

CITY COUNCIL AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Arterial Speed Limit Findings
DEPARTMENT:	Public Works
PRESENTED BY:	Jesus Sanchez, Director of Public Works Rich Meredith, City Engineer

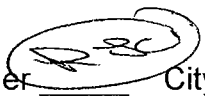
PROBLEM/ISSUE STATEMENT

The purpose of this follow-up report is to provide a more detailed review of the operation of selected Shoreline arterial streets in relation to their classification, posted speed limit, and traffic volume. This is in response to the new street classifications adopted by the City Council June 6, 2005, with the Transportation Master Plan, and the Arterial Speed Limit Findings staff report of July 17, 2006.

The report identifies a group of arterial street segments (**Appendix D**) that should be considered for changes in posted speed limits to meet City Council adopted policy, sound engineering principles, and provide consistency and predictability for motorists in Shoreline. After Council review of Appendix D staff will prepare a revised city ordinance to officially implement this first round of changes.

RECOMMENDATION

Staff recommends that Council adopt Appendix D, a section of the proposed Arterial Speed study that would reduce speeds in certain segments of the City and rectify speed limits posting in two streets. Staff will then draft an ordinance implementing the authorized changes for Council adoption. Additionally, staff will continue to bring back to Council additional corridors that may require changed speed limits.

Approved By: City Manager  City Attorney _____

INTRODUCTION

This report is in response to the new street classifications adopted by the City Council June 6, 2005, with the Transportation Master Plan. A map of the new classifications is shown in Appendix A.

The purpose of this report is to provide a more detailed review of the operation of a sub-group of Shoreline arterial streets in relation to their classification, posted speed limit, and traffic volume, then compare the current operations with table 6.3 of the Transportation Master Plan (TMP) to help identify inconsistencies. The table 6.3 is shown in Appendix B.

Table 2, the Arterial Roadway Data Matrix, summarizes all the arterial and neighborhood collector roadways with their currently associated classification, and the operating speed and traffic data collected on them. Table 2 is shown in Appendix C.

Table 3 is a matrix showing the additional data and evaluation for the roadway segments in this review. Table 3 is shown in Appendix D.

A map of all the streets considered in this review and where posted speeds are above or below what would be consistent with adopted policies and standard engineering principles is shown in Appendix E.

BACKGROUND INFORMATION

In June, 2003, the City of Shoreline began the process of updating its Transportation Master Plan (TMP). The TMP looked at the existing arterial street network, and came back with two recommendations. The first recommendation was modifications to the types of roadway classifications. Second was a reclassification of a number of roadways. These recommendations were adopted by the City Council on June 6, 2005.

Table 1 is a comparison of the previous street classifications to the new ones

<i>Table 1</i>			
Abbreviation	Description	Previous Classification	Updated Classification
SR	State Route	Same as Principal Arterial	deleted - included with PA
PA	Principal Arterial		same
MA	Minor Arterial		same
CA	Collector Arterial		same
RS	Residential Street		deleted - included with NC and LS
NC	Neighborhood Collector	N/A	new - non-arterial streets that handle higher volumes, such as for commercial access
LS	Local Street	N/A	new - all non-arterials except NC

The range of appropriate speed limits and volumes for the different classifications is shown in Appendix B. With the new roadway classifications having been adopted, the next step was a preliminary review of the operation of the arterial streets. That review looked at the posted speed limit, operating speeds, volumes, and suggested where changes in the posted speed limit would be appropriate. The review was presented to

the City Council on July 17, 2006. At that time, the Council provided some feedback on the study, and asked for a follow-up discussion in December. That discussion was postponed until January due to time constraints in reviewing the budget in December.

In evaluating the operating speeds, the commonly used measure is the 85% (85 percentile) speed. The 85th percentile speed is the speed at which 85% of the vehicles are traveling at or below. One reason for using this measure is that studies have found that most drivers will travel at a speed that feels comfortable for them. Based on those findings, the normal method of setting a speed limit on a roadway is to use the 85% speed as a starting point, then consider additional factors such as land use (neighborhoods, schools, etc), roadway geometrics (hills and curves), collision records, and street classification in using engineering judgment to determine an appropriate speed limit.

With the exception of Aurora Ave N and Ballinger Way NE, the speed limits on city streets are specified by ordinance, which is passed by the City Council. Because Aurora Ave N and Ballinger Way NE are state highways, and that Aurora Ave N is also a highway of statewide significance, changes to the speed limit on each roadway must also be approved by the Secretary of Transportation for the State of Washington.

DISCUSSION

The principles of transportation planning and traffic operations both recognize the *importance of having a consistent look and feel to arterial routes*. By clearly identifying arterial streets with yellow centerline markings, traffic control devices for all intersecting streets (stop signs, traffic signals, etc.), and consistent application of speed limits, drivers can be encouraged to stay on the arterial network instead of finding alternate routes through neighborhoods. A marked centerline is typically a characteristic of an arterial street, so marking a centerline on a non-arterial street can identify a neighborhood street as a “through” route, and invite more traffic into a neighborhood.

An example of this philosophy can be seen in neighboring cities, such as Seattle, where all the arterial streets are marked with centerlines, while the non-arterials typically have none. The speed limit on all the arterials in Seattle is 30 MPH unless otherwise posted. There are signs at every arterial entry into Seattle that remind drivers of the arterial speed limits, which negates the need to have speed limit signs posted on every street.

Currently, there is an inconsistency in the treatments of some roadways in Shoreline. There are some local streets with centerlines, stop signs on all the side streets, and speed limits of 30 mph. There are also some arterials with speed limits below 30 mph. *One of the effects of having arterials streets with speeds lower than 30 MPH is that it can be just as easy, or easier, to travel through the neighborhood on local streets.* This has resulted in a need for additional man-hours of police enforcement to achieve a lower operating speed, and maintain the lowered speed. In addition, having posted speed limit too low for the intended use is an underlying factor in complaints about speeding and cut-through traffic in neighborhoods.

Issues associated with speed limits that are set too low include the requirement for additional enforcement to achieve the desired driver behavior and posted speed compliance. Unfortunately, local residents who are normally obeying the law often get

caught traveling too fast on 25 MPH arterials merely because they did not realize the speed limit was lower than other typical arterials. The City's traffic engineering staff has been subpoenaed into court to defend the engineering judgment associated with the posted speed on a street. In these type of cases, if found arbitrary or without adequate grounds, courts can dismiss speeding violations.

