Council Meeting Date: May 7, 2007 **Agenda Item: 6(d)**

CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	15th Ave NE Traffic Study – Final Report
DEPARTMENT:	Public Works-Traffic Services
PRESENTED BY:	Mark Relph, Public Works Director
	Jesus Sanchez, Operations Manager
	Rich Meredith, City Traffic Engineer

PROBLEM/ISSUE STATEMENT:

In December, 2003, Public Works completed a project to reconfigure 15th Ave NE between NE 150 St and NE 175 St from a 4-lane roadway, two lanes in each direction, to a 3 lane roadway with one lane in each direction, a center turn lane, and bike lanes.

There were concerns raised about increased traffic congestion on 15th Ave NE, and increased traffic volumes and speeds on parallel arterial collectors, 5th Ave NE, 10th Ave NE, and 25th Ave NE, and neighborhood streets. Staff has been monitoring these issues through traffic counts, speed studies, accident review, and traffic studies.

FINDINGS/CONCLUSIONS

The operation of 15th Ave NE as a three-lane roadway meets the planned expectations:

- Lower speeds – The 85% speeds fell 1.5 MPH from 39.3 to 37.8
- Lower volumes – The average weekday traffic (AWDT) declined 1,339 (7.8%)
- Decreased number of collisions – There was a 3.1% decline in reported collisions comparing three years before to three years after implementation.
- Decrease in collision severity – There was a 30.9% drop in the number of reported injuries.

Some local streets experienced small gains in traffic volumes and speeds, and some experienced reductions. The increases on local streets are within the range that these streets can accommodate, and are manageable with controls through the Neighborhood Traffic Safety program (NTSP).

RECOMMENDATION

No council action is required or recommended. Staff will continue to work with local residents to manage traffic impacts on non-arterial streets and implement appropriate neighborhood traffic mitigation improvements.

Approved By: City Manager _____ City Attorney _____

ACTION/BACKGROUND

Historically, 15th Ave NE consisted of two lanes in each direction between NE 150 St and NE 175 St. The curb to curb width of 15th Ave NE is 44 feet, so there is not enough room for a center turn lane and two lanes in each direction. The character of the land uses along 15th Ave NE is primarily residential. The speed limit is 35 MPH. There were complaints about pedestrian safety along the corridor. The City of Shoreline funded a study to examine the corridor and recommend improvements. In the study titled "Final Pedestrian Safety report, January, 2003, one of the recommendations was to reconfigure 15th Ave NE from four lanes to one lane in each direction with a center turn lane. This change, sometimes referred to as a "road diet" because of the reduction in the number of lanes, has been found to improve overall safety of a roadway. One specific safety benefit is the reduction of the "multiple threat" situation for pedestrians. A "multiple threat" occurs when one car stops for a pedestrian, but a vehicle in the adjacent lane doesn't, in part because the visibility of the pedestrian can be obscured by the stopped vehicle.

"Road diet" projects have been successfully implemented in other cities, such as Seattle, Bellevue, Portland, and other locations across the country. Below are some links to websites where more information about the performance of similar projects can be found.

http://www.hsisinfo.org/pdf/04-082.pdf
http://www.walkable.org/download/rdiets.pdf
http://www.ite.org/meetcon/2005AM/Rosales_Tues.pdf

The North City business district was also planned as a three-lane roadway between NE 175 St and NE 180 St to enhance the pedestrian environment, improve pedestrian safety while crossing 15th Ave NE, and improve turning movements into and out of adjacent businesses.

In December, 2003, 15th Ave NE south of NE 175 St was reconfigured to three lanes to facilitate the transition into and out of the North City CBD.

Subsequently, in December, 2004, the City Council directed the channelization through the North City CBD be maintained as 4 lanes between NE 175th St and NE 180th St after completion of the North City construction project.

The City Council asked for a review of the traffic behavior changes resulting from the three lane section between NE 175th St and NE 150th St. A report summarizing those findings was presented in March, 2005. This report updates the findings from that report with data collected through February, 2007.

DISCUSSION

In March, 2003, prior to implementing the three-lane design, traffic counts were taken at 56 locations, and speed studies were conducted at 15 locations to establish a baseline to measure against after the restriping project and the North City improvement project. Traffic signal equipment was upgraded to accommodate the new three-lane

configuration, and to improve traffic flow along to corridor. Construction of the restriping project began in December, 2003. The North City redevelopment project began in May, 2005, and was substantially complete in June, 2006.

Follow up traffic data was collected each year to help monitor the effects of the reconfiguration and the construction impacts of the North City project. The last set of data was collected in February, 2007, to produce this final report about the traffic patterns following substantial completion of the North city project and the restriping.

The following are some of the results of the comparison:

15th Ave NE

Overall, traffic volumes declined 1339 vehicles per day (7.8%) on 15th Ave NE between NE 145th St and NE 175th St. Peak hour volumes also dropped, 55 (4.1%) in the morning and 207 (12.3%) in the evening. The 85 percentile speeds dropped 3.8% from 39.25 MPH to 37.75 MPH. The speed limit is posted at 35 MPH.

According to the Police Department, the number of citations issued on 15th Ave NE south of NE 175 St has dropped. They report that the three lane configuration had a significant effect on the declining number of speeding violations they observed.

	2001	2002	2003	2004	2005	2006
Number of reported collisions - NE 150th St to NE 175th St	30	34	32	38	30	25
Number of reported injuries - NE 150th St to NE 175th St	13	35	20	17	16	14

Vehicle collisions between NE 145th St and NE 175th St decreased 3.1% between 1/1/2001 and 12/31/06. The severity drastically decreased, with the reported injuries dropping 30.9%. The decline in the number of collisions and injuries implies that the three lane configuration has been successful in reducing collision severity, in part by reducing overall speeds, providing refuge for turning vehicles, and improving sight distance for vehicles entering 15th Ave NE.

5th Ave NE

Overall, traffic volumes decreased 94 vehicles per day (1.4%) on 5th Ave NE between NE 145th St and NE 175th St. Peak hour volumes grew, 146 (33.8%) in the morning and decreased 64 (8.6%) in the evening. The 85 percentile speeds grew 1.4% from 35.5 MPH to 36.0 MPH. The speed limit is posted at 30 MPH.

10 Ave NE

Overall, traffic volumes grew 38 vehicles per day (2.1%) on 10th Ave NE between NE 155th St and NE 175th St. Peak hour volumes grew 16 (9.4%) in the morning and

decreased 16 (8.2%) in the evening. The 85 percentile speeds declined 8.2% from 34.8 MPH to 31.9 MPH. The speed limit is posted at 30 MPH.

