TRAFFIC ON NORTH VICTORIA PARK ROAD

October 2010

Contents:

PAST IMPROVEMENTS ON BROWARD / VICTORIA PARK RD / NE 7TH ST / NE 20TH AVE CORRIDOR

Median installed on Broward Boulevard eliminates cross traffic between Collee Hammock and Victoria Park east of 15th Avenue

Broward Boulevard narrows to one lane in each direction east of 16th Avenue

VPCA installed entryways and textured crosswalks at N. Victoria Park Rd and NE 1st Street (see cover) and at NE 20th Ave and NE 8th Street

Dedicated right turn lane closed for NB Victoria Park Rd traffic turning right on to NE 7th Street — installed a full four-way stop.

NE 5th Street closed off at the east side of N. Victoria Park Rd creating a three-way stop

Textured crosswalk across NE 20th Ave at 9th Street (Gateway)

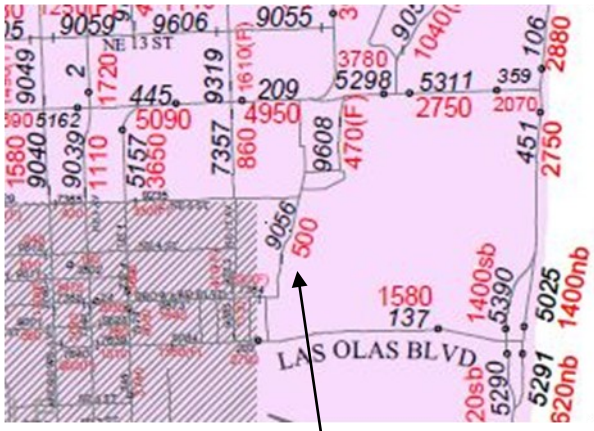
HISTORIC TRAFFIC COUNTS

Counter ID #		Location	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
9056	Daily Total AADT	VICTORIA PK RD S OF NE 3 ST	7261	6650	6831	6795	6290	6379	6225	6187	5500	5600	5281*
9056	PEAK HOUR		639	710	677	666	695	684	669	659	500	500	533*

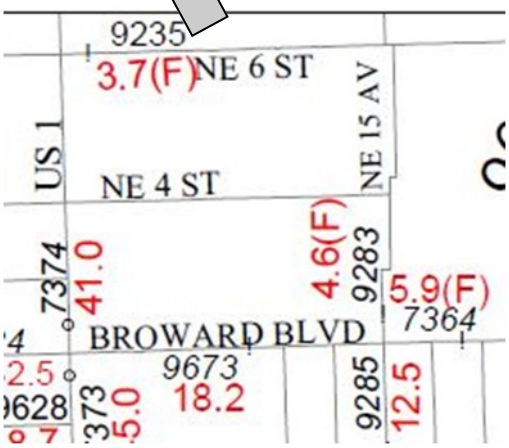
Source: 2000-2009 Broward County MPO traffic counts updated May 2010 http://www.browardmpo.org/mpo/trafficcounts.htm
2010 Broward County traffic study Oct 13 &14, 2010 noon-noon (between 1st & 6th Sts)
full set of data can be found in Appendix A
Table shows AADT (Average Annual Daily Traffic) AADT = raw vehicle count adjusted for seasonal and axle factors)
*not adjusted for seasonal factor SCF for Oct 13, 2006 = 1.12 October 13, 2009 = 1.07

2010 AADT (May 2010)
http://www.browardmpo.org/mpo/traffic_count_map_aadt.pdf

2010 PEAK HOUR (May 2010)
http://www.browardmpo.org/mpo/traffic_count_map_peakhr.pdf



Victoria Park Road station 9056



DATA FOR SHADED AREA (downtown)

number in black = counter ID#

number in red = traffic counts (AADT in thousands)

Daily traffic counts on Victoria Park Road dropped by approximately 25% over the past decade. Actual traffic count in Appendix A confirms the trend of reduced traffic volume.

LEVELS OF SERVICE

North/ South		Design Code	2007							
ID#			DAILY				PEAK HOUR			
			AADT	Capacity	V/C	LOS	Volume	Capacity	V/C	LOS
933	Victoria Pk Rd N of Broward Blvd	264	6187	10000	0.62	D	659	950	0.69	D

2007 Levels of Service (LOS) 2030

Victoria Park Road

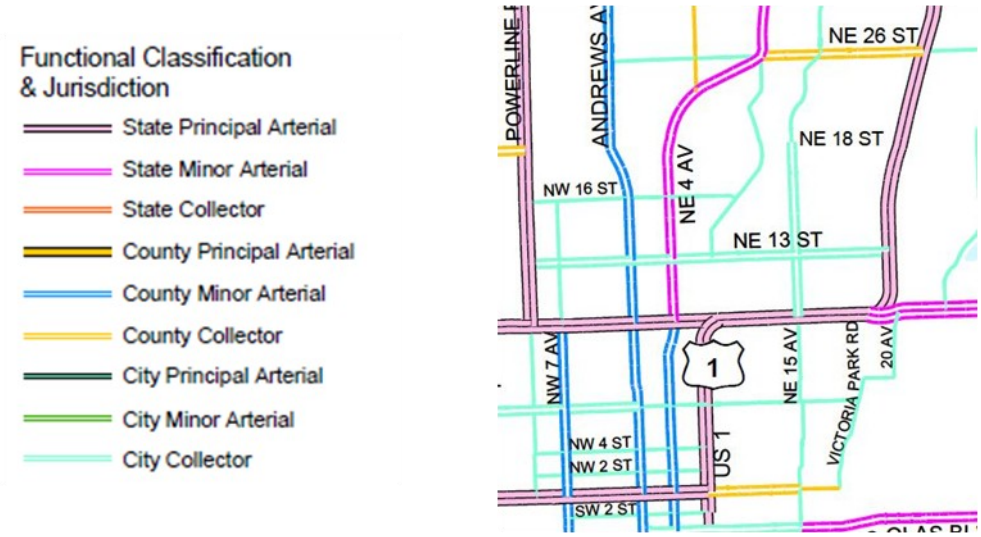
North/ South		Design Code	2030							
ID#			DAILY				PEAK HOUR			
			AADT	Capacity	V/C	LOS	Volume	Capacity	V/C	LOS
933	Victoria Pk Rd N of Broward Blvd	264	4,565	10,000	0.46	C	434	950	0.46	C

AADT = Average Annual Daily Traffic V/C = Volume / Capacity LOS = Level of Service (A thru F, D is target level)

Source: Roadway Capacity and Level of Service Analysis Spreadsheet
http://www.browardmpo.org/mpo/plansprograms.htm 9/30/08

The Level of Service (LOS) is a measure of the road's effectiveness (ranging from A "excellent" to "F" failure) LOS of "E" represents the roadway operating at full capacity, "D" or better is the target in Broward County. The LOS of most collector and arterial roads in and around Victoria Park are forecasted to worsen by 2030. Victoria Park Road is the only roadway which is forecast to see an improvement in its Level of Service: from "D" to "C". (NE 15th Avenue south of 6th St and Broward Blvd east of 15th Ave will remain the same at "D". Sunrise will continue to fail.)

