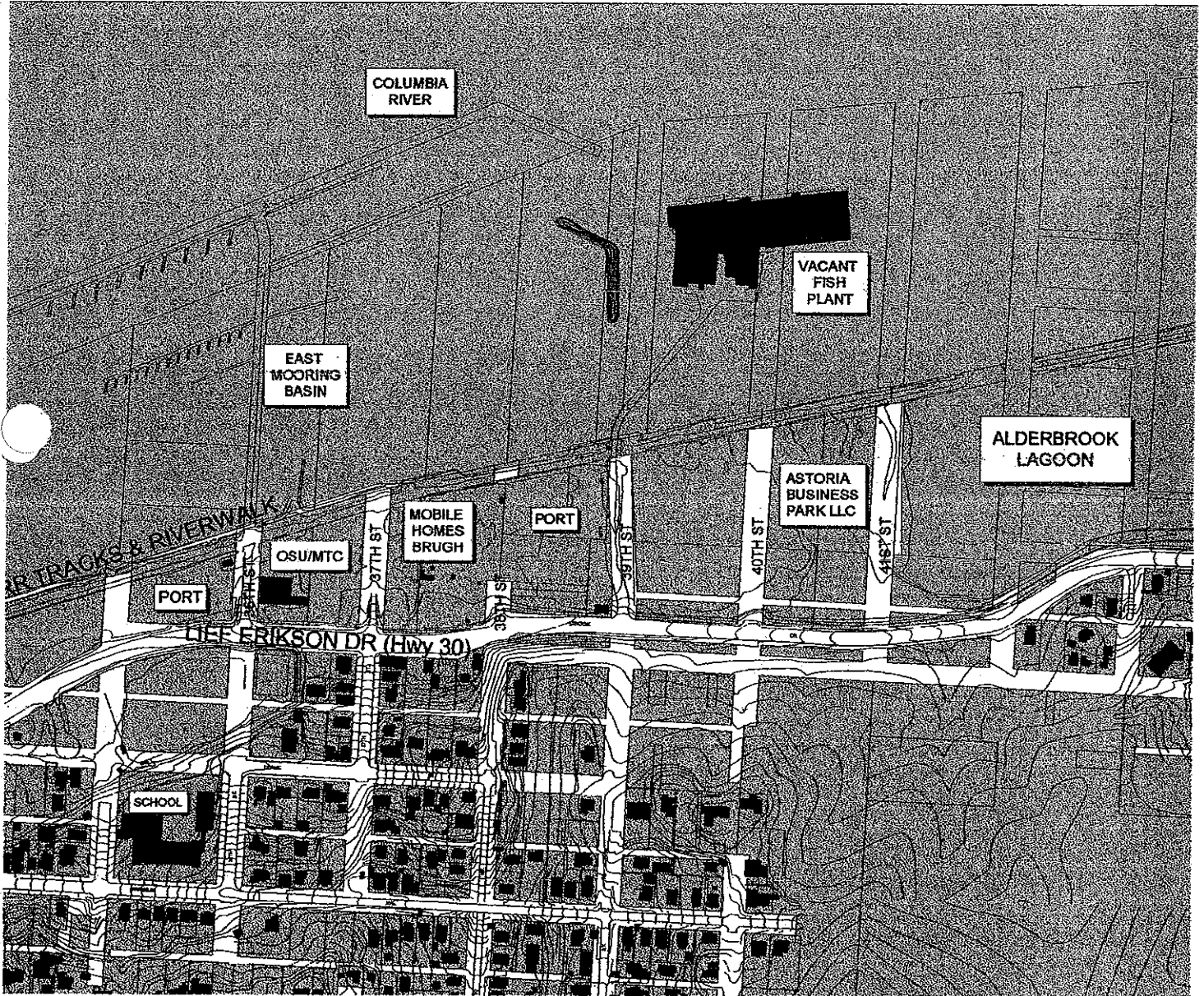
LETTERS OF SUPPORT

- City of Astoria Mayor and City Council
- Port of Astoria
- OSU Seafood Laboratory
- Columbia River Estuary Study Taskforce (CREST)
- ODOT Local Officials

