Florida International University

Existing Traffic Analysis

For

Modesto A. Maidique, Engineering Center & Biscayne Bay Campuses

Prepared By:

MILLER LEGG

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12-00133

ENGINEER'S CERTIFICATION

I, Mohan Gopalakrishna, P.E. # 60720, certify that I currently hold an active Professional Engineers License in the State of Florida and am competent through education and experience to provide engineering services in the civil and traffic engineering disciplines contained in this plan, print, specification or report. I further certify that this traffic analysis study was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions and recommendations made herein are true and correct to the best of my knowledge and ability.

Existing Traffic Analysis for Modesto A. Maidique, Engineering Center & Biscayne Bay Campuses

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1.0 Introduction and Background

Florida International University (FIU) retained Miller Legg to perform an existing traffic analysis for the Comprehensive Master Plan Amendment for the three FIU Campuses in Miami, Florida; namely, Modesto A Maidique (MMC), Engineering Center (ECC) and Biscayne Bay (BBC).

Modesto A. Maidique Campus (MMC)

The MMC is the main campus located (see Figure 1, Appendix A) just east of the Florida's Turnpike in University Park in Miami-Dade County, abutting SW 8th Street between SW 107th and 117th Avenues. The campus has access points along SW 117th Avenue, SW 8th Street, SW 107th Avenue and SW 24th Street (Coral Way).

Collector Roads: The entrance roads and campus roads (SW 10th Street/University Drive), SW 11th Street (Victoria Drive), SW 115th Avenue, SW 17th Street and SW 14th Street, function as collectors on this campus. These campus roads serve to collect traffic and segregate it from the campus core, yet provide vehicular linkage to key parking, education, athletic, housing and support facilities.

Local Roads: All other roads on campus function as local Streets; these Streets are: SW 11th Street (west of SW 115th Avenue) on the western part of campus; SW 113th Avenue, just east of the nature preserve, SW 14th Street which runs east/west on the north side of University Towers; and the SW 12th Street entry to University Apartments at SW 107th Avenue.

The roadways in the planning study area are classified as follows: Tamiami Trail (SW 8th Street) is a state principal arterial. The Homestead Extension of Florida's Turnpike (HEFT) is a limited-access tolled expressway.

The following roadways are minor arterials:

- SW 24th Street (Coral Way)
- SW 107th Avenue (SR 985)
- SW 117th Avenue
- W Flagler Street (SR 968)

The following roadways are collectors:

- SW 16th Street
- SW 97th Avenue
- SW 102nd Avenue
- SW 122nd Avenue
- SW 127th Avenue

Engineering Center Campus (ECC)

The ECC is a smaller campus than MMC, abutting W Flagler Street between NW 107th Avenue and SW 105th Place (see Figure 2, Appendix A). This campus is also accessible from NW 107th Avenue.

Collector Roads: The campus entrance roads to NW 107th Avenue and W. Flagler Street function as collectors.

Local Roads: All other roads providing access to the campus parking lots and engineering center building function as local Streets.

The roadways in the planning study area are classified as follows: Tamiami Trail (SW 8th Street) is a state principal arterial. The Homestead Extension of Florida's Turnpike (HEFT) is a limited-access tolled expressway.

The following roadways are minor arterials:

- NW/SW 107th Avenue (SR 985)
- W Flagler Street (SR 968)

The following roadways are collectors:

- NW 7th Street/Fontainebleau Blvd
- NW/SW 97th Avenue
- NW/SW 102nd Avenue
- NW/SW 122nd Avenue
- NW/SW 127th Avenue

Biscayne Bay Campus (BBC)

The BBC is located (see Figure 3, Appendix A) on the shores of Biscayne Bay; the campus has access to the intra-coastal and is surrounded by Oleta River State Park and a natural preserve. It is located in the southeast quadrant of US 1 (Biscayne Boulevard) and NE 151st Street and is restricted by a single point of access from NE 151st Street/Bay Vista Boulevard.

Collector Roads: Bay Vista Boulevard is the main collector road which leads into the Biscayne Bay Campus. Bay Vista Boulevard intersects with NE 151st Street, and becomes NE 151st Street east of US 1 (Biscayne Boulevard).

Local Roads: All other roads providing access to the campus parking lots and facilities function as local Streets.

In the Biscayne Bay Campus planning study area, US 1 (Biscayne Boulevard) and NE 163rd Street (SR 826) are classified as principal arterials. W Dixie Highway (SR 909) is classified as a minor arterial, while the following are classified as collectors: NE 159th Street, NE 151st Street, and Bay Vista Boulevard.

The Campus Master Plan (Inventory and Analysis, dated December 18, 2012) is currently being updated and contains projected University enrollment by

Campus for undergraduate and graduate programs for 2020. These projections would most likely result in traffic capacity improvements on roadways and intersections, and expansion of academic facilities and student housing.

2.0 Traffic Impact Assessment of the Roadway Capacity on Campus and in the Planning Study Area for the Campus Master Plan Base Year and Projected Year 2020

Future Conditions for Enrollment, Building Program and Parking Facilities

Modesto A. Maidique Campus (MMC)

Locations of future academic facilities, support facilities, and utility elements for the Modesto A. Maidique Campus are anticipated. Academic facilities are located mostly inside of the campus loop road. The northeast area, which is outside of the campus loop road, will also accommodate future academic facilities.

Engineering Center (EC)

Locations of future academic facilities, support facilities, and utility elements for the Engineering Center are anticipated. Future facilities will be located in the southwest area of the Engineering Center building.

Biscayne Bay Campus (BBC)

Future academic, support facilities and utilities are anticipated for the Biscayne Bay Campus.

3.0 Traffic Analysis Methodology

For all campuses, the analysis area includes the existing on campus and off campus roadway segments and intersections, which provide access.

3.1 ***Traffic Data Collection*** used turning movement counts (TMCs) for existing year 2012 (PM Peak hour traffic) at the on and off campus intersections and determination of roadway segment directional peak hour traffic volumes.

3.2 ***Capacity Analysis for Existing 2012 Traffic Data*** (using Highway Capacity Software (HCS) 2010) to determine the existing 2012 level of service (LOS) for both roadway segments and intersections. This is required to determine if there are any capacity issues related to congestion and delay. LOS "A" through "D" is acceptable. LOS "E" is at capacity or constrained conditions. LOS "F" is failure.

3.3 ***Trip Generation*** analysis was done for the year 2020, using the ITE (Institute of Transportation Engineers) Trip Generation Manual (8th Edition). The new peak hour (PM) trip ends is obtained based on the projected student headcount (land use code 550, page 1033) and the faculty/staff (employees) headcount (land use code 550, page 1039). Trip generation is based on equations or rates and the equations specified on these pages were utilized to compute the PM peak hour trips between 4:00 and 6:00 PM to match the adjacent street traffic peak hour.

3.4 ***Trip Distribution*** was accomplished using the cardinal directional distribution method, which is currently used in Miami-Dade County. Distribution percentages of each Traffic Analysis Zone (TAZ) pertaining to the three campuses were obtained from Miami Dade County, Department of Planning and Zoning. These percentages were applied to the year 2020 new peak hour (PM) trip ends prior to their distribution (***Traffic Assignment***) along the roadway network.

3.5 ***Traffic Assignment and Capacity Analysis – Year 2020*** (without any capacity improvements in problem areas): Highway Capacity Software (HCS) 2010) is used to determine the year 2020 level of service (LOS) for both roadway segments and intersections. The projected new peak hour (PM) traffic is added to the existing 2012 traffic data for this analysis. This is required to determine if there are any capacity issues related to congestion and delay. LOS "A" through "D" is acceptable. LOS "E" is at capacity or constrained conditions. LOS "F" is failure.

3.6 ***Recommendations*** to mitigate the traffic impacts on the existing roadways and intersections will be included in Traffic Study Update Report (in February 2013).

3.1 *Traffic Data Collection*

Modesto A. Maidique Campus (MMC)

PM peak period turning movement counts (TMCs) were collected at the following University access locations:

- SW 107th Avenue and SW 12th Street
- SW 107th Avenue and SW 16th Street
- SW 107th Avenue and SW 1700 Block (SW 108th Avenue)
- SW 109th Avenue and SW 8th Street
- SW 112th Avenue and SW 8th Street
- SW 117th Avenue and SW 17th Street

The TMCs were collected in September/October 2012 between Tuesday and Thursday during the PM peak periods from 4:00 PM to 6:00 PM. The data collected is included in the Appendix B.

Engineering Center Campus (ECC)

PM peak period TMC's were collected at the following intersections:

- NW 107th Avenue and Engineering Center Entrance (West Entrance)
- W Flagler Street and SW 105th Place (South Entrance)

The TMCs was collected in September/October 2012 between Tuesday and Thursday during the PM peak periods from 4:00 PM to 6:00 PM. The data collected is included in the Appendix B.

Biscayne Bay Campus (BBC)

PM peak period TMCs was collected at the following intersections:

- US 1 (Biscayne Blvd)/NE 151 Street,
- Bay Vista Blvd (NE 151 Street) and FIU entrance (NE 145th Street).

The TMCs was collected in September 2012 between Tuesday and Thursday during the PM peak periods from 4:00 PM to 6:00 PM. The data collected is included in Appendix B. At the US 1/NE 151 Street, we obtained TMC's conducted by Atkins in December 2012 for PM peak. Cross check with Miller Legg data shows that the traffic data numbers are similar. Hence, for analysis purposes we used Miller Legg data at this location.

3.2 *Capacity Analysis for Existing 2012 Traffic Data*

A capacity analysis was conducted using the HCS 2010 software for all the roadway segments and intersections. For this purpose the existing 2012 PM peak hour traffic data was used with existing lane configuration. FIU experiences the highest volume of traffic during the PM peak period as many part-time students commute to/from campus during this period. The level of service (LOS) results obtained is indicative of

the operation and capacity issues. LOS “A” through “D” is acceptable. LOS “E” is at capacity or constrained conditions. LOS “F” is failure.

Modesto A. Maidique Campus (MMC)

The study area includes access roadways and intersections adjacent to the campus. Highway Capacity Software (HCS) 2010 was used to analyze the LOS on each of the study area roadway segments. The existing 2012 PM peak hour LOS for the roadways on campus and within the study area is shown in Table 1. All the roadway segments currently operate above adopted LOS “E”.

Capacity analyses for critical intersections around the campus were performed using HCS 2010. The intersection LOS for the 2012 PM peak hour is shown in Table 2. All locations, with the exception of two (2) intersections, currently satisfy the minimum adopted LOS threshold. The intersections of SW 109th Avenue/SW 8th Street and SW 107th Avenue/SW 16th Street operate at a LOS E (capacity). With future growth and anticipated traffic increase, these intersections could potentially exceed capacity and fail. These locations need to be evaluated for future traffic impacts and capacity improvements.

Table 1 Existing Roadway Segment Level of Service (LOS) Analysis 2012 PM Peak Hour – Modesto A. Maidique Campus

Location	Direction	Lanes (3)	LOS E Capacity (1)	Traffic Volumes (2)	LOS (4)
SW 117th Avenue, S/O SW 17th Street	NB	1	-	540	D
	SB	1	-	877	D
SW 17th Street, E/O SW 117th Avenue	EB	1	-	217	C
	WB	1	-	643	C
SW 117th Avenue ,N/O SW 17th Street	NB	1	-	595	C
	SB	1	-	506	C
SW 8th Street, W/O SW 109th Avenue	EB	3	-	2163	B
	WB	3	-	2333	C
SW 109th Avenue, S/O SW 8th Street	NB	2	-	726	A
	SB	2	-	535	A
SW 8th Street, E/O SW 109th Avenue	EB	3	-	2240	C
	WB	3	-	2038	B
SW 109th Avenue, N/O SW 8th Street	NB	1	-	442	C
	SB	1	-	623	C
SW 8th Street, W/O SW 112th Avenue	EB	3	-	2520	C
	WB	3	-	2967	C
SW 112th Avenue, S/O SW 8th Street	NB	2	-	678	A
	SB	2	-	717	A
SW 8th Street, E/O SW 112th Avenue	EB	3	-	2353	C
	WB	3	-	2839	C
SW 107th Avenue, N/O SW 12th Street	NB	3	-	2170	B
	SB	3	-	2067	B
SW 12th Street , W/O SW 107th Avenue	EB	1	-	745	D
	WB	1	-	542	D
SW 12th Street, E/O SW 107th Avenue	EB	1	-	227	A
	WB	1	-	0	A
SW 107th Avenue, S/O SW 12th Street	NB	3	-	2215	B
	SB	3	-	1941	B
SW 16th Street, W/O SW 107th Avenue	EB	2	-	820	A
	WB	2	-	679	A
SW 16th Street, E/O SW 107th Avenue	EB	2	-	531	A
	WB	2	-	798	A
SW 107th Ave N/O SW 16th Street	NB	3	-	1465	B
	SB	3	-	1571	B
SW 107th Ave S/O SW 16th Street	NB	3	-	1258	A
	SB	3	-	1772	B
SW 108TH Ave, W/O SW 107th Avenue	EB	2	-	97	A
	WB	2	-	116	A
SW 107th Ave S/O SW 108TH Ave	NB	3	-	1613	B
	SB	3	-	1869	B
SW 107th Ave N/O SW 108TH Ave	NB	3	-	1525	B
	SB	3	-	1800	B

(1) For LOS thresholds refer to HCM 2010 for Multi-Lane (HCM Exhibit 14-4, LOS based on density within segment) & Two-Lane highways (HCM Exhibit 15-3, LOS based on percent of free flow speed).
(2) Traffic volumes are based on 2012 PM peak turning movement counts.
(3) Denotes number of through lanes by direction.
(4) From HCS 2010 analysis, see Appendix D.

Table 2 Existing Intersection Level of Service (LOS) Year 2012 PM Peak Hour - Modesto A. Maidique Campus

SIGNALIZED INTERSECTIONS		
	DELAY & LOS (1)	
Location	**Intersection Delay (secs/veh)**	**LOS**
SW 107th Ave and SW 12th St	29.3	C
SW 107th Ave and SW 16th St	65.8	E
SW 107th Ave and SW 8th St (2)	-	-
SW 107th Ave and SW 1700 Block (SW 108th Ave)	9.7	A
SW 109th Ave and SW 8th St	76.1	E (4)
SW 112th Ave and SW 8th St	31.2	C
SW 117th Ave and SW 17th St	32.9	C
SW 112th Ave & University Dr (Unsignalized-2 way stop control) (on campus) (3)	(EB approach delay=228.1) (WB approach delay = 31.1)	F D
University Dr & SW 109th Ave (on campus)	6.1	A

(1) From HCS 2010 analysis, see Appendix C.
(2) Intersection is not analyzed since FDOT is making improvements
(3) Stop control on SW 112th Avenue
(4) Critical movements at LOS "F" are westbound approach, eastbound right and northbound left.

Engineering Center Campus (ECC)

The study area includes access roadways and intersections adjacent to the campus. HCS 2010 was used to analyze the LOS on each of the roadway segments within the study area. All of the roadway segments currently operate at or above adopted levels of service, as shown in Table 3.

HCS 2010 was also used to analyze the intersection LOS. Table 4 summarizes the existing LOS for study area intersections. Analysis results indicate that all study intersections operate at or above adopted levels of service.

Table 3 Existing Roadway Segment Level of Service Analysis PM Peak Hour Engineering Center Campus – Year 2012

Location	Direction	Lanes (3)	LOS E Capacity (1)	Traffic Volumes (2)	LOS (4)
NW 107th Ave (SR 985) S/O EC Entrance	NB	3	-	1281	A
	SB	2	-	1546	C
NW 107th Ave(SR 985) N/O EC Entrance	NB	3	-	1284	A
	SB	3	-	1606	B
W Flagler Street E/O EC Entrance/SW 105 Pl.	EB	3	-	1051	A
	WB	3	-	1203	A
W Flagler St W/O EC Entrance/SW 105 Pl.	EB	3	-	1010	A
	WB	3	-	1223	A

(1) For LOS thresholds refer to HCM 2010 for Multi-Lane (HCM Exhibit 14-4, LOS based on density within segment).
(2) Traffic volumes are based on 2012 PM peak turning movement counts.
(3) Denotes number of through lanes by direction.
(4) From HCS 2010 analysis, see Appendix D.

Table 4 Existing Intersection Level of Service (LOS) Analysis 2012 PM Peak Hour – Engineering Center Campus

SIGNALIZED INTERSECTION			
LOCATION		**DELAY & LOS**	
		Intersection Delay (secs/veh)	**LOS**
SW 105th Pl and W Flagler St (SR 968)		33.8	C
UNSIGNALIZED INTERSECTION			
		Approach Delay (secs/veh)	**LOS**
NW 107th St and EC Entrance	WBR only (Stop Control)	16.4	C
	SBL	14.4	B
	NBL	12.0	B
	EBR only (Stop Control)	12.5	B

Source: From HCS 2010 analysis, Appendix C.

Biscayne Bay Campus (BBC)

The study area includes access roadways and intersections adjacent to the campus. HCS 2010 was used to analyze the LOS on each of the roadway segments within the study area. All of the roadway segments currently operate above the adopted LOS "E" as presented in Table 5.

