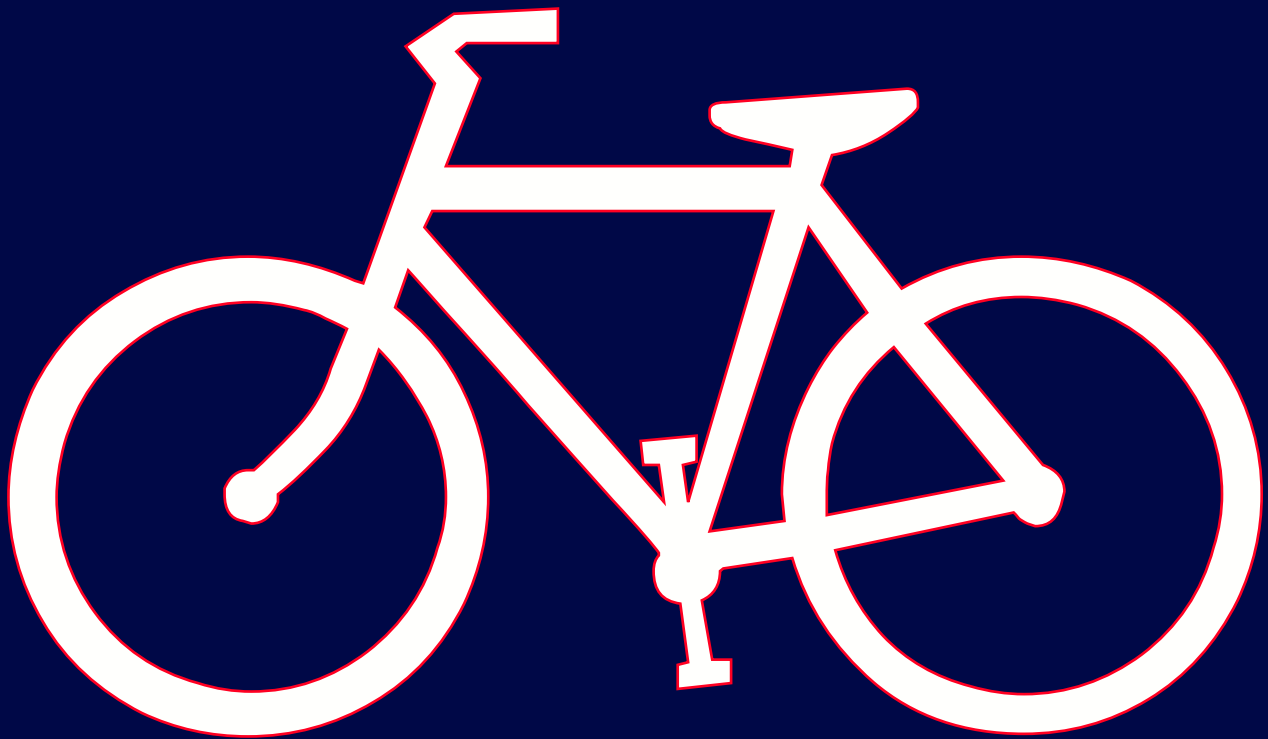


Oriental Boul evard

Bicycl e Lane Impacts



New York City
Department of Transportation
Iris Weinshall, Commissioner



City of New York
Michael R. Bloomberg, Mayor

Final Report

Study Findings:

To study the impacts of bicycle lanes on Oriental Boulevard, a comprehensive data collection effort was conducted after implementation of bicycle lanes in April 2003. This data was collected in May, July (to assess seasonal impacts), and at the start of the school year in September 2003.

Data on vehicle volumes, auto travel times, and non-motorized wheeler user (bicyclist, skater, and scooter) volumes were collected, and radar speed surveys were conducted. For the purpose of this final report, the data was averaged for May, July, and September, and compared with “before” data collected in 2002. Overall, the findings are favorable and there are no negative impacts associated with the installation of the bicycle lanes on Oriental Boulevard. Following are the highlights:

- Average daily traffic (ADT) and AM and PM peak hour volume decreased in both the eastbound and westbound directions on Oriental Boulevard between Coleridge and Beaumont Streets. Between Kensington and Jaffray Streets (which is further east and closer to Kingsborough Community College), ADT volumes decreased in the eastbound direction and increased in the westbound direction. AM peak hour volumes increased slightly in both directions, while PM peak hour volumes remained unchanged in the eastbound direction and increased in the westbound direction.
 - There was no evidence of vehicular diversion to Shore Boulevard. Between Norfolk and Mackenzie Streets, ADT decreased in both directions. In the AM peak hour volume decreased in the eastbound direction and increased slightly in the westbound direction while the PM peak hour volume decreased significantly in both directions. Between Dover and Coleridge Streets, ADT and AM peak hour volume decreased in both the eastbound and westbound directions. In the PM peak hour, volume increased slightly in the eastbound direction and decreased in the westbound direction.
 - Vehicle travel times conducted during mid-week on Oriental Boulevard indicate a decrease in travel time for the AM, midday, and PM peak periods in both the eastbound and westbound directions.
 - Non-motorized wheeler users increased during the weekday and weekend.
 - Radar speeds decreased in both the eastbound and westbound directions in the AM, Midday, and PM peak periods.
 - Comparing NYPD accident data before implementation (May-December 2002) to after implementation data (May-December 2003), total accidents have remained unchanged (21 during both periods).
-

Detailed analyses as well as charts exhibiting the data are attached.

Before and After Volume and Auto Travel Times Studies were conducted to evaluate the impacts of the bike lanes on motorized vehicular traffic. The findings were as follows:

**Oriental Boulevard
Between Coleridge and Beaumont Streets
Vehicle Volumes**

- Eastbound average daily traffic volume decreased 13%, to 4,924 from 5,648
- Westbound average daily traffic volume decreased 23%, to 4,656 from 6,076
- Eastbound AM peak hour volume decreased 24%, to 629 from 822
- Eastbound PM peak hour volume decreased 8%, to 409 from 443
- Westbound AM peak hour volume decreased 14%, to 305 from 353
- Westbound PM peak hour volume decreased 24%, to 437 from 571

**Oriental Boulevard
Between Kensington and Jaffray Streets**

- Eastbound average daily traffic volume decreased 3%, to 4,409 from 4,550
- Westbound average daily traffic volume increased 15%, to 2,937 from 2,550
- Eastbound AM peak hour volume increased 3%, to 496 from 481
- Eastbound PM peak hour volume remained unchanged
- Westbound AM peak hour volume increased 4%, to 174 from 168
- Westbound PM peak hour volume increased 12% to 283 from 252

**Shore Boulevard
Between Norfolk and Mackenzie Streets**

- Eastbound average daily traffic volume decreased 26%, to 4,313 from 5,861
- Westbound average daily traffic volume decreased 13%, to 4,711 from 5,436
- Eastbound AM peak hour volume decreased 15%, to 626 from 739
- Eastbound PM peak hour volume decreased 30%, to 385 from 546
- Westbound AM peak hour volume remained unchanged
- Westbound PM peak hour volume decreased 37%, to 449 from 712

**Shore Boulevard
Between Dover and Coleridge Streets**

- Eastbound average daily traffic volume decreased 5%, to 7,886 from 8,340
- Westbound average daily traffic volume decreased 11%, to 8,294 from 9,310
- Eastbound AM peak hour volume decreased 4%, to 1,000 from 1,042
- Eastbound PM peak hour volume increased 3%, to 691 from 670
- Westbound AM peak hour volume decreased 6%, to 555 from 587
- Westbound PM peak hour volume decreased 9% to 713 from 783

**Oriental Boulevard between Oxford Street & West End Avenue
Vehicle Travel Times (2003 Average)**

- 7-10:00 AM** Eastbound travel time decreased 31%, to 1.95 minutes from 2.81 minutes.
Westbound travel time decreased 29% to 1.96 minutes from 2.75 minutes.
- 1-3:00 PM** Eastbound travel time decreased 20%, to 1.91 minutes from 2.40 minutes.
Westbound travel time decreased 11%, to 2.06 minutes from 2.31 minutes.
- 4-6:00 PM** Eastbound travel time decreased 30%, to 1.82 minutes from 2.58 minutes.
Westbound travel time decreased 21%, to 1.88 from 2.39 minutes.

Non-Motorized Wheeler User (bicyclists, skaters, and scooters)

Weekday (7:30 AM to 6:30 PM)

In 2003 Average Non-Motorized Wheeler User volume was up 52% to 103 from 68 during September 2002.

Weekend (10:00 AM to 6:00 PM)

Non-Motorized Wheeler User volume was up 7%, to 65 from 61 during this time period

AM Peak Radar Speeds (MPH)

- Eastbound average speed decreased 6%, to 30.0 mph from 32.0 mph and the 85th percentile speed decreased 8%, to 34.9 mph from 38.0 mph
- Westbound average speed decreased 5%, to 30.2 mph from 31.7 mph and the 85th percentile speed decreased 10%, to 36.0 mph from 40.0 mph

Midday Peak Radar Speeds (MPH)

- Eastbound average speed decreased 16%, to 29.5 mph from 35.1 mph and the 85th percentile speed decreased 16%, to 35.2 mph from 42.0 mph
- Westbound average speed decreased 15%, to 29.4 mph from 34.6 mph and the 85th percentile speed decreased 12%, to 35.3 mph from 40.0 mph

PM PEAK Radar Speed (MPH)

- Eastbound average speed decreased 14%, to 29.1 mph from 34.0 mph and the 85th percentile speed decreased 12%, to 35.2 mph from 40.0 mph
- Westbound average speed decreased 14%, to 28.6 mph from 33.2 mph and the 85th percentile speed decreased 14%, to 34.4 mph from 40.2 mph

Oriental Boulevard

Bicycle Lane Impacts

Between Coleridge and Beaumont Streets

Vehicle Volumes

	Before (9/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avgs.)		% Change	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
ADT	5,648	6,076	4,729	4,779	4,990	4,392	5,052	4,796	4,924	4,656	-12.8%	-23.4%
AM Peak	822	353	653	293	528	307	705	315	629	305	-23.5%	-13.6%
PM Peak	443	571	391	412	427	367	409	531	409	437	-7.7%	-23.5%

Oriental Boulevard

Between Kensington and Jaffray Streets

Vehicle Volumes

	Before (9/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avgs.)		% Change	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
ADT	4,550	2,550	4,253	3,071	3,831	2,586	5,143	3,155	4,409	2,937	-3.1%	15.2%
AM Peak	481	168	440	185	510	150	538	188	496	174	3.1%	3.6%
PM Peak	429	252	433	314	368	279	483	257	428	283	-0.2%	12.3%

Vehicle Volumes

	Before (9/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avgs.)		% Change	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
ADT	5,861	5,436	4,503	4,924	3,972	4,436	4,464	4,773	4,313	4,711	-26.4%	-13.3%
AM Peak	739	329	542	320	753	325	583	357	626	334	-15.3%	1.5%
PM Peak	546	712	414	453	343	469	397	426	385	449	-29.5%	-36.9%

