Appendix B
Off-Site Traffic Analysis

EDMONDS CROSSING

Connecting ferries, bus & rail

Off-Site Traffic Analysis

Transportation Discipline Report Edmonds Crossing Multimodal Transportation Center Study

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Off-Site Traffic Analysis

Summary

The purpose of the Off-Site Traffic Analysis was to analyze, evaluate, and compare traffic conditions on the arterial system serving Edmonds and the Edmonds Crossing Multimodal Transportation Center (including city streets and state highways) under existing conditions and for each of the study alternatives: the No Action Alternative (Alternative 1), the Point Edwards Alternative (Alternative 2), and the Mid-Waterfront Alternative (Alternative 3). The Analysis focused on two interrelated impacts: the impact of ferry traffic and transportation center traffic on the regional and local street/highway system, and the impact of street/highway conditions on ferry and transportation center traffic access.

For the purposes of the Off-Site Traffic Analysis, the term "ferry traffic" refers to vehicles that either (i) are enroute to the Edmonds Terminal to drive onto a ferry, or (ii) have just driven off a ferry at the Edmonds Terminal. The term "transportation center traffic" refers to traffic enroute to the multimodal transportation center for all other purposes, and includes transportation center employee commute trips as well as pick-up, drop-off, and park-and-ride traffic for the ferries, for the Sound Transit commuter rail service, for bus transit service, and for Amtrak. (It should be noted that all the various types of transportation center traffic were combined for this analysis because all transportation center parking and pick-up/drop-off activity occurs on-site; as a result, there are no off-site impacts other than those associated with the combined transportation center traffic flows to/from the site access points.)

The Off-Site Traffic Analysis comprised three main elements: 1) an analysis of existing conditions, 2) the preparation of traffic forecasts for each of the study alternatives, and 3) the analysis and comparative evaluation of the study alternatives.

The existing ferry terminal is located at the western terminus of the mainland segment of SR 104, at the foot of Main Street in the Edmonds downtown/waterfront area. In the Edmonds study area, SR 104 is a five-lane arterial that runs to the east and south along the south side of Edmonds, providing connections to the regional highway system (SR 99 and I-5), as well as to the Edmonds and Woodway local arterial systems. Connections from the terminal to the regional and local systems also are provided by SR 524, which runs east from the north side of the downtown area via 3rd Avenue, Caspers Street, 9th Avenue, Puget Drive, and 196th Street, and by the Main Street-212th Street corridor east of downtown. Regional connections are provided by 220th Street east of 9th Avenue as well, but the connections between 220th Street and the terminal are indirect, requiring a circuitous route and/or travel through downtown and residential neighborhoods.

Ferry traffic combined with local circulation traffic creates unique traffic problems for the City of Edmonds and its citizens. The problems associated with ferry egress traffic include a

lack of adequate capacity to serve the volume in some locations, as well as the delay and restriction of local circulation caused by the platoons of vehicles disembarking from the ferry during the intermittent unloading periods. The Off-Site Traffic Analysis focused on traffic operations at the key intersections on the street/highway network, and the impact of ferry and transportation center traffic on those intersections.

Existing Conditions

The existing conditions traffic operations analysis focused on the arterial/arterial and downtown intersections. The highest-volume intersections in the study area are the intersections on SR 99, including 212th Street SW/SR 99, 220th Street SW/SR 99, and N 205th Street/SR 99. Each of these intersections is over capacity and operates at a substandard service level.

Other high-volume intersections include SR 104/Dayton Street, SR 104/100th Avenue SW, and SR 104/N 205th Street, and 76th Avenue/196th Street, 76th Avenue/212th Street, and 76th Avenue/220th Street. Each of these intersections has adequate capacity for current volumes, as do each of the other downtown Edmonds intersections.

No Action Alternative

- Nearly 75 percent of the traffic arriving at the ferry will arrive via SR 104. Most of the remaining ferry traffic will arrive from the east via Main Street and SR 524 (the Puget-196th corridor), and will travel through downtown on 3rd Avenue to get to Pine Street and SR 104. Leaving the ferry and the waterfront area, two-thirds of the ferry traffic will use SR 104. The remaining ferry egress traffic will depart the waterfront through downtown enroute to the Main-212th and Puget-196th corridors.

- About one-third of the traffic coming to the transportation center will arrive via SR 104; the remainder will arrive through downtown. Leaving the transportation center and waterfront area, about one third of the traffic will use SR 104 and two thirds will depart the waterfront through downtown.

- As in 2001-02, the highest-volume intersections in the study area in 2030 are the intersections on SR 99. Entering volume at these intersections will increase significantly over the next 20 years. Despite recent improvements (i.e., the addition of a third lane in each direction that functions as a transit-only through lane at signalized intersections), none of these intersections operate at an adequate service level in 2001-02, and all except 212th Street/SR 99 will be significantly over capacity and will experience severe congestion in 2030. Volumes at the 76th Avenue intersections (196th Street, 212th Street, and 220th Street) will experience modest increases. Other high-volume intersections include the SR 104 intersections at Dayton Street, at 100th Avenue, and at 205th Street; each of these intersections has adequate capacity to serve forecasted 2030 traffic volumes.

- Modest traffic increases were forecasted for downtown and 9th Avenue (100th Avenue) intersections. (Due to changed circulation patterns, total p.m. peak hour intersection entering volume was forecasted to decrease at some intersections.) At 3rd Avenue/Main Street, entering volume was forecasted to increase by 35 percent, resulting in "nearing

capacity" conditions. Each of the other downtown intersections has adequate capacity to serve the forecasted volumes.

- At the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

Point Edwards Alternative

- Over 75 percent of the traffic arriving at the ferry will arrive via SR 104 from the south/east. Most of the remaining ferry traffic will enter from southbound Edmonds Way, after passing through downtown enroute from the east via Main Street and SR 524 (the Puget-196th corridor). Leaving the ferry and the waterfront area, over 70 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will travel through downtown via Dayton, Main, and 3rd on its way to the Main-212th and Puget-196th corridors.
- Over one-third of the traffic coming to the transportation center will arrive via SR 104 from the south/east; the remainder will arrive through downtown via Dayton Street and Edmonds Way. Leaving the transportation center and waterfront area, about one third of the traffic will use SR 104 to the south/east, and two thirds will depart the waterfront through downtown via Edmonds Way and Dayton Street.
- Conditions at most intersections outside the downtown area are similar to conditions under the No Action Alternative.
- Locating the terminal access at Pine Street also will reduce traffic volumes and improve service levels at downtown and waterfront intersections (as compared to the No Action Alternative).
- At the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.
- With the closure of Pine Street to terminal traffic, the traffic that would have otherwise traveled around downtown via 3rd and Pine will shift to Edmonds Way along the waterfront, and will use various routes through downtown enroute to and from Edmonds Way (primarily Main Street and Dayton Street).

Mid-Waterfront Alternative

- The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are the same as for the Point Edwards Alternative, and the travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are the same as for the No Action Alternative.

- Conditions at most intersections outside the downtown area are similar to conditions under the No Action Alternative.
- Locating the ferry access and providing a second waterfront access at Pine Street also will reduce traffic volumes and improve service levels at downtown and waterfront intersections (as compared to the No Action Alternative).
- At the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.
- With the closure of Pine Street to terminal traffic, the traffic that would have otherwise traveled around downtown via 3rd and Pine will shift to Edmonds Way along the waterfront, and will use various routes through downtown enroute to/from Edmonds Way.

1.0 Existing Conditions

1.1 Street and Highway System

1.1.1 Roadway Configuration and Traffic Control

The street/highway system providing access to/from the existing Ferry Terminal and the alternative sites for the Edmonds Crossing Multimodal Transportation Center is shown in Figure 1-1. Traffic signals and intersections with all-way stop control also are identified in Figure 1-1.

The existing ferry terminal is located at the western terminus of the mainland segment of SR 104, at the foot of Main Street in the Edmonds downtown/waterfront area. In the Edmonds study area, SR 104 is a five-lane arterial that runs to the east and south along the south side of Edmonds, providing connections to the regional highway system (SR 99 and I-5), as well as to the Edmonds and Woodway local arterial systems. Connections from the terminal to the regional and local systems also are provided by SR 524, which runs east from the north side of the downtown area via 3rd Avenue, Caspers Street, 9th Avenue, Puget Drive, and 196th Street, and by the Main Street-212th Street corridor east of downtown. Regional connections are provided by 220th Street east of 9th Avenue as well, but the connections between 220th Street and the terminal are indirect, requiring a circuitous route and/or travel through downtown and residential neighborhoods.

1.1.2 Functional Classification

The City of Edmonds has classified its streets (and the state highways within the city) according to their function. The "functional classifications" are consistent with state and federal guidelines, and are used by the City to determine appropriate roadway capacity, traffic control, and access management characteristics. The City of Edmonds Functional Classification System includes four classes: Principal Arterial, Minor Arterial, Collector Street, and Local Access Street; these are defined in the Comprehensive Plan as follows:

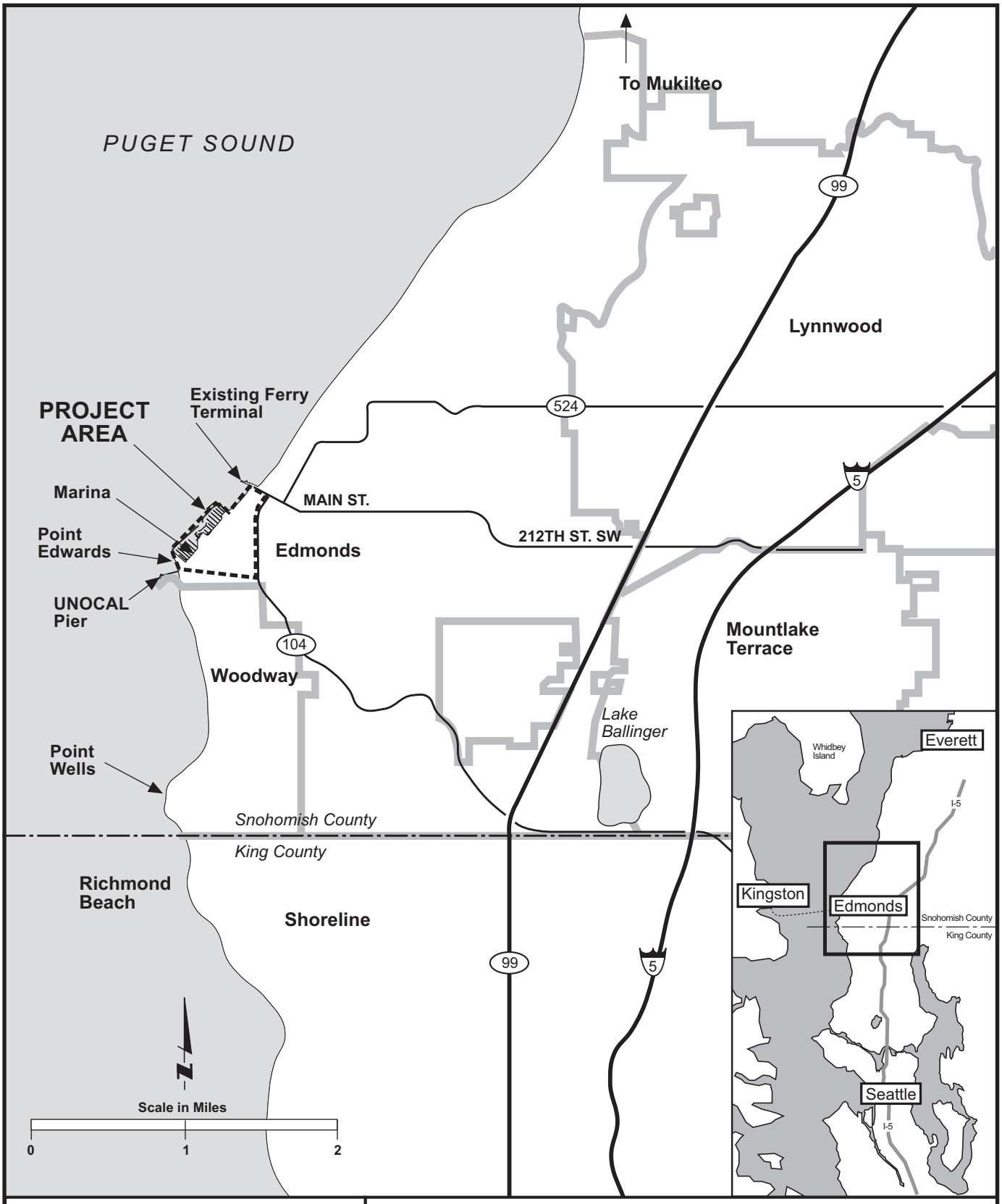

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Figure 1-1

Project Vicinity Map

154090.G1.07.A1_T092004007SEA • 1-1 Vicinity Map • 9/24/04 • dk/gm

- Principal Arterials provide for movement across and between large subareas and serve predominantly "through trips" with minimum direct service to abutting land uses.
- Minor Arterials provide for movement within large subareas. Minor Arterials may provide direct access to large traffic generators (e.g., community business centers and neighborhood shopping centers), and they also serve traffic from neighborhood to neighborhood within a larger community. There are two types of Minor Arterials. Type 1 and Type 2 are identical functionally. The difference is in the roadway design standards (e.g., roadway width).
- Collector Streets provide for movement within the smaller subareas and from Principal and Minor Arterials to the local access streets. Collector Streets provide direct access to small traffic generators (e.g., individual retail stores, schools, and small multi-family residential developments).
- Local Access Streets serve traffic to and from abutting land uses. The adjacent land uses on Local Access Streets are most often residential, but may also include industrial and low-volume commercial uses. Local Access Streets also include neighborhood collectors and industrial/commercial streets.

The first three classes of Edmonds streets are shown in Figure 1-2. Because of the scale of the map, local access streets are not depicted. Arterial access to the existing terminal and the alternative terminal locations is provided by SR 104 (Principal), the 3rd-Caspers-9th-Puget-196th—or SR 524—corridor (Minor), and the Main-212th corridor (Minor). According to the functional class definitions, these are the only routes appropriate for terminal access/egress, and terminal traffic should be focused on the Principal Arterial, SR 104, to the extent possible. It should be noted that access to the existing ferry dock from the SR 524 and Main-212th corridors currently is, of necessity, routed on a Collector Street (3rd Avenue south of Main) and a Local Access Street (Pine Street between 3rd and SR 104).

1.2. Traffic Operations

1.2.1 Traffic Volumes

In order to analyze existing conditions, and to update and calibrate the traffic forecasting model, current p.m. peak hour intersection traffic counts were needed at the intersections covered by the off-site traffic analysis. These include most arterial/arterial intersections in Edmonds plus several downtown intersections. Counts were made in 2001 or 2002 at the following intersections and ramps:

- 196th Street/76th Avenue
- 212th Street/76th Avenue
- 212th Street/SR 99
- 220th Street/76th Avenue
- 220th Street/SR 99
- SR 104/100th Avenue (9th Avenue)
- 205th Street/SR 104
- 205th Street/SR 99
- SR 104/SR 99 Ramps
- Pine Street/SR 104
- Pine Street/3rd Avenue
- Pine Street/5th Avenue
- Main Street/5th Avenue
- Main Street/9th Avenue
- Main Street/3rd Avenue
- Dayton Street/SR 104
- Dayton Street/5th Avenue
- Caspers Street/9th Avenue
- 220th Street/9th Avenue

Existing (2001-02) p.m. peak hour counts are summarized in Figure 1-3.

1.2.2 Capacity/Level of Service Analysis Methodology

The overall operation and service level of the street/highway system serving Edmonds and the Edmonds Crossing Multimodal Transportation Center area is determined/controlled by operations at arterial intersections. For this reason, the capacity/level of service analysis focused on arterial intersections. Two types of intersections were analyzed: signalized intersections and four-way-stop-controlled intersections, as described below.

Signalized Intersections

Signalized intersections were analyzed using the "planning-level" procedure described in the Highway Capacity Manual. Planning-level analysis of signalized intersections provides a basic assessment of whether or not capacity is likely to be exceeded for a given set of demand volumes and geometrics. Signal timing is not considered (signal timing is assumed to be perfectly efficient), and delay and level of service are not determined specifically.

The planning-level analysis is based on a "critical movement" analysis. This procedure relates to the capacity/adequacy of an intersection to lane utilization. The capacity of a point where intersecting lanes of traffic cross is 1,400 vehicles per hour (vph), and the degree to which intersecting lane volumes (i.e., the "critical movements") exceed or fall short of this capacity indicates the quality of traffic operations at the intersection. When the sum of the critical movements is greater than 1,400, the intersection is considered to be "over capacity." Critical movement sums between 1,200 and 1,400 indicate that the intersection is "nearing capacity," while fewer than 1,200 is "under capacity." For the purposes of this study, intersection capacity is considered to be adequate if the intersection operates "under capacity."