Table 5 Existing Roadway Segment Level of Service (LOS) Analysis 2012 PM Peak Hour – Biscayne Bay Campus

Location	Direction	Lanes (3)	LOS E Capacity (1)	Traffic Volumes (2)	LOS (4)
Bay Vista Blvd, (NE151st St) N/O NE 145 Street	NB	2	-	311	A
	SB	2	-	256	A
Bay Vista Blvd (NE 151st St) E/O Biscayne Blvd	EB	2	-	580	A
	WB	2	-	782	A
Campus Entrance (NE 145th St) E/O Bay Vista Blvd (NE 151st Street)	EB	1	-	210	B
	WB	1	-	184	B

(1) For LOS thresholds refer to HCM 2010 for Multi-Lane (HCM Exhibit 14-4, LOS based on density within segment) & Two-Lane highways (HCM Exhibit 15-3, LOS based on percent of free flow speed).
(2) Traffic volumes are based on 2012 PM peak turning movement counts.
(3) Denotes number of through lanes by direction.
(4) From HCS 2010 analysis, see Appendix D.

HCS 2010 was also used to analyze the intersection LOS. Table 6 summarizes the existing level of service for study area intersections. Analysis results indicate that the intersection of US 1/Biscayne Boulevard and NE 151st Street is currently operating at LOS F (capacity). With future growth and anticipated traffic increase, the conditions will likely worsen, if no capacity improvements occur. This location needs to be further evaluated for capacity improvements.

Table 6 Existing Intersection Level of Service (LOS) 2012 PM Peak Hour – Biscayne Bay Campus

SIGNALIZED INTERSECTIONS		
	DELAY & LOS	
LOCATION	**Intersection Delay (secs/veh)**	**LOS**
US 1 (Biscayne Blvd) and NE 151st St	159.5	F
UNSIGNALIZED INTERSECTION		
Bay Vista Blvd (NE 151st St) and Campus Entrance (NE 145th Street)	Approach Delay (secs/veh)	LOS
WB Approach (L+R)	8.42	A
NB Approach (2 lane)	8.41	A
SB Approach (1 LT+2 THRU)	10.38	B

Source: From HCS 2010 analysis, see Appendix C.

3.3 *Trip Generation*

For the year 2020, the ITE (Institute of Transportation Engineers) Trip Generation Manual (8th Edition) was utilized for student headcount (land use code 550, page 1033) and for faculty/staff (employees) headcount (land use code 550, page 1039). Trip generation is based on equations or rates and the equations specified on these pages were utilized to compute the PM peak hour trips between 4:00 and 6:00 PM to match the adjacent street traffic peak hour. Tables 7 and 8 summarize the estimated total PM peak hour trips of the student, faculty/staff (employee) and other future traffic generators.

Table 7 Fall 2020 PM Peak Hour Trips by FIU Campuses

University Campus	Fall 2020 Student Headcount (1)	Fall 2020 Faculty/Staff (employees) Headcount (2)	Student+ Faculty/Staff Trips (Veh/hr) 2020 PM Peak Hour (3)	Other future Trips (Veh/hr) 2020 PM Peak Hour (4)	Total 2020 PM Peak Hour Trips (Veh/hr) (5)
Modesto A. Maidique (MMC)	37,719	6,690	9,493	1,204	10,697
Engineering Center (ECC)	2,918	97	705	-	705
Biscayne Bay Campus (BBC)	9,055	397	1,970	347	2,317

(1) From FIU enrollment matrix
(2) Not provided by FIU, Projections calculated based on faculty/staff to student ratio for 2012, and percentage of total faculty/staff (employees) in 2012 which is FTE.
(3) 2020 PM Peak hour trips = trip generation based on student headcount (1) + trip generation based on faculty/staff (employees) headcount (2).
(4) Trip totals from last column of Table 8 for MMC and BBC. No new trips for ECC.
(5) Total 2020 PM Peak Hour Trips = (3)+(4)

Table 8 Fall 2020 PM Peak Hour Trips by FIU Campuses for Other Future Traffic Generators

University Campus	Land Use (ITE Code) (1)	Units	2020 PM Peak Hour Trips (Veh/hr) (3)
Modesto A. Maidique (MMC)	Hotel (310)	150 Rooms	89
Modesto A. Maidique (MMC)	Hotel (310)	50 Employees	65
Modesto A. Maidique (MMC)	Ambulatory care Clinic (630)	14,100 SF	40
Modesto A. Maidique (MMC)	Medical Office Building - MAP-1 (720)	91,200 SF	260
Modesto A. Maidique (MMC)	Medical Office Building - MAP-2 (720)	105,000 SF	295
Modesto A. Maidique (MMC)	Medical Office Building - MAP-3 (720)	142,400 SF	385
Modesto A. Maidique (MMC)	Medical Office Building - MAP-4 (720)	15,700 SF	55
Total MMC trips			**1,204**
Biscayne Bay Campus (BBC)	Magnet High School (530)	1200 students 60 Staff 30 visitors (2) (1.55 trips/visitor – assumed same rate as staff)	156 93 47
Biscayne Bay Campus (BBC)	Royal Caribbean Training Center (assume trips during peak hour) (710)	50 employees 25 visitors (2) (assume same rate as General Office, 0.5 trip/employee)	38
Biscayne Bay Campus (BBC)	Miami Science & Wildlife Museum (assume trips during peak hour)	based on anticipated Museum closing time at 5 PM. Assume 5 buses during PM peak hour (assume 1 trip/bus), 8 visitors (assume 1 trip/visitor)	13
Total BBC trips			**347**

(1) Source: ITE Trip Generation, 8th Edition
(2) No ITE trip generation rates provided and hence assumptions were necessary.
(3) 2020 PM Peak hour trips = trip generation based on units shown in Column 3.

Table 9 Future Traffic Generators (Biscayne Landing) Impacting NE 151 Street – Sole BBC Access – 2020 AM & PM Peak

Proposed Land Use	Land Use (ITE Code) (1)	Units (2)	2020 AM (PM) Peak Hour Trips (Veh/hr) (1)	Traffic Impact on NE 151 Street 2020 AM (PM) Peak Hour Trips (Veh/hr) (3)
Shopping Center	820	1,270,280 SF	690 (3,493)	248 (1,257)
Residential/Condominium/Townhouse	230	3,200 Units	826 (1,031)	297 (371)
Hotel	310	200 Rooms	97 (118)	35 (42)
Total Net New Trips (Veh/hr)			**1,613 (4,642)**	**581 (1,671)**

(1) Source: ITE Trip Generation, 8th Edition
(2) Source: "Traffic Due Diligence Assessment Update" Biscayne Landing Development (dated December 14, 2012), North Miami, Florida
(3) 36% contribution (per (2)) to NE 151 Street traffic

3.4 *Trip Distribution*

Modesto A. Maidique (MMC) and Engineering Center Campuses (ECC)

The Modesto A. Maidique Campus is located within the Miami-Dade County Metropolitan Planning Organization (MPO) Traffic Analysis Zone (TAZ) 983 while Engineering Center is located within TAZ 814. Trip distribution was accomplished using the cardinal directional distribution method, which is currently used in Miami-Dade County. Distribution percentages of each TAZ were obtained from the Department of Planning and Zoning. Tables 9 and 10 show the distribution percentage and trip distribution corresponding to the cardinal direction for the TAZs in which the Modesto A. Maidique campus and the Engineering Center are located.

Table 10 Trip Distribution by Cardinal Direction – Modesto A. Maidique Campus

Cardinal Direction	Percent of Trip Distribution for TAZ 983 (1)	Trip Distribution (Year 2020) (Veh/hr)
NNE	11.2	1,198
ENE	16.91	1,810
ESE	9.12	976
SSE	13.88	1,485
SSW	23.2	2,482
WSW	14.94	1,598
WNW	4.85	519
NNW	5.89	630
TOTAL	100	10,697 (2)

(1) Percent trip distribution for TAZ from Miami-Dade County MPO.
(2) Trip generation computed earlier from ITE Trip Generation Manual, 8th Edition.

Table 11 Trip Distribution by Cardinal Direction – Engineering Center Campus

Cardinal Direction	Percent of Trip Distribution for TAZ 814 (1)	Trip Distribution (Year 2020) (Veh/hr)
NNE	14.49	102
ENE	18.5	130
ESE	14.62	103
SSE	11.97	84
SSW	20.46	144
WSW	10.98	77
WNW	3.90	27
NNW	5.08	36
TOTAL	100	705 (2)

(1) Percent trip distribution for TAZ from Miami-Dade County MPO.
(2) Trip generation computed earlier from ITE Trip Generation Manual, 8th Ed.

3.5 *Traffic Assignment and Capacity Analysis – Year 2020*

The traffic assignment has been documented to establish the project traffic contribution on roadways within one mile of both the MMC and ECC using the concurrency data kept by the Miami-Dade County Public Works Department. The resulting two-way assignment of project traffic along with the percentage of project traffic contribution for each traffic count station is shown in Table 12. A LOS analysis was conducted for each of the roadway segments listed, with the existing lane configuration. Except for the segment along SW 107 Ave, all of them operate within the adopted LOS threshold. A LOS analysis was also conducted for the critical intersections, with the existing lane configuration and the results are shown in Table 13. Three of the critical intersections providing access to the campuses fail.

Table 12 Traffic Impact Assessment – Two Way PM Peak Analysis for Roadway Segments – Modesto A. Maidique and Engineering Center Campus – Year 2020

Roadway	Limits	Station No.	Roadway LOS Standard (7)	2020 PM peak hour two-way traffic (5)	Two-Way Project Traffic (3)	Project Traffic Contribution (2)	2011 Background Traffic (DHV) (One Way) (4)	2011 Background Traffic (Two Way) (6)
SW 127 Ave (1)	SW 7 St to NW 6 St	9770	A	1,754	125	1.1%	NA	1,628
SW 127 Ave (1)	SW 8 St to SW 26 St	9772	B	2,389	34	0.3%	NA	2,355
SW 122 Ave	SW 8 St to SW 26 St	877046	B	2,410	160	1.4%	1,310 (4)	2,250
HEFT	300' N of SW 8 St	2250	D	12,717	137	1.2%	7,208 (4)	12,580
HEFT	1000' N of Bird Rd	2270	F	11,613	308	2.7%	6,478 (4)	11,305
NW 107 Ave	Flagler St to SR 836	1218	D/C	6,600	1,425	12.5%	3,012 (4)	5,175
SW 107 Ave	Flagler St to SW 8 St	2580	F/D	6,441	2,976	26.1%	2,016 (4)	3,465
SW 107 Ave	SW 8 St to SW 24 St	1090	D/C	5,467	787	6.9%	2,723 (4)	4,680
SW 97 Ave (1)	SW 8 St to SW 40 St	9698	D	1,394	239	2.1%	NA	1,154
SW 26 St. (Coral Way) (1)	SW 117 Ave to SW 127 Ave	9130	D	4,633	923	8.1%	NA	3,709
SW 24 St (Coral Way) (1)	SW 107 Ave to SW 117 Ave	9128	C	3,789	57	0.5%	NA	3,732
SW 24 St (Coral Way) (1)	SW 97 Ave to SW 107 Ave	9126	C	3,689	399	3.5%	NA	3,290
SW 8 St	SW 127 Ave to SW 137 Ave	88	D/C	5,438	308	2.7%	2,986 (4)	5,130
SW 8 St	SW 117 Ave to SW 127 Ave	2561	D/C	5,872 (8)	502	4.4%	3,116 (4)	5,355
SW 8 St	SW 107 Ave to SW 117 Ave	90	D/C	5,747 (8)	467	4.1%	3,064 (4)	5,265
W Flagler St (1)	NW 107 Ave to NW 114 Ave	9158	B	3,532	285	2.5%	2,760	3,247
W Flagler St(1)	NW 97 Ave to 107 Ave	9156	B	3,631	604	5.3%	2,572	3,026

(1) Items had no FDOT 2011 volumes, therefore a 20% increase was applied (based on increase on other segments) to the previous background traffic from 2006 Campus Master Plan
(2) Same traffic contribution percentages as 2006 Campus Master Plan
(3) Two way project traffic = (Sum of 2020 PM peak trip generation trips for MMC campus (10,696 veh/hr from Table 10) + EC campus (705 from Table 11) = 11,401 x (2).
(4) Background traffic (directional hourly volume, DHV) computed from 2011 AADT. K factor of 0.09 used. D factor varies and computed based on 2012 TMC's.
(5) 2020 PM peak hour traffic = (3) + (6)
(7) From HCS 2010, see Appendix F. When two LOS are shown, highest LOS is in peak direction of travel.
(8) Includes 15 trips for proposed transit hub at proposed parking garage 6 (PG 6)

Table 13 Traffic Impact Assessment –PM Peak Analysis for Critical Intersections – Modesto A. Maidique and Engineering Center Campuses – Year 2020

SIGNALIZED INTERSECTIONS		
	DELAY & LOS (1)	
Location	Intersection Delay (secs/veh)	LOS
SW 107th Ave and SW 16th St	346.8	F
SW 109th Ave and SW 8th St	127.6	F
SW 112th Ave and SW 8th St	112	F
SW 117th Ave and SW 17th St	72.2	E
SW 105th Pl and W Flagler St (SR 968)	33.0	C

(1) From HCS 2010 analysis, see Appendix G.

Biscayne Bay Campus

The Biscayne Bay Campus is located within the Miami-Dade County Metropolitan Planning Organization (MPO) Traffic Analysis Zone (TAZ) 190.–Trip distribution was accomplished using the cardinal directional distribution method. Distribution percentages of TAZ 190 were obtained from the Department of Planning and Zoning. Table 14 summarizes the distribution percentage and trip distribution corresponding to the cardinal direction of TAZ 190.

Table 14 Trip Distribution by Cardinal Direction – Biscayne Bay Campus

Cardinal Direction	Percent of Trip Distribution for TAZ 190 (1)	Trip Distribution (Year 2020) (Veh/hr)
NNE	10.51	244
ENE	0.15	3
ESE	0.01	0
SSE	4.13	96
SSW	11.31	262
WSW	26.71	619
WNW	23.44	543
NNW	23.73	550
TOTAL	100	2,317 (2)

(1) Percent trip distribution for TAZ from Miami-Dade County MPO.
(2) Trip generation computed earlier from ITE Trip Generation Manual, 8th Edition (See Table 7).

Table 15 depicts the project traffic contribution on all roadway links within one (1) mile of Biscayne Bay Campus using concurrency data kept by the Miami-Dade County Public Works Department. The resulting two-way assignment of project traffic along with the percentage of project traffic contribution for each traffic count station is shown in Table 15. A LOS analysis was conducted for each of the roadway segments listed, with the existing lane configuration. All of them operate within the adopted LOS threshold. A LOS analysis was conducted for the critical intersections, with the

existing lane configuration and the results are shown in Table 16. Both intersections providing access to the campus fail.

Table 15 Traffic Impact Assessment – Two Way PM Peak Analysis for Roadway Segments – Biscayne Bay Campus - Year 2020

Roadway	Limits	Station No.	Roadway LOS Standard (7)	2020 PM peak hour two-way traffic (5)	Two-Way Project Traffic (3)	Project Traffic Contribution (2)	2011 Background Traffic (DHV) (One Way) (4)	2011 Background Traffic (Two Way) (6)
West Dixie Hwy	NE 16 Ave to NE 163 St	531	A	1,370	2	0.1%	754 (4)	1,368
Biscayne Blvd	NE 135 St to NE 163 St	5219	C	5,621	86	3.7%	3,050 (4)	5,535
Biscayne Blvd	NE 121 St to NE 135 St	524	B	3,507	42	1.8%	1,909 (4)	3,465
NE 135th St	NE 12 Ave to Biscayne Blvd	1026	B/A	1,916	188	8.1%	952 (4)	1,728
NE 151 St/Bay Vista Blvd	Biscayne Blvd to East of Biscayne Landing entrance	NA	C	3,821 (8)	788	34.0%	NA	1,362 (1)
NE 151 St/Bay Vista Blvd	East of Biscayne Landing entrance to Biscayne Bay Campus Entrance	NA	B	2,150	788	34.0%	NA	1,362 (1)
Bay Vista Blvd	South of Golden Panther Dr to New Magnet School Entrance	NA	C	507	293 (Magnet School) + 78 (9)	NA	NA	136 (9)

(1) Obtained from 2012 TMCs at US 1 (Biscayne Blvd) & NE 151 St.
(2) Same contribution as 2006 Campus Master Plan
(3) Two way project traffic = (2020 PM peak trip generation trips for BC campus, i.e. 2,293, from Table 14) x (2).
(4) Background traffic (directional hourly volume, DHV) computed from 2011 AADT. K factor of 0.09 used. D factor varies and computed based on 2012 TMC's.
(5) 2020 PM peak hour traffic = (3) + (6)
(7) From HCS 2010, see Appendix F. When two LOS are shown, highest LOS is in peak direction of travel.
(8) Includes 2020 traffic from Biscayne Landing (see Table 9) =1,362 + 788 + 1,671 = 3,821
(9) 10 percent of traffic shown in the row above it.

Table 16 Traffic Impact Assessment –PM Peak Analysis for Critical Intersections – Biscayne Bay Campus– Year 2020

SIGNALIZED INTERSECTIONS		
	DELAY & LOS	
LOCATION	**Intersection Delay (secs/veh)**	**LOS**
US 1 (Biscayne Blvd) and NE 151st St (1)	622.8	F
UNSIGNALIZED INTERSECTION		
Bay Vista Blvd (NE 151st St) and Campus Entrance (NE 145th Street) (2)	Approach Delay (secs/veh)	LOS
WB Approach (L+R)	360.77	F
NB Approach (2 lane)	55.61	F
SB Approach (1 LT+2 THRU)	122.89	F
Intersection Delay = F (188.3 secs/veh)		

Source: From HCS 2010 analysis, see Appendix G.

(1) In addition to future FIU traffic, includes future traffic from Biscayne Landings Development.