CLASSIFICATION OF ROADWAYS



source: http://www.browardmpo.org/mpo/highway_funclass_map.pdf

Description and uses for types of roads: ntl.bts.gov/lib/23000/23100/23121/09**RoadFunction**.pdf

A **collector road** is a low or moderate-capacity road which is below a highway or arterial road functional class. Collector roads tend to lead traffic from local roads or sections of neighborhoods to activity areas within communities, arterial roads or (occasionally) directly to expressways or freeways.

Collector roads can have many different characteristics. Some urban collectors are wide boulevards entering communities or connecting sections. Others are residential streets, which are typically wider than local roads, although few are wider than 4 lanes wide except in extremely dense areas. Some small-scale commercial areas can be found on collector roads in residential areas. Key community functions such as schools, churches and recreational facilities can often be found on residential collector roads. The same description, substituted for industrial or rural purposes, can be found on collector roads in those areas.

The category is sometimes subdivided into major and minor collector roads, with the former category being for the more important and busier of the two types of roads, although such subdivisions are far less common than with arterials.

Collector roads can originate in different ways: most often they have been planned along with the suburban layout and built especially for that purpose. Occasionally they can fill gaps in a grid system between arterial roads.

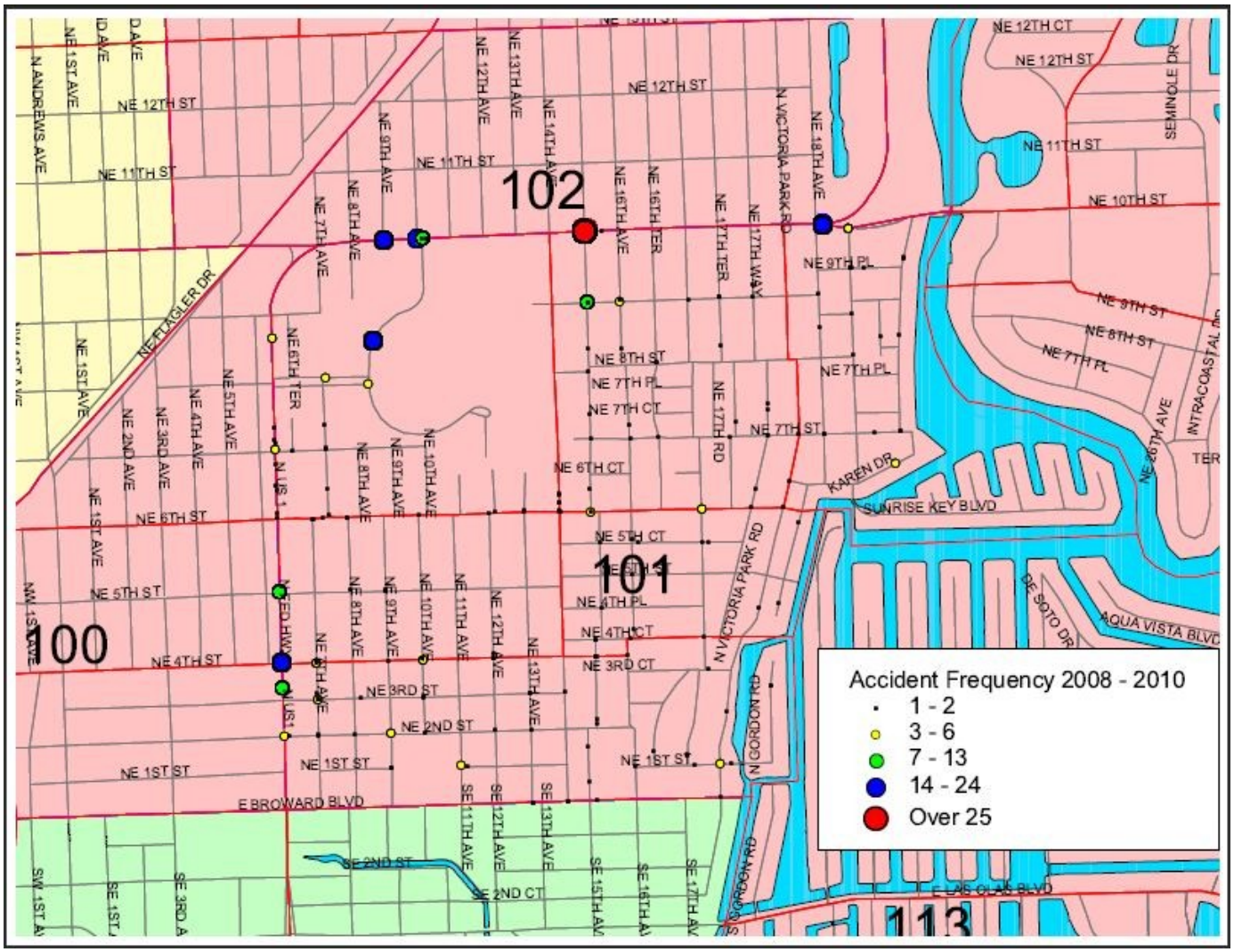
The flow of a collector road usually consists of a mixture of signaled intersections (or traffic circles) with arterial roads, either signals, circles or stop signs (usually in the form of a four-way stop) with other collector roads, and smaller intersections which have stop signs only for the local roads. Often, full private access will be permitted onto collector roads.

Urban planners will often consider such roads when laying out new areas of development, as branch sections of utilities such as trunk sewers and water mains can be built through the same corridor.

Speed limits are typically between 20 and 35 mph (or 30 to 55km/h) on collector roads in built-up areas, depending on the degree of development and frequency of local access, intersections and pedestrians, as well as the surrounding area (the speed tends to be lowest in a school zone). Traffic calming is occasionally used in older areas on collector roads as well.

source: http://en.wikipedia.org/wiki/Collector_road

ACCIDENT DATA



Victoria Park Road between Broward Blvd and NE 7th Avenue experienced 8 accidents in 2008-2010. (The rest of the NE 7th St / NE 20th Avenue route had 6 accidents)

By comparison, the other collector routes in the neighborhood saw more accidents in the same period. NE 6th Street had 17 accidents, NE 15th Avenue had 15 accidents (not including the accident prone intersections with NE 9th St and Sunrise Blvd.)