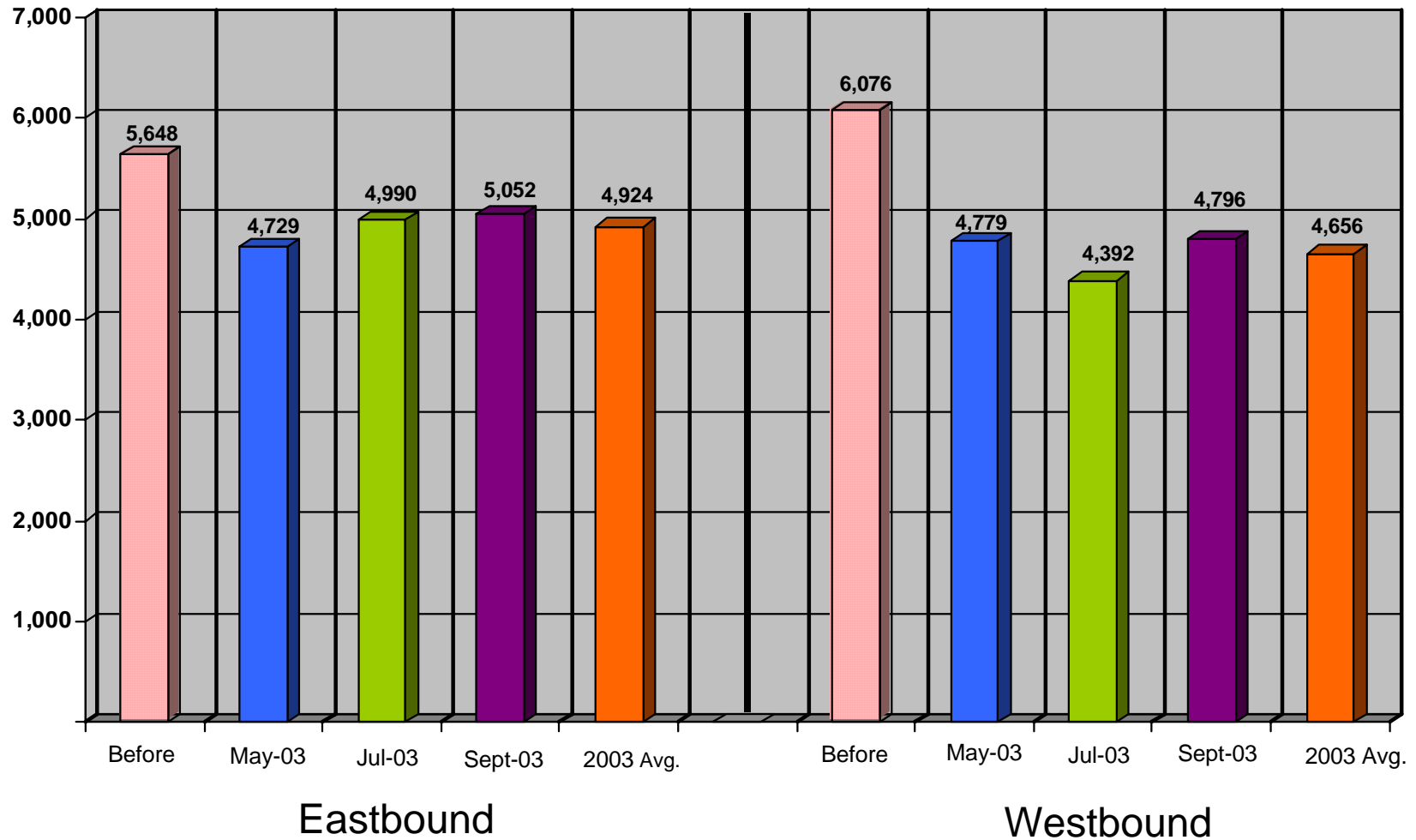
Shore Boulevard

Between Dover and Coleridge Streets

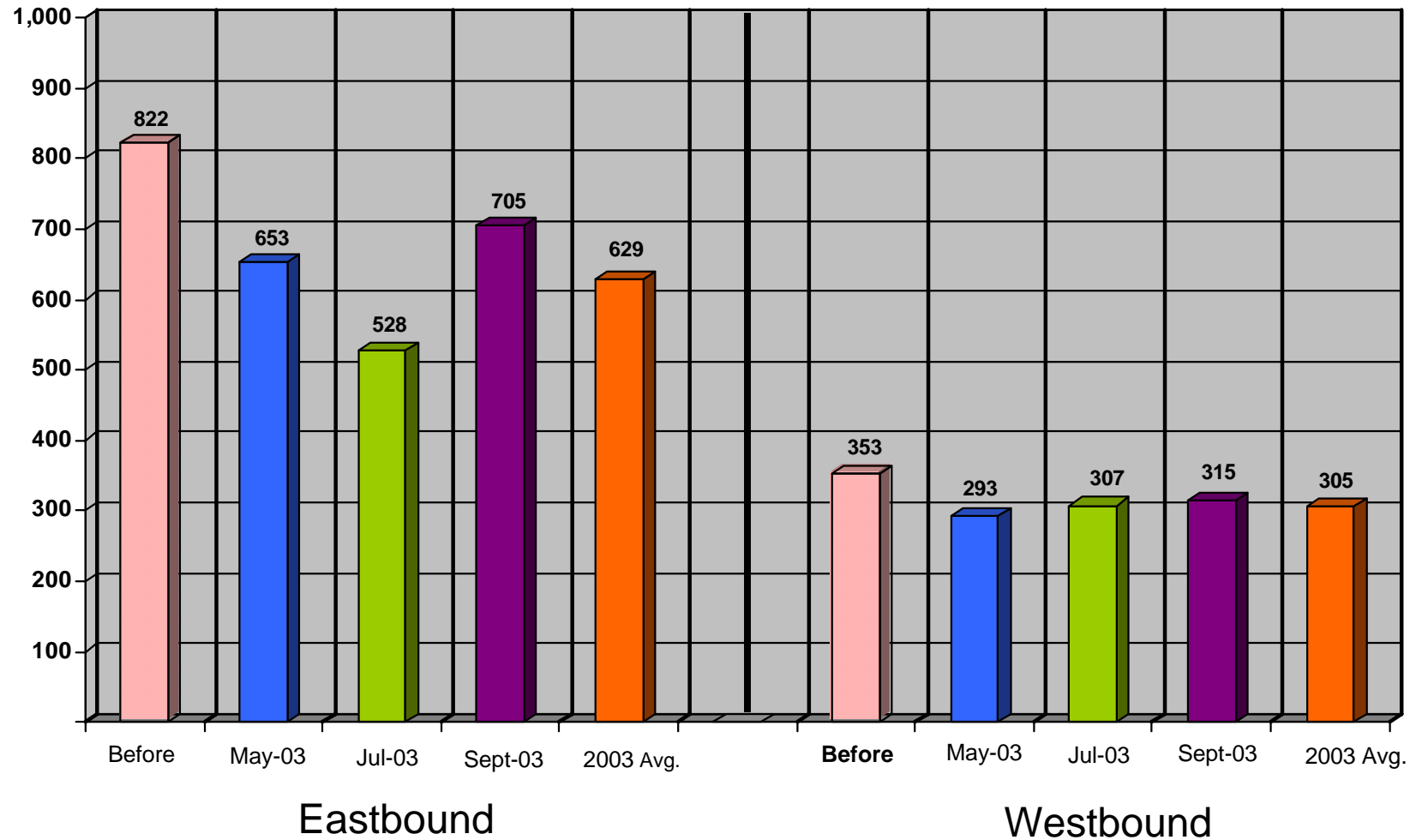
Vehicle Volumes

	Before (9/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avgs.)		% Change	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
ADT	8,340	9,310	8,095	8,913	7,522	7,553	8,042	8,416	7,886	8,294	-5.4%	-10.9%
AM Peak	1,042	587	956	567	1,032	476	1,011	623	1,000	555	-4.0%	-5.5%
PM Peak	670	783	720	707	593	644	761	787	691	713	3.1%	-8.9%

Average Daily Traffic Volumes (ADT) Oriental Boulevard Between Coleridge & Beaumont Streets



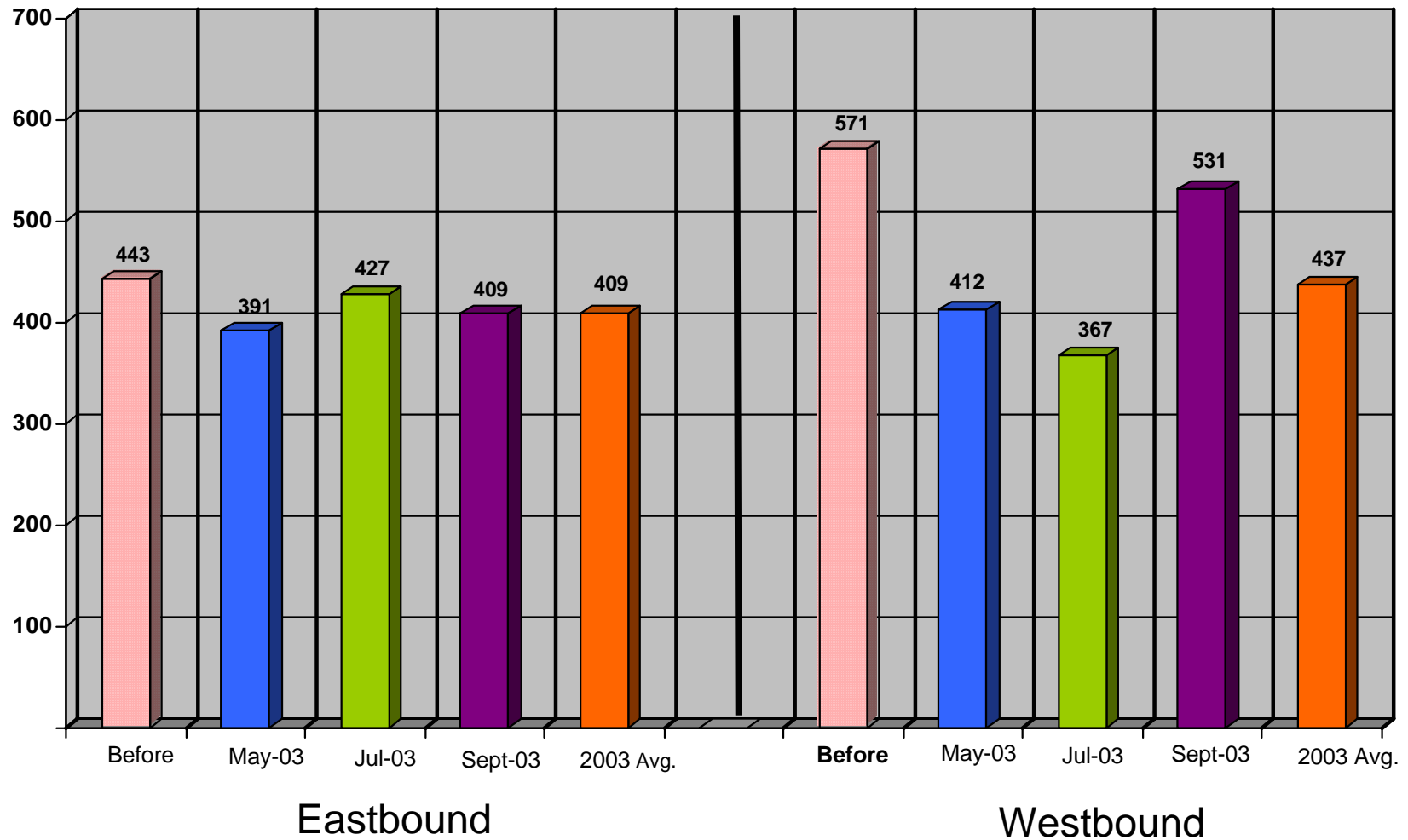
Peak Hour Volumes (AM) Oriental Boulevard Between Coleridge & Beaumont Streets



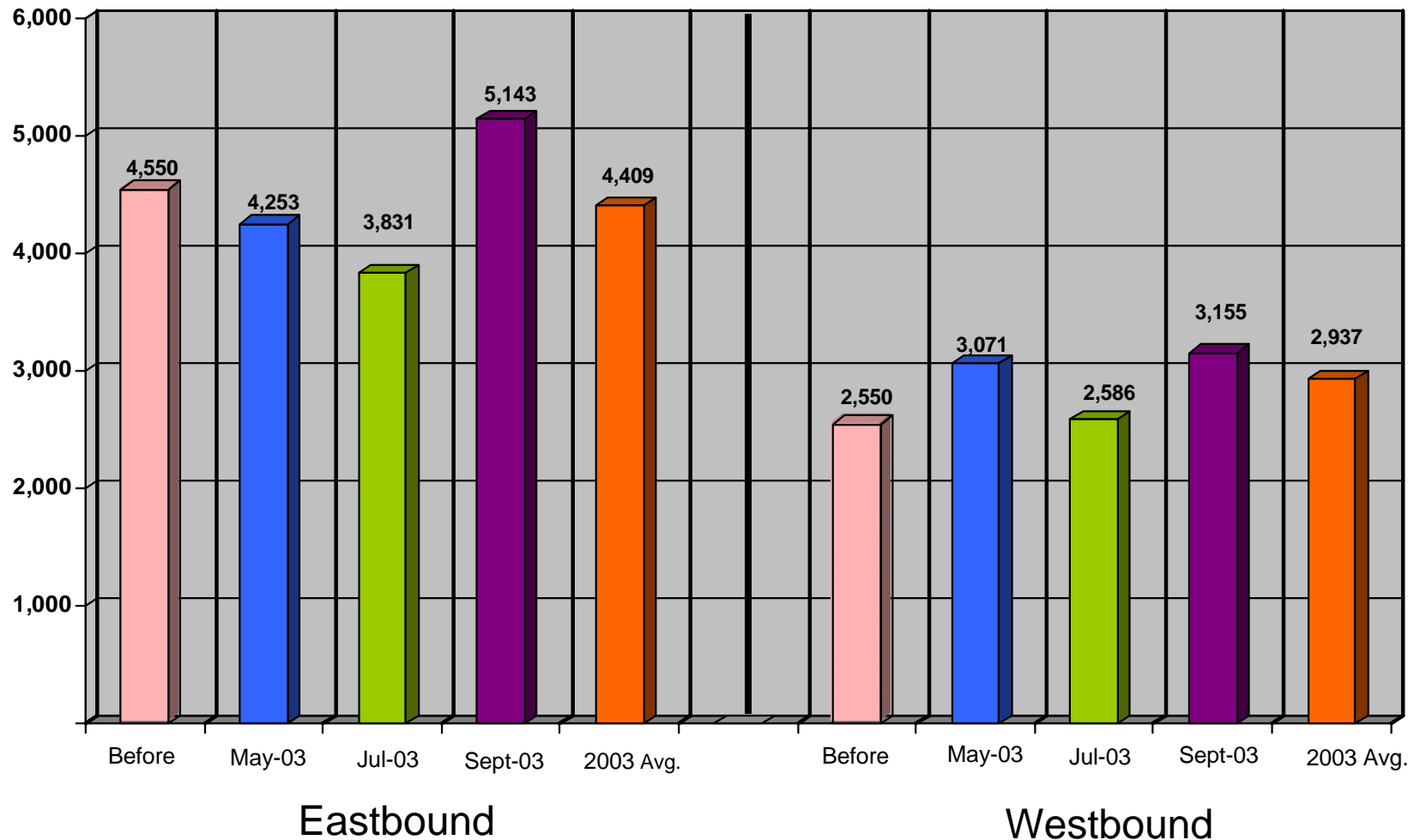
Peak Hour Volumes (PM)