The issue of changing speed limits can be difficult. A common perception is that raising a speed limit will increase speeding and decrease safety. **Studies have shown that typically, simply changing the speed limit signs alone has little effect on the operating speed of a roadway.** Physical changes, such as narrower lanes, curbs and sidewalks, and parallel parking can help to reduce driver comfort at higher speeds, so drivers tend to slow down.

Speed limits, when set too low, require more hours of enforcement, increase driver delay, and can cause drivers to seek faster routes through neighborhoods. Support for setting appropriate speed limits can be found a number of engineering publications. Some of them are referenced below.

When a speed limit is to be posted, it should be within 10 km/h or 5 mph of the 85th-percentile speed of free-flowing traffic.

Source: Manual on Uniform Traffic Control Devices (MUTCD), 2003 ed, FHWA

When considering a change to the speed limit of a roadway, physical improvements may be needed to help adjust driving behavior. Such improvements can include centerline removal, edge line installation, intersection reconfiguration, sidewalks, and modifying signal operation.

A prerequisite to development of any effective speed management program is establishment of realistic speed limits to match roadway design and area characteristics. The goal is to design streets that communicate the appropriate speed for the facility. The selected speed limits should be consistent with driver expectations and commensurate with the functions of the roadway. A complementary relationship must exist among desired speed, actual operating speed, and posted speed limits. If the majority of road users view speed limits as unrealistic for prevailing conditions, the posted speed will be violated unless strictly enforced.

Source: Traffic Engineering Handbook, 5th Edition, Institute of Traffic Engineers (ITE)

Of the current 5700 regulatory and warning signs in Shoreline, 700 are speed limit signs. These speed limit signs are located on most roadways because it is not readily apparent to drivers what the correct speed limit on each roadway is. Setting consistent speed limits can reduce sign clutter by creating opportunities to remove redundant speed limit signs.

Posting signs at the city limits stating "Arterial Speed 30MPH unless otherwise posted" allows a jurisdiction to remove redundant signs, unless the sign is needed for some other existing condition, such as marking the end of a school zone. "Arterial Speed Limit" signs can be seen on all arterials entering Seattle, and their use is described as a standard in the Manual on Uniform Traffic Control Devices (MUTCD).

Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State and at jurisdictional boundaries of metropolitan areas.

Source: Manual on Uniform Traffic Control Devices (MUTCD), 2003 ed, FHWA

Installing such signs would need to be coordinated with evaluation and removal of centerline markings on non-arterial streets.

Methodology for evaluation of current conditions

Using the current list of arterials and neighborhood collectors adopted through the TMP, staff collected data on the average weekday traffic volumes and the 85% traffic speeds for the roadways. This data is shown in table 2 in Appendix C.

Comparing the current speed and volume data to the roadway classification, staff developed a list of roadways to consider for further review of changes to the posted speed limit. These roadways were initially assigned into four groups. The groups are defined as follows:

- Group 1 – Low difficulty of implementation, high benefit
- Group 2 – Medium difficulty – moderate benefits
- Group 3 – Higher difficulty – few benefits
- Group 4 – No changes recommended at this time.

These roadways are sorted by groupings, and also shown in Appendix C.

Benefits of appropriately assigned speed limits

- Greater consistency in setting appropriate speed limits may help reduce driver confusion, and increase driver compliance.
- Statutory speed limits on roadways would be consistent with current roadway classification.
- Clearly defining arterial routes helps preserve neighborhood integrity.
- Appropriately set speed limits can free up police resources to focus their attention on problem areas.
- Drivers tend to respect and comply with speed limits when appropriately set.
- Brings more drivers into compliance with the law.

Disadvantages of raising the posted speed limits

- Negative public perception
- Perception is that raising speed limit makes cars go faster and decreases safety.
- Increased resources to help defend speeding citations, and greater chance of dismissal.
- Capital improvement projects may be needed to maintain or improve driver compliance and the level of safety on each roadway

Further Evaluation Methodology Process

- Generate a list of roadways with the 85% speeds out of compliance of the posted or classification range policy by 5 or more MPH
- Evaluate the collision history, roadway geometrics, pedestrian facilities, and land use (schools, etc)

- Compare the CIP needs vs the costs of enforcement to achieve compliance with the appropriate speed for the street classification.
- Work with police department in development of final list of roadways for suggested changes to posted speed limit.
- Recommend an action plan and ordinance changes for specific arterial links

Funding Source Discussion

When considering a change to the speed limit of a roadway, physical improvements may be needed to help adjust driving behavior. Such improvements can include centerline removal, edge line installation, intersection reconfiguration, sidewalks, curb and gutter, drainage facilities, and modifying signal operations. Funding for such improvements could come from a combination of sources, including CIP projects, annual programs, and grants.

Conclusions

Many of Shoreline's roadways are functioning as intended. However, there are some that can and should be changed to meet the needs of users of the transportation system, be in compliance with our roadway classification system, and still maintain the necessary level of safety. Adjusting some of the speed limits on Shoreline's arterials to make them consistent with the roadway classification can have several benefits. These include helping improve driver compliance with the posted speed, and reduce delay and cut-through traffic in some neighborhoods.

Such changes could also require some capital improvements to maintain or improve the safety for all users of the roadways. Such improvements can reduce the need for extra police enforcement, freeing up those resources to be used at other problem areas.

An implementation plan needs to be developed prior to changing the speed limit signs on a roadway. Through the development of the table 2 in Appendix C, we can see some of the areas with the worst speeding problems. The police department is using this table to target speed enforcement. However, enforcement is not likely to completely achieve a change in driver behavior in the long term.

Staff will continue to work with neighborhoods to insure understanding of the process and the effects resulting from any speed limit change recommendations.

