

# Chapter 2. Inventory of the Existing Transportation System

## Roadway Network

Shoreline is greatly impacted by state highways. SR 99 and I-5, both of which are designated as “highways of statewide significance,” run the entire length of Shoreline and carry well over 200,000 vehicles per day.

Shoreline is also bordered by three state highways; SR 104 (NE 205<sup>th</sup> Street), SR 523 (NE 145<sup>th</sup> Street), and SR 522 (Bothell Way NE). Even though these three corridors are not currently inside the corporate limits of the City, Shoreline citizens and businesses rely on them for a majority of their travels. Generally, the sidewalk systems along these streets are in disrepair, illumination is lacking, and the lanes are narrow and do not include provisions to improve transit operations.

I-5 has three full interchanges with direct impact on Shoreline: NE 145<sup>th</sup> Street, NE 175<sup>th</sup> Street, and NE 205<sup>th</sup> Street. The location of each of these interchanges has direct and significant impact on these streets, essentially making them Shoreline’s most heavily traveled east-west corridors. When I-5 is congested, parallel arterials in Shoreline often receive spillover through traffic: 15<sup>th</sup> Avenue NE, 5<sup>th</sup> Avenue NE, 1<sup>st</sup> Avenue NE, and Meridian Avenue N are the streets that tend to pick up the overflow traffic.

### ***Aurora Corridor Project***

The Aurora Corridor Project is to support the City of Shoreline’s transportation policies in the adopted Comprehensive Plan. This project will redevelop the three miles of Aurora Avenue N (SR 99) that run through Shoreline. The goal of the plan is to improve pedestrian and vehicle safety, pedestrian and disabled access, vehicular capacity, traffic flow, transit speed and reliability, nighttime visibility and safety, storm water quality, economic investment potential and streetscape amenities, and satisfy access management RCW (Revised Code of Washington).

For funding and design purposes, the plan is divided into two sections: N 145<sup>th</sup> to 165<sup>th</sup> Streets and N 165<sup>th</sup> to 205<sup>th</sup> Streets. The City has completed both a State Environmental Policy Act (SEPA) EIS and a National Environmental Policy Act (NEPA) environmental assessment review for Aurora N 145<sup>th</sup> to 165<sup>th</sup> Streets. The current funded project is N 145<sup>th</sup> to 165<sup>th</sup> Streets and construction is scheduled to begin in 2005. The cost estimate for preliminary engineering, right-of-way and construction for the first mile (N 145<sup>th</sup> to 165<sup>th</sup>) is \$25 Million, with 87% of the funding coming from federal, state and county grants and 13% from money set aside by the City for the project.

The original design concept was developed during the Aurora Corridor Multi-Modal Pre-Design Study, a public process involving over 60 public meetings, open houses and

briefings at City Council meetings. Based on the analysis in the final EIS, the City Council approved Alternative A – Modified on December 9, 2002 that includes the following features:

- 7-foot sidewalks
- 4-foot amenity zone for bus shelters, street and pedestrian lights, landscaping and pedestrian amenities such as benches and trash cans
- Two through lanes and a Business Access/Transit (BAT) lane in each direction next to the curb
- Continuous street lighting and pedestrian-level lighting at intersections
- Underground utilities
- Narrower sidewalks at three locations to avoid impacts to buildings (will be widened with redevelopment of parcels)
- Landscaping
- Stormwater facilities and water quality treatment that meets or exceeds city, county and state requirements
- Raised medians with left/U-turns at intersections (breaks for pedestrian crossings)
- New traffic signals/pedestrian crossings at 152nd and 165th
- Bus zone enhancements

### ***Street Classifications***

Federal and State guidelines require that streets be classified based on function. Generally, streets are classified as either arterials or local streets. Local jurisdictions can also use the designations to guide the nature of improvements allowed and/or desired on certain roadways, such as sidewalks or street calming devices. The City of Shoreline's 1998 Comprehensive Plan used the following designations, which are illustrated in **Figure 2 1**. (Note: the TMP recommends modification to these designations as shown in Chapter 6.)

**Arterials** – The primary function of arterials is to provide a high degree of vehicular mobility by limiting property access. The vehicles on arterials are predominantly for through traffic. Arterials are generally connected with interstate freeways or limited access expressways. Sidewalks are required by the City's development code. Arterials are further classified into three classes: Principal Arterials, Minor Arterials and Collector Arterials.

Principal Arterials have higher levels of local land access controls and regional significance as major vehicular travel routes that connect between cities within a metropolitan area.

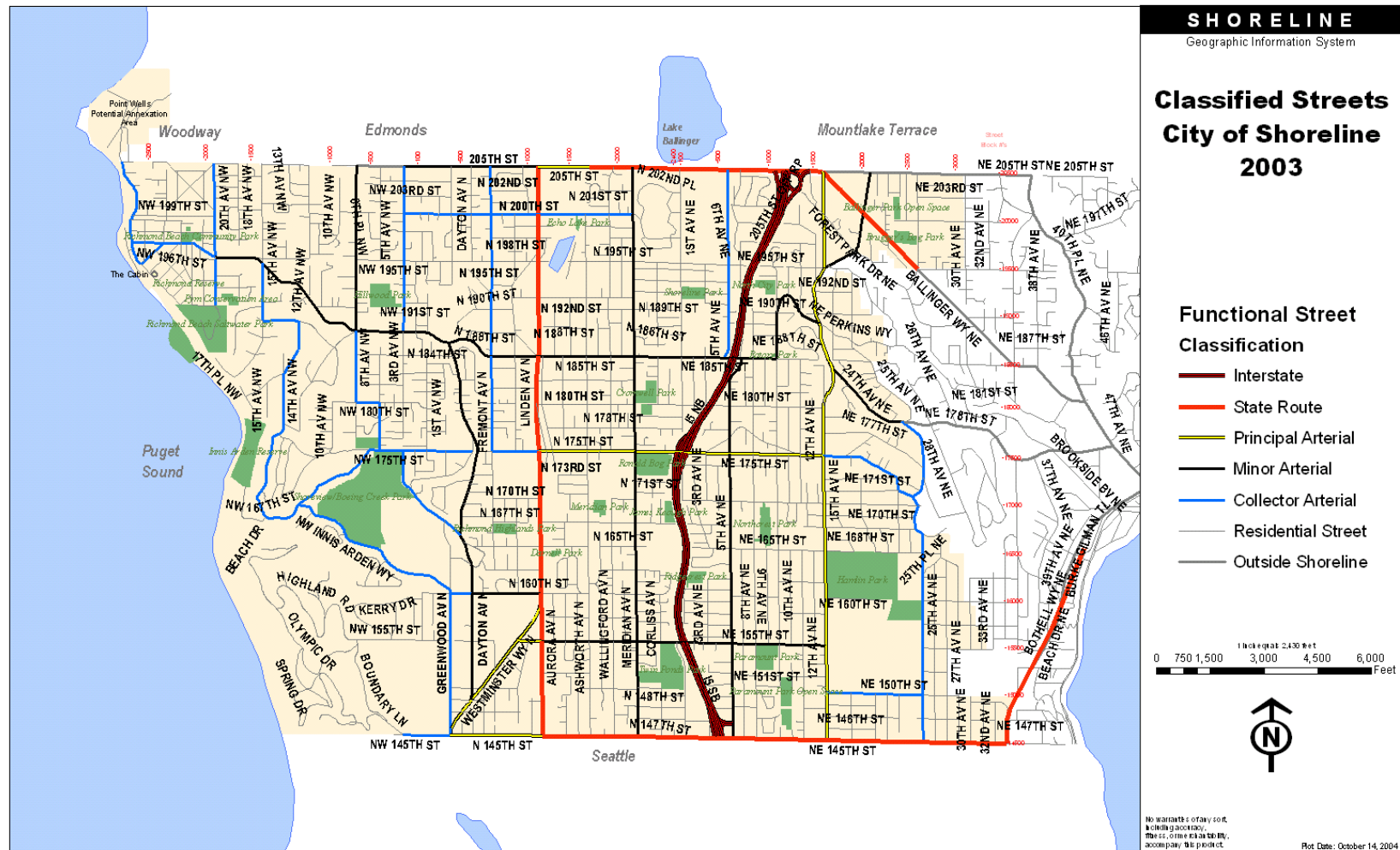
Minor Arterials are generally designed to provide a high degree of intra-community connections and are less significant from a perspective of a regional mobility.

Collector Arterials assemble traffic from the interior of an area/community and deliver it to the closest Minor or Principal Arterials. Collector Arterials provide for both mobility and access to property are designed to fulfill both functions.