(2) In addition to future FIU traffic, includes trips for Magnet School, Royal Caribbean & Museum.

3.6 *Recommendations*

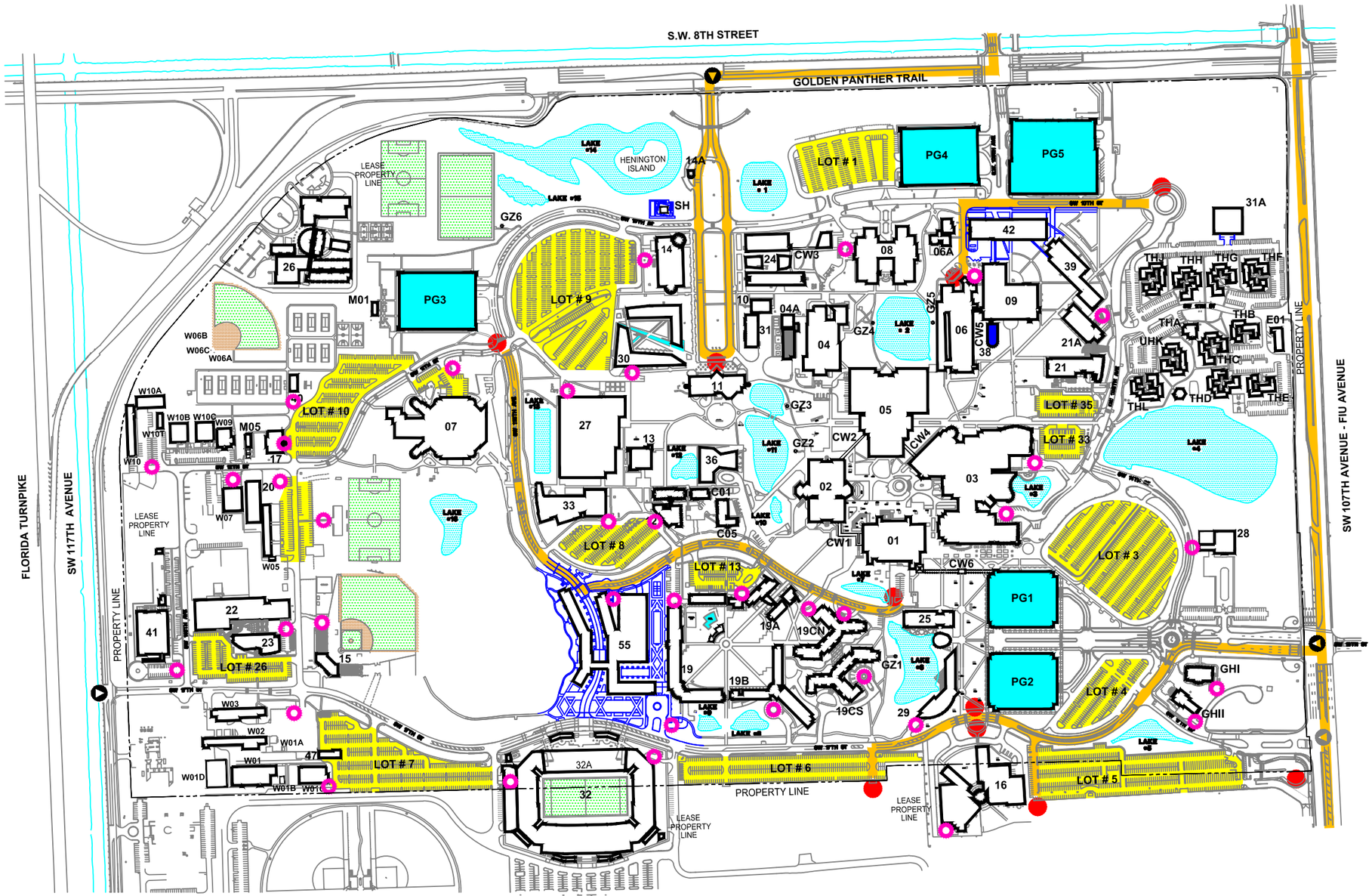
Based on our capacity analysis for years 2012 and 2020, several intersections providing access to the MMC and BBC fail during the PM peak hour. Capacity improvements will be necessary at these intersections in order to improve their operation. A qualitative assessment and recommendations will be included in Traffic Study Update Concept Report.

APPENDIX A

FIGURE 1: Location Map
Modesto A. Maidique Campus (MMC)

FIGURE 2: Location Map
Engineering Center (EC)

FIGURE 3: Location Map
Biscayne Bay Campus (BBC)



MODESTO A. MAIDIQUE CAMPUS

LEGEND

- Transit Route
- Parking Garages
- Surface Parking Lots
- Service/Loading Area
- Transit Stop

KEY MAP

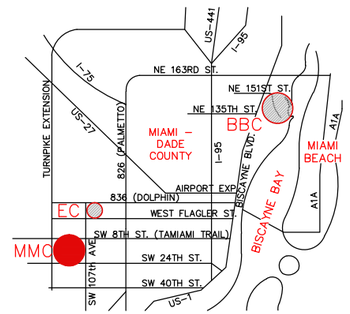


FIGURE 1
Location Map
Modesto A. Maidique Campus

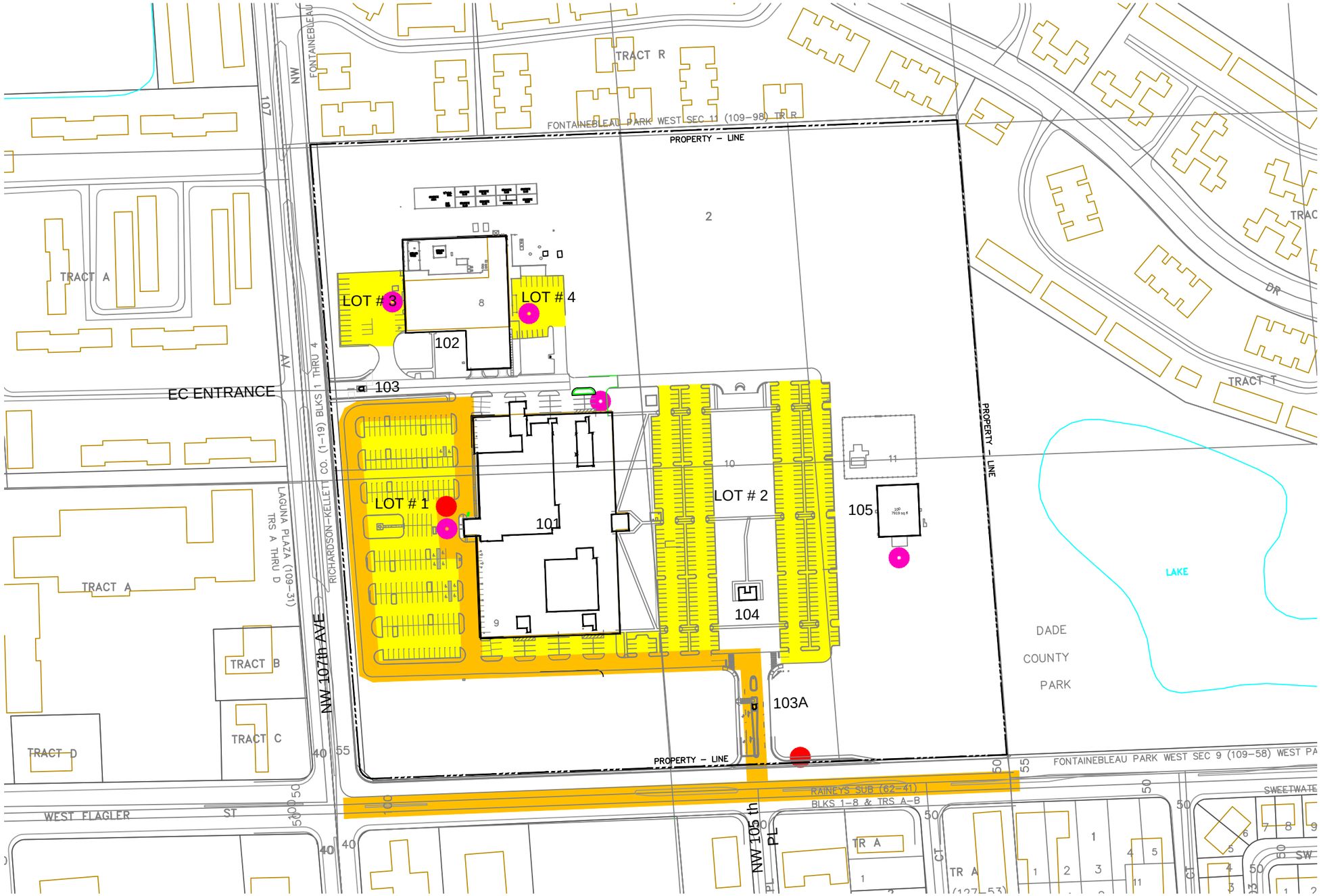
FLORIDA INTERNATIONAL UNIVERSITY

Campus Master Plan - March 2010

0 250 500 1000

PERKINS + WILL

MILLER LEGG



ENGINEERING CENTER

LEGEND

- Transit Route
- Surface Parking Lots
- Service/Loading Area
- Transit Stop

KEY MAP

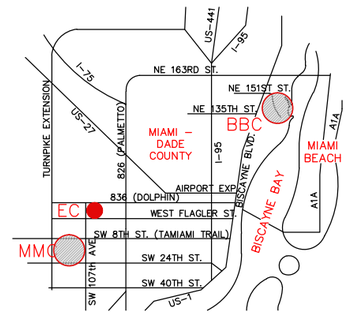


FIGURE 2
Location Map
Engineering Center
Campus

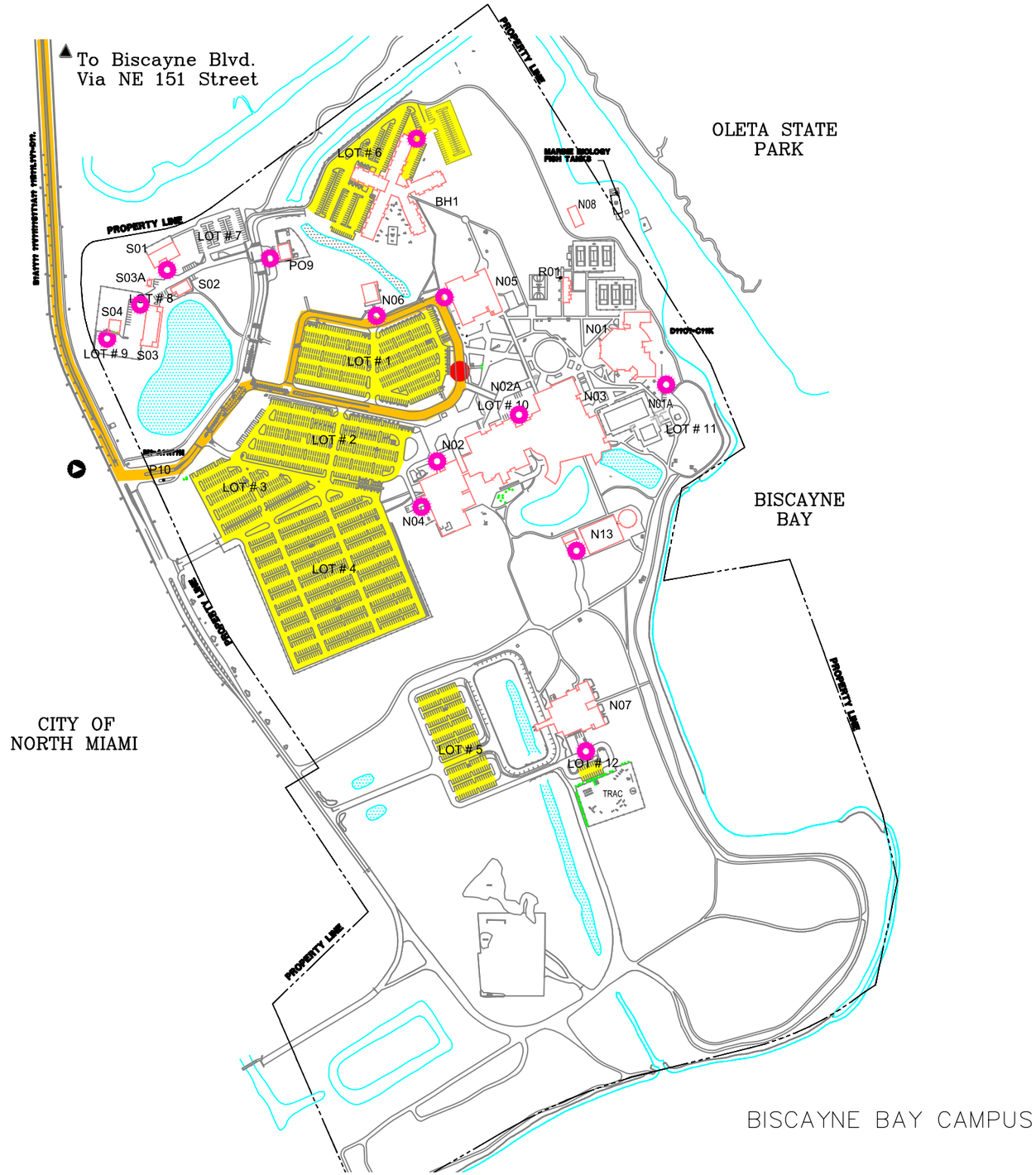
FLORIDA INTERNATIONAL UNIVERSITY

Campus Master Plan - March 2010

0 100 200 400

PERKINS + WILL

MILLER LEGG



LEGEND

- Proposed Building
- Transit Route
- Surface Parking
- Service/Loading Area
- Transit Stop

KEY MAP

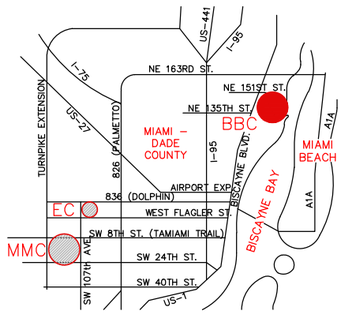


FIGURE 3
Location Map
Biscayne Bay Campus

FLORIDA INTERNATIONAL UNIVERSITY

Campus Master Plan–March 2010

0 250 500 1000

PERKINS + WILL

MILLER LEGG

APPENDIX B

Traffic Data Collection: 2012 PM peak hour Turning Movement Counts (TMCs) (MMC)

Traffic Data Collection: 2012 PM peak hour Turning Movement Counts (TMCs) (EC)

Traffic Data Collection: 2012 PM peak hour Turning Movement Counts (TMCs) (BBC)

SW 117 AVENUE & SW 17 STREET

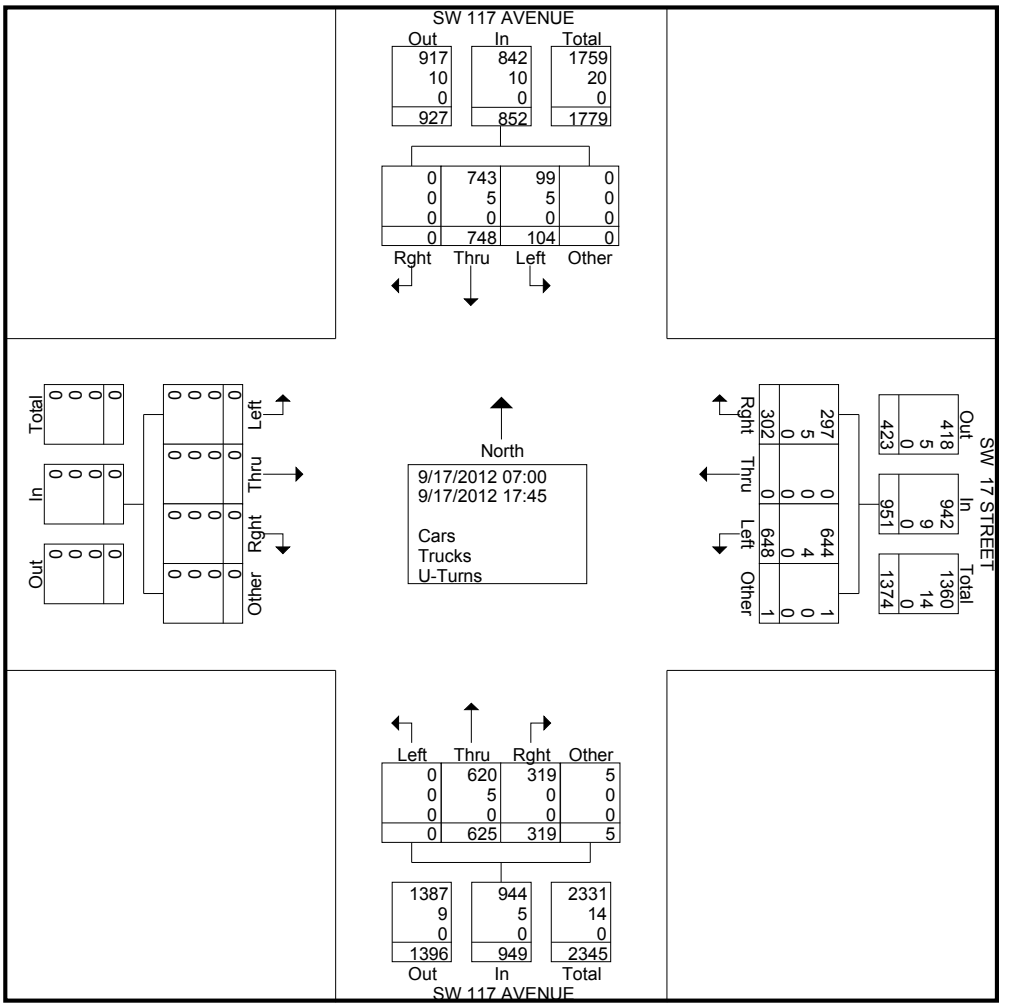
File Name : Not Named 1
Site Code : 00000000
Start Date : 9/18/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	SW 117 AVENUE Northbound				SW 117 AVENUE Southbound				Eastbound				SW 17 STREET Westbound				
Start Time	Left	Thru	Rght	Other	Left	Thru	Rght	Other	Left	Thru	Rght	Other	Left	Thru	Rght	Other	Int. Total
*** BREAK ***																	
16:00	0	26	21	2	6	55	0	0	0	0	0	0	18	0	14	0	142
16:15	0	69	39	2	9	60	0	0	0	0	0	0	53	0	27	0	259
16:30	0	78	64	0	13	85	0	0	0	0	0	0	64	0	24	0	328
16:45	0	97	67	1	14	98	0	0	0	0	0	0	62	0	41	0	380
Total	0	270	191	5	42	298	0	0	0	0	0	0	197	0	106	0	1109
17:00	0	97	33	0	17	113	0	0	0	0	0	0	111	0	48	1	420
17:15	0	87	24	0	11	101	0	0	0	0	0	0	144	0	51	0	418
17:30	0	104	31	0	20	132	0	0	0	0	0	0	116	0	70	0	473
17:45	0	67	40	0	14	104	0	0	0	0	0	0	80	0	27	0	332
Total	0	355	128	0	62	450	0	0	0	0	0	0	451	0	196	1	1643
Grand Total	0	625	319	5	104	748	0	0	0	0	0	0	648	0	302	1	2752
Apprch %	0	65.9	33.6	0.5	12.2	87.8	0	0	0	0	0	0	68.1	0	31.8	0.1	
Total %	0	22.7	11.6	0.2	3.8	27.2	0	0	0	0	0	0	23.5	0	11	0	
Cars	0	620	319	5	99	743	0	0	0	0	0	0	644	0	297	1	2728
% Cars	0	99.2	100	100	95.2	99.3	0	0	0	0	0	0	99.4	0	98.3	100	99.1
Trucks	0	5	0	0	5	5	0	0	0	0	0	0	4	0	5	0	24
% Trucks	0	0.8	0	0	4.8	0.7	0	0	0	0	0	0	0.6	0	1.7	0	0.9
U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SW 117 AVENUE & SW 17 STREET