25 Ave NE

Overall, traffic volumes declined 199 vehicles per day (4.7%) south of NE 150th St, and decreased 23 (0.6%) between NE 150th St and NE 177th St. South of NE 150th St, the peak hour volumes increased 36 (9.4%) in the morning, and declined 134 (29.6%) in the evening. North of NE 150th St, the peak hour volumes increased 43 (8.8%) in the morning, and declined 75 (17.7%) in the evening. The 85 percentile speeds north of NE 150th St declined 2.5% from 33.5 MPH to 32.7 MPH. The speed limit is posted at 30 MPH, with a 20MPH school zone north of NE 153rd St and south of NE 165th St.

NE 175 St

Overall, traffic volumes decreased 142 vehicles per day (1.0%) on NE 175th St between 5th Ave NE and 15th Ave NE. Peak hour volumes grew 9 (1.0%) in the morning and declined128 (9.9%) in the evening. The 85 percentile speeds grew 0.7% from 38.5 MPH to 39.2 MPH. The speed limit is posted at 35 MPH.

ISSUES

Since the completion of the reconfiguration, residents have voiced a number of concerns. These include congestion on 15th Ave NE. Preliminary traffic modeling showed that there would be added delay to traffic on 15th Ave NE, and suggested that some commuter traffic would find other routes. According to field observations by staff and residents, it appears that congestion has increased on 15th Ave NE. Traffic count data shows a reduction in volume. In February, 2007, all the traffic signals on 15th Ave NE were optimized to improve traffic flow. Preliminary results show improvements in the peak hours, reducing the travel time from about 6 minutes to around 5.5 minutes between NE 155th St and NE Perkins Way.

Another concern was increased traffic on neighboring streets. While some streets have seen some increase in the total daily traffic, most of the streets south of NE 175th St experienced a decrease in the weekday traffic volumes. Traffic calming devices in the neighborhood have shown significant impacts. The traffic circle at 10th Ave NE and NE 170th St has reduced the 85% speeds 5.4 MPH (15.6%)

Residents have commented that speeding appears to be more of a problem. The comparison showed that 15th Ave NE has seen a decrease in the 85 percentile speeds over a 24 hour period, as shown in the attachments.

There have been complaints about drivers using the center turn lane as a passing lane. This problem developed in other cities making a similar change. It can be mitigated by building traffic islands periodically in the center turn lane. Construction of such islands should be a priority should the decision be made to retain the three lane configuration.

Questions have been raised on the effect on emergency vehicle response times. The center turn lane can actually help improve response time in congested areas by

providing space to pass stopped vehicles without having to move into oncoming traffic lanes.

There have been compliments on the new lane by bicycle users, who feel safer using the new bike lanes. Data collected the week of October 2, 2006, showed that the daily bicycle volumes range from 35 to 85 per day.

Some concerns were raised about transit stop locations. Working with King County Metro, stop placement was reviewed, and some were moved, and a couple eliminated, to improve traffic flow. Striping on the roadway was adjusted to help guide drivers around stopped buses.

Intersection visibility has improved on 15th Ave NE in that the bike lanes have moved the vehicular traffic 5 ft away from the curb. With a 4-lane design, the vehicles travel next to the curb.

Pedestrian safety has improved. Vehicles have been moved further away from the curb and sidewalk, providing for a more comfortable pedestrian environment. Also, the center lane can be used as a quasi-refuge by pedestrians crossing 15th Ave NE, as they wait for a gap in traffic. Lastly, the three-lane design greatly reduces the "multiple-threat" scenario for pedestrians crossing 15th Ave NE. The multiple-threat is one of the most problematic situations facing pedestrians crossing a multi-lane roadway.

FUNDING CONSIDERATIONS

Should the 3-lane configuration remain permanent, it is recommended that median islands be constructed. Two landscaped islands cost a total of about $25,000 to build. If 15th Ave NE is changed back to 4 lanes, required capital costs would include removal of existing markings, restriping, signing, and signal modifications. King County has estimated this cost to be $70,500. Other costs to consider would be an increased need for traffic signals to facilitate access across 15th Ave NE. A potential location for a traffic signal is at the intersection of NE 170th St. and 15th Ave. NE. A traffic signal at this location would need to include improvements on NE 170th St for pedestrian safety and traffic signal equipment and can cost as much as $600,000. For the traffic signal installation at 15th NE and NE 170th Street, partial funding is available. The 2007 State Legislature has sent the state budget package to the Governor's Office for signature, which includes $425,000.00 earmarked for the City of Shoreline, grant funds under the LEAP Transportation Document 2007- Pedestrian and Bicycle Safety Program. We would propose to supplement the grants funds with carry over CIP funds to complete this project. Additionally, a new traffic signal is already scheduled to be built at 15th Ave NE and NE 150th St this year.

CONCLUSION

The current operation of 15th Ave NE is meeting expectations. Vehicle volumes on 15th Ave NE have declined 7.8%, which is what was expected. More important, the data records show improvement to both vehicle and pedestrian safety. Some of the non-arterial roadways in the surrounding area have seen an increase in vehicles and

speeds. However, many roadways actually saw a decrease in volume. Neighborhood traffic calming projects continue to be implemented to manage vehicles on local streets

RECOMMENDATION

No council action is required or recommended. Staff will continue to work with local residents to manage traffic impacts on non-arterial streets and implement appropriate neighborhood traffic mitigation improvements.

ATTACHMENTS

Appendix A: - Average Weekday Volume Comparison
Appendix A-1 - Map of AWDT Comparison
Appendix B: - Average Weekday Volume Comparison – AM Peak Hours
Appendix B-1 - Map of AM Peak Comparison
Appendix C: - Average Weekday Volume Comparison – PM Peak Hours
Appendix C-1 - Map of PM Peak Comparison
Appendix D: - 15th Ave NE Volume Graph
Appendix E: - 85% Speed Comparison
Appendix F: - Collision Comparison
Appendix G: - Collision Comparison Graph

North City Traffic Monitoring Study
Average Weekday Volume Summary
February 2003 to February 2007 revised 03/18/2007

North/South

5 Ave NE	2003	2007	diff	% diff
NE 148 St	7,831	7,855	24	
NE 156 St	7,005	6,367	(638)	
NE 163 St	6,557	6,633	76	
NE 165 St	6,363	6,355	(8)	
NE 170 Ln	5,916	5,993	77	
NE 180 St	3,213	3,410	197	
average 145 to 175	6,734	6,641	(94)	(1.4)
average 145 to 180	6,148	6,102	(45)	(0.7)

8 Ave NE	2003	2007	diff	% diff
NE 145 St	530	462	(68)	
NE 155 St	639	680	41	
NE 160 St	504	603	99	
NE 170 St	506	679	173	
NE 175 St	548	598	50	
average 145 to 155	530	462	(68)	(12.8)
average 155 to 175	549	640	91	16.5