**Local Streets** – All other streets are generally designated as local streets.

Local Streets provide local access to residential areas. Buses are not allowed except for short distances, and with new development or redevelopment sidewalks are typically required by the City's development code, although with some design flexibility.

Figure 2-1 Existing Street Classification



Source: Shoreline Comprehensive Plan, adopted on November 23, 1998.

(available in 11 x 17 format)

### ***Existing Traffic***

The pattern of daily traffic volumes reflects the street classifications. The highest volumes of traffic are observed on state highways, which are principal arterials. SR 99 (Aurora Avenue N) had the highest overall average daily traffic for any facility in Shoreline except I-5. Over a two-year period (2000-2002), traffic volumes range from 35,300 in the north to 45,000 in the vicinity of N 160<sup>th</sup> Street. However, SR 104 (N 205<sup>th</sup> Street) near the I-5 interchange had daily traffic volumes around 50,000. Traffic along SR 523 (NE 145<sup>th</sup> Street) had volumes ranging from 24,000 to 31,000. Other principal arterials that had significant traffic but are not state routes include: 15<sup>th</sup> Avenue NE, Meridian Avenue N, NW Richmond Beach Road, N 185<sup>th</sup> Street, N 175<sup>th</sup> Street, N 155<sup>th</sup> Street and Westminster Way N. **Figure 2-2** summarizes the existing Average weekday traffic volumes for Shoreline.

### **Access Control Classification System**

For all Washington State highways, Washington State Department of Transportation (WSDOT) controls all access to these facilities in order to preserve the safety and efficiency of these highways. Under current access management standards, access is distinguished as being either a limited access highway or a managed access highway. I-5 is the only limited access highway in Shoreline. The remaining state routes in Shoreline are managed access. Aurora Avenue within the City of Shoreline is a class 4 managed access highway. WSDOT has sole authority to reclassify route designations.

[illegible]

***Shoreline Transportation Master Plan – DRAFT November 2004***

## **Local and Regional Public Transit**

Public transit is an integral part of Shoreline's commitment to address neighborhood quality of life issues. Shoreline citizens view public transit as a way to address issues of traffic congestion, transportation options, pollution, and a sense of community. Unlike central cities in the Puget Sound region, Shoreline does not have a concentrated base of employment or major population centers. The majority of the destinations for journey-to-work trips for Shoreline residents are located in urban centers such as Downtown Seattle and the University of Washington. However, access to community facilities and institutions are important to the people of Shoreline. The library, city hall, community center and many parks and schools are scattered throughout the City. The one major destination point within the City is Shoreline Community College, a major commuter college.

### ***Transit Agencies***

The City of Shoreline is served by three transit agencies: Metro Transit, Community Transit, and Sound Transit. Metro Transit provides transit service primarily in King County. Just to the north of Shoreline, Community Transit services most of Snohomish County and adjacent areas. Both Metro and Community Transit provide park-and-ride lots, vanpools, paratransit, Dial-A Ride Transportation (DART), and local and commuter express bus service throughout their primary service areas and to neighboring major centers. However, due to their service jurisdictions, transit users along the Aurora Avenue Corridor who cross the county line need to make a transfer.

Sound Transit is the regional transit agency for the Puget Sound region and provides express bus service from Shoreline to Seattle, Lynnwood, and Everett. Sound Transit provides limited services in Shoreline. Two express buses stop at I-5/NE145th freeway station, which serves the North Jackson Park-and-Ride lot located within the City. Sound Transit's Sounder commuter rail between Seattle and Everett operates along Shoreline's coast but currently does not have any stations within the City limits.

### ***Facilities***

Bus stops are located along most principal, minor and collector arterials and next to park-and-ride lots. Almost all are handicap accessible. The Aurora Village Transit Center is a major transfer point for both Metro Transit and Community Transit. The transit center accommodates a park-and-ride lot, and 12 bus bays that allow for local, inter-community and regional bus connections. Transit riders who cross the county line along Aurora Avenue need to transfer at this location. Community Transit provides connections to the Edmonds-Kingston ferry and the Sounder Edmonds station. The freeway station at N 145<sup>th</sup> Street provides connections between the North Jackson Park-and-Ride, Metro's express buses, and Sound Transit service. Five Metro Transit lines and two Sound Transit routes serve the freeway station.

Passenger amenities are provided at major passenger activity areas, including Aurora Village Transit Center, Shoreline Park-and-Ride, Shoreline Community College, and the N 145<sup>th</sup> Avenue freeway station. Amenities at these locations include shelters, benches and route-specific schedule information. However, only 47 out of the 288 Shoreline stops have shelters. Most shelter locations are oriented towards AM peak bus route operations.

A King County Metro survey of bus stops in Shoreline conducted in the spring of 2003 indicated that the most heavily utilized stops were located at the Aurora Village Transit Center, Shoreline Community College, along Aurora Avenue N, and a couple of stops along



N 175<sup>th</sup> Street and 15<sup>th</sup> Avenue N. The stops with the largest number of boardings and disembarkations occurred at the Aurora Village Transit Center. Outside of the Transit Center, Shoreline Community College had the next highest number of boardings and disembarkations, followed by the Shoreline Park-and-Ride.

In addition to their transit service, Metro Transit has eight designated park-and-ride lots located throughout the City; three are permanent facilities, and five are parking lots leased from local churches. The Shoreline Park-and-Ride located on Aurora Avenue N has the largest capacity with 400 parking spaces. The smallest park-and-ride lot is located at Shoreline United Methodist Church with 20 spaces. A study conducted by Metro Transit in the spring of 2003 indicated that all of the permanent park-and-ride lots have a utilization rate ranging from 68% to 74%. The leased lot at Aurora Church of Nazarene had the highest utilization rate with 97%. The remaining five lots have excess capacity. See **Table 2-2** for a complete listing.

**Table 2-2: Shoreline Park-and-Ride Facilities**

Name	Location	Capacity	2003 Utilization
<i>Aurora Church of Nazarene</i>	<i>1900 N 175<sup>th</sup> ST</i>	67	97%
<i>Shoreline United Methodist Church</i>	<i>NE 145<sup>th</sup> ST &amp; 25<sup>th</sup> Avenue NE</i>	20	75%
Shoreline	18821 Aurora Avenue N	400	74%
Aurora Village Transit Center	1524 N 200 <sup>th</sup> ST	200	74%
North Jackson Park	14711 5 <sup>th</sup> Avenue NE	68	68%
<i>Korean Zion Presbyterian Church</i>	<i>17920 Meridian Avenue N</i>	25	52%
<i>Prince of Peace Lutheran Church</i>	<i>14514 20<sup>th</sup> Avenue NE</i>	40	40%
<i>Bethel Lutheran Church</i>	<i>NE 175<sup>th</sup> ST &amp; 10<sup>th</sup> Avenue N</i>	85	27%

NOTE: Italicized are leased parking lots.

Transit priority treatments are provided at several locations along the I-5 and Aurora Avenue N corridors. In addition to the high occupancy vehicle lanes on I-5, ramp metering and queue by-pass lanes for transit and carpools have been constructed at the interchanges with N 145<sup>th</sup> Street, N 175<sup>th</sup> Street, and N 205<sup>th</sup> Street/Lake Ballinger Way. Business access/transit (BAT) lanes have been constructed in the northbound shoulder of Aurora Avenue N.

### **Service**

As of January 2004, 28 bus routes operate in the City of Shoreline as well as four routes that skirt its southeastern border along Lake City Way. Fifteen out of the 28 routes operate only during peak periods. The remaining routes are offered throughout the day, seven days a week. Overall, Metro Transit provides the majority of the service, with 20 fixed routes operating in the Shoreline area. Using Metro Transit's classification system, current transit services can be aggregated into the following categories:

**Community:** These routes provide local access within the City. Currently, there are no bus routes that exclusively serve the City of Shoreline. However, as part of their overall service, several routes connect Shoreline neighborhoods together including: 330, 331, 346, 347, 348, and 358.

**Inter-community:** These routes connect communities within a subarea of the county and neighboring areas such as Mountlake Terrace, Lake City, Lake Forest Park, Kenmore and Northgate. Routes include: 330, 331, 345, 346, 347, 348, and 355.

**Regional:** These connect Shoreline to urban centers outside of the subarea or county including: Downtown Seattle, University District, Bellevue, Renton, Lynnwood and Everett. Routes include Metro 5, 77, 242, 243, 301, 303, 304, 308, 316, 342, 355, 358, 373, 416; Community Transit 100, 101, 118, 416, 630; and Sound Transit 510 and 511.