Recommendations

Staff recommends that Council adopt Appendix D, a section of the proposed Arterial Speed study that would reduce speeds in certain segments of the city and rectify speed limits posting in two streets. Staff will then draft an ordinance implementing the authorized changes for Council adoption. Additionally, staff will continue to bring back to Council additional corridors that may require changed speed limits

ATTACHMENTS

Appendix A: Arterial Map of Shoreline-Street Classification
Appendix B: Characteristics of Roadways chart from TMP
Appendix C: Arterial Roadway Data Matrix
Appendix D: List of Group1 street segment evaluations
Appendix E: Map of Group 1 street segments
Appendix F - Current Posted Arterial Speed Limits

Appendix A - Arterial Map of Shoreline

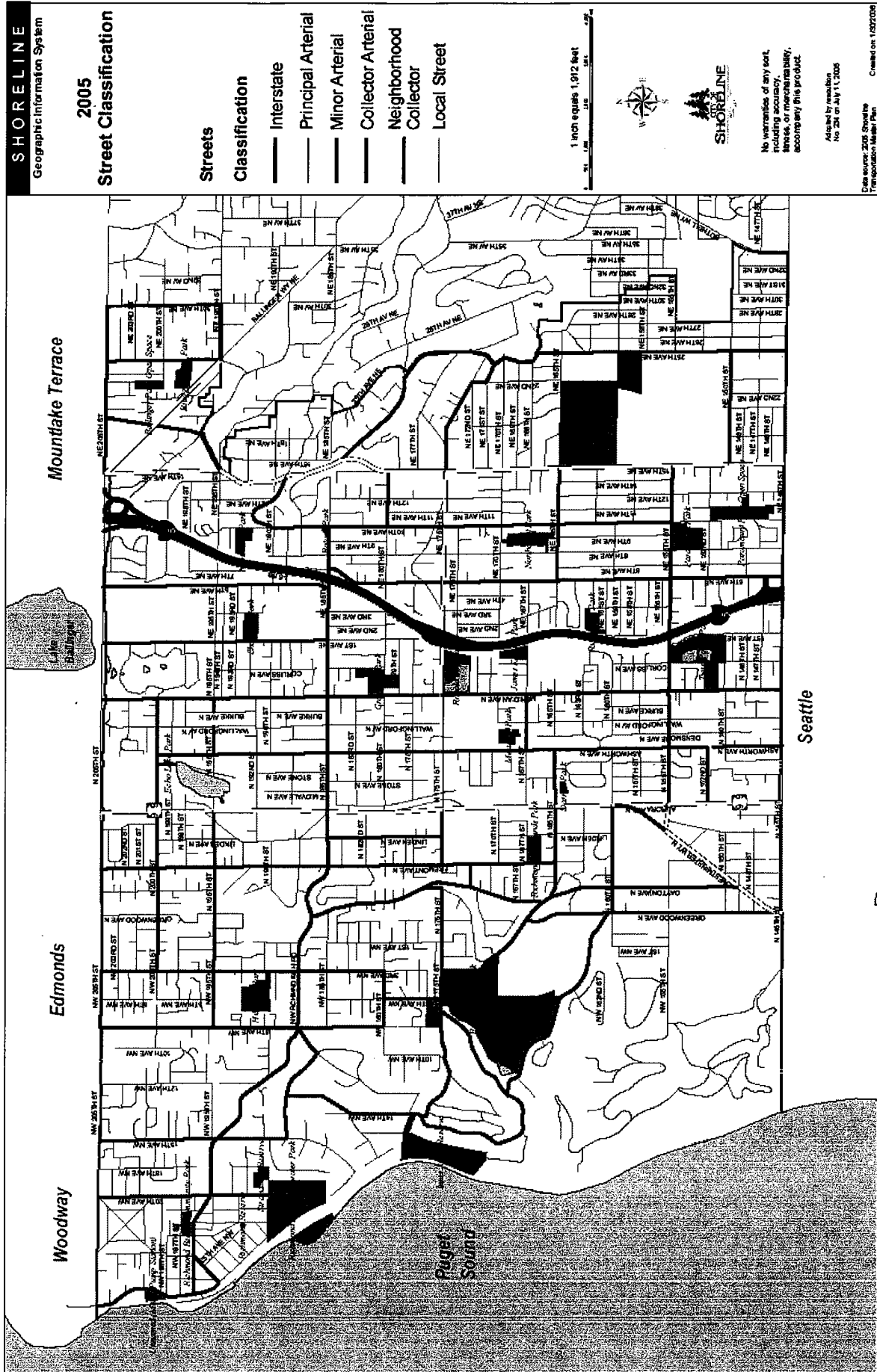


Table 6-3: General Description of Classified Streets

	Arterial			Local Street	
	Principal Arterial	Minor Arterial	Collector Arterial	Neighborhood Collector	Local Street
Function	- To connect cities and urban centers with minimum delay - To channel traffic to Interstate system - To accommodate long and through trips	- To connect activity centers within the City - To channel traffic to Principal Arterials/Interstate - Accommodate some long trips	- To serve community centers and businesses - To channel traffic from Neighborhood Access streets to Minor or Principal Arterials - Accommodate medium length trips	- To serve residential areas - To channel traffic from local streets to Collector Arterials - Accommodate short trips such as shopping trips	- To provide local accesses - To serve residential areas
Land Access	- Limited local access – refer to the "Access Management Plan" - 30 – 45 mph	- Limited local access to abutting properties - 30 – 40 mph	- Local access with some control - 30- 35 mph	- Local access with minimum restrictions - 25 –30 mph	- Local access with minimum restrictions - 25 mph
Speed Limits	- More than 15,000 vpd	- 8,000 – 25,000 vpd	- 3,000 – 9,000 vpd	- less than 4,000 vpd	- Less than 4,000 vpd
Daily Volumes (vpd)	- Three or more lanes	- Three or more lanes	- Two or more lanes	- One or Two lanes	- One or Two lanes
Number of Lanes	- Travel lanes delineated with stripes	- Travel lanes delineated with stripes	- Travel lanes delineated with stripes	- No travel lane striping	- No travel lane striping
Lane striping	- Landscaped medians or two-way center left turn lanes	- Landscaped medians or two-way center left turn lanes	- Landscaped medians allowed	- Medians are not needed unless provided as traffic calming devices	- Medians may be provided as traffic calming devices
Median	- Buses/transit stops allowed	- Buses/transit stops allowed	- Buses/transit stops allowed	- Buses/transit stops not generally allowed except for short segments	- Buses/transit stops not allowed
Transit	- Bike lanes or shared lanes desired	- Bike lanes or shared lanes desired	- Bike lanes or shared lanes desired	- Shared lanes can be provided	- Bike facilities not specifically provided; may include signed bike routes
Bicycle Facilities	- Sidewalks on both sides - Landscaped/amenity strips	- Sidewalks on both sides - Landscaped/amenity strips	- Sidewalks on both sides - Landscaped/amenity strips	- Sidewalks on both sides - Landscaped/amenity strips	- Safe pedestrian access through the use of sidewalks, trails, or other means.
Pedestrian Facilities*					