Oriental Boulevard

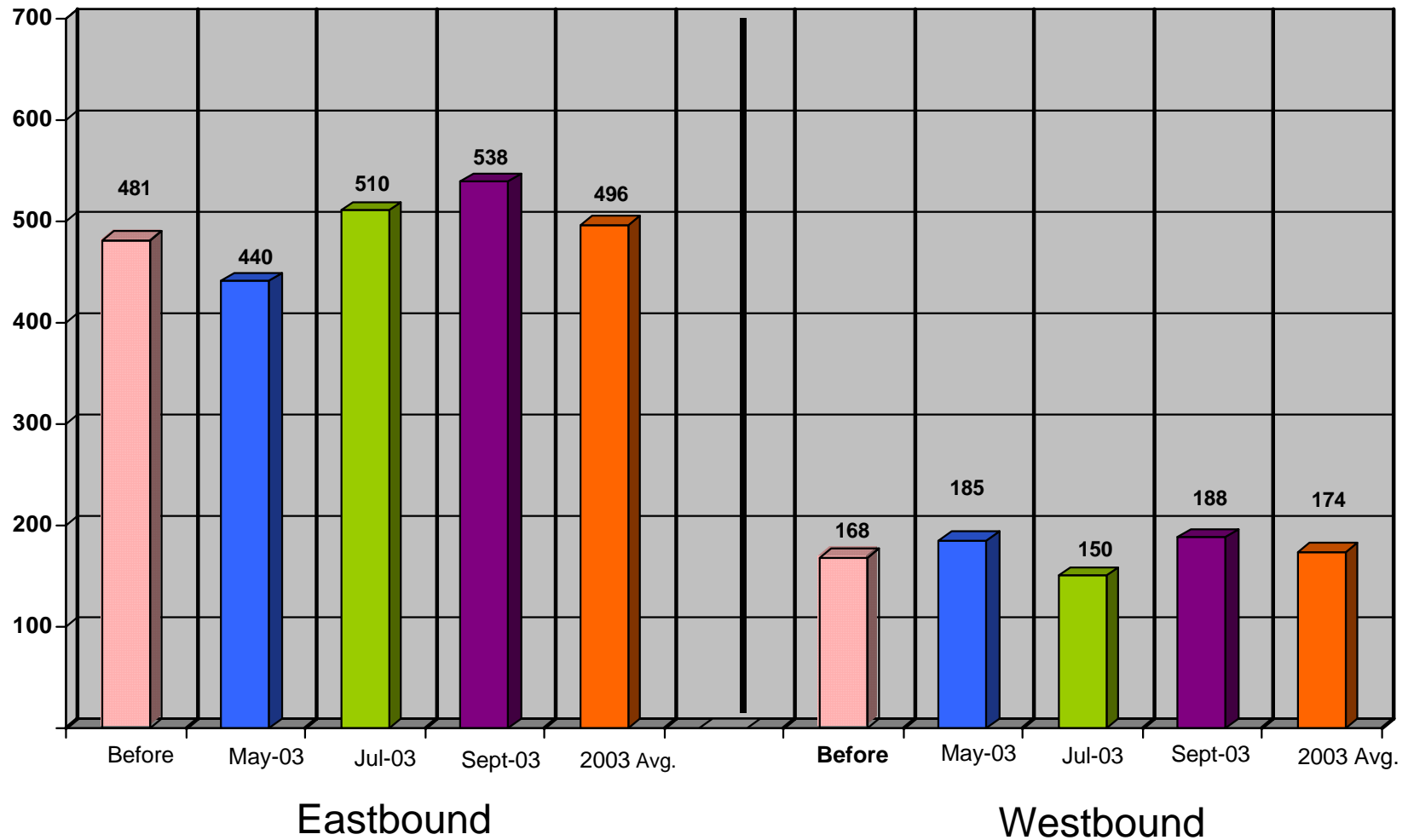
Between Coleridge & Beaumont Streets



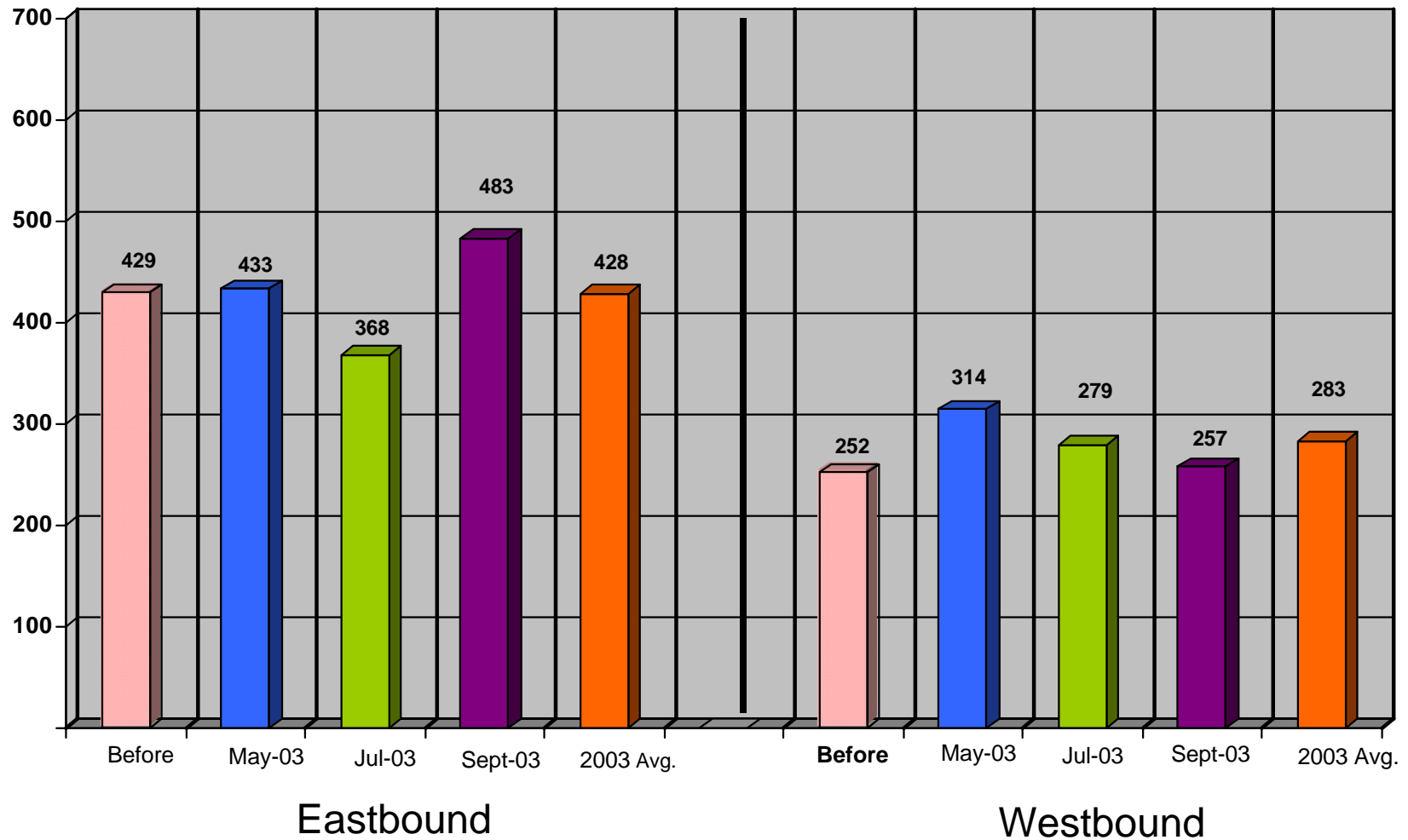
Average Daily Traffic Volumes (ADT) Oriental Boulevard Between Kensington and Jaffray Streets



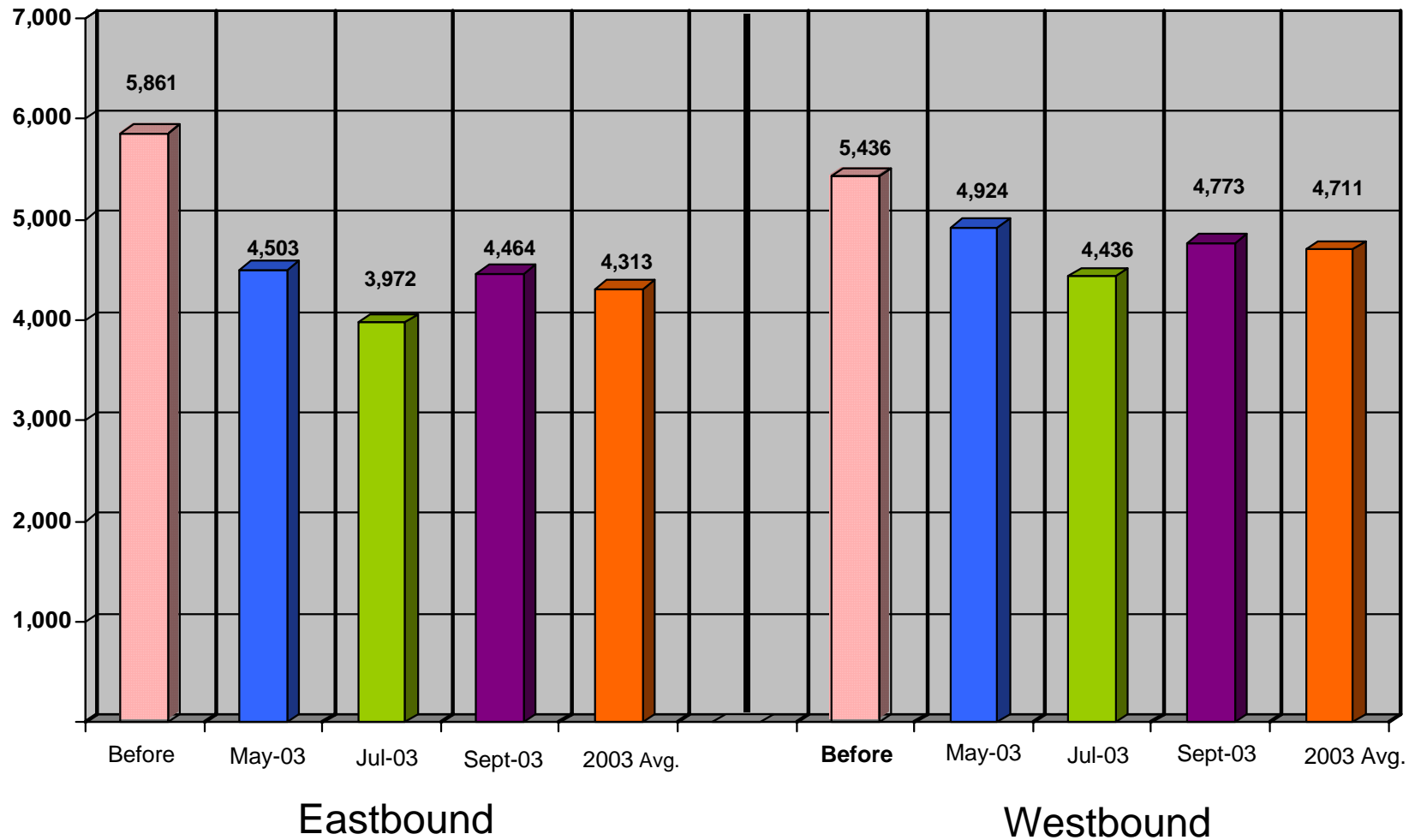
Peak Hour Volumes (AM) Oriental Boulevard Between Kensington and Jaffray Streets