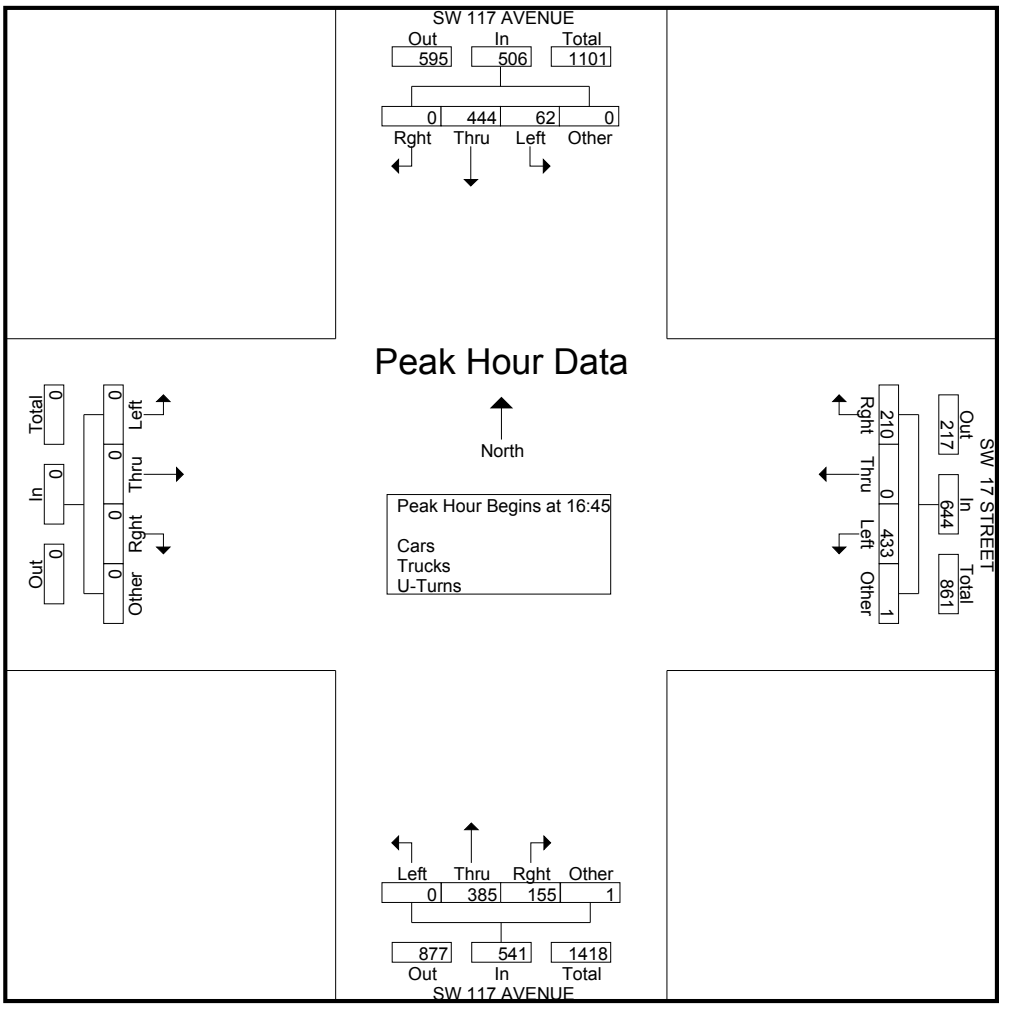
File Name : Not Named 1
Site Code : 00000000
Start Date : 9/18/2012
Page No : 2



SW 117 AVENUE & SW 17 STREET

File Name : Not Named 1
Site Code : 00000000
Start Date : 9/18/2012
Page No : 3

	SW 117 AVENUE Northbound					SW 117 AVENUE Southbound					Eastbound					SW 17 STREET Westbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	0	97	**67**	**1**	**165**	14	98	0	0	112	0	0	0	0	0	62	0	41	0	103	380
17:00	0	97	33	0	130	17	113	0	0	130	0	0	0	0	0	111	0	48	**1**	160	420
17:15	0	87	24	0	111	11	101	0	0	112	0	0	0	0	0	**144**	0	51	0	**195**	418
17:30	0	**104**	31	0	135	**20**	**132**	0	0	**152**	0	0	0	0	0	116	0	**70**	0	186	**473**
Total Volume	0	385	155	1	541	62	444	0	0	506	0	0	0	0	0	433	0	210	1	644	1691
% App. Total	0	71.2	28.7	0.2		12.3	87.7	0	0		0	0	0	0		67.2	0	32.6	0.2		
PHF	.000	.925	.578	.250	.820	.775	.841	.000	.000	.832	.000	.000	.000	.000	.000	.752	.000	.750	.250	.826	.894



SW 107 AVENUE AND SW 108 AVENUE

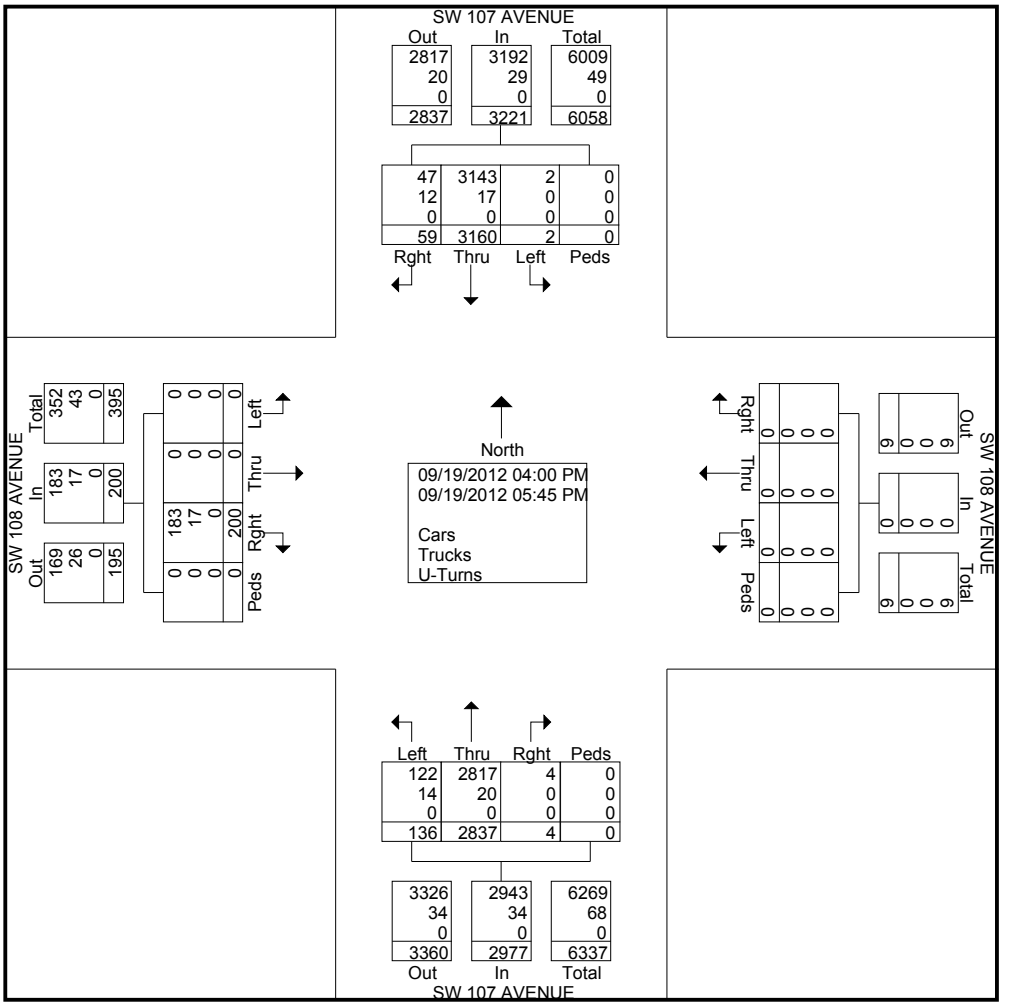
File Name : SW 107 Avenue and SW 108 Avenue
Site Code : 00000000
Start Date : 09/19/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	SW 107 AVENUE Northbound				SW 107 AVENUE Southbound				SW 108 AVENUE Eastbound				SW 108 AVENUE Westbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
04:00 PM	14	252	4	0	0	306	6	0	0	0	24	0	0	0	0	0	606
04:15 PM	7	324	0	0	0	351	4	0	0	0	24	0	0	0	0	0	710
04:30 PM	28	330	0	0	0	400	5	0	0	0	20	0	0	0	0	0	783
04:45 PM	25	404	0	0	2	444	9	0	0	0	10	0	0	0	0	0	894
Total	74	1310	4	0	2	1501	24	0	0	0	78	0	0	0	0	0	2993
05:00 PM	19	389	0	0	0	482	6	0	0	0	47	0	0	0	0	0	943
05:15 PM	16	402	0	0	0	444	8	0	0	0	20	0	0	0	0	0	890
05:30 PM	11	301	0	0	0	362	10	0	0	0	32	0	0	0	0	0	716
05:45 PM	16	435	0	0	0	371	11	0	0	0	23	0	0	0	0	0	856
Total	62	1527	0	0	0	1659	35	0	0	0	122	0	0	0	0	0	3405
Grand Total	136	2837	4	0	2	3160	59	0	0	0	200	0	0	0	0	0	6398
Apprch %	4.6	95.3	0.1	0	0.1	98.1	1.8	0	0	0	100	0	0	0	0	0	
Total %	2.1	44.3	0.1	0	0	49.4	0.9	0	0	0	3.1	0	0	0	0	0	
Cars	122	2817	4	0	2	3143	47	0	0	0	183	0	0	0	0	0	6318
% Cars	89.7	99.3	100	0	100	99.5	79.7	0	0	0	91.5	0	0	0	0	0	98.7
Trucks	14	20	0	0	0	17	12	0	0	0	17	0	0	0	0	0	80
% Trucks	10.3	0.7	0	0	0	0.5	20.3	0	0	0	8.5	0	0	0	0	0	1.3
U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SW 107 AVENUE AND SW 108 AVENUE

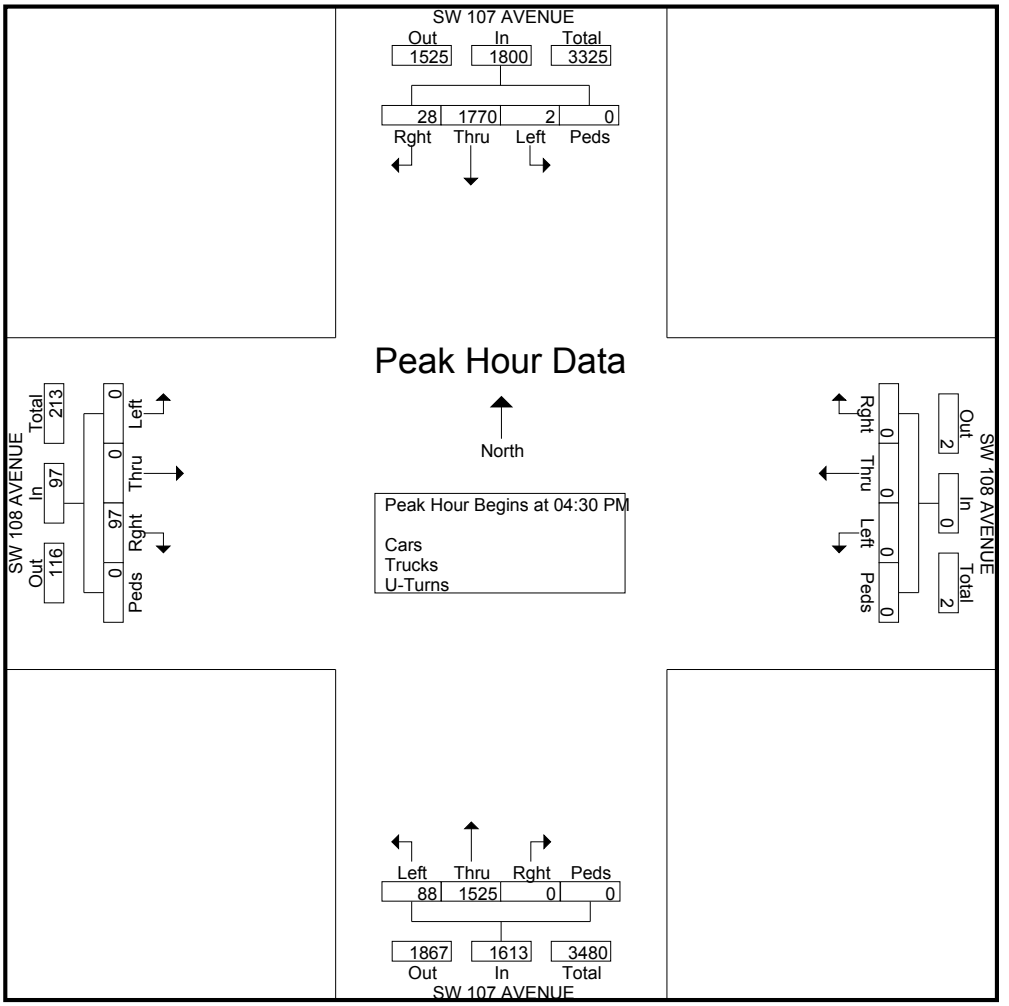
File Name : SW 107 Avenue and SW 108 Avenue
Site Code : 00000000
Start Date : 09/19/2012
Page No : 2



SW 107 AVENUE AND SW 108 AVENUE

File Name : SW 107 Avenue and SW 108 Avenue
Site Code : 00000000
Start Date : 09/19/2012
Page No : 3

	SW 107 AVENUE Northbound					SW 107 AVENUE Southbound					SW 108 AVENUE Eastbound					SW 108 AVENUE Westbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**28**	330	0	0	358	0	400	5	0	405	0	0	20	0	20	0	0	0	0	0	783
04:45 PM	25	**404**	0	0	**429**	**2**	444	**9**	0	455	0	0	10	0	10	0	0	0	0	0	894
05:00 PM	19	389	0	0	408	0	**482**	6	0	**488**	0	0	**47**	0	**47**	0	0	0	0	0	**943**
05:15 PM	16	402	0	0	418	0	444	8	0	452	0	0	20	0	20	0	0	0	0	0	890
Total Volume	88	1525	0	0	1613	2	1770	28	0	1800	0	0	97	0	97	0	0	0	0	0	3510
% App. Total	5.5	94.5	0	0		0.1	98.3	1.6	0		0	0	100	0		0	0	0	0		
PHF	.786	.944	.000	.000	.940	.250	.918	.778	.000	.922	.000	.000	.516	.000	.516	.000	.000	.000	.000	.000	.931