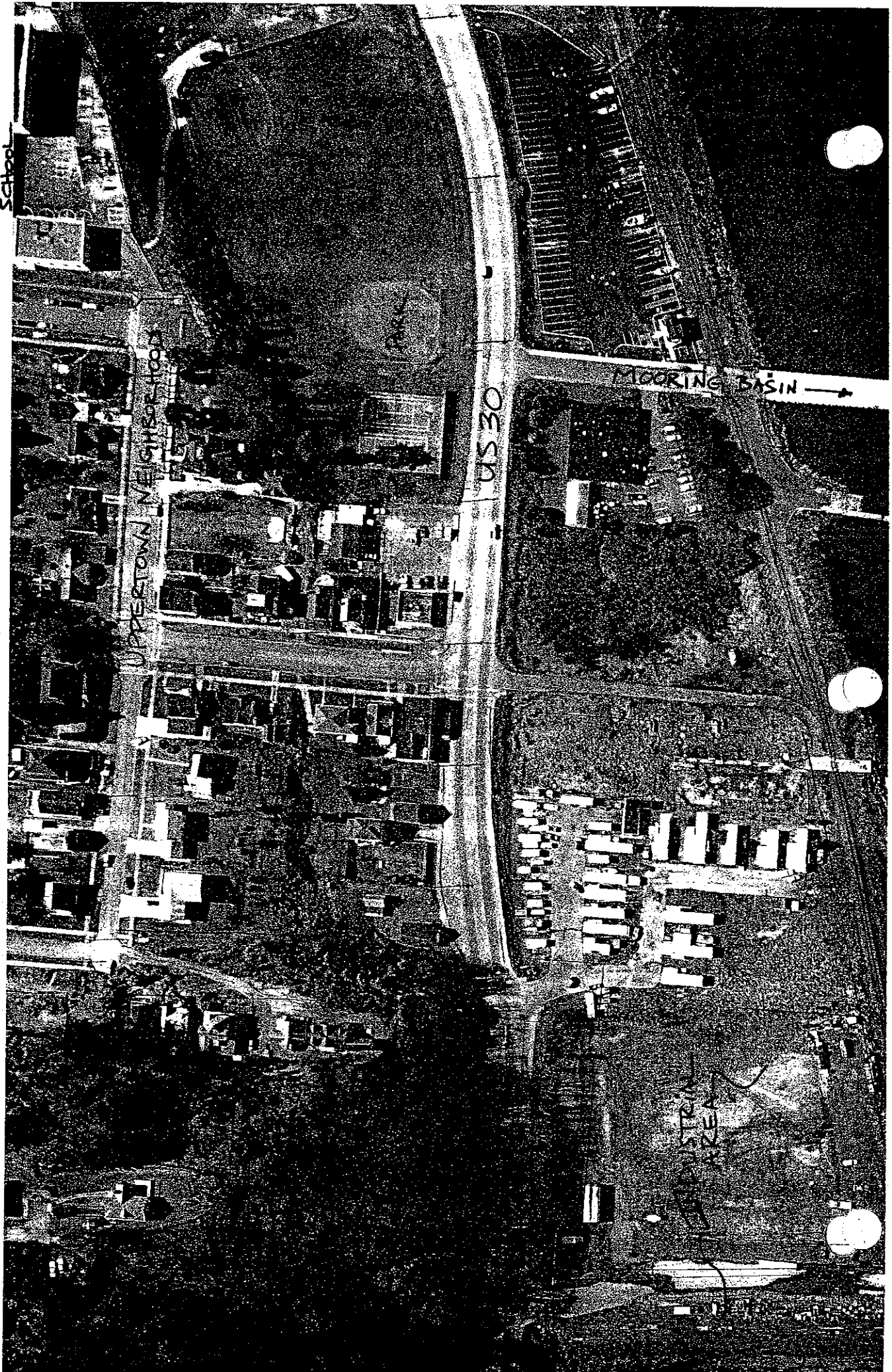
EAST ASTORIA TGM AREA



Scale 1"=480'