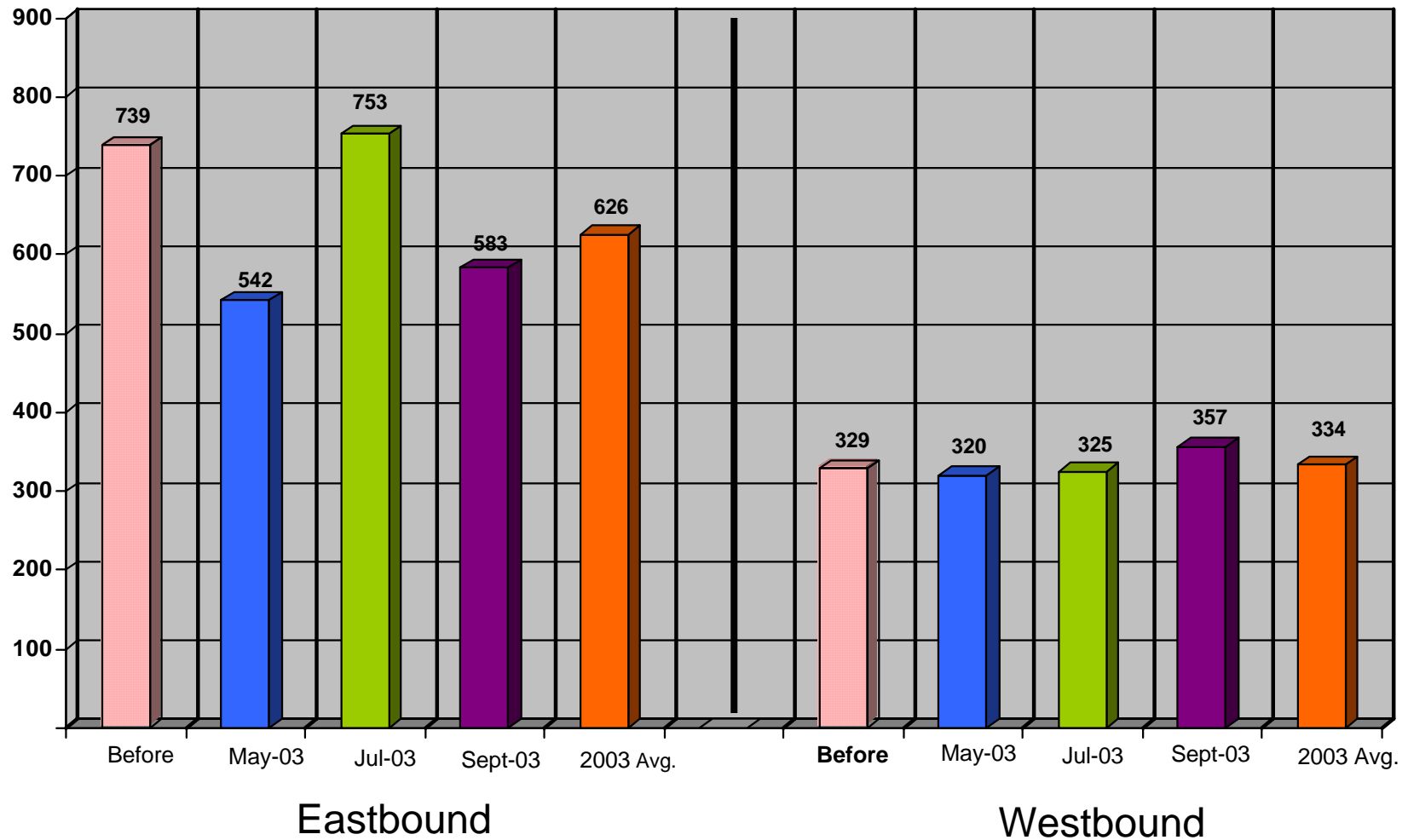
Peak Hour Volumes (PM) Oriental Boulevard Between Kensington and Jaffray Streets



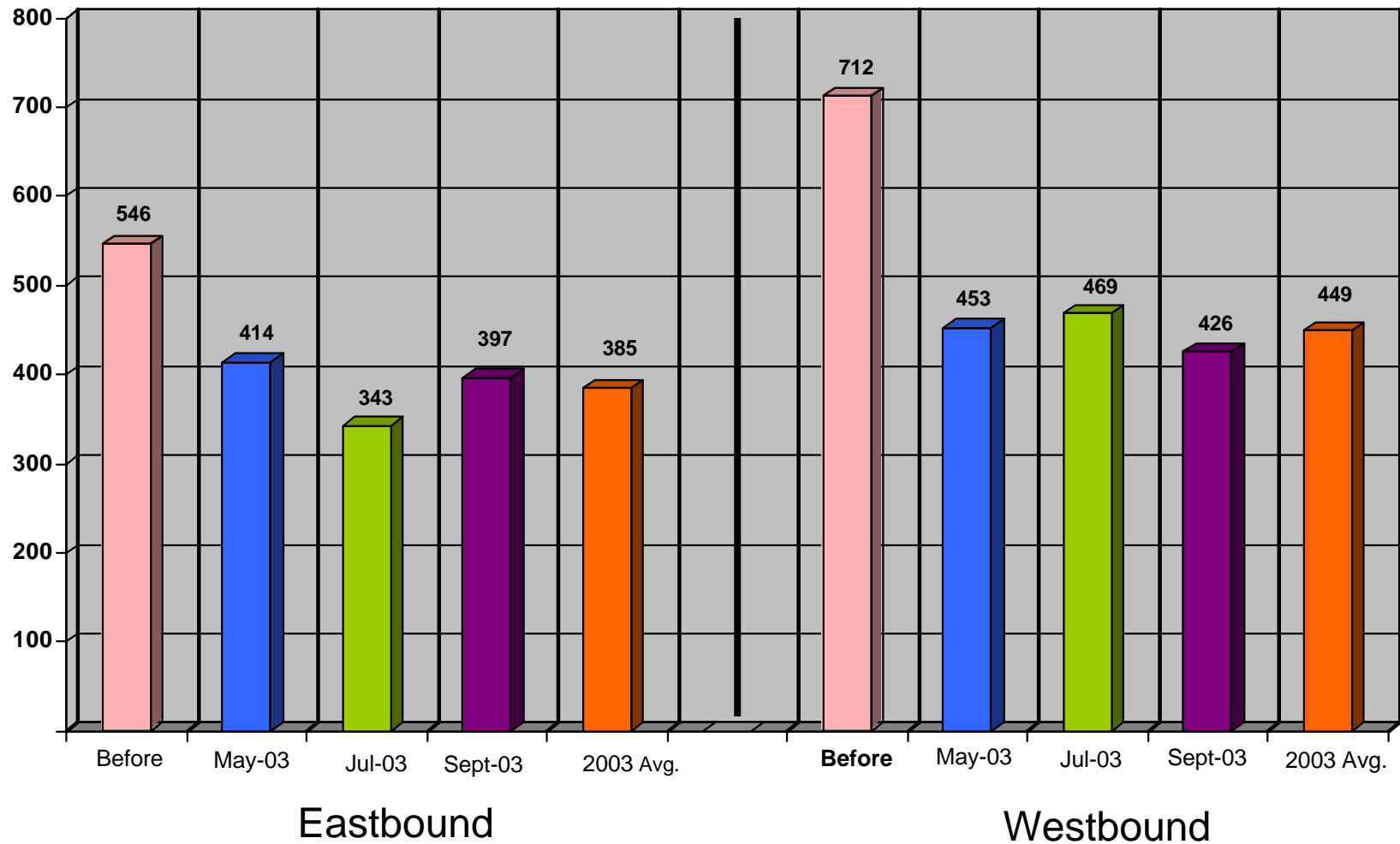
Average Daily Traffic Volumes (ADT) Shore Boulevard Between Norfolk & Mackenzie Streets



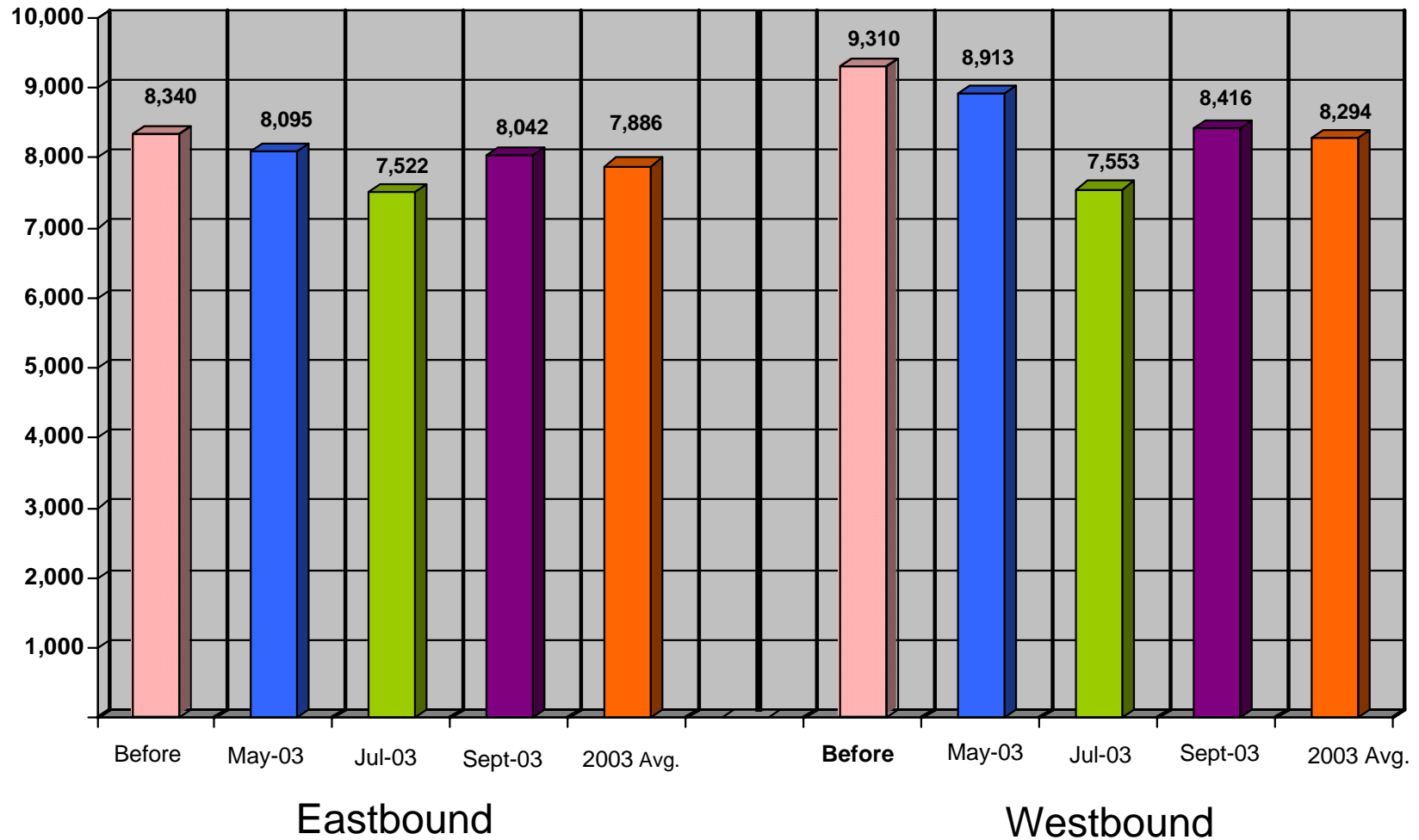
Peak Hour Volumes (AM) Shore Boulevard Between Norfolk & Mackenzie Streets