SW 107 AVENUE & SW 16 STREET

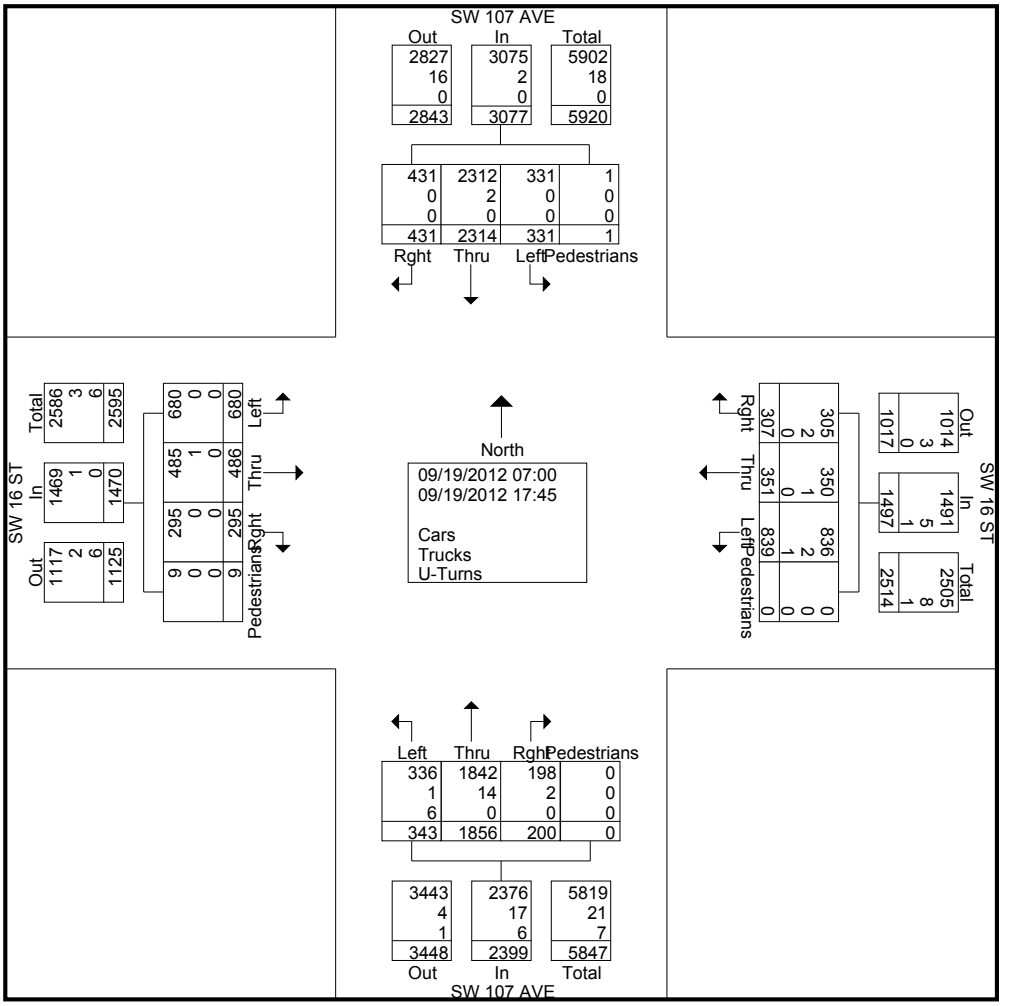
File Name : Not Named 1
Site Code : F I U
Start Date : 09/19/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	SW 107 AVE Northbound				SW 107 AVE Southbound				SW 16 ST Eastbound				SW 16 ST Westbound				
Start Time	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Int. Total
*** BREAK ***																	
16:00	37	204	14	0	47	326	40	0	74	48	26	0	81	44	42	0	983
16:15	50	241	20	0	38	388	99	1	87	59	37	9	79	44	30	0	1182
16:30	66	200	20	0	24	255	58	0	89	90	51	0	91	67	33	0	1044
16:45	54	222	26	0	17	270	87	0	86	39	27	0	126	48	44	0	1046
Total	207	867	80	0	126	1239	284	1	336	236	141	9	377	203	149	0	4255
17:00	35	273	51	0	57	244	34	0	109	90	56	0	148	37	51	0	1185
17:15	41	230	22	0	52	269	23	0	75	61	32	0	113	37	42	0	997
17:30	20	276	28	0	45	300	54	0	79	61	30	0	95	29	30	0	1047
17:45	40	210	19	0	51	262	36	0	81	38	36	0	106	45	35	0	959
Total	136	989	120	0	205	1075	147	0	344	250	154	0	462	148	158	0	4188
Grand Total	343	1856	200	0	331	2314	431	1	680	486	295	9	839	351	307	0	8443
Apprch %	14.3	77.4	8.3	0	10.8	75.2	14	0	46.3	33.1	20.1	0.6	56	23.4	20.5	0	
Total %	4.1	22	2.4	0	3.9	27.4	5.1	0	8.1	5.8	3.5	0.1	9.9	4.2	3.6	0	
Cars	336	1842	198	0	331	2312	431	1	680	485	295	9	836	350	305	0	8411
% Cars	98	99.2	99	0	100	99.9	100	100	100	99.8	100	100	99.6	99.7	99.3	0	99.6
Trucks	1	14	2	0	0	2	0	0	0	1	0	0	2	1	2	0	25
% Trucks	0.3	0.8	1	0	0	0.1	0	0	0	0.2	0	0	0.2	0.3	0.7	0	0.3
U-Turns	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7
% U-Turns	1.7	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1

SW 107 AVENUE & SW 16 STREET

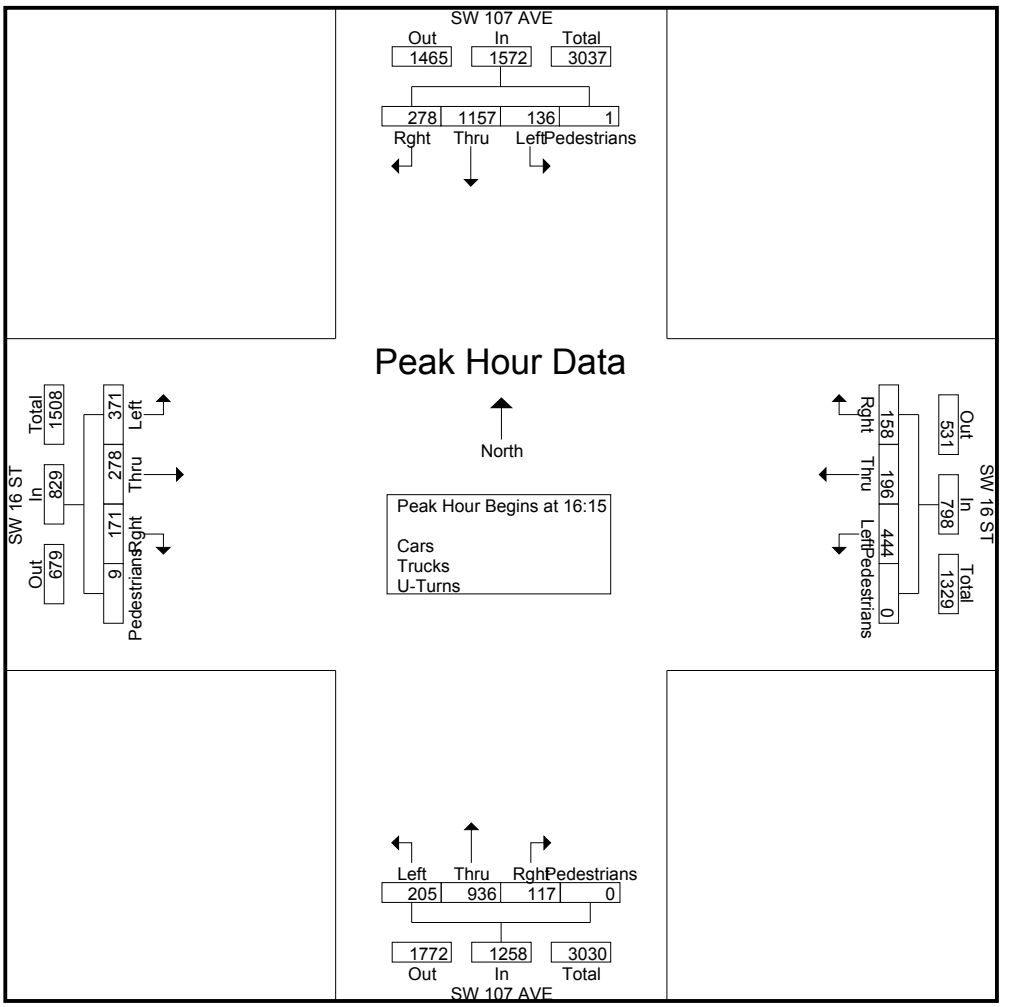
File Name : Not Named 1
Site Code : F I U
Start Date : 09/19/2012
Page No : 2



SW 107 AVENUE & SW 16 STREET

File Name : Not Named 1
Site Code : F I U
Start Date : 09/19/2012
Page No : 3

	SW 107 AVE Northbound					SW 107 AVE Southbound					SW 16 ST Eastbound					SW 16 ST Westbound					
Start Time	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	50	241	20	0	311	38	**388**	**99**	**1**	**526**	87	59	37	**9**	192	79	44	30	0	153	1182
16:30	**66**	200	20	0	286	24	255	58	0	337	89	**90**	51	0	230	91	**67**	33	0	191	1044
16:45	54	222	26	0	302	17	270	87	0	374	86	39	27	0	152	126	48	44	0	218	1046
17:00	35	**273**	**51**	0	**359**	**57**	244	34	0	335	**109**	90	**56**	0	**255**	**148**	37	**51**	0	**236**	**1185**
Total Volume	205	936	117	0	1258	136	1157	278	1	1572	371	278	171	9	829	444	196	158	0	798	4457
% App. Total	16.3	74.4	9.3	0		8.7	73.6	17.7	0.1		44.8	33.5	20.6	1.1		55.6	24.6	19.8	0		
PHF	.777	.857	.574	.000	.876	.596	.745	.702	.250	.747	.851	.772	.763	.250	.813	.750	.731	.775	.000	.845	.940



SW 8 STREET AND SW 112 AVENUE

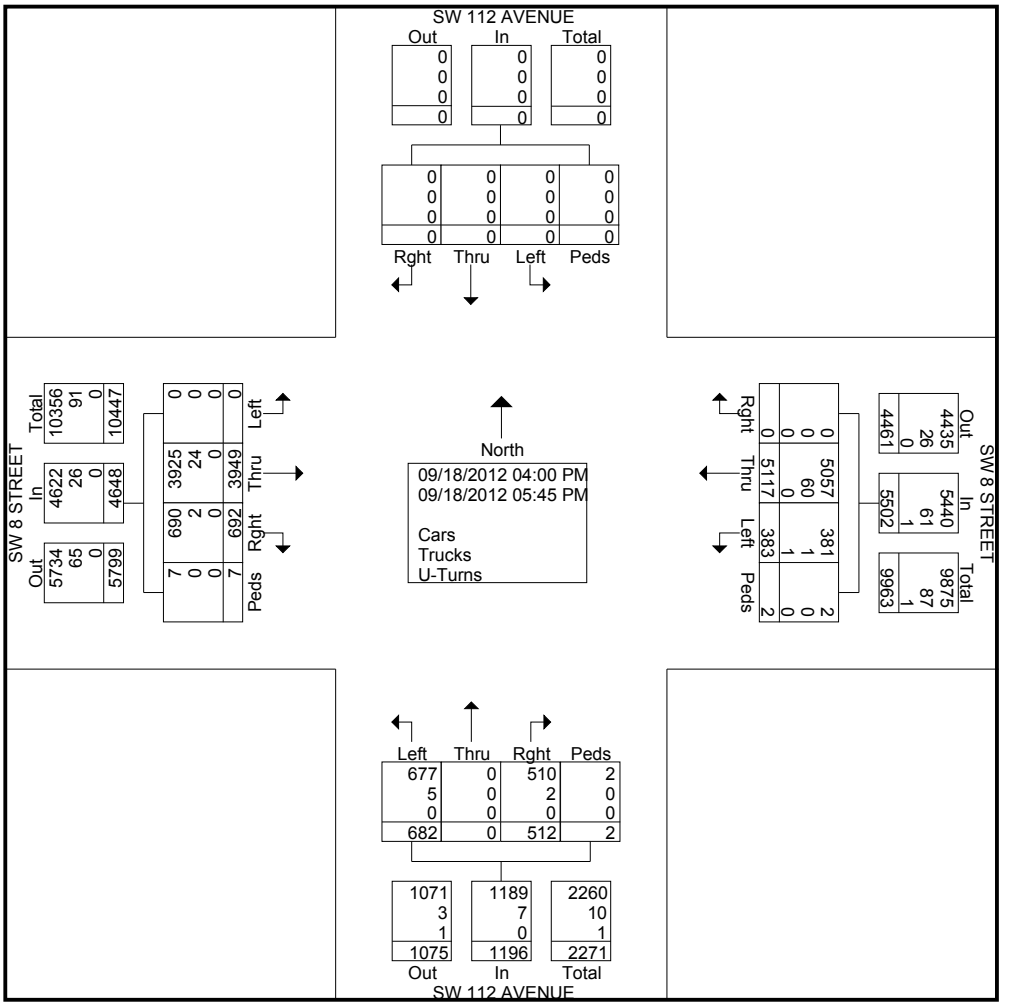
File Name : SW 8 Street and SW 112 Avenue
Site Code : 00000000
Start Date : 09/18/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	SW 112 AVENUE Northbound				SW 8 STREET Eastbound				SW 8 STREET Westbound				SW 112 AVENUE Southbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
04:00 PM	81	0	74	2	0	564	35	0	40	690	0	0	0	0	0	0	1486
04:15 PM	102	0	91	0	0	576	113	0	33	664	0	0	0	0	0	0	1579
04:30 PM	79	0	82	0	0	487	169	1	79	617	0	1	0	0	0	0	1515
04:45 PM	109	0	60	0	0	419	157	5	91	625	0	0	0	0	0	0	1466
Total	371	0	307	2	0	2046	474	6	243	2596	0	1	0	0	0	0	6046
05:00 PM	122	0	55	0	0	433	42	0	54	573	0	1	0	0	0	0	1280
05:15 PM	71	0	49	0	0	527	49	1	23	564	0	0	0	0	0	0	1284
05:30 PM	62	0	56	0	0	497	69	0	27	672	0	0	0	0	0	0	1383
05:45 PM	56	0	45	0	0	446	58	0	36	712	0	0	0	0	0	0	1353
Total	311	0	205	0	0	1903	218	1	140	2521	0	1	0	0	0	0	5300
Grand Total	682	0	512	2	0	3949	692	7	383	5117	0	2	0	0	0	0	11346
Apprch %	57	0	42.8	0.2	0	85	14.9	0.2	7	93	0	0	0	0	0	0	
Total %	6	0	4.5	0	0	34.8	6.1	0.1	3.4	45.1	0	0	0	0	0	0	
Cars	677	0	510	2	0	3925	690	7	381	5057	0	2	0	0	0	0	11251
% Cars	99.3	0	99.6	100	0	99.4	99.7	100	99.5	98.8	0	100	0	0	0	0	99.2
Trucks	5	0	2	0	0	24	2	0	1	60	0	0	0	0	0	0	94
% Trucks	0.7	0	0.4	0	0	0.6	0.3	0	0.3	1.2	0	0	0	0	0	0	0.8
U-Turns	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
% U-Turns	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0

SW 8 STREET AND SW 112 AVENUE

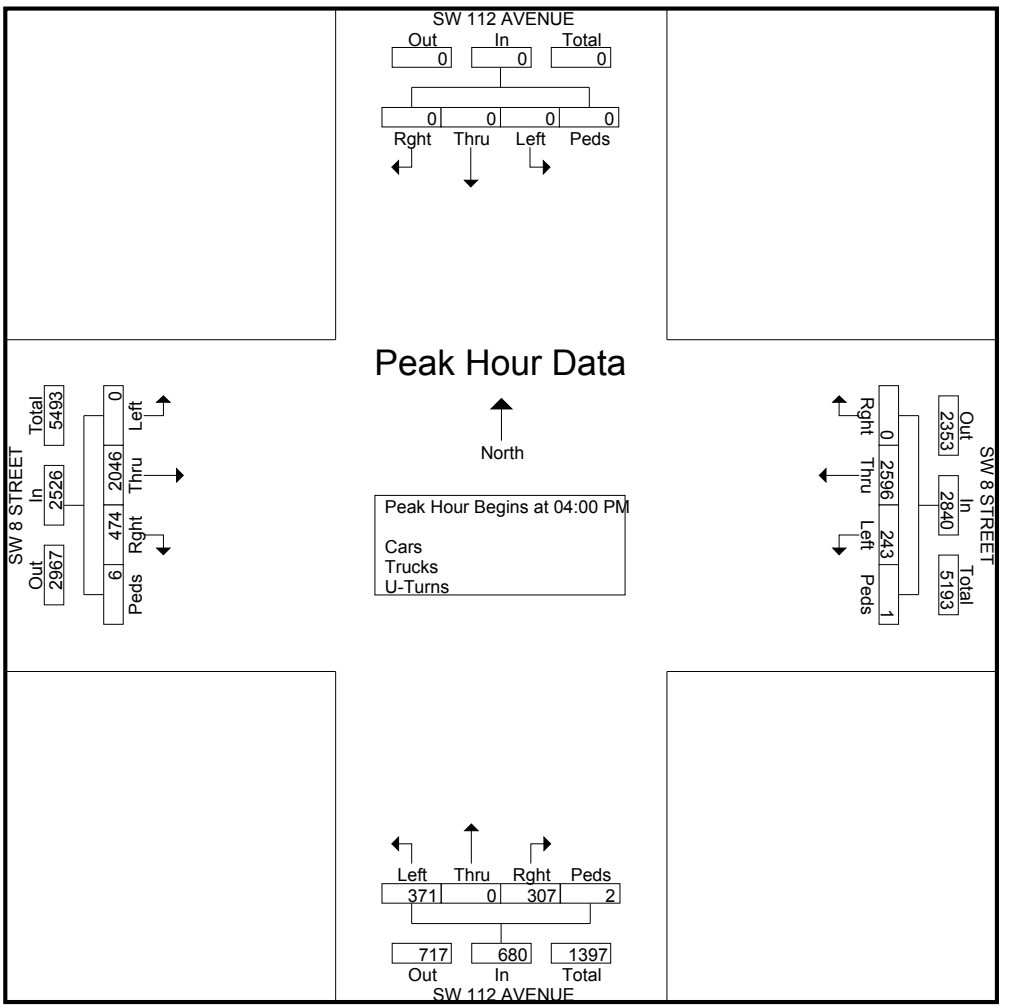
File Name : SW 8 Street and SW 112 Avenue
Site Code : 00000000
Start Date : 09/18/2012
Page No : 2