**Custom:** Custom bus routes operate at specific times to specific destinations such as an employment area or school. Metro operates route 949 to the Boeing Everett plant and route 995 to Lakeside School.

In addition to fixed route service, Metro Transit provides primary paratransit service for Shoreline to King County under its ACCESS Transportation program. Community Transit also provides DART to destinations in Shoreline from Snohomish County. A regional coalition of transit agencies, including Community and Sound Transit, provide regional connections for special needs riders. **Table 2-3** illustrates that most Shoreline bus routes are regional service to Downtown Seattle, and are provided during peak periods. However, the majority of inter-community services to neighboring areas have all day service.

**Table 2-4** provides an overview of service availability for each of the 28 bus routes serving Shoreline. Most lines service regional north-south corridors running at 30-minute headways. Recently, Metro added route 348, which provides east-west connections through the City. Evening headways are either 30 or 60 minutes. Saturday service runs on 30-minute headways, while buses on Sunday run at 60-minute intervals. Routes that have an end point in Shoreline tend to terminate at Shoreline Community College or at the Aurora Village Transit Center. Most of the regional and one of the inter-community bus routes operate only during peak periods. The remaining routes offer a mix of inter-community and regional bus service throughout most of the day during the weekday.



**Table 2-3: Transit Service Classification**

Service Type	Route	Provider	Major Destinations
Regional	<b>5</b>	Metro Transit	Shoreline CC, Greenwood, Woodland Park Zoo, Fremont, Downtown Seattle
<i>Regional</i>	<i><b>77</b></i>	<i>Metro Transit</i>	<i>North City, Jackson Park, Maple Leaf, Downtown Seattle</i>
<i>Regional</i>	<i><b>100</b></i>	<i>Community Transit</i>	<i>Aurora Village TC, Edmonds CC, Everett Station</i>
Regional	<b>101</b>	Community Transit	Aurora Village TC, Edmonds CC, Mariner P&R
Regional	<b>118</b>	Community Transit	Aurora Village, Alderwood Mall, Ash Way P&R
<i>Regional</i>	<i><b>242</b></i>	<i>Metro Transit</i>	<i>North City, Northgate TC, Green Lake P&amp;R, Montlake, Safeco, Overlake</i>
<i>Regional</i>	<i><b>243</b></i>	<i>Metro Transit</i>	<i>Jackson Park, Lake City, Ravenna, University Village, Montlake, Evergreen Point, Bellevue, Wilburton P&amp;R</i>
<i>Regional</i>	<i><b>301</b></i>	<i>Metro Transit</i>	<i>Aurora Village TC, Firdale Village, Richmond Highlands, Shoreline P&amp;R, I-5 Freeway Stations, Downtown Seattle (Tunnel)</i>
<i>Regional</i>	<i><b>303</b></i>	<i>Metro Transit</i>	<i>Shoreline P&amp;R, Aurora Village TC, Richmond Highlands, Jackson Park, Northgate TC, Downtown Seattle, First Hill</i>
<i>Regional</i>	<i><b>304</b></i>	<i>Metro Transit</i>	<i>Richmond Beach, NE 145<sup>th</sup> ST Freeway Station, Downtown Seattle</i>
<i>Regional</i>	<i><b>308</b></i>	<i>Metro Transit</i>	<i>Horizon View, Lake Forest Park, Lake City, Jackson Park, Downtown Seattle</i>
<i>Regional</i>	<i><b>316</b></i>	<i>Metro Transit</i>	<i>Meridian Park, N Seattle CC, E Green Lake, Downtown Seattle</i>
<i>Regional</i>	<i><b>342</b></i>	<i>Metro Transit</i>	<i>Shoreline P&amp;R, Aurora Village TC, Lake Forest Park, Kenmore P&amp;R, I-405 Freeway Stations, Bellevue TC, Newport Hills, Kenndale, Renton Boeing, Renton TC</i>
<i>Regional</i>	<i><b>355</b></i>	<i>Metro Transit</i>	<i>Shoreline CC, Greenwood, University District, Downtown Seattle</i>
Regional	<b>358</b>	Metro Transit	Aurora Village TC, Shoreline P&R, Aurora Avenue N, W Green Lake, Downtown Seattle
<i>Regional</i>	<i><b>373</b></i>	<i>Metro Transit</i>	<i>Aurora Village TC, Shoreline P&amp;R, Richmond Heights, Jackson Park, Maple Leaf, University District, UW Campus</i>
<i>Regional</i>	<i><b>416</b></i>	<i>Community Transit</i>	<i>Edmonds Ferry, Aurora Village TC, Downtown Seattle</i>
Regional	<b>510</b>	Sound Transit	Downtown Seattle, Lynnwood, Everett
Regional	<b>511</b>	Sound Transit	Ash Way P&R, Lynnwood, Downtown Seattle
Regional	<b>630</b>	Community Transit	Edmonds CC TC, Edmonds Ferry, Aurora Village, Lynnwood TC
<i>Inter-community</i>	<i><b>330</b></i>	<i>Metro Transit</i>	<i>Shoreline CC, Fircrest, Lake City</i>
<i>Inter-community</i>	<i><b>331</b></i>	<i>Metro Transit</i>	<i>Shoreline CC, Richmond Highlands, Aurora Village TC, Ballinger Terrace, Lake Forest Park, Kenmore P&amp;R</i>
<i>Inter-community</i>	<i><b>345</b></i>	<i>Metro Transit</i>	<i>Shoreline CC, Northwest Hospital, N Seattle CC, Northgate TC</i>
<i>Inter-community</i>	<i><b>346</b></i>	<i>Metro Transit</i>	<i>Aurora Village TC, Richmond Highlands, Haller Lake, Northwest Hospital, Northgate TC</i>
<i>Inter-community</i>	<i><b>347</b></i>	<i>Metro Transit</i>	<i>Mountlake Terrace P&amp;R, Ballinger Terrace, Shoreline Library, Jackson Park, Northgate TC</i>
<i>Inter-community</i>	<i><b>348</b></i>	<i>Metro Transit</i>	<i>Richmond Beach, North City, Shoreline Community Center &amp; Library, Jackson Park, Northgate TC</i>
<i>Custom</i>	<i><b>949</b></i>	<i>Metro Transit</i>	<i>NE 145<sup>th</sup> &amp; I-5 Station, Everett Boeing Plant</i>
<i>Custom</i>	<i><b>995</b></i>	<i>Metro Transit</i>	<i>Evergreen School, Lakeside School</i>

NOTE: *Italicized routes only operate during peak periods.*

**Table 2-4. Transit Service Headways by Time Period**

Route	Provider	Peak		Midday	Early Evening	Late Evening	Sat.	Sunday
		Peak dir	Both dir					
<i>77</i>	<i>Metro Transit</i>	<i>15</i>	-	-	-	-	-	-
<i>100</i>	<i>Community Transit</i>	<i>20</i>	-	-	-	-	-	-
<i>242</i>	<i>Metro Transit</i>	<i>30</i>	-	-	-	-	-	-
<i>243</i>	<i>Metro Transit</i>	<i>30</i>	-	-	-	-	-	-
<i>303</i>	<i>Metro Transit</i>	<i>25</i>	-	-	-	-	-	-
<i>304</i>	<i>Metro Transit</i>	<i>25</i>	-	-	-	-	-	-
<i>308</i>	<i>Metro Transit</i>	<i>30</i>	-	-	-	-	-	-
<i>316</i>	<i>Metro Transit</i>	<i>25</i>	-	-	-	-	-	-
<i>342</i>	<i>Metro Transit</i>	<i>30</i>	-	-	-	-	-	-
<i>355</i>	<i>Metro Transit</i>	<i>15</i>	-	-	-	-	-	-
<i>373</i>	<i>Metro Transit</i>	<i>30</i>	-	-	-	-	-	-
<i>416</i>	<i>Community Transit</i>	<i>20</i>	-	-	-	-	-	-
<i>949</i>	<i>Metro Transit</i>	<i>180</i>	-	-	-	-	-	-
<i>995</i>	<i>Metro Transit</i>	<i>180</i>	-	-	-	-	-	-
<i>301</i>	<i>Metro Transit</i>	<i>15</i>	<i>30</i>	-	-	-	-	-
<i>330</i>	<i>Metro Transit</i>	-	<i>30</i>	-	-	-	-	-
<b>510</b>	Sound Transit	<b>30</b>	-	<b>60</b>	<b>30</b>	<b>60</b>	<b>60</b>	<b>60</b>
<b>511</b>	Sound Transit	<b>30</b>	-	<b>30</b>	<b>30</b>	<b>60</b>	<b>60</b>	<b>60</b>
<b>118</b>	Community Transit	-	<b>30</b>	<b>30</b>	<b>60</b>	-	<b>60/30/60</b>	<b>60</b>
<b>630</b>	Community Transit	-	<b>30</b>	<b>30</b>	<b>60</b>	-	<b>60</b>	<b>60</b>
<b>5</b>	Metro Transit	-	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>
<b>101</b>	Community Transit	<b>15</b>	<b>20</b>	<b>15</b>	<b>15</b>	<b>30</b>	<b>30</b>	<b>30</b>
<b>331</b>	Metro Transit	-	<b>30</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>30/60</b>	<b>60</b>
<b>345</b>	Metro Transit	-	<b>30</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>60/30/60</b>	<b>60</b>
<b>346</b>	Metro Transit	-	<b>30</b>	<b>30</b>	<b>60</b>	<b>60</b>	<b>60/30/60</b>	<b>60</b>
<b>347</b>	Metro Transit	-	<b>30</b>	<b>30</b>	<b>60</b>	<b>60</b>	<b>60/30/60</b>	<b>60</b>
<b>348</b>	Metro Transit	-	<b>30</b>	<b>30</b>	<b>60</b>	<b>60</b>	<b>60/30/60</b>	<b>60</b>
<b>358</b>	Metro Transit	<b>8</b>	<b>15</b>	<b>15</b>	<b>30</b>	<b>30</b>	<b>30/15/30</b>	<b>30</b>