Source: City of Shoreline Transportation Master Plan – June, 2006

Arterial Roadway Data
Traffic Services, June 2006

Table 2-Appendix C

Street Segment	Old Class	New Class	Current Posted		Volume	# of lanes	Speed Diff	Typical Posted Speed based on 85% or Volume (AWDT)	Suggested Speed		Comments
			Speed Limit	85% speed					Limit Change	Limit	
10th Ave NE - NE 155th St to NE 165th St	RS	NC	30	36.1	2,500	2	6.1	30-40	25-30	Lower	NC => 25 mph (min); New sidewalk and traffic circle being installed
10th Ave NE - NE 165th St to NE 175th St	RS	NC	30	36.3	2,500	2	6.3	30-40	25-30	Lower	NC => 25 mph (min); New sidewalk and traffic circle being installed
10th Ave NE - NE 175th St to NE 185th St	RS	NC	30	35.2	5,200	2	5.2	30-40	30-40		
10th Ave NE - NE 185th St to NE Perkins Wy	MA	CA	30	34.8	5,400	2	4.8	30-40	30-40		
10th Ave NW - NW Innis Arden W to NW 175th St	CA	CA	25	33.8	650	2	8.8	30-35	25-30	Raise	CA => 30 mph (min)
14th Ave NW - NW 175th St to NW Springdale Pl	CA	CA	25	33.9	1,024	2	8.9	30-35	25-30	Raise	CA => 30 mph (min)
15th Ave NE - NE 145th St to NE 175th St	PA	PA	35	38.6	17,000	3	3.6	30-40	30-35		
15th Ave NE - NE 175th St to 15th Pl NE	PA	PA	25	34.7	17,600	4	9.7	30-40	30-35	Raise	PA => 30 mph (min)
15th Ave NE - 15th Pl NE to NE 195th St	PA	PA	35	38.8	17,600	4	3.8	30-40	30-35		
15th Ave NE - NE 195th St to NE 205th St	PA	PA	35	39.4	9,000	2	4.4	30-45	30-35		
15th Ave NW - NW 167th St to NW 175th St	CA	CA	25	34.6	1,130	2	9.6	30-40	25-30	Raise	CA => 30 mph (min)
15th Ave NW - NW 188th St to NW Richmond Bch Rd	CA	CA	25	33.1	1,424	2	8.1	30-35	25-30	Raise	CA => 30 mph (min)
15th Ave NW - NW Richmond Bch Rd to NW 205th St	RS	CA	25	31.7	1,400	2	6.7	30-35	25-30	Raise	CA => 30 mph (min)
19th Ave NE - 15th Ave NE to Ballinger Way NE	MA	MA	25	33.3	6,000	2	8.3	30-35	30-40	Raise	MA => 30 mph (min)
19th Ave NE - Ballinger Way NE to NE 205th St	MA	MA	25	33.5	8,000	2	8.5	30-35	30-35	Raise	MA => 30 mph (min)
1st Ave NE - NE 145th St to NE 155th St	RS	CA	30	37.4	3,200	2	7.4	30-40	30-40		
1st Ave NE - NE 185th St to NE 194th St	RS	CA	25	34.2	3,600	2	9.2	30-40	30-40	Raise	CA => 30 mph (min)
1st Ave NE - NE 194th St to NE 205th St	RS	CA	35	41.3	3,100	2	6.3	30-45	30-40		
20th Ave NW - NW 190th St to NW 205th St	CA	CA	25	31.5	2,200	2	6.5	30-35	25-30	Raise	CA => 30 mph (min)
22nd Ave NE - NE 171st St to NE 175th St	CA	CA	25	30.1	1,200	2	5.1	30-35	25-30	Raise	CA => 30 mph (min)
24th Ave NE - NE 178th St to 15th Ave NE	MA	MA	35	28.5	3,800	2	(6.5)	25-30	30-40	Lower	CA => 30 mph (min)
25th Ave NE - NE 145th St to NE 175th St	CA	CA	30	32.7	5,000	2	2.7	30-35	30-40		
25th Ave NE - NE 175th St to NE 178th St	CA	CA	30	38.9	4,000	2	8.9	30-40	30-40		
25th Ave NE - NE 178th St to NE Perkins Way	RS	NC	25	33.0	860	2	8.0	30-35	25-30		
25th Ave NE - Ballinger Way NE to NE 205th St	RS	NC	25	34.1	1,700	2	9.1	30-40	25-30	Raise	CA => 30 mph (min)
3rd Ave NW - Carlyle Hal Rd NW to NW 175th St	CA	CA	25	38.2	3,500	2	13.2	30-40	30-40	Raise	CA => 30 mph (min)
3rd Ave NW - NW 180th St to NW Richmond Bch Rd	RS	NC	25	30.1	1,500	2	5.1	30-35	25-30		
3rd Ave NW - NW Richmond Bch Rd to NW 205th St	CA	CA	35	28.4	4,200	2	(6.6)	25-30	30-40	Lower	CA => 30 mph (min)
5th Ave NE - NE 145th St to NE 175th St	MA	MA	30	37.4	7,200	2	7.4	30-40	30-40		
5th Ave NE - NE 175th St to NE 185th St	MA	MA	30	38.3	4,000	2	8.3	30-40	30-40		
5th Ave NE - NE 185th St to NE 205th St	CA	NC	30	37.6	2,000	2	7.6	30-40	25-30		
6th Ave NW - NW 175th St to NW 180th St	CA	CA	25	34.8	2,700	2	4.8	30-40	25-30	Raise	CA => 30 mph (min)
8th Ave NW - NW 180th St to NW Richmond Bch Rd	CA	CA	30	35.0	3,700	2	5.0	30-40	30-40		
8th Ave NW - NW Richmond Bch Rd to NW 205th St	MA	MA	35	34.9	6,800	2	(0.1)	30-40	30-40	Lower	MA => 30 mph (min)
Ashworth Ave N - N 145th St to N 150th St	RS	NC	25	32.8	350	2	7.8	30-35	25-30		
Ashworth Ave N - N 152nd St to N 155th St	RS	NC	25	28.5	1,370	2	3.5	25-30	25-30		
Ashworth Ave N - N 155th St to N 175th St	RS	NC	30	32.3	1,500	2	2.3	30-35	25-30		
Ashworth Ave N - N 175th St to N 200th St	RS	NC	30	34.4	1,300	2	4.4	30-40	25-30		
Aurora Ave N - N 145th St to N 205th St	SR	PA	40	42.6	45,000	5	2.6	30-45	30-35		State Route