EAST ASTORIA AREA



ASTORIA TRANSPORTATION AND GROWTH MANAGEMENT PROGRAM

LETTERS OF SUPPORT

- City of Astoria Mayor and City Council
- Port of Astoria
- OSU Seafood Laboratory
- Columbia River Estuary Study Taskforce (CREST)
- ODOT Local Officials



CITY OF ASTORIA
OFFICE OF THE MAYOR

May 22, 2003

Transportation and Growth Management Program
635 Capitol Street NE
Suite 150
Salem OR 97301-2540

Att: Cindy Lesmeister

Dear Ms. Lesmeister:

The Astoria City Council is in complete support of the City of Astoria's application for the Transportation and Growth Management grant to examine the area east of downtown between 36th & 41st Streets.

The City is very excited about the growth potential of the area East of the Mooring Basin and North of Highway 30. We feel it is Astoria's best opportunity for marine and general industrial development in the near term. However, there needs to be careful consideration as to how this growth is managed.

We hope you will give this grant application serious consideration.

Sincerely,

THE CITY OF ASTORIA



Blair Henningsgaard, President
Astoria City Council

BH/sw



1 Portway • Astoria, Oregon 97103

(503) 325-4521 • FAX (503) 325-4525 • (800) 860-4093

May 20, 2003

Mr. Mike Morgan
City of Astoria
1095 Duane Street
Astoria, Oregon 97103

Dear Mr. Morgan,

The Port of Astoria is in complete support of the City's application for a Transportation and Growth Management grant to examine the area surrounding the Port's East Mooring Basin. The Port has worked closely with the U.S. Army Corps of Engineers over the past 14 years to realize restoration of the existing breakwater in the amount of \$20 million dollars gained through Federal Energy and Water appropriations. The benefit of that project will allow for expansion and protection for the vessels mooring in that basin. With that safety factor now provided, the Port will continue to develop the basin and the adjacent uplands.

The Port's position is that the area from 36th to 41st streets will be experiencing significant growth in the next decade, and transportation improvements will be an important part of the development.

Please consider the grant for the City as a vital component in the further development of our city.

Sincerely,

Glenn Taggart, president
Port of Astoria Commission

COASTAL OREGON
MARINE EXPERIMENT
STATION
Seafood Laboratory



OREGON
STATE
UNIVERSITY

101 Marine Drive, Rm 253
Astoria, Oregon
97103-3420

Telephone
503-325-4531

Fax
503-325-2753

www.orst.edu/dept/seafood

May 21, 2003

Mike Morgan
Interim Community Development Director
City of Astoria
1095 Duane St.
Astoria, Or 97103

The OSU Seafood Laboratory owns and maintains the former lab facility at the foot of 37th Street near the East Mooring Basin. With the extensive reconstruction of the mooring basin and the potential for industrial growth in this area, we would be very supportive of a Transportation and Growth Management grant application that would examine the need for road and street improvements, as well as the land use issues along the Columbia River in this area.

The laboratory fully supports this effort, and I would be glad to participate in any advisory committee that is formed to oversee its preparation.

Sincerely,

A handwritten signature in black ink that reads "Michael Morrissey". The signature is written in a cursive style with a large, sweeping flourish at the end.

Michael Morrissey, Director
OSU Seafood Laboratory



Columbia River Estuary Study Taskforce

750 Commercial Street, Room 205, Astoria, Oregon 97103

Phone: (503) 325-0435, Fax: (503) 325-0459

Email: crest@columbiaestuary.org

Website: www.columbiaestuary.org

May 22, 2003

Transportation & Growth Management Program
635 Capitol Street, NE
Suite 150
Salem, OR 97301-2540

Dear TGM Application Review Committee:

Please accept this letter of support for the application by the City of Astoria for a Transportation and Growth Management grant. CREST (Columbia River Estuary Study Taskforce) is a 27-year old regional council of local governments working with local jurisdictions in both Washington and Oregon.

CREST has a long work history with the City of Astoria and is aware of the growth and development that is occurring at the east end of town. The land surrounding the Port of Astoria's East Mooring basin is one of the few tracts of available land for development. It appears that the TGM program is well suited to assist the City in its efforts to address some of the current and potential future transportation issues at the east end of Astoria.

