

COURT STREET SIGNAL MODIFICATION ANALYSIS

JUNE 2005



City of New York
Michael R. Bloomberg, Mayor



**New York City
Department of Transportation**
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Introduction

During the Downtown Brooklyn Traffic Calming Project (DBTCP), local stakeholders in the community identified Court Street as a problematic corridor. Concerns expressed included the perception of speeding, which was attributed to the one way operation of the street and the existing signal coordination/progression along the corridor. An additional concern was the high incidence of pedestrians crossing against the signals, which could be attributed to long cycle lengths. The existing traffic flow patterns on Court Street are governed by the signal timing required to accommodate the high volumes along the major east-west roadways (Atlantic and Hamilton Avenues) at each end of the corridor. This allocates less green time for Court Street southbound traffic at these intersections and provides the opportunity for the Department to adjust signal timing along the corridor without negatively impacting traffic flow.

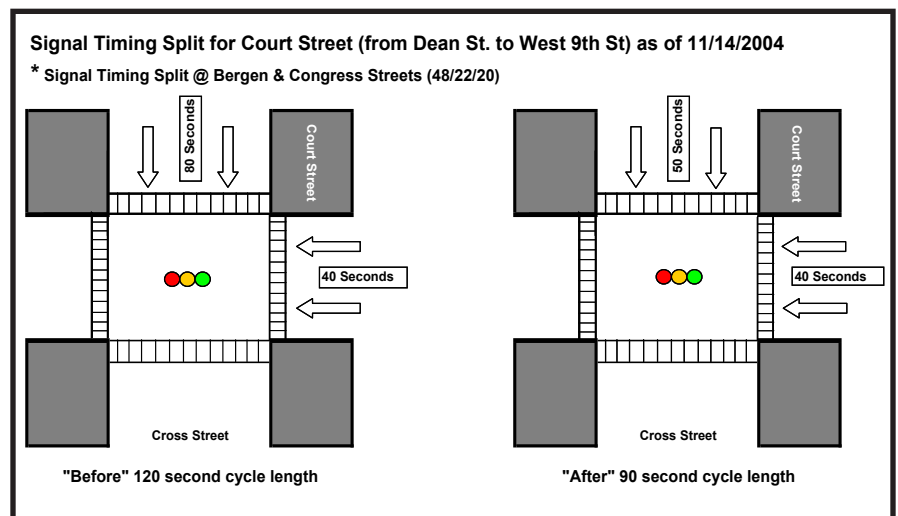
Objectives

The objectives of the project are to:

- Facilitate pedestrian crossing
- Discourage excessive speeding
- Improve access to business and reinforce neighborhood commercial “cores”
- Improve environment for pedestrians, bicyclist, businesses and residents

Concept Tested

In order to achieve these objectives, the Signals Division reviewed the existing timing plans. Along Court Street, 120 second cycle lengths were in place on weekdays in the AM (6:00-10:15am) and PM (3:00-8:30pm) peak periods and all day Saturday. The splits during these times were 80 seconds for Court Street and 40 seconds for the cross streets. A review of the signal timing plans indicated that the cycle

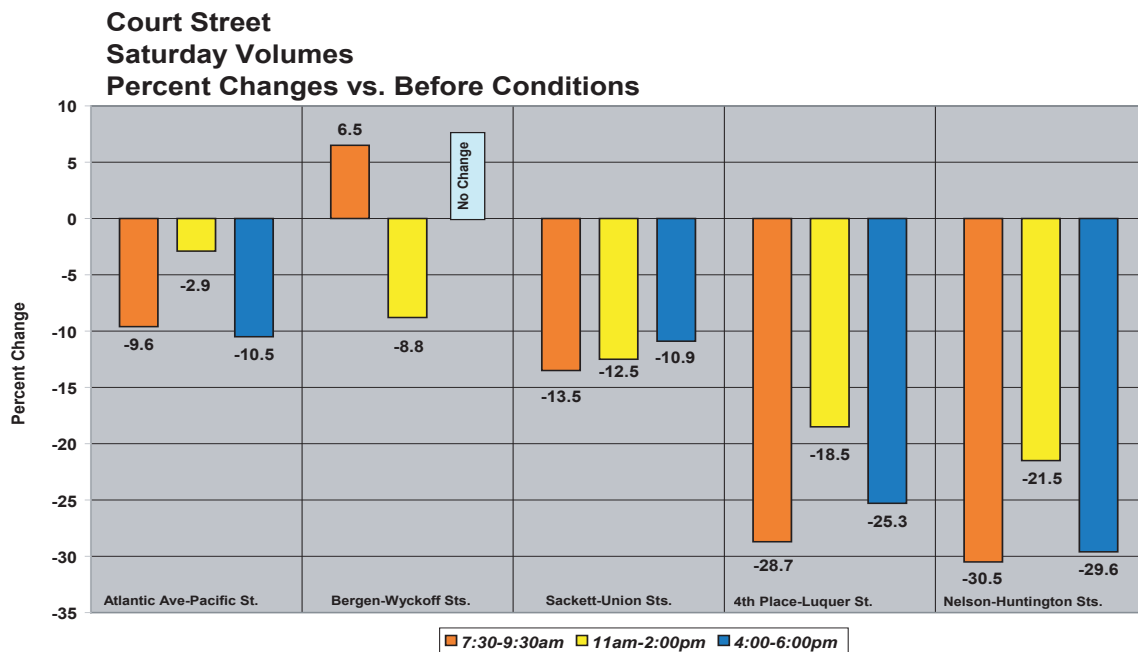
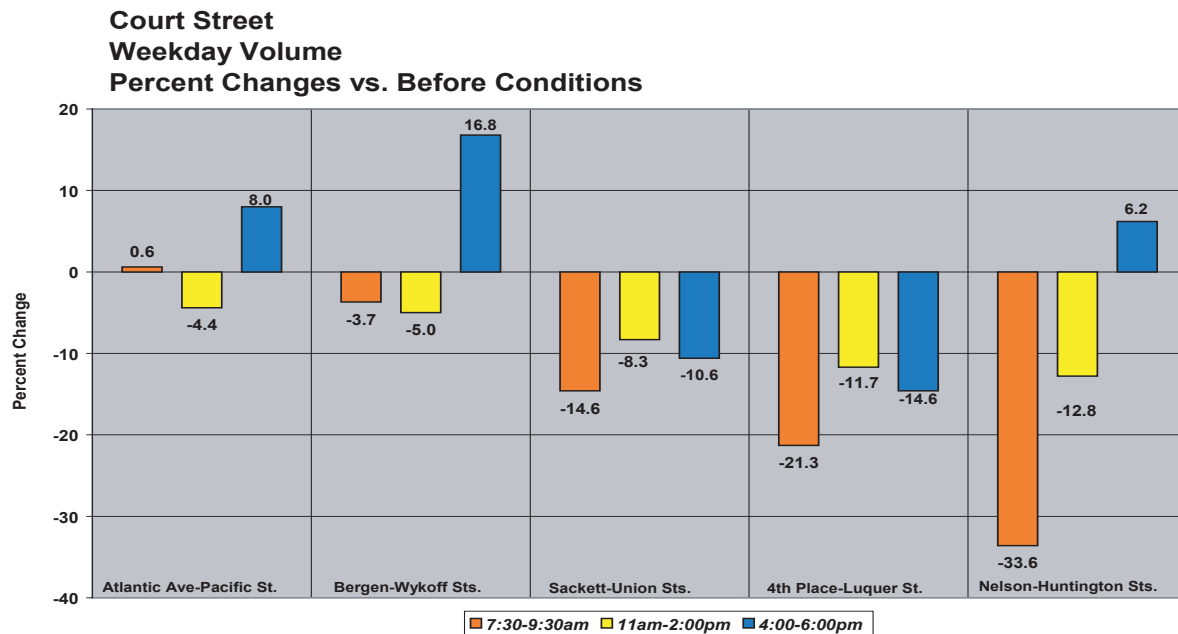


Major Findings

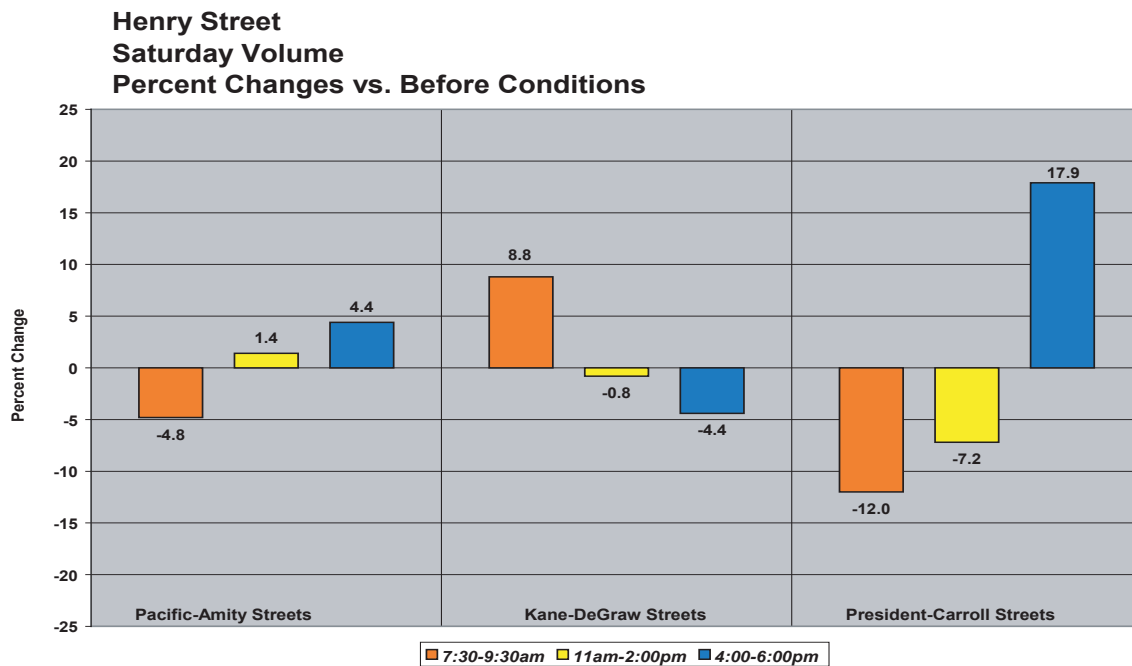
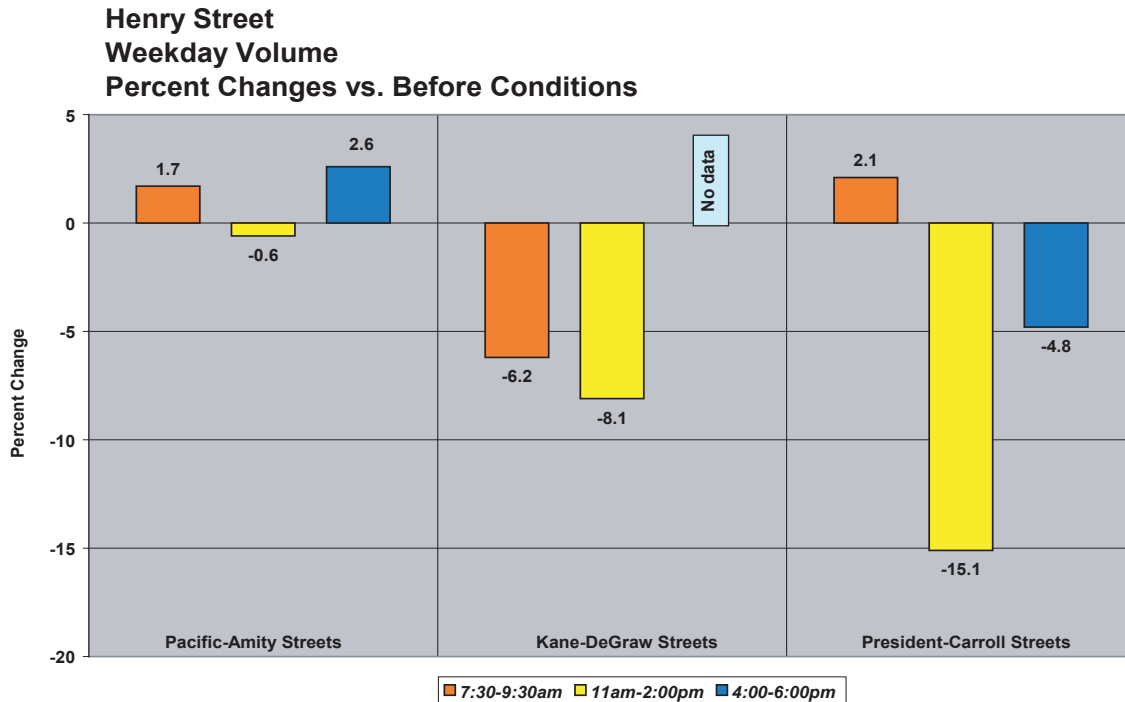
Following are the highlights:

I. Volume

- Overall, average volumes decreased on Court Street during all weekday and weekend peak periods.
- The largest increase in average weekday volume was recorded on Court Street between Congress/Bergen-Wyckoff Streets where average volume increased 16.8% (to 1,394 from 1,194 vehicles, an increase of 200 vehicles) during the PM peak period.

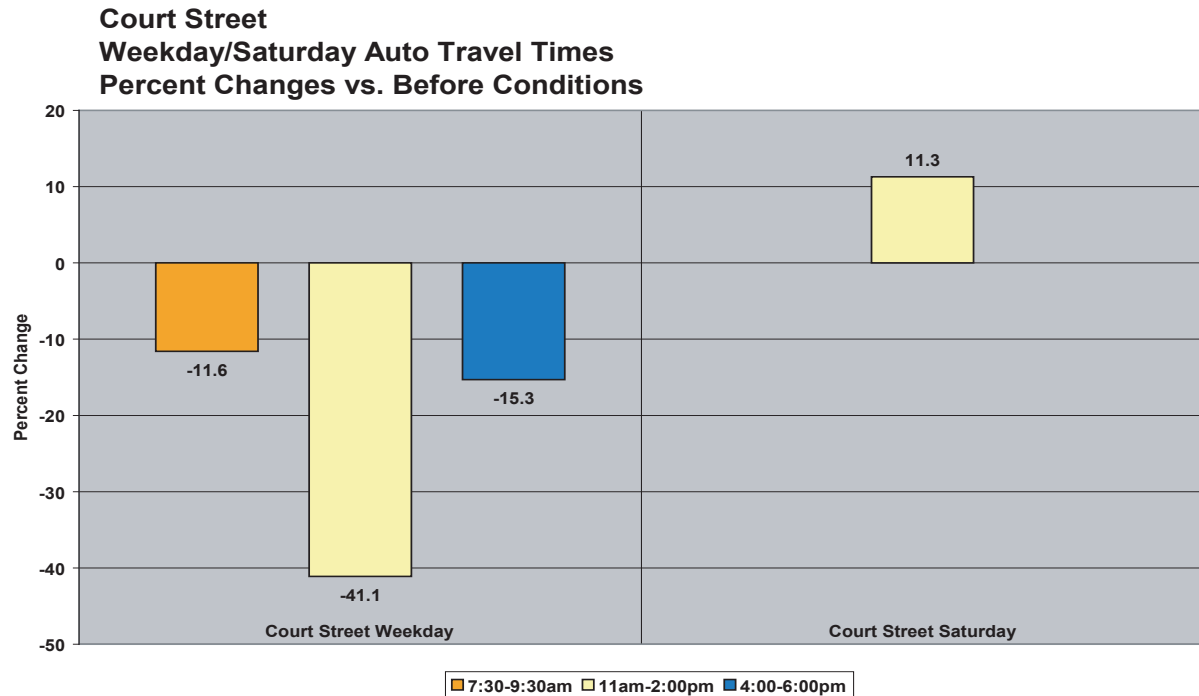


- There was no evidence of traffic diversion onto Henry Street. Volumes decreased during most peak periods during weekdays on Henry Street.
- On Saturday, the most significant increase in volume occurred between President and Carroll Streets where volume increased 17.9% (to 336 from 285 vehicles or 51 additional vehicles).



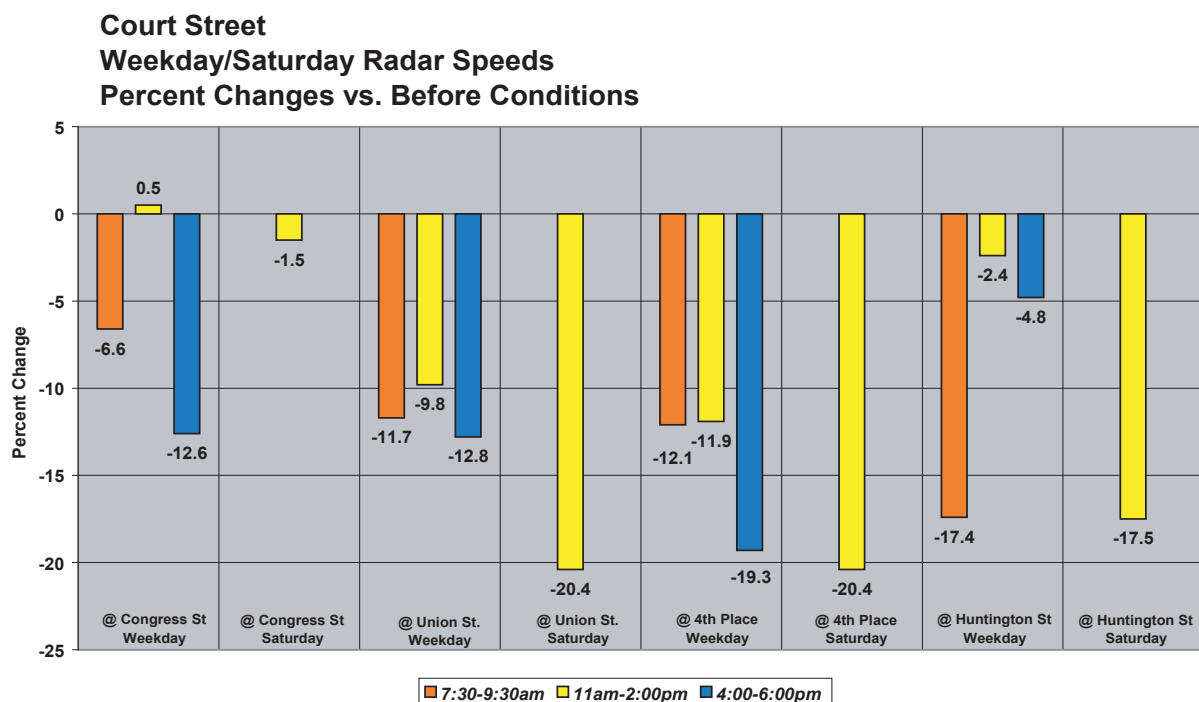
II. Travel Times & Speeds

- Overall, travel times decreased during the weekday peak periods.
- On Saturday, however, the average travel time increased 11.3% (to 7.48 from 6.72 minutes) and speeds decreased 10.2% (to 11.2 from 12.5 mph).



III. Radar Speeds

- Overall, radar speeds on Court Street decreased during all peak periods.



IV. Queue Lengths

Court Street Queue Lengths

- Overall, there was a significant decrease in the average and maximum number of queued vehicles per signal cycle at all four location during the AM, Midday, and PM peak periods.
- Average queues decreased 68% during the AM, 78% during the Midday, and 80% during the PM peak period. Maximum queues decreased 43% during the AM, 32% during Midday, and 47% during the PM peak period.

Side Street Queue Lengths

- After implementation of the signal modification, on average there was only one vehicle per signal cycle on the side streets that were monitored during the AM, Midday and the PM peak periods.