NOTE: *Italicized* routes only service during peak periods.

**Table 2-5** provides an overview of weekday service destinations to and from the City of Shoreline. Considering that most journey-to-work trips are to urban centers outside of Shoreline, it is not surprising to see that almost 7 out of 10 buses that service Shoreline have a regional connection (68.9%). Roughly one-third of all bus service is destined to and from Downtown Seattle (32.7%). This equates to roughly half of all regional transit service (47.4%). Metro Transit routes 5 and 358, which provide all-day service, contribute over two-thirds of all Downtown bus service. The remaining seven routes only provide peak period service.

The next largest percentage of transit service (30.7%) makes connections to inter-community destinations. Locations include neighboring Mountlake Terrace, Lake City, Lake Forest Park, Kenmore and Northgate. With the exception of Metro Transit route 330, all-day bus service is evenly distributed among the remaining five servicing routes. The third largest percentage of overall transit service (23.0%) is regional destinations to points north: Edmonds, Lynnwood and Everett. Half of the transit service is provided by Community Transit route 101, which makes connections to the Edmonds / Kingston ferry and Sound Transit's Sounder commuter rail station.

Outside of the custom bus services, connections to the University District and points east of Lake Washington comprise the smallest percentage of overall service (4.3%). Nearly 9% of all bus service had connecting service between both Downtown Seattle and points north of Shoreline. Sound Transit routes 510 and 511 provide over 84% of this service.

**Table 2-5: Weekday Transit Service by Destination**

Service Type	Destination	Route	Provider	# of Buses	% of Total Service	% of Service Type	% of Destination
Regional	Downtown Seattle (SOUTH)	5	Metro Transit	81	7.5%	10.8%	22.9%
		77	<i>Metro Transit</i>	9	0.8%	1.2%	2.5%
		301	<i>Metro Transit</i>	41	3.8%	5.5%	11.6%
		303	<i>Metro Transit</i>	14	1.3%	1.9%	4.0%
		304	<i>Metro Transit</i>	10	0.9%	1.3%	2.8%
		308	<i>Metro Transit</i>	8	0.7%	1.1%	2.2%
		316	<i>Metro Transit</i>	14	1.3%	1.9%	4.0%
		355	<i>Metro Transit</i>	20	1.8%	2.7%	5.6%
		358	<i>Metro Transit</i>	157	14.5%	21.0%	44.4%
		<b>TOTAL</b>		<b>354</b>	<b>32.7%</b>	<b>47.4%</b>	<b>100%</b>
	Downtown Seattle – Edmonds / Lynnwood / Everett (N-S)	416	<i>Community Transit</i>	15	1.4%	2.0%	15.5%
		510	Sound Transit	35	3.2%	4.7%	36.1%
		511	Sound Transit	47	4.3%	6.3%	48.5%
		<b>TOTAL</b>		<b>97</b>	<b>8.9%</b>	<b>13.0%</b>	<b>100%</b>
	Edmonds / Lynnwood / Everett (NORTH)	100	<i>Community Transit</i>	19	1.8%	2.5%	7.6%
		101	<i>Community Transit</i>	127	11.7%	17.0%	51.0%
		118	<i>Community Transit</i>	45	4.2%	6.0%	18.1%
		630	<i>Community Transit</i>	58	5.4%	7.8%	23.3%
		<b>TOTAL</b>		<b>249</b>	<b>23.0%</b>	<b>33.3%</b>	<b>100%</b>
	University District / Bellevue / Renton (SOUTH-EAST)	242	<i>Metro Transit</i>	15	1.4%	2.0%	31.9%
		243	<i>Metro Transit</i>	6	0.6%	0.8%	12.8%
		342	<i>Metro Transit</i>	11	1.0%	1.5%	23.4%
		373	<i>Metro Transit</i>	15	1.4%	2.0%	31.9%
		<b>TOTAL</b>		<b>47</b>	<b>4.3%</b>	<b>6.3%</b>	<b>100%</b>
	<b>TOTAL</b>			<b>747</b>	<b>68.9%</b>	<b>100%</b>	<b>-</b>
Inter-community	Mountlake Terrace / Lake City / Lake Forest Park / Kenmore / Northgate	330	<i>Metro Transit</i>	22	2.0%	6.6%	6.6%
		331	<i>Metro Transit</i>	61	5.6%	18.3%	18.3%
		345	<i>Metro Transit</i>	61	5.6%	18.3%	18.3%
		346	<i>Metro Transit</i>	64	5.9%	19.2%	19.2%
		347	<i>Metro Transit</i>	62	5.7%	18.6%	18.6%
		348	<i>Metro Transit</i>	63	5.8%	18.9%	18.9%
		<b>TOTAL</b>		<b>333</b>	<b>30.7%</b>	<b>100%</b>	<b>100%</b>
	<b>TOTAL</b>			<b>333</b>	<b>30.7%</b>	<b>100%</b>	<b>-</b>
Community	Shoreline	-	-	-	-	-	-
Custom	Everett Boeing Plant	949	<i>Metro Transit</i>	2	0.2%	50%	100%
	Lakeside School	995	<i>Metro Transit</i>	2	0.2%	50%	100%
	<b>TOTAL</b>			<b>4</b>	<b>0.4%</b>	<b>100%</b>	<b>-</b>
<b>TOTAL</b>				<b>1084</b>	<b>100%</b>	<b>-</b>	<b>-</b>

NOTE: *Italicized routes* only service during peak periods.

**Figure 2-3** maps out the all-day transit service and their destinations. This figure illustrates how much of this service provides connections to inter-community destination and provides connections throughout most of Shoreline. Connections to points north are only provided at the freeway station of Aurora Village transit center in the peak period. **Figure 2-4** illustrates how the majority of the service provides connections to Downtown Seattle. These routes are available throughout the City. Transit routes to the University District or points to the north, south or east are only available at select areas of Shoreline. Many of these connections can be made at the Aurora Village Transit Center.