SW 8 STREET AND SW 112 AVENUE

File Name : SW 8 Street and SW 112 Avenue
Site Code : 00000000
Start Date : 09/18/2012
Page No : 3

	SW 112 AVENUE Northbound					SW 8 STREET Eastbound					SW 8 STREET Westbound					SW 112 AVENUE Southbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	81	0	74	**2**	157	0	564	35	0	599	40	**690**	0	0	**730**	0	0	0	0	0	1486
04:15 PM	102	0	**91**	0	**193**	0	**576**	113	0	**689**	33	664	0	0	697	0	0	0	0	0	**1579**
04:30 PM	79	0	82	0	161	0	487	**169**	1	657	79	617	0	**1**	697	0	0	0	0	0	1515
04:45 PM	**109**	0	60	0	169	0	419	157	**5**	581	**91**	625	0	0	716	0	0	0	0	0	1466
Total Volume	371	0	307	2	680	0	2046	474	6	2526	243	2596	0	1	2840	0	0	0	0	0	6046
% App. Total	54.6	0	45.1	0.3		0	81	18.8	0.2		8.6	91.4	0	0		0	0	0	0		
PHF	.851	.000	.843	.250	.881	.000	.888	.701	.300	.917	.668	.941	.000	.250	.973	.000	.000	.000	.000	.000	.957



SW 8 STREET AND SW 109 AVENUE

File Name : SW 8 Street and SW 109 Avenue
Site Code : 00000000
Start Date : 09/18/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	SW 109 AVENUE Northbound				SW 109 AVENUE Southbound				SW 8 STREET Eastbound				SW 8 STREET Westbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
04:00 PM	68	16	41	3	52	22	39	1	82	362	29	0	30	295	0	0	1040
04:15 PM	84	12	45	4	56	18	36	0	43	442	39	0	56	295	0	0	1130
04:30 PM	63	23	47	0	36	18	61	0	43	400	81	0	71	373	9	0	1225
04:45 PM	80	22	41	3	60	26	93	0	24	466	74	0	122	410	16	0	1437
Total	295	73	174	10	204	84	229	1	192	1670	223	0	279	1373	25	0	4832
05:00 PM	89	30	72	0	53	33	61	0	56	477	22	1	84	285	19	0	1282
05:15 PM	97	58	66	6	45	3	80	0	59	448	27	0	59	436	21	1	1406
05:30 PM	86	42	43	2	62	15	92	0	74	407	29	0	41	524	21	3	1441
05:45 PM	95	33	53	2	59	10	97	0	100	393	51	0	100	418	13	0	1424
Total	367	163	234	10	219	61	330	0	289	1725	129	1	284	1663	74	4	5553
Grand Total	662	236	408	20	423	145	559	1	481	3395	352	1	563	3036	99	4	10385
Apprch %	49.9	17.8	30.8	1.5	37.5	12.9	49.6	0.1	11.4	80.3	8.3	0	15.2	82	2.7	0.1	
Total %	6.4	2.3	3.9	0.2	4.1	1.4	5.4	0	4.6	32.7	3.4	0	5.4	29.2	1	0	
Cars	658	234	401	20	419	140	554	1	475	3363	351	1	553	3012	99	4	10285
% Cars	99.4	99.2	98.3	100	99.1	96.6	99.1	100	98.8	99.1	99.7	100	98.2	99.2	100	100	99
Trucks	4	2	7	0	4	5	5	0	6	32	1	0	6	24	0	0	96
% Trucks	0.6	0.8	1.7	0	0.9	3.4	0.9	0	1.2	0.9	0.3	0	1.1	0.8	0	0	0.9
U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
% U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0

SW 8 STREET AND SW 109 AVENUE

File Name : SW 8 Street and SW 109 Avenue
Site Code : 00000000
Start Date : 09/18/2012
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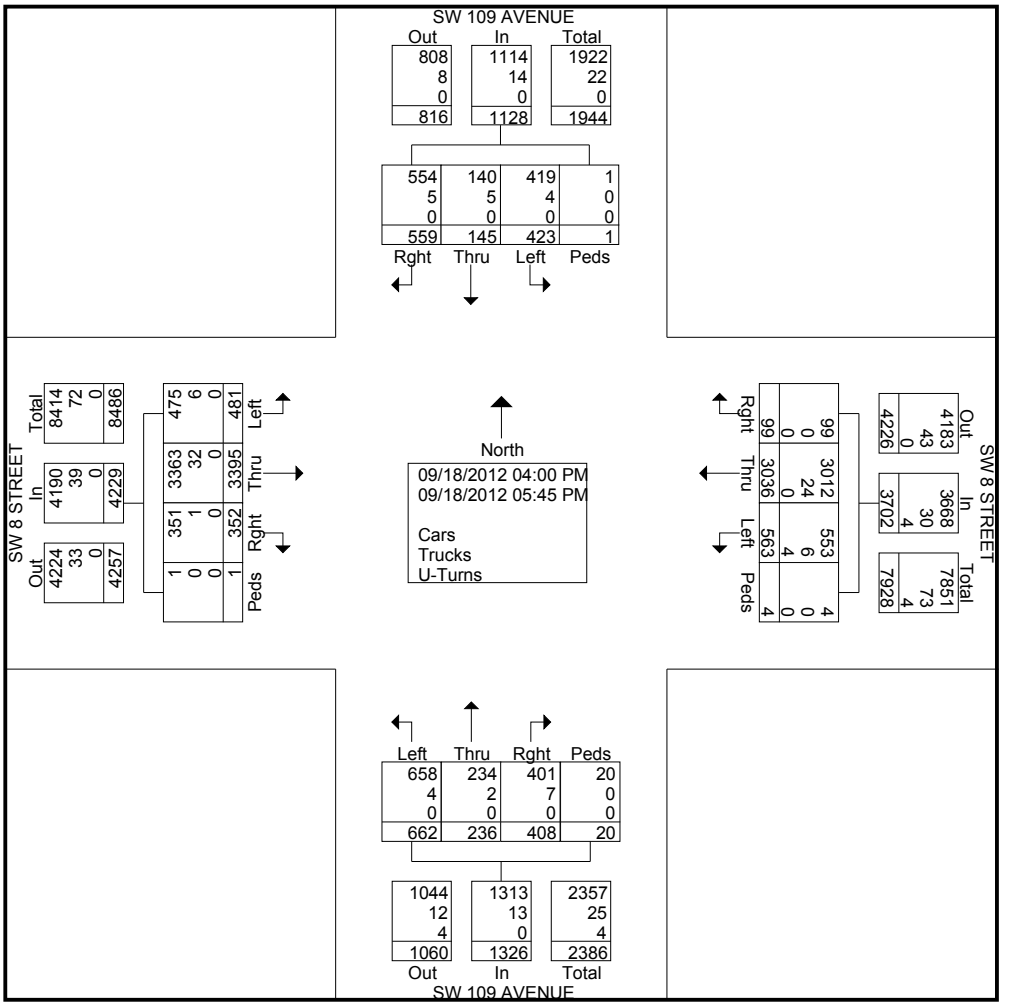
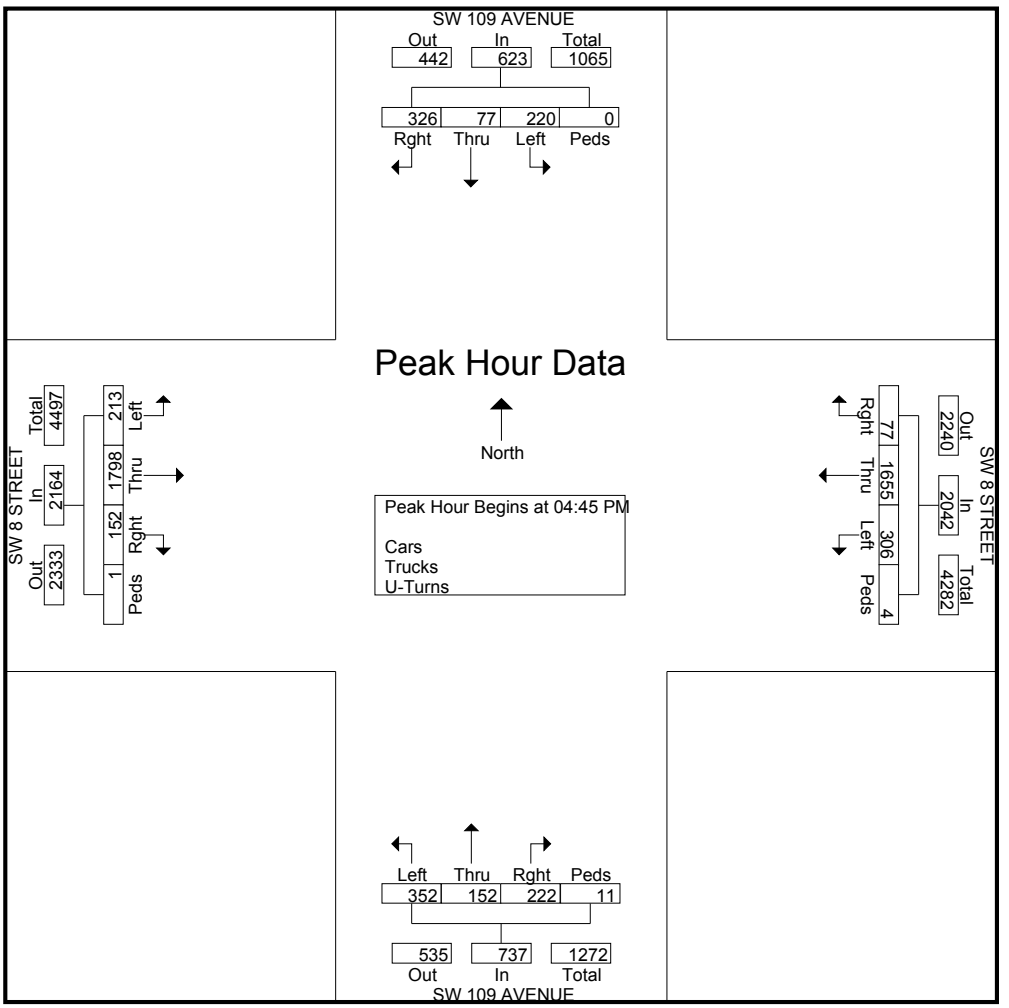


SW 8 STREET AND SW 109 AVENUE

File Name : SW 8 Street and SW 109 Avenue
Site Code : 00000000
Start Date : 09/18/2012
Page No : 3

	SW 109 AVENUE Northbound					SW 109 AVENUE Southbound					SW 8 STREET Eastbound					SW 8 STREET Westbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	80	22	41	3	146	60	26	**93**	0	**179**	24	466	**74**	0	**564**	**122**	410	16	0	548	1437
05:00 PM	89	30	**72**	0	191	53	**33**	61	0	147	56	**477**	22	**1**	556	84	285	19	0	388	1282
05:15 PM	**97**	**58**	66	**6**	**227**	45	3	80	0	128	59	448	27	0	534	59	436	**21**	1	517	1406
05:30 PM	86	42	43	2	173	**62**	15	92	0	169	**74**	407	29	0	510	41	**524**	21	**3**	**589**	**1441**
Total Volume	352	152	222	11	737	220	77	326	0	623	213	1798	152	1	2164	306	1655	77	4	2042	5566
% App. Total	47.8	20.6	30.1	1.5		35.3	12.4	52.3	0		9.8	83.1	7	0		15	81	3.8	0.2		
PHF	.907	.655	.771	.458	.812	.887	.583	.876	.000	.870	.720	.942	.514	.250	.959	.627	.790	.917	.333	.867	.966



SW 107 AVENUE & SW 12 STREET

File Name : SW 107 AVENUE & SW 12 STREET
Site Code : 00000000
Start Date : 09/19/2012
Page No : 1

Groups Printed- cars - trucks - turns

	SW 107 AVENUE Northbound				SW 107 AVENUE Southbound				SW 12 STREET Eastbound				Westbound				
Start Time	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Int. Total
*** BREAK ***																	
04:00 PM	59	425	29	0	14	537	65	17	67	20	41	0	0	0	0	0	1274
04:15 PM	66	438	21	0	20	434	43	0	108	33	63	0	0	0	0	0	1226
04:30 PM	83	438	17	0	14	423	58	0	111	38	77	0	0	0	0	0	1259
04:45 PM	64	524	16	0	23	413	60	0	89	31	64	3	0	0	0	0	1287
Total	272	1825	83	0	71	1807	226	17	375	122	245	3	0	0	0	0	5046
05:00 PM	77	462	30	0	14	415	64	0	87	33	53	1	0	0	0	0	1236
05:15 PM	63	416	32	0	13	428	84	0	69	65	55	26	0	0	0	0	1251
05:30 PM	89	456	29	0	46	411	52	0	101	23	56	0	0	0	0	0	1263
05:45 PM	59	467	35	0	28	458	54	0	112	26	65	0	0	0	0	0	1304
Total	288	1801	126	0	101	1712	254	0	369	147	229	27	0	0	0	0	5054
Grand Total	560	3626	209	0	172	3519	480	17	744	269	474	30	0	0	0	0	10100
Apprch %	12.7	82.5	4.8	0	4.1	84	11.5	0.4	49	17.7	31.2	2	0	0	0	0	
Total %	5.5	35.9	2.1	0	1.7	34.8	4.8	0.2	7.4	2.7	4.7	0.3	0	0	0	0	
cars	533	3593	205	0	171	3485	460	17	731	266	470	30	0	0	0	0	9961
% cars	95.2	99.1	98.1	0	99.4	99	95.8	100	98.3	98.9	99.2	100	0	0	0	0	98.6
trucks	5	31	4	0	1	34	20	0	13	3	4	0	0	0	0	0	115
% trucks	0.9	0.9	1.9	0	0.6	1	4.2	0	1.7	1.1	0.8	0	0	0	0	0	1.1
u-turns	22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
% u-turns	3.9	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2