Conclusion

The initial signal modification implementation on Court Street resulted in the following improvements:

- More opportunities have been provided for pedestrians to cross Court Street.
- Radar speed surveys indicate a reduction of speed on Court Street.
- There was no traffic diversion onto Henry Street.
- Although travel times decreased, speeds remained within the 20 mph progression.
- Queue lengths on Court Street decreased indicating that the volume was being efficiently processed with less green time.
- Side street queues averaged one vehicle per cycle.

APPENDIX I

SUMMARY OF FINDINGS

Summary of Findings

Queue Lengths

At the four locations surveyed on Court Street, average queues were less than 2 vehicles per signal cycle during “before” conditions and less than one vehicle per signal cycle during “after” conditions. On Saturday, queue lengths were less than one vehicle per signal cycle during “before” and “after” conditions. Additional queue length surveys were conducted, at four side streets approaching Court Street in westbound direction, during “after” conditions. On average there only one vehicle per signal cycle at these four locations.

Court Street Volumes

Overall volumes decreased during much of the day and increased only slightly during the latter part of PM peak period, except for two intersections where volumes decreased throughout the day.

Court Street Southbound between Atlantic Avenue and Pacific Street

Weekday Volume

- Volume increased slightly, 0.6% to 635 from 631 vehicles between 7:30-9:30am, and decreased 4.4% to 998 from 1,044 vehicles between 11:00am-2:00pm, while increasing 8.0% to 954 from 883 vehicles between 4:00pm-6:00pm.

Saturday Volume

- Volume decreased 9.6% to 377 from 417 vehicles between 7:30-9:30am, and 2.9% to 1,093 from 1,126 vehicles between 11:00am and 2:00pm, and decreased 10.5% to 738 from 825 vehicles between 4:00-6:00pm.

Court Street Southbound between Congress and Bergen Streets

Weekday Volume

- Volume decreased slightly, 3.7% to 957 from 994 vehicles between 7:30-9:30am, and decreased 5% to 1,399 from 1,473 between 11:00am-2:00pm, while increasing 16.8% to 1,394 from 1,194 between 4-6:00pm.

Saturday Volume

- Volume increased 6.5% to 658 from 618 vehicles between 7:30-9:30am, decreased 8.8% to 1,418 from 1,554 vehicles between 11:00am-2:pm. Data were not available for 4:00-6:00pm time period.

Court Street Southbound Sackett and Union Streets

Weekday Volume

- Volume decreased 14.6% to 562 from 658 vehicles between 7:30-9:30am, decreased 8.3% to 985 from 1,074 vehicles between 11:00am-2:00pm, and further declined 10.6% to 760 from 850 vehicles between 4:00-6:00pm.

Saturday Volume

- Volume decreased 13.5% to 405 from 468 vehicles between 7:30-9:30am, decreased 12.5% to 1,069 from 1,222 vehicles between 11:00am-2:00pm, and decreased 10.9% to 746 from 837 vehicles between 4:00-6:00pm.

Court Street Southbound between Nelson and Huntington Streets

Weekday Volume

- Volume decreased 33.6% to 507 from 763 vehicles between 7:30-9:30am, decreased 12.8% to 935 from 1,072 vehicles between 11am-2:00pm, while increasing slightly, 6.2% to 701 from 660 vehicles between 4:00-6:00pm.

Saturday Volume

- Volume decreased 30.5% to 301 from 433 vehicles between 7:30-9:30am, and decreased 21.5% to 900 from 1,146 vehicles between 11:00am-2:00pm, and decreased 29.6% to 585 from 831 vehicles between 4-6:00pm.

Court Street southbound between 4th Place-Luquer Street

Weekday Volume

- Volume decreased 21.3% to 634 from 806 vehicles between 7:30-9:30am, and decreased 11.7% to 1,128 from 1,278 vehicles between 11am-2:00pm, and decreased 14.6% to 921 from 1,079 vehicles between 4-6:00pm.

Saturday Volume

- Volume decreased 28.7% to 370 from 519 vehicles between 7:30-9:30am, and 18.5% to 1,121 from 1,376 vehicles between 11:00am-2:00pm, decreased 25.3% to 677 from 906 vehicles between 4-6:00pm.

Henry Street Volumes

Overall the volume decreased during much of the day and increased during latter part of PM peak period, except for one intersection where volume decreased throughout the day.

Henry Street Southbound between Kane and Degraw Streets

Weekday Volume

- Volume decreased 6.2% to 305 from 325 vehicles between 7:30-9:30am, decreased 8.1% to 432 from 470 vehicles between 11:00am-2:00pm. The volume remained unchanged during “before” and “after” study periods.

Saturday Volume

- Volume increased 8.8% to 161 from 148 vehicles between 7:30-9:30am, decreased slightly, 0.8%, to 483 from 487 vehicles between 11:00am-2:00pm, and decreased 4.4% to 302 from 320 vehicles.

Henry Street Southbound Pacific and Amity Streets

Weekday Volume

- Volume increased slightly, 1.7%, to 587 from 577 vehicles between 7:30-9:30, decreased slightly, 0.6%, to 948 from 954 vehicles between 11:00am-2:00pm, while increasing 2.6% to 633 from 617 vehicles between 4:00-6:00pm.

Saturday Volume

- Volume decreased 4.8% to 258 from 271 vehicles between 7:30-9:30am, increased slightly, 1.4%, to 720 from 710 vehicles between 11:00am-2:00pm, and increased 4.4% to 497 from 476 vehicles between 4:00-6:00pm.

Henry Street Southbound between President and Carroll Streets

Weekday Volume

- Volume increased slightly, 2.1%, to 286 from 280 vehicles, while decreased 15.1% to 378 from 445 vehicles between 11:00am-2:00pm, and decreased 4.8% to 337 from 354 vehicles between 4:00-6:00pm.

Saturday Volume

- Volume decreased 12.0% to 139 from 158 vehicles between 7:30-9:30am, and decreased 7.2% to 440 from 474 vehicles between 11:00am-2:00pm, while increasing 17.9% to 336 from 285 vehicles during 4:00-6:00pm.

Travel Time & Speeds

Overall travel time decreased and speeds increased on northbound Smith Street and southbound Court Street during Morning, Midday, and Evening peak periods.

Smith Street northbound between Hamilton Avenue and Joralemon/Fulton Streets

Weekday (7:30am-6:00pm)

- Travel time decreased 22.9% (to 9.26 from 12.01 minutes), and speeds increased 29.7% (to 9.1 from 7.0 mph) between 7:30-9:30am. Between 11am-2:00pm travel time decreased 28.2% (to 8.51 from 11.86 minutes) and speeds increased 39.4% (to 9.9 from 7.1 mph). Travel time decreased 10.9% (to 8.48 from 9.52 minutes), and speeds increased 12.3% (to 9.9 from 8.8 mph) between 4-6:00pm.

Saturday (11:00am-2:00pm)

- Travel Time decreased 20.8% (to 8.16 from 10.30 minutes), and speeds increased 26.2% (to 8.2 from 10.3 mph) between 11:00am-2:00pm.

Court Street southbound between Joralemon Street and Hamilton Avenue

Weekday (7:30am-6:00pm)

- Travel time decreased 11.6% (to 7.83 from 8.86 minutes), and speeds increased 13.2% (to 10.7 from 9.5 mph) between 7:30-9:30am. Between 11am-2:00pm travel time decreased 41.1% (to 6.94 from 11.78 minutes) and speeds increased 69.7% (to 12.1 from 7.1 mph). Travel time decreased 15.3% (to 8.63 from 10.19 minutes), and speeds increased 18.1% (to 9.7 from 8.2 mph) between 4-6:00pm.

Saturday (11:00am-2:00pm)

- Travel time increased 11.3% (to 7.48 from 6.72 minutes), and speeds decreased 10.2% (to 11.2 from 12.5 mph) between 11:00am-2:00pm.

Radar Speeds

Court Street at Congress Street

- Average weekday speed decreased 6.6% to 19.8 from 21.2 mph and the 85th percentile speed decreased 5.8% to 24.2 from 25.7 mph between 7:30-9:30am.
- Average weekday speed increased 0.5% to 19.1 from 19.0 mph and the 85th percentile speed increased 5.3% to 23.8 from 22.6 mph between 11:00am-2:00pm.
- Average weekday speed decreased 12.6% to 18.1 from 20.7 mph and the 85th percentile speed decreased 13.1% to 21.3 from 24.5 mph between 4-6:00pm.
- Average speed on Saturday decreased slightly, 1.5%, to 19.1 from 19.4 mph and the 85th percentile speed increased 3.6% to 23.3 from 22.5 mph between 11:00am-2:00pm.

Court Street at Union Street

- Average weekday speed decreased 11.7% to 19.6 from 22.2 mph and the 85th percentile speed decreased 10.4% to 24.2 from 27.0 mph between 7:30-9:30am.
- Average weekday speed decreased 9.8% to 20.2 from 22.4 mph and the 85th percentile speed decreased 9.0% to 25.2 from 27.7 mph between 11:00am-2:00pm.

- Average weekday speed decreased 12.8% to 20.4 from 23.4 mph and the 85th percentile speed decreased 10.8% to 24.8 from 27.8 mph between 4-6:00pm.
- Average speed on Saturday decreased 20.4% to 19.5 mph from 24.5 mph and the 85th percentile speed decreased 26.1% to 21.8 from 29.5 mph between 11:00am-2:00pm.

Court Street at 4th Place

- Average weekday speed decreased 12.1% to 21.0 from 23.9 mph and the 85th percentile speed decreased 14.2% to 25.4 from 29.6 mph between 7:30-9:30am.
- Average weekday speed decreased 11.9% to 20.7 from 23.5 mph and the 85th percentile speed decreased 11.6% to 25.1 from 28.4 mph between 11:00am-2:00pm.
- Average weekday speed decreased 19.3% to 20.5 from 25.4 mph and the 85th percentile speed decreased 17.9% to 25.2 from 30.7 mph between 4-6:00pm.
- Average speed on Saturday decreased 20.4% to 20.7 from 26.0 mph and the 85th percentile speed decreased 21.8% to 24.7 mph from 31.6 mph between 11:00am-2:00pm.

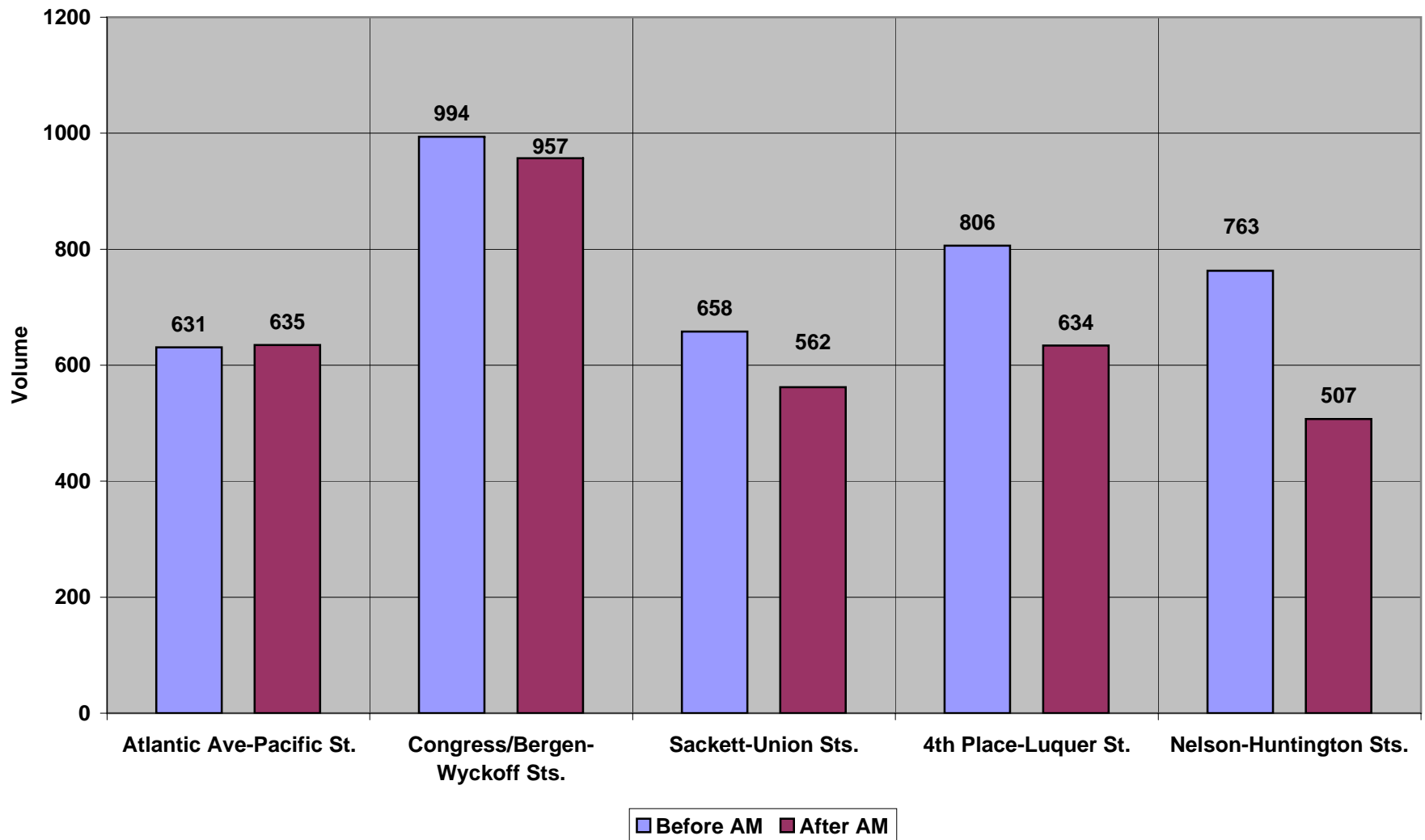
Court Street at Huntington Street

- Average weekday speed decreased 17.4% to 19.9 from 24.1 mph and the 85th percentile speed decreased 4.4% to 24.0 from 25.1 mph between 7:30-9:30am.
- Average weekday speed decreased 2.4% to 20.7 from 21.2 mph and the 85th percentile speed decreased 1.2% to 24.9 from 25.2 mph between 11:00am-2:00pm.
- Average weekday speed decreased 4.8% to 19.8 from 20.8 mph and the 85th percentile speed decreased 2.4% to 23.9 from 24.5 mph between 4-6:00pm.
- Average speed on Saturday decreased 17.5% to 20.7 from 25.1 mph and the 85th percentile speed decreased 16.8% to 24.7 from 29.7 mph between 11:00am-2:00pm.

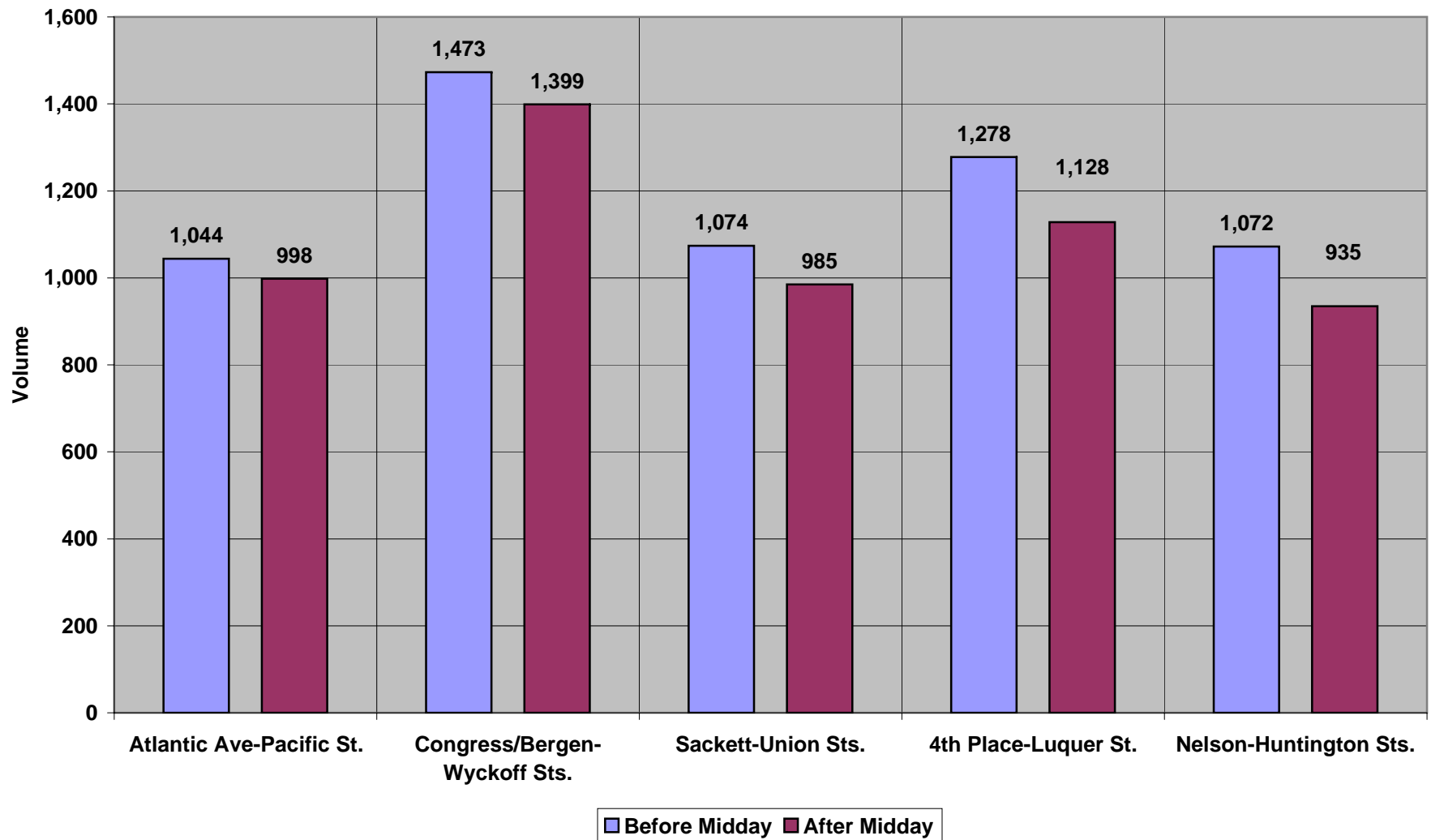
APPENDIX II

CHARTS

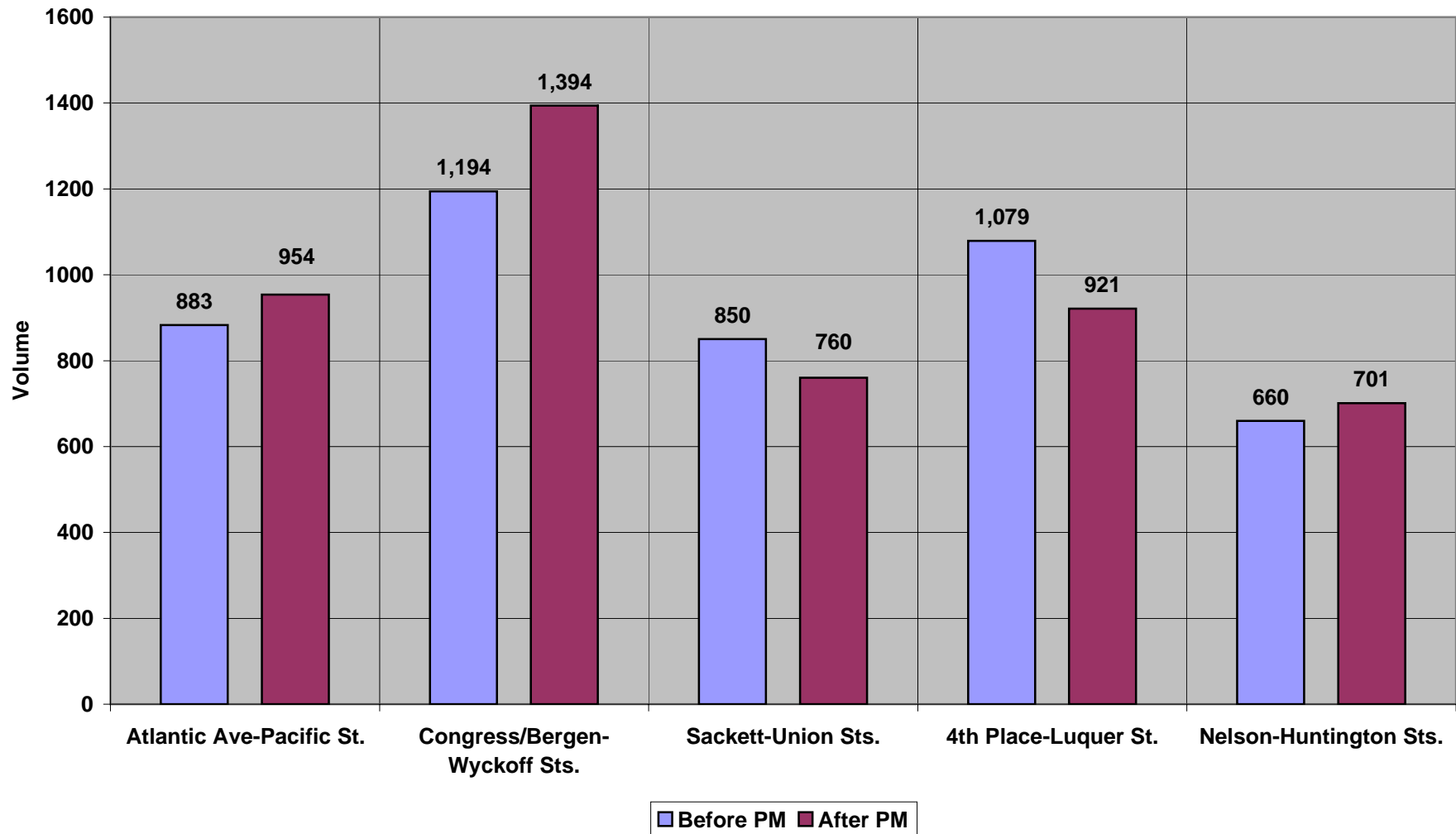
**Court Street
Weekday Average Volume
AM Peak**