Signalized intersections analyzed include 196th Street/76th Avenue, 212th Street/76th Avenue, and 220th Street/76th Avenue intersections, the 212th Street/SR 99, and 220th Street/SR 99 intersections, the 205th Street/SR 99 and 205th Street/SR 104 intersections, and the SR 104/100th Avenue, SR 104/Dayton Street, and Main Street/3rd Avenue intersections. In addition, the City of Edmonds plans to install signals at the Main Street/9th Avenue and 220th Street/9th Avenue intersections in 2005.

Four-Way Stop Intersections

For four-way stop intersections, capacity is determined for the intersection as a whole (i.e., for total entering traffic) and is based on the directional split of approaching traffic (e.g., east-west versus north-south). A maximum capacity of 1,900 entering vehicles per hour is achieved when the directional split is 50/50. Capacity decreases to 1,400 for a directional split of 75/25.

Four-way stop intersections analyzed include Main Street/5th Avenue, Main Street/9th Avenue, Dayton Street/3rd Avenue, Dayton Street/5th Avenue, and 220th Street/9th Avenue, although the City of Edmonds plans to install signals at Main Street/9th Avenue and 220th Street/9th Avenue in 2005.

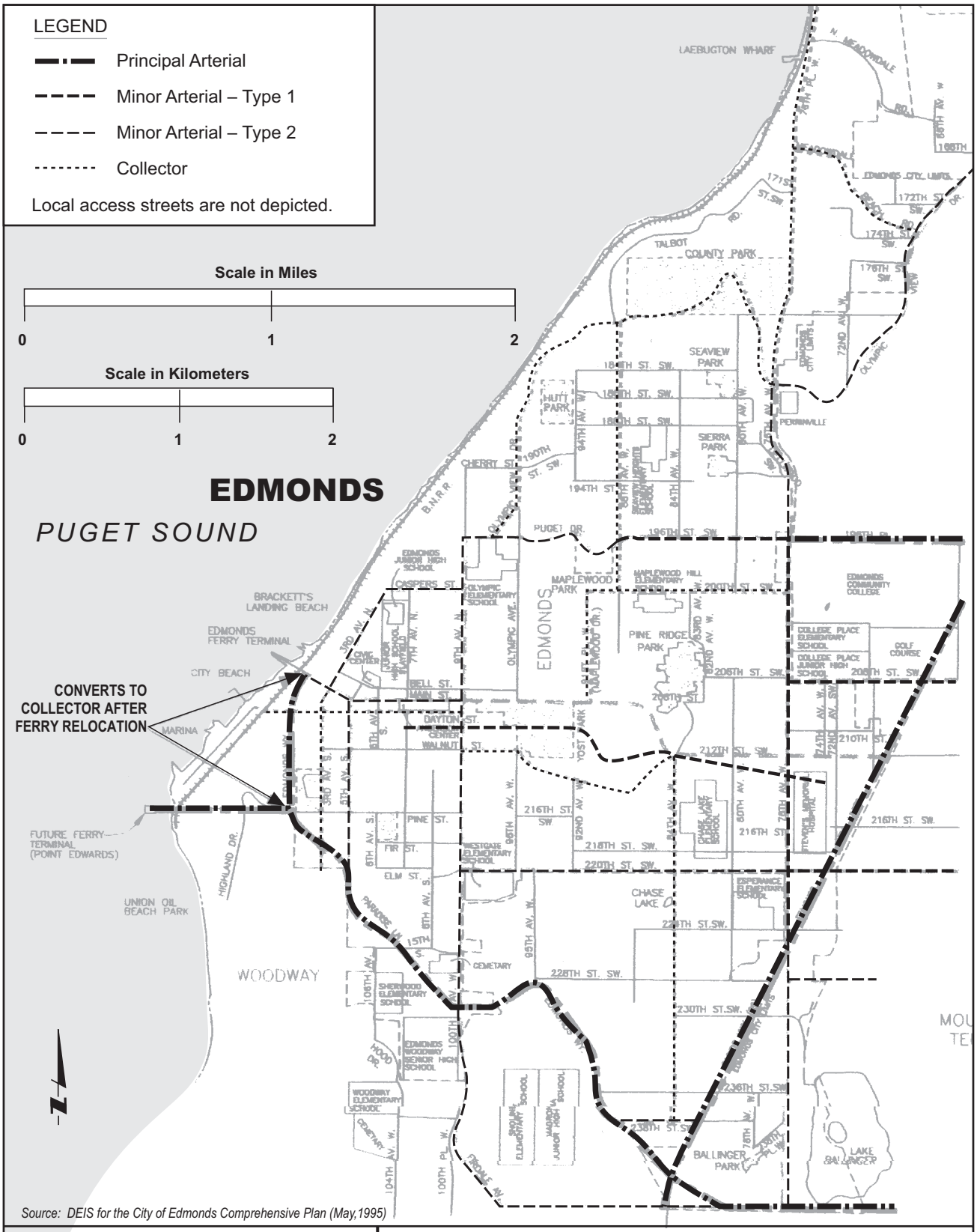

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Figure 1-2

Functional Classifications

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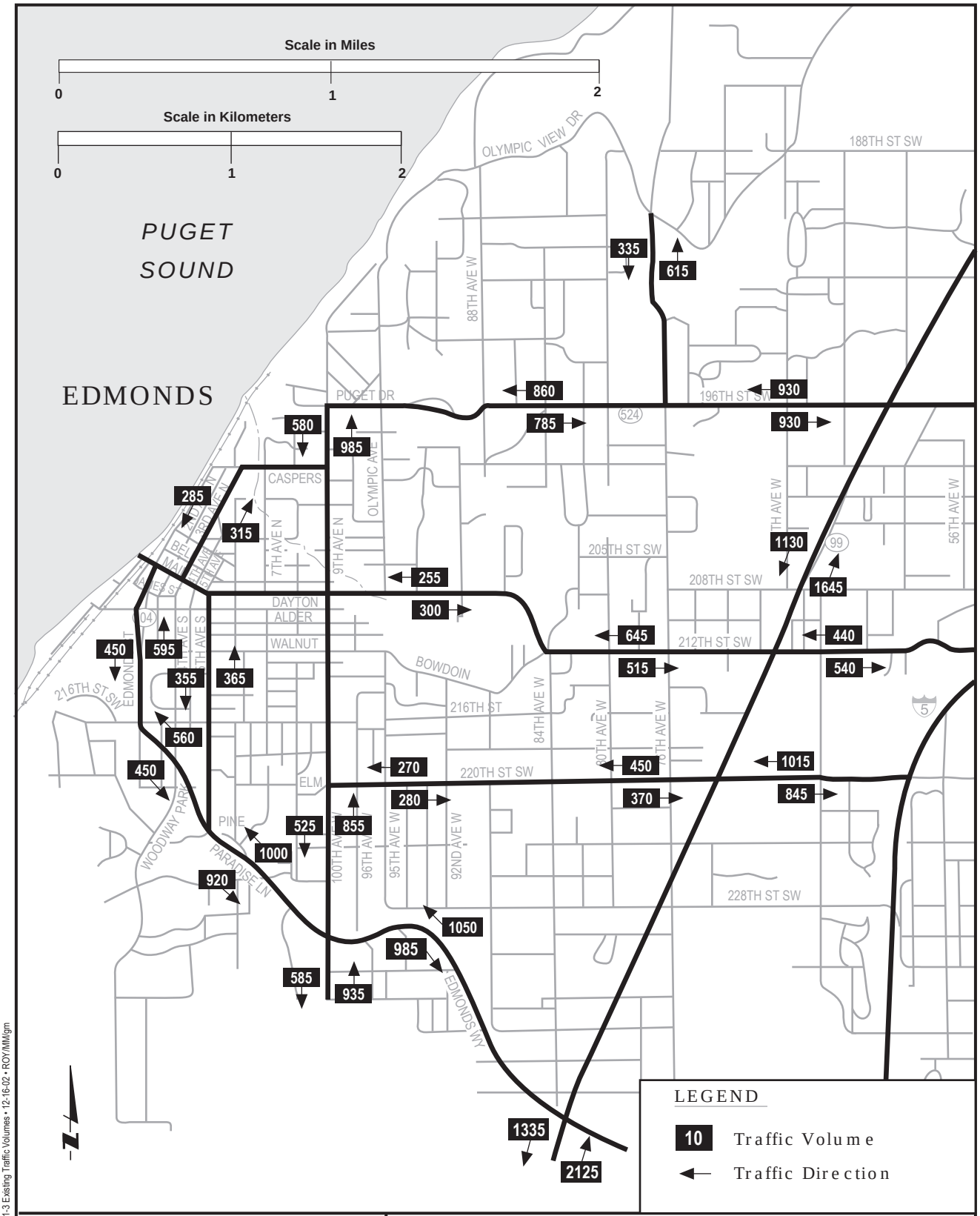

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Figure 1-3

Existing Traffic Volumes
(2002 p.m. Peak Hour)

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1.2.3 Capacity/Level of Service Analysis Results

The existing conditions traffic operations analysis focused on the arterial/arterial and downtown intersections for which counts were collected. The results are compiled in Table 1-1, and include total intersection entering volume, the critical volume sum at signalized intersections, the capacity of four-way stop intersections, and a general service level for each intersection .

As shown in Table 1-1, the highest-volume intersections in the study area are the intersections on SR 99. None of these intersections operate at an adequate service level, with the 220th Street, 212th Street, and 205th Street intersections experiencing "over capacity" conditions. Other high-volume intersections include SR 104 at Dayton Street, at 100th Avenue, and at 205th Street, and 76th Avenue at 196th Street, at 212th Street, and at 220th Street. Each of these intersections has adequate capacity for current volumes, and operates at "under capacity" conditions, as do each of the other downtown Edmonds intersections.

TABLE 1-1
Existing Intersection Volume and Capacity, 2002 P.M. Peak Hour
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

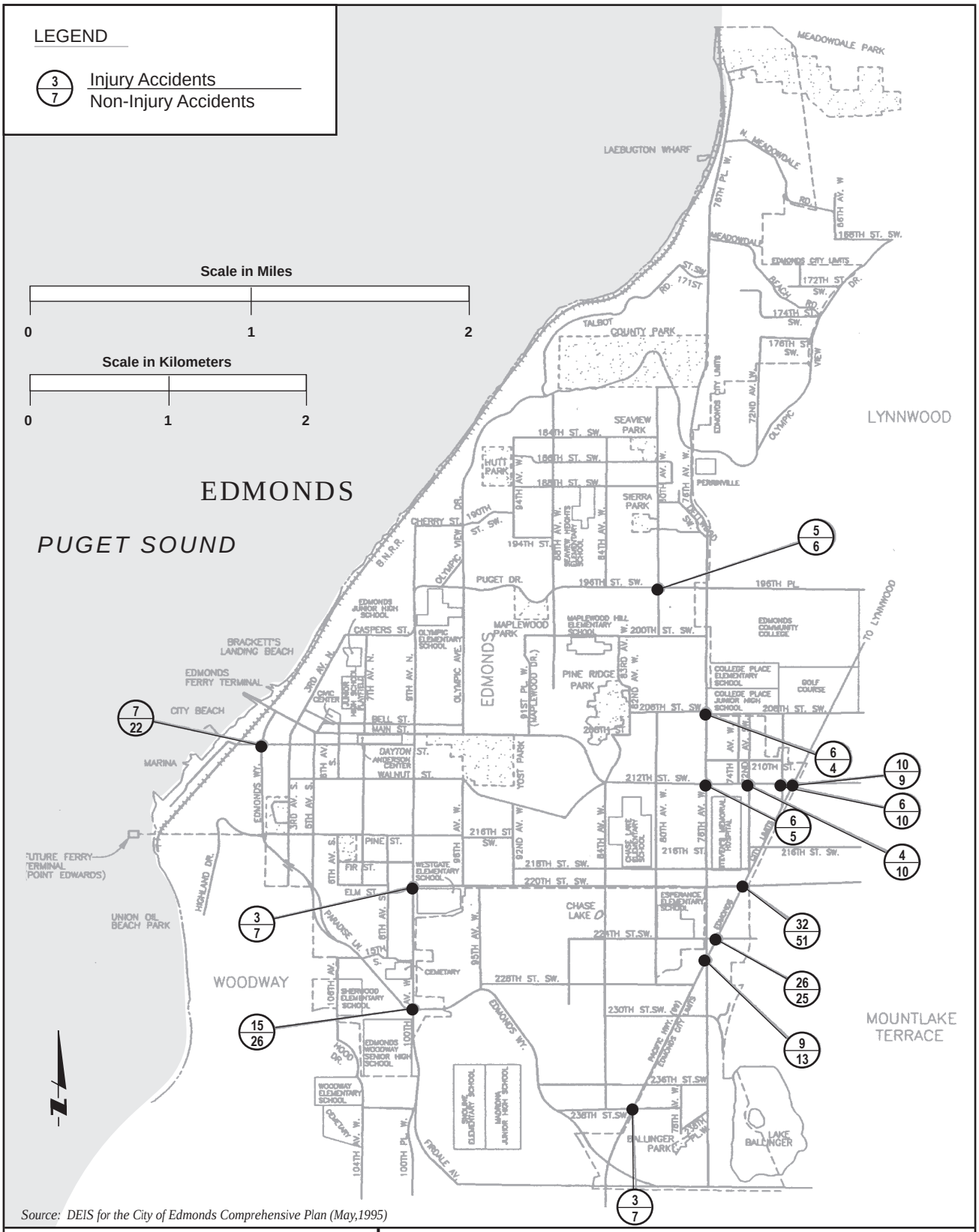
Intersection	Total Entering Volume[a]	Critical Volume[b] (signals)	Capacity (all-way stops)	Service Level
196th Street SW/76th Avenue W	2,810	1,035		under capacity
212th Street SW/76th Avenue W	2,200	1,200		nearing capacity
212th Street SW/SR 99	3,830	1,510		over capacity
220th Street SW/76th Avenue W	1,920	1,090		under capacity
220th Street SW/SR 99	4,580	1,420		over capacity
N 205th Street/SR 99	4,480	1,630		over capacity
N 205th Street/SR 104	3,650	820		under capacity
Main Street/3rd Avenue	920	510		under capacity
Main Street/5th Avenue	840		1,700	under capacity
Main Street/9th Avenue	1,280		1,800	under capacity
Dayton Street/SR 104	1,465	745		under capacity
Dayton Street/3rd Avenue	910		1,800	under capacity
Dayton Street/5th Avenue	810		1,700	under capacity
220th Street SW/9th Avenue	1,390		1,400	under capacity
SR 104/100th Avenue W	3,430	1,055		under capacity

[a] Total number of vehicles entering the intersection, summed from all approaches.

[b] Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

1.2.4 Traffic Accidents

A summary of traffic accident data reported in the Edmonds Transportation Plan is compiled in Figure 1-4. The Transportation Plan identified 13 intersections with more than five accidents in a three-year period. Most of these intersections are located on the eastern



Source: DEIS for the City of Edmonds Comprehensive Plan (May,1995)

Figure 1-4

Traffic Accidents

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side of Edmonds on SR 99, on 76th Avenue, and on 212th Street between 76th and SR 99. On the main access routes to/from the existing ferry terminal, the SR 104/Dayton Street and SR 104/100th Avenue intersections are on the list of high-accident intersections, having experienced 10 and 14 accidents per year, respectively. (For purposes of comparison, it should be noted that the "Accident Experience" warrant for traffic signal installation is met when there are five accidents in a year.)

In addition to the City of Edmonds accident data, WSDOT maintains a list of high accident locations (HALs), high accident corridors (HACs), and pedestrian accident locations (PALs). In the Off-Site Traffic Analysis study area in 2002, WSDOT identified three HALs, one HAC, and two PALs: the SR 104/Dayton Street intersection, SR 104/100th Avenue, and SR 524 from the existing ferry dock to and through the Main Street/3rd Avenue intersection were designated as HALs; SR 524 from 3rd Avenue/Caspars Street to 94th Place/12th Avenue is designated as a HAL; and the existing ferry dock and SR 524 between 69th Place and 68th Avenue are designated as PALs. (It should be noted that the 2002 PAL designation for the ferry dock is based on 1995-2000 data, and the construction of the overhead loading facility has addressed the pedestrian safety deficiencies that caused the PAL designation.) HALs and PALs not identified as being resolved by the Edmonds Crossing Project will be addressed/improved by other WSDOT projects.