PA = Principal Arterial MA = Minor Arterial CA = Collector Arterial
NC = Neighborhood Collector LS = Local Street

Arterial Roadway Data
Traffic Services, June 2006

Table 2-Appendix C

Street Segment	Old Class	New Class	Current Posted			# of lanes	Speed Diff	Typical Posted Speed based on 85% or Volume (AWDT)	Suggested Speed		Comments
			Limit	Speed	85% speed				Limit Change	Limit	
Ballinger Way NE - NE 195th St to NE 205th St	SR	PA	40	39.7	22,400	5	(0.3)	30-45		30-35	State Route
Carlyle Hall Rd NW - 3rd Ave NW to Dayton Ave N	CA	PA	25	35.0	2,200	2	10.0	30-40	Raise	25-30	CA => 30 mph (min)
Dayton Ave N - Westminster Way N to N 185th St	MA	CA	35	38.5	8,600	2	3.5	30-40		30-35	
Fremont Ave N - N 165th St to N 205th St	RS	CA	30	33.9	9,000	2	3.9	30-35		30-35	
Greenwood Ave N - NE 145th St to N Innis Arden Wy	CA	CA	35	39.8	7,000	2	4.8	30-45		30-40	
Greenwood Ave N - Innis Arden Wy to Carlyle Hall Rd	RS	CA	30	36.6	3,400	2	6.6	30-40		30-40	
Linden Ave N - N 175th St to N 185th St	RS	NC	25	33.5	2,900	2	8.5	30-35		25-30	
Meridian Ave N - N 145th St to N 205th St	MA	MA	35	37.0	12,000	2	2.0	30-40		30-35	
Midvale Ave N - N 175th St to N 185th St	RS	CA	25	31.3	1,200	2	6.3	30-35		25-30	
N 152nd St - Aurora Ave N to Ashworth Ave N	RS	NC	25	27.0	2,250	2	2.0	25-30		25-30	
N 155th St - Westminster Way N to Aurora Ave N	PA	PA	35	34.4	13,800	5	(0.6)	30-40		30-35	
N 155th St - Aurora Ave N to 5th Ave NE	MA	MA	35	37.0	12,500	3	2.0	30-40		30-35	
N 160th St - Greenwood Ave N to Dayton Ave N	CA	CA	25	28.4	5,200	2	3.4	25-30	Raise	30-35	CA => 30 mph (min)
N 160th St - Dayton Ave N to Aurora Ave N	MA	MA	35	38.7	8,500	4	3.7	30-40		30-35	
N 165th St - Carlyle Hall Rd N to Aurora Ave N	RS	CA	25	33.3	1,900	2	8.3	30-35	Raise	25-30	CA => 30 mph (min)
N 165th St - Aurora Ave N to Ashworth Ave N	RS	NC	25	31.0	600	2	6.0	30-35		25-30	
N 167th St - Ashworth Ave N to Meridian Ave N	RS	NC	25	33.7	1,900	2	8.7	30-35		25-30	
N 172nd St - Dayton Ave N to Fremont Ave N	RS	CA	25	30.8	5,000	2	5.8	30-35	Raise	30-40	CA => 30 mph (min)
N 175th St - Fremont Ave N to Aurora Ave N	CA	CA	30	34.9	10,000	4	4.9	30-40		30-35	
N 175th St - Aurora Ave N to 15th Ave NE	PA	PA	35	41.6	33,000	4	6.6	30-45		30-35	
N 185th St - Fremont Ave N to Midvale Ave N	MA	MA	35	31.9	13,300	4	(3.1)	30-35		30-35	
N 185th St - Midvale Ave N to 1st Ave NE	MA	MA	35	37.0	12,000	3	2.0	30-40	Lower	30-35	MA => 30 mph (min)
N 195th St - Fremont Ave N to Aurora Ave N	RS	CA	25	18.8	1,140	2	(6.2)	25-30	Lower	25-30	MA => 30 mph (min) CA => 30 mph (min); data collected between Firlands and Aurora
N 195th St - Ashworth Ave N to Meridian Ave N	RS	NC	25	27.7	900	2	2.7	25-30		25-30	
N 200th St - 3rd Ave NW to Meridian Ave N	CA	CA	25	34.9	6,000	2	9.9	30-40	Raise	30-40	CA => 30 mph (min)
N 205th St - 3rd Ave NW to Aurora Ave N	MA	MA	35	39.9	15,000	3	4.9	30-45		25-30	
N 205th St - Aurora Ave N to Wallingford Ave N	SR	PA	35	37.2	20,100	4	2.2	30-40		30-35	
NE 150th St - 15th Ave NE to 25th Ave NE	CA	CA	30	33.2	3,200	2	3.2	30-35		30-40	
NE 155th St - 5th Ave NE to 15th Ave NE	MA	MA	35	37.3	9,000	3	2.3	30-40		30-35	
NE 165th St - 5th Ave NE to 15th Ave NE	RS	CA	25	33.4	2,050	2	8.4	30-35	Raise	25-30	CA => 30 mph (min)
NE 168th St - 15th Ave NE to 25th Ave NE	RS	LS	30	37.4	2,500	2	7.4	30-40		25-30	
NE 171st St - 22nd Ave NE to 25th Ave NE	CA	CA	25	29.9	325	2	4.9	30-35		25-30	
NE 175th St - 15th Ave NE to NE 172nd St	CA	CA	30	34.9	3,500	2	4.9	30-40	Raise	30-40	CA => 30 mph (min)
NE 178th St - 24th Ave NE to 25th Ave NE	MA	MA	35	38.5	3,700	2	3.5	30-40		30-40	
NE 180th St - 10th Ave NE to 15th Ave NE	RS	NC	25	34.0	2,800	2	9.0	30-35	Raise	25-30	CA => 30 mph (min)
NE 185th St - 1st Ave NE to 10th Ave NE	MA	MA	35	36.9	8,400	3	1.9	30-40	Lower	30-35	MA => 30 mph (min)
NE 205th St - Ballinger Way NE to 30th Ave NE	RS	MA	40	35.4	10,800	2	(4.6)	30-40		25-30	
NE Perkins Way - 10th Ave NE to 15th Ave NE	MA	CA	25	32.2	4,000	2	7.2	30-35	Raise	30-40	CA => 30 mph (min)
NE Perkins Way - 15th Ave NE to 25th Ave NE	MA	CA	25	33.3	3,000	2	8.3	30-35	Raise	25-30	CA => 30 mph (min)
NW 167th St - 10th Ave NW to 15th Ave NW	CA	CA	25	29.2	1,100	2	4.2	30-35	Raise	25-30	CA => 30 mph (min)