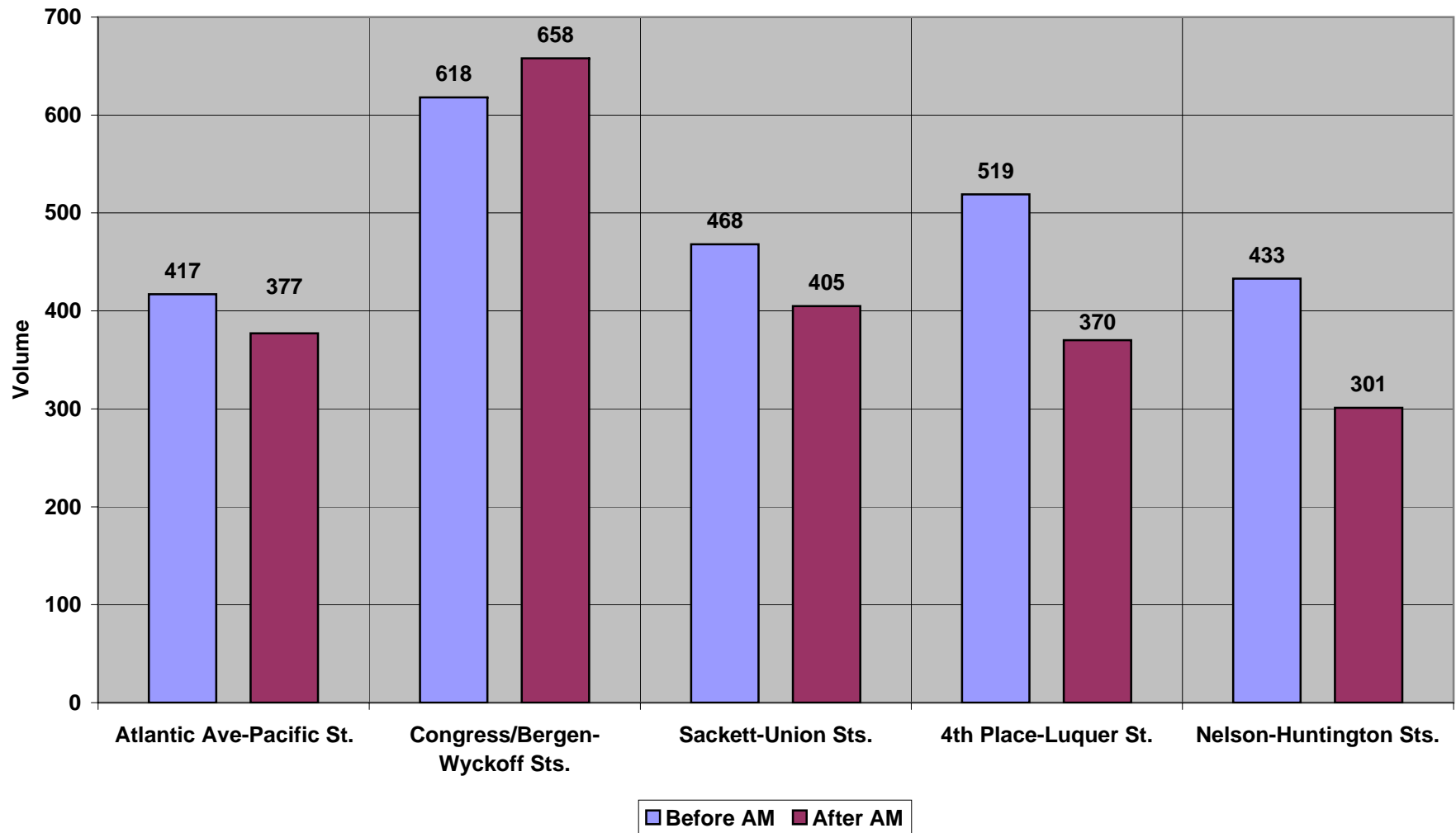
**Court Street
Weekday Average Volume
Midday Peak**



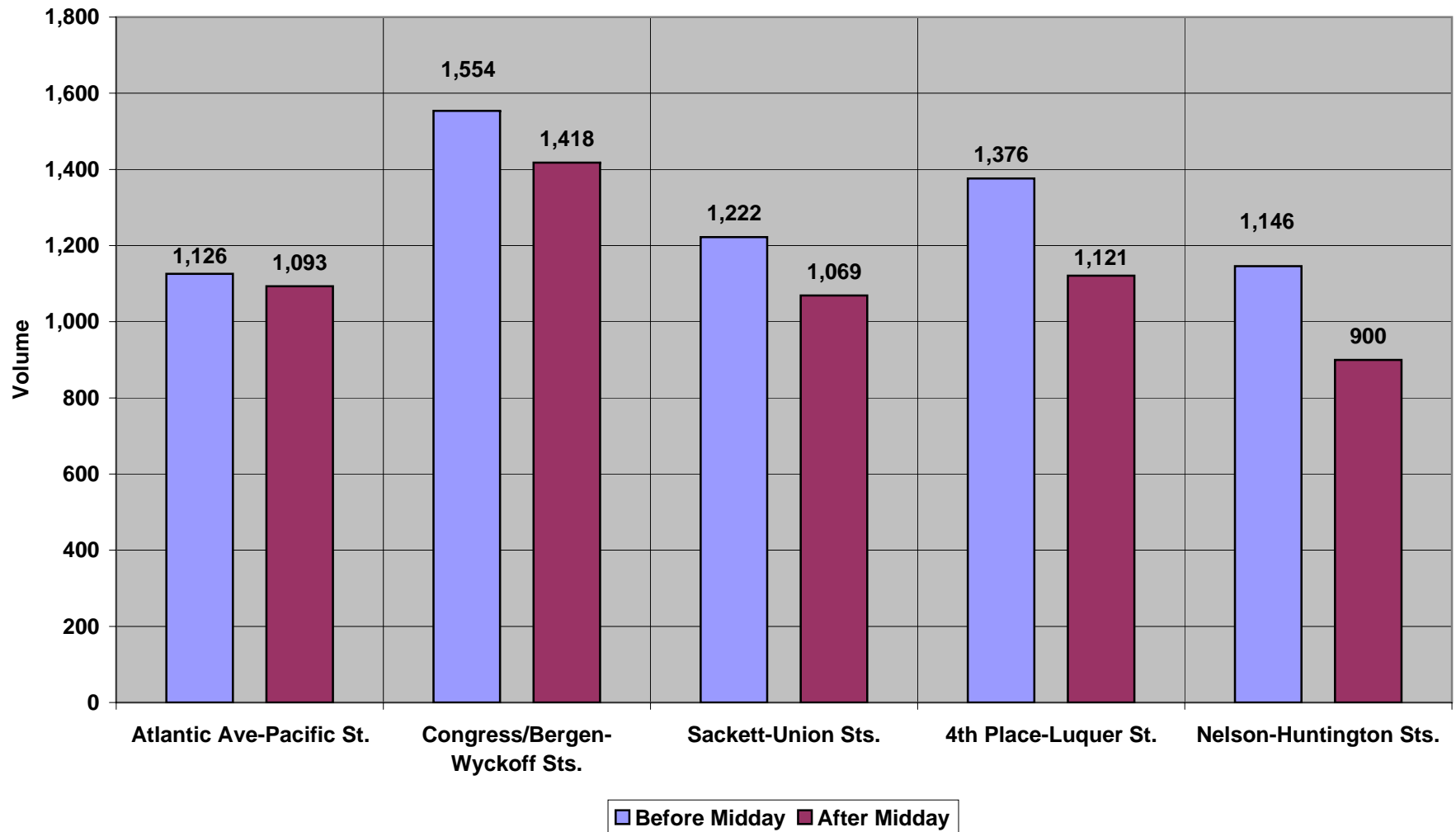
**Court Street
Weekday Average Volume
PM Peak**



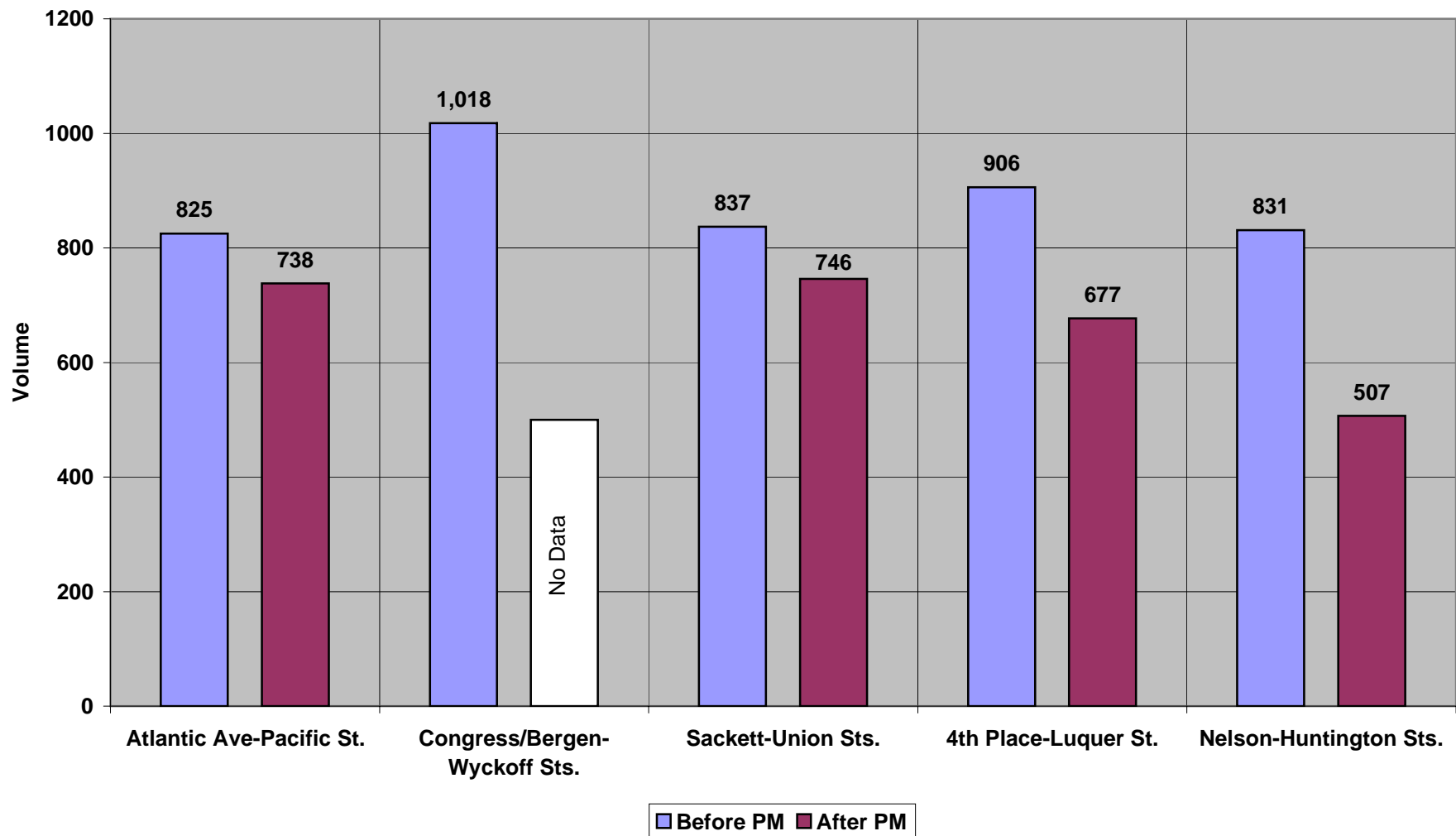
**Court Street
Saturday Average Volume
AM Peak**



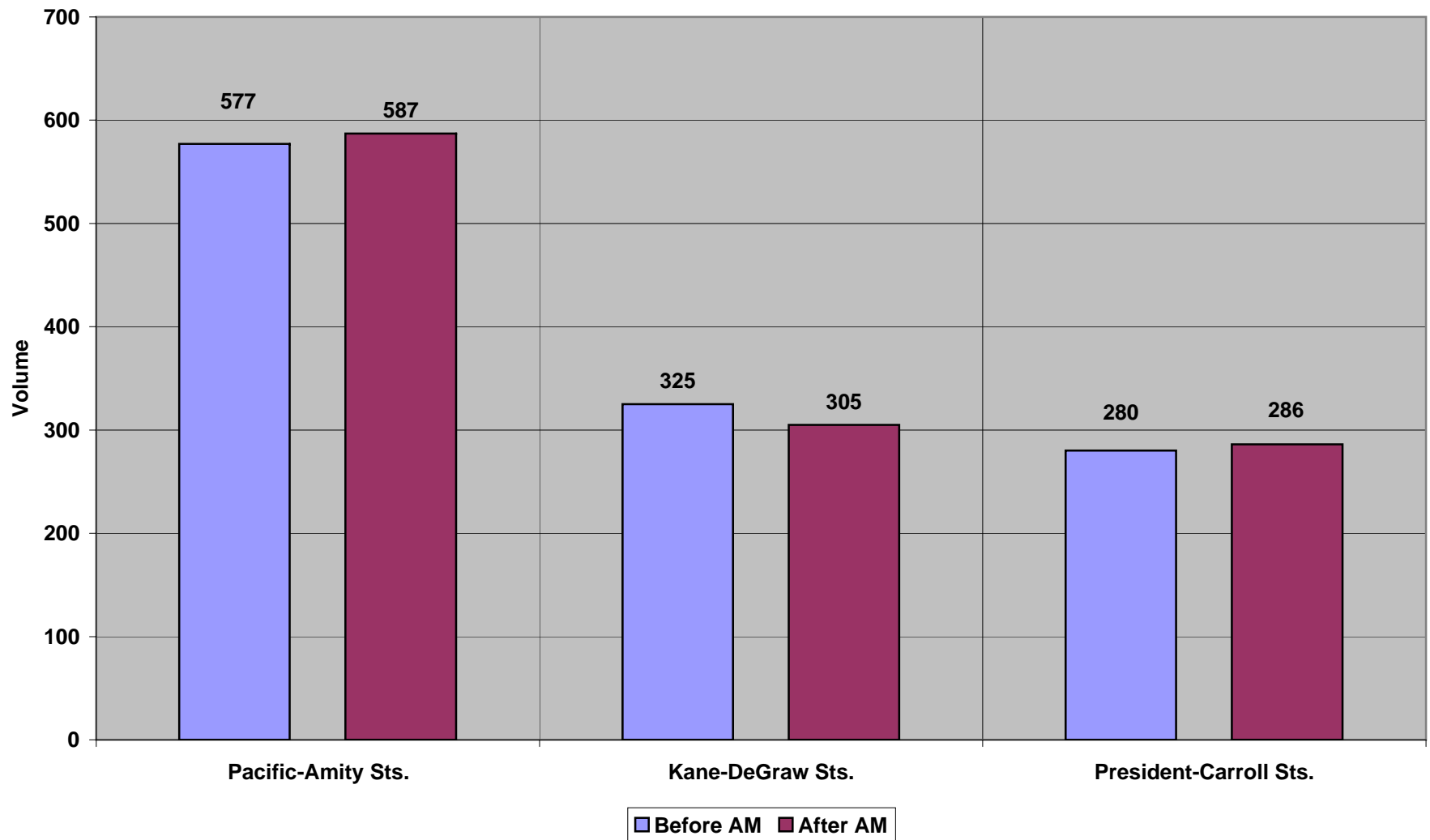
**Court Street
Saturday Average Volume
Midday Peak**