CREST continues to support our member organizations by providing a forum for regional discussion and cooperation. With the intention of Port of Astoria to begin a master planning effort for the East Basin, coordination with the TGM study would be very timely and beneficial to the City of Astoria.

Thank you for your consideration in the matter, we urge the Transportation & Growth Management Program to support this proposal. If you have any questions, please do not hesitate to contact us at (503) 325-0435.

Sincerely,

Christy McDonald, Coastal Planner

for

Matthew Van Ess
Director



Oregon

Theodore R. Kulongoski, Governor

Oregon Department of Transportation

Highway Division

District 1

350 W. Marine Drive

Astoria, OR 97103

Telephone (503) 325-7222

FAX (503) 325-1314

May 21, 2003

Mike Morgan
Interim Community Development Director
1095 Duane Street
Astoria, OR 97103

File Code:

Re: TGM Grant

Mike:

I am writing this letter to express my support in your efforts of the City of Astoria to obtain a Transportation and Growth Management Grant for the east area of the city.

It is clear that this area will experience significant growth in the near term. Highway 30 is the major arterial through the community, and the Oregon Department of Transportation has a vital interest in reducing local use and managing access, as well as promoting safe pedestrian use of the highway.

If I could be of any assistance as a resource for information, please feel free to call me at (503) 325-7222.

Sincerely,

Kathleen B. McMullen
ODOT, Area Manager

js.



City of Astoria East Gateway Transportation Plan Plan Document Format

PREPARED FOR: City of Astoria East Gateway Transportation Plan PMT
PREPARED BY: Cheryl Yoshida/CH2M HILL
DATE: March 31, 2005

This technical memorandum outlines the format of the City of Astoria East Gateway Transportation Plan (Plan). The Plan's chapters and major headings are outlined below to identify the order and content of chapters. The chapters will be presented in Technical Memorandum format that will address the subjects outlined below. Both the Draft and Final Plan will be prepared using the following format.

Document Organization (Technical Memorandum #2) – to be converted to Table of Contents in Draft and Final Plan

Executive Summary

Introduction

Chapter 1: Plan and Policy Review (Technical Memorandum # 1)

State Plans and Documents

- TPR (Oregon Administrative Rule [OAR] 660-012)
- Access Management Rules (OAR 734-051)
- Traffic Control Rules (OAR 734-020)
- 1992 Oregon Transportation Plan
- 1999 Oregon Highway Plan
- 2001 Oregon Rail Plan
- 1995 Oregon Bicycle and Pedestrian Plan
- 1995 Oregon Transportation Safety Action Plan
- 1997 Oregon Public Transportation Plan
- 1999 Freight Moves the Oregon Economy
- 2000 Oregon Aviation Plan
- 2003 Highway Design Manual
- 1999 Portland – Astoria (US 30) Corridor Plan Summary
- Oregon State Marine Board Standards

Local/Regional Plans and Documents

- 1979 Astoria Comprehensive Plan

1991 Urban Growth Boundary Area Joint Management Agreement (Clatsop County/City of Astoria)

Gateway Overlay Zone (GO), Astoria Development Code, Sections 14.005 – 14.340

1999 City of Astoria Transportation System Plan (TSP)

2004 Sunset Empire Transportation City and Regional Bus Service Schedule

1990 Waterfront Planning Study

1997 Astoria Gateway Master Plan

1999 Astoria Gateway Area Transportation and Growth Management Plan

1994 South Tongue Point Land Exchange and Marine Industrial Park Development Project, Final Environmental Impact Statement

1999 Master Development Plan for North Tongue Point

Navy study of Tongue Point

2004 Immediate Opportunity Fund application for 39th Street/Astoria Business Park

2004 Astoria Business Park Platting

Capital Improvement Documents

Chapter 2: Goals, Objectives, and Evaluation Criteria

Public and Agency Involvement

Project Management Team

Citizen Advisory Committee

Open Houses

Other

Goals and Objectives

Evaluation Criteria

Industrial/Commercial Sites

Residential Sites

Pedestrian/Cyclist Enhancement

River Trail Extension

Chapter 3: Existing Conditions (Technical Memorandum #3)