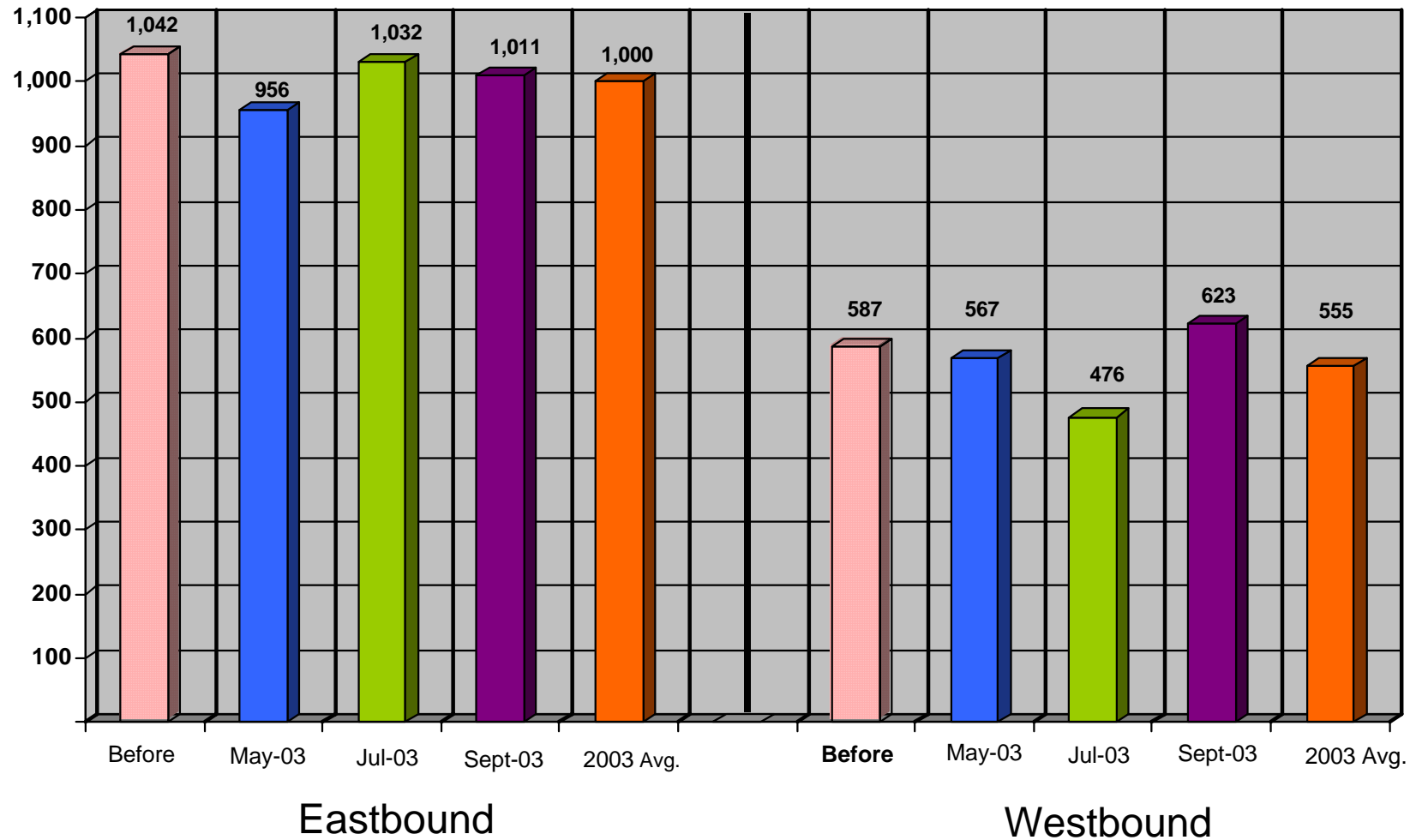
Peak Hour Volumes (PM) Shore Boulevard Between Norfolk & Mackenzie Streets



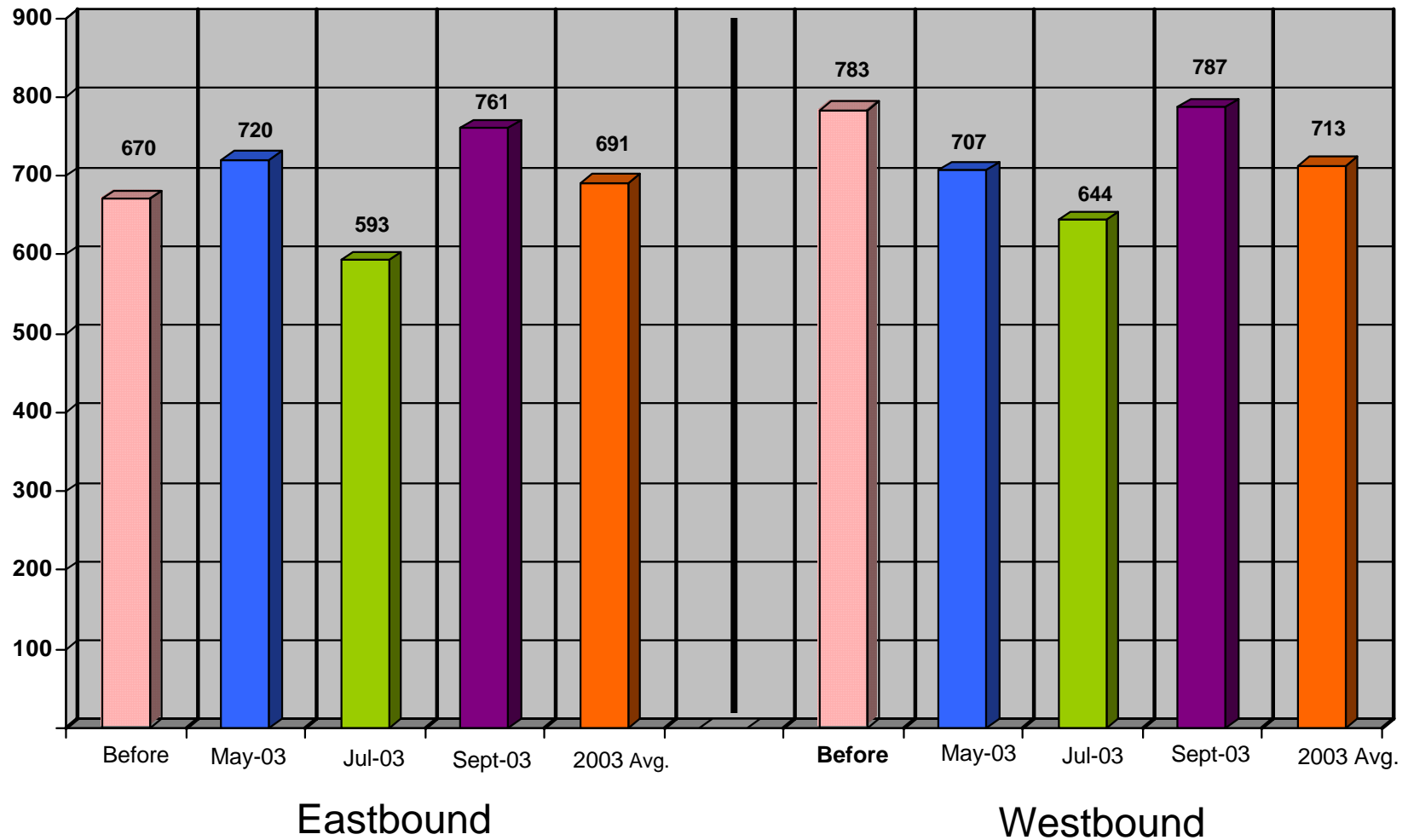
Average Daily Traffic Volumes (ADT) Shore Boulevard Between Dover & Coleridge Streets



Peak Hour Volumes (AM) Shore Boulevard Between Dover & Coleridge Streets



Peak Hour Volumes (PM) Shore Boulevard Between Dover & Coleridge Streets



Radar Speeds (MPH)
Between Irwin and Hastings Streets

AM PEAK
Average Speeds

Before (2/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avg.)		% Change	
Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds	
Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
32.0	31.7	28.6	29.1	30.9	32.1	30.4	29.4	30.0	30.2	-6.3%	-4.7%

85th Percentile Speeds

Before (2/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avg.)		% Change	
85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds	
Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
38.0	40.0	33.0	34.0	36.5	38.0	35.1	36.0	34.9	36.0	-8.2%	-10.0%

MIDDAY PEAK
Average Speeds

Before (2/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avg.)		% Change	
Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds	
Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
35.1	34.6	30.5	28.7	29.6	29.4	28.3	30.0	29.5	29.4	-16.0%	-15.1%

85th Percentile Speeds

Before (2/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avg.)		% Change	
85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds	
Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
42.0	40.0	36.0	33.0	35.7	36.5	34.0	36.5	35.2	35.3	-16.1%	-11.7%

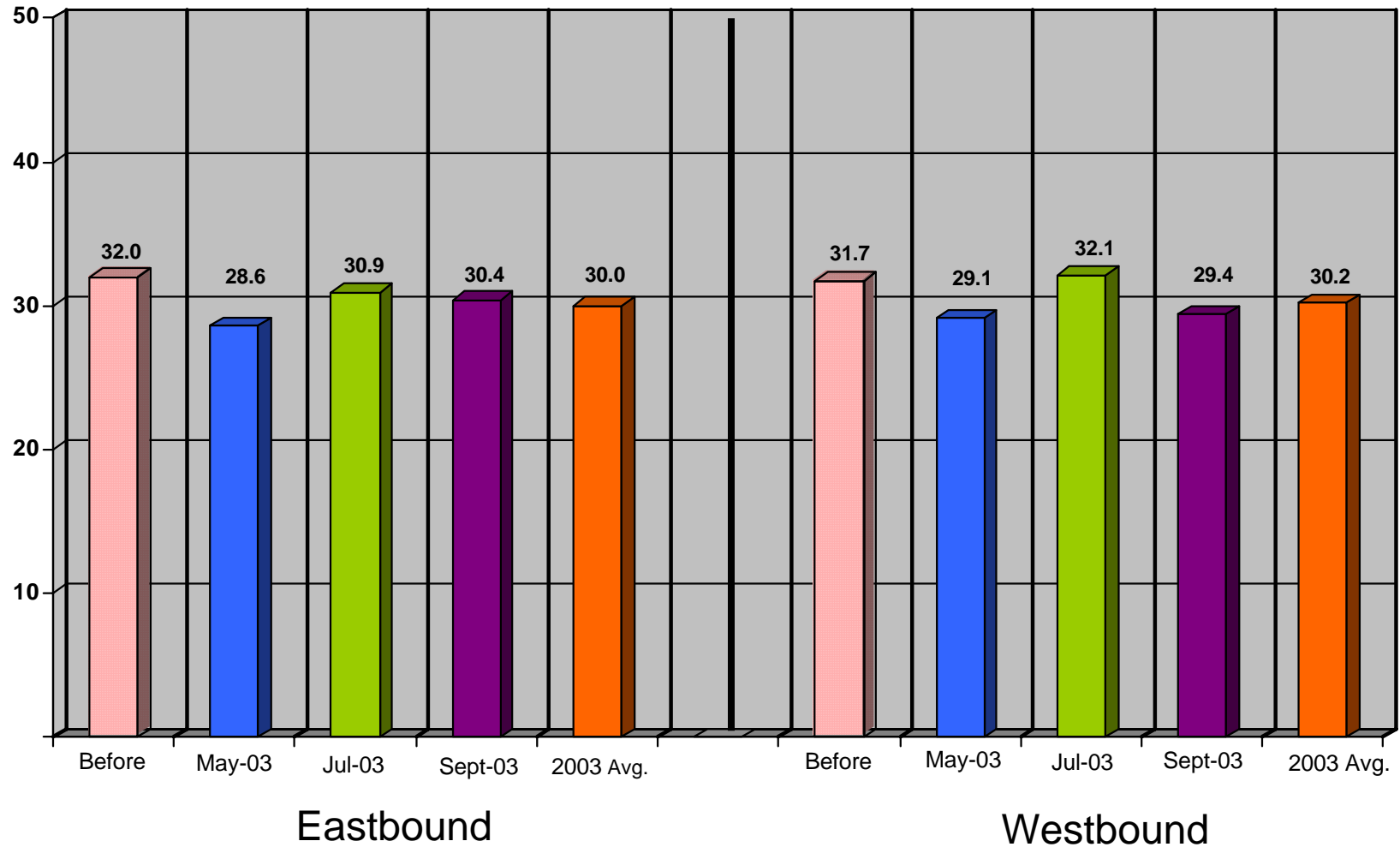
**PM PEAK
Average Speeds**

Before (2/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avg.)		% Change	
Avg. Speeds		Avg. Speeds		Avg. Speeds		Avg. Speeds					
Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
34.0	33.2	28.9	30.7	29.4	27.0	29.1	28.2	29.1	28.6	-14.3%	-13.8%