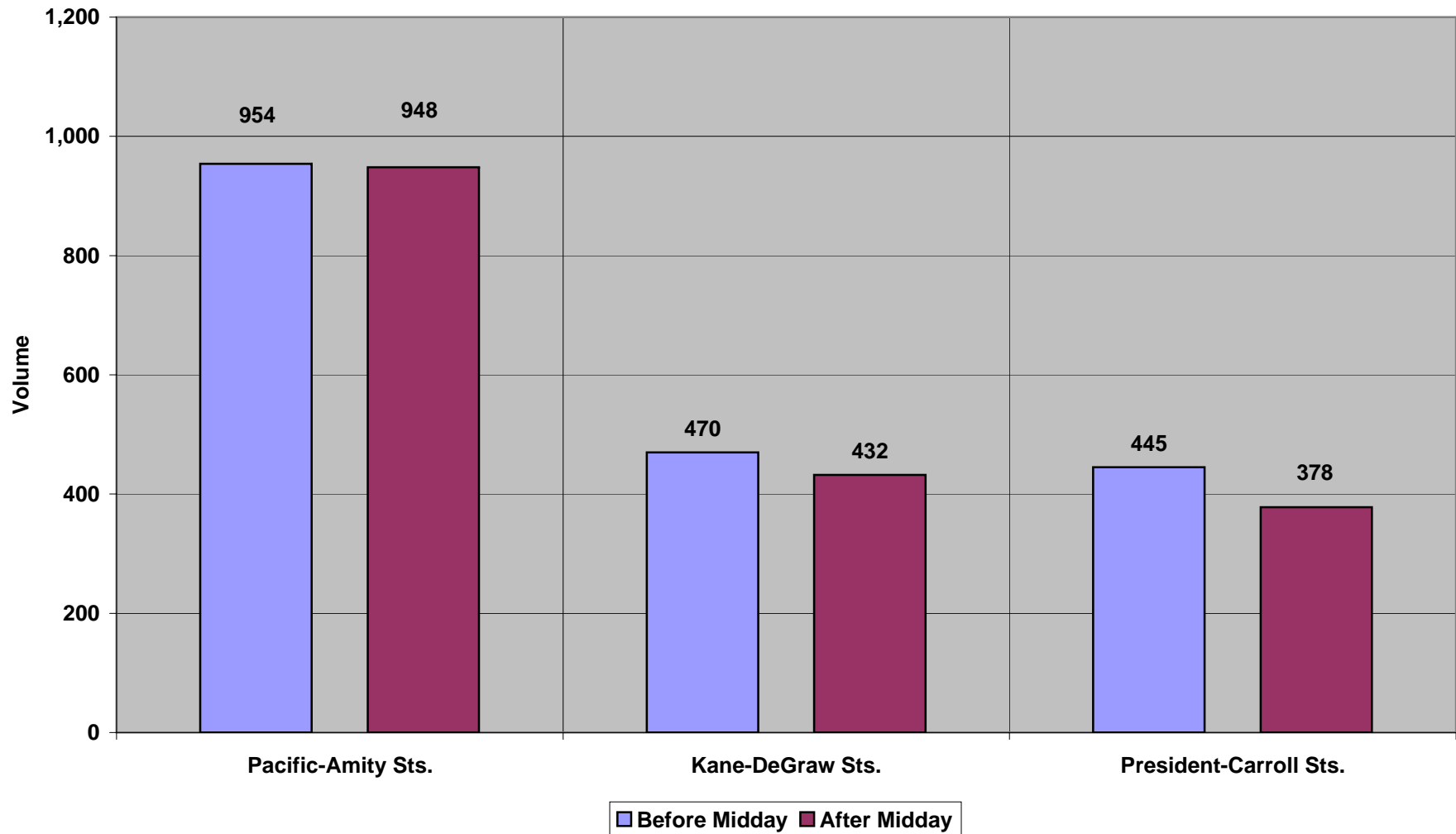
**Court Street
Saturday Average Volume
PM Peak**



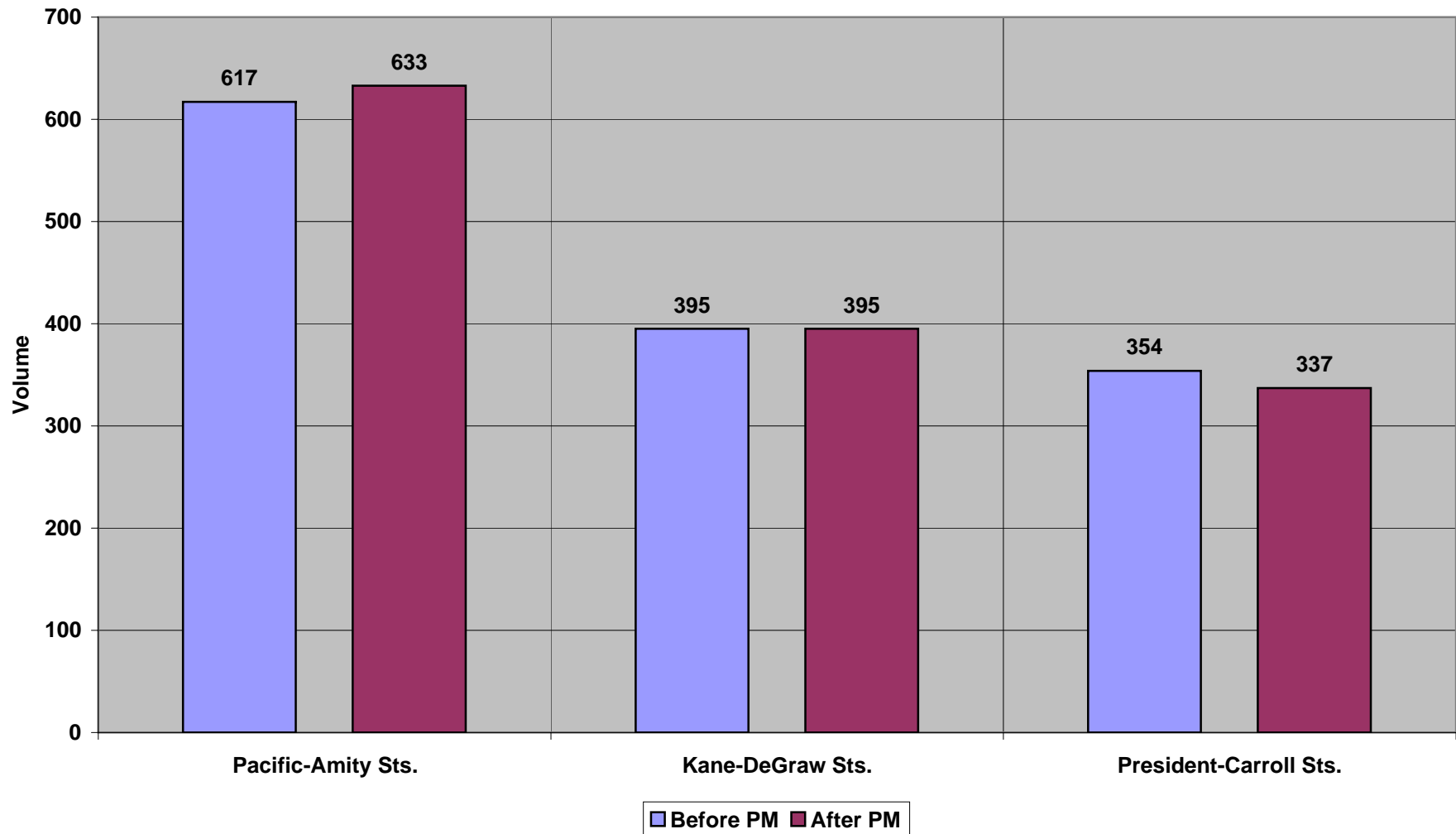
**Henry Street
Weekday Average Volume
AM Paek**



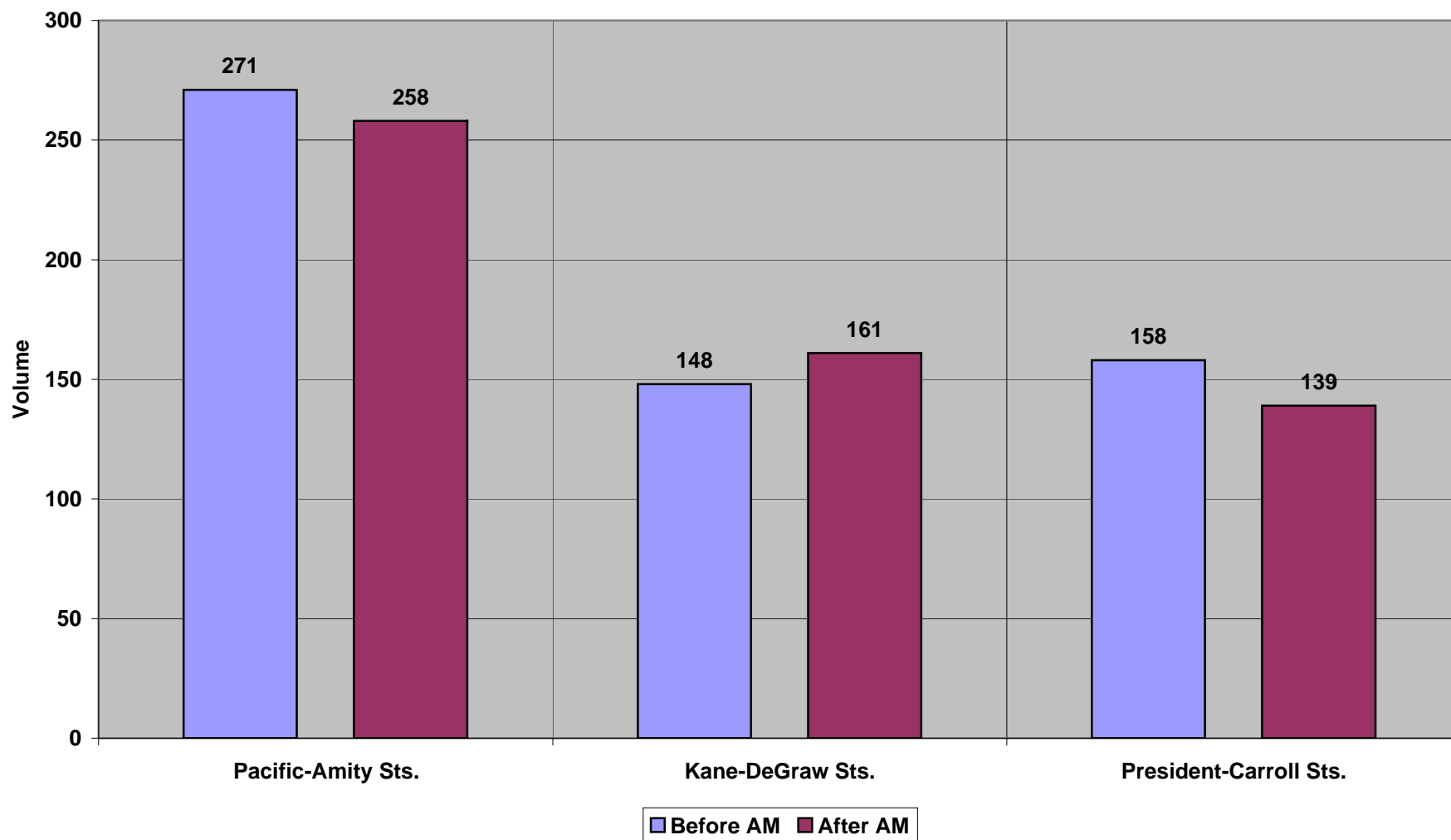
**Henry Street
Weekday Average Volume
Midday Paek**



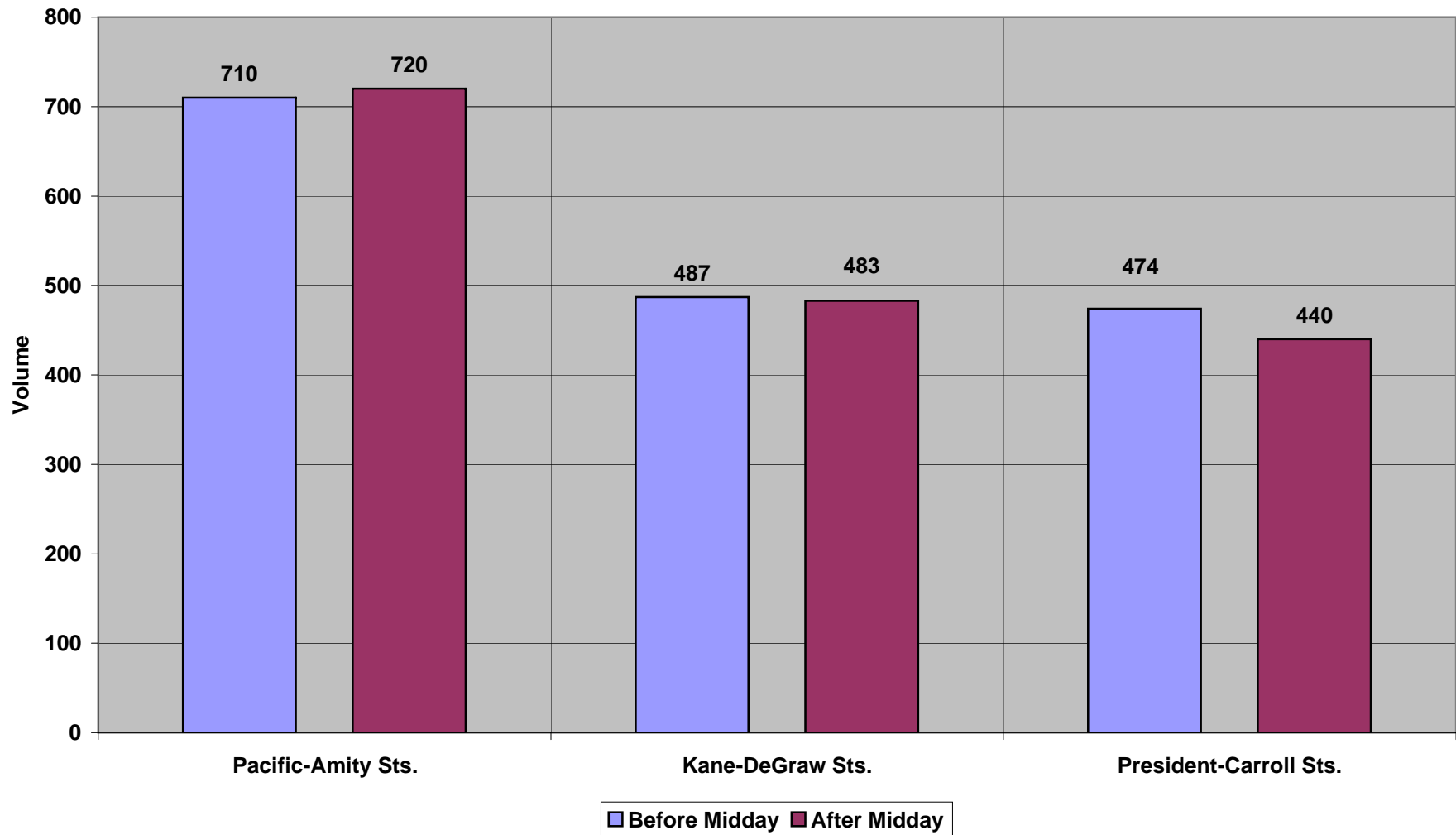
**Henry Street
Weekday Average Volume
PM Peak**



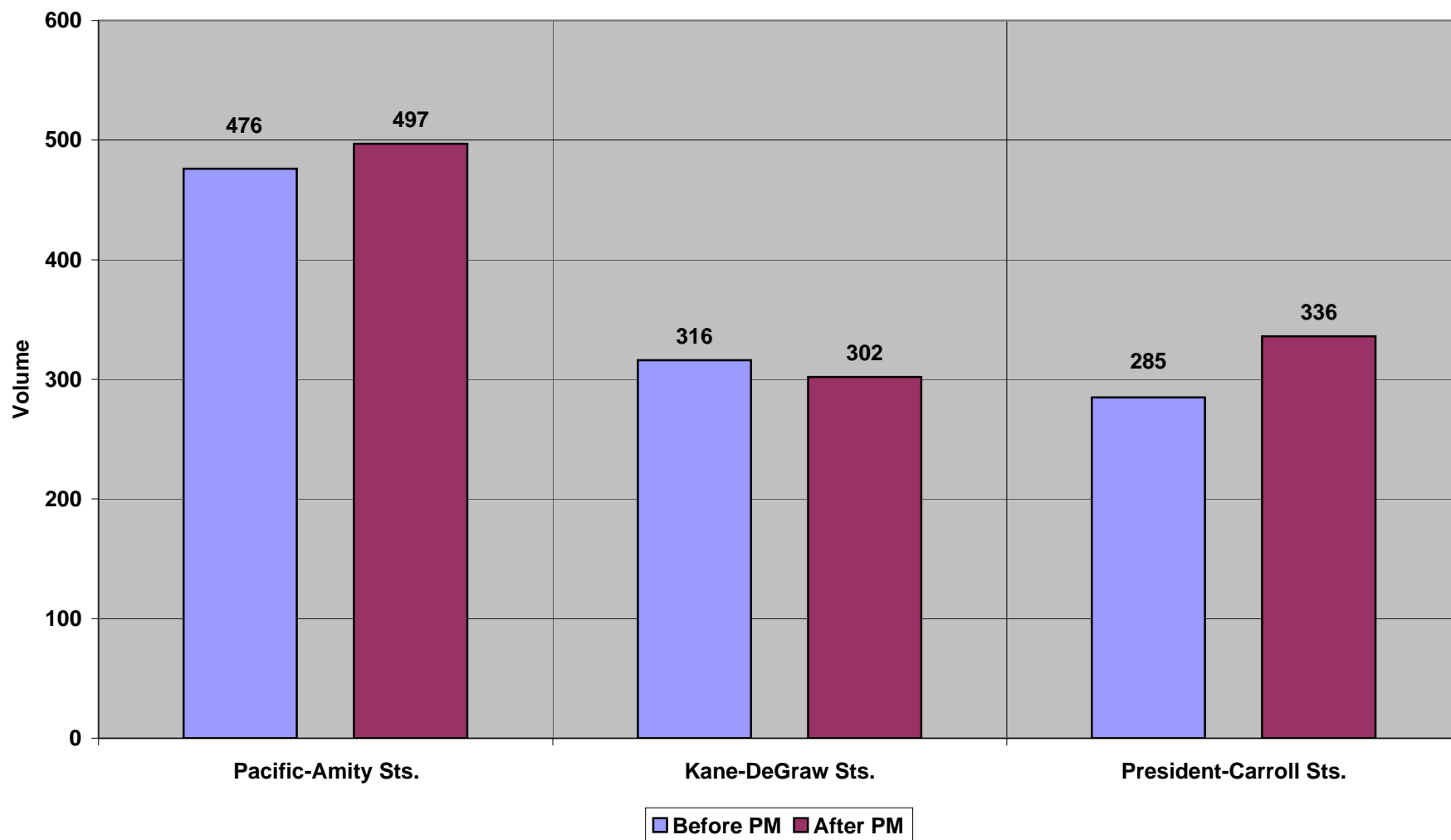
**Henry Street
Saturday Average Volume
AM Paek**