Factoring in relative traffic volumes, NE 6th Street is by far the most accident prone of our neighborhood collectors.

While not collectors, NE 4th Street saw 13 accidents (not counting the intersection with Federal Hwy), and NE 7th Avenue (excluding Holiday Park) had 17 accidents — experiences similar to the collectors.

source: Fort Lauderdale Police Department
October 18, 2010

*2010 data does not reflect full year

HIGH FREQUENCY ACCIDENT AREAS	2008	2009	2010*	Grand Total
NE 15TH AVE & E SUNRISE BLVD	32	43	25	100
1500 E SUNRISE BLVD	19	32	19	70
1150 G HAROLD MARTIN DR	10	8	6	24
1820 E SUNRISE BLVD	10	7	3	20
400 N FEDERAL HWY	9	6	2	17
900 E SUNRISE BLVD	4	7	5	16
NE 10TH AVE & E SUNRISE BLVD	1	9	5	15
NE 9TH AVE & E SUNRISE BLVD	7	2	4	13
1000 E SUNRISE BLVD	3	6	3	12
500 N FEDERAL HWY	4	6		10
330 N FEDERAL HWY	2	4	3	9
NE 15TH AVE & NE 9TH ST	4	3	1	8
NE 4TH ST & NE 7TH AVE	2		4	6
NE 19TH AVE & E SUNRISE BLVD		4	2	6
850 N FEDERAL HWY		2	2	4
1700 NE 6TH ST	4			4
700 N FEDERAL HWY	2	1	1	4
NE 2ND ST & NE 9TH AVE		4		4
NE 3RD ST & NE 7TH AVE		1	3	4
NE 10TH AVE & NE 4TH ST	2	2		4
Grand Total	115	147	88	350

SPEED DATA

The following are excerpts from the Traffic Study conducted by Broward County on October 13 & 14, 2010 (noon-noon) on North Victoria Park Road between NE 1st and 6th Streets. The full set of data and summaries can be found in Appendix A.

NORTHBOUND At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 30 mph with 87.6 percent exceeding the posted speed of 25 mph. The [study] found 0.17 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 34.58 mph.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	7	20	343	1178	1090	304	38	10	2	1	1	1	1	1

S**OUTHBOUND** At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 29 mph with 83.3 percent exceeding the posted speed of 25 mph. The [study] found 0.15 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 34.22 mph.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	6	45	284	794	693	158	26	4	3	1	0	1	1	0

The speed counts point out a disturbing fact — there are a number of drivers who speed excessively on Victoria Park Road, in both directions Most of the excessive speeders (going over 45 mph) were clocked in the daytime hours (N = northbound S = southbound).

	45-50	50-55	55-60	60-65	65-70	70-75	75+ mph	TOTAL
midnight-2 am								0
2 am-4 am								0
4 am-6 am	1S							1
6 am-8 am	1N	1S				1N		2
8 am-10 am								0
10 am-noon	2N		1N				1N	4
noon-2 pm	1S	1N						2
2 pm-4 pm						1S		1
4 pm-6 pm	5N	1N			1S			7
6 pm-8 pm	1N 2S	2S		1N				6
8 pm-10 pm			1S					1
10 pm-midnight	1N				1N			2

TRAFFIC CALMING

The Three "E's" of Traffic Calming

Education
Communities with educational programs seek to remind speeding drivers of the negative effects of their actions, often by stressing that the community's children are the most at risk. Educational campaigns may use brochures or neighborhood newsletters to spread this message. Newsletters may also contain information on speeding fines (particularly in school zones), pedestrian and bicycle safety tips, and information on average speeds in the neighborhood. Residents who pledge to obey the speed limit within the neighborhood act as "rolling speed bumps", slowing speeders and demonstrating the appropriate speed to outside drivers.

Enforcement
Enforcement involves a more intensive police presence and a greater allocation of time to enforcing the speed limit in a particular neighborhood. Unfortunately, it is often not practicable to maintain a police presence at the level needed to permanently lower speeds. However, consistent visible enforcement does lead to respect of the speed limit by motorists.

Engineering
If the first two steps are not effective in lowering speeds on neighborhood streets, the need for traffic calming measures becomes more apparent. Engineering includes, but is not limited to, traffic calming measures. It can also include the use of signs and pavement markings to obtain the desired effect.

Prior to installing traffic calming measures on local or collector streets, traffic conditions on adjacent arterial streets should be investigated to determine if operational deficiencies are contributing to the identified traffic concerns. If the adjacent arterial streets are the responsibility of the local government, these deficiencies should be addressed before traffic calming is considered. In addition, when the use of traffic calming measures may divert large volumes of traffic from local streets, the effects on adjacent roadways should be addressed.

source: ftp://ftp.dot.state.pa.us/public/pdf/TrafficCalming/Ch1TCH.pdf

TRAFFIC CALMING — non-construction solutions

The following page lists a number of physical measures used to calm traffic. Besides construction of traffic calming devices in the roadway, there are a couple of other traffic calming measures available, including:

- landscaping to narrow the perceived width of the roadway,
- traffic signs and pavement markings,
- radar speed detectors (permanent or portable).

RESEARCH

For more research on traffic calming subjects, please visit the Institute of Traffic Engineers Traffic Calming Library: http://www.ite.org/traffic/

Minnesota maintains a searchable database of traffic projects that that been constructed in that state: http://mn-traffic-calming.org/cgi-bin/index.cgi?file=/xml/Overview.xml

Of particular interest to Fort Lauderdale situations, Peter Partington, our city engineer, maintains a personal website devoted to traffic calming: http://www.trafficcalming.net/

TRAFFIC CALMING — Engineering

"Traffic calming involves changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through volumes, in the interest of street safety, livability, and other public purposes" **INSTITUTE OF TRANSPORTATION ENGINEERS**

Links on this page will take you to the TrafficCalming.org website — there are examples of various types of measures, photos of installed measures, a comparison of the benefits and disadvantages of each measure and approximate cost.

Types of Traffic Calming Measures...