10 Ave NE	2003	2007	diff	% diff
NE 155 St	1,261	1,220	(41)	
NE 160 St	1,261	1,295	34	
NE 165 St	2,216	2,332	116	
NE 170 St	2,378	2,420	42	
NE Serpentine Pl	3,994	3,564	(430)	
NE 182 St	5,230	4,954	(276)	
average 155 to 175	1,779	1,817	38	2.1
average 175 to 185	4,612	4,259	(353)	(7.7)
average 155 to 185	2,723	2,631	(93)	(3.4)

11 Ave NE	2003	2007	diff	% diff
NE 155 St	398	269	(129)	
average north of 155	398	269	(129)	(32.4)

12 Ave NE	2003	2007	diff	% diff
NE 155 St	423	290	(133)	
NE 175 St	992	774	(218)	
average 155 to 165	423	290	(133)	(31.4)
average north of 175	992	774	(218)	(22.0)

14 Ave NE	2003	2007	diff	% diff
NE 155 St	327	229	(98)	
average 155 to 165	327	229	(98)	(30.0)

24 Ave NE	2003	2007	diff	% diff
15 Ave NE	4,446	3,940	(506)	
average 25 to 15	4,446	3,940	(506)	(11.4)

15 Ave NE	2003	2007	diff	% diff
NE 146 St	16,315	16,291	(24)	
NE 152 St	18,963	16,649	(2,314)	
NE 158 St	15,433	14,637	(796)	
NE 170 St	18,158	15,938	(2,220)	
NE 177 St	17,169	15,038	(2,131)	
24 Ave NE	15,123	13,778	(1,345)	
average 145 to 175	17,217	15,879	(1,339)	(7.8)
average 175 to 24 Av NE	16,146	14,408	(1,738)	(10.8)
average 145 to 24 Av NE	16,860	15,389	(1,472)	(8.7)

25 Ave NE	2003	2007	diff	% diff
NE 147 St	4,242	4,043	(199)	
NE 155 St	4,837	4,567	(270)	
NE 168 St	4,626	4,440	(186)	
NE 171 St	2,355	2,220	(135)	
NE 177 St	3,840	4,340	500	
average 145 to 150	4,242	4,043	(199)	(4.7)
average 150 to 178	3,915	3,892	(23)	(0.6)

North City Traffic Monitoring Study
Average Weekday Volume Summary

February 2003 to February 2007

revised 03/18/2007

East/West

NE 150 St	2003	2007	diff	% diff
15 Ave NE	3,740	2,940	(800)	
average 15 to 25	3,740	2,940	(800)	(21.4)

NE 155 St	2003	2007	diff	% diff
5 Ave NE	11,368	9,902	(1,466)	
8 Ave NE	9,187	8,717	(470)	
14 Ave NE	8,642	7,391	(1,251)	
average west of 5th	11,368	9,902	(1,466)	(12.9)
average 5th to 15th	8,915	8,054	(861)	(9.7)

NE 165 St	2003	2007	diff	% diff
15 Ave NE	2,606	1,726	(880)	
average 5 to 15	2,606	1,726	(880)	(33.8)

NE 162 St	2003	2007	diff	% diff
15 Ave NE	208	188	(20)	
average 10th to 15th	208	188	(20)	(9.6)

NE 170 St	2003	2007	diff	% diff
10 Ave NE	1,689	1,242	(447)	
15 Ave NE	735	688	(47)	
average 5 to 15	1,689	1,242	(447)	(26.5)
average 15 to 25	735	688	(47)	(6.4)

NE 168 St	2003	2007	diff	% diff
18 Ave NE	2,897	2,314	(583)	
average 25 to 15	2,897	2,314	(583)	(20.1)

NE 171 St	2003	2007	diff	% diff
15 Ave NE	457	386	(71)	
average 25 to 15	457	386	(71)	(15.5)

NE 169 St	2003	2007	diff	% diff
22 Ave NE	147	125	(22)	
average 25 to 15	147	125	(22)	(15.0)

NE 172 St	2003	2007	diff	% diff
15 Ave NE	620	586	(34)	
average 25 to 15	620	586	(34)	(5.5)

NE 175 St	2003	2007	diff	% diff
5 Ave NE	14,792	14,726	(66)	
12 Ave NE	14,606	14,389	(217)	
15 Ave NE	4,023	4,196	173	
25 Ave NE	2,058	2,358	300	
average 5 to 15	14,699	14,558	(142)	(1.0)
average 15 to 25	3,041	3,277	237	7.8

NE 177 St	2003	2007	diff	% diff
15 Ave NE	685	617	(68)	
25 Ave NE	840	685	(155)	
average 25 to 15	763	651	(112)	(14.6)

NE 180 St	2003	2007	diff	% diff
11 Ave NE	2,951	2,836	(115)	
average 10th to 15th	2,951	2,836	(115)	(3.9)

NE Serpentine Pl	2003	2007	diff	% diff
NE 175 St	864	805	(59)	
average 175 to 177	864	805	(59)	(6.8)

NE Perkins Way	2003	2007	diff	% diff
15 Ave NE	2,984	3,169	185	
average 10th to 15th	2,984	3,169	185	6.2

NE 185 St	2003	2007	diff	% diff
9 Ave NE	7,533	7,148	(385)	
average west of 10	7,533	7,148	(385)	(5.1)