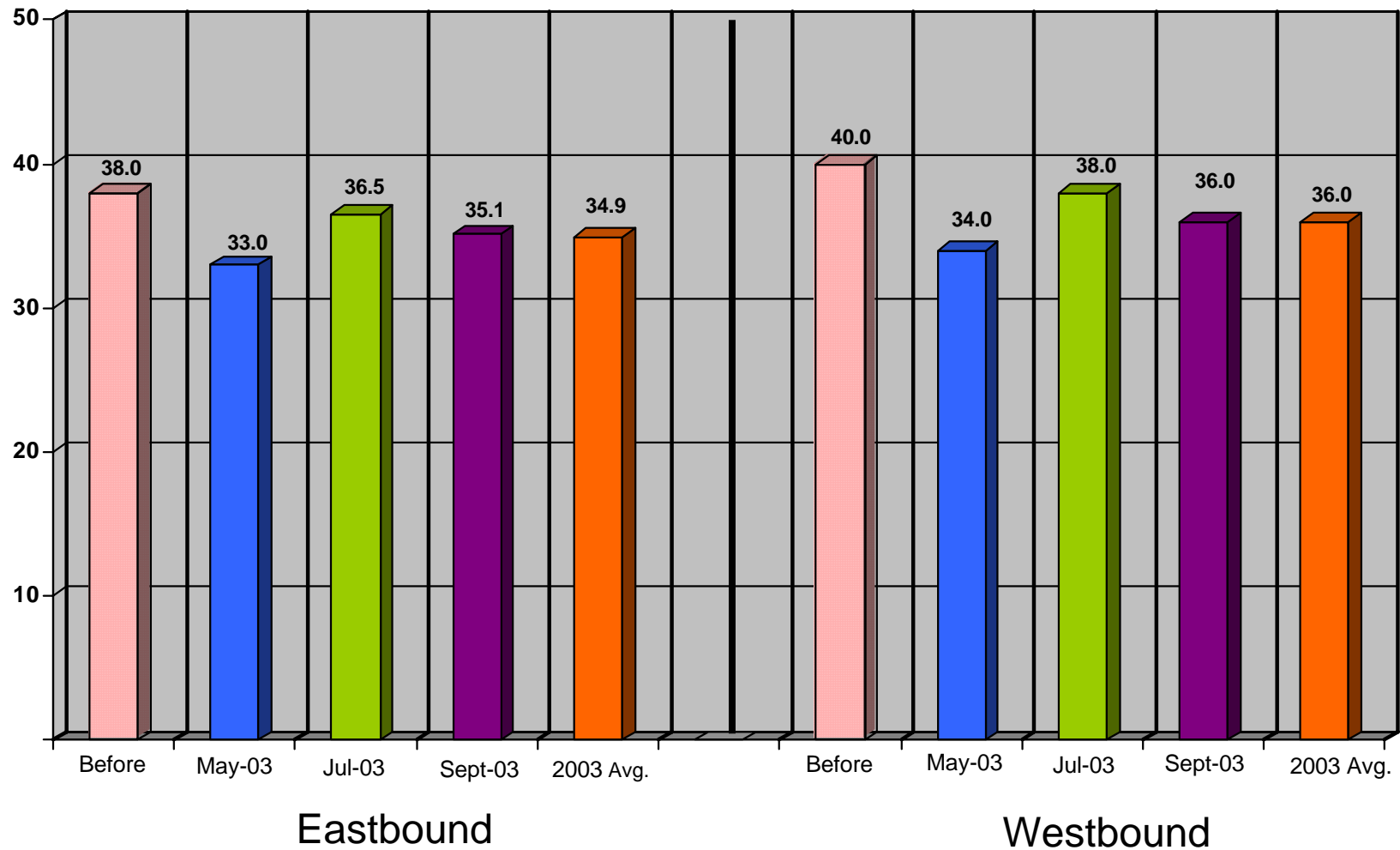
85th Percentile Speeds

Before (2/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avg.)		% Change	
85th % Speeds		85th % Speeds		85th % Speeds		85th % Speeds					
Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
40.0	40.2	35.0	36.0	35.5	33.1	35.2	34.2	35.2	34.4	-11.9%	-14.4%

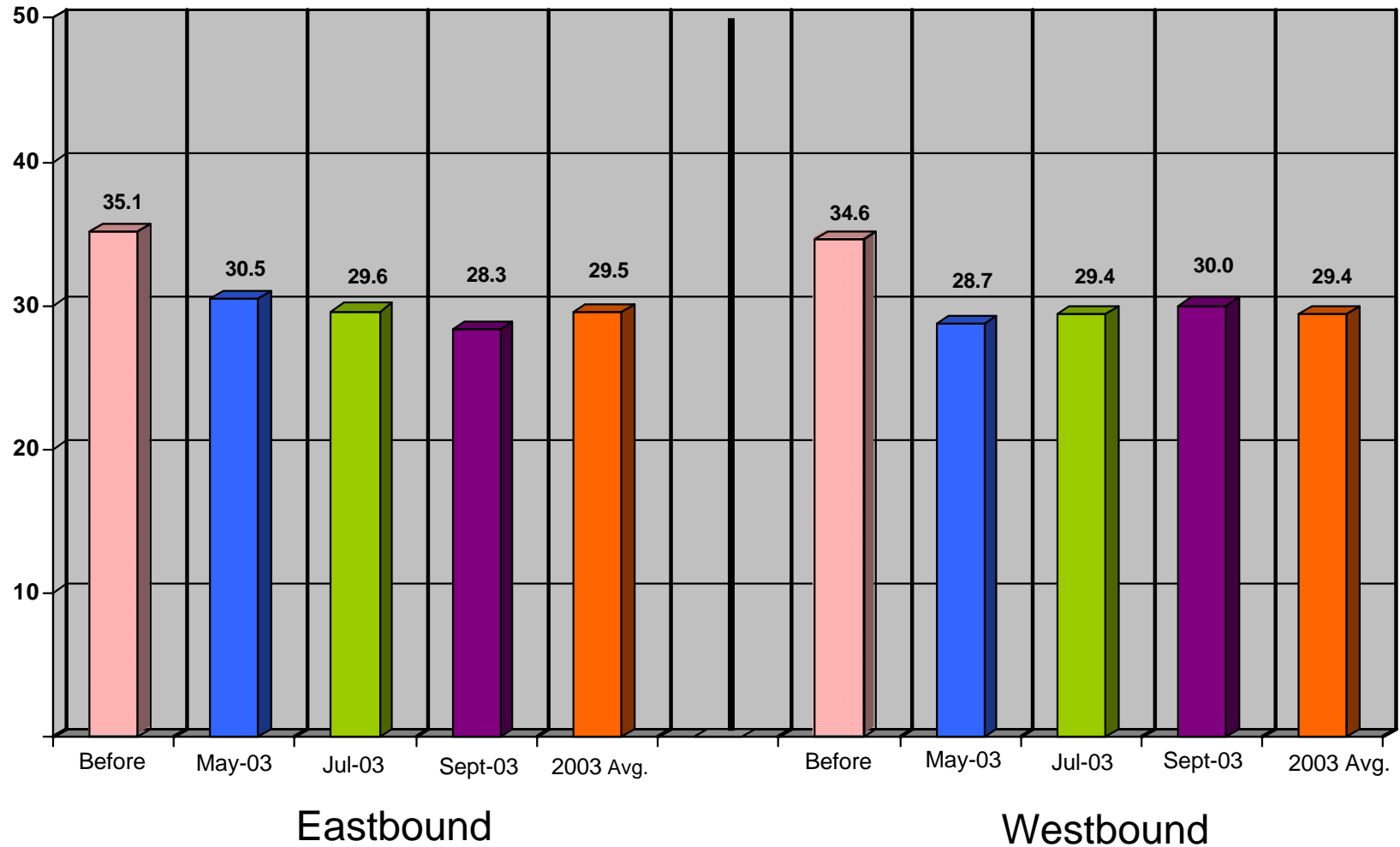
Average AM Peak Speeds (MPH) Oriental Boulevard Between Irwin & Hastings Streets



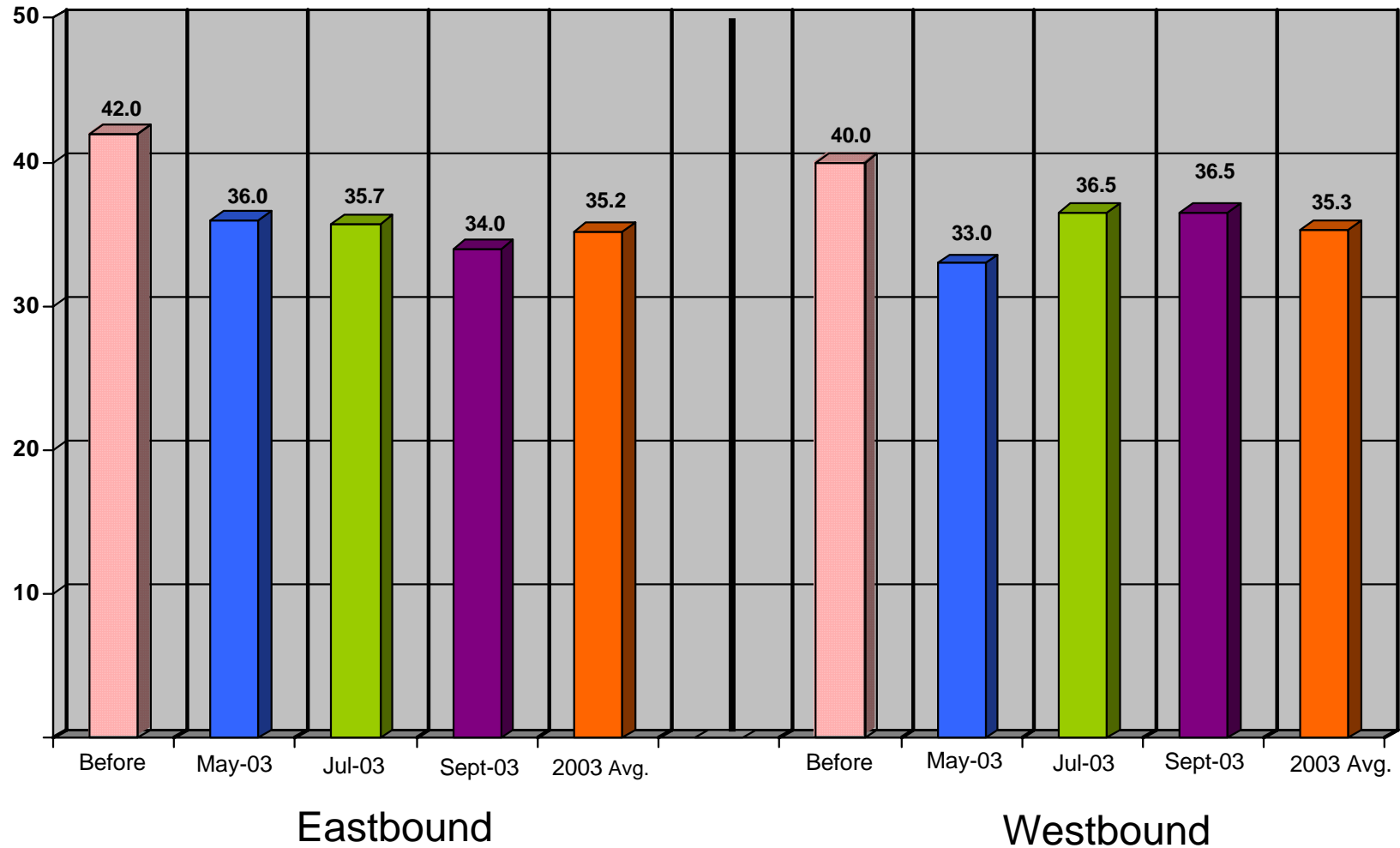
Average AM Peak 85th Percentile Speeds (MPH)
Oriental Boulevard
Between Irwin & Hastings Streets