Traffic calming measures can be separated into two groups based on the main impact intended. **Volume control measures** are primarily used to address cut-through traffic problems by blocking certain movements, thereby diverting traffic to streets better able to handle it. **Speed control measures** are primarily used to address speeding problems by changing vertical alignment, changing horizontal alignment, or narrowing the roadway. The distinction between the two types of measures is not as clear as their names suggest, since speed control measures frequently divert traffic to alternate routes, and volume control measures usually slow traffic.

Speed Control Measures

Vertical Deflection	Horizontal Deflection	Horizontal Narrowing	Other Measures
Speed Humps	Traffic Circles	Neckdowns	Examples
Speed Tables	Roundabouts	Center Island Narrowings	
Raised Crosswalks	Chicanes	Chokers	
Raised Intersections	Realigned Intersections		
Textured Pavements			
Speed Lumps *			
Speed Cushion *			
Split Speed Hump *			

Volume Control Measures

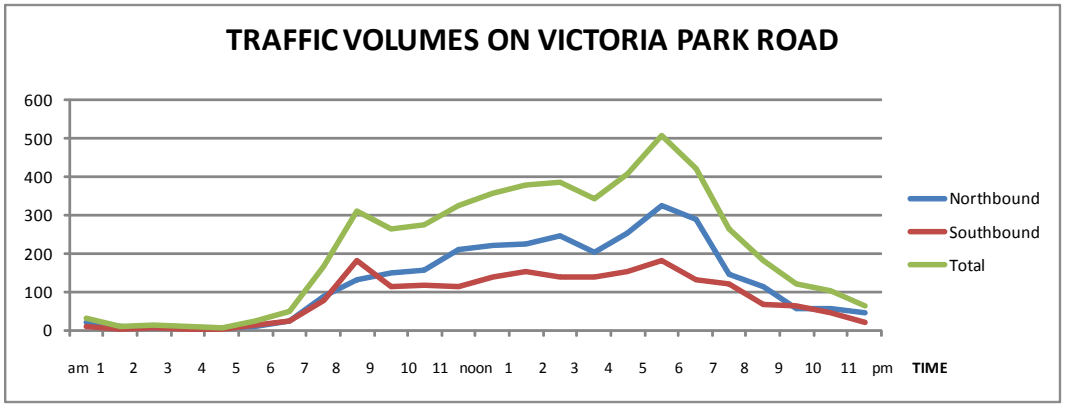
Divertive, Restrictive	Other Measures
Full Closures	Examples
Half Closures	
Diagonal Diverters	
Lateral Shift *	
Median Barriers	

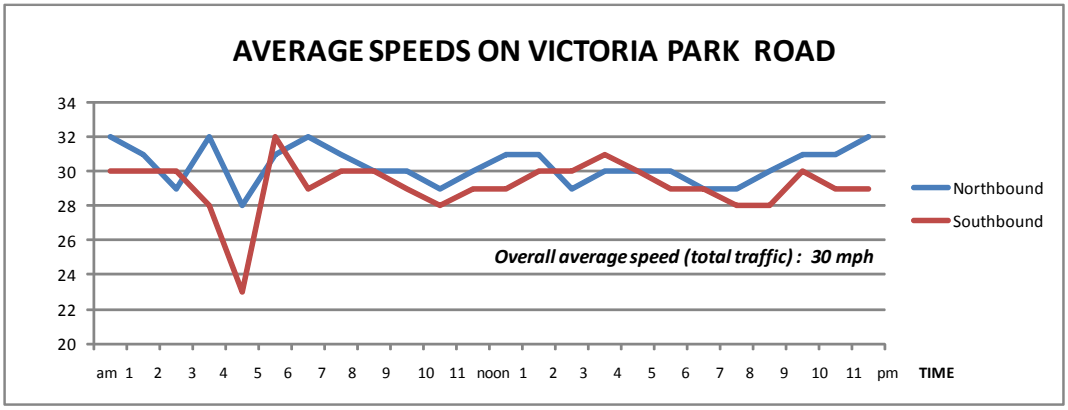
source: http://www.TrafficCalming.org/

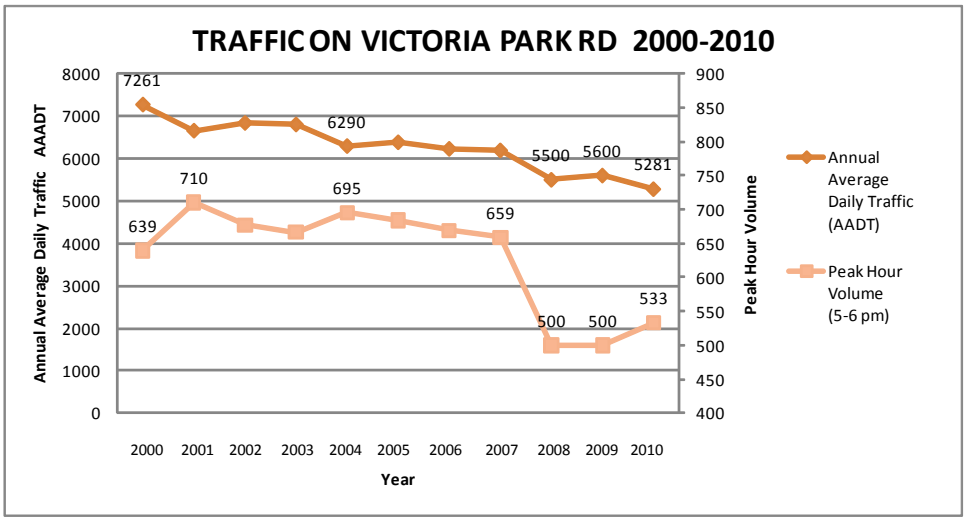
Appendix A: TRAFFIC STUDY DATA October 13-14, 2010

The data on the following pages are the results of a traffic & speed study conducted by Broward County on October 13-14, 2010 (noon to noon). The charts below summarize traffic volumes and average speeds in hourly increments. The Annual Average Daily Traffic count is 5,281 (3,055 northbound, 2,226 southbound) Peak Hour Volume was 533 vehicles between 5 and 6 pm. Traffic counts were consistent with past studies by the county, confirming a general trend to lower traffic volumes. The posted speed limit is 25 mph, the overall average speed is 30 mph. The 85th percentile speed — the number that traffic engineers use to gauge the flow of traffic when setting speed limits — is just under 35 mph. This means that 85 of 100 vehicles travel at 35 mph or less (or conversely, that 15 of 100 vehicles travel above that speed — some excessively).