PA = Principal Arterial MA = Minor Arterial CA = Collector Arterial
NC = Neighborhood Collector LS = Local Street

Arterial Roadway Data
Traffic Services, June 2006

Table 2-Appendix C

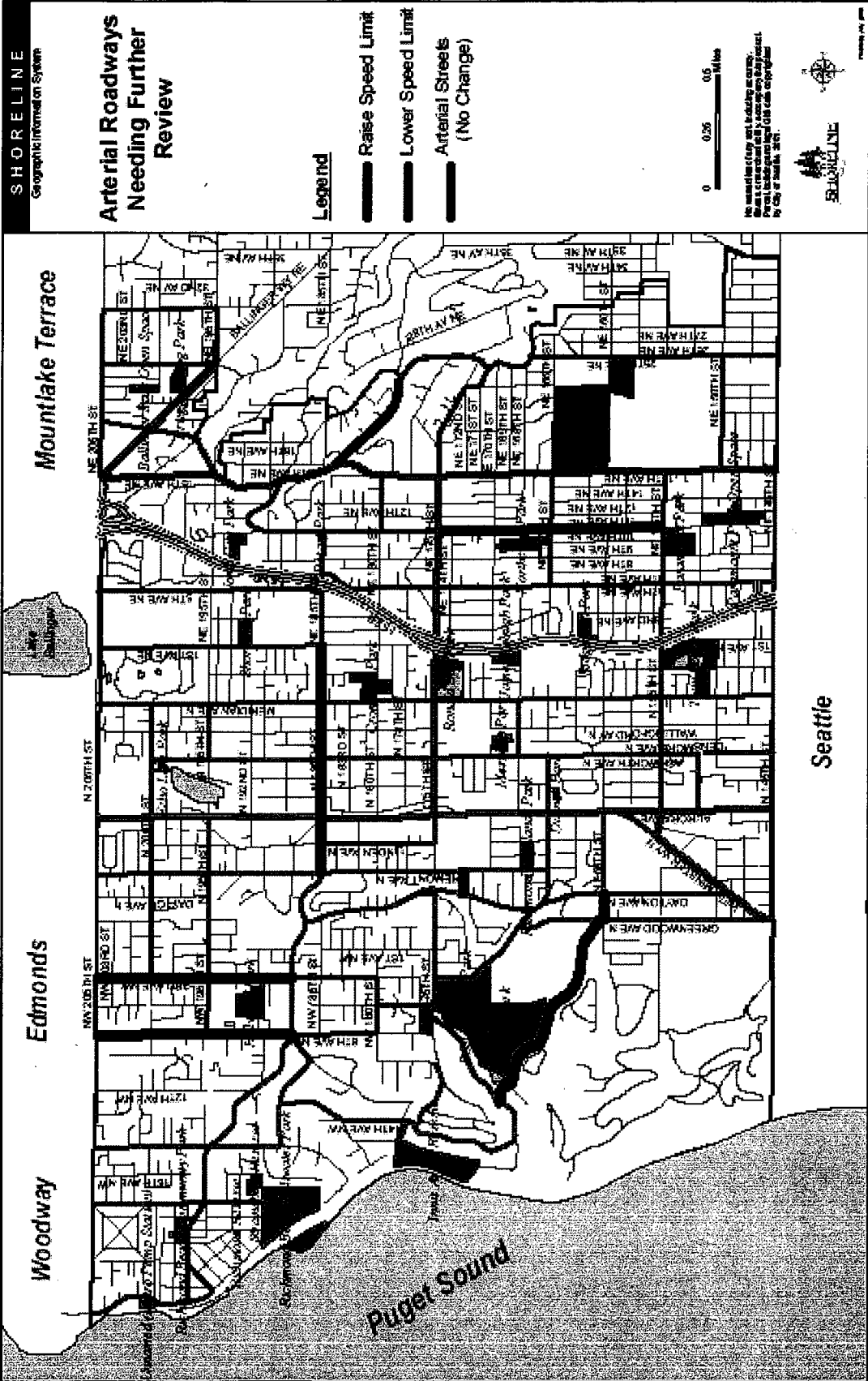
Street Segment	Current Posted			Typical Posted			Suggested Speed				
	Old Class	New Class	85% Speed Limit	Volume	# of lanes	Speed Diff	Speed based on 85% or Volume speed (AWDT)	Limit Change	Comments		
NW 175th St - Greenwood Pl N to 10th Ave NW	RS	CA	25	32.4	4,200	2	7.4	30-35	30-40	Raise	CA => 30 mph (min)
NW 175th St - 10th Ave NW to 15th Ave NW	RS	NC	25	27.1	500	2	2.1	25-30	25-30		
NW 180th St - 3rd Ave NW to 6th Ave NW	RS	NC	25	29.7	450	2	4.7	30-35	25-30		
NW 180th St - 6th Ave NW to 8th Ave NW	CA	CA	25	29.2	2,100	2	4.2	30-35	25-30		
NW 188th St - Springdale Ct NW to 15th Ave NW	CA	CA	25	32.2	1,850	2	7.2	30-35	25-30	Raise	CA => 30 mph (min)
NW 195th Pl - 24th Ave NW to NW Richmond Beach	CA	NC	25	32.6	950	2	7.6	30-35	25-30	Raise	CA => 30 mph (min)
NW 195th St - Fremont Ave N to 8th Ave NW	RS	NC	25	34.7	2,550	2	9.7	30-40	25-30	Raise	CA => 30 mph (min)
NW 195th St - 15th Ave NW to 20th Ave NW	MA	MA	30	38.6	9,100	4	8.6	30-40	30-35		
NW 196th St - 20th Ave NW to 24th Ave NW	CA	CA	30	35.8	2,100	4	5.8	30-40	25-30		
NW 196th St - 24th Ave NW to NW Richmond Bch Rd	CA	CA	25	33.3	900	2	8.3	30-35	25-30	Raise	CA => 30 mph (min)
NW 205th St - 3rd Ave NW to 8th Ave NW	RS	CA	25	25.1	2,000	2	0.1	25-30	25-30	Raise	CA => 30 mph (min)-speed humps
NW Innis Arden Way - Greenwood Av N to 10th Av NW	CA	CA	35	41.1	2,100	2	6.1	30-45	25-30	Lower	CA => 30 mph (min)
NW Richmond Bch Rd - Fremont Ave N to 8th Ave NW	MA	MA	35	38.7	19,000	4	3.7	30-40	30-35		
NW Richmond Bch Rd - 8th Ave NW to 15th Ave NW	MA	MA	30	36.8	12,000	4	6.8	30-40	30-35		
Richmond Bch Dr NW - NW 195th Pl to NW 196th St	CA	NC	25	27.7	500	2	2.2	25-30	25-30		
Richmond Bch Dr NW - NW 196th St to NW 205th St	CA	CA	25	31.5	525	2	6.5	30-35	25-30	Raise	CA => 30 mph (min)
Ridgefield Rd NW - Innis Arden Rd to Springdale Ct NW	RS	NC	25	31.9	925	2	6.9	30-35	25-30		
Springdale Ct NW - 14th Ave NW to NW 188th St	CA	CA	25	28.9	1,300	2	3.9	25-30	25-30	Raise	CA => 30 mph (min)
St Luke Pl N - N 175th St to Dayton Ave N	RS	CA	25	27.6	2,300	2	2.6	25-30	25-30		
Westminster Way N - Greenwood Ave N to N 155th St	PA	PA	35	43.2	22,000	4	8.2	30-45	30-35		
Westminster Way N - N 155th St to Aurora Ave N	PA	PA	35	44.1	6,800	2	9.1	30-45	30-40		One Way SB