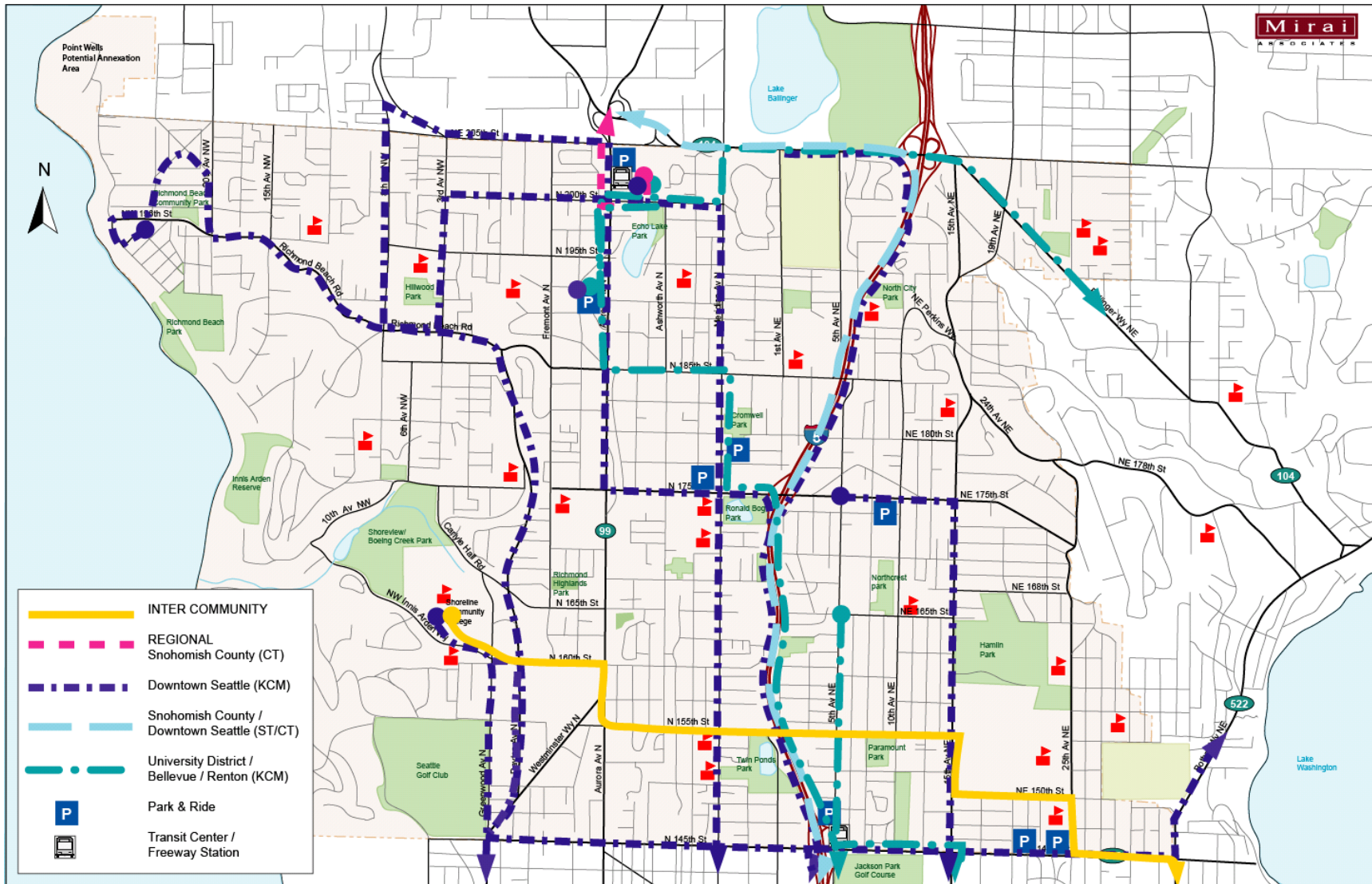
The map displays the Mirai Association area, which includes parts of Snohomish County and Downtown Seattle. Key features include:

- Transit Routes:**
  - INTER COMMUNITY:** Represented by a solid yellow line.
  - REGIONAL Snohomish County (CT):** Represented by a dashed pink line.
  - Downtown Seattle (KCM):** Represented by a dashed blue line.
  - Snohomish County / Downtown Seattle (ST/CT):** Represented by a solid light blue line.
  - University District / Bellevue / Renton (KCM):** Represented by a solid teal line.
- Stations and Landmarks:**
  - Park & Ride:** Indicated by a blue 'P' in a square.
  - Transit Center / Freeway Station:** Indicated by a blue icon of a train and a bus.
  - Other Landmarks:** Richmond Beach Park, Hillwood Park, Echo Lake Park, North Park, Cromwell Park, Ronald Bog Park, Northcrest Park, Hamlin Park, Twin Ponds Park, Paramount Park, Jackson Park Golf Course, and Seattle Golf Club.
- Geographical Features:** Lake Ballinger, Lake Washington, and the Point Wells Potential Annexation Area.
- Infrastructure:** Major roads like NE 104th St, NE 98th St, NE 175th St, and NE 150th St are shown.

A legend in the bottom left corner provides a key for the transit routes and symbols. The Mirai Association logo is in the top right corner.

***Shoreline Transportation Master Plan – DRAFT November 2004***

Figure 2-4. Peak Period Only Transit Service Coverage



(available in 11" x 17" format)



## **Pedestrian and Bicycle Systems**

The community has repeatedly identified sidewalks as important. Residents want to use sidewalks and trails to go to work, catch a bus, walk to school, go shopping or do recreation activities. In addition, many residents of the City's 85-90 group homes have limited mobility and need the safety and access provided by sidewalks. However, only about one-third of Shoreline's arterial streets and even fewer local streets have sidewalks. **Figure 2-5** illustrates existing sidewalks.

The City of Shoreline's terrain lends itself fairly well to bicyclists traveling north-south. However, the ridges and ravines pose greater challenges for east-west travel by bike especially around North City, Richmond Beach, Innis Arden, Briarcrest and Shoreline Community College. Bicyclists in Shoreline must generally ride in traffic due to the lack of wide shoulders or exclusive bike lanes. The City provides bike lanes on N 155<sup>th</sup> Street between Midvale Avenue N and 5<sup>th</sup> Avenue N and recently created lanes on N 185<sup>th</sup> Street when that roadway was modified from four to three lanes between Stone Avenue N and 1<sup>st</sup> Avenue N. At the end of 2003, a similar lane modification project was completed for 15<sup>th</sup> Avenue NE between NE 150<sup>th</sup> Street and NE 175<sup>th</sup> Street where bicycle lanes were added. The lanes on 155<sup>th</sup> end rather abruptly at 5<sup>th</sup> Avenue N to accommodate on-street parking for Paramount Park users. Bicyclists can cross under I-5 on NE 155<sup>th</sup> and over I-5 on the N 195<sup>th</sup> pedestrian overpass (dismounting is suggested due to the narrow walkway). Street maintenance also improves the bicycle environment for riders using roadway shoulders. **Figure 2-6** illustrates existing bike facilities.

Upon completion, the Interurban Trail will be one of the most important pathway projects for pedestrians and bicyclists in Shoreline.

### ***Interurban Trail***

The City of Shoreline completed construction on the first segment of the Interurban Trail in February 2004. For design, construction and funding purposes, Shoreline has divided its portion of the Interurban Trail into five sections:

- South Section: N. 145th to 155th Streets;
- South Central: N. 160th to 175th Streets;
- North Central: N. 175th to 192nd Streets;
- North: N. 192nd to 205th Streets; and
- Bridges: N. 155th to 160th Streets.

The trail section between N. 155th and 160<sup>th</sup> Streets includes two pedestrian bridges. The City Council approved the "Loop Ramp Option" in Fall 2003 that provides a bridge over N. 155th Street, just west of Aurora Avenue N. and a bridge across Aurora Avenue N. at about N. 158th Street. The only section that is not funded is N. 175th to 192nd Streets. When completed, the Interurban Trail will be a three-mile non-motorized transportation system mostly developed along the former Interurban Rail Line. Owned by Seattle City Light and used as an electrical power transmission corridor, the 100-foot-wide former rail corridor runs from Seattle to Everett, roughly parallel to Aurora Avenue.

Shoreline and Seattle have agreed on the benefits of adding a trail to the transmission right-of-way corridor. The City of Shoreline is working with a regional committee of public agencies that are developing sections of the Interurban Trail through their jurisdictions. Snohomish County has completed about 80 percent of its Interurban corridor from Everett to



just north of the King-Snohomish County line. Seattle is in the planning and design stages on its section between N. 108th and 129th Streets.

The Interurban Trail's close proximity to Aurora Avenue N and the economic core of Shoreline will provide access to nearby shopping, services and employment, plus access to transit centers at Aurora Village and the Shoreline Park-and-Ride. The trail project, when completed, will also include rest stops, trailhead, interpretive historical and natural features, and directional signs.

## Accident Analysis

WSDOT provided six years of reported accident data, 1998 – 2003, for assessing accident locations for all state highway facilities in the City of Shoreline. The City of Shoreline provided data for reported accidents on the remaining streets. Note that data from August to December 2003 was incomplete. In addition, accidents for which no police report was filed are not included in this analysis, so minor accidents and non-injury accidents are probably under-represented by this data. **Table 2-6** summarizes the six-year accident data for the Shoreline intersections with the highest rates of reported accidents. **Table 2-7** summarizes mid-block accidents.