October 13-14 Sunrise: 7:14 am Sunset 6:54 pm 86% of traffic occurs during daylight hours (7am-7pm)







Appendix A Contents

NOTE: *The traffic counts on the speed reports do not match the traffic counts on the traffic volume reports. We've asked county staff for an explanation.*

The data from the speed reports can be accessed as an Excel spreadsheet — contact traffic@vpca.org for a copy

Historic traffic counts for all continuous traffic study sites in Broward County can be accessed online at : http://www.browardmpo.org/mpo/trafficcounts.htm

Victoria Park Road (at NE 3rd St) is site 9054.

The 2010 data in this chart are from the October 2010 study (above)

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report
City: FORT LAUDERDALE
Street: VICTORIA PK RD btwn NE 1 ST & 6

A study of vehicle traffic was conducted with HI-STAR unit number 7640. The study was done in the NORTHBOUND lane on VICTORIA PK RD btwn NE 1 ST & 6 in FORT LAUDERDALE, FL in BROWARD county. The study began on 10/13/2010 at 12:00 PM and concluded on 10/14/2010 at 12:00 PM, lasting a total of 24 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 3,055 vehicles passed through the location with a peak volume of 330 on 10/13/2010 at 05:00 PM and a minimum volume of 5 on 10/14/2010 at 02:00 AM. The AADT Count for this study was 3,055.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	7	20	343	1178	1090	304	38	10	2	1	1	1	1	1

At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 30 mph with 87.6 percent exceeding the posted speed of 25 mph. The HI-STAR found 0.17 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 34.58 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
2961	23	13	0	0	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 2,984 which represents 99.60 percent of the total classified vehicles. The number of Small Trucks in the study was 13 which represents 0.40 percent of the total classified vehicles. The number of Trucks/Buses in the study was 0 which represents 0.00 percent of the total classified vehicles. The number of Tractor Trailers in the study was 0 which represents 0.00 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 10/13/2010 at 05:00 PM the average headway between the vehicles was 10.88 seconds. The slowest traffic period was on 10/14/2010 at 02:00 AM. During this slowest period, the average headway was 600.0 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 78 and 89 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 7640	Begin: 10/13/2010 12:00 PM	End: 10/14/2010 12:00 PM
Street: VICTORIA PK RD btwn NE 1 ST	Lane: NORTHBOUND	Hours: 24:00
State: FL	Oper: TA	Period: 60
City: FORT LAUDERDALE	Posted: 25	Raw Count: 3055
County: BROWARD	AADT Factor: 1	AADT Count: 3055

NC97	Count	Avg Speed	Temp	Wet/Dry
10/13/2010				
[12:00 PM-01:00 PM]	223	31 mph	85 F	Dry
[01:00 PM-02:00 PM]	227	31 mph	87 F	Dry
[02:00 PM-03:00 PM]	250	29 mph	87 F	Dry
[03:00 PM-04:00 PM]	205	30 mph	89 F	Dry
[04:00 PM-05:00 PM]	259	30 mph	89 F	Dry
[05:00 PM-06:00 PM]	330	30 mph	87 F	Dry
[06:00 PM-07:00 PM]	298	29 mph	83 F	Dry
[07:00 PM-08:00 PM]	147	29 mph	82 F	Dry
[08:00 PM-09:00 PM]	117	30 mph	82 F	Dry
[09:00 PM-10:00 PM]	58	31 mph	80 F	Dry
[10:00 PM-11:00 PM]	57	31 mph	80 F	Dry
[11:00 PM-12:00 AM]	46	32 mph	80 F	Dry
10/14/2010				
[12:00 AM-01:00 AM]	24	32 mph	80 F	Dry
[01:00 AM-02:00 AM]	8	31 mph	80 F	Dry
[02:00 AM-03:00 AM]	5	29 mph	78 F	Dry
[03:00 AM-04:00 AM]	6	32 mph	78 F	Dry
[04:00 AM-05:00 AM]	6	28 mph	78 F	Dry
[05:00 AM-06:00 AM]	11	31 mph	78 F	Dry
[06:00 AM-07:00 AM]	24	32 mph	78 F	Dry
[07:00 AM-08:00 AM]	92	31 mph	78 F	Dry
[08:00 AM-09:00 AM]	134	30 mph	80 F	Dry
[09:00 AM-10:00 AM]	151	30 mph	85 F	Dry
[10:00 AM-11:00 AM]	162	29 mph	87 F	Dry
[11:00 AM-12:00 PM]	215	30 mph	87 F	Dry

Time/Speed Report

HI-Star ID: 7640	Begin: 10/13/2010 12:00 PM	End: 10/14/2010 12:00 PM
Street: VICTORIA PK RD btwn NE 1 ST & 6	Lane: NORTHBOUND	Hours: 24:00
State: FL	Oper: TA	Period: 60
City: FORT LAUDERDALE	Posted: 25	Raw Count: 3055
County: BROWARD	AADT Factor: 1	AADT Count: 3055

NC97 - mph	0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >	Total
10/13/2010																
[12:00 PM-01:00 PM]	0	0	0	16	81	92	27	2	0	1	0	0	0	0	1	220
[01:00 PM-02:00 PM]	0	0	0	18	90	83	32	2	0	0	0	0	0	0	0	225
[02:00 PM-03:00 PM]	0	1	1	32	103	87	19	3	0	0	0	0	0	0	0	246
[03:00 PM-04:00 PM]	0	0	2	20	78	75	26	2	0	0	0	0	0	0	0	203
[04:00 PM-05:00 PM]	0	0	6	34	93	93	21	3	3	0	0	0	0	0	0	253
[05:00 PM-06:00 PM]	0	0	1	32	137	121	26	4	2	1	0	0	0	0	0	324
[06:00 PM-07:00 PM]	0	0	1	43	121	106	15	1	1	0	0	1	0	0	0	289
[07:00 PM-08:00 PM]	0	0	1	18	68	51	6	1	0	0	0	0	0	0	0	145
[08:00 PM-09:00 PM]	0	0	1	6	54	40	13	1	0	0	0	0	0	0	0	115
[09:00 PM-10:00 PM]	0	0	0	5	23	21	6	2	0	0	0	0	0	0	0	57
[10:00 PM-11:00 PM]	0	0	0	8	18	22	4	2	0	0	0	0	1	0	0	55
[11:00 PM-12:00 AM]	0	0	0	2	12	17	12	0	1	0	0	0	0	0	0	44
	0	1	13	234	878	808	207	23	7	2	0	1	1	0	1	2176
Daily Totals:	0	1	13	234	878	808	207	23	7	2	0	1	1	0	1	2176
10/14/2010																
[12:00 AM-01:00 AM]	0	0	1	1	6	9	3	2	0	0	0	0	0	0	0	22
[01:00 AM-02:00 AM]	0	0	1	0	3	1	3	0	0	0	0	0	0	0	0	8
[02:00 AM-03:00 AM]	0	0	0	3	0	1	0	1	0	0	0	0	0	0	0	5
[03:00 AM-04:00 AM]	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	6
[04:00 AM-05:00 AM]	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	6
[05:00 AM-06:00 AM]	0	1	0	0	3	4	2	1	0	0	0	0	0	0	0	11
[06:00 AM-07:00 AM]	0	0	0	2	6	9	7	0	0	0	0	0	0	0	0	24
[07:00 AM-08:00 AM]	0	0	1	12	28	32	14	1	1	0	0	0	0	1	0	90
[08:00 AM-09:00 AM]	0	0	2	12	45	57	13	2	0	0	0	0	0	0	0	131
[09:00 AM-10:00 AM]	0	1	1	16	64	50	17	0	0	0	0	0	0	0	0	149
[10:00 AM-11:00 AM]	0	3	0	29	54	53	13	5	1	0	0	0	0	0	0	158
[11:00 AM-12:00 PM]	0	1	1	33	85	62	24	3	1	0	1	0	0	0	0	211
	0	6	7	109	300	282	97	15	3	0	1	0	0	1	0	821
Daily Totals:	0	6	7	109	300	282	97	15	3	0	1	0	0	1	0	821
Report Totals:	0	7	20	343	1178	1090	304	38	10	2	1	1	1	1	1	2997
Report Percentages:	0.00%	0.23%	0.67%	11.44%	39.31%	36.37%	10.14%	1.27%	0.33%	0.07%	0.03%	0.03%	0.03%	0.03%	0.03%	