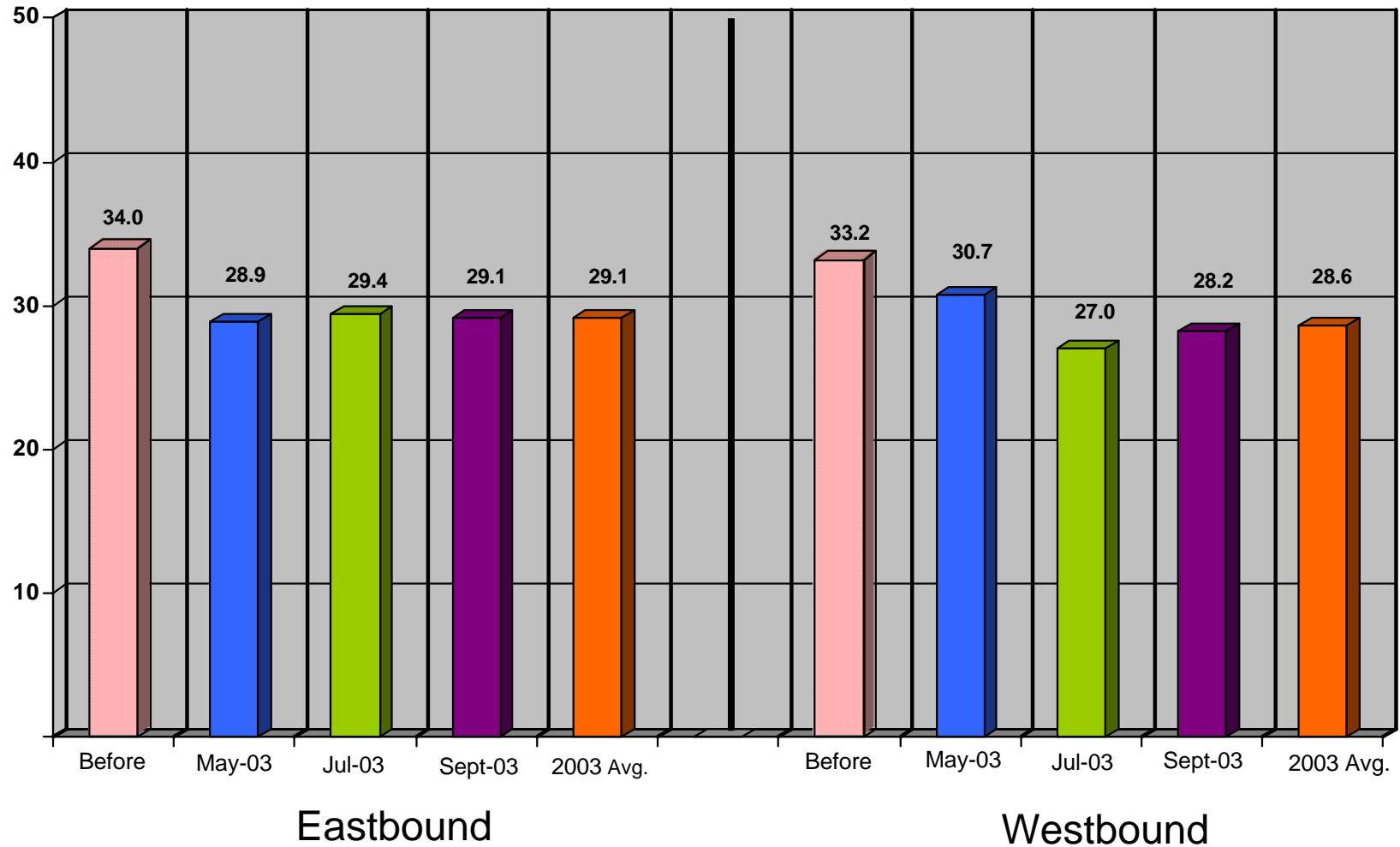
Average Midday Peak Speeds (MPH) Oriental Boulevard Between Irwin & Hastings Streets



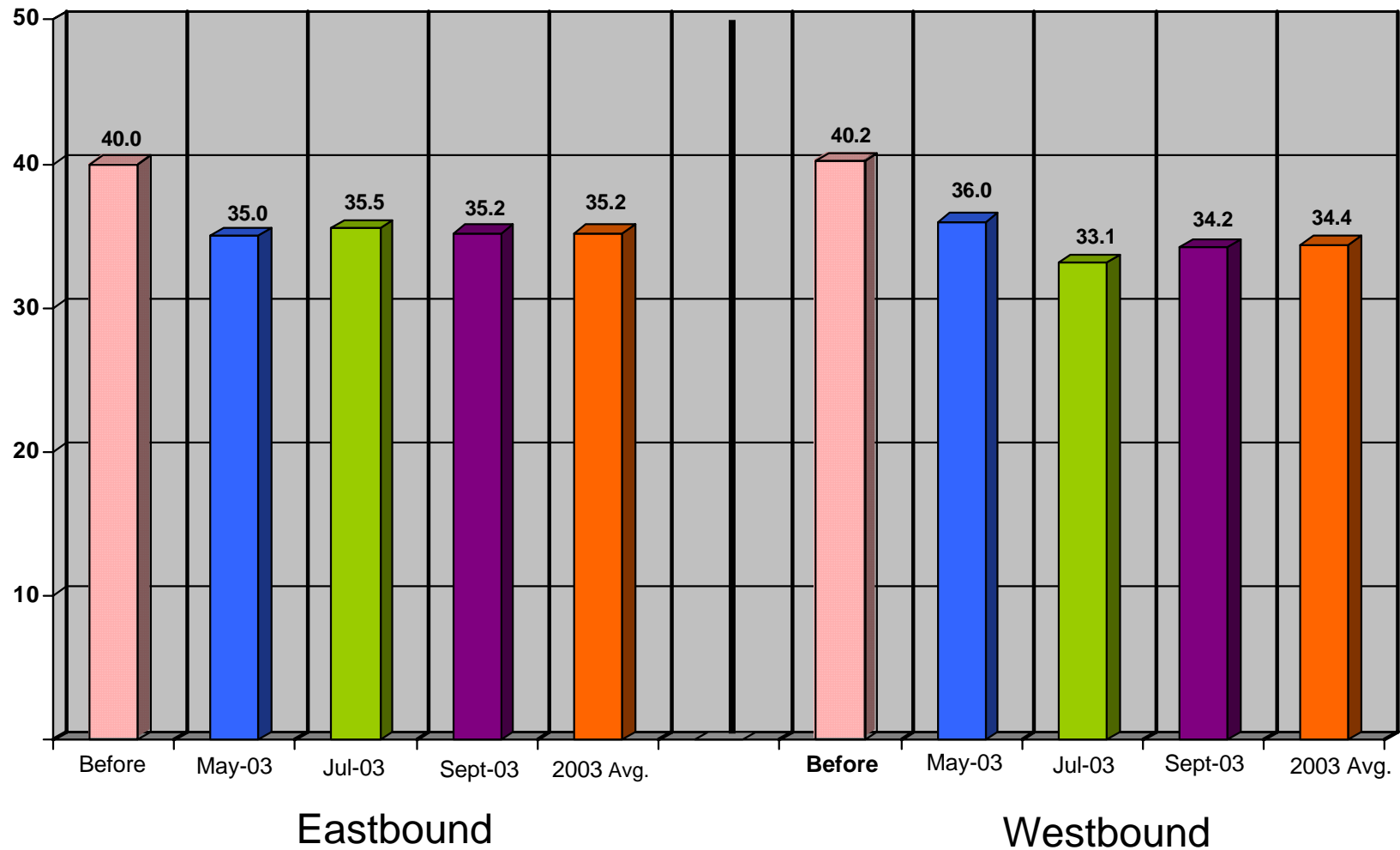
Average Midday Peak 85th Percentile Speeds (MPH) Oriental Boulevard Between Irwin & Hastings Streets



Average PM Peak Speeds (MPH) Oriental Boulevard Between Irwin & Hastings Streets



Average PM Peak 85th Percentile Speeds (MPH) Oriental Boulevard Between Irwin & Hastings Streets



Oriental Boulevard
Between Oxford Street and West End Avenue
Weekday
Vehicle Travel Times

	Before (11/02)		After (5/03)		After (7/03)		After (9/03)		After (2003 Avgs.)		% Change	
Time	Travel Times (Minutes)		Travel Times (Minutes)		Travel Times (Minutes)		Travel Times (Minutes)		Travel Times (Minutes)		Travel Times (Minutes)	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
7-10:00 am	2.81	2.75	2.23	2.17	1.89	1.91	1.74	1.79	1.95	1.96	-30.6%	-28.7%
1-3:00 pm	2.40	2.31	2.05	2.36	1.83	1.94	1.85	1.89	1.91	2.06	-20.4%	-10.8%
4-6:00 pm	2.58	2.39	1.92	1.90	1.81	1.93	1.74	1.82	1.82	1.88	-29.5%	-21.3%

Oriental Boulevard
Between Kensington and Jaffray Streets
Non-Motorized Wheeler User

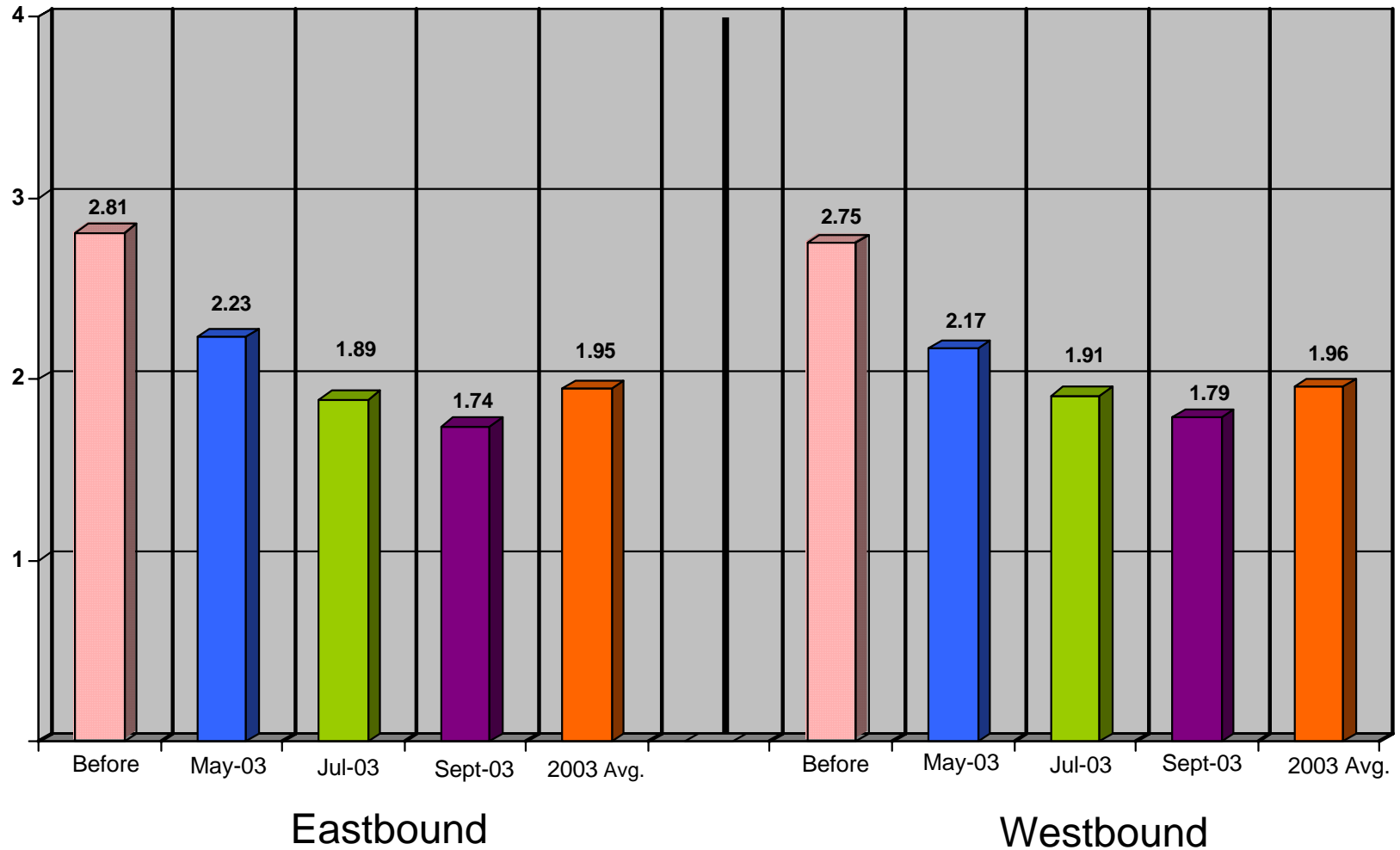
Week Day (7:30 am to 6:30 pm)