SW 107 AVENUE & SW 12 STREET

File Name : SW 107 AVENUE & SW 12 STREET
Site Code : 00000000
Start Date : 09/19/2012
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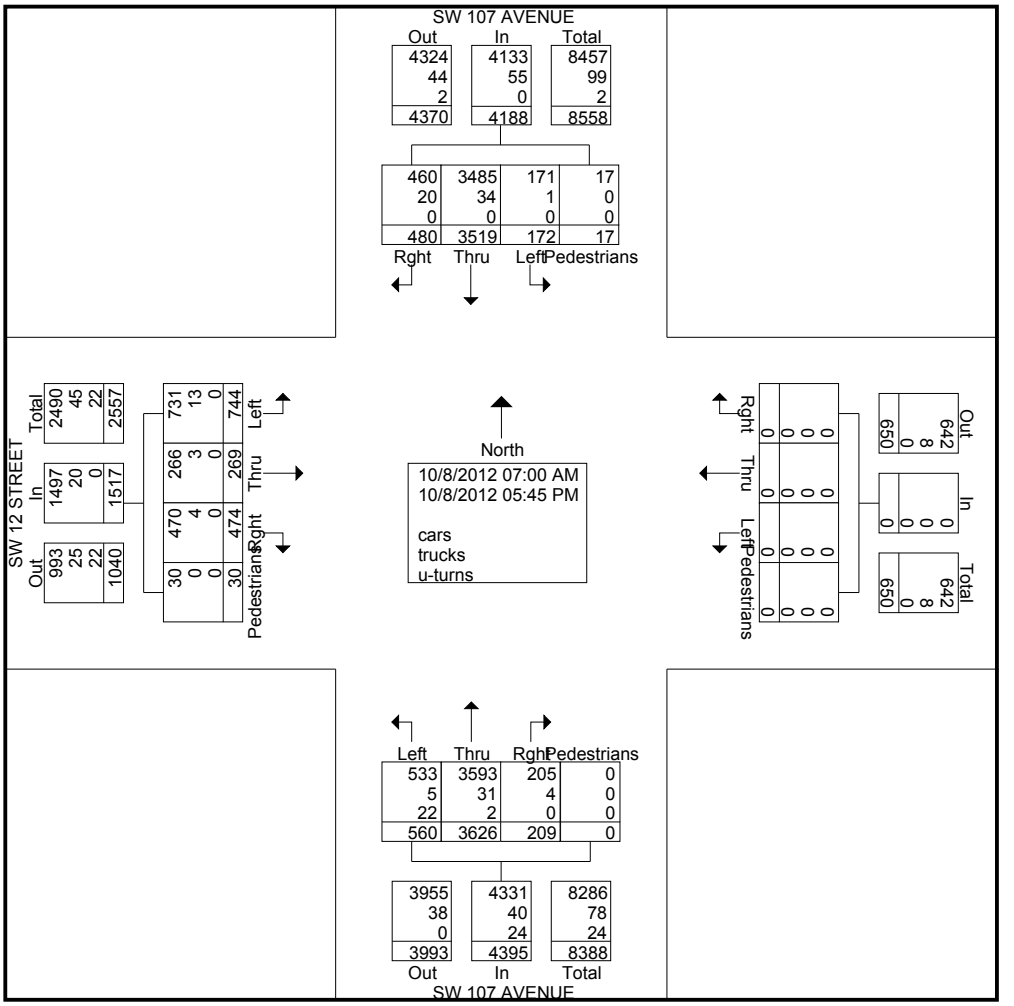
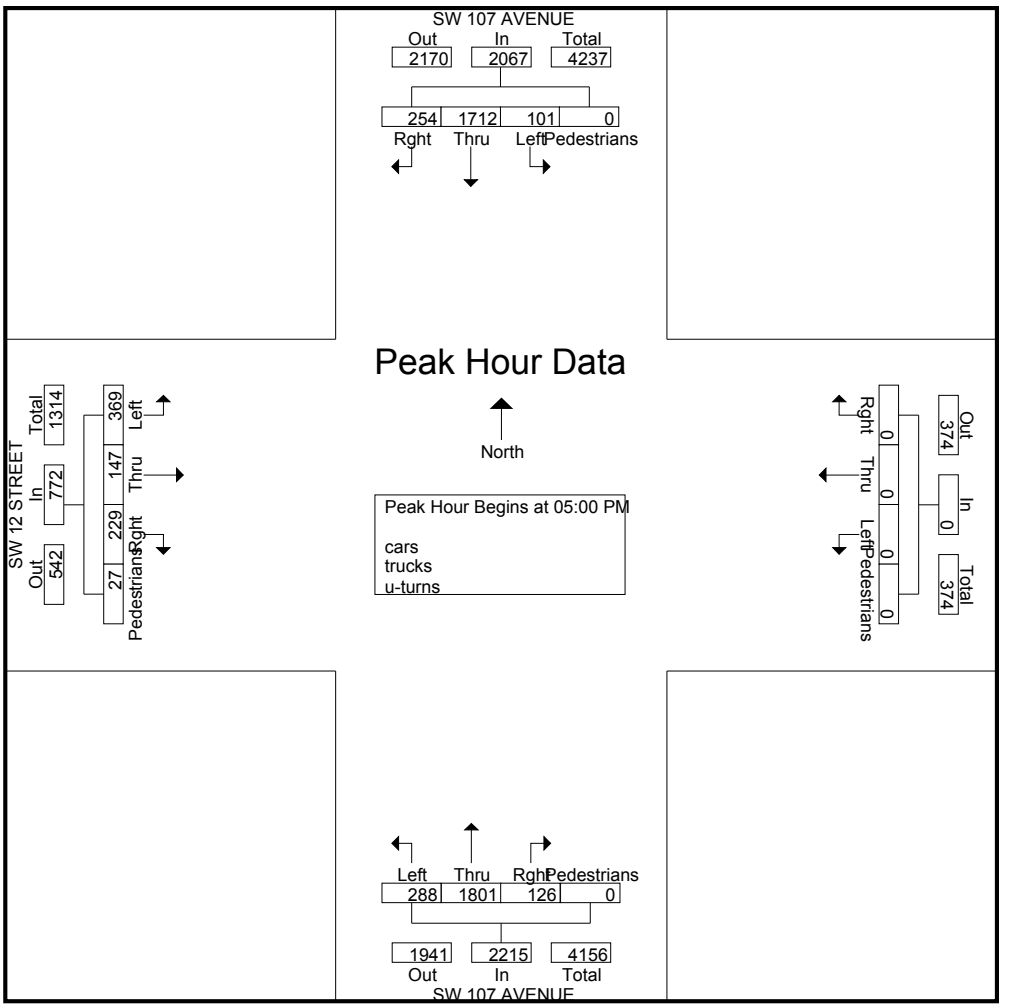


SW 107 AVENUE & SW 12 STREET

File Name : SW 107 AVENUE & SW 12 STREET
Site Code : 00000000
Start Date : 09/19/2012
Page No : 3

	SW 107 AVENUE Northbound					SW 107 AVENUE Southbound					SW 12 STREET Eastbound					Westbound					
Start Time	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	77	462	30	0	569	14	415	64	0	493	87	33	53	1	174	0	0	0	0	0	1236
05:15 PM	63	416	32	0	511	13	428	**84**	0	525	69	**65**	55	**26**	**215**	0	0	0	0	0	1251
05:30 PM	**89**	456	29	0	**574**	**46**	411	52	0	509	101	23	56	0	180	0	0	0	0	0	1263
05:45 PM	59	**467**	**35**	0	561	28	**458**	54	0	**540**	**112**	26	**65**	0	203	0	0	0	0	0	**1304**
Total Volume	288	1801	126	0	2215	101	1712	254	0	2067	369	147	229	27	772	0	0	0	0	0	5054
% App. Total	13	81.3	5.7	0		4.9	82.8	12.3	0		47.8	19	29.7	3.5		0	0	0	0		
PHF	.809	.964	.900	.000	.965	.549	.934	.756	.000	.957	.824	.565	.881	.260	.898	.000	.000	.000	.000	.000	.969



W FLAGLER AND FIU ENTRANCE (105 AVE)

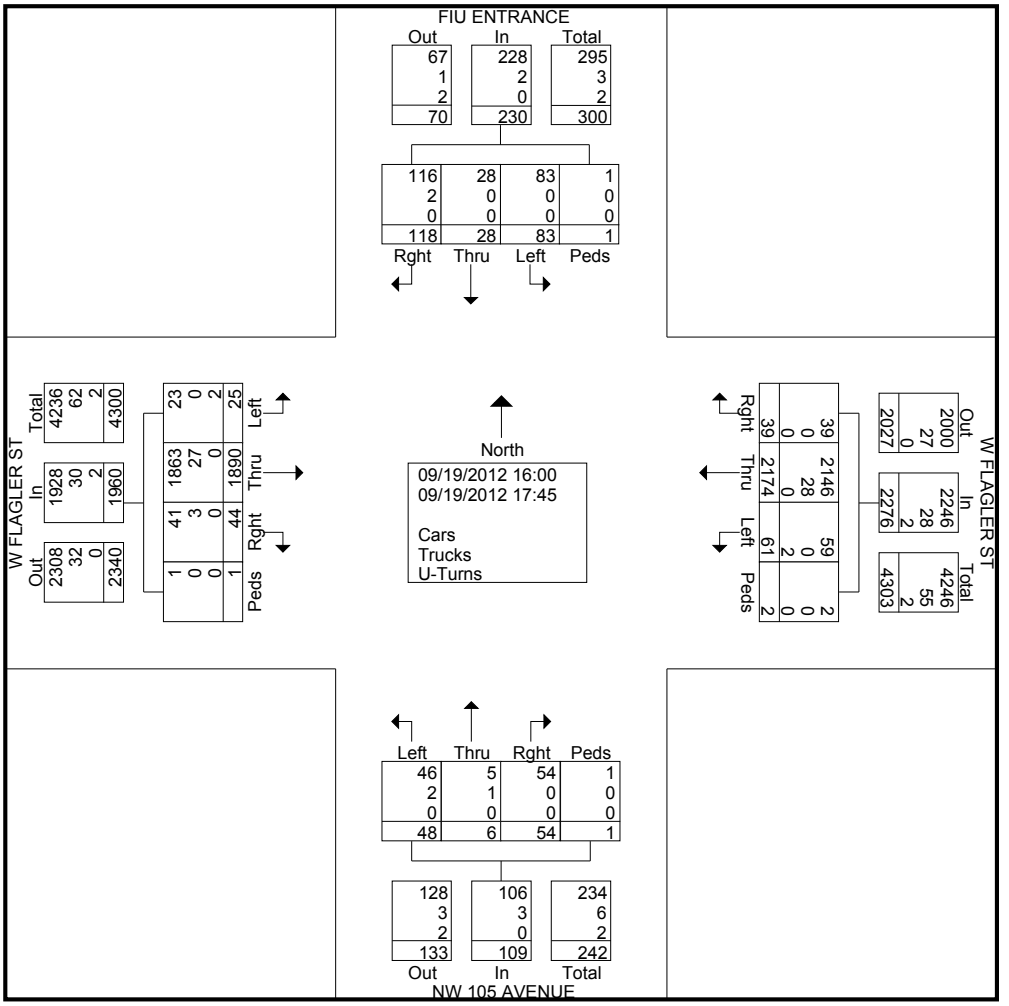
File Name : W Flagler and FIU Entrance (105 Ave)
Site Code : 00000000
Start Date : 09/19/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	NW 105 AVENUE Northbound				FIU ENTRANCE Southbound				W FLAGLER ST Eastbound				W FLAGLER ST Westbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
16:00	6	2	8	1	2	3	14	0	1	276	9	1	7	229	5	0	564
16:15	4	0	8	0	7	1	17	0	1	205	5	0	2	258	7	1	516
16:30	9	0	3	0	18	2	19	1	0	201	10	0	12	260	3	1	539
16:45	10	0	16	0	12	5	30	0	0	229	6	0	14	270	5	0	597
Total	29	2	35	1	39	11	80	1	2	911	30	1	35	1017	20	2	2216
17:00	4	0	2	0	21	1	8	0	1	268	2	0	5	253	7	0	572
17:15	7	1	5	0	7	4	11	0	12	234	6	0	11	282	7	0	587
17:30	5	0	7	0	11	7	6	0	8	239	5	0	9	337	3	0	637
17:45	3	3	5	0	5	5	13	0	2	238	1	0	1	285	2	0	563
Total	19	4	19	0	44	17	38	0	23	979	14	0	26	1157	19	0	2359
Grand Total	48	6	54	1	83	28	118	1	25	1890	44	1	61	2174	39	2	4575
Apprch %	44	5.5	49.5	0.9	36.1	12.2	51.3	0.4	1.3	96.4	2.2	0.1	2.7	95.5	1.7	0.1	
Total %	1	0.1	1.2	0	1.8	0.6	2.6	0	0.5	41.3	1	0	1.3	47.5	0.9	0	
Cars	46	5	54	1	83	28	116	1	23	1863	41	1	59	2146	39	2	4508
% Cars	95.8	83.3	100	100	100	100	98.3	100	92	98.6	93.2	100	96.7	98.7	100	100	98.5
Trucks	2	1	0	0	0	0	2	0	0	27	3	0	0	28	0	0	63
% Trucks	4.2	16.7	0	0	0	0	1.7	0	0	1.4	6.8	0	0	1.3	0	0	1.4
U-Turns	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	4
% U-Turns	0	0	0	0	0	0	0	0	8	0	0	0	3.3	0	0	0	0.1

W FLAGLER AND FIU ENTRANCE (105 AVE)

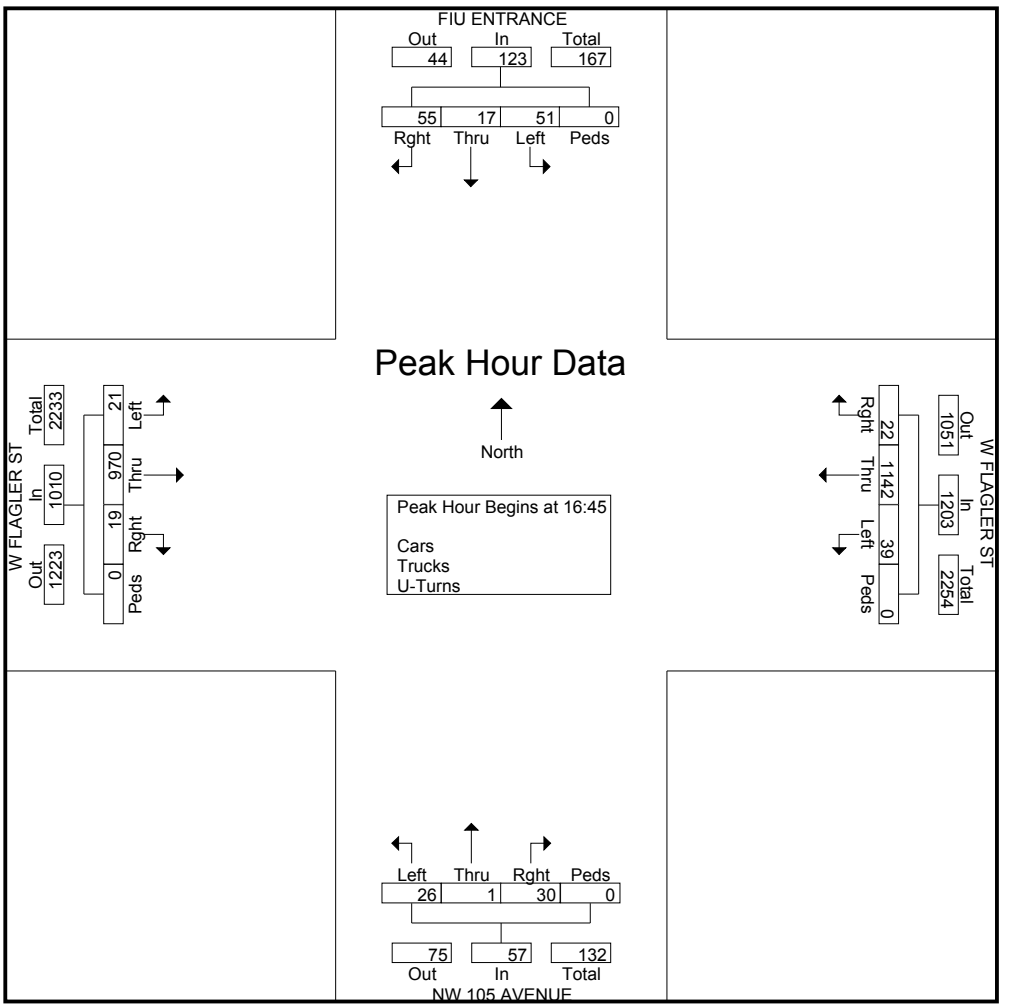
File Name : W Flagler and FIU Entrance (105 Ave)
Site Code : 00000000
Start Date : 09/19/2012
Page No : 2



W FLAGLER AND FIU ENTRANCE (105 AVE)

File Name : W Flagler and FIU Entrance (105 Ave)
Site Code : 00000000
Start Date : 09/19/2012
Page No : 3

	NW 105 AVENUE Northbound					FIU ENTRANCE Southbound					W FLAGLER ST Eastbound					W FLAGLER ST Westbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	**10**	0	**16**	0	**26**	12	5	**30**	0	**47**	0	229	**6**	0	235	**14**	270	5	0	289	597
17:00	4	0	2	0	6	**21**	1	8	0	30	1	**268**	2	0	**271**	5	253	**7**	0	265	572
17:15	7	**1**	5	0	13	7	4	11	0	22	**12**	234	6	0	252	11	282	7	0	300	587
17:30	5	0	7	0	12	11	**7**	6	0	24	8	239	5	0	252	9	**337**	3	0	**349**	**637**
Total Volume	26	1	30	0	57	51	17	55	0	123	21	970	19	0	1010	39	1142	22	0	1203	2393
% App. Total	45.6	1.8	52.6	0		41.5	13.8	44.7	0		2.1	96	1.9	0		3.2	94.9	1.8	0		
PHF	.650	.250	.469	.000	.548	.607	.607	.458	.000	.654	.438	.905	.792	.000	.932	.696	.847	.786	.000	.862	.939



NW 107 AVENUE & NW 7 STREET

File Name : Not Named 1
Site Code : 00000000
Start Date : 10/8/2012
Page No : 1

Groups Printed- Trucks

	NW 107 AVENUE Southbound				NW 107 AVENUE Northbound				NW 7 STRETT Westbound				NW 7 STRETT Eastbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3
16:15	0	7	0	0	0	2	0	0	1	0	0	0	2	2	1	0	15
16:30	0	2	0	0	0	3	0	0	0	2	1	0	2	2	0	0	12
16:45	0	7	0	0	0	0	0	0	0	3	1	0	2	9	0	0	22
Total	0	16	0	0	0	5	0	0	2	5	2	0	7	14	1	0	52
17:00	0	4	0	0	0	4	0	1	0	0	0	0	1	0	0	0	10
17:15	0	6	0	0	0	0	0	0	4	0	0	0	2	3	0	0	15
17:30	0	3	2	0	0	0	0	2	0	0	0	0	0	2	0	0	9
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	14	2	0	0	4	0	3	4	0	0	0	3	5	0	0	35
Grand Total	0	30	2	0	0	9	0	3	6	5	2	0	10	19	1	0	87
Apprch %	0	93.8	6.2	0	0	75	0	25	46.2	38.5	15.4	0	33.3	63.3	3.3	0	
Total %	0	34.5	2.3	0	0	10.3	0	3.4	6.9	5.7	2.3	0	11.5	21.8	1.1	0	