North City Traffic Monitoring Study

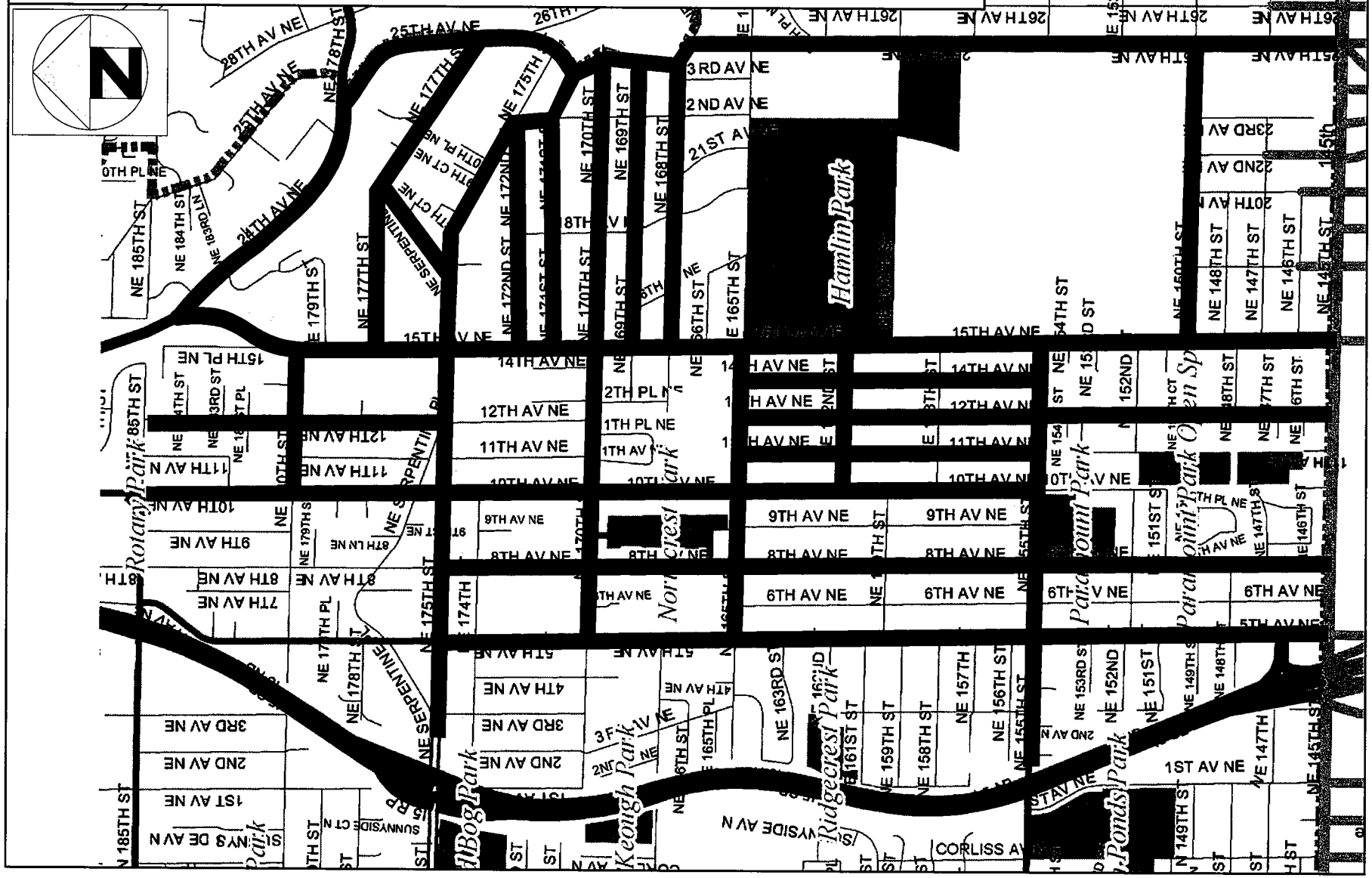
March 2003 to February 2007 Comparison

AWDT - Average Weekday Daily Traffic Volumes

Increase -

Decrease -

No Change (less than 1%) -



North City Traffic Monitoring Study
AWDT AM Peak Volume Summary - 7 - 8am

February 2003 to February 2007

revised 03/18/2007

North/South

5 Ave NE	2003	2007	diff	% diff
NE 148 St	559	696	137	
NE 156 St	426	608	182	
NE 163 St	438	561	123	
NE 165 St	395	510	115	
NE 170 Ln	342	515	173	
NE 180 St	254	345	91	
average 145 to 175	432	578	146	33.8
average 145 to 180	402	539	137	34.0

8 Ave NE	2003	2007	diff	% diff
NE 145 St	28	18	(10)	
NE 155 St	48	72	24	
NE 160 St	40	65	25	
NE 170 St	37	93	56	
NE 175 St	40	71	31	
average 145 to 155	28	18	(10)	(35.7)
average 155 to 175	41	75	34	82.4

10 Ave NE	2003	2007	diff	% diff
NE 155 St	127	139	12	
NE 160 St	114	137	23	
NE 165 St	228	235	7	
NE 170 St	220	243	23	
NE Serpentine Pl	337	312	(25)	
NE 182 St	398	371	(27)	
average 155 to 175	172	189	16	9.4
average 175 to 185	368	342	(26)	(7.1)
average 155 to 185	237	240	2	0.9

11 Ave NE	2003	2007	diff	% diff
NE 155 St	30	24	(6)	
average north of 155	30	24	(6)	(20.0)

12 Ave NE	2003	2007	diff	% diff
NE 155 St	36	19	(17)	
NE 175 St	96	84	(12)	
average 155 to 165	36	19	(17)	(47.2)
average north of 175	96	84	(12)	(12.5)

14 Ave NE	2003	2007	diff	% diff
NE 155 St	327	229	(98)	
average 155 to 165	327	229	(98)	(30.0)

24 Ave NE	2003	2007	diff	% diff
15 Ave NE	367	330	(37)	
average 25 to 15	367	330	(37)	(10.1)

15 Ave NE	2003	2007	diff	% diff
NE 146 St	1,126	1,231	105	
NE 152 St	1,426	1,321	(105)	
NE 158 St	1,228	1,216	(12)	
NE 170 St	1,612	1,404	(208)	
NE 177 St	1,632	1,318	(314)	
24 Ave NE	1,432	1,372	(60)	
average 145 to 175	1,348	1,293	(55)	(4.1)
average 175 to 24 Av NE	1,532	1,345	(187)	(12.2)
average 145 to 24 Av NE	1,409	1,310	(99)	(7.0)

25 Ave NE	2003	2007	diff	% diff
NE 147 St	381	417	36	
NE 155 St	479	556	77	
NE 168 St	640	668	28	
NE 171 St	346	315	(31)	
NE 177 St	466	562	96	
average 145 to 150	381	417	36	9.4
average 150 to 178	483	525	43	8.8

North City Traffic Monitoring Study
AWDT AM Peak Volume Summary - 7 - 8am

February 2003 to February 2007

revised 03/18/2007

East/West

NE 150 St	2003	2007	diff	% diff
15 Ave NE	360	318	(42)	
average 15 to 25	360	318	(42)	(11.7)

NE 165 St	2003	2007	diff	% diff
15 Ave NE	186	114	(72)	
average 5 to 15	186	114	(72)	(38.7)

NE 170 St	2003	2007	diff	% diff
10 Ave NE	116	97	(19)	
15 Ave NE	50	37	(13)	
average 5 to 15	116	97	(19)	(16.4)
average 15 to 25	50	37	(13)	(26.0)

NE 171 St	2003	2007	diff	% diff
15 Ave NE	38	37	(1)	
average 25 to 15	38	37	(1)	(2.6)

NE 172 St	2003	2007	diff	% diff
15 Ave NE	50	50	0	
average 25 to 15	50	50	0	0.0

NE 177 St	2003	2007	diff	% diff
15 Ave NE	48	35	(13)	
25 Ave NE	56	46	(10)	
average 25 to 15	52	41	(12)	(22.1)