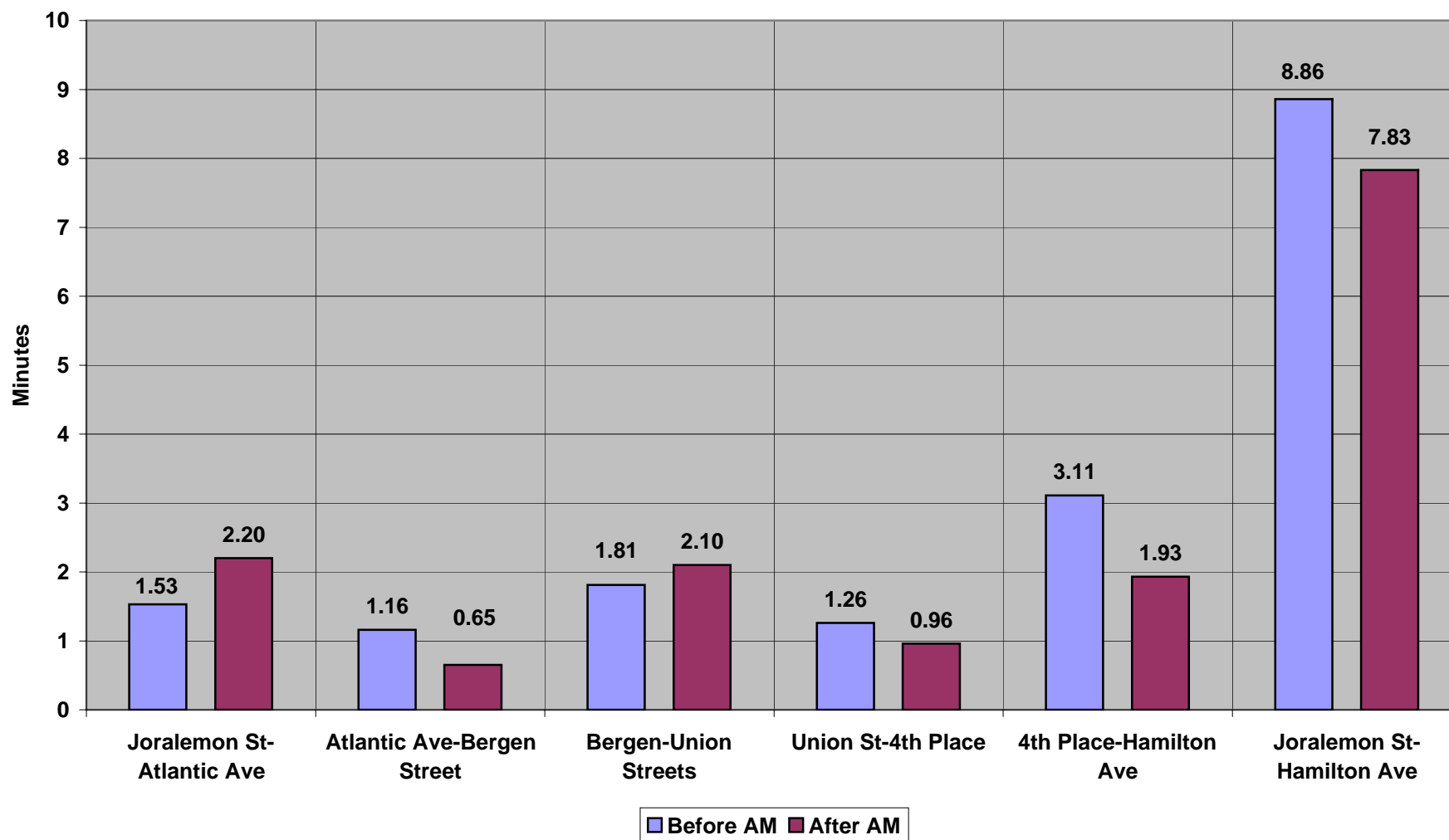
**Henry Street
Saturday Average Volume
Midday Peak**



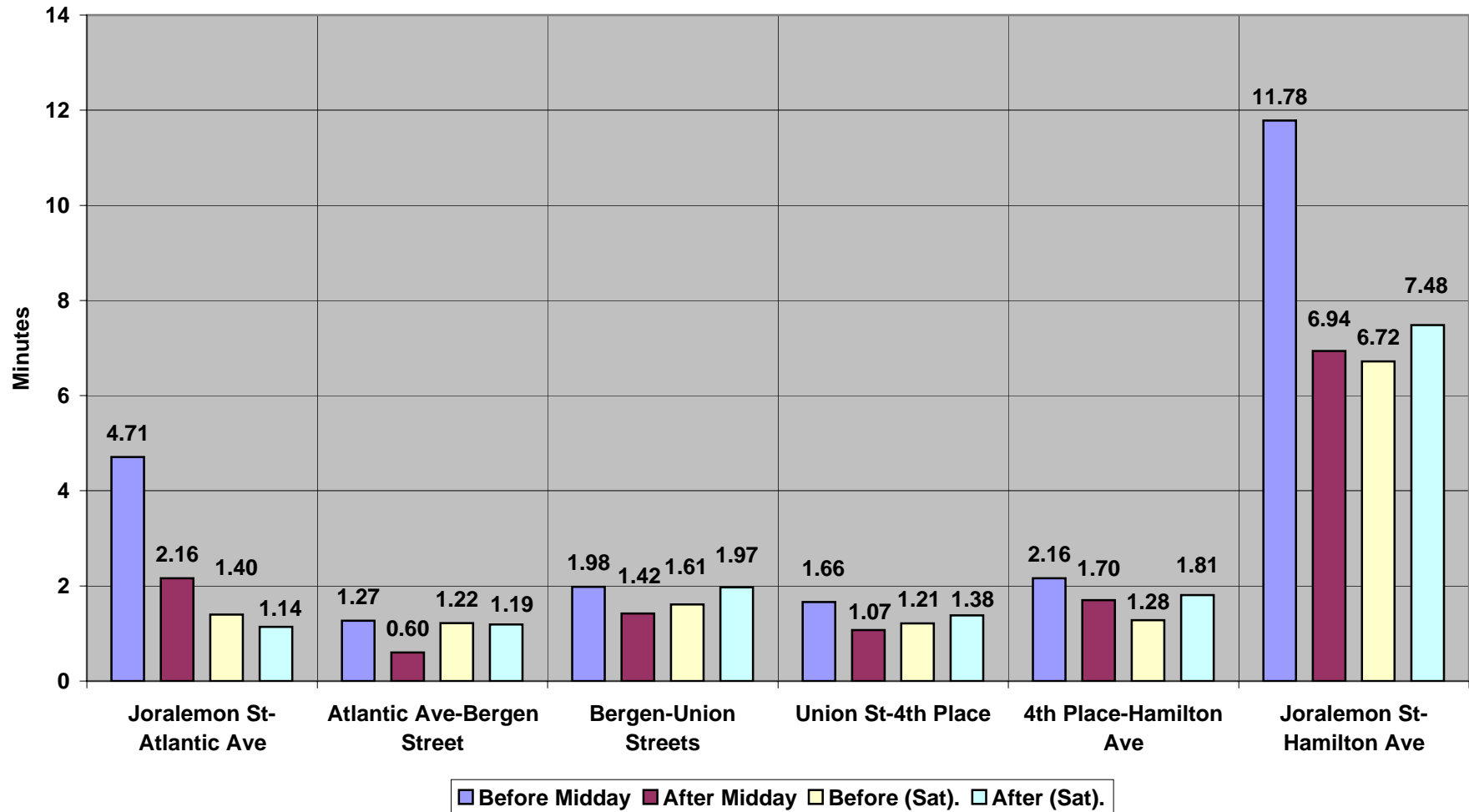
**Henry Street
Saturday Average Volume
PM Peak**



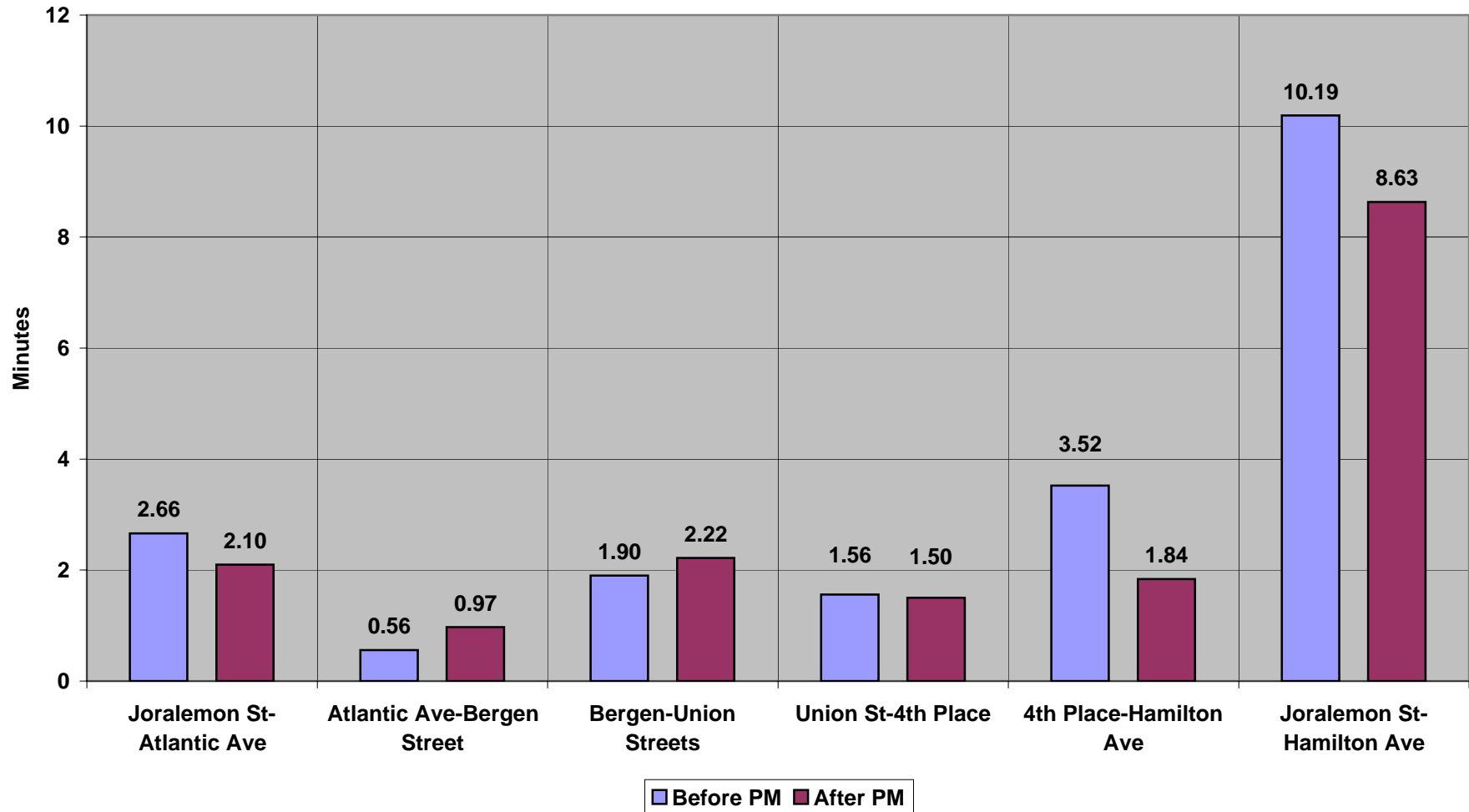
**Court Street
Weekday Average Auto Travel Times
AM Peak**



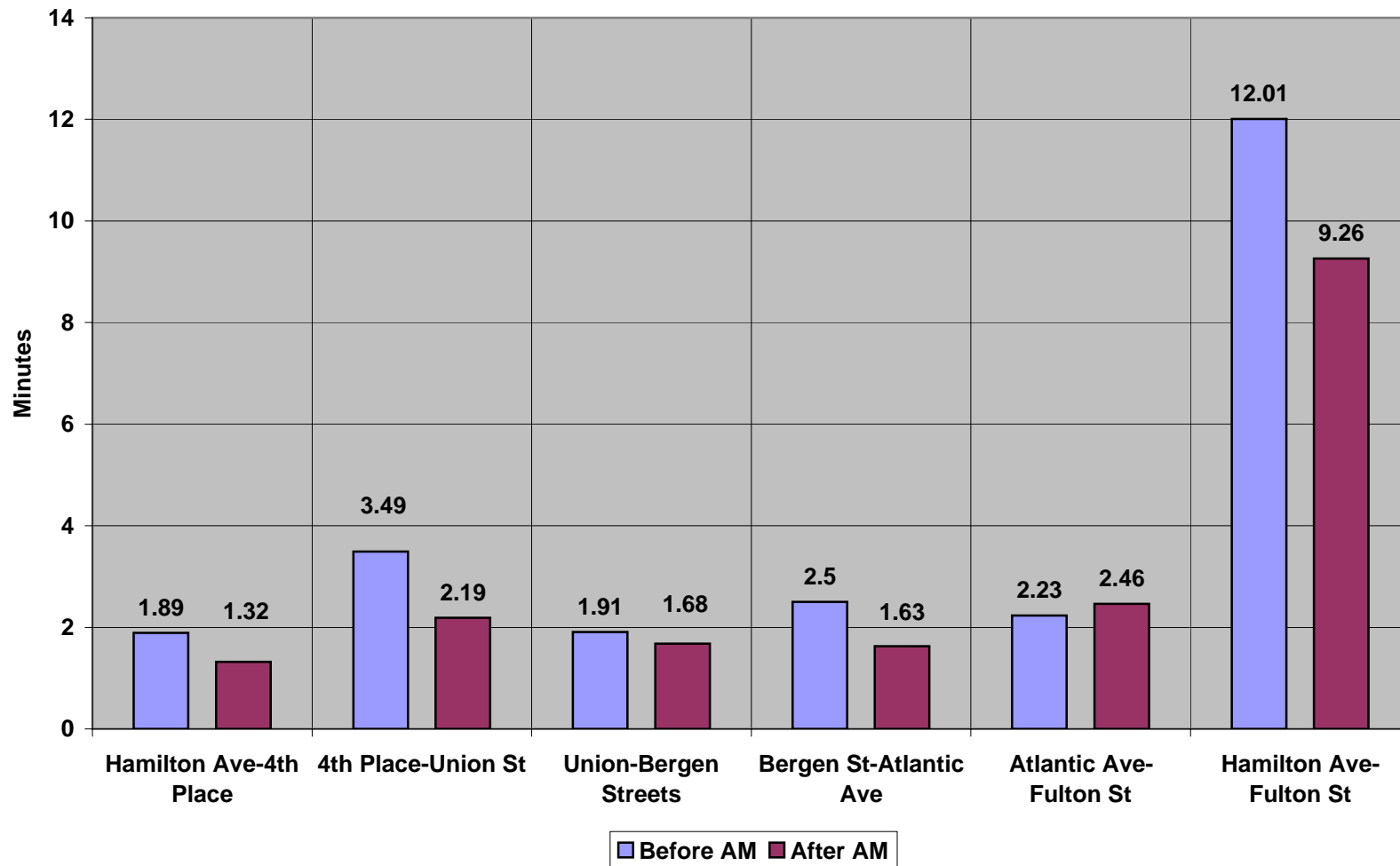
**Court Street
Weekday/Saturday Auto Travel Times
Midday Peak**



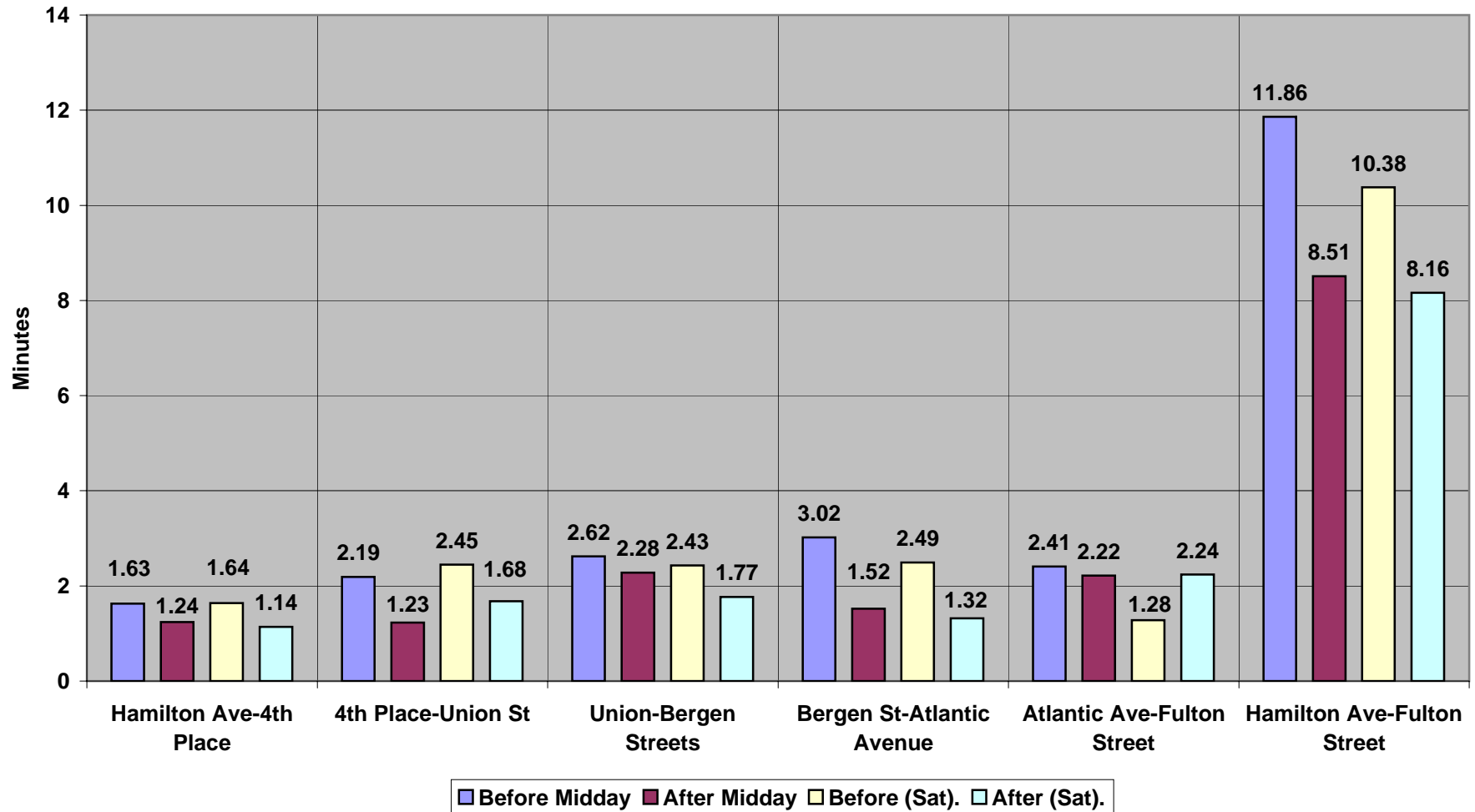
**Court Street
Weekday Auto Travel Times
PM Peak**



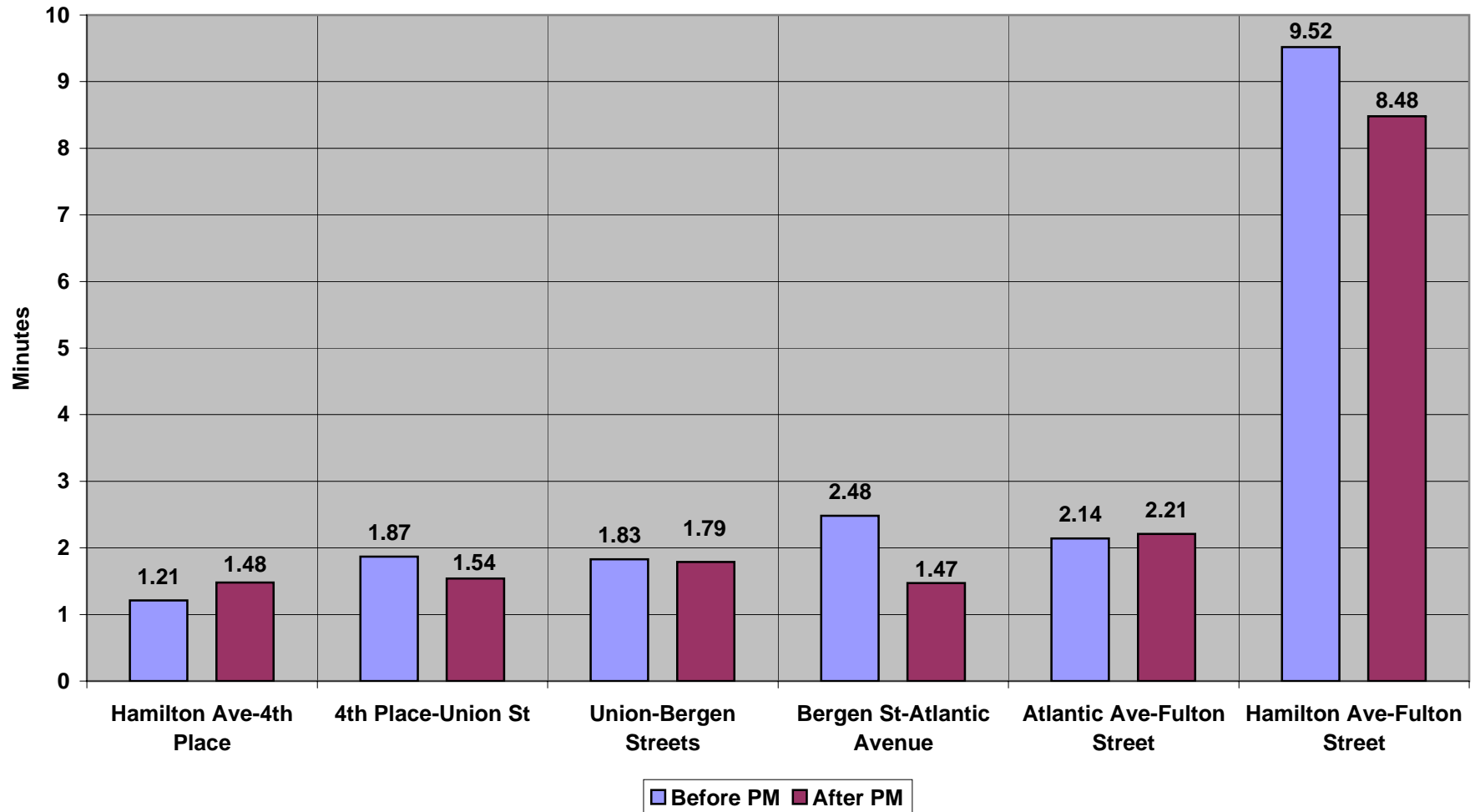
**Smith Street
Weekday Auto Travel Times
AM Peak**