2.0 Traffic Forecasts

The traffic forecasts on which the Off-Site Traffic Analysis was based were for the p.m. peak hour in the analysis year, 2015. The forecasts included regional traffic, traffic generated in the City of Edmonds under its adopted Comprehensive Plan, traffic traveling to and from the Edmonds-Kingston Ferry, traffic traveling to and from the multimodal transportation center, traffic generated by activities in the Port of Edmonds waterfront areas, and traffic generated by redevelopment of the Unocal property (uplands and lowlands).

2.1 Alternatives

The traffic forecasts for each of the alternatives—No Action, Point Edwards, and Mid-Waterfront—include regional background traffic, Edmonds traffic, Port of Edmonds area traffic, ferry traffic, transportation center (and parking area) traffic, and Unocal uplands traffic. Development of the Unocal lowlands—with its attendant traffic generation—was assumed to occur only under the Point Edwards Alternative. Conversely, the Mid-Waterfront Alternative locates the multimodal transportation center on the Safeway site (on the north side of Dayton Street between SR 104 and the railroad tracks), replacing the existing commercial complex and eliminating the traffic it would generate.

2.2 Growth Forecasts/Traffic Generation

2.2.1 City of Edmonds

The City of Edmonds has recently updated its traffic forecasting model. The City's model is based on and incorporates regional growth forecasts adopted by the Puget Sound Regional Council for two forecast years: 2008 and 2022. Traffic growth to the 2030 Design Year was estimated by extrapolating the 2022 forecasts. Based on discussion with City of Edmonds Planning staff, it was concluded that although the City currently is growing at rate of 1.5

percent-2 percent annually, the City will be almost completely built out by 2022, and as a result, growth between 2022 and 2030 will be minimal. In order to incorporate some limited 2022-2030 growth into the traffic forecasts, it was estimated that there would be 5 percent growth throughout the City over that 8-year period, which is equivalent to about one half the 2008-2022 annual growth rate.

2.2.2 Ferry Traffic

For the purposes of the off-site traffic analysis, "worst-case" weekday p.m. peak hour ferry traffic volumes were assumed. The forecasted 2030 design year p.m. peak hour traffic volumes include 565 vehicles leaving the terminal (upon arrival from Kingston), and 750 vehicles arriving at the terminal to board the ferry. (For Alternative 1, the No-Build Alternative, only two boats will arrive from Kingston during the p.m. peak hour (three arrivals were assumed for the analysis of the build alternatives) and as a result, 2030 design year p.m. peak hour traffic volume leaving the terminal for Alternative 1 is limited to two full boatloads, or 430 vehicles.

While ferry egress volumes are finite, limited by ferry schedule and vessel capacity, ferry access volumes are not. The 2030 traffic forecasts include 750 p.m. peak hour vehicle trips from Edmonds to Kingston. With 30-minute ferry departure service, and assuming ferry traffic arrives at the terminal at a constant rate over the peak hour, this level of demand would result in a queue of 160 vehicles after the first sailing and a queue of 320 after the second. Of these 480 vehicles, 375 would face a one-boat wait (30 or 40 minutes, depending on the frequency of service), and 105 would have a 2-boat wait. If 20-minute service could be operated, there would be a queue of 35 vehicles after the first sailing, a queue of 70 after the second, and a queue of 105 after the third.

Although it could be argued that ferry users will adjust their schedules to avoid the one-boat wait (and as a result, ferry traffic volumes during the peak hour would be fewer than the forecasted 750), the higher ferry access volume is being used for the off-site traffic analysis in order to be conservative. It should be noted, also, that a peak hour ferry traffic reduction of 100 to 150 vehicles, spread across all of the various access routes, would have minimal impact on the traffic analysis results, findings, and conclusions.

In addition to the analysis of peak hour conditions, impacts of the platoons of traffic leaving the ferry were analyzed. The quantitative approach to the platoon impact analysis was similar to the peak hour analysis; the platoon analysis, however, focused on the 10-minute period of platooning, rather than on the entire peak hour.

2.2.3 Multimodal Transportation Center

Multimodal transportation center traffic comprises auto traffic and transit buses traveling to and from the Amtrak parking area, passenger pick-up and drop-off areas, employee parking areas, service/delivery areas, and ferry and commuter rail park-and-ride areas. For the purposes of this analysis, 2030 p.m. peak hour transportation center traffic was estimated to be 300 inbound trips and 250 outbound trips.

2.3 Traffic Forecasts

2.3.1 Traffic Forecasting Model

The City of Edmonds' recently-updated traffic forecasting model is based on and incorporates regional growth forecasts adopted by the Puget Sound Regional Council, and includes vehicle trip tables for two forecast years: 2008 and 2022. The 2015 trip tables used to prepare the 2015 Year-of-Opening traffic forecasts were developed by interpolating between the 2008 and 2022 trip tables. The 2030 trip tables used to prepare the 2030 Design Year traffic forecasts were developed by extrapolating the 2022 trip table: in order to incorporate some limited 2022-2030 growth into the traffic forecasts, it was assumed that there would be 5 percent growth throughout the City over that 8-year period, and that traffic generation would increase by the same 5 percent. Traffic demand in 2030 was estimated by assuming a 5 percent increase citywide over the forecasted 2022 demand incorporated in the City's traffic forecasting model.

2.3.2 Baseline Road Network

The "Baseline Road Network" comprises the arterial and freeway facilities in or affecting the study area that, for the purposes of the traffic analysis, are assumed to be complete and operational by the 2015 Opening Year. The Baseline Network comprises the existing arterials and freeways plus the improvements that are expected to be built over the next 13 years.

The planned/programmed roadway improvements that are expected to be complete by 2008 were identified and incorporated in the traffic forecasting model road network. The following improvements were incorporated into the baseline network used to prepare traffic forecasts for the off-site traffic analysis:

- Main Street/9th Avenue: install traffic signal (2005)
- 220th Street/9th Avenue: install traffic signal (2005)

In addition, the baseline network contains the recently-completed SR 99 improvements which provide a third lane (northbound and southbound) which is limited to rights turn only—except for transit—at signalized intersections.

2.3.3 Traffic Forecasts

Forecasted 2030 Design Year p.m. peak hour volumes for the three study alternatives are compiled in Figure 2-1. For purposes of comparison, 2001-02 counts also are compiled. As shown in the figure, traffic volumes are forecasted to grow significantly on the east side of the study area, especially in the SR 99 corridor. These traffic increases are the result of continuing growth and development throughout the Everett/southwest Snohomish County area (including the Paine Field/SW Everett employment center). Increased use of SR 99 also is caused in part by the heavy use and resultant congestion on I-5.

The forecasts indicate that much of the ferry, transportation center, and other Port/waterfront traffic will use SR 104 enroute to/from the area. As a result, inbound (westbound) p.m. peak hour SR 104 volumes are forecasted to increase under all alternatives. However, outbound (eastbound) p.m. peak hour volumes on SR 104 volumes

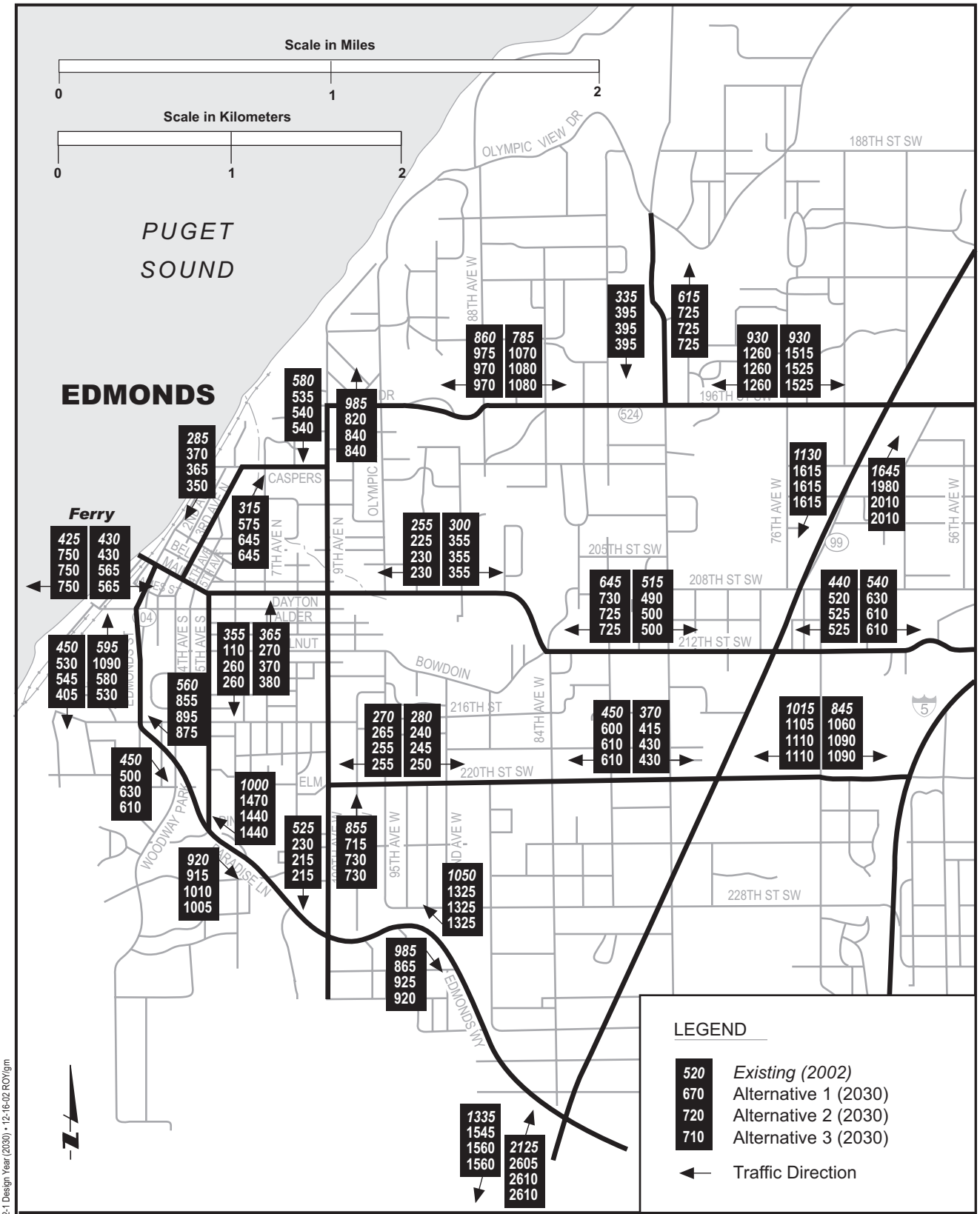

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Figure 2-1

Design Year (2030)
Forecasted Traffic Volumes
(P.M. Peak Hour)

T072001006SEA • 154090.g1.01.A2 • 2-1 Design Year (2030) • 12-16-02 ROY/gm

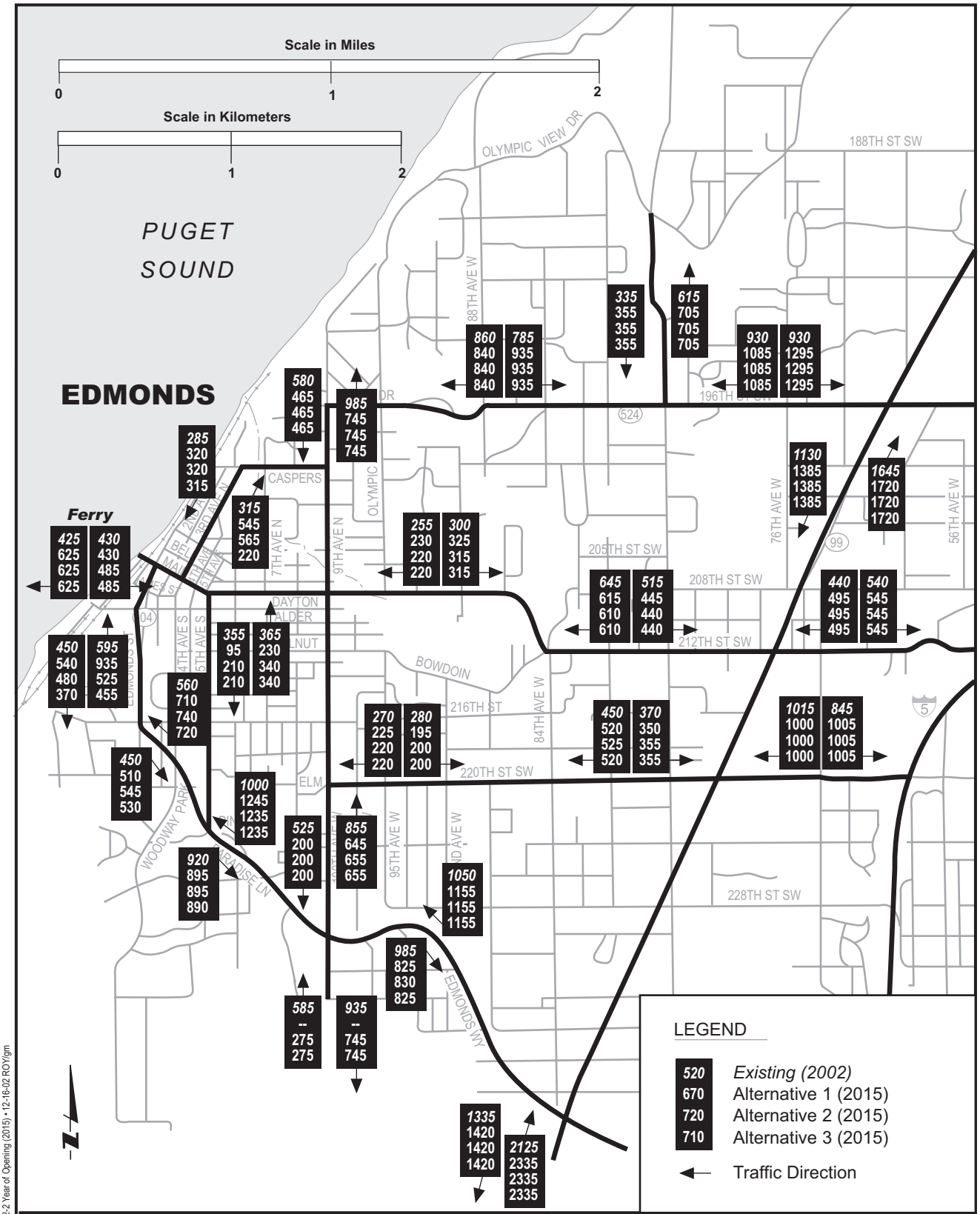

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Figure 2-2

Year of Opening (2015)
Forecasted Traffic Volumes
(P.M. Peak Hour)

T072001006SEA • 154090.g1.01.A2 • 2-2 Year of Opening (2015) • 12-16-02 ROY/gm

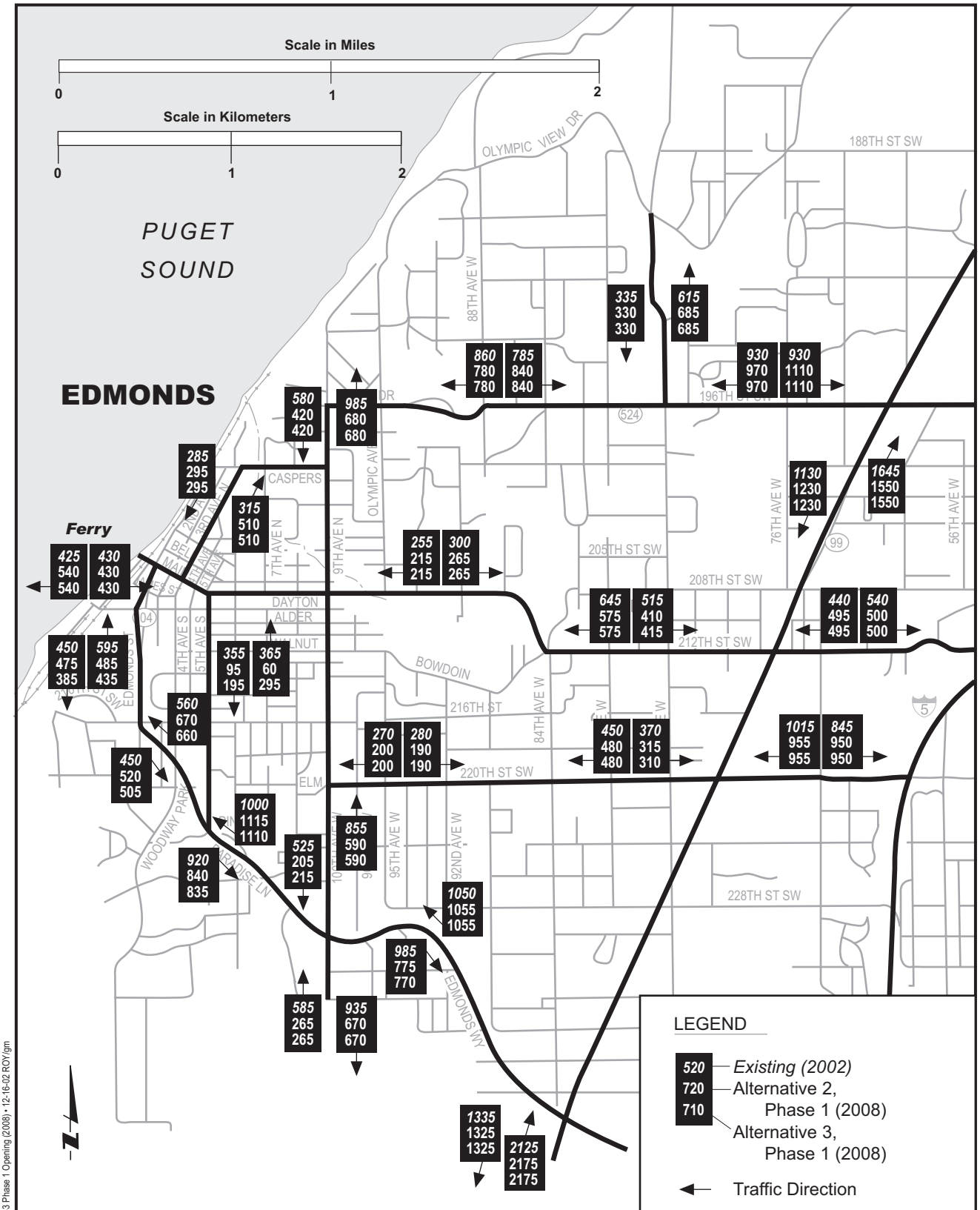

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Figure 2-3

Phase 1 Opening (2008)
Forecasted Traffic Volumes
(P.M. Peak Hour)

T0720010065EA • 154090.g1.01.A2 • 2-3 Phase 1 Opening (2008) • 12-16-02 ROY/gm

are not expected to increase significantly, as outbound ferry traffic increases are limited by the vehicular capacity of the ferry service and much of the outbound transportation center traffic has destinations to the north of the SR 104 corridor. Significant traffic increases also are expected on the 3rd Avenue-Puget-196th (SR 524) corridor.