NE Serpentine Pl	2003	2007	diff	% diff
NE 175 St	54	59	5	
average 175 to 177	54	59	5	9.3

NE Perkins Way	2003	2007	diff	% diff
15 Ave NE	209	237	28	
average 10th to 15th	209	237	28	13.4

NE 155 St	2003	2007	diff	% diff
5 Ave NE	723	654	(69)	
8 Ave NE	639	698	59	
14 Ave NE	618	580	(38)	
average west of 5th	723	654	(69)	(9.5)
average 5th to 15th	629	639	11	1.7

NE 162 St	2003	2007	diff	% diff
15 Ave NE	14	8	(6)	
average 10th to 15th	14	8	(6)	(42.9)

NE 168 St	2003	2007	diff	% diff
18 Ave NE	373	267	(106)	
average 25 to 15	373	267	(106)	(28.4)

NE 169 St	2003	2007	diff	% diff
22 Ave NE	13	14	1	
average 25 to 15	13	14	1	7.7

NE 175 St	2003	2007	diff	% diff
5 Ave NE	891	878	(13)	
12 Ave NE	896	926	30	
15 Ave NE	261	301	40	
25 Ave NE	170	226	56	
average 5 to 15	894	902	9	1.0
average 15 to 25	216	264	48	22.3

NE 180 St	2003	2007	diff	% diff
11 Ave NE	201	190	(11)	
average 10th to 15th	201	190	(11)	(5.5)

NE 185 St	2003	2007	diff	% diff
9 Ave NE	518	521	3	
average west of 10	518	521	3	0.6

North City Traffic Monitoring Study

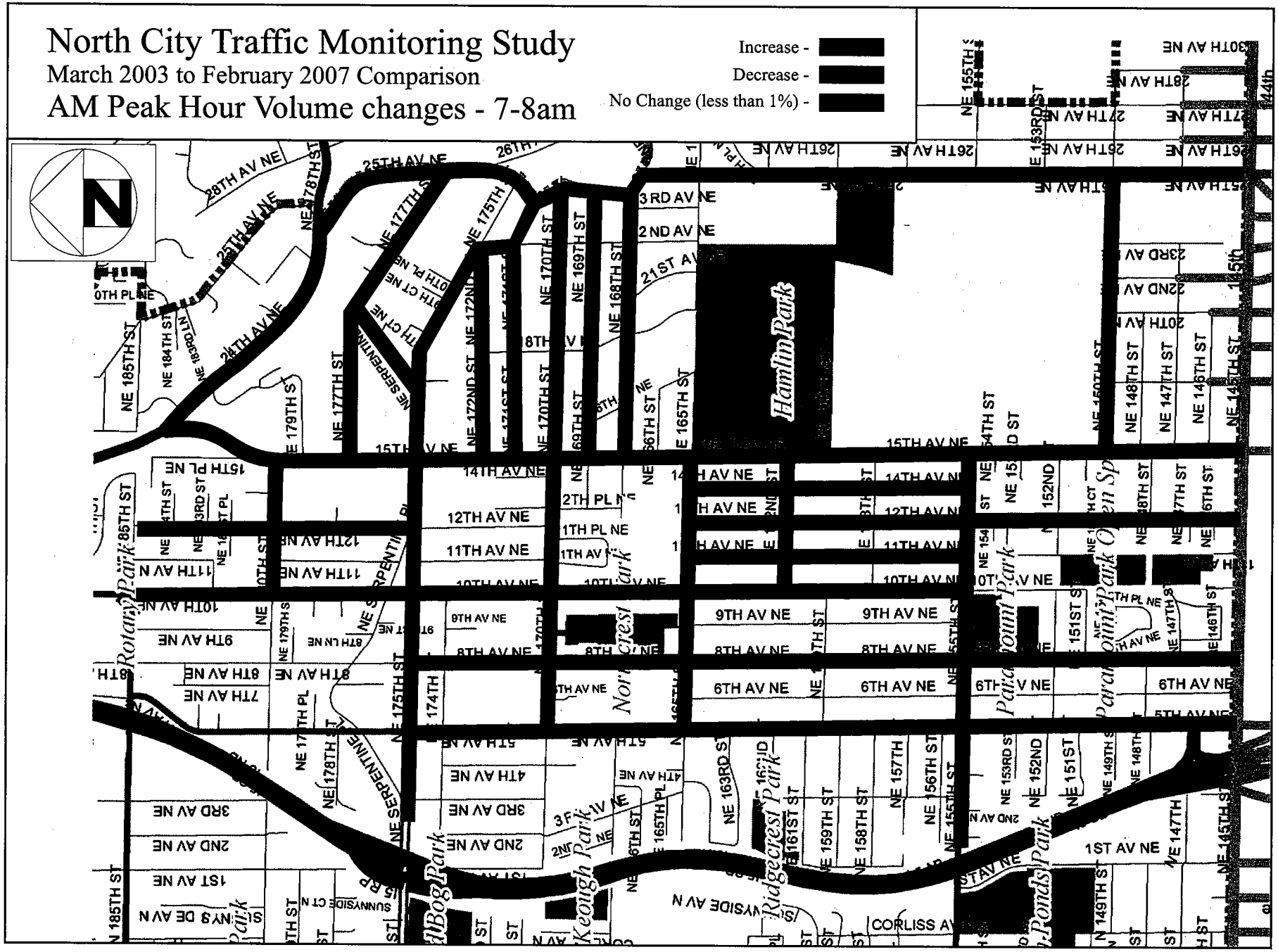
March 2003 to February 2007 Comparison

AM Peak Hour Volume changes - 7-8am

Increase -

Decrease -

No Change (less than 1%) -



North City Traffic Monitoring Study
AWDT PM Peak Volume Summary - 5 - 6pm

February 2003 to February 2007

revised 03/18/2007

North/South

5 Ave NE	2003	2007	diff	% diff
NE 148 St	777	680	(97)	
NE 156 St	758	653	(105)	
NE 163 St	723	691	(32)	
NE 165 St	755	685	(70)	
NE 170 Ln	666	652	(14)	
NE 180 St	331	347	16	
average 145 to 175	736	672	(64)	(8.6)
average 145 to 180	668	618	(50)	(7.5)

8 Ave NE	2003	2007	diff	% diff
NE 145 St	49	38	(11)	
NE 155 St	61	72	11	
NE 160 St	46	58	12	
NE 170 St	44	55	11	
NE 175 St	55	49	(6)	
average 145 to 155	49	38	(11)	(22.4)
average 155 to 175	52	59	7	13.6