**Table 2-6: Intersection Accident Analysis (1998-2003)**

Location		Total Accidents*	Entering Volume**	Accident Rate***
Street	Cross Street			
15 <sup>th</sup> Avenue NE	NE 155 <sup>th</sup> St	28	6,315	0.89
	NE 175 <sup>th</sup> St	30	8,821	0.68
3 <sup>rd</sup> Avenue NW	Richmond Beach Rd NW	38	7,158	1.06
5 <sup>th</sup> Avenue NE	NE 175 <sup>th</sup> St	27	5,835	0.93
Aurora Avenue N****	N 145 <sup>th</sup> St	30	15,974	0.38
	N 152 <sup>nd</sup> St	35	N/A	N/A
	N 155 <sup>th</sup> St	43	15,862	0.54
	N 160 <sup>th</sup> St	43	14,740	0.58
	N 175 <sup>th</sup> St	38	17,049	0.45
	N 185 <sup>th</sup> St	27	15,967	0.34
	N 205 <sup>th</sup> St	32	15,624	0.41

\* Total number of accidents from 1/1/98 to 12/31/03, provided by the City of Shoreline. **Accident data from 8/1/03 to 12/31/03 is incomplete.**

\*\* In thousands

\*\*\* Number of accidents per million vehicles per year

\*\*\*\* Based on intersection analysis and not shown accidents based on corridor analysis

The map displays the City of Everett, Washington, with proposed sidewalk locations. Major roads shown include I-5, I-92, and I-520. Key landmarks and parks include Lake Ballinger, Lake Washington, Lake Jackson, and various community parks like Richmond Beach, Hillwood, and North City. The legend indicates three types of sidewalk proposals: N/W side (dashed red line), S/E side (dashed blue line), and Both side (dashed purple line). A north arrow is located in the top left corner.

***Shoreline Transportation Master Plan – DRAFT November 2004***

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**Shoreline Transportation Master Plan – DRAFT November 2004**

The majority of the accidents at intersections for the City of Shoreline occurred along Aurora Avenue N. For the six-year period, the intersection at N 155<sup>th</sup> Street and Aurora Avenue N and at N 160<sup>th</sup> Street and Aurora Avenue N both had the highest number of observed accidents (43). The next two highest accident locations at intersections were also on Aurora Avenue: N 152<sup>nd</sup> Street and N 175<sup>th</sup> Street. This stretch of Aurora is highly commercialized and has several through lanes in each direction. Left-turn lanes and pockets are provided at all intersections, including the cross streets.

When these numbers are normalized by volume, the accident rate is relatively low along Aurora Avenue N. At N 160<sup>th</sup> Street and Aurora Avenue N, the rate is only 0.58 accidents per million vehicles per mile. At N 155<sup>th</sup> Street, the accident rate drops to 0.54. For the intersections with the most total accidents, the highest accident rate was observed at NE 175<sup>th</sup> Street and 5<sup>th</sup> Avenue N with 1.06. This intersection is in a primarily low-density residential area and is situated at the top of a hill. **Figures 2-7 and 2-8** map out these locations.

For mid-block locations, Aurora Avenue N was the site of the majority of accidents. The highest number was observed between N 152<sup>nd</sup> and N 155<sup>th</sup> Street on Aurora Avenue N where 91 accidents occurred. The next highest number of accidents for a mid-block location occurred between N 170<sup>th</sup> and N 175<sup>th</sup> Street where 66 accidents were reported. These locations are highly commercialized with several driveways connecting to Aurora Avenue N. The roadway has 2 lanes in each direction and a center two-way left-turn lane.

The block between N 152<sup>nd</sup> and N 155<sup>th</sup> Street remained a problem spot. It had the second highest accident rate of 1.44 accidents per million vehicles per year. However, the highest mid-block accident rate was found along N 205<sup>th</sup> Street between Aurora Avenue N and Meridian Avenue N. This five-lane roadway is heavily commercialized with the Aurora Village shopping center to the south and a center two-way left-turn lane. **Figures 2-9 and 2-10** map out these locations.

Aurora's intersection analysis shows low accident rates. However, as a corridor, the accident rates are considered very high. Left turn accidents are the most common type of accidents. The Aurora Corridor Project will address this issue.

**Table 2-7: Mid-block Accident Analysis (1998-2003)**

Location			Total Accidents*	Daily Traffic	Accident Rate**
Street	Cross Street 1	Cross Street 2			
15 <sup>th</sup> Avenue NE	Forest Park Dr NE	Ballinger Way NE	7	9,500	0.48
	NE 145 <sup>th</sup> St	NE 146 <sup>th</sup> St	7	19,000	0.24
	NE 146 <sup>th</sup> St	NE 147 <sup>th</sup> St	8	19,000	0.27
	NE 148 <sup>th</sup> St	NE 150 <sup>th</sup> St	6	18,500	0.21
	NE 150 <sup>th</sup> St	NE 151 <sup>st</sup> St	6	18,000	0.22
	NE 169 <sup>th</sup> St	NE 170 <sup>th</sup> St	5	17,650	0.18
	NE 172 <sup>nd</sup> St	NE 175 <sup>th</sup> St	12	19,300	0.40
	NE 175 <sup>th</sup> St	NE 177 <sup>th</sup> St	5	19,900	0.16
	NE 180 <sup>th</sup> St	NE 184 <sup>th</sup> St	5	6,000	0.54
19 <sup>th</sup> Avenue NE	Ballinger Way NE	NE 205 <sup>th</sup> St	9	8,430	0.69
25 <sup>th</sup> Avenue NE	NE 153 <sup>rd</sup> St	NE 155 <sup>th</sup> St	7	4,900	0.93
5 <sup>th</sup> Avenue NE	NE 145 <sup>th</sup> St	NE 148 <sup>th</sup> St	12	14,500	0.45
	NE 153 <sup>rd</sup> St	NE 155 <sup>th</sup> St	5	6,400	0.51
Aurora Avenue N	N 145 <sup>th</sup> St	N 149 <sup>th</sup> St	40	39,900	0.65
	N 149 <sup>th</sup> St	N 152 <sup>nd</sup> St	30	40,485	0.48
	N 152 <sup>nd</sup> St	N 155 <sup>th</sup> St	91	41,070	1.44
	N 155 <sup>th</sup> St	N 160 <sup>th</sup> St	57	42,243	0.88
	N 160 <sup>th</sup> St	N 163 <sup>rd</sup> St	31	44,414	0.45
	N 163 <sup>rd</sup> St	N 165 <sup>th</sup> St	8	45,000	0.12
	N 165 <sup>th</sup> St	N 167 <sup>th</sup> St	33	44,000	0.49
	N 167 <sup>th</sup> St	N 170 <sup>th</sup> St	38	43,000	0.57
	N 170 <sup>th</sup> St	N 175 <sup>th</sup> St	66	40,000	1.07
	N 175 <sup>th</sup> St	N 180 <sup>th</sup> St	30	38,833	0.50
	N 180 <sup>th</sup> St	N 182 <sup>nd</sup> St	10	37,677	0.17
	N 182 <sup>nd</sup> St	N 183 <sup>rd</sup> St	15	37,000	0.26
	N 183 <sup>rd</sup> St	N 185 <sup>th</sup> St	40	37,000	0.70
	N 185 <sup>th</sup> St	N 192 <sup>nd</sup> St	35	36,500	0.62
	N 192 <sup>nd</sup> St	N 195 <sup>th</sup> St	26	35,900	0.47
	N 195 <sup>th</sup> St	N 198 <sup>th</sup> St	22	35,900	0.40
	N 198 <sup>th</sup> St	N 199 <sup>th</sup> St	11	35,600	0.20
	N 199 <sup>th</sup> St	N 200 <sup>th</sup> St	31	35,450	0.57
	N 201 <sup>st</sup> St	N 205 <sup>th</sup> St	44	35,300	0.81
Ballinger Way NE	15 <sup>th</sup> Avenue NE	19 <sup>th</sup> Avenue NE	23	36,200	0.41
Fremont Avenue N	N 175 <sup>th</sup> St	N 178 <sup>th</sup> St	5	5,700	0.57
Greenwood Avenue N	N 145 <sup>th</sup> St	N 148 <sup>th</sup> St	5	5,600	0.58
Meridian Avenue N	N 172 <sup>nd</sup> St	N 175 <sup>th</sup> St	6	10,300	0.38
	N 180 <sup>th</sup> St	N 183 <sup>rd</sup> St	5	10,300	0.32
N 145 <sup>th</sup> St	Whitman Avenue N	Aurora Avenue N	5	18,000	0.18
N 152 <sup>nd</sup> St	Aurora Avenue N	Stone Ln N	12	N/A	N/A
N 155 <sup>th</sup> St	Aurora Avenue N	Midvale Avenue N	15	11,500	0.85
N 160 <sup>th</sup> St	Linden Avenue N	Aurora Avenue N	17	13,800	0.80
N 175 <sup>th</sup> St	Aurora Avenue N	Midvale Avenue N	5	25,800	0.13
	Densmore Avenue N	Wallingford Avenue N	5	27,800	0.12
	Meridian Avenue N	Corliss Avenue N	14	29,800	0.31
	Midvale Avenue N	Ashworth Avenue N	12	25,800	0.30
	Wallingford Avenue N	Meridian Avenue N	10	27,800	0.23
N 185 <sup>th</sup> St	Aurora Avenue N	Midvale Avenue N	12	14,500	0.54
	Linden Avenue N	Aurora Avenue N	7	14,750	0.31
	Meridian Avenue N	Corliss Avenue N	5	10,000	0.32
N 200 <sup>th</sup> St	Aurora Avenue N	Ashworth Avenue N	14	7,500	1.21
N 205 <sup>th</sup> St	Aurora Avenue N	Meridian Avenue N	47	11,800	2.59
	Fremont Avenue N	Whitman Avenue N	6	8,675	0.45
	Whitman Avenue N	Aurora Avenue N	7	8,675	0.52
NE 175 <sup>th</sup> St	12 <sup>th</sup> Avenue NE	15 <sup>th</sup> Avenue NE	14	15,500	0.59
NE 185 <sup>th</sup> St	3 <sup>rd</sup> Avenue NE	5 <sup>th</sup> Avenue NE	6	9,450	0.41
NW Innis Arden Way	6 <sup>th</sup> Avenue NW	Greenwood Avenue N	5	4,800	0.68
NW Richmond Beach Rd	15 <sup>th</sup> Avenue NW	12 <sup>th</sup> Avenue NW	14	11,000	0.83
	8 <sup>th</sup> Avenue NW	3 <sup>rd</sup> Avenue NW	27	15,000	1.17