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Appendix D - List of Group1 street segment evaluations

Street Segment	New Class	Current Speed Limit	Prop Speed Limit	# of lanes	Recommended Posted Speed based on				Speed limit Change	Comments	3 year collisions			Geometrics straight and level	school zone	existing facilities
					85% speed	Volume	Speed Diff	85% speed			# coll	# in	Length			
10th Ave NE - NE 155th St to NE 165th St	NC	30	25	2	35.2	2,500	5.2	30-40	Lower	NC => 25 mph (min)	1	1	2533	straight and level	yes	All way stop at NE 165th St, school on NE corner
Evaluation:	Lower speed limit meets the intent of the street classification, fits character of neighborhood, and supports neighborhood traffic action plan. Will need extra enforcement to reduce current 85% speeds.															
10th Ave NE - NE 165th St to NE 175th St	NC	30	25	2	33.5	2,500	3.5	30-35	Lower	NC => 25 mph (min)	6	2	2722	straight and level	yes	Sidewalk on east side, traffic circle at NE 170 St, all way stop at NE 165th St.
Evaluation:	Lower speed limit meets the intent of the street classification, fits character of neighborhood, and supports neighborhood traffic action plan. The 85% speeds are dropping with construction of a new sidewalk on the east side of 10th Ave NE, and a traffic circle at NE 170th St. Will need extra enforcement to reduce current 85% speeds.															
24th Ave NE - NE 178th St to 15th Ave NE	MA	35	30	2	28.6	3,800	(6.4)	25-30	Lower	CA => 30 mph (min), 85% speeds are low	1	0	2001	winding roadway	no	
Evaluation:	The geometrics of this two-lane winding roadway contributes to the slower speeds for the majority of drivers. Since the 85% speeds are already lower than the posted speed limit, lowering the speed limit can be done with just a changing of signs.															
3rd Ave NW - NW Richmond Bch Rd to NW 205th St	CA	35	30	2	28.8	4,200	(6.2)	25-30	Lower	CA => 30 mph (min), 85% speeds are low	19	10	4515	straight and level	yes	Sidewalk on one side between NW Richmond Beach Rd and NW 195th St
Evaluation:	Existing school zones and the all way stop at NW 195th St contribute to slower speeds. Since the 85% speeds are already lower than the posted speed limit, lowering the speed limit can be done with just a changing of signs.															
8th Ave NW - NW Richmond Bch Rd to NW 205th St	MA	35	30	2	36.8	6,800	1.8	30-40	Lower	MA => 30 mph (min)	7	1	4583	straight and level	no	Sidewalk on one side between NW 190th St and NW 200th St, 3 marked pedestrian crossings.
Evaluation:	Lower speed limit meets the intent of the street classification, fits character of neighborhood, and supports three marked pedestrian crossings. It also lies in with the lower speed limits north of NW 205th St. Will need extra enforcement to reduce current 85% speeds.															
N 160th St - Greenwood Ave N to Dayton Ave N	CA	25	30	2	28.4	5,200	3.4	25-30	Raise	CA => 30 mph (min)	1	0	560	straight with vertical curve	no	Sidewalk on south side of the street
Evaluation:	Higher speed limit meets the intent of the street classification and consistency of arterial speed limit postings. This segment is only one block. A speed limit of 30 MPH would be consistent with speed limits to the east, Greenwood Ave N, and Dayton Ave N. Since the 85% speeds are only 28.4 MPH, changing the speed limit can be done by just replacing signs. No significant change in driver behavior is expected															
N 172nd St - Dayton Ave N to Fremont Ave N	CA	25	30	2	30.8	5,000	5.8	30-35	Raise	CA => 30 mph (min)	2	0	528	straight and level	no	Sidewalk on south side, all-way stops at Dayton Ave N and at Fremont Ave N
Evaluation:	Higher speed limit meets the intent of the street classification and consistency of arterial speed limit postings. This segment is only one block, with all-way stops at each end. Since the 85% speeds are already at 30.8 MPH, changing the speed limit can be done by just replacing signs.															
N 185th St - Fremont Ave N to Midvale Ave N	MA	35	30	4	31.9	13,300	(3.1)	30-35	Lower	MA => 30 mph (min)			2693	straight and level	no	Sidewalks on both sides of street except for 200 ft west of Aurora Ave N.
Evaluation:	Lower speed limit meets the intent of the street classification, fits character of neighborhood, and can improve safety as drivers enter a congested, commercial area. Since the 85% speeds are already lower than the posted speed limit, lowering the speed limit can be done with just a changing of signs.															
N 185th St - Midvale Ave N to 1st Ave NE	MA	35	30	3	37	12,000	2.0	30-40	Lower	MA => 30 mph (min)			3938	straight and level	no	Sidewalks on both sides of street. Center turn lane, bike lanes.
Evaluation:	Lower speed limit meets the intent of the street classification, fits character of neighborhood, and could help support use of the bicycle lanes. Will need extra enforcement to reduce current 85% speeds.															
NE 185th St - 1st Ave NE to 10th Ave NE	MA	35	30	3	36.9	8,400	1.9	30-40	Lower	MA => 30 mph (min)	93	60	2382	straight and level		Sidewalks on both sides of street.
Evaluation:	Lower speed limit meets the intent of the street classification, and fits character of neighborhood. Will need extra enforcement to reduce current 85% speeds.															
NW Imis Arden Way - Greenwood Av N to 10th Av NW	CA	35	30	2	41.1	2,100	6.1	30-45	Lower	CA => 30 mph (min)	13	3	4749	winding roadway	no	
Evaluation:	Lower speed limit meets the intent of the street classification, fits character of neighborhood, and can improve safety on this winding two-lane roadway. Will need extra enforcement to reduce current 85% speeds.															