10 Ave NE	2003	2007	diff	% diff
NE 155 St	144	134	(10)	
NE 160 St	136	141	5	
NE 165 St	240	218	(22)	
NE 170 St	268	230	(38)	
NE Serpentine Pl	417	317	(100)	
NE 182 St	528	450	(78)	
average 155 to 175	197	181	(16)	(8.2)
average 175 to 185	473	384	(89)	(18.8)
average 155 to 185	289	248	(41)	(14.0)

11 Ave NE	2003	2007	diff	% diff
NE 155 St	44	26	(18)	
average north of 155	44	26	(18)	(40.9)

12 Ave NE	2003	2007	diff	% diff
NE 155 St	39	31	(8)	
NE 175 St	85	66	(19)	
average 155 to 165	39	31	(8)	(20.5)
average north of 175	85	66	(19)	(22.4)

14 Ave NE	2003	2007	diff	% diff
NE 155 St	30	24	(6)	
average 155 to 165	30	24	(6)	(20.0)

24 Ave NE	2003	2007	diff	% diff
15 Ave NE	401	328	(73)	
average 25 to 15	401	328	(73)	(18.2)

15 Ave NE	2003	2007	diff	% diff
NE 146 St	1,584	1,559	(25)	
NE 152 St	1,835	1,562	(273)	
NE 158 St	1,605	1,369	(236)	
NE 170 St	1,691	1,399	(292)	
NE 177 St	1,632	1,353	(279)	
24 Ave NE	1,551	1,242	(309)	
average 145 to 175	1,679	1,472	(207)	(12.3)
average 175 to 24 Av NE	1,592	1,298	(294)	(18.5)
average 145 to 24 Av NE	1,650	1,414	(236)	(14.3)

25 Ave NE	2003	2007	diff	% diff
NE 147 St	453	319	(134)	
NE 155 St	512	405	(107)	
NE 168 St	472	362	(110)	
NE 171 St	317	217	(100)	
NE 177 St	389	407	18	
average 145 to 150	453	319	(134)	(29.6)
average 150 to 178	423	348	(75)	(17.7)

North City Traffic Monitoring Study
AWDT PM Peak Volume Summary - 5 - 6pm

February 2003 to February 2007

revised 03/18/2007

East/West

NE 150 St	2003	2007	diff	% diff
15 Ave NE	336	229	(107)	
average 15 to 25	336	229	(107)	(31.8)

NE 155 St	2003	2007	diff	% diff
5 Ave NE	1,083	929	(154)	
8 Ave NE	866	783	(83)	
14 Ave NE	822	678	(144)	
average west of 5th	1,083	929	(154)	(14.2)
average 5th to 15th	844	731	(114)	(13.4)

NE 165 St	2003	2007	diff	% diff
15 Ave NE	248	151	(97)	
average 5 to 15	248	151	(97)	(39.1)

NE 162 St	2003	2007	diff	% diff
15 Ave NE	21	15	(6)	
average 10th to 15th	21	15	(6)	(28.6)

NE 170 St	2003	2007	diff	% diff
10 Ave NE	187	136	(51)	
15 Ave NE	66	61	(5)	
average 5 to 15	187	136	(51)	(27.3)
average 15 to 25	66	61	(5)	(7.6)

NE 168 St	2003	2007	diff	% diff
18 Ave NE	268	150	(118)	
average 25 to 15	268	150	(118)	(44.0)

NE 171 St	2003	2007	diff	% diff
15 Ave NE	47	29	(18)	
average 25 to 15	47	29	(18)	(38.3)

NE 169 St	2003	2007	diff	% diff
22 Ave NE	15	13	(2)	
average 25 to 15	15	13	(2)	(13.3)

NE 172 St	2003	2007	diff	% diff
15 Ave NE	62	44	(18)	
average 25 to 15	62	44	(18)	(29.0)

NE 175 St	2003	2007	diff	% diff
5 Ave NE	1,293	1,170	(123)	
12 Ave NE	1,286	1,153	(133)	
15 Ave NE	420	412	(8)	
25 Ave NE	224	223	(1)	
average 5 to 15	1,290	1,162	(128)	(9.9)
average 15 to 25	322	318	(5)	(1.4)

NE 177 St	2003	2007	diff	% diff
15 Ave NE	60	63	3	
25 Ave NE	84	77	(7)	
average 25 to 15	72	70	(2)	(2.8)

NE 180 St	2003	2007	diff	% diff
11 Ave NE	281	251	(30)	
average 10th to 15th	281	251	(30)	(10.7)

NE Serpentine Pl	2003	2007	diff	% diff
NE 175 St	79	64	(15)	
average 175 to 177	79	64	(15)	(19.0)

NE Perkins Way	2003	2007	diff	% diff
15 Ave NE	345	354	9	
average 10th to 15th	345	354	9	2.6

NE 185 St	2003	2007	diff	% diff
9 Ave NE	761	690	(71)	
average west of 10	761	690	(71)	(9.3)