\*Total number of accidents from 1/1/98 to 12/31/03, 8/1/03 to 12/31/03 is incomplete, due to WSDOT's limited accident data processing capabilities.

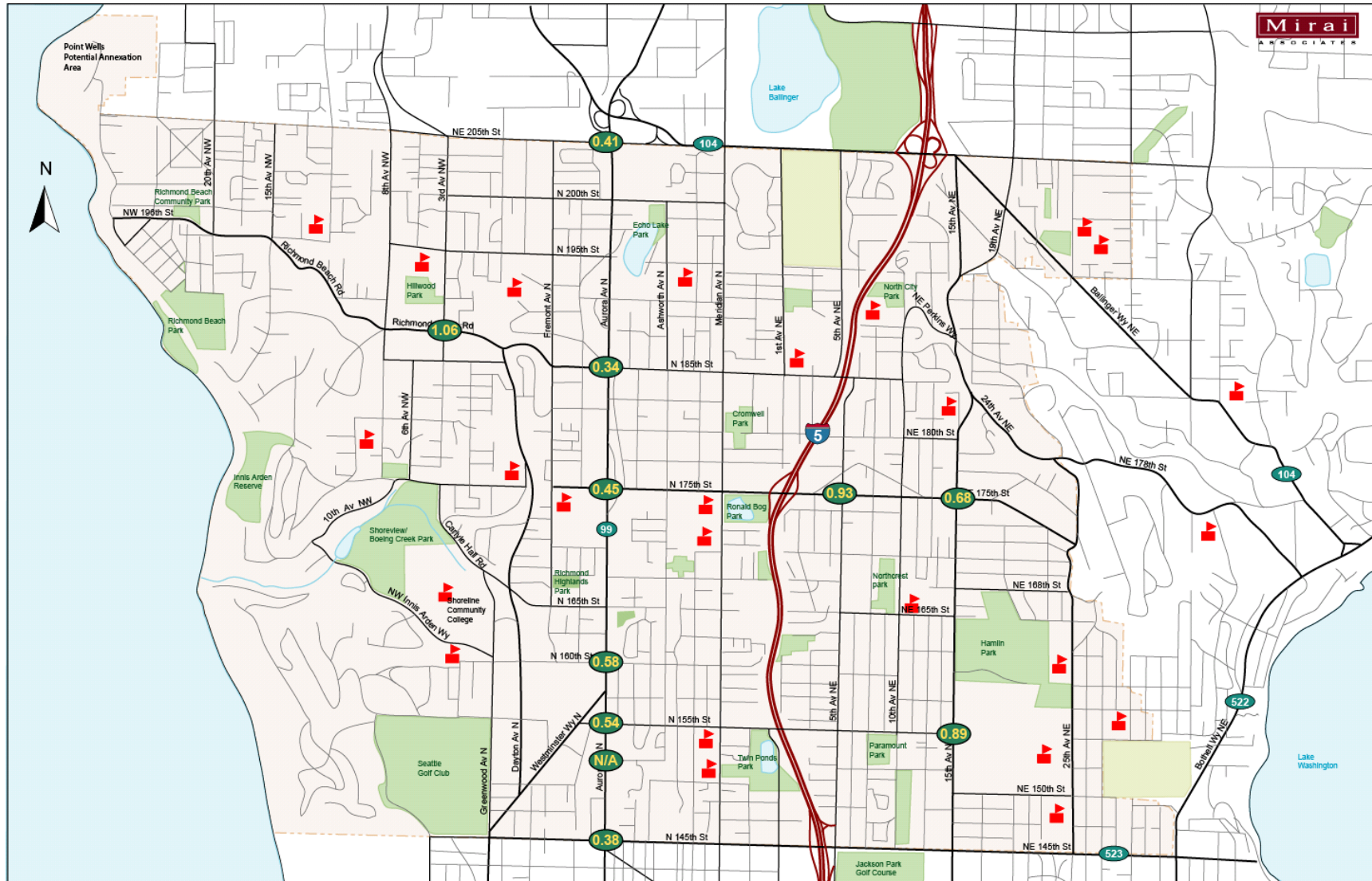
\*\* Number of accidents per million vehicles per year.



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(available in 11" x 17" format)

Figure 2-8. Accidents Rates at Intersection Locations (1998-2003)