Vehicular Facilities

Bicycle and Pedestrian Facilities

River Trail Extension

Travel Patterns and Movements

Public Transportation/Alternative Travel Modes

Other Facilities (Rail, Pipelines, Airports)

Chapter 4: Operational and Safety Analysis (Technical Memorandum #4)

Traffic Volumes

Intersection Operations

Accident and Safety Analysis

Existing Deficiencies

Future Land Use

Trip Generation

Trip Distribution

Trip Assignment

Future Traffic Forecasts

Future Traffic Operations

Future Deficiencies

Chapter 5: Alternative Improvements and Preferred Alternative (Technical Memorandum #5)

Develop Alternative Improvements

Short Term

Vehicular

Bicycle

Pedestrian

Public Transportation/Alternative Travel Modes

Other Facilities (Rail, Pipelines, Airports)

Long Term

Vehicular

Bicycle

Pedestrian

Public Transportation/Alternative Travel Modes

Other Facilities (Rail, Pipelines, Airports)

Evaluate Alternative Improvements

Preferred Alternatives

Appendix

Meeting Minutes

Technical Data

OTMS - Lane Information

Lane Information

Road Inventory and Classification Services

Please call Darrell Haugeberg at (503) 986-3161 or Dan Kaplan at (503) 986-3160 if you have any questions.

Oregon Department of Transportation

Data source refreshed on 10/19/2004. 1 - 89 of 89 rows shown.

Roadway Type	Code	Mileage Overlap	Mils	Point Dup	Roadway Codes	Description	L L L L L L L						R L L			MEDIAN	L R
							6	5	4	3	2	1	C	S	S		

Highway #: 092 LOWER COLUMBIA RIVER Hwy

1		98.00	10			ENGSTA ATTACHED (PT)	0	0	0	0	24	11	AU	0	13	0	0	8	99	0	2
1		98.00				MILEPOINT 98.00	0	0	0	0	24	11	AU	0	13	0	0	8	99	0	2
1		97.96	10	S -		HWY. 092 (COMMERCIAL ST.) M.P. (2) 97.96	0	0	0	0	12	AU	5	5	0	0	8	99	0	2	
1		97.95			C -	16TH ST. (1ST LT.)	0	0	0	0	12	AU	5	5	0	0	8	99	0	2	
1		97.94				ENGSTA ATTACHED	0	0	0	0	16	17	AU	4	4	0	11	0	0	0	2
1		97.93				ENGSTA ATTACHED (PS)	0	0	0	0	16	17	AU	4	4	0	11	0	0	0	2
1		97.89			C -	17TH ST.	0	0	0	0	11	11	AU	4	4	0	12	0	0	0	2
1		97.85			C -	16TH ST.	0	0	0	0	11	11	AU	4	4	0	12	0	0	0	2
1		97.71			C -	20TH ST.	0	0	0	0	11	11	AU	4	4	0	12	0	0	0	2
1		97.62	10			COMMERCIAL ST.	0	0	0	0	11	11	AU	4	4	0	12	0	0	0	2
1		97.62			C -	21ST ST.	0	0	0	0	11	11	AU	4	4	0	12	0	0	0	2
1		97.55					0	0	0	0	11	11	AU	5	5	0	12	0	0	0	2
1		97.52			C -	EXCHANGE ST.	0	0	0	0	11	11	AU	5	6	0	12	0	0	0	2

<http://www.oregonstate.edu/otms/inventory/highwayreport.html> - Attach_report.cfm (1 of 1) 10/29/2004 12:10:34 AM