North City Traffic Monitoring Study

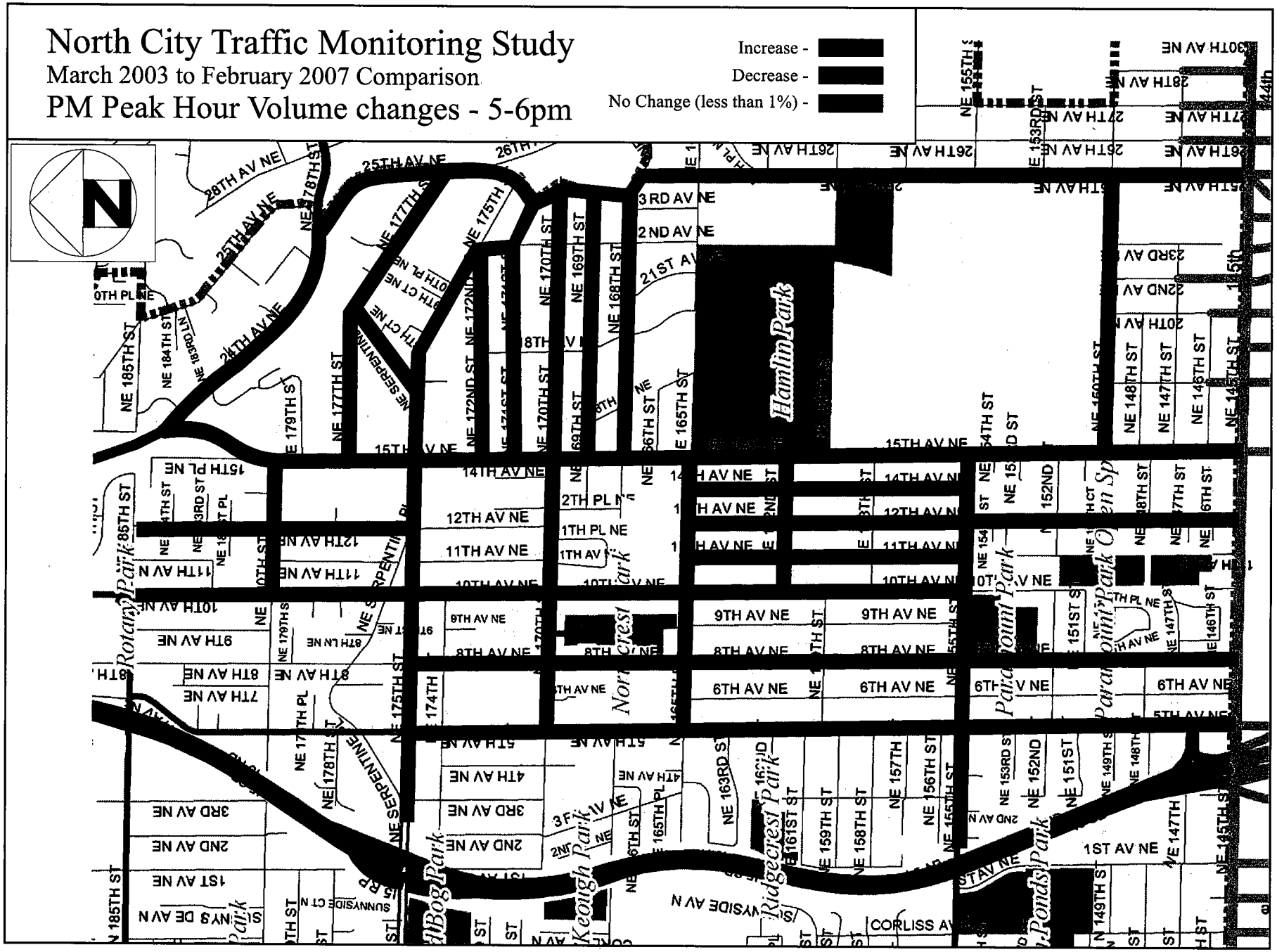
March 2003 to February 2007 Comparison

PM Peak Hour Volume changes - 5-6pm

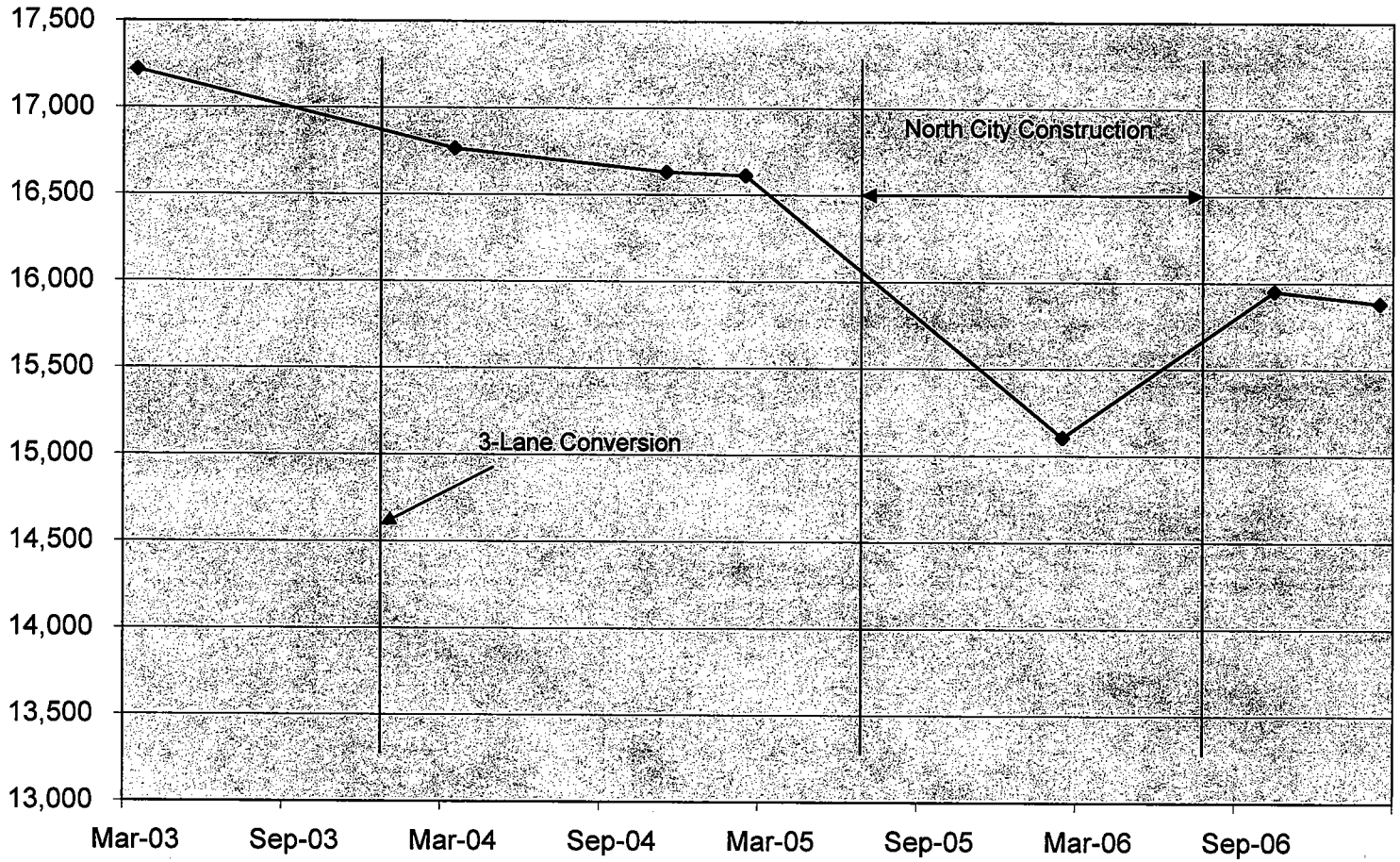
Increase -

Decrease -

No Change (less than 1%) -



15th Ave NE - Average Weekday Traffic Volumes



	Mar-03	Mar-04	Nov-04	Feb-05	Feb-06	Oct-06	Feb-07
NE 175th St to NE 145th St	17,217	16,764	16,631	16,611	15,103	15,949	15,879