Forecasted 2015 Opening Year p.m. peak hour volumes for the three study alternatives are compiled in Figure 2-2, and forecasted 2008 Phase 1 Opening Year p.m. peak hour volumes for the two build alternatives are compiled in Figure 2-3.

3.0 Off-Site Traffic Analysis: 2030 Design Year

Ferry traffic combined with local circulation traffic creates unique traffic problems for the City of Edmonds and its citizens. The problems associated with ferry egress traffic include a lack of adequate capacity to serve the volume in some locations, as well as the delay and restriction of local circulation caused by the platoons of vehicles disembarking from the ferry during the intermittent unloading periods.

The Off-Site Traffic Analysis focused on traffic operations at the key intersections on the street/highway network, and the impact of ferry and transportation center traffic on those intersections. In order to analyze these impacts, the volume and travel routes/paths of ferry and transportation center traffic was determined, and intersection capacity and operation were analyzed under traffic loadings for the full p.m. peak hour and for the shorter periods of time when platoons of traffic leaving the ferry are present.

3.1 No Action Alternative (2030)

3.1.1 Terminal Access and Egress

Ferry Access/Egress

Vehicular access to the ferry is available exclusively from westbound SR 104, with access to westbound SR 104 available via Pine Street or at points east of 5th Avenue. Ferry traffic arriving from the north and east can either travel south to SR 104 via 9th Avenue, or come to Pine Street via 3rd Avenue or 5th Avenue. Use of Pine Street requires ferry traffic to travel through downtown or around downtown on neighborhood streets (e.g., Walnut Street). Leaving the ferry, traffic can either turn right onto SR 104, or continue up Main Street into downtown to 3rd Avenue, to 9th Avenue, or to continue east on Main Street.

The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are compiled in Figure 3-1a. The traffic forecasts indicate that much of the traffic arriving at the ferry—nearly 75 percent—will arrive via SR 104. Most of the remaining ferry traffic will arrive from the east via Main Street and the Puget-196th corridor, and will use 3rd Avenue to get to Pine Street and SR 104. Leaving the ferry and the waterfront area, nearly 70 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will depart the waterfront through downtown, via Main Street and 3rd Avenue, enroute to the Main-212th and Puget-196th corridors.

Transportation Center Access/Egress

Traffic traveling to and from the "transportation center" (i.e., the commuter rail/Amtrak station and the ferry, commuter rail, and Amtrak parking facilities) will enter and leave via

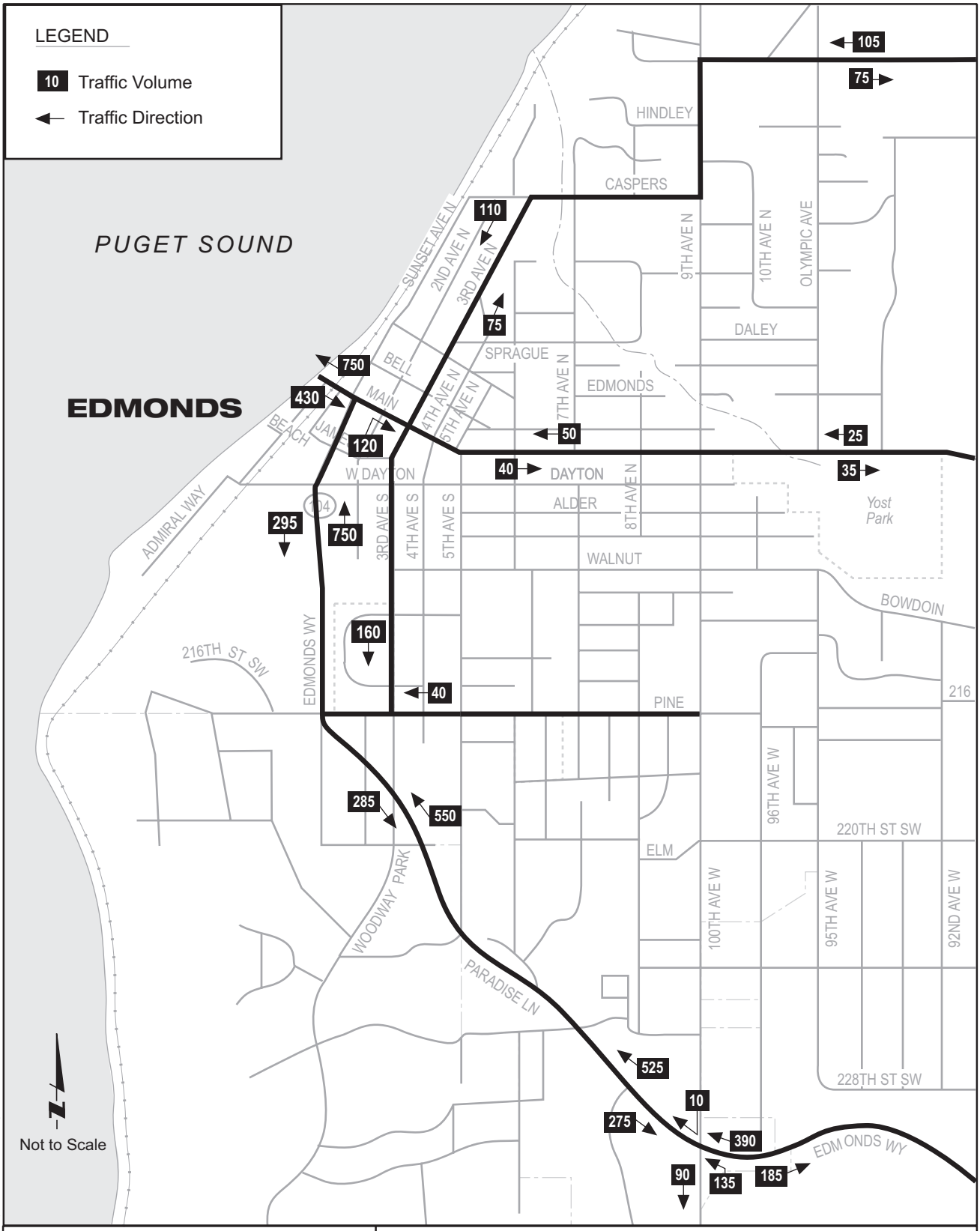

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Figure 3-1a

Ferry Traffic Routes - Alternative 1 (No Action) Design Year (2030)

T072001006SEA • 154090.G1.01.A2 • 3-1a Ferry Traffic Routes • DK/MM/gm • 12-16-02

the Dayton Street/SR 104 intersection. Traffic enroute to/from this intersection can arrive/depart via SR 104 or through downtown Edmonds on Dayton Street and Main Street.

The travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are compiled in Figure 3-1b. According to the forecasts, about one-third of the traffic coming to the transportation center will arrive via SR 104 from the east/south.

Another one-third will come from the Main-212th and Puget-196th corridors, and the remaining third will come from central/downtown Edmonds; all of this traffic will travel through downtown to the transportation center via Main Street and Edmonds Way or Dayton Street and 3rd Avenue. Leaving the transportation center and waterfront area, 25 percent of the traffic will use SR 104. Another 55 percent of the transportation center traffic depart the waterfront through downtown enroute to the Main-212th and Puget-196th corridors, and the final 20 percent will have a destination in downtown.

3.1.2 Traffic Operations Analysis

Results of the p.m. peak hour traffic operations analysis are compiled in Table 3-1. As in 2002, the highest-volume intersections in the study area in 2030 are the intersections on SR 99. The forecasts indicate that p.m. peak hour entering volume at these intersections will increase significantly over the next 28 years. None of these intersections operate at an adequate service level in 2002, and all will be significantly over capacity and will experience severe congestion in 2030. Volumes also will increase and traffic operations will degrade at the 76th Avenue intersections (196th Street, 212th Street, and 220th Street), with the 196th Street and 220th Street intersections experiencing "over capacity" conditions, and the 212th Street intersection will be "nearing capacity." Other high-volume intersections include the SR 104 intersections at Dayton Street, at 100th Avenue, and at 205th Street. The p.m. peak hour volumes at these intersections are not forecasted to increase significantly, with future traffic growth tending to occur in the hours before and after the peak hour. (This phenomenon is referred to as "peak spreading.") Each of these intersections has adequate capacity to serve the forecasted volumes.

The forecasts indicate that p.m. peak hour traffic volume will increase significantly at the 3rd Avenue/Main Street intersection; however, due to the peak spreading described previously (wherein peak period traffic increases occur primarily in the hours before and after the peak hour, and not during the peak hour), and due to the limited traffic increases generated in the downtown Edmonds area, forecasted traffic volume increases at other intersections were modest or minimal. All of these intersections have adequate capacity to serve the forecasted volumes.

The impact on intersection operations of the traffic platoons leaving the ferry also were analyzed. Results of this analysis are compiled in Table 3-2. The forecasts indicate that at the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

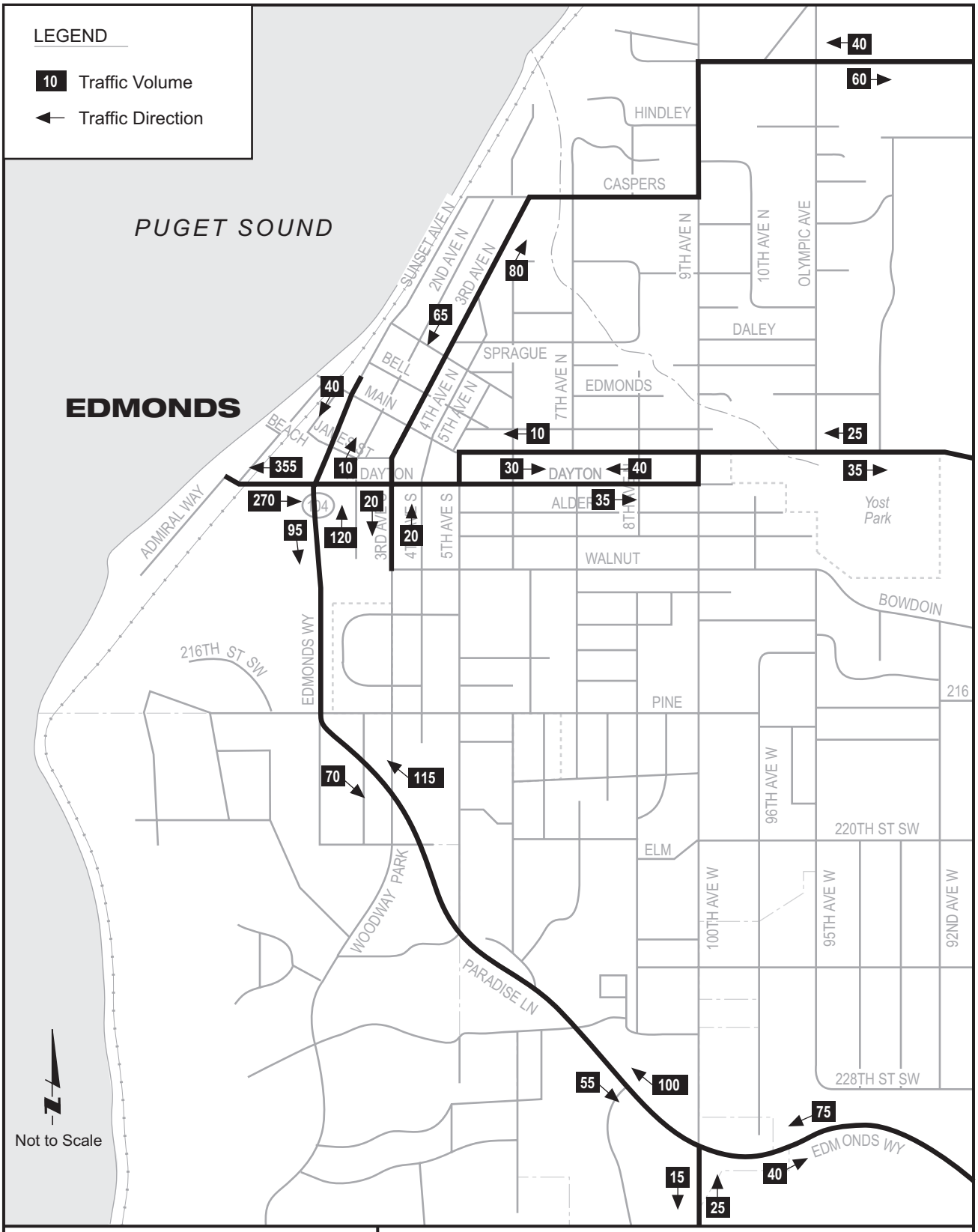

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Figure 3-1b

Multimodal Center Traffic Routes - Alternatives 1 and 3 Design Year (2030)

T072001006SEA • 154090.G1.01.A2 • 3-1b Multimodal Center Traffic Routes • DK/MM/gm • 12-16-02

TABLE 3-1
Alternative 1 (No Action), Intersection Volume and Capacity, 2030 P.M. Peak Hour[b]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[a] (signals)	Capacity (all-way stops)	Service Level
196th Street SW/76th Avenue W	2,720 [2,810]	1,490 [1,035]		over capacity [under capacity]
212th Street SW/76th Avenue W	2,700 [2,200]	1,400 [1,200]		nearing capacity [under capacity]
212th Street SW/SR 99	4,800 [3,830]	1,515 [1,510]		over capacity [over capacity]
220th Street SW/76th Avenue W	2,280 [1,920]	1,510 [1,090]		over capacity [under capacity]
220th Street SW/SR 99	5,580 [4,580]	1,795 [1,420]		over capacity [over capacity]
N 205th Street/SR 99	5,550 [4,480]	1,920 [1,630]		over capacity [over capacity]
N 205th Street/SR 104	4,000 [3,650]	930 [820]		under capacity [under capacity]
Main Street/3rd Avenue	1,255 [920]	835 [510]		under capacity [under capacity]
Main Street/5th Avenue	530 [840]		1,600 [1,700]	under capacity [under capacity]
Main Street/9th Avenue	1,320 [1,280]	835	[1,800]	under capacity [under capacity]
Dayton Street/SR 104	1,270 [1,465]	610 [745]		under capacity [under capacity]
Dayton Street/3rd Avenue	900 [910]		1,800 [1,800]	under capacity [under capacity]
Dayton Street/5th Avenue	680 [810]		1,700 [1,700]	under capacity [under capacity]
220th Street SW/9th Avenue	1,350 [1,390]	1,015	[1,400]	under capacity [under capacity]
SR 104/100th Avenue W	3,310 [3,430]	900 [1,055]		under capacity [under capacity]

[a]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[b]000 = 2030 p.m. peak hour; [000] = 2002 p.m. peak hour

TABLE 3-2
Alternative 1 (No Action), Intersection Volume and Capacity during/after Ferry Unloading, 2030 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Affected Intersection	Entering Flow Rate (veh/hr)	Critical Volume[b] (signals)	Service Level
Main Street/3rd Avenue	1,495 [1,255]	995 [835]	under capacity [under capacity]
Main Street/9th Avenue	1,400 [1,320]	915 [835]	under capacity [under capacity]
Dayton Street/SR 104	1,890 [1,270]	920 [610]	under capacity [under capacity]
SR 104/100th Avenue W	3,860 [3,310]	1,075 [900]	under capacity [under capacity]

[a]000 = Ferry platoons present
[000] = full peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

3.1.3 Traffic Safety

Traffic accident potential is directly related to the number of conflicting traffic movements, and can be exacerbated by limited sight distance, poor weather conditions, and delay-related motorist frustration. Without safety improvements, the accident rate[1] will at best remain unchanged, and in the future, the number of traffic accidents on study area streets and highways will increase with increasing traffic volumes and increasing conflicting movements. Increasing delays on sidestreets also will tend to increase the number of accidents. Accident potential can be reduced by safety-conscious design of intersection geometry, channelization, and traffic control.