OTMS - Lane Information

1	97.43	- C	23RD ST.	0	0	0	0	11	11	AU	6	6	0	12	0	0	0	0
1	97.45		ENGSTA ATTACHED (PT)	0	0	0	0	11	11	AU	6	6	0	12	0	0	0	0
1	97.41	10 C -	FRANKLIN ST. (2ND LT.)	0	0	0	0	11	11	AU	6	5	0	0	0	0	0	0
1	97.41	C -	27TH ST. (1ST LT.)	0	0	0	0	11	11	AU	6	5	0	0	0	0	0	0
1	97.37		ENGSTA ATTACHED (PC)	0	0	0	0	11	11	AU	12	12	0	0	0	0	0	0
1	97.27	C - - C	29TH ST.	0	0	0	0	11	11	AU	12	12	0	0	0	0	0	0
1	97.20	C - 3 - C	30TH ST.	0	0	0	0	11	11	AU	12	12	0	0	0	0	0	0
1	97.14	C - - C	31ST ST.	0	0	0	0	22	11	AU	0	12	0	0	0	0	0	0
1	97.08		END PROJ F- FR-1(6) 1982	0	0	0	0	22	11	AU	0	12	0	0	0	0	0	0
1	97.07	20 S	BEG. MARINE DR.	0	0	0	0	22	11	AU	0	12	0	0	0	0	0	0
1	97.07	10 C -	FRANKLIN AVE.	0	0	0	0	22	11	AU	0	12	0	0	0	0	0	0
1	97.07	- C	32ND ST.	0	0	0	0	22	11	AU	0	12	0	0	0	0	0	0
1	97.00		MILEPOST 97.00 MISSING	0	0	0	0	12	12	AU	7	4	0	0	1	13	0	0
1	97.00	20	BEG. PROJ. X- NH-802W(34) (CONT. # 12572)	0	0	0	0	12	12	AU	7	4	0	0	1	13	0	0
1	97.00	10 C - - C	33RD ST.	0	0	0	0	12	12	AU	7	4	0	0	1	13	0	0
1	97.00		MILEPOINT 97.00	0	0	0	0	12	12	AU	7	4	0	0	1	13	0	0
1	96.96		BEG. CURBS LT.	0	0	0	0	12	12	AU	7	4	0	0	1	13	0	0
1	96.93	C -	34TH ST.	0	0	0	0	12	12	AU	7	5	0	0	1	13	0	0
1	96.88	Z -	ROAD	0	0	0	0	12	12	AU	7	16	0	0	1	13	0	0
1	96.84	- C	35TH ST.	0	0	0	0	12	12	AU	7	16	0	0	1	13	0	0
1	96.83		BEG. CURB RT.	0	0	0	0	12	12	AU	7	5	0	0	1	13	0	0
1	96.77	- C	36TH ST.	0	0	0	0	12	12	AU	7	5	0	0	1	13	0	0
1	96.73		END CURB LT.	0	0	0	0	12	12	AU	7	5	0	0	1	13	0	0
1	96.70	10	END CURB RT.	0	0	0	0	16	16	AU	0	5	0	0	1	12	0	0
1	96.70	C - - C	37TH ST.	0	0	0	0	16	16	AU	0	5	0	0	1	12	0	0
1	96.65			0	0	0	0	24	16	AU	0	0	0	12	0	0	0	0

http://www.ci.astoria.or.us/information/highways/transportation_detail_report.cfm?ref=510/26/2004/12:20:34 AM