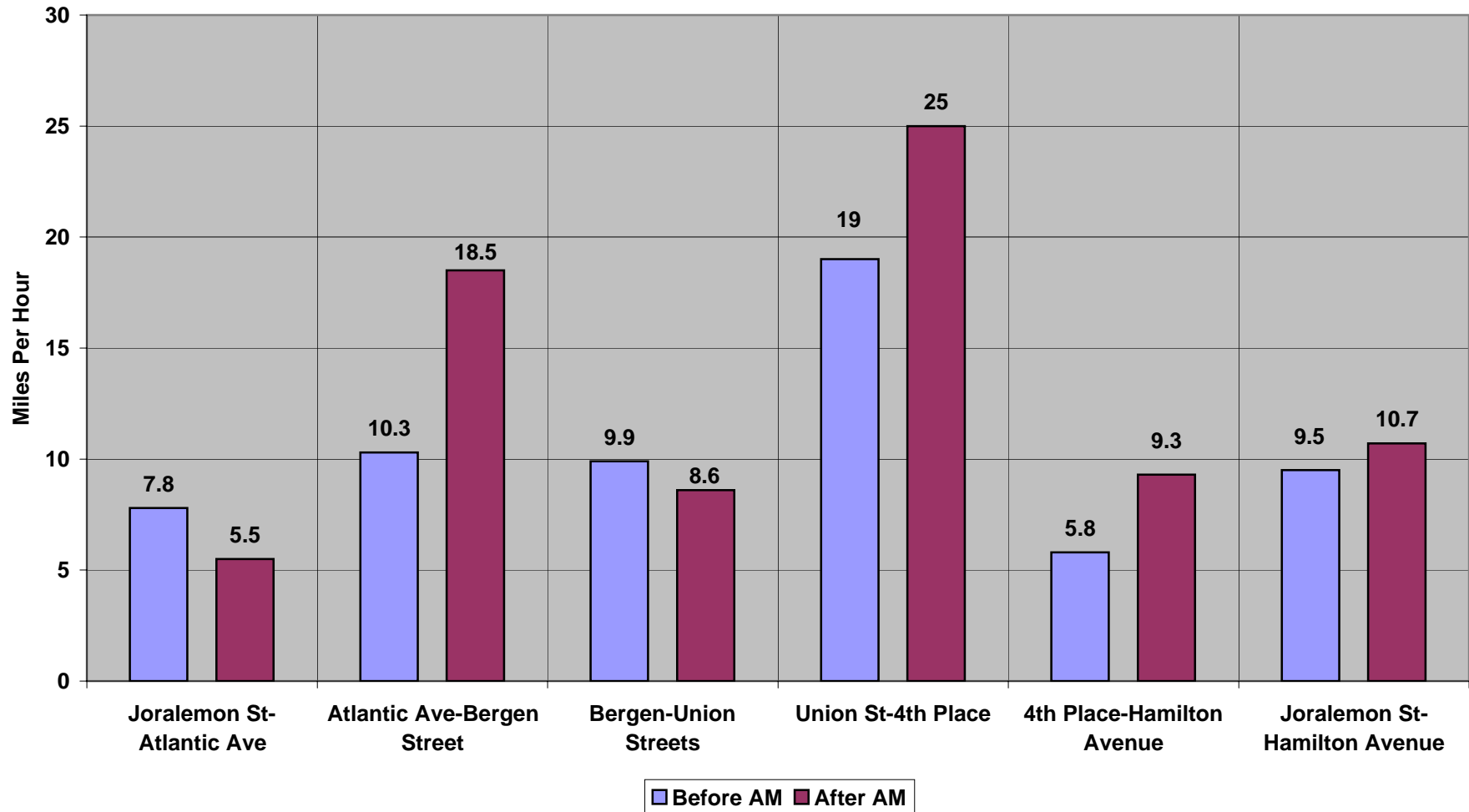
**Smith Street
Weekday/Saturday Auto Travel Times
Midday Peak**



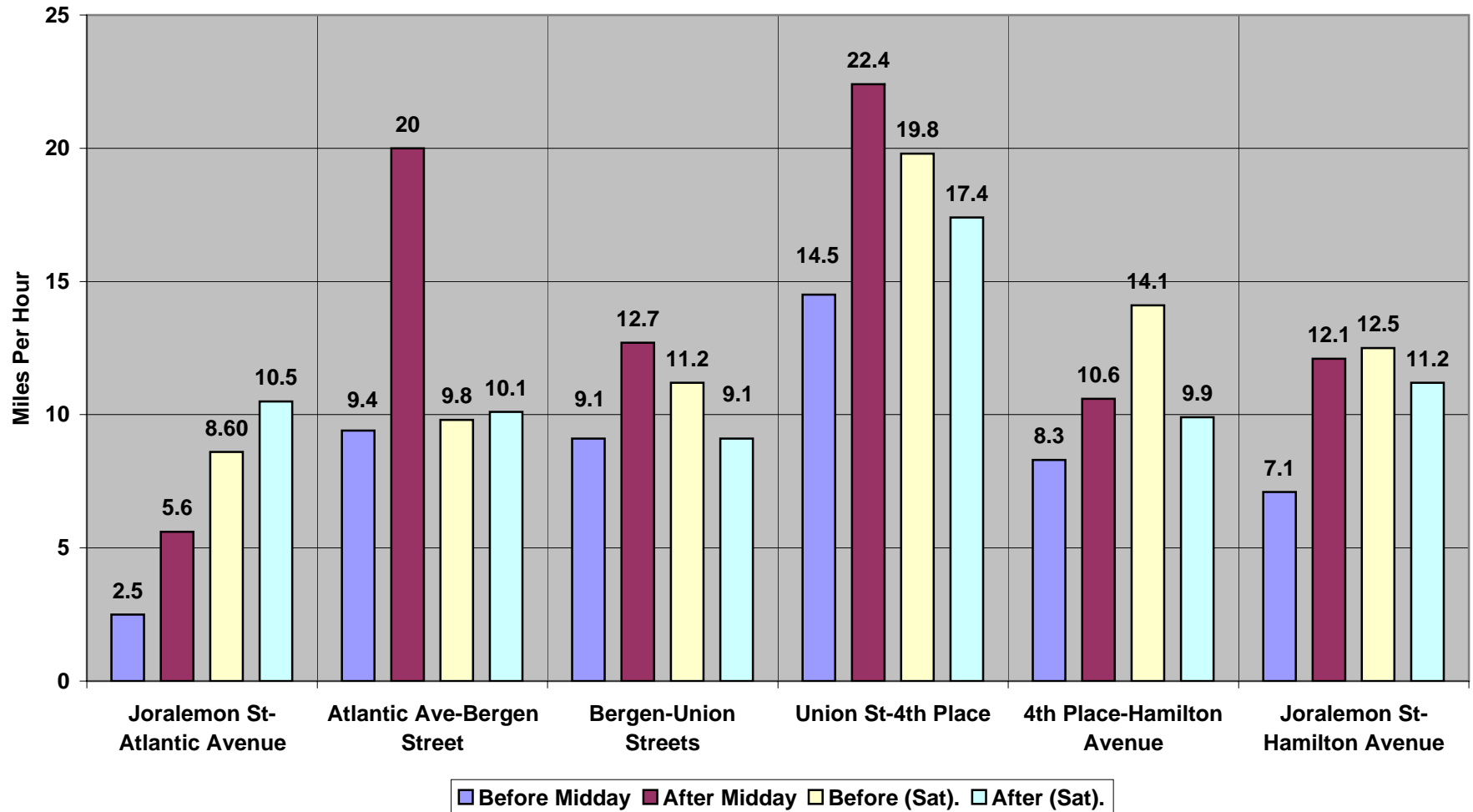
**Smith Street
Weekday Auto Travel Times
PM Peak**



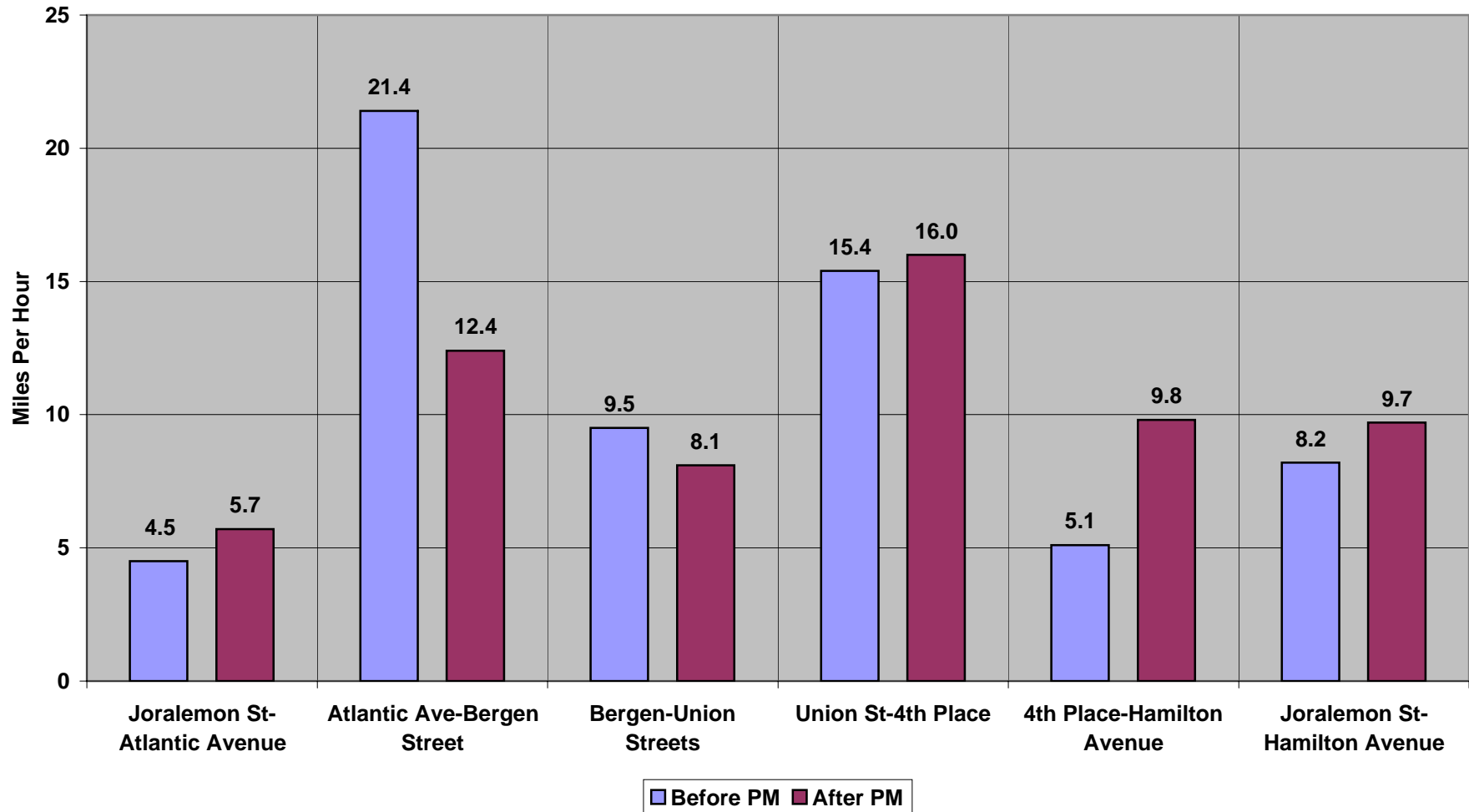
**Court Street
Weekday Auto Speeds
AM Peak Period**



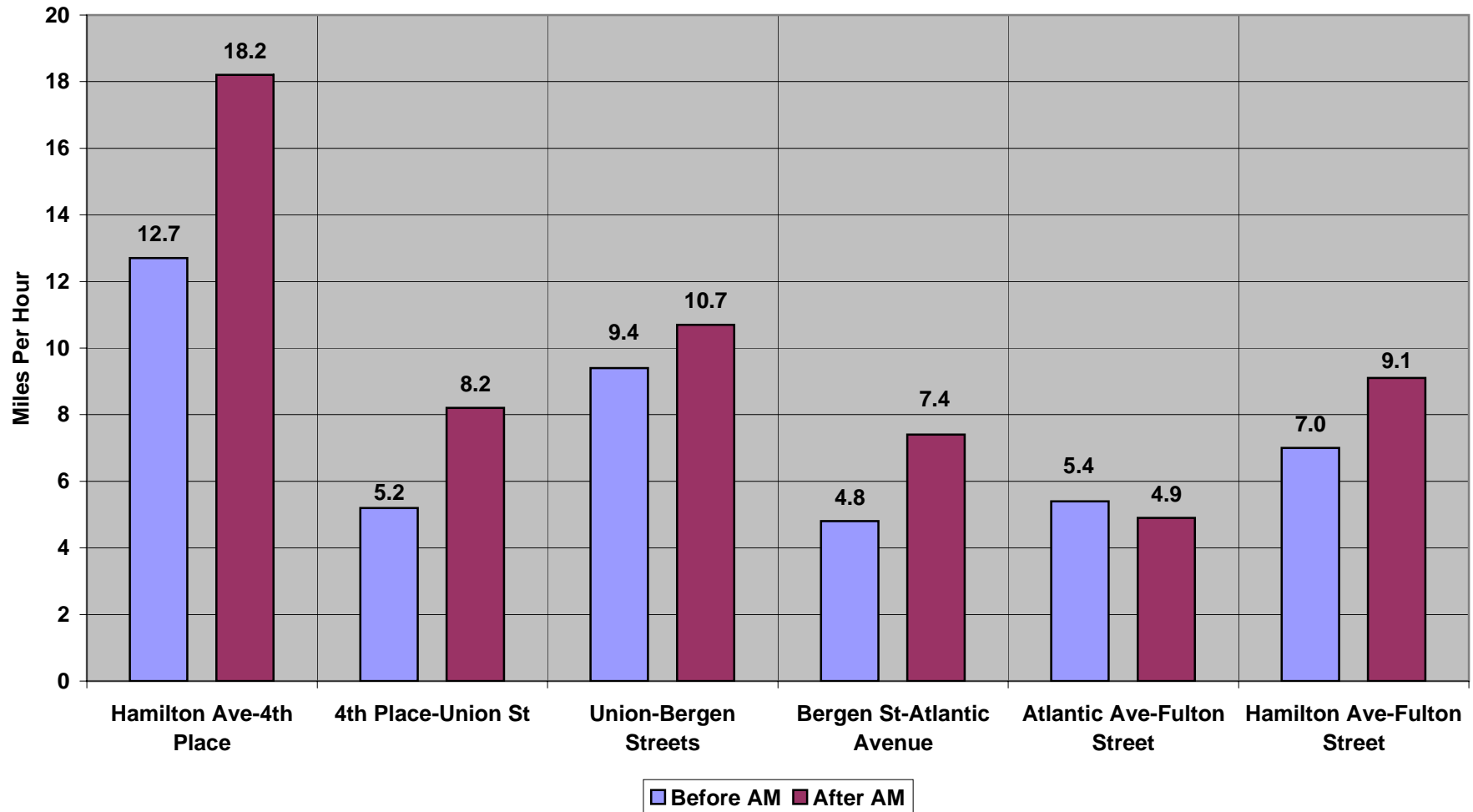
**Court Street
Weekday/Saturday Auto Speeds
Midday Peak**



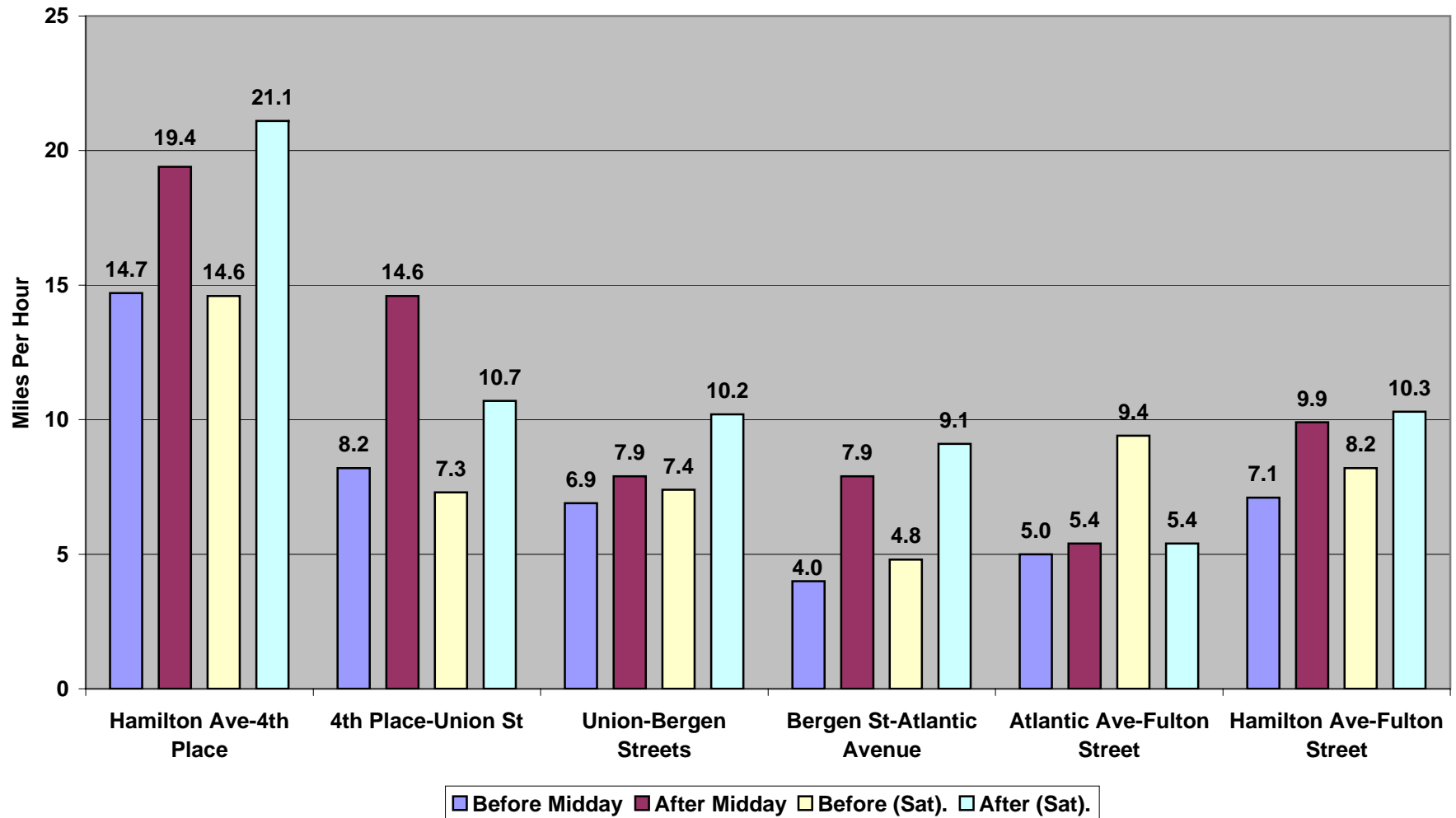
**Court Street
Weekday Auto Speeds
PM Peak Period**