The Dayton Street/SR 104 intersection is one of Edmonds' high-accident locations, and increased ferry traffic, Port/waterfront traffic, and "transportation center" traffic will be concentrated there, aggravating safety problems. Another high-accident intersection (SR 104/100th Avenue) lies on the terminal's main access route. Comprising 25 percent of the total entering volume, ferry and "transportation center" traffic will not be the main cause of accidents at SR 104/100th Avenue, but terminal access can be affected by accidents there.

The vehicle and pedestrian grade crossing of the BNSF mainline at the ferry dock entrance/exit also is of critical concern.

1 The accident rate is the number of in relation to traffic volume; i.e., accidents per million vehicle-miles traveled on the roadway, or accidents per million entering vehicles at intersections

3.2 Point Edwards Alternative (2030)

3.2.1 Terminal Access and Egress

Ferry Access/Egress

Vehicular access to the ferry comes through the Terminal Access Rd/SR 104/Pine Street intersection, which can be reached via SR 104 from the north (Edmonds Way) or south ("westbound" SR 104). There will be no access via Pine Street. Access to westbound SR 104 is available at points east of 5th Avenue. Ferry traffic arriving from the north and east can either travel south to SR 104 via 9th Avenue or come to eastbound SR 104 (Edmonds Way) through downtown Edmonds via Main Street or Dayton Street. Leaving the ferry, traffic is directed to the right onto eastbound SR 104, but it can also make a signal-controlled left turn onto Edmonds Way (westbound SR 104).

The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are compiled in Figure 3-2a. The traffic forecasts indicate that much of the traffic arriving at the ferry—over 75 percent—will arrive via SR 104. The remaining ferry traffic will enter from southbound Edmonds Way, arriving from east and north of downtown via Main Street and the 3rd Avenue-Puget-196th (SR 524) corridor. Leaving the ferry and the waterfront area, 70 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will travel through downtown via Edmonds Way and Main and Dayton Streets enroute to the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors.

Transportation Center Access/Egress

Transportation center access/egress routes are the same as for the ferry dock. The travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are compiled in Figure 3-2b. The traffic forecasts indicate that much of the traffic arriving at the transportation center—over 60 percent—will arrive via Edmonds Way from downtown Edmonds and the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors. The remaining transportation center traffic (40 percent) will enter from SR 104. Similarly, leaving the transportation center 40 percent of traffic will use SR 104 and 60 percent will travel into downtown via Edmonds Way, Main Street, and Dayton Street, enroute to downtown destinations and the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors.

3.2.2 Traffic Operations Analysis

Results of the p.m. peak hour traffic operations analysis for the Point Edwards Alternative are compiled in Table 3-3. (Conditions at the intersections on the east side of the study area are virtually identical to conditions under the No Action Alternative, so the analysis focused on the 9th Avenue-100th Avenue, downtown, and waterfront intersections.)

TABLE 3-3
Alternative 2 (Point Edwards), Intersection Volume and Capacity, 2030 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[b] (signals)	Capacity (all-way stops)	Service Level
Main Street/3rd Avenue	1,095 [1,255]	720 [835]		under capacity [under capacity]
Main Street/5th Avenue	440 [530]		1,400 [1,600]	under capacity [under capacity]
Main Street/9th Avenue	1,315 [1,320]	820 [835]		under capacity [under capacity]
Dayton Street/SR 104	1,065 [1,270]	395 [610]		under capacity [under capacity]
Dayton Street/3rd Avenue	950 [900]		1,700 [1,800]	under capacity [under capacity]
Dayton Street/5th Avenue	595 [680]		1,900 [1,700]	under capacity [under capacity]
Pine Street/SR 104	1,480c	920 [n/a][d]	[n/a][d]	under capacity [n/a][d]
220th Street SW/9th Avenue	1,340 [1,350]	970 [1,015]		under capacity [under capacity]
SR 104/100th Avenue W	3,395 [3,310]	975 [900]		under capacity [under capacity]

[a]000 = Alternative 2, 2030 p.m. peak hour
[000] = Alternative 1 (No-Build), 2030 p.m. peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[c]Excludes free-flow movement from ferry terminal to eastbound SR 104.

[d]Two-way stop under No-Build Alternative.

As with the No Action Alternative, the forecasts indicate that due to peak spreading and the limited traffic increases generated in the downtown Edmonds area, forecasted p.m. peak hour traffic volumes will not significantly increase. As a result, all intersections have adequate capacity to serve the forecasted volumes.

The impact on intersection operations of the traffic platoons leaving the ferry also were analyzed. Results of this analysis are compiled in Table 3-4. The forecasts indicate that at the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue) —the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

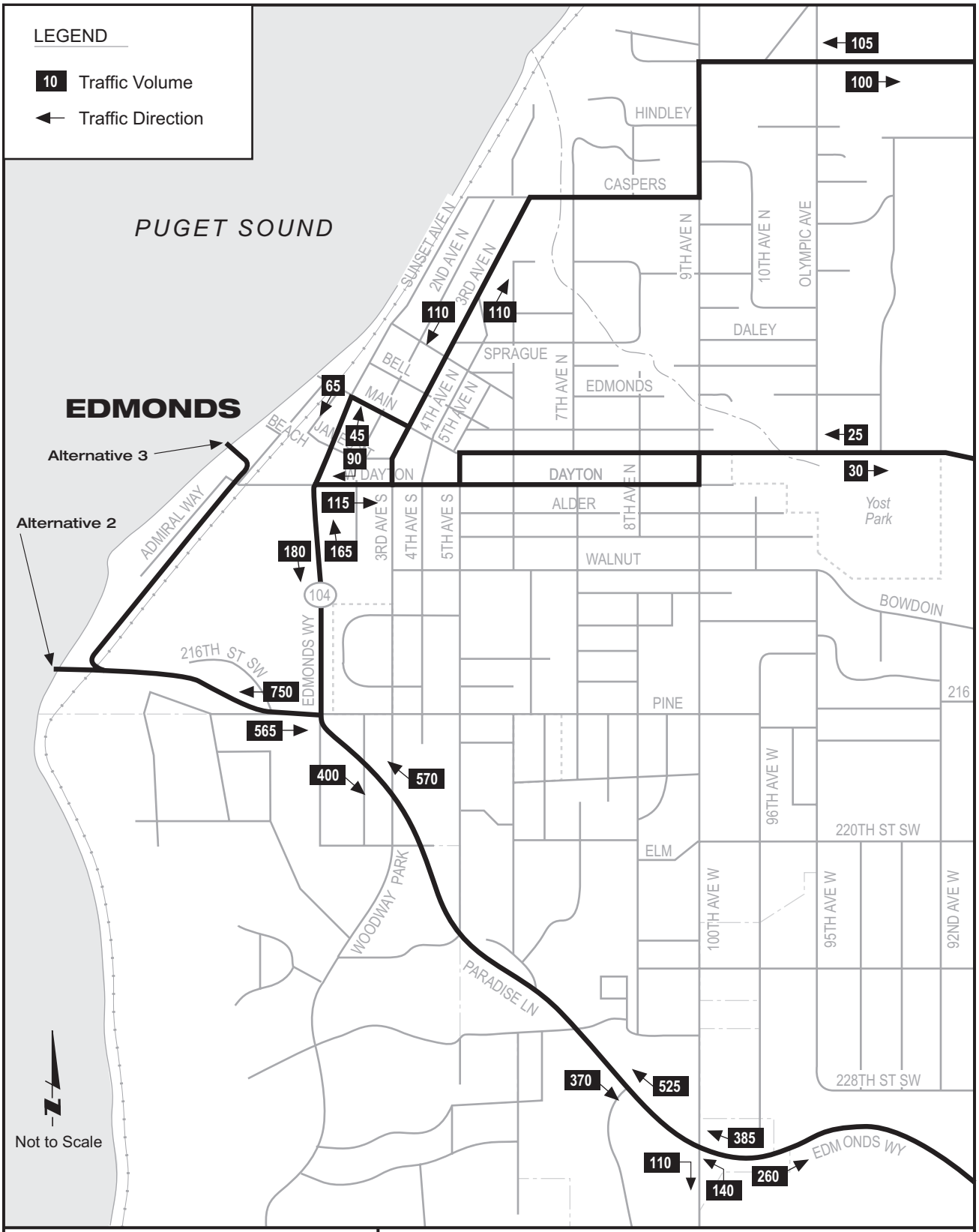

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Figure 3-2a

Ferry Traffic Routes - Alternatives 2 and 3 Design Year (2030)

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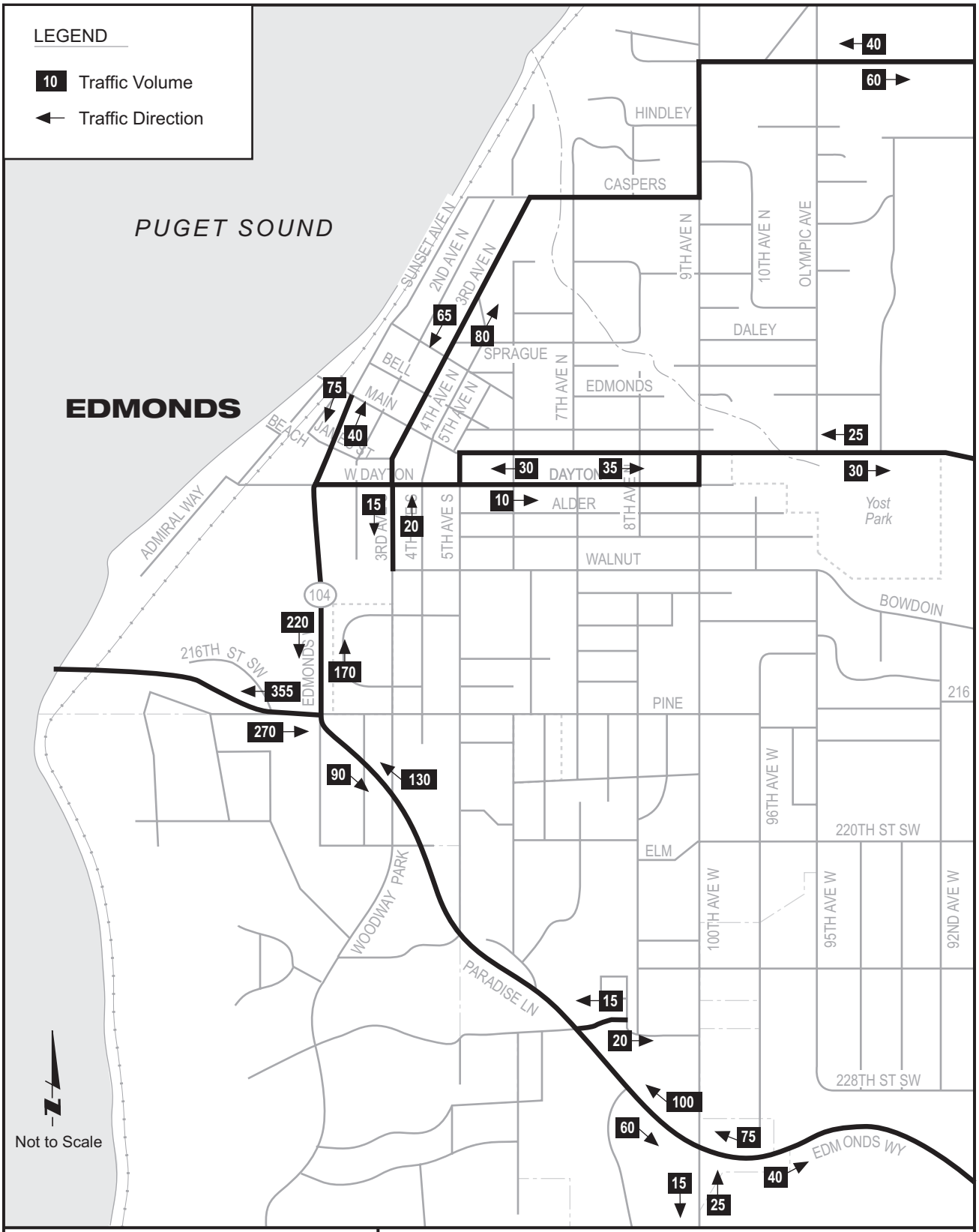

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Figure 3-2b

Multimodal Center Traffic Routes - Alternative 2
Design Year (2030)

T072001006SEA • 154090.G1.01.A2 • 3-2b Multimodal Center Traffic (2030) • DK/MM/gm • 12-1602

TABLE 3-4
Alternative 2 (Point Edwards), Intersection Volume and Capacity during/after Ferry Unloading, 2030 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Affected Intersection	Entering Flow Rate (veh/hr)	Critical Volume[b] (signals)	Service Level
Main Street/3rd Avenue	1,235 [1,095]	840 [720]	under capacity [under capacity]
Main Street/9th Avenue	1,355 [1,315]	855 [820]	under capacity [under capacity]
Dayton Street/SR 104	1,275 [1,065]	665 [395]	under capacity [under capacity]
Pine Street/SR 104	1,690 [1,480]	1,135 [920]	under capacity [under capacity]
SR 104/100th Avenue W	3,560 [3,395]	1,145 [975]	under capacity [under capacity]

[a]000 = Ferry platoons present
[000] = full peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

3.2.3 Traffic Safety

The primary safety improvement provided by the build alternatives (Alternatives 2 and 3) is the elimination of the grade crossing of the BNSF mainline for vehicular traffic and pedestrians enroute to/from the ferry dock.

Dayton Street/SR 104 is one of Edmonds' high-accident intersections, and relocation of the ferry and transportation center access point to Pine Street will reduce traffic volume and conflicts at Dayton/SR 104. Traffic safety will be improved, as compared to the No Action Alternative. Another high-accident intersection—SR 104/100th Avenue—lies on the terminal's main access route. Comprising 30 percent of the total entering volume in the p.m. peak hour, ferry and transportation center traffic will not be the main cause of accidents at SR 104/100th Avenue, but terminal access can be affected by accidents there.

3.3 Mid-Waterfront Alternative (2030)

3.3.1 Terminal Access and Egress

Ferry Access/Egress

Vehicular access to the ferry under the Mid-Waterfront Alternative is the same as for the Point Edwards Alternative, coming through the Terminal Access Rd/SR 104/Pine Street intersection, which can be reached via SR 104 from the north (Edmonds Way) or south ("westbound" SR 104). There will be no access via Pine Street. Access to westbound SR 104 is available at points east of 5th Avenue. Ferry traffic arriving from the north and east can either travel south to SR 104 via 9th Avenue or come to eastbound SR 104 (Edmonds Way) through downtown Edmonds via Main Street or Dayton Street. Leaving the ferry, traffic is directed to the right onto eastbound SR 104, but it can also make a signal-controlled left turn onto Edmonds Way (westbound SR 104).

The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are the same as for the Point Edwards Alternative, and are compiled in Figure 3-2a. The traffic forecasts indicate that much of the traffic arriving at the ferry—over 75 percent—will arrive via SR 104. The remaining ferry traffic will enter from southbound Edmonds Way, arriving from east and north of downtown via Main Street and the 3rd Avenue-Puget-196th (SR 524) corridor. Leaving the ferry and the waterfront area, 70 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will travel through downtown via Edmonds Way and Main and Dayton Streets enroute to the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors.