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report
City: FORT LAUDERDALE
Street: VICTORIA PK RD btwn NE 1 ST & 6

A study of vehicle traffic was conducted with HI-STAR unit number 3283. The study was done in the SOUTHBOUND lane on VICTORIA PK RD btwn NE 1 ST & 6 in FORT LAUDERDALE, FL in BROWARD county. The study began on 10/13/2010 at 12:00 PM and concluded on 10/14/2010 at 12:00 PM, lasting a total of 24 hours. Data was recorded in 60 minute time periods. The total recorded volume of traffic showed 2,226 vehicles passed through the location with a peak volume of 203 on 10/14/2010 at 08:00 AM and a minimum volume of 2 on 10/14/2010 at 01:00 AM. The AADT Count for this study was 2,226.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	6	45	284	794	693	158	26	4	3	1	0	1	1	0

At least half of the vehicles were traveling in the 25 - 29 mph range or a lower speed. The average speed for all classified vehicles was 29 mph with 83.3 percent exceeding the posted speed of 25 mph. The HI-STAR found 0.15 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 25 mph and the 85th percentile was 34.22 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
1999	10	7	0	0	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 2,009 which represents 99.70 percent of the total classified vehicles. The number of Small Trucks in the study was 7 which represents 0.30 percent of the total classified vehicles. The number of Trucks/Buses in the study was 0 which represents 0.00 percent of the total classified vehicles. The number of Tractor Trailers in the study was 0 which represents 0.00 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 10/14/2010 at 08:00 AM the average headway between the vehicles was 17.65 seconds. The slowest traffic period was on 10/14/2010 at 01:00 AM. During this slowest period, the average headway was 1200.0 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 78 and 93 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 3283	Begin: 10/13/2010 12:00 PM	End: 10/14/2010 12:00 PM
Street: VICTORIA PK RD btwn NE 1 ST	Lane: SOUTHBOUND	Hours: 24:00
State: FL	Oper: TA	Period: 60
City: FORT LAUDERDALE	Posted: 25	Raw Count: 2226
County: BROWARD	AADT Factor: 1	AADT Count: 2226

NC97	Count	Avg Speed	Temp	Wet/Dry
10/13/2010				
[12:00 PM-01:00 PM]	158	29 mph	89 F	Dry
[01:00 PM-02:00 PM]	164	30 mph	89 F	Dry
[02:00 PM-03:00 PM]	153	30 mph	89 F	Dry
[03:00 PM-04:00 PM]	145	31 mph	91 F	Dry
[04:00 PM-05:00 PM]	175	30 mph	93 F	Dry
[05:00 PM-06:00 PM]	202	29 mph	89 F	Dry
[06:00 PM-07:00 PM]	146	29 mph	85 F	Dry
[07:00 PM-08:00 PM]	126	28 mph	83 F	Dry
[08:00 PM-09:00 PM]	77	28 mph	83 F	Dry
[09:00 PM-10:00 PM]	70	30 mph	83 F	Dry
[10:00 PM-11:00 PM]	47	29 mph	82 F	Dry
[11:00 PM-12:00 AM]	20	29 mph	82 F	Dry
10/14/2010				
[12:00 AM-01:00 AM]	11	30 mph	82 F	Dry
[01:00 AM-02:00 AM]	2	30 mph	80 F	Dry
[02:00 AM-03:00 AM]	8	30 mph	80 F	Dry
[03:00 AM-04:00 AM]	2	28 mph	80 F	Dry
[04:00 AM-05:00 AM]	3	23 mph	80 F	Dry
[05:00 AM-06:00 AM]	16	32 mph	78 F	Dry
[06:00 AM-07:00 AM]	26	29 mph	78 F	Dry
[07:00 AM-08:00 AM]	87	30 mph	80 F	Dry
[08:00 AM-09:00 AM]	203	30 mph	80 F	Dry
[09:00 AM-10:00 AM]	123	29 mph	85 F	Dry
[10:00 AM-11:00 AM]	130	28 mph	87 F	Dry
[11:00 AM-12:00 PM]	132	29 mph	87 F	Dry

Time/Speed Report

HI-Star ID: 3283	Begin: 10/13/2010 12:00 PM	End: 10/14/2010 12:00 PM
Street: VICTORIA PK RD btwn NE 1 ST & 6	Lane: SOUTHBOUND	Hours: 24:00
State: FL	Oper: TA	Period: 60
City: FORT LAUDERDALE	Posted: 25	Raw Count: 2226
County: BROWARD	AADT Factor: 1	AADT Count: 2226