Appendix E - Map of Group 1 street segments

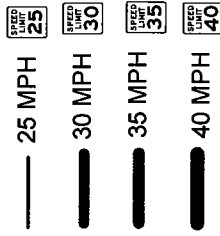


Appendix F – Current Posted Arterial Speed Limits

SHORELINE
Geographic Information System

Current (2006) Posted Speed Limits

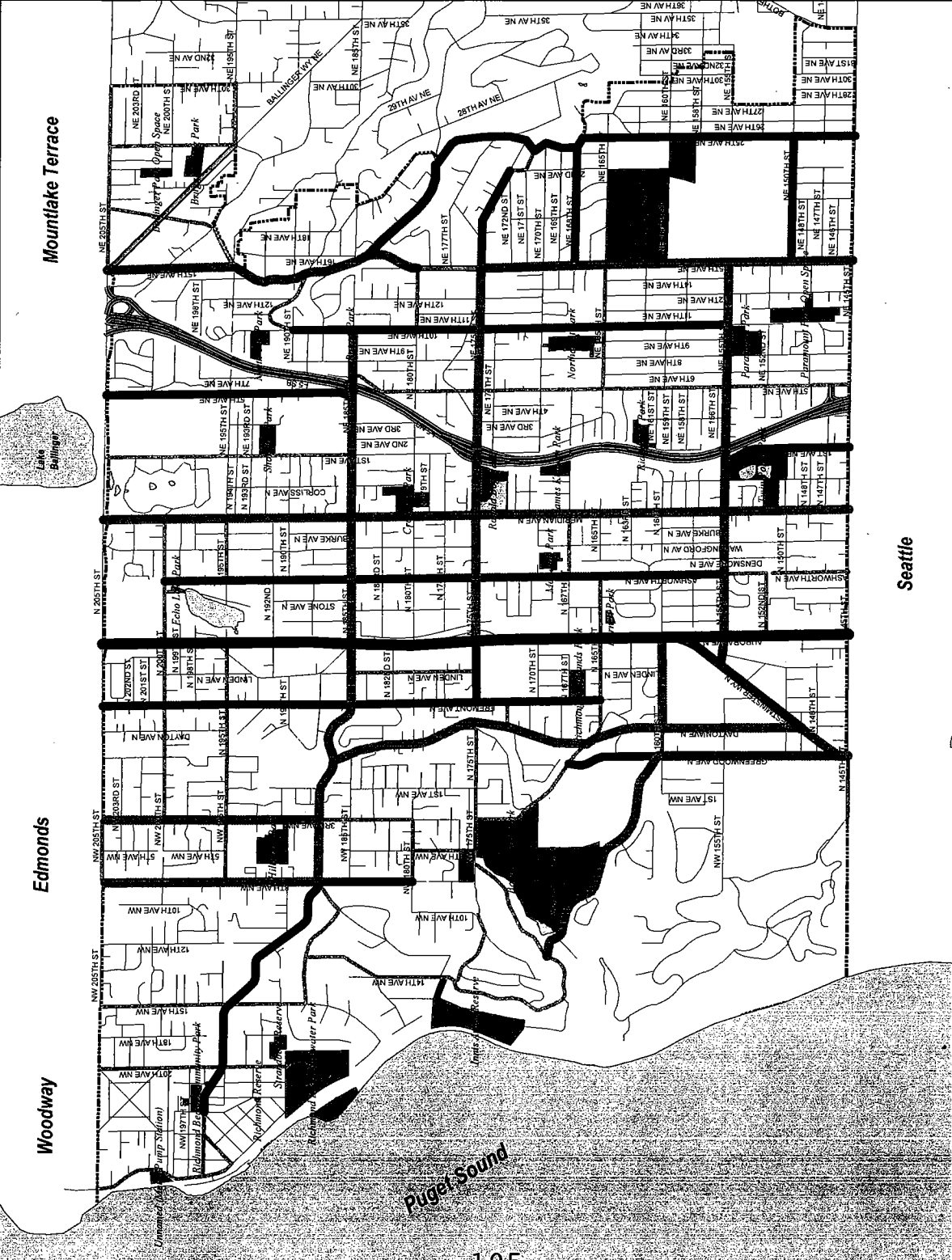
Legend



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Appendix F – Current Posted Arterial Speed Limits