Transportation Center Access/Egress

Under the Mid-Waterfront Alternative, the transportation center access/egress routes are the same as for the No Action Alternative. Traffic traveling to and from the transportation center will enter and leave via the Dayton Street/SR 104 intersection. Traffic enroute to/from this intersection can arrive/depart via SR 104 or through downtown Edmonds on Dayton Street and Main Street.

The travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are the same as for the No Action Alternative, and are compiled in Figure 3-1b. According to the forecasts, about one-third of the traffic coming to the transportation center will arrive via SR 104 from the east/south. Another one-third will come from the Main-212th and Puget-196th corridors, and the remaining third will come from central/downtown Edmonds; all of this traffic will travel through downtown to the transportation center via Main Street and Edmonds Way or Dayton Street and 3rd Avenue. Leaving the transportation center and waterfront area, 25 percent of the traffic will use SR 104. Another 55 percent of the transportation center traffic depart the waterfront through downtown enroute to the Main-212th and Puget-196th corridors, and the final 20 percent will have a destination in downtown.

Traffic traveling to and from the "transportation center" (i.e., the commuter rail/Amtrak station and the ferry, commuter rail, and Amtrak parking facilities) will enter and leave via the Dayton Street/SR 104 intersection. Traffic enroute to/from this intersection can arrive/depart via SR 104 or through downtown Edmonds on Dayton Street and Main Street.

3.3.2 Traffic Operations Analysis

Results of the p.m. peak hour traffic operations analysis for the Mid-Waterfront Alternative are compiled in Table 3-5. (Conditions at the intersections on the east side of the study area are virtually identical to conditions under the No Action and Point Edwards Alternatives, so the analysis focused on the 9th Avenue-100th Avenue, downtown, and waterfront intersections.) As with the No Action and Point Edwards Alternatives, the forecasts indicate that due to peak spreading and the limited traffic increases generated in the downtown Edmonds area, forecasted p.m. peak hour traffic volumes will not significantly increase. As a result, all intersections have adequate capacity to serve the forecasted volumes.

TABLE 3-5
Alternative 3 (Mid-Waterfront), Intersection Volume and Capacity, 2030 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[b] (signals)	Capacity (all-way stops)	Service Level
Main Street/3rd Avenue	1,080 [1,255]	700 [835]		under capacity [under capacity]
Main Street/5th Avenue	470 [530]		1,400 [1,600]	under capacity [under capacity]
Main Street/9th Avenue	1,315 [1,320]	820 [835]		under capacity [under capacity]
Dayton Street/SR 104	1,280 [1,270]	545 [610]		under capacity [under capacity]
Dayton Street/3rd Avenue	1,000 [900]		1,600 [1,800]	under capacity [under capacity]
Dayton Street/5th Avenue	650 [680]		1,800 [1,700]	under capacity [under capacity]
Pine Street/SR 104	1,325c	715 [n/a][d]	[n/a][d]	under capacity [n/a][d]
220th Street SW/9th Avenue	1,340 [1,350]	985 [1,015]		under capacity [under capacity]
SR 104/100th Avenue W	3,395 [3,310]	975 [900]		under capacity [under capacity]

[a]000 = Alternative 3, 2030 p.m. peak hour
[000] = Alternative 1 (No-Build), 2030 p.m. peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[c]Excludes free-flow movement from ferry terminal to eastbound SR 104.

[d]Two-way stop under No-Build Alternative.

The impact on intersection operations of the traffic platoons leaving the ferry also were analyzed. Results of this analysis are compiled in Table 3-6. The forecasts indicate that at the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

3.3.3 Traffic Safety

The primary safety improvement provided by the build alternatives (Alternatives 2 and 3) is the elimination of the grade crossing of the BNSF mainline for vehicular traffic and pedestrians enroute to/from the ferry dock.

Dayton Street/SR 104 is one of Edmonds' high-accident intersections, and relocation of the ferry access point to Pine Street (and the provision of waterfront access there, as well) will reduce traffic volume and conflicts at Dayton/SR 104. Traffic safety will be improved, as compared to the No Action Alternative. Another high-accident intersection—SR 104/100th

Avenue—lies on the terminal's main access route. Comprising 29 percent of the total entering volume, ferry and transportation center traffic will not be the main cause of accidents at SR 104/100th Avenue, but terminal access can be affected by accidents there.

TABLE 3-6
Alternative 3 (Mid-Waterfront), Intersection Volume and Capacity during/after Ferry Unloading, 2030 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Affected Intersection	Entering Flow Rate (veh/hr)	Critical Volume[b] (signals)	Service Level
Main Street/3rd Avenue	1,220 [1,080]	845 [700]	under capacity [under capacity]
Main Street/9th Avenue	1,355 [1,315]	860 [820]	under capacity [under capacity]
Dayton Street/SR 104	1,495 [1,280]	635 [545]	under capacity [under capacity]
Pine Street/SR 104	1,535 [1,325]	935 [715]	under capacity [under capacity]
SR 104/100th Avenue W	3,560 [3,395]	1,080 [975]	under capacity [under capacity]

[a]000 = Ferry platoons present
[000] = full peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

4.0 Off-Site Traffic Analysis: 2015 Opening Year

The Off-Site Traffic Analysis for the 2015 Opening Year focused on traffic operations at the key intersections on the street/highway network, and the impact of ferry and transportation center traffic on those intersections. In order to analyze these impacts, the volume and travel routes/paths of ferry and transportation center traffic was determined, and intersection capacity and operation were analyzed under traffic loadings for the full p.m. peak hour and for the shorter periods of time when platoons of traffic leaving the ferry are present.

4.1 No Action Alternative (2015)

4.1.1 Terminal Access and Egress

Ferry Access/Egress

The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are compiled in Figure 4-1a. The traffic forecasts indicate that 70 percent of the traffic arriving at the ferry will arrive via SR 104. Most of the remaining ferry traffic will arrive from the east via Main Street and the Puget-196th corridor, and will use 3rd Avenue to get to Pine Street and SR 104. Leaving the ferry and the waterfront area, nearly 70 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will depart the waterfront through downtown, via Main Street and 3rd Avenue, enroute to the Main-212th and Puget-196th corridors.

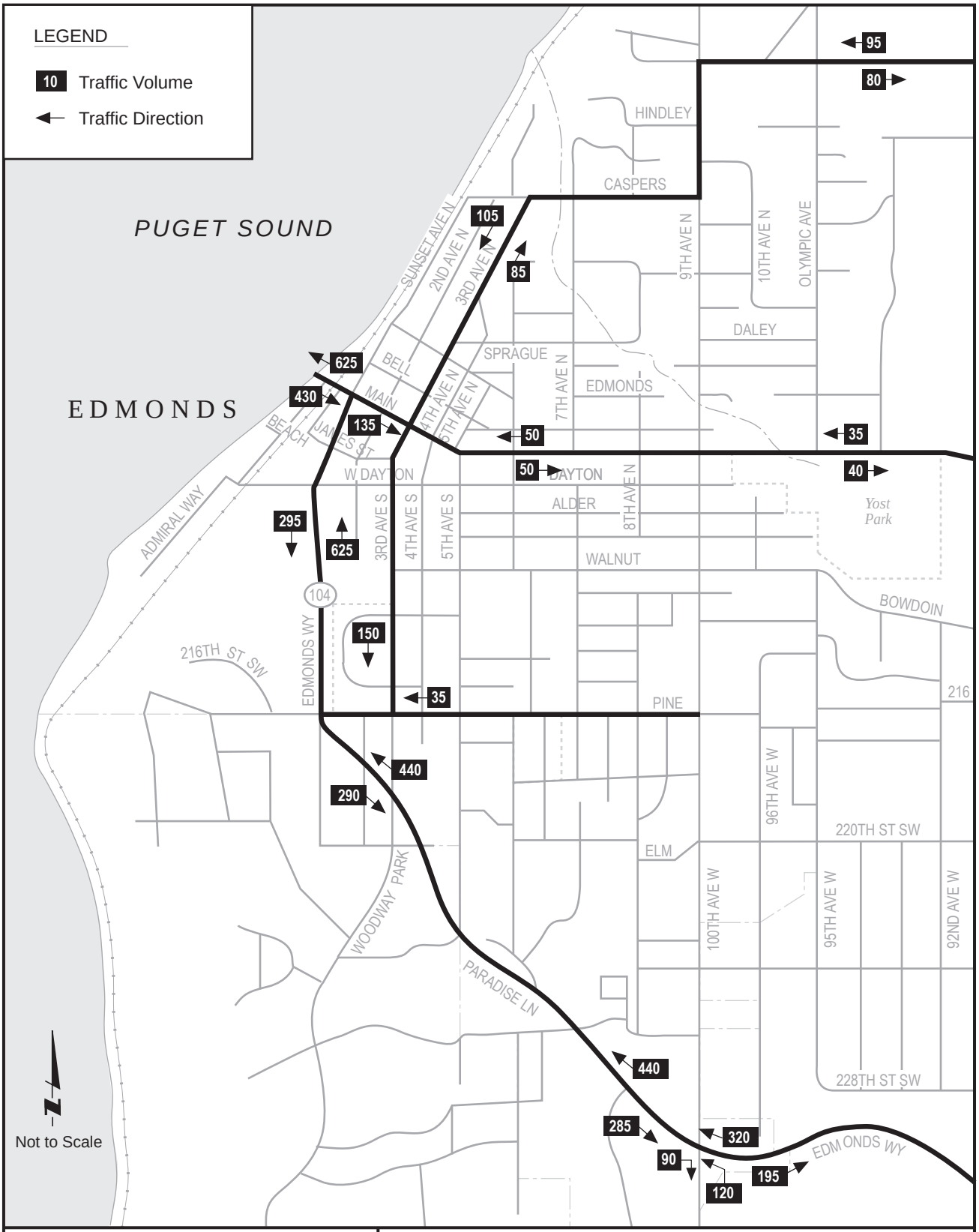

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Figure 4-1a

Ferry Traffic Routes - Alternative 1 (No Action) Opening Year (2015)

T072001006SEA • 154090.G1.01.A2 • 4-1a Ferry Traffic Routes (2015) • DK/MM/gm • 12-16-02

Transportation Center Access/Egress

The travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are compiled in Figure 4-1b. According to the forecasts, about one-third of the traffic coming to the transportation center will arrive via SR 104 from the east/south. Another one-third will come from the Main-212th and Puget-196th corridors, and the remaining third will come from central/downtown Edmonds; all of this traffic will travel through downtown to the transportation center via Main Street and Edmonds Way or Dayton Street and 3rd Avenue. Leaving the transportation center and waterfront area, 20 percent of the traffic will use SR 104. Another 55 percent of the transportation center traffic depart the waterfront through downtown enroute to the Main-212th and Puget-196th corridors, and the final 25 percent will have a destination in downtown.

4.1.2 Traffic Operations Analysis

Results of the p.m. peak hour traffic operations analysis are compiled in Table 4-1. As in 2002, the highest-volume intersections in the study area in 2015 are the intersections on SR 99. The forecasts indicate that p.m. peak hour entering volume at these intersections will increase over the next 13 years. None of these intersections operate at an adequate service level in 2002, but with the planned SR 99 improvements that provide much-needed intersection capacity, all will operate better in 2015 than they do currently. Volumes also will increase and traffic operations will degrade at the 76th Avenue intersections (196th Street, 212th Street, and 220th Street), all of which will be "nearing capacity" in 2015. Other high-volume intersections include the SR 104 intersections at Dayton Street, at 100th Avenue, and at 205th Street. The p.m. peak hour volumes at these intersections are not forecasted to increase significantly, with future traffic growth tending to occur in the hours before and after the peak hour. (This phenomenon is referred to as "peak spreading.") Each of these intersections has adequate capacity to serve the forecasted volumes.

The forecasts indicate that p.m. peak hour traffic volume will increase at the 3rd Avenue/Main Street intersection, but due to the peak spreading described previously, and the limited traffic increases generated in the downtown Edmonds area, forecasted traffic volume increases at other intersections were modest or minimal, and all of these intersections have adequate capacity to serve the forecasted volumes.

The impact on intersection operations of the traffic platoons leaving the ferry also were analyzed. Results of this analysis are compiled in Table 4-2. The forecasts indicate that at the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

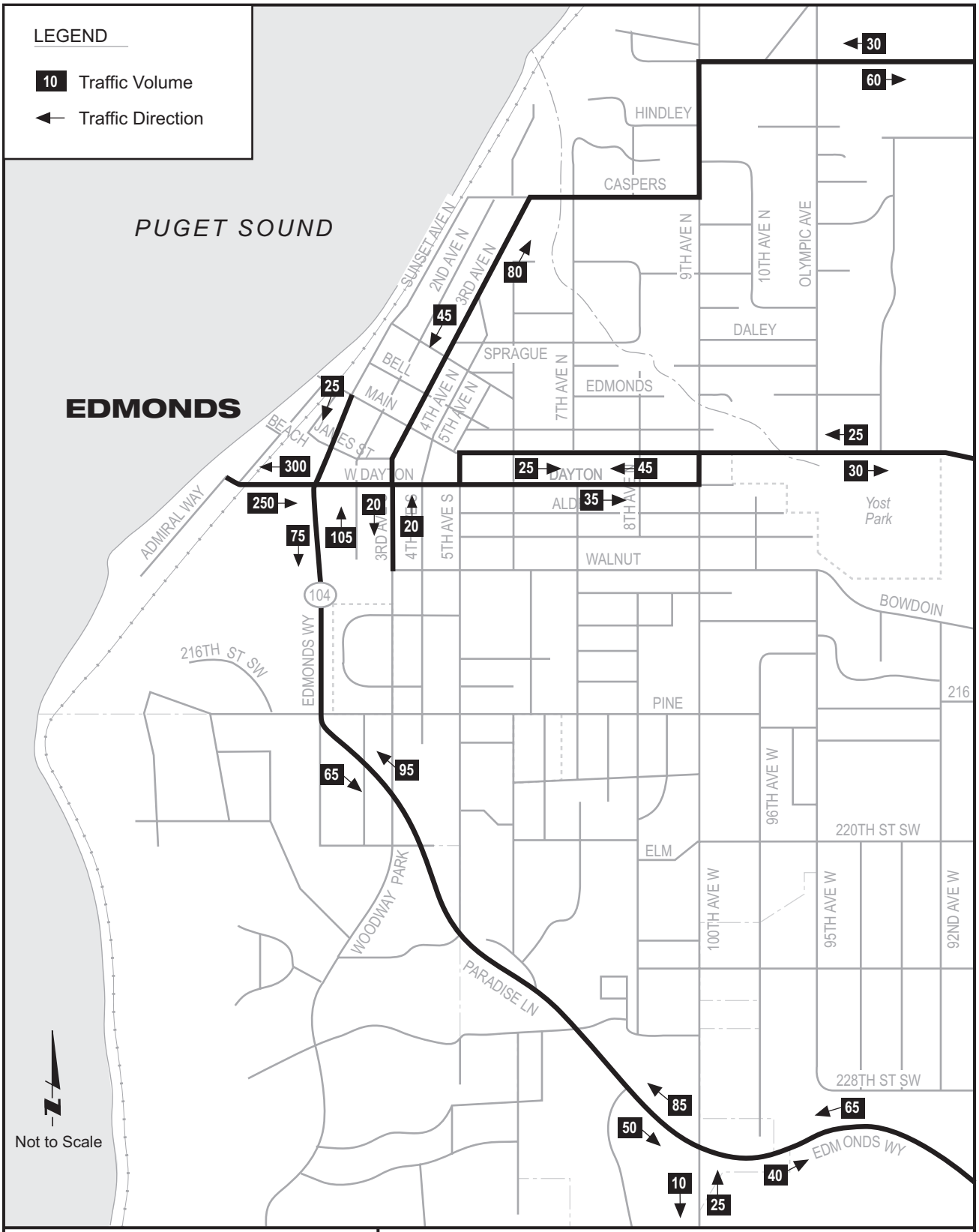

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Figure 4-1b

Multimodal Center Traffic Routes - Alternatives 1 and 3 Opening Year (2015)

T072001006SEA • 154090.G1.01.A2 • 4-1b Multimodal Center Traffic (2015) • DK/MM/gm • 12-16-02