Before	After			After	% Change
(9/02)	(5/03)	(7/03)	(9/03)	After (2003 Avgs.)	
68	147	82	80	103	51.5%

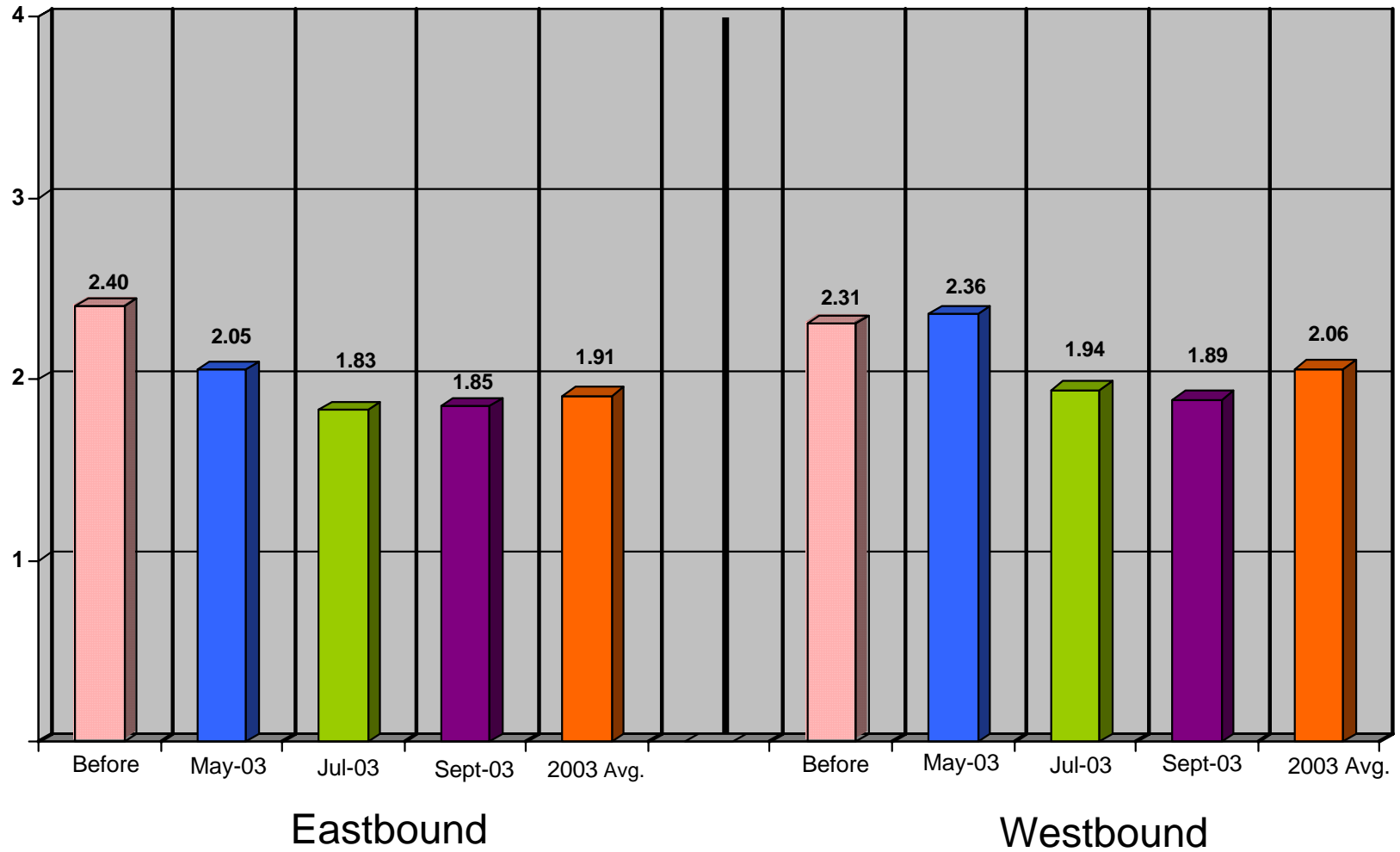
Weekend (10:00 am to 6:00 pm)

Before	After			After	% Change
(9/02)	(5/03)	(7/03)	(9/03)	After (2003 Avgs.)	
61	59	108	65	77	26.2%

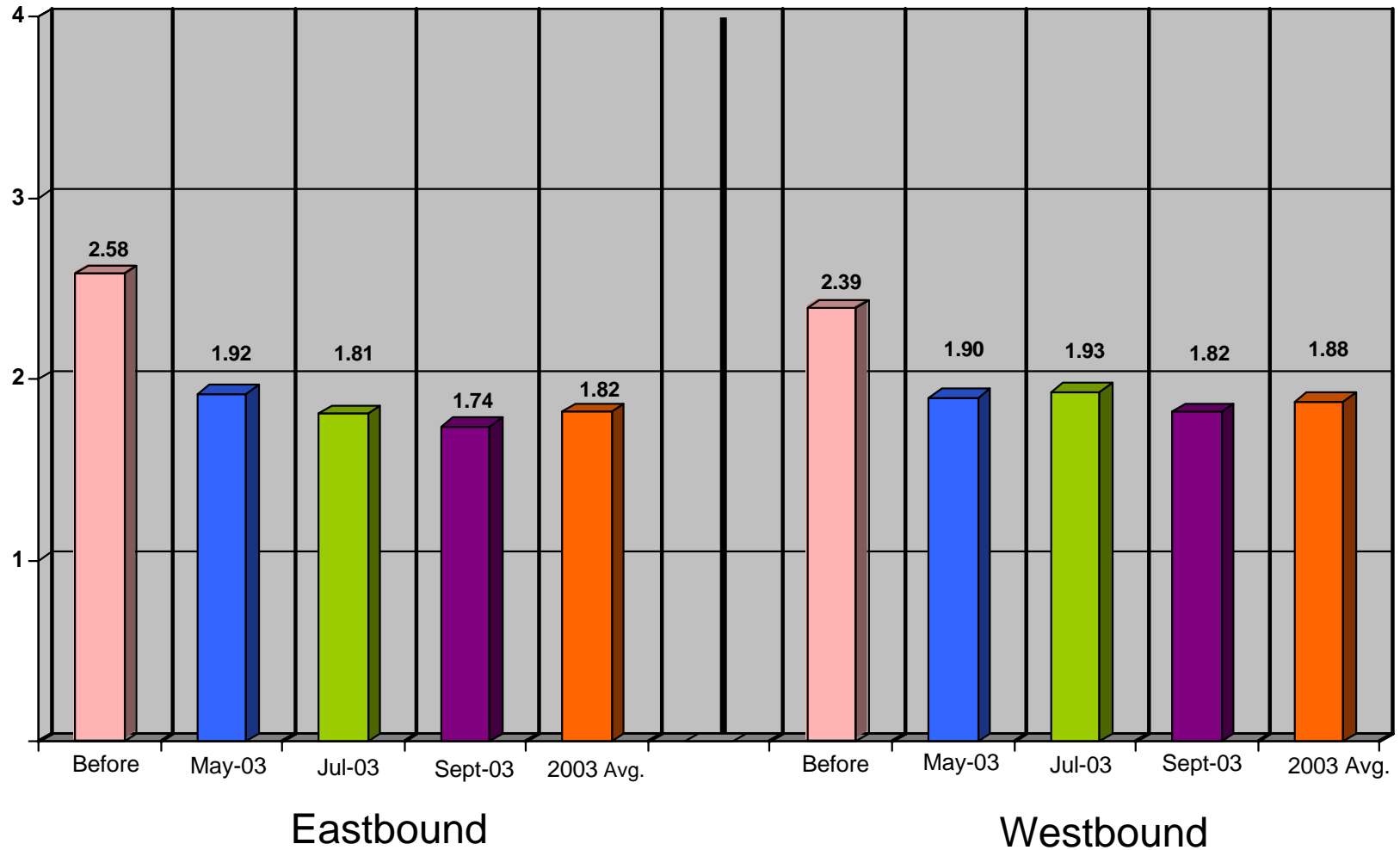
Vehicle Travel Time (Minutes)
Oriental Boulevard
Between West End Avenue & Oxford Street
(7-10 AM)



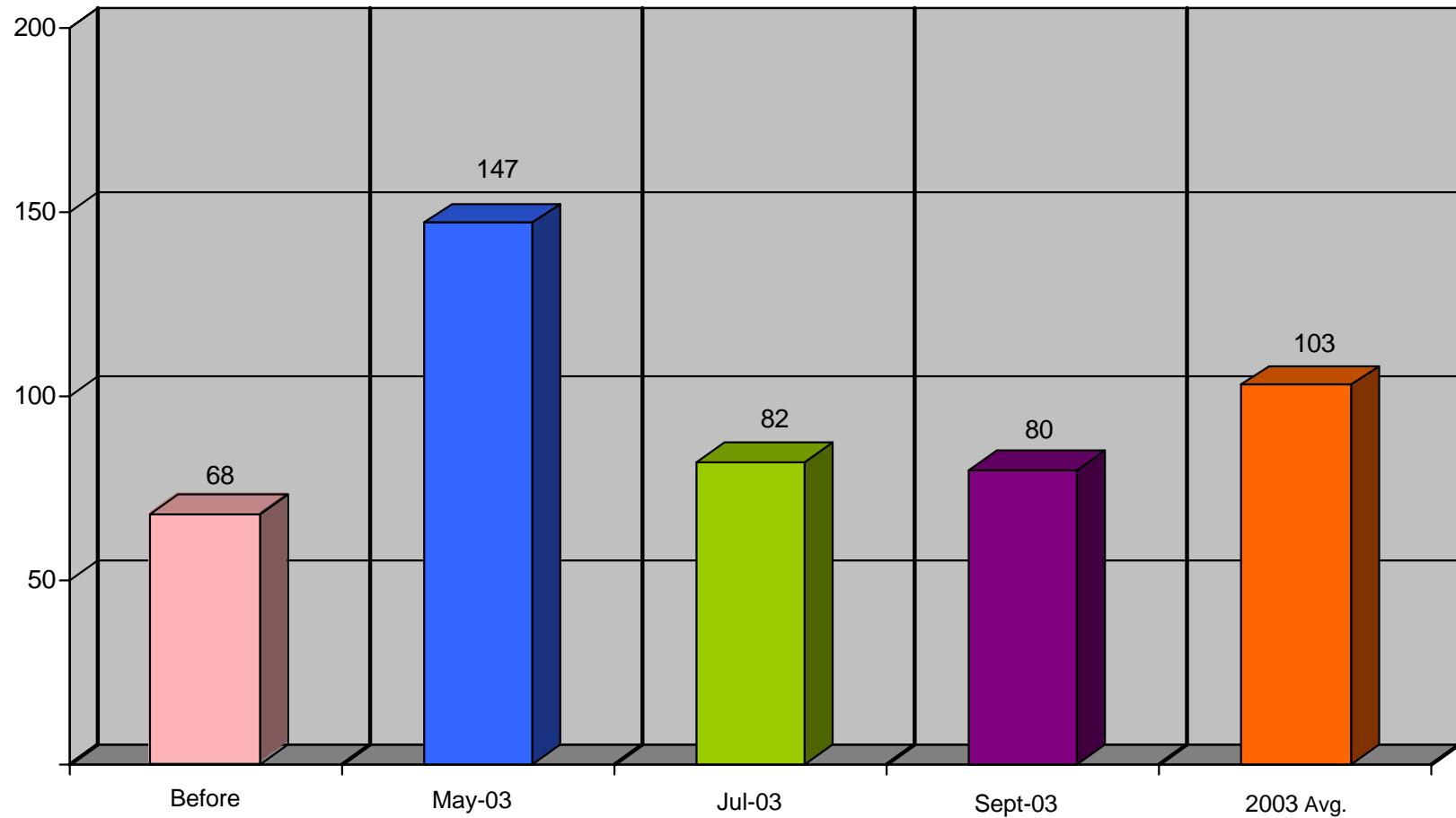
Vehicle Travel Time (Minutes)
Oriental Boulevard
Between West End Avenue & Oxford Street
(1-3 PM)



Vehicle Travel Time (Minutes)
Oriental Boulevard
Between West End Avenue & Oxford Street
(4-6 PM)



**Non-Motorized Wheeler User
Oriental Boulevard
Between Kensington & Jaffray Streets
Week Day (7:30 AM - 6:30 PM)**



**Non-Motorized Wheeler User
Oriental Boulevard
Between Kensington & Jaffray Streets
Weekend (10:00 AM - 6:00 PM)**