NC97 - mph	0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >	Total
10/13/2010																
[12:00 PM-01:00 PM]	0	0	3	22	56	39	15	2	1	0	0	0	0	0	0	138
[01:00 PM-02:00 PM]	0	0	2	14	58	61	15	2	0	0	0	0	0	0	0	152
[02:00 PM-03:00 PM]	0	0	7	18	45	53	12	2	0	0	0	0	0	1	0	138
[03:00 PM-04:00 PM]	0	1	1	10	51	52	20	2	0	0	0	0	1	0	0	138
[04:00 PM-05:00 PM]	0	0	1	21	62	54	12	4	0	0	0	0	0	0	0	154
[05:00 PM-06:00 PM]	0	0	3	24	73	75	8	0	0	0	0	0	0	0	0	183
[06:00 PM-07:00 PM]	0	2	0	19	51	52	5	1	2	0	0	0	0	0	0	132
[07:00 PM-08:00 PM]	0	1	3	32	55	22	3	1	0	2	0	0	0	0	0	119
[08:00 PM-09:00 PM]	0	0	3	14	23	22	4	1	0	0	0	0	0	0	0	67
[09:00 PM-10:00 PM]	0	0	4	7	23	23	5	2	0	0	1	0	0	0	0	65
[10:00 PM-11:00 PM]	0	0	1	9	20	11	5	1	0	0	0	0	0	0	0	47
[11:00 PM-12:00 AM]	0	0	0	4	6	8	0	1	0	0	0	0	0	0	0	19
	0	4	28	194	523	472	104	19	3	2	1	0	1	1	0	1352
Daily Totals:	0	4	28	194	523	472	104	19	3	2	1	0	1	1	0	1352
10/14/2010																
[12:00 AM-01:00 AM]	0	0	0	1	4	3	1	0	0	0	0	0	0	0	0	9
[01:00 AM-02:00 AM]	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
[02:00 AM-03:00 AM]	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	7
[03:00 AM-04:00 AM]	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
[04:00 AM-05:00 AM]	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
[05:00 AM-06:00 AM]	0	0	0	0	9	1	3	0	1	0	0	0	0	0	0	14
[06:00 AM-07:00 AM]	0	0	1	1	11	10	1	0	0	0	0	0	0	0	0	24
[07:00 AM-08:00 AM]	0	0	4	6	32	26	7	1	0	1	0	0	0	0	0	77
[08:00 AM-09:00 AM]	0	0	2	21	73	67	16	2	0	0	0	0	0	0	0	181
[09:00 AM-10:00 AM]	0	0	3	16	45	41	8	2	0	0	0	0	0	0	0	115
[10:00 AM-11:00 AM]	0	2	5	19	50	32	8	1	0	0	0	0	0	0	0	117
[11:00 AM-12:00 PM]	0	0	2	24	43	35	10	1	0	0	0	0	0	0	0	115
	0	2	17	90	271	221	54	7	1	1	0	0	0	0	0	664
Daily Totals:	0	2	17	90	271	221	54	7	1	1	0	0	0	0	0	664
Report Totals:	0	6	45	284	794	693	158	26	4	3	1	0	1	1	0	2016
Report Percentages:	0.00%	0.30%	2.23%	14.09%	39.38%	34.38%	7.84%	1.29%	0.20%	0.15%	0.05%	0.00%	0.05%	0.05%	0.00%	

Appendix B: STOP SIGN INSTALLATION (MUTCD 2009)

Section 2B.06 STOP Sign Applications

Guidance:

At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).

The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:

A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;

B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or

C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to *yield the right-of-way to traffic on the through street or highway.*

Support:

The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

For Multi-Way Stop Sign criteria see next page

For 2003 MUTCD criteria see later pages

NOTE: There are no "standards" (i.e., mandatory criteria) for stop sign uses in the 2009 MUTCD — just "guidance" and "support" (i.e., recommended criteria) for "engineering judgment".

Appendix B: STOP SIGN INSTALLATION (MUTCD 2009)

Section 2B.07 Multi-Way Stop Applications

Support:

Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

The decision to install multi-way stop control should be based on an engineering study.

The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:

   1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
   2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
   3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option:

Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

For 2003 MUTCD criteria see following pages

source: http://mutcd.fhwa.dot.gov/htm/2009/part2/part2b.htm

For more on the effectiveness of multistep intersections as a traffic calming measure, see http://troymi.gov/trafficengineering/multiway.htm

Appendix B: STOP SIGN INSTALLATION (MUTCD 2003)

Section 2B.05 STOP Sign Applications (Multi-Stops 2B.07 next page)

Guidance:

STOP signs should be used if engineering judgment indicates that one or more of the following conditions exist:

A. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;

B. Street entering a through highway or street;

C. Unsignalized intersection in a signalized area; and/or

D. High speeds, restricted view, or crash records indicate a need for control by the STOP sign.

Standard:
Because the potential for conflicting commands could create driver confusion, STOP signs shall not be installed at intersections where traffic control signals are installed and operating except as noted in Section 4D.01.

Portable or part-time STOP signs shall not be used except for emergency and temporary traffic control zone purposes.

Guidance:

STOP signs should not be used for speed control.

STOP signs should be installed in a manner that minimizes the numbers of vehicles having to stop. At intersections where a full stop is not necessary at all times, consideration should be given to using less restrictive measures such as YIELD signs (see Section 2B.08).

Once the decision has been made to install two-way stop control, the decision regarding the appropriate street to stop should be based on engineering judgment. In most cases, the street carrying the lowest volume of traffic should be stopped.

A STOP sign should not be installed on the major street unless justified by a traffic engineering study.

Support:

The following are considerations that might influence the decision regarding the appropriate street upon which to install a STOP sign where two streets with relatively equal volumes and/or characteristics intersect:

A. Stopping the direction that conflicts the most with established pedestrian crossing activity or school walking routes;

B. Stopping the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds;

C. Stopping the direction that has the longest distance of uninterrupted flow approaching the intersection; and

D. Stopping the direction that has the best sight distance to conflicting traffic.

The use of the STOP sign at highway-railroad grade crossings is described in Section 8B.08. The use of the STOP sign at highway-light rail transit grade crossings is described in Section 10C.04

http://mutcd.fhwa.dot.gov/HTM/2003/part2/part2b1.htm

Appendix B: STOP SIGN INSTALLATION (MUTCD 2003)

Section 2B.07 Multiway Stop Applications

Support:

Multiway stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multiway stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multiway stop control is used where the volume of traffic on the intersecting roads is approximately equal.

The restrictions on the use of STOP signs described in Section 2B.05 also apply to multiway stop applications.

Guidance:

The decision to install multiway stop control should be based on an engineering study.

The following criteria should be considered in the engineering study for a multiway STOP sign installation:

A. Where traffic control signals are justified, the multiway stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:

   1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
   2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour, but
   3. If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option:

Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection.