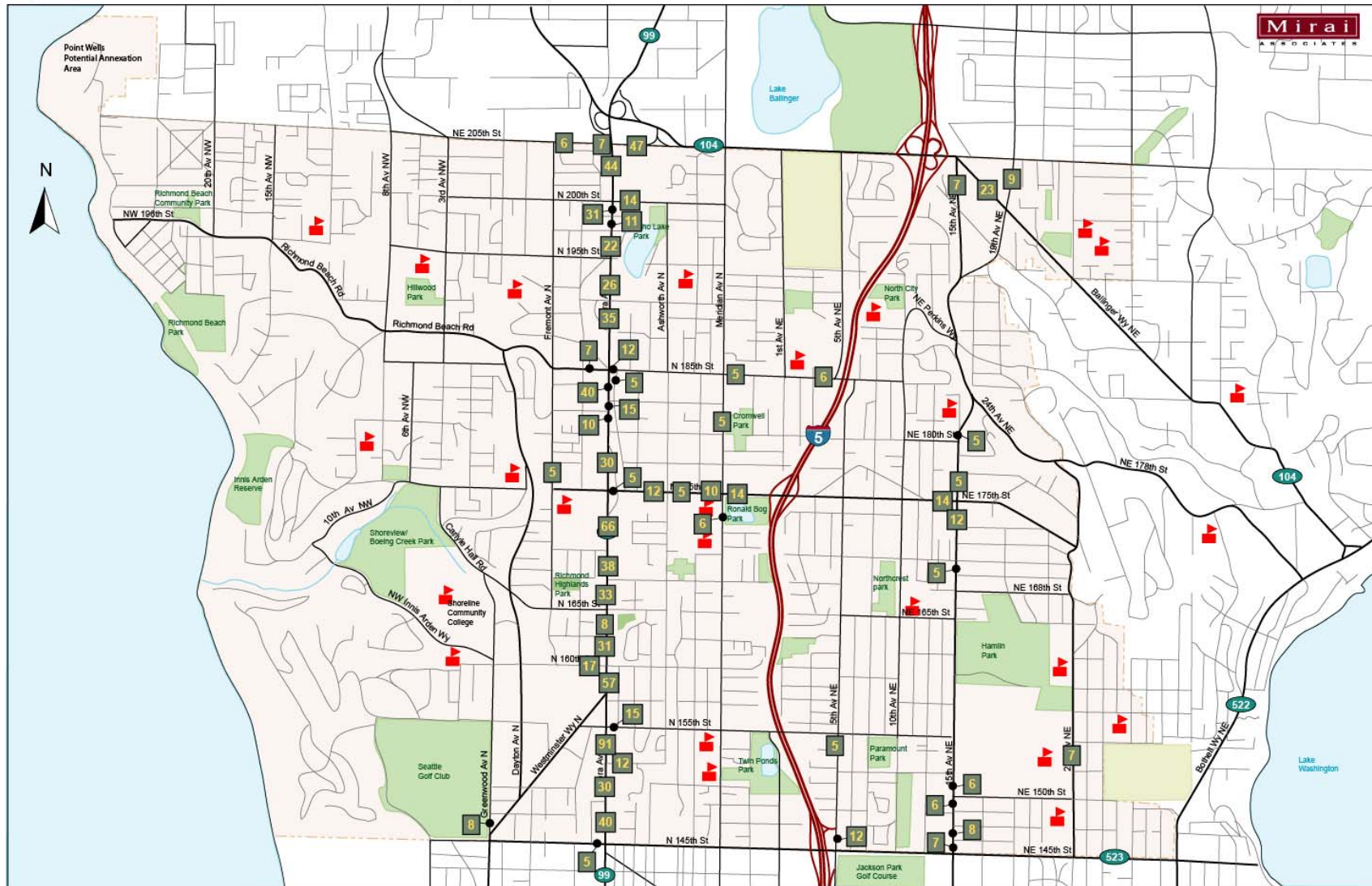


Total number of accidents from 1/1/98 to 12/31/03, provided by the City of Shoreline. **Accident data from 8/1/03 to 12/31/03 is incomplete.**

(available in 11" x 17" format)



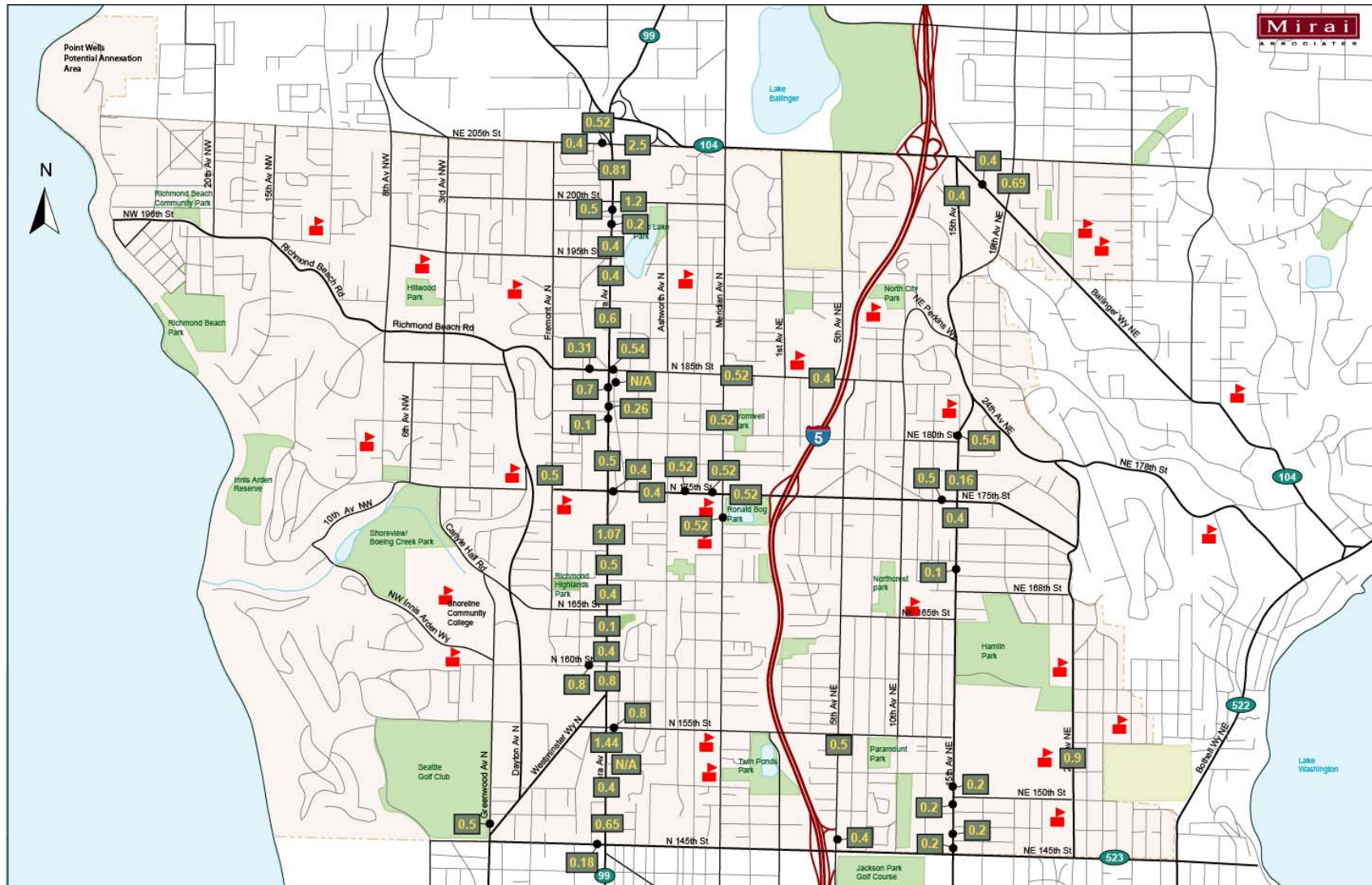
Figure 2-9. Number of Accidents at Mid-block Locations (1998-2003)



\* Total number of accidents from 1/1/98 to 12/31/03, provided by the City of Shoreline. Accident data from 8/1/03 to 12/31/03 is incomplete.

(available in 11" x 17" format)

Figure 2-10. Accidents Rates at Mid-block Locations (1998-2003)



\* Total number of accidents from 1/1/98 to 12/31/03, provided by the City of Shoreline. Accident data from 8/1/03 to 12/31/03 is incomplete.

(available in 11" x 17" format)

### ***Pedestrian-Bicycle Accident Data***

This same set of six-year accident data, 1998 – 2003, recorded pedestrian and bicycle related accidents. From this data, only the location and number of incidents was provided. Accident locations are mapped out in **Figure 2-11**. Note that data from August to December 2003 was incomplete.

A total of 129 accidents were reported. However, no location had more than two vehicle incidents involving a pedestrian or bicyclist. These accidents occurred at 106 unique locations. Sixty of them were at intersections and the remaining 46 occurred at mid-block locations. Most of the accidents occurred along arterials. Aurora Avenue N had the highest number of accidents (31). Other corridors with a concentrated number of accidents included: N/NE 155<sup>th</sup> Street (12), N/NE 175<sup>th</sup> Street (10), 15<sup>th</sup> Avenue NE (8) and N/NE 185<sup>th</sup> Street (7). Almost all of the accidents that occurred in residential areas were within a half-mile radius to a school or park.

### **Shoreline's Neighborhood Traffic Safety Program**

The City of Shoreline created its Neighborhood Traffic Safety Program (NTSP) to respond to residents' concerns about speeding, cut-through traffic, accidents and pedestrian safety on residential (non-arterial) streets. The City developed this program with the help of citizens, school district officials, fire and police department representatives and technical experts.

The NTSP consists of a two-phase approach that incorporates the "Three E's." The first phase uses "Education" and traffic "Enforcement" to encourage behavior changes that lead to safer streets. The second phase uses "Engineering" solutions such as traffic circles, speed bumps and narrowed lanes for traffic calming. **Appendix 2-1** shows the status of program requests as of October 2003.

### **Transportation Demand Management**

Transportation demand management (TDM) seeks to balance the expense of additional roadway capacity projects by reducing the peak period demand for vehicle space. TDM employs a number of techniques to influence travel mode choice, the time of day that a trip is taken, and even whether or not a trip is made.

The City of Shoreline also has six sites required to comply with the state's Commute Trip Reduction (CTR) Law. This law sets goals for single occupant commute trip reduction at worksites that employ over 100 regular full time employees. As the City continues to grow and new businesses locate here, additional sites may be subject to the CTR law. The City, large employers, Sound Transit, Metro Community Transit need to work together to provide good transit service to these sites.



**LEGEND**

- ▲ School
- @ Intersection with 1 incident
- @ Mid-block with 1 incident
- @ Intersection with 2 incidents
- @ Mid-block with 2 incidents

(available in 11" x 17" format)

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