TABLE 4-1
Alternative 1 (No Action), Intersection Volume and Capacity, 2015 P.M. Peak Hour[b]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[a] (signals)	Capacity (all-way stops)	Service Level
196th Street SW/76th Avenue W	3,390 [2,810]	1,330 [1,035]		nearing capacity [under capacity]
212th Street SW/76th Avenue W	2,460 [2,200]	1,260 [1,200]		nearing capacity [under capacity]
212th Street SW/SR 99	4,180 [3,830]	1,325 [1,510]		nearing capacity [over capacity]
220th Street SW/76th Avenue W	2,100 [1,920]	1,365 [1,090]		nearing capacity [under capacity]
220th Street SW/SR 99	4,925 [4,580]	1,535 [1,420]		over capacity [over capacity]
N 205th Street/SR 99	5,065 [4,480]	1,700 [1,630]		over capacity [over capacity]
N 205th Street/SR 104	3,590 [3,650]	865 [820]		under capacity [under capacity]
Main Street/3rd Avenue	1,165 [920]	790 [510]		under capacity [under capacity]
Main Street/5th Avenue	500 [840]		1,700 [1,700]	under capacity [under capacity]
Main Street/9th Avenue	1,205 [1,280]	750	[1,800]	under capacity [under capacity]
Dayton Street/SR 104	1,180 [1,465]	570 [745]		under capacity [under capacity]
Dayton Street/3rd Avenue	1,210 [910]		1,600 [1,800]	under capacity [under capacity]
Dayton Street/5th Avenue	610 [810]		1,700 [1,700]	under capacity [under capacity]
220th Street SW/9th Avenue	1,150 [1,390]	885	[1,400]	under capacity [under capacity]
SR 104/100th Avenue W	2,990 [3,430]	815 [1,055]		under capacity [under capacity]

[c]ritical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[b]000 = 2015 p.m. peak hour; [000] = 2002 p.m. peak hour

TABLE 4-2
Alternative 1 (No Action), Intersection Volume and Capacity during/after Ferry Unloading, 2015 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Affected Intersection	Entering Flow Rate (veh/hr)	Critical Volume[b] (signals)	Service Level
Main Street/3rd Avenue	1,435 [1,165]	960 [790]	under capacity [under capacity]
Main Street/9th Avenue	1,305 [1,205]	850 [750]	under capacity [under capacity]
Dayton Street/SR 104	1,770 [1,180]	855 [570]	under capacity [under capacity]
SR 104/100th Avenue W	3,560 [2,990]	1,050 [815]	under capacity [under capacity]

[a]000 = Ferry platoons present
[000] = full peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

4.2 Point Edwards Alternative (2015)

4.2.1 Terminal Access and Egress

Ferry Access/Egress

The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are compiled in Figure 4-2a. The traffic forecasts indicate that much of the traffic arriving at the ferry—over 75 percent—will arrive via SR 104. The remaining ferry traffic will enter from southbound Edmonds Way, arriving from east and north of downtown via Main St and the 3rd Avenue-Puget-196th (SR 524) corridor. Leaving the ferry and the waterfront area, over 80 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will travel through downtown via Edmonds Way and Main and Dayton Streets enroute to the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors.

Transportation Center Access/Egress

Transportation center access/egress routes are the same as for the ferry dock. The travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are compiled in Figure 4-2b. The traffic forecasts indicate that 60 percent of the traffic arriving at the transportation center will arrive via Edmonds Way from downtown Edmonds and the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors. The remaining transportation center traffic (40 percent) will enter from SR 104. Leaving the transportation center 32 percent of traffic will use SR 104 and 68 percent will travel into downtown via Edmonds Way, Main Street, and Dayton Street, enroute to downtown destinations and the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors.

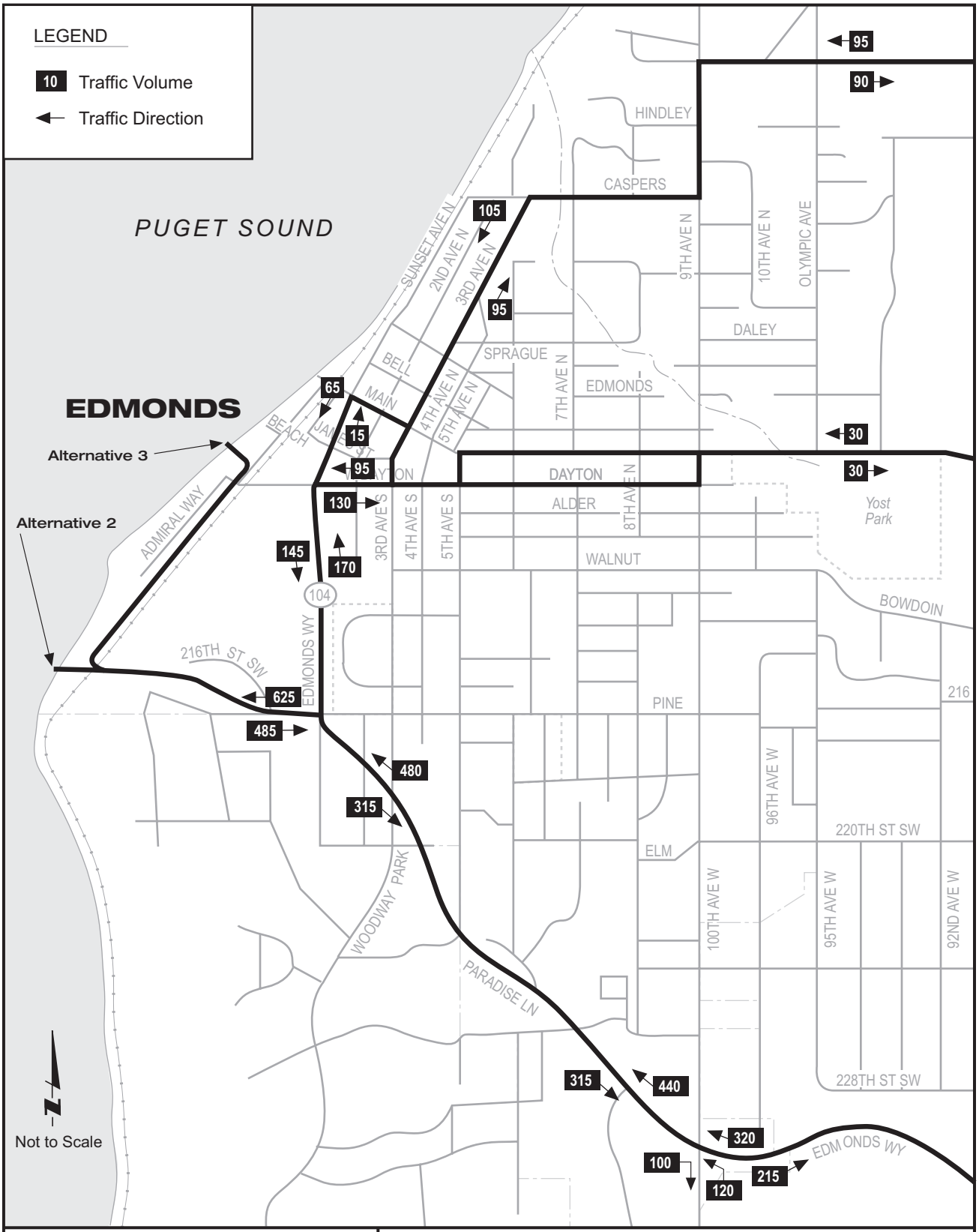

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Figure 4-2a

Ferry Traffic Routes - Alternatives 2 and 3 Opening Year (2015)

T072001006SEA • 154090.G1.01.A2 • 4-2a Ferry Traffic Routes (2015) • DK/MM/gm • 12-16-02

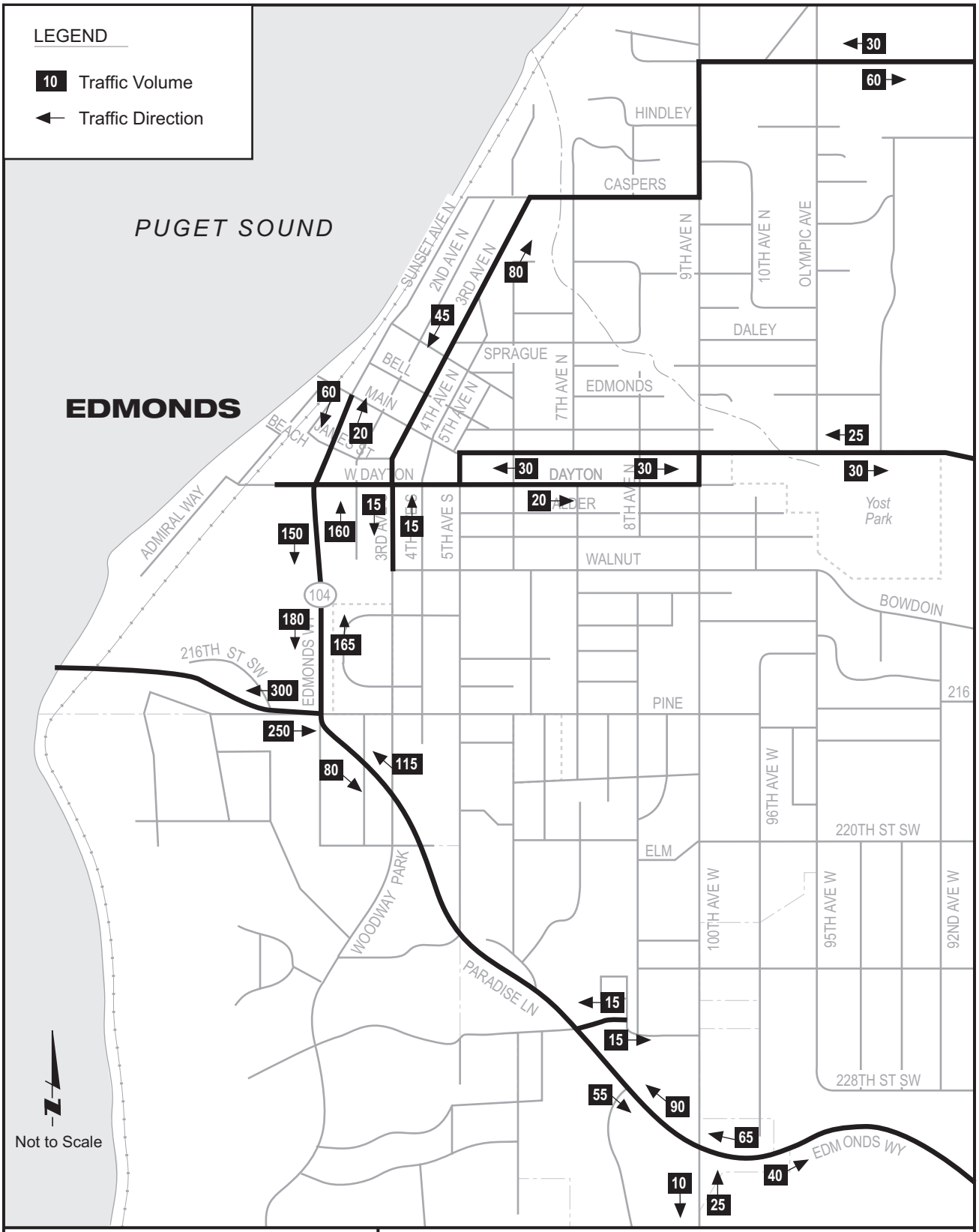

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Figure 4-2b
Multimodal Center Traffic Routes - Alternative 2 Opening Year (2015)

T072001006SEA • 154090.G1.01.A2 • 4-2b Multimodal Center Traffic Alt. 2 (2015) • DK/MM/gm • 12-1602

4.2.2 Traffic Operations Analysis

Results of the p.m. peak hour traffic operations analysis for the Point Edwards Alternative are compiled in Table 4-3. (Conditions at the intersections on the east side of the study area are virtually identical to conditions under the No Action Alternative, so the analysis focused on the 9th Avenue-100th Avenue, downtown, and waterfront intersections.)

TABLE 4-3
Alternative 2 (Point Edwards), Intersection Volume and Capacity, 2015 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[b] (signals)	Capacity (all-way stops)	Service Level
Main Street/3rd Avenue	960 [1,165]	610 [790]		under capacity [under capacity]
Main Street/5th Avenue	400 [500]		1,400 [1,700]	under capacity [under capacity]
Main Street/9th Avenue	1,185 [1,205]	735 [750]		under capacity [under capacity]
Dayton Street/SR 104	970 [1,180]	360 [570]		under capacity [under capacity]
Dayton Street/3rd Avenue	915 [1,210]		1,600 [1,600]	under capacity [under capacity]
Dayton Street/5th Avenue	560 [610]		1,900 [1,700]	under capacity [under capacity]
Pine Street/SR 104	1,990[c]	815 [n/a][d]	[n/a][d]	under capacity [n/a][d]
220th Street SW/9th Avenue	1,150 [1,150]	860 [885]		under capacity [under capacity]
SR 104/100th Avenue W	2,990 [2,990]	815 [815]		under capacity [under capacity]

[a]000 = Alternative 2, 2015 p.m. peak hour
[000] = Alternative 1 (No-Build), 2015 p.m. peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[c]Excludes free-flow movement from ferry terminal to eastbound SR 104.

[d]Two-way stop under No-Build Alternative.

As with the No Action Alternative, the forecasts indicate that due to peak spreading and the limited traffic increases generated in the downtown Edmonds area, forecasted p.m. peak hour traffic volumes will not significantly increase. As a result, all intersections have adequate capacity to serve the forecasted volumes.

The impact on intersection operations of the traffic platoons leaving the ferry also were analyzed. Results of this analysis are compiled in Table 4-4. The forecasts indicate that at the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th Avenue) —the platoons of traffic leaving a ferry will create a surge of traffic that will

increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

TABLE 4-4
Alternative 2 (Point Edwards), Intersection Volume and Capacity during/after Ferry Unloading, 2015 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Affected Intersection	Entering Flow Rate (veh/hr)	Critical Volume[b] (signals)	Service Level
Main Street/3rd Avenue	1,120 [960]	770 [610]	under capacity [under capacity]
Main Street/9th Avenue	1,235 [1,185]	785 [735]	under capacity [under capacity]
Dayton Street/SR 104	1,255 [970]	640 [360]	under capacity [under capacity]
Pine Street/SR 104	2,270 [1,990]	1,095 [815]	under capacity [under capacity]
SR 104/100th Avenue W	3,515 [2,990]	1,025 [815]	under capacity [under capacity]

[a]000 = Ferry platoons present
[000] = full peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

4.3 Mid-Waterfront Alternative (2015)

4.3.1 Terminal Access and Egress

Ferry Access/Egress

The travel routes and p.m. peak hour traffic volumes enroute to and from the ferry dock are the same as for the Point Edwards Alternative, and are compiled in Figure 4-2a. The traffic forecasts indicate that much of the traffic arriving at the ferry—over 75 percent—will arrive via SR 104. The remaining ferry traffic will enter from southbound Edmonds Way, arriving from east and north of downtown via Main Street and the 3rd Avenue-Puget-196th (SR 524) corridor. Leaving the ferry and the waterfront area, over 80 percent of the ferry traffic will use SR 104. The remaining ferry egress traffic will travel through downtown via Edmonds Way and Main and Dayton Streets enroute to the Main-212th and 3rd Avenue-Puget-196th (SR 524) corridors.

Transportation Center Access/Egress

The travel routes and p.m. peak hour traffic volumes enroute to and from the transportation center are the same as for the No Action Alternative, and are compiled in Figure 4-1b. According to the forecasts, about one-third of the traffic coming to the transportation center will arrive via SR 104 from the east/south. Another one-third will come from the Main-212th and Puget-196th corridors, and the remaining third will come from central/downtown Edmonds; all of this traffic will travel through downtown to the transportation center via Main Street and Edmonds Way or Dayton Street and 3rd Avenue. Leaving the transportation center and waterfront area, 20 percent of the traffic will use SR 104. Another 55 percent of the transportation center traffic depart the waterfront through

downtown enroute to the Main-212th and Puget-196th corridors, and the final 25 percent will have a destination in downtown.

4.3.2 Traffic Operations Analysis

Results of the p.m. peak hour traffic operations analysis for the Mid-Waterfront Alternative are compiled in Table 4-5. (Conditions at the intersections on the east side of the study area are virtually identical to conditions under the No Action and Point Edwards Alternatives, so the analysis focused on the 9th Avenue-100th Avenue, downtown, and waterfront intersections.) As with the No Action and Point Edwards Alternatives, the forecasts indicate that due to peak spreading and the limited traffic increases generated in the downtown Edmonds area, forecasted p.m. peak hour traffic volumes will not significantly increase. As a result, all intersections have adequate capacity to serve the forecasted volumes.