For more on the effectiveness of multistep intersections as a traffic calming measure, see http://troymi.gov/trafficengineering/multiway.htm

Appendix C: SPEED HUMP INSTALLATION

There are advantages and disadvantages of installing speed humps, a few pros and cons are listed below.

PROS:

TrafficCalming.org surveyed a number of speed hump projects nationwide and found the following average reduction in speeds for various width speed humps and speed tables (standard deviations in parentheses):

Width of Speed Hump	# of projects reviewed	85th Percentile Speed after installation	Average Change in 85th Percentile Speed	Average Change
12' hump	179	27.4 mph (4.0 mph)	- 7.6 mph (3.5 mph)	- 22% (9%)
14' hump	15	25.6 mph (2.1 mph)	-7.7 mph (2.1 mph)	- 23% (6%)
22' table	58	30.1 mph (2.8 mph)	- 6.6 mph (3.2 mph)	- 18 % (8%)
>22' table	10	31.6 mph (2.0 mph)	-3.2 mph (2.4 mph)	- 9% (7%)

CONS:

- They cause a "rough ride" for all drivers, and can cause severe pain for people with certain skeletal disabilities
- They force large vehicles, such as emergency vehicles and those with rigid suspensions, to travel at slower speeds
- They may increase noise and air pollution
- They have questionable aesthetics.

TrafficCalming.org

- Residents living near speed humps must tolerate increased noise levels as vehicles traverse speed humps day and night.
- Vehicles may drive on sidewalks or through front yards to avoid speed humps.
- Traffic may be diverted to previously quiet parallel streets in the neighborhood.
- Emergency service response time suffers.
- Motorized street sweeping equipment cannot be used at speed hump locations.
- Speed humps interfere with street repaving, decreasing the effectiveness of both the speed hump and the new pavement surface.
- Speed humps block the flow of drainage water on some streets and can cause flooding problems.
- Speed humps require signing and striping, which some residents consider unattractive.

Phoenix AZ http://phoenix.gov/streets/speedhmp.html

Installation of speed humps on streets other than local residential streets could have potentially severe traffic safety consequences, almost certainly affect emergency services and other service delivery activities, and likely create the diversion of large amounts of through traffic onto local residential streets, which were not intended for that purpose. Therefore, speed humps will not normally be considered for streets that are classified as collector streets or higher in the Circulation Element of the City's General Plan, or which are determined to provide a transportation service to the community beyond that of simply providing access to the immediate abutting residences.

Hermosa Beach CA http://www.hermosabch.org/departments/publicworks/speedhump.html

The following pages list the criteria for the installation of speed humps and other engineered traffic calming measures in Fort Lauderdale.

CITY OF FORT LAUDERDALE
SPEED HUMP INSTALLATION POLICY

1. **Engineering Study.** Since speed humps may divert traffic to other street facilities, an estimate of the amount and location of that diversion will be made so that the potential impacts of the proposed humps can be fully considered. If the humps are expected to create equal or greater traffic problems on another residential street, they will either not be installed, or humps will be considered for other impacted facilities.

2. **Street Classification and Use.** Speed humps will not be installed on any "Collector" roads that carry more than 6,000 vehicles per day (vpd), and will not be installed on any higher category roads than "Collectors." Speed humps will not usually be installed on any cul-de-sacs unless privately funded as provided for in Item 13; however, because of the differing types of land uses found on some cul-de-sacs, the Commission may consider the installation of speed humps on cul-de-sacs on a case by case basis.

3. **Street Width and Number of Lanes.** Speed humps will be used only on streets with no more than two travel lanes, or where the overall pavement width is not greater than 40 feet. In addition, the pavement shall have good surface and drainage qualities.

4. **Street Grades.** Speed humps will only be considered for use on streets with grades of 8-percent or less approaching the hump. When installed on streets with significant down-grades, special care shall be taken to ensure that vehicles will not approach the humps at excessive speed.

5. **Horizontal and Vertical Alignment.** Speed humps will not be placed within severe horizontal or vertical curves that might result in substantial lateral or vertical forces on a vehicle traversing the hump. Humps will be avoided within horizontal curves of less than 300 feet centerline radius and on vertical curves with less than the minimum safe stopping sight distance. If possible, humps will be located on tangent rather than curve sections.

6. **Sight Distance.** Speed humps will generally be installed only where the minimum safe stopping sight distance (as defined in AASHTO's "A Policy on Geometric Design of Streets") can be provided.

7. **Traffic Speeds.** Speed humps will generally be installed only on streets where the posted or prima facie speed limit is 30-mph or less. Speed humps will be carefully considered on streets where the majority of vehicles travel at relatively fast speeds, such as 45-mph or greater.

   City funding for speed humps will be considered on roads where the 85 percentile speed (average of both directions) is at least 10-mph above the posted speed limit. This funding may be extended to include roads which are expected to have traffic diverted to them as a result of speed hump installation.

8. **Traffic Volumes**. Rounded profile (TRRL) or "flat top" speed humps will be considered for installation on streets with an average daily traffic volume of between 500 to 3,000 vehicles per day (vpd). Only "flat-top" speed humps will be installed on roads with a traffic volume of between 3,000 and 6,000 vehicles per day (maximum volume).

9. **Traffic Safety.** Proposed speed hump locations will be evaluated to determine that such an installation will not introduce increased accident potential for the subject street.

10. **Vehicle Mix.** Speed humps will not normally be installed on streets that carry significant volumes (greater than five (5%) percent) of long wheel-base vehicles unless there is a reasonable alternative route for those vehicles. Special consideration will also be given to motorcycles, bicycles and other types of special vehicles that use the street. The impacts that speed humps might have on these individual vehicle types will be considered in the decision to install humps, and ultimately considered in their design and location.

11. **Transit Routes.** Speed humps will not generally be installed along streets with established transit routes. If humps are installed on transit routes, they will be "flat-top" humps.

12. **Citizen Support.** Citizen support for the installation of speed humps shall be documented by a City-conducted survey of all properties with addresses on the road and, when appropriate, the surrounding neighborhood.

13. **Payment for Speed Hump Installation.** Where roads do not meet the minimum 85 percentile speed specified under Item 7 and the minimum volume specified under Item 8 above as qualifying for possible City funding, the City may approve the installation of humps if the neighborhood/residents pay for the installation, including engineering costs.

14. **Roads Immediately Adjacent/Bordering Public Parks.** Where roads are immediately adjacent to or border a public park, City funding for speed humps will be considered on roads where the 85-percentile speed (average of both directions) is at least 8 mph above the posted speed limit. (December 11, 2001 – ccm01-1714)