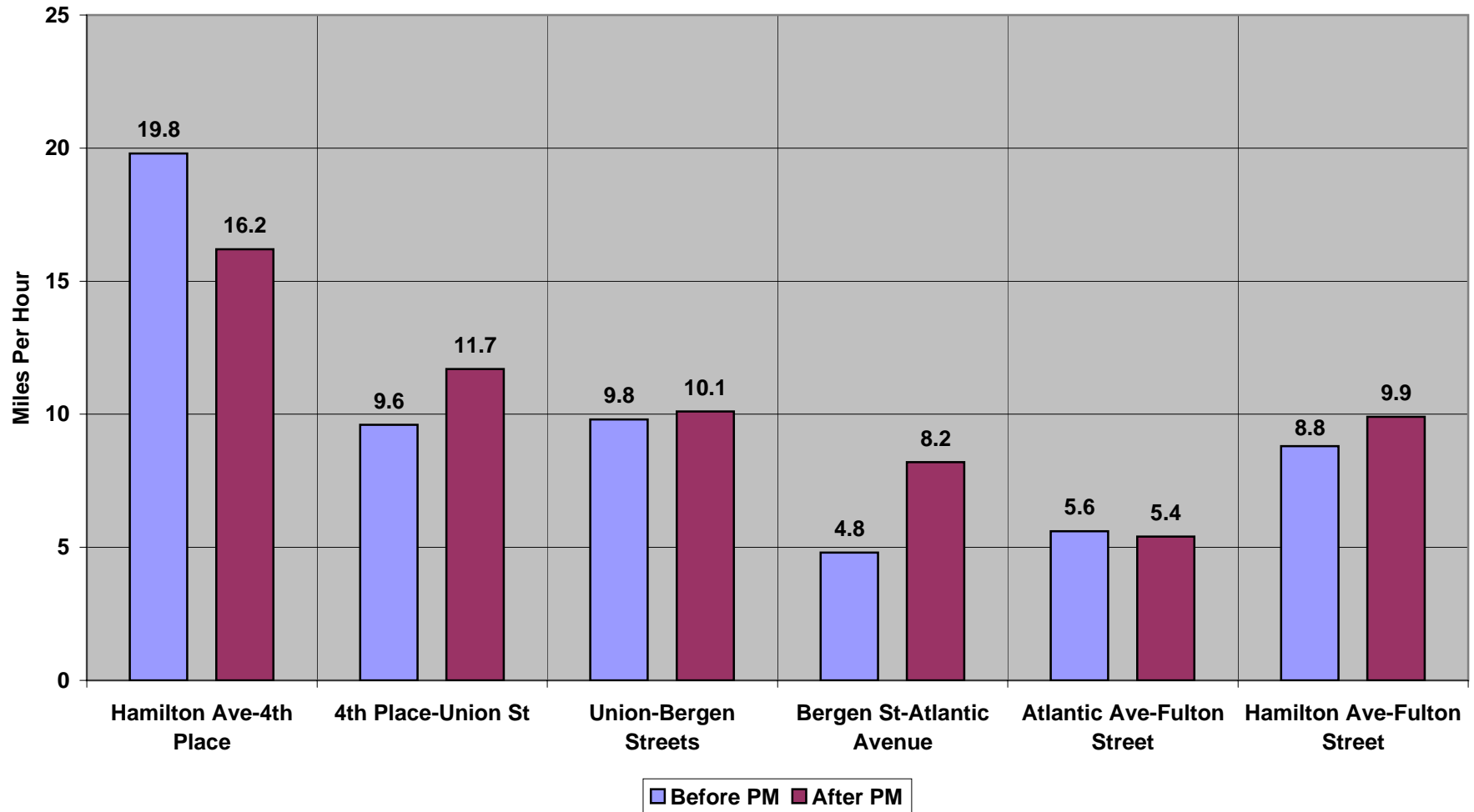
**Smith Street
Weekday Auto Speeds
AM Peak Period**



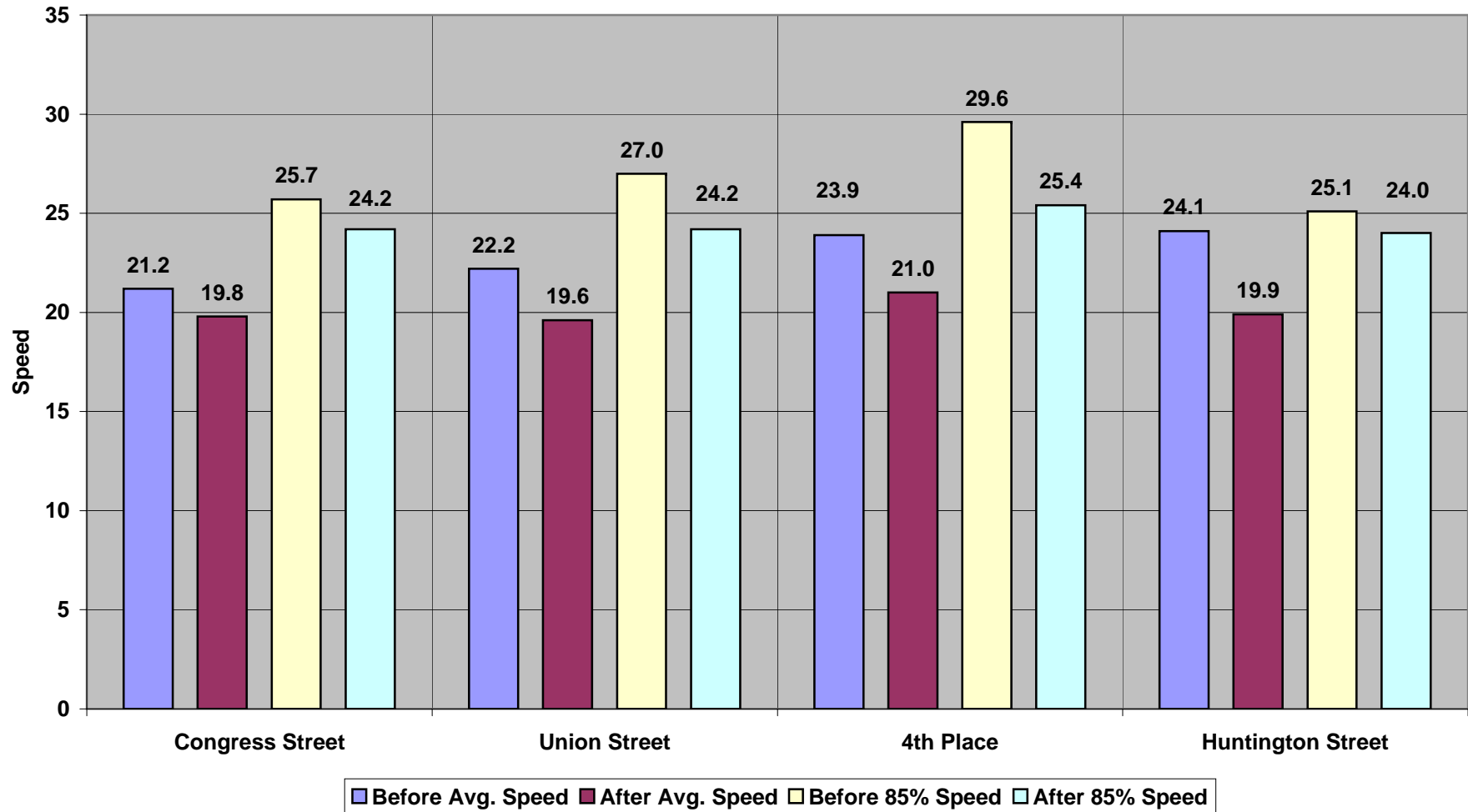
**Smith Street
Weekday/Saturday Auto Speeds
Midday Peak Period**



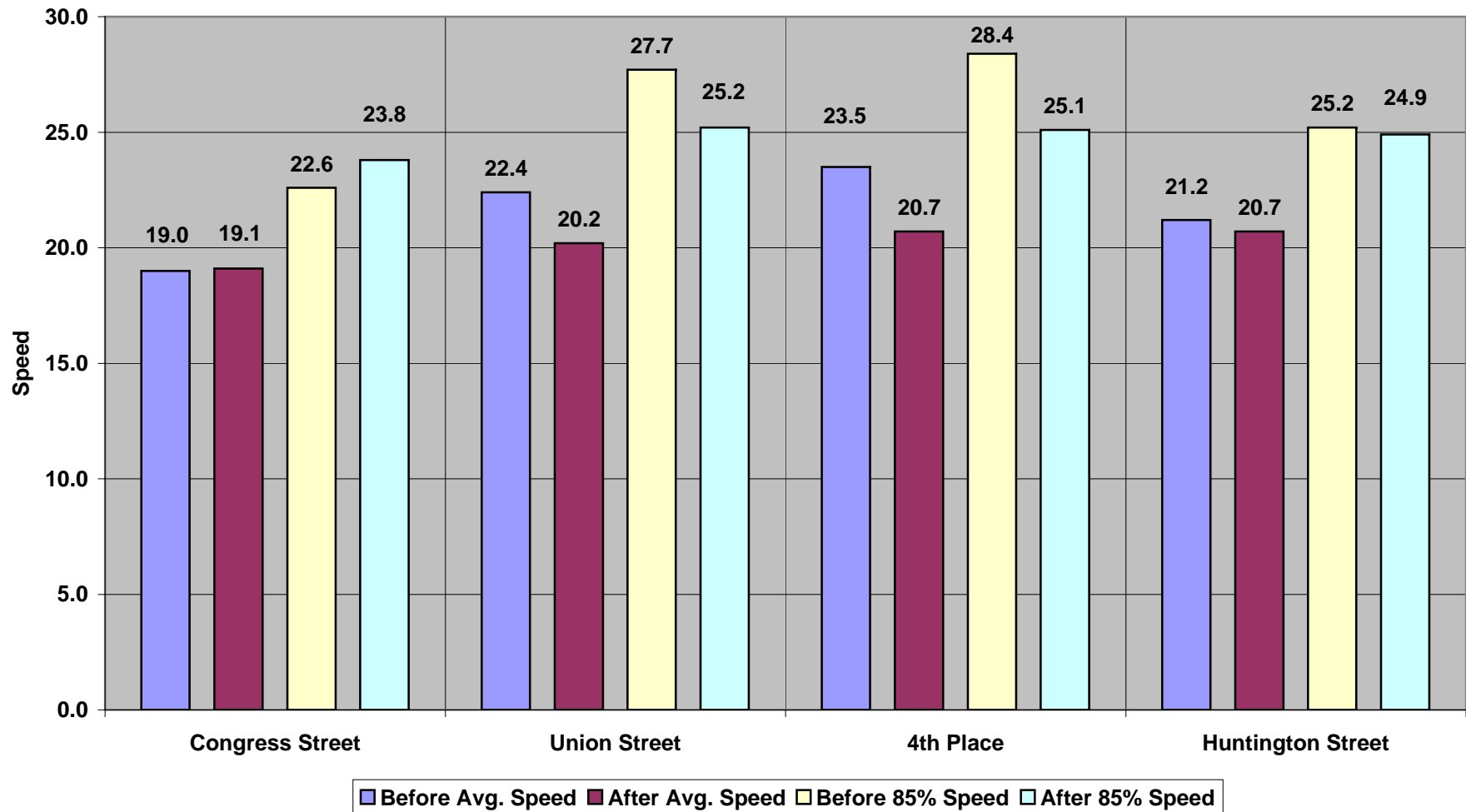
**Smith Street
Weekday Auto Speeds
PM Period**



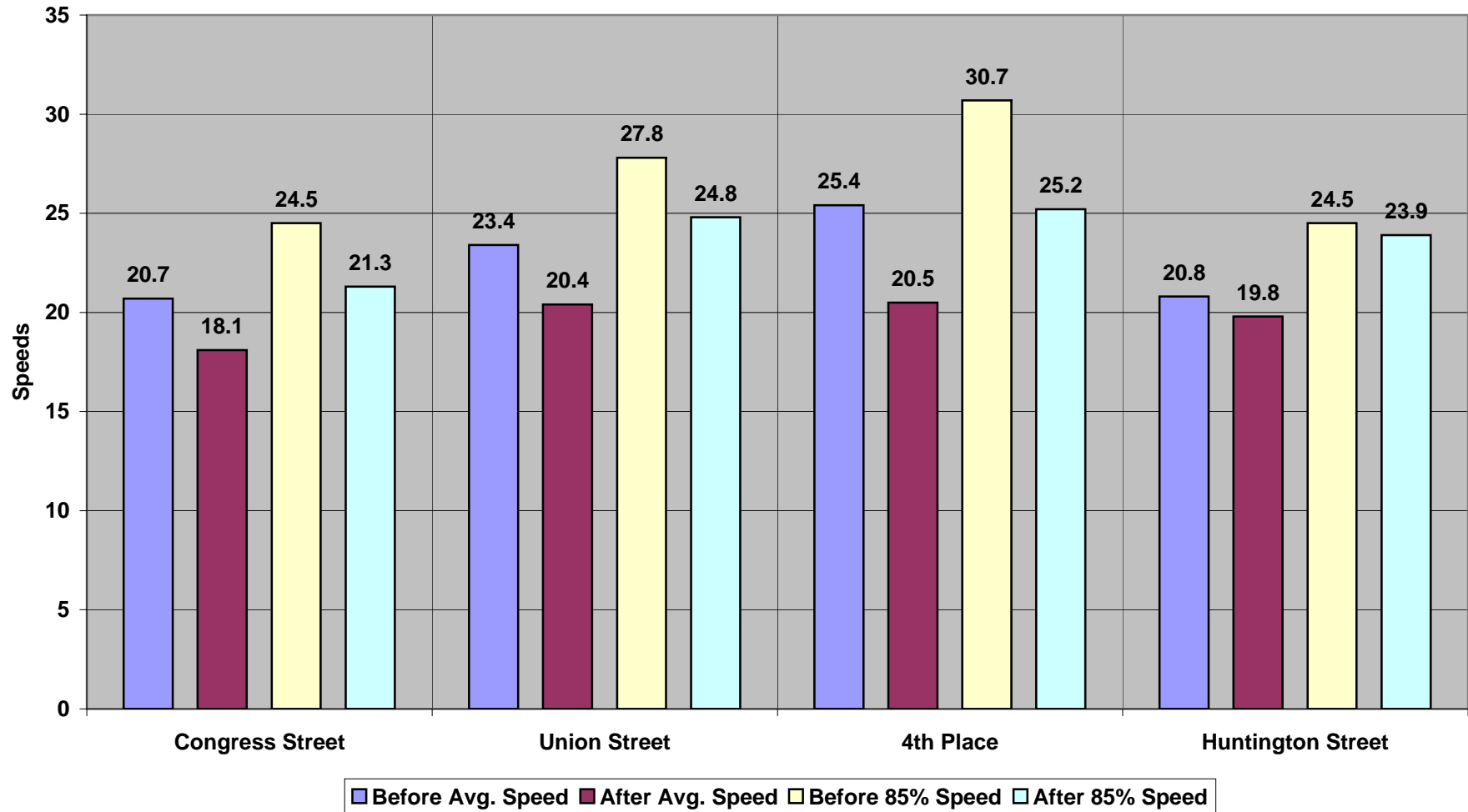
**Court Street Weekday
Radar Speeds
AM Peak Period**



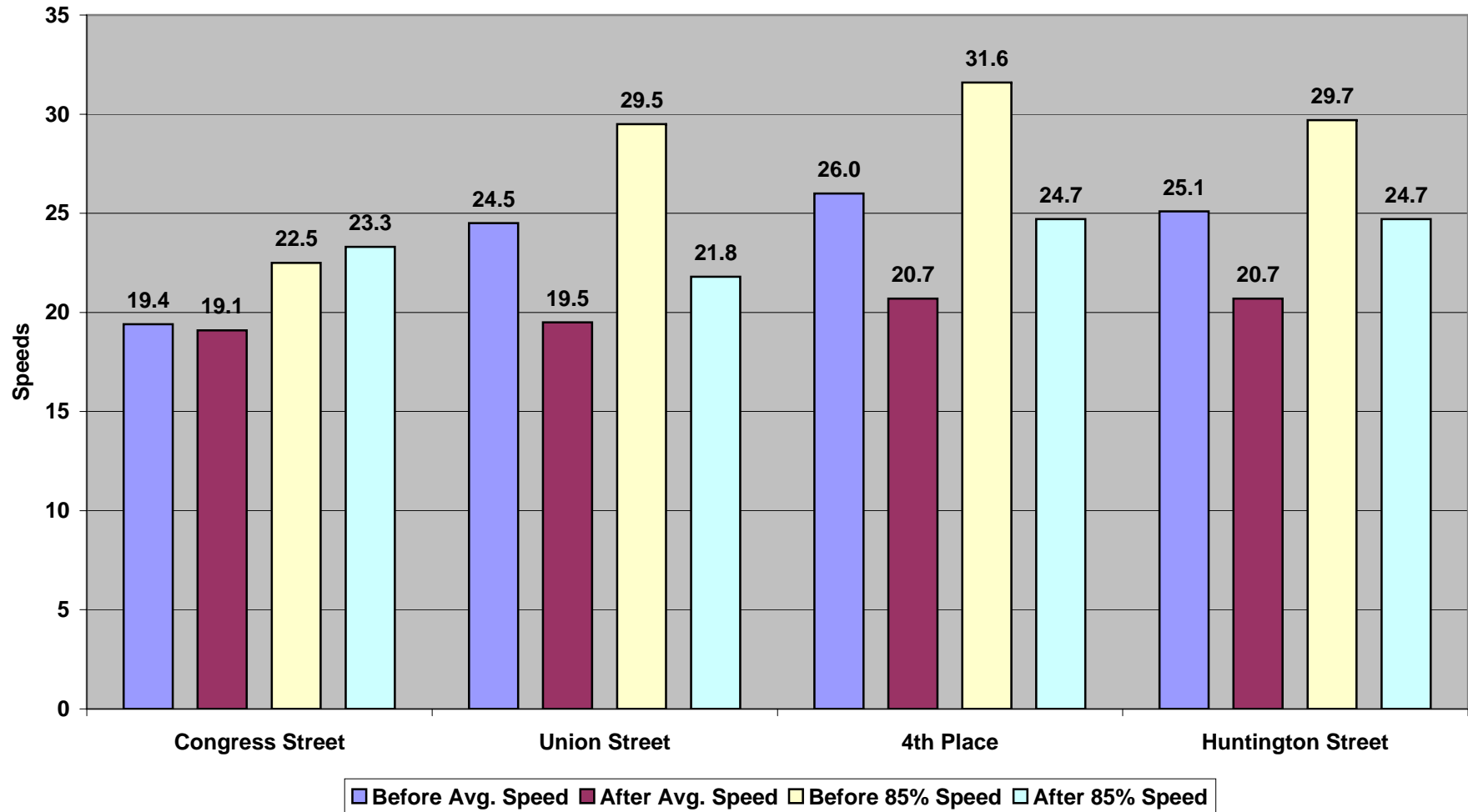
**Court Street
Weekday Radar Speeds
Midday Peak Period**



**Court Street
Weekday Radar Speeds
PM Peak Period**



**Court Street
Saturday Radar Speeds
(11:00am-2:00pm)**



APPENDIX III

“BEFORE” & “AFTER” CONDITIONS

Court Street Signal Modifications

“Before” & “After” Conditions

“Before” Conditions

1. Weekday Court Street Queuing (Vehicles stopped for more than one signal cycle).

- Average queues were less than two vehicles per signal cycle at all locations during all weekday time periods studied.