North City Traffic Monitoring Study
85 Percentile Speed Comparison

February 2003 to February 2007

revised 3/2/2007

On-Street	Direction	Cross-St	2003	2005	2006	2007	diff 2003-2007	
			85% Speed (MPH)				diff	% diff
5 Ave NE	s/o	NE 163 St	36.0	37.0	36.6	36.2	0.2	0.7%
5 Ave NE	n/o	NE 170 Ln	35.0	37.3	36.6	35.8	0.8	2.2%
		average	35.5	37.1	36.6	36.0	0.5	1.4%
8 Ave NE	n/o	NE 160 St	32.0	33.8	34.6	33.4	1.4	4.4%
8 Ave NE	n/o	NE 170 St	32.0	34.3	33.1	33.7	1.7	5.2%
		average	32.0	34.1	33.8	33.5	1.5	4.8%
10 Ave NE	n/o	NE 160 St	35.0	36.6	36.2	34.7	(0.3)	-0.9%
10 Ave NE	n/o	NE 170 St	34.5	37.3	33.5	29.1	(5.4)	-15.6%
		average	34.8	36.9	34.9	31.9	(2.8)	-8.2%
10 Ave NE	s/o	NE 182 St	34.5	36.0	34.2	33.7	(0.8)	-2.4%
15 Ave NE	s/o	NE 158 St	40.5	40.3	40.3	38.7	(1.8)	-4.4%
15 Ave NE	n/o	NE 170 St	38.0	36.8	36.7	36.8	(1.2)	-3.2%
		average	39.3	38.6	38.5	37.8	(1.5)	-3.8%
25 Ave NE	s/o	NE 155 St	33.5	34.7	33.2	32.7	(0.8)	-2.5%
NE 155 St	w/o	8 Ave NE	35.0	37.2	36.4	35.3	0.3	1.0%
NE 168 St	w/o	18 Ave NE	36.5	37.6	37.6	37.0	0.5	1.4%
NE 175 St	w/o	12 Ave NE	38.5	40.9	39.9	39.2	0.7	1.7%
NE 175 St	e/o	15 Ave NE	32.5	34.2	33.5	33.6	1.1	3.5%
NE 177 St	e/o	15 Ave NE	29.5	30.3	28.9	31.3	1.8	6.2%

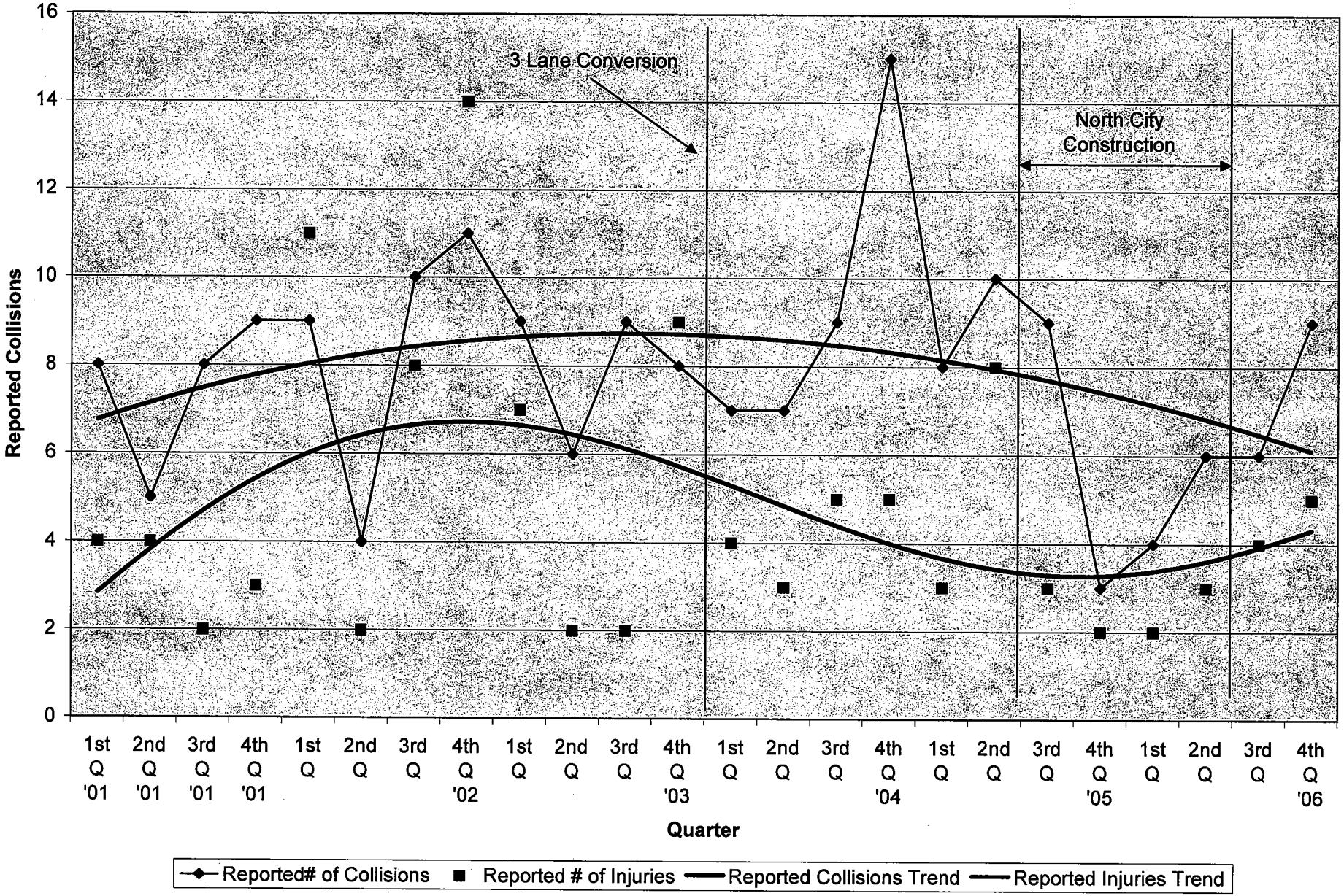
15th Ave NE three lane conversion
Collision Comparision
1/1/2001 to 12/31/2006

15th Ave NE btwn NE 150th St to NE 175th St				Collison Types					Contributing Circumstances	
	TOT COL	# INJ	# FTL	HDO	ANG	RE	SS	PED	RGT TRN	LFT TRN
1/2002 to 1/2004	96	68	1	0	17	30	5	3	0	15
1/2004 to 1/2006	**93**	**47**	**0**	**0**	**16**	**39**	**2**	**4**	**0**	**8**
change	(3)	(21)	(1)	0	(1)	9	(3)	1	0	(7)
% change	-3.1%	-30.9%	-100%	0.0%	-5.9%	30.0%	-60.0%	25.0%	0.0%	-46.7%

Definition Of Abbreviations

TOT/COL = Total # of Collisions
#/INJ = Total # of Injured
#/FTL = Total # of Fatalities
HDO = Head-on Collision
ANG = Right Angle
RE = Rear End
SS = SideSwipe
PED = Pedestrian
RGT/TRN = Right Turn
LFT/TRN = Left Turn

15th Ave NE Collisions 2001-2006



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