OEMS - Lane Information

1	96.62		- C	36TH ST.	0	0	0	0	16	16	AU	0	0	0	12	0	0	0	0
1	96.61			ENGSTA ATTACHED (PT)	0	0	0	0	16	16	AU	0	0	0	12	0	0	0	0
1	96.57			ENGSTA ATTACHED (PC)	0	0	0	0	16	16	AU	0	0	0	12	0	0	0	0
1	96.56		- C	39TH ST.	0	0	0	0	16	16	AU	0	0	0	12	0	0	0	0
1	96.51			END CURB LT.	0	0	0	0	16	16	AU	0	0	0	0	0	0	0	0
1	96.42			ENGSTA ATTACHED	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.26	C -		43RD ST.	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.19	C -	- C	44TH ST.	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.12	C -	- C	45TH ST.	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.05			SEG. CURBS RT.	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.04	10		ENGSTA ATTACHED (PT)	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.04	C -		46TH ST.	0	0	0	0	19	19	AU	0	0	0	0	0	0	0	0
1	96.00	10		ENGSTA ATTACHED (PC)	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	96.00			MILEPOINT 96.00	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	95.98			MILEPOST 96.00	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	95.84	C -		48TH ST.	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	95.79			ENGSTA ATTACHED	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	95.79	C -		49TH ST.	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	95.73			SEG. CURB LT.	0	0	0	0	15	12	AU	0	4	0	0	0	0	0	0
1	95.55			ENGSTA ATTACHED (PT)	0	0	0	0	12	12	AU	5	5	0	0	0	0	0	1
1	95.47	10	- N	53RD ST.	0	0	0	0	12	12	AU	5	5	0	0	0	0	0	1
1	95.47	S		LEIF ERICKSON DR.	0	0	0	0	12	12	AU	5	5	0	0	0	0	0	1
1	95.42			END PROJ FRF 121 (6)	0	0	0	0	12	12	AU	5	5	0	0	0	0	0	1
1	95.38			SEG. PROJ F- FR-1(16) 1582	0	0	0	0	12	12	AU	5	5	0	0	0	0	0	1

http://www.cdot.state.or.us/traninfo/highwayprojects/astl_data_report.cfm (3 of 3) 10/26/2004 11:20:34 AM

OTMS - Last Information

1	95.37			ENGSTA ATTACHED (PS)	0 0 0 0 12 12 AU 5 5 0 0 0 0 0 1 0
1	95.30		- Z	BLUE RIDGE DR.	0 0 0 0 12 12 AU 5 5 0 0 0 0 0 1 0
1	95.29				0 0 0 0 12 12 AU 5 5 0 0 0 0 0 1 0
1	95.15				0 0 0 0 12 12 AU 4 4 0 0 1 16 0 0
1	95.12	C L		ASTORIA	0 0 0 0 12 12 AU 4 4 0 16 0 0 0 0
1	95.11	N -		NIMITZ RD.	0 0 0 0 12 12 AU 4 4 0 16 0 0 0 0
1	95.08		- N	TONGUE POINT RD. (MARITIME RD.)	0 0 0 0 12 12 AU 4 4 0 16 0 0 0 0
1	95.06				0 0 0 0 12 12 AU 4 4 0 16 0 0 0 0
1	95.03				0 0 0 0 12 12 AU 4 4 0 0 1 16 0 0
1	95.00			MILEPOINT 95.00	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0
1	94.97			MILEPOST 95.00	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0
1	94.97				0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0
1	94.67	30 U E	E U	ASTORIA	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.67	20 C E +		ASTORIA	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.67	10 C E + E C		ASTORIA	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.67		- W -	0609' 01237 'BSC 9'X8' MILL CREEK (JTL 2003)	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.61			ENGSTA ATTACHED (PT)	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.60		- N	TONGUE POINT RD.	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.52			ENGSTA ATTACHED (PC)	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.41		- K	LIBERTY LN. (MARITIME RD)	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
1	94.00			MILEPOINT 94.00	0 0 0 0 12 12 AU 4 4 0 0 0 0 0 0 1
2	96.00			MILEPOINT 96.00	0 0 0 0 0 14 AU 7 4 0 0 8 999 0 0
2	97.96	30		SEG. PROJ. X- NH-802W(34) (CONT. # 12692)	0 0 0 0 0 14 AU 7 4 0 0 8 999 0 0
2	97.95	20 C -	- C	16TH ST.	0 0 0 0 0 14 AU 7 4 0 0 8 999 0 0

http://www.cdot.state.or.us/transportation/otms/otms_data/print.cfm (4 of 5) 02/23/2014 12:20:24 AM

OIMS - Lane Information

2	97.95	10	S	-		-	S	HWY. 032W M.	0	0	0	0	0-14	AU	7	4	0	0	0	999	0	0
								P. 97.95														
2	97.95		S					BEG.	0	0	0	0	0-14	AU	7	4	0	0	0	999	0	0
								COMMERCIAL														

http://www.odot.state.or.us/tranview/highwayreport.html_detail_report.cfm (3 of 5) 10/25/04 12:20:24 AM