Court Street Weekday Signal Queues						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
At Bergen St	1.4	4	1.1	6	0.8	3
At Sackett St	1.2	5	0.8	4	0.9	4
At 4 th Place	0.6	3	1.3	6	1.4	4
At Huntington St	0.2	2	0.8	6	1.8	6

- Bergen St: Three or fewer queued vehicles on 97% of cycles.
- Sackett St: Three or fewer queued vehicles on 97% of cycles.
- 4th Place: Three or fewer queued vehicles on 96% of cycles.
- Huntington St: Three or fewer queued vehicles on 95% of cycles.

“After” Conditions

2. Weekday Court Street Queuing (Vehicles stopped for more than one signal cycle).

- Average queue was less than one vehicle per signal cycle at all locations during all weekday time periods studied.

Court Street Weekday Signal Queues						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
At Bergen St	0.3	2	0.4	5	0.3	3
At Sackett St	0.2	2	0.2	5	0.3	3
At 4 th Place	0.4	3	0.3	4	0.3	2
At Huntington St	0.2	1	0.0	1	0.1	1

- Bergen St: Two or fewer queued vehicles on 98% of cycles.
- Sackett St: Three or fewer queued vehicles on 99% of cycles.
- 4th Place: Two or fewer queued vehicles on 98% of cycles.
- Huntington St: One queued vehicle on 91% of cycles.

“After” Conditions

3. Weekday Side Street Queuing (Vehicles stopped for more than one signal cycle).

- Average queue was less than one vehicle per signal cycle at all locations during all weekday time periods studied.

Off-Court Street Weekday Signal Queues						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bergen St	0.6	2	0.7	2	0.4	2
At Sackett St	0.6	2	0.8	3	0.5	2
At 4th Place	0.3	1	0.6	2	0.3	1
At Huntington St	0.2	1	0.4	1	0.2	1

- Bergen St: One queued vehicle on 87% of cycles.
- Sackett St: Two or fewer queued vehicles on 99% of cycles.
- 4th Place: One queued vehicle on 98% of cycles.
- Huntington St: One queued vehicle on 77% of cycles.

“Before” Conditions

4. Weekday Court Street Vehicle Volumes.

- Average hourly volumes were under 800 vehicles per hour at the five locations during all weekday time periods studied.

Court Street Weekday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Atlantic Av-Pacific St	316	346	348	369	442	506
Bet Bergen-Wyckoff Sts	497	573	491	593	597	789
Bet Sackett-Union Sts	329	470	358	453	425	518
Bet Nelson-Huntington Sts	382	442	357	471	330	412
Bet 4th Place-Luquer St	403	458	426	511	540	598

- Between Atlantic Av-Pacific St: Max. 506 vph recorded Fri. 09/24/2004, 4:00-5:00pm.
- Between Bergen-Wyckoff Sts: Max. 789 vph recorded Mon. 09/27/2004, 5:00-6:00pm.
- Between Sackett-Union Sts: Max. 518 vph recorded Fri. 09/24/2004, 5:00-6:00pm.
- Between Nelson-Huntington Sts: Max. 471 vph recorded Fri. 09/24/2004, noon-1:00pm.
- Between 4th Place-Luquer St: Max 598 vph recorded Tue. 09/28/2004, 5:00-6:00pm.

“After” Conditions

5. Weekday Court Street Vehicle Volumes.

- Average hourly volumes were under 900 vehicles per hour at the five locations during all weekday time periods studied.

Court Street Weekday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Atlantic Av-Pacific St	318	338	333	384	477	724
Bet Bergen-Wyckoff Sts	479	518	466	488	697	801
Bet Sackett-Union Sts	281	305	328	361	380	454
Bet Nelson-Huntington Sts	254	341	311	351	351	403
Bet 4th Place-Luquer Sts	317	402	376	443	461	520

- Between Atlantic Av-Pacific St: Max. 724 vph recorded Tue. 04/05/2005, 5:00-6:00pm.
- Between Bergen-Wyckoff Sts: Max. 801 vph recorded Wed. 01/19/2005, 5:00-6:00pm.
- Between Sackett-Union Sts: Max. 454 vph recorded Mon. 04/04/2005, 5:00-6:00pm.
- Between Nelson-Huntington Sts: Max. 403 vph recorded Wed. 01/19/2005, 5:00-6:00pm.
- Between 4th Place-Luquer St: Max 520 vph recorded Fri. 01/21/2005, 4:00-5:00pm

“Before” Conditions

6. Weekday Henry Street Vehicle Volumes.

- Average hourly volumes were under 400 vehicles per hour at the three locations during all weekday time periods studied.

Henry Street Weekday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Kane-DeGraw Sts	163	197	157	198	198	235
Bet Pacific-Amity Sts	289	332	318	359	309	339
Bet President-Carroll Sts	140	175	148	180	177	193

- Between Kane-DeGraw Sts: Max. 235 vph recorded Fri. 09/24/2004, 5:00-6:00pm.
- Between Pacific-Amity Sts: Max. 359 vph recorded Mon. 09/27/2004, 11:00am-noon.
- Between President-Carroll Sts: Max. 193 vph recorded Tue. 09/21/2004, 5:00-6:00pm.

“After” Conditions

7. Weekday Henry Street Vehicle Volumes.

- Average hourly volumes were under 400 vehicles per hour at the four locations during all weekday time periods studied.

Henry Street Weekday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Kane-DeGraw Sts	153	225	144	225	198	218
Bet Pacific-Amity Sts	294	346	316	359	317	343
Bet President-Carroll Sts	143	160	126	134	169	186

- Between Kane-DeGraw Sts: Max. 225 vph recorded Fri. 04/08/2005, 8:30-9:30am.
- Between Pacific-Amity Sts: Max. 359 vph recorded Thu. 04/07/2005, 1:00-2:00pm.
- Between President-Carroll Sts: Max. 187 vph recorded Fri. 04/08/2005, 8:30-9:30am.

“Before” Conditions

8. Weekday Court Street Auto Travel Times & Speeds: Joralemon St. to Hamilton Ave. (1.40 miles).

- 7:30-9:30am
 - Average travel time 8.86 minutes, average speed 9.5 mph.
 - Best segment Union St. to 4th Place (19.0 mph).
 - Worst segment 4th Place to Hamilton Ave. (5.8 mph).
- 11:00am-2:00pm
 - Average travel time 11.78 minutes, average speed 7.1 mph.
 - Best segment Union St. to 4th Place (14.5 mph).
 - Worst segment Joralemon Street to Atlantic Ave. (2.5 mph).
- 4:00-6:00pm
 - Average travel time 10.19 minutes, average speed 8.2 mph.
 - Best segments Atlantic Ave. to Bergen St. (21.4 mph) & Union St. to 4th Place (15.4 mph).
 - Worst segments Joralemon St. to Atlantic Ave. (4.5 mph) & 4th Place to Hamilton Ave. (5.1 mph).

“After” Conditions

9. Weekday Court Street Auto Travel Times & Speeds: Joralemon St. to Hamilton Ave. (1.40 miles).

- 7:30-9:30am
 - Average travel time 7.83 minutes, average speed 10.7 mph.
 - Best segment Union St. to 4th Place (25.0 mph).

- Worst segment Joralemon St to Atlantic Ave. (5.5 mph).
- 11:00am-2:00pm
 - Average travel time 6.94 minutes, average speed 10.6 mph.
 - Best segment Union St. to 4th Place (22.4 mph).
 - Worst segment Joralemon Street to Atlantic Ave. (5.6 mph).
- 4:00-6:00pm
 - Average travel time 8.63 minutes, average speed 9.7 mph.
 - Best segment Union St. to 4th Place (16.0 mph).
 - Worst segment Joralemon St. to Atlantic Ave. (5.7 mph).

“Before” Conditions

10. Weekday Smith Street Auto Travel Times & Speeds: Hamilton Ave to Fulton St. (1.40 miles).

- 7:30-9:30am
 - Average travel time 12.01 minutes, average speed 7.0 mph.
 - Best segment Hamilton Ave. to 4th Place (12.7 mph).
 - Worst segments 4th Place to Union St. (5.2 mph), Bergen St. to Atlantic Ave. (4.8 mph), & Atlantic Ave. to Fulton St. (5.4 mph).
- 11:00am-2:00pm
 - Average travel time 11.86 minutes, average speed 7.1 mph.
 - Best segment Hamilton Ave to 4th Place (14.7 mph).
 - Worst segments Bergen St. to Atlantic Ave. (4.0 mph), & Atlantic Ave. to Fulton St. (5.0 mph).
- 4:00-6:00pm
 - Average travel time 9.52 minutes, average speed 8.8 mph.
 - Best segment Hamilton Ave. to 4th Place (19.8mph).
 - Worst segments Bergen St. to Atlantic Ave. (4.8 mph), & Atlantic Ave. to Fulton St. (5.6 mph).

“After” Conditions

11. Weekday Smith Street Auto Travel Times & Speeds: Hamilton Ave to Fulton St. (1.40 miles).

- 7:30-9:30am
 - Average travel time 9.26 minutes, average speed 9.1 mph.
 - Best segment Hamilton Ave. to 4th Place (18.2 mph).
 - Worst segment Atlantic Ave. to Fulton St. (4.9 mph).
- 11:00am-2:00pm
 - Average travel time 8.51 minutes, average speed 9.9 mph.
 - Best segment Hamilton Ave to 4th Place (19.4 mph).

- Worst segment Atlantic Ave. to Fulton St. (5.4 mph).
- 4:00-6:00pm
 - Average travel time 8.48 minutes, average speed 9.9 mph.
 - Best segment Hamilton Ave. to 4th Place (16.2mph).
 - Worst segment Ave. to Fulton St. (5.4 mph).

“Before” Conditions

11. Court Street Radar Speed Surveys (MPH)

- Average speed was less than 30 mph (posted speed limit), on all four locations.

Court Street Radar Speeds (MPH)									
	7:30-9:30am			11:00am-2:00pm			4:00-6:00pm		
	Avg	85%	Max	Avg	85%	Max	Avg	85%	Max
At Congress Street	21.2	25.7	45.0	19.0	22.5	37.0	20.7	24.5	39.0
At Union Street	22.2	27.7	49.0	22.4	27.7	38.0	23.4	27.8	40.0
At 4th Place	23.9	29.6	45.0	23.5	28.4	40.0	25.4	30.7	40.0
Huntington Street	24.1	25.1	37.0	21.2	25.2	40.0	20.8	24.5	37.0

“After” Conditions

12. Court Street Radar Speed Surveys (MPH)

- Average speed was less than 30 mph (posted speed limit), on all four locations.

Court Street Radar Speeds (MPH)									
	7:30-9:30am			11:00am-2:00pm			4:00-6:00pm		
	Avg	85%	Max	Avg	85%	Max	Avg	85%	Max
At Congress Street	19.8	24.2	35.0	19.1	23.8	41.0	18.1	21.3	47.0
At Union Street	19.6	24.2	36.0	20.2	25.2	37.0	20.4	24.8	36.0
At 4th Place	21.0	25.4	52.0	20.7	25.1	50.0	20.5	25.2	37.0
Huntington Street	19.9	24.0	39.0	20.7	24.9	50.0	19.8	23.9	37.0

Court Street Signal Modifications

“Before” & “After” Conditions

Before Conditions

1. Saturday Court Street Queuing (Vehicles stopped for more than one signal cycle).

- Average queue was less than one vehicle per signal cycle at all locations during all weekday time periods studied.

Court Street Saturday Signal Queues		
	11am-2:00pm	
	Avg	Max
At Bergen St	0.7	3
At Sackett St	0.3	2
At 4 th Place	0.5	2
At Huntington St	0.3	1

- Bergen St: Three or fewer queued vehicles on 99% of cycles.
- Sackett St: Two or fewer queued vehicles on 99% of cycles.
- 4th Place: Two or fewer queued vehicles on 99% of cycles.
- Huntington St: One queued vehicle on 97% of cycles.

“After” Conditions

2. Saturday Court Street Queuing (Vehicles stopped for more than one signal cycle).

- Average queue was less than one vehicle per signal cycle at all locations during all weekday time periods studied.

Court Street Saturday Signal Queues		
	11am-2:00pm	
	Avg	Max
At Bergen St	0.6	3
At Sackett St	0.5	2
At 4 th Place	0.9	2
At Huntington St	0.6	3

- Bergen St: Two or fewer queued vehicles on 81% of cycles.
- Sackett St: One queued vehicle on 92% of cycles.
- 4th Place: One queued vehicle on 77% of cycles.
- Huntington St: Two or fewer queued vehicles on 96% of cycles.

“Before” Conditions

3. Saturday Court Street Vehicle Volumes.

- Average hourly volumes were under 600 vehicles per hour at the five locations during all Saturday time periods studied.

Court Street Saturday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Atlantic Av-Pacific St	209	245	375	422	413	445
Bet Congress-Bergen Sts	309	352	518	551	509	520
Bet Sackett-Union Sts	234	263	408	443	419	430
Bet Nelson-Huntington Sts	217	274	382	429	416	428
Bet 4th Place-Luquer St	260	282	459	507	453	470

- Between Atlantic Av-Pacific St: Max. 445 vph recorded Sat. 09/25/2004, 5:00-6:00pm.
- Between Congress-Bergen Sts: Max 551 vph recorded Sat. 10/02/2004, 11:00am-noon
- Between Sackett-Union Sts: Max 443 vph recorded Sat. 10/02/2004, noon-1:00pm
- Between Nelson-Huntington Sts: Max 429 vph recorded Sat 10/02/2004, noon-1:00pm
- Between 4th Place-Luquer St: Max 507 vph recorded Sat 10/02/2004, noon-1:00pm.

“After” Conditions

4. Saturday Court Street Vehicle Volumes.

- Average hourly volumes were under 600 vehicles per hour at the five locations during all Saturday time periods studied.

Court Street Weekend Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Atlantic Av-Pacific St	189	222	364	371	369	369
Bet Congress-Bergen Sts	329	370	473	522	N/A	N/A
Bet Sackett-Union Sts	203	230	356	381	373	393
Bet Nelson-Huntington Sts	151	169	300	318	293	285
Bet 4th Place-Luquer Sts	185	216	374	391	339	347

- Between Atlantic Av-Pacific St: Max. 371 vph recorded Sat. 04/09/2005, 1:00-2:00pm.
- Between Congress-Bergen Sts: Max 522 vph recorded Sat. 01/22/2004, 11:00am-noon.
- Between Sackett-Union Sts: Max 393 vph recorded Sat. 04/09/2005, 4:00-5:00pm.
- Between Nelson-Huntington Sts: Max 318 vph recorded Sat. 01/15/2005, 1:00-2:00pm.
- Between 4th Place-Luquer St: Max 391 vph recorded Sat. 01/15/2005, 1:00-2:00pm.

“Before” Conditions

5. Saturday Henry Street Vehicle Volumes.

- Average hourly volumes were under 325 vehicles per hour at the three locations during all Saturday time periods studied.

Henry Street Saturday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Kane-Degraw Sts	74	94	162	199	158	172
Bet Pacific-Amity Sts	136	153	237	305	238	262
Bet President-Carroll Sts	79	107	158	181	143	144

- Between Kane-Degraw Sts: Max. 199 vph recorded Sat. 09/18/2004, 1:00-2:00pm.
- Between Pacific-Amity Sts: Max 305 vph recorded Sat. 09/18/2004, 1:00-2:00pm.
- Between President-Amity Sts: Max 181 vph recorded Sat 9/18/2004, 1:00-2:00pm.

“After” Conditions

6. Saturday Henry Street Vehicle Volumes.

- Average hourly volumes were under 275 vehicles per hour at the three locations during all Saturday time periods studied.

Henry Street Saturday Hourly Vehicle Volumes (vph)						
	7:30-9:30am		11:00am-2:00pm		4:00-6:00pm	
	Avg	Max	Avg	Max	Avg	Max
Bet Kane-Degraw Sts	81	82	161	174	151	155
Bet Pacific-Amity Sts	129	134	240	248	249	250
Bet President-Carroll Sts	70	78	147	168	168	188

- Between Kane-Degraw Sts: Max. 174 vph recorded Sat. 04/09/2005, 11:00am-noon.
- Between Pacific-Amity Sts: Max 250 vph recorded Sat. 04/09/2005, 4:00-5:00pm.
- Between President-Carroll Sts: Max 188 vph recorded Sat 04/09/2205, 5:00-6:00pm.

“Before” Conditions

7. Weekend Court Street Auto Travel Times & Speeds: Joralemon St. to Hamilton Ave. (1.40 miles).

- 11:00am-2:00pm
 - Average travel time 6.72 minutes, average speed 12.5 mph.
 - Best segment Union St. to 4th Place (19.8 mph).
 - Worst segment Joralemon Street to Atlantic Ave. (8.6 mph).

“After” Conditions

8. Weekend Court Street Auto Travel Times & Speeds: Joralemon St. to Hamilton Ave. (1.40 miles).

- 11:00am-2:00pm
 - Average travel time 7.48 minutes, average speed 11.2 mph.
 - Best segment Union St. to 4th Place (17.4 mph).
 - Worst segment Bergen Street to Union Street. (9.1 mph).

“Before” Conditions

9. Weekend Smith Street Auto Travel Times & Speeds: Hamilton Ave to Fulton St. (1.40 miles).

- 11:00am-2:00pm
 - Average travel time 10.30 minutes, average speed 8.2 mph.
 - Best segment Hamilton Ave to 4th Place (14.6 mph).
 - Worst segments 4th Pl. to Union St. (7.4 mph), & Union St. to Bergen St. (7.4 mph).

“After” Conditions

10. Weekend Smith Street Auto Travel Times & Speeds: Hamilton Ave to Fulton St. (1.40 miles).

- 11:00am-2:00pm
 - Average travel time 8.16 minutes, average speed 10.3 mph.
 - Best segment Hamilton Ave to 4th Place (21.1 mph).
 - Worst segment Atlantic Ave. to Fulton St. (5.4 mph).

“Before” Conditions

11. Court Street Radar Speed Surveys (MPH)

- Average speed was less than 30 mph (posted speed limit), on all four locations.

Court Street Radar Speeds (MPH)			
	11:00am-2:00pm		
	Avg	85%	Max
At Congress Street	19.4	22.5	30.0
At Union Street	24.5	29.4	38.0
At 4th Place	26.0	31.6	43.0
Huntington Street	25.1	29.0	40.0

“After” Conditions

12. Court Street Radar Speed Surveys (MPH)

- Average speed was less than 30 mph (posted speed limit), on all four locations.

Court Street Radar Speeds (MPH)			
	7:30-9:30am		
	Avg	85%	Max
At Congress Street	19.1	23.3	37.0
At Union Street	19.5	21.8	34.0
At 4th Place	20.7	24.7	34.0
Huntington Street	20.8	24.7	37.0