TABLE 4-5
Alternative 3 (Mid-Waterfront), Intersection Volume and Capacity, 2015 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[b] (signals)	Capacity (all-way stops)	Service Level
Main Street/3rd Avenue	960 [1,165]	610 [790]		under capacity [under capacity]
Main Street/5th Avenue	400 [500]		1,400 [1,700]	under capacity [under capacity]
Main Street/9th Avenue	1,185 [1,205]	735 [750]		under capacity [under capacity]
Dayton Street/SR 104	1,165 [1,180]	530 [570]		under capacity [under capacity]
Dayton Street/3rd Avenue	915 [1,210]		1,600 [1,600]	under capacity [under capacity]
Dayton Street/5th Avenue	560 [610]		1,900 [1,700]	under capacity [under capacity]
Pine Street/SR 104	1,990c	815 [n/a][d]	[n/a][d]	under capacity [n/a][d]
220th Street SW/9th Avenue	1,150 [1,150]	875 [885]		under capacity [under capacity]
SR 104/100th Avenue W	2,990 [2,990]	815 [815]		under capacity [under capacity]

[a]000 = Alternative 3, 2015 p.m. peak hour
[000] = Alternative 1 (No-Build), 2015 p.m. peak hour

[b]Critical volume: more than 1,400 = "over capacity";
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[c]Excludes free-flow movement from ferry terminal to eastbound SR 104.

[d]Two-way stop under No-Build Alternative.

The impact on intersection operations of the traffic platoons leaving the ferry also were analyzed. Results of this analysis are compiled in Table 4-6. The forecasts indicate that at the key intersections along the primary ferry egress routes—Dayton Street/SR 104 (Edmonds Way), Main Street/3rd Avenue, Main Street/9th Avenue, and SR 104/100th Avenue (9th

Avenue)—the platoons of traffic leaving a ferry will create a surge of traffic that will increase delay and inconvenience, but the intersections have adequate capacity to handle the platoons.

TABLE 4-6
Alternative 3 (Mid-Waterfront), Intersection Volume and Capacity during/after Ferry Unloading, 2015 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Affected Intersection	Entering Flow Rate (veh/hr)	Critical Volume[b] (signals)	Service Level
Main Street/3rd Avenue	1,120 [960]	770 [610]	under capacity [under capacity]
Main Street/9th Avenue	1,240 [1,185]	735 [785]	under capacity [under capacity]
Dayton Street/SR 104	1,450 [1,165]	710 [530]	under capacity [under capacity]
Pine Street/SR 104	2,270 [1,990]	900 [815]	under capacity [under capacity]
SR 104/100th Avenue W	3,515 [2,990]	1,025 [815]	under capacity [under capacity]

[a]000 = Ferry platoons present
[000] = full peak hour

[b]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

5.0 Off-Site Traffic Analysis: 2008 Phase 1 Opening

The Off-Site Traffic Analysis focused on traffic operations at the key intersections on the street/highway network, and the impact of ferry and transportation center traffic on those intersections. In order to analyze these impacts, the volume and travel routes/paths of ferry and transportation center traffic was determined, and intersection capacity and operation were analyzed under traffic loadings for the full p.m. peak hour.

5.1 Point Edwards Alternative (2008): Traffic Operations Analysis

Results of the 2008 p.m. peak hour traffic operations analysis for Phase 1 of the Point Edwards Alternative are compiled in Table 5-1. As shown in the table, all intersections have adequate capacity to serve the forecasted volumes.

5.2 Mid-Waterfront Alternative (2008): Traffic Operations Analysis

Results of the 2008 p.m. peak hour traffic operations analysis for Phase 1 of the Mid-Waterfront Alternative are compiled in Table 5-2. As shown in the table, all intersections have adequate capacity to serve the forecasted volumes.

TABLE 5-1
Alternative 2 (Point Edwards), Intersection Volume and Capacity, 2008 P.M. Peak Hour
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[a] (signals)	Capacity (all-way stops)	Service Level
Main Street/3rd Avenue	850	500		under capacity
Main Street/5th Avenue	355		1,400	under capacity
Main Street/9th Avenue	1,080	660		under capacity
Dayton Street/SR 104	930	365		under capacity
Dayton Street/3rd Avenue	865		1,600	under capacity
Dayton Street/5th Avenue	515		1,900	under capacity
Pine Street/SR 104	1,510b	580		under capacity
220th Street SW/9th Avenue	1,050	790		under capacity
SR 104/100th Avenue W	2,735	725		under capacity

[a]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[b]Excludes free-flow movement from ferry terminal to eastbound SR 104.

TABLE 5-2
Alternative 3 (Mid-Waterfront), Intersection Volume and Capacity, 2008 P.M. Peak Hour[a]
Edmonds Crossing Multimodal Transportation Center Study, Transportation Discipline Report, Off-Site Traffic Analysis

Intersection	Total Entering Volume	Critical Volume[b] (signals)	Capacity (all-way stops)	Service Level
Main Street/3rd Avenue	870	530		under capacity
Main Street/5th Avenue	370		1,500	under capacity
Main Street/9th Avenue	1,080	660		under capacity
Dayton Street/SR 104	1,125	500		under capacity
Dayton Street/3rd Avenue	895		1,600	under capacity
Dayton Street/5th Avenue	520		1,900	under capacity
Pine Street/SR 104	1,510b	580		under capacity
220th Street SW/9th Avenue	1,055	805		under capacity
SR 104/100th Avenue W	2,735	725		Under capacity

[a]Critical volume: more than 1,400 = "over capacity"
1,200 to 1,400 = "nearing capacity"
fewer than 1,200 = "under capacity"

[b]Excludes free-flow movement from ferry terminal to eastbound SR 104.

6.0 Off-Site Pedestrian and Bicycle Access

The City of Edmonds Walkway Plan is shown in Figure 6-1a, and the City of Edmonds Bikeway Plan is shown in Figure 6-1b. Walkways and Bikeways providing access to downtown Edmonds and the waterfront area from surrounding neighborhoods and beyond generally avoid the main vehicular traffic routes. A major exception is SR 104 which is

designated as a walkway and bikeway from 5th Avenue east. In addition, Caspers Street-9th Avenue (SR 524) from 7th Avenue to Puget Drive, and 3rd Avenue between Dayton Street and Pine Street, are designated as walkways/bikeways. From downtown Edmonds, Pine Street and Dayton Street are the designated bicycle and pedestrian connections to the ferry terminal, transportation center, and waterfront.

6.1 No Action Alternative

Dayton Street would provide the primary access to the ferry terminal and "transportation center." At the Dayton Street/SR 104 intersection, heavy traffic volumes, a high proportion of turning movements, and wide intersection legs make pedestrian and bicycle access to the terminal difficult and inconvenient. Alternative or supplementary access via Main Street may be more convenient.

6.2 Point Edwards Alternative

Pine Street would provide the primary access to the ferry terminal and transportation center. At the Terminal Access Drive/SR 104/Pine Street intersection, heavy traffic volumes, a high proportion of turning movements, and wide intersection legs make pedestrian and bicycle access to the terminal difficult and inconvenient. Pedestrian access between the terminal and downtown is more difficult than under other alternatives due to the distance separating the two areas.

6.3 Mid-Waterfront Alternative

Dayton Street would provide the primary access to the ferry terminal and "transportation center." At the Dayton Street/SR 104 intersection, heavy traffic volumes (though less than under the No Action Alternative), a high proportion of turning movements, and wide intersection legs make pedestrian and bicycle access to the terminal difficult and inconvenient. Alternative or supplementary access via Main Street may be more convenient.

7.0 Mitigation

The Off-Site Traffic Analysis has shown that in 2030 there will be severe congestion on some parts of the street and highway system serving the Edmonds Crossing Multimodal Transportation Center. The congested intersections, however, are on the opposite (east) side of the study area, and are too far away to significantly affect or be affected by ferry and transportation center traffic. Intersections in downtown and central Edmonds and in the immediate vicinity of Edmonds Crossing have adequate capacity to serve forecasted traffic volumes. In addition, the Off-Site Traffic Analysis has shown that traffic conditions under the No Action Alternative and under the build alternatives differ little. This is because future traffic increases and congestion problems are not caused by the Edmonds Crossing project: future congestion is caused by the increased traffic volumes generated by growth and development in Edmonds and southwest Snohomish County, and to a lesser extent by increased ferry and transportation center traffic. (The Edmonds Crossing build alternatives will not generate the increased ferry and transportation center traffic; rather, the project alternatives are intended to better serve the increased traffic.)

Reconfiguring and reconstructing the SR 104/Pine Street intersection is included as an integral element of the two build alternatives (Alternatives 2 and 3); this improvement could be considered a "mitigation measure." Other than the direct impacts on the SR 104/Pine Street intersection, the Edmonds Crossing project does not create significant off-site impacts, and therefore no other off-site mitigation measures are required.

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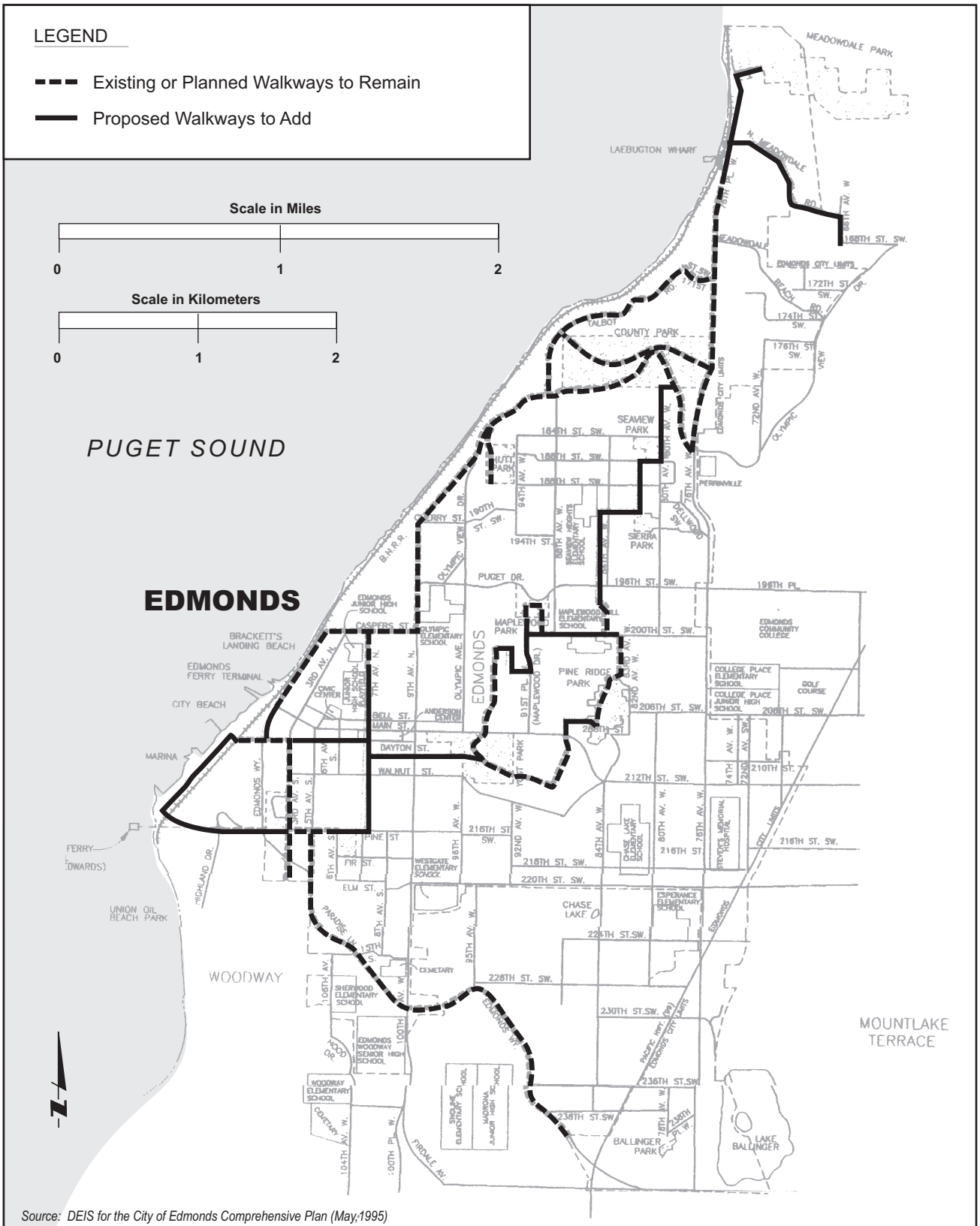

Source: DEIS for the City of Edmonds Comprehensive Plan (May,1995)

EDMONDS CROSSING

Connecting ferries, bus & rail

Figure 6-1a

City of Edmonds Walkway Plan

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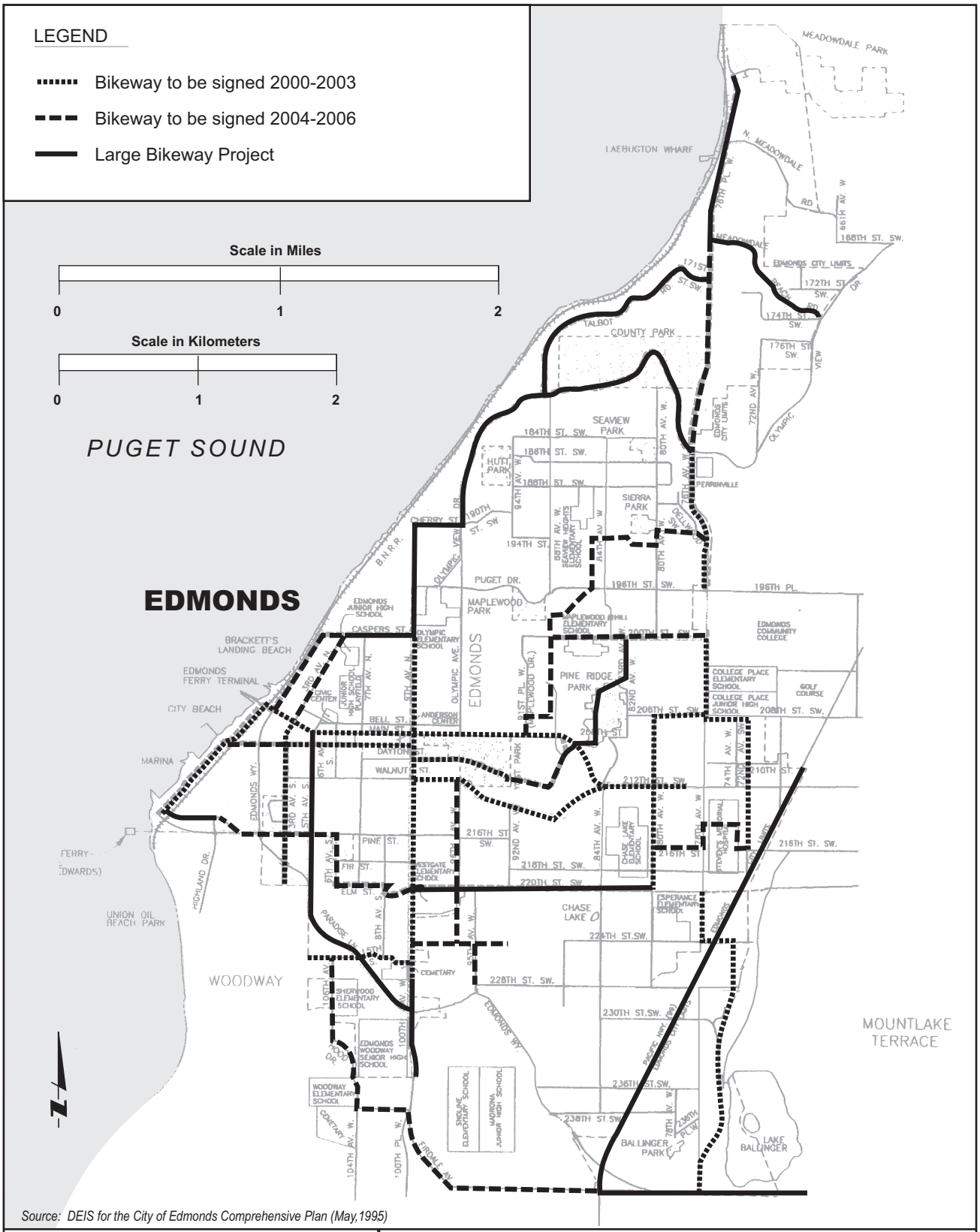

Source: DEIS for the City of Edmonds Comprehensive Plan (May,1995)

EDMONDS CROSSING

Connecting ferries, bus & rail

Figure 6-1b

City of Edmonds 2000 Bikeway Comprehensive Plan

154090.G1.02.A1_T072001006SEA • 6-1b Bikeway Plan • 3/3/03 • dk