NW 107 AVENUE & NW 7 STREET

File Name : Not Named 1
Site Code : 00000000
Start Date : 10/8/2012
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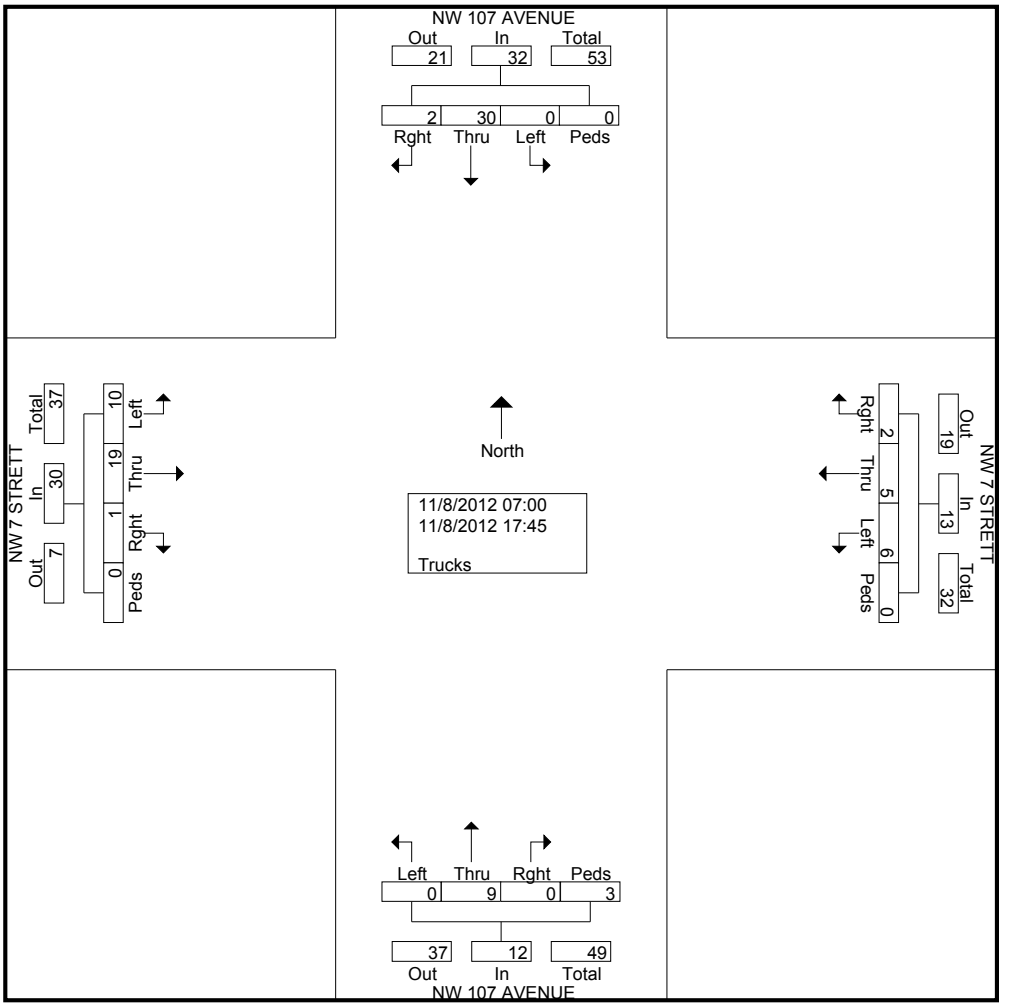
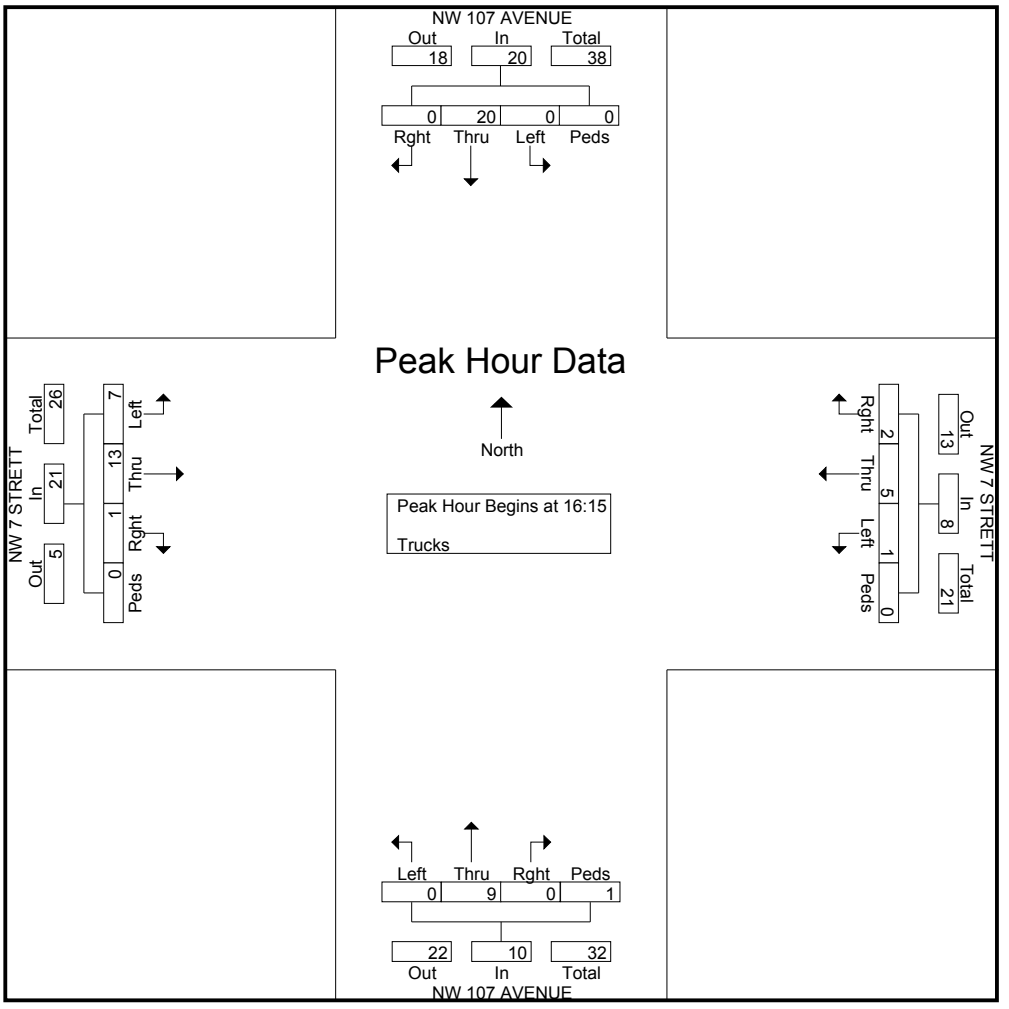


NW 107 AVENUE & NW 7 STREET

File Name : Not Named 1
Site Code : 00000000
Start Date : 10/8/2012
Page No : 3

	NW 107 AVENUE Southbound					NW 107 AVENUE Northbound					NW 7 STRETT Westbound					NW 7 STRETT Eastbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	**7**	0	0	**7**	0	2	0	0	2	**1**	0	0	0	1	**2**	2	**1**	0	5	15
16:30	0	2	0	0	2	0	3	0	0	3	0	2	**1**	0	3	2	2	0	0	4	12
16:45	0	7	0	0	7	0	0	0	0	0	0	**3**	1	0	**4**	2	**9**	0	0	**11**	**22**
17:00	0	4	0	0	4	0	**4**	0	**1**	**5**	0	0	0	0	0	1	0	0	0	1	10
Total Volume	0	20	0	0	20	0	9	0	1	10	1	5	2	0	8	7	13	1	0	21	59
% App. Total	0	100	0	0		0	90	0	10		12.5	62.5	25	0		33.3	61.9	4.8	0		
PHF	.000	.714	.000	.000	.714	.000	.563	.000	.250	.500	.250	.417	.500	.000	.500	.875	.361	.250	.000	.477	.670



NW 107 AVENUE & NW 7 STREET

File Name : Not Named 1
Site Code : 00000000
Start Date : 10/8/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	NW 107 AVENUE Southbound				NW 107 AVENUE Northbound				NW 7 STRETT Westbound				NW 7 STRETT Eastbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	8	114	6	0	42	188	81	0	72	28	6	0	18	67	52	0	682
16:15	17	303	22	0	136	346	139	0	50	32	11	0	26	109	110	0	1301
16:30	5	345	23	0	101	395	116	0	119	52	31	0	33	81	106	0	1407
16:45	56	259	37	0	117	389	93	1	107	40	16	0	15	169	91	1	1391
Total	86	1021	88	0	396	1318	429	1	348	152	64	0	92	426	359	1	4781
17:00	44	272	28	1	129	358	144	1	85	32	19	1	16	110	85	0	1325
17:15	36	264	35	0	138	428	132	0	126	44	12	0	27	122	90	2	1456
17:30	49	212	27	0	146	400	200	2	124	66	19	0	19	114	135	2	1515
17:45	4	49	4	0	31	136	68	0	39	27	5	0	6	26	23	0	418
Total	133	797	94	1	444	1322	544	3	374	169	55	1	68	372	333	4	4714
Grand Total	219	1818	182	1	840	2640	973	4	722	321	119	1	160	798	692	5	9495
Apprch %	9.9	81.9	8.2	0	18.8	59.2	21.8	0.1	62.1	27.6	10.2	0.1	9.7	48.2	41.8	0.3	
Total %	2.3	19.1	1.9	0	8.8	27.8	10.2	0	7.6	3.4	1.3	0	1.7	8.4	7.3	0.1	
Cars	219	1788	180	1	840	2631	973	1	716	316	117	1	150	779	691	5	9408
% Cars	100	98.3	98.9	100	100	99.7	100	25	99.2	98.4	98.3	100	93.8	97.6	99.9	100	99.1
Trucks	0	30	2	0	0	9	0	3	6	5	2	0	10	19	1	0	87
% Trucks	0	1.7	1.1	0	0	0.3	0	75	0.8	1.6	1.7	0	6.2	2.4	0.1	0	0.9
U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NW 107 AVENUE & NW 7 STREET

File Name : Not Named 1
Site Code : 00000000
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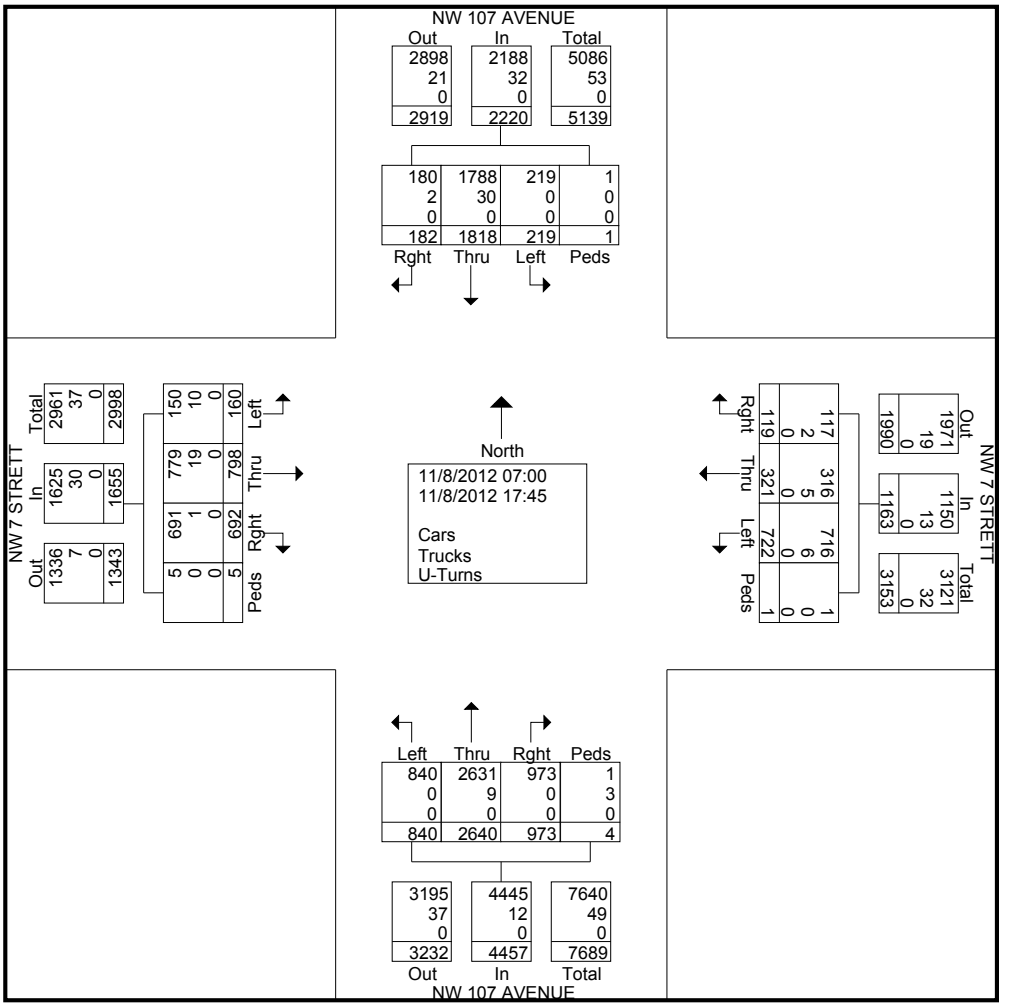

NW 107 AVENUE & NW 7 STREET

File Name : Not Named 1
Site Code : 00000000
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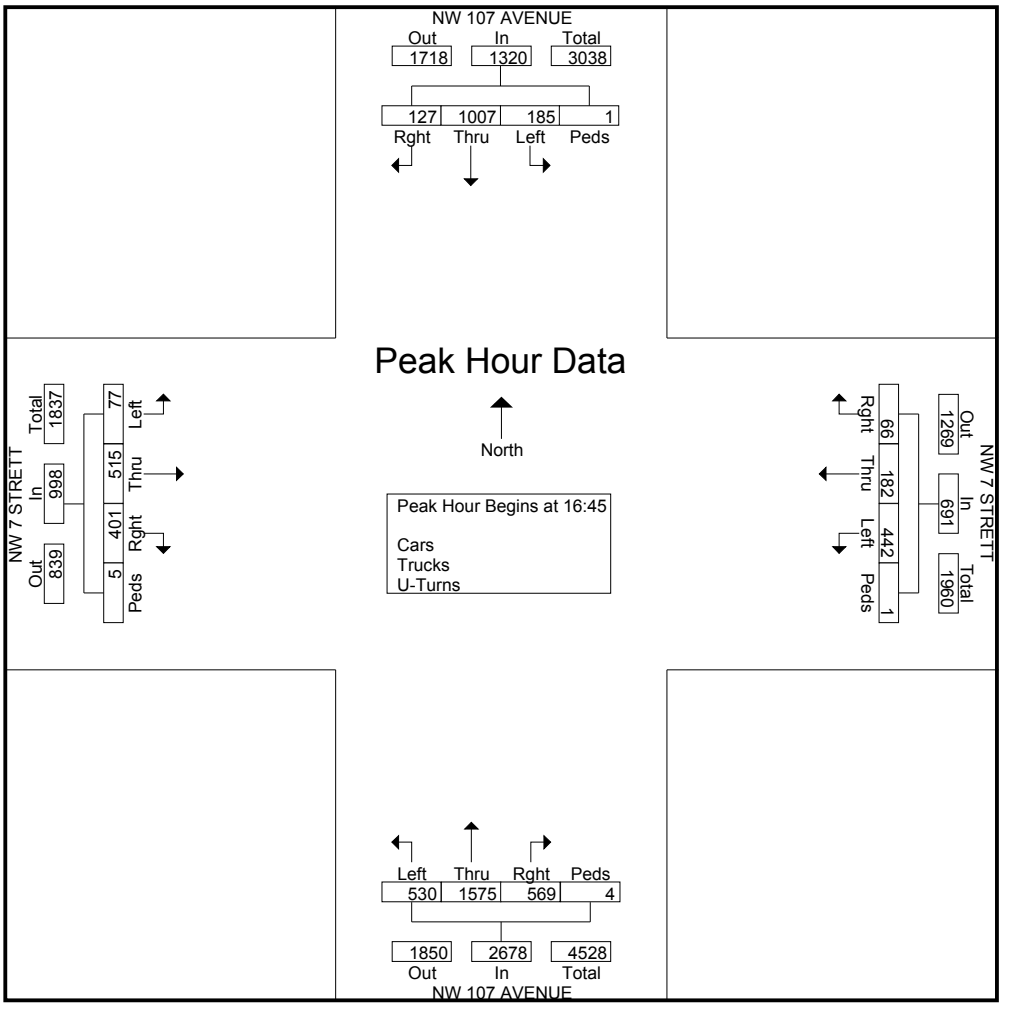
	NW 107 AVENUE Southbound					NW 107 AVENUE Northbound					NW 7 STRETT Westbound					NW 7 STRETT Eastbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	**56**	259	**37**	0	**352**	117	389	93	1	600	107	40	16	0	163	15	**169**	91	1	**276**	1391
17:00	44	**272**	28	**1**	345	129	358	144	1	632	85	32	**19**	**1**	137	16	110	85	0	211	1325
17:15	36	264	35	0	335	138	**428**	132	0	698	**126**	44	12	0	182	**27**	122	90	**2**	241	1456
17:30	49	212	27	0	288	**146**	400	**200**	**2**	**748**	124	**66**	19	0	**209**	19	114	**135**	2	270	**1515**
Total Volume	185	1007	127	1	1320	530	1575	569	4	2678	442	182	66	1	691	77	515	401	5	998	5687
% App. Total	14	76.3	9.6	0.1		19.8	58.8	21.2	0.1		64	26.3	9.6	0.1		7.7	51.6	40.2	0.5		
PHF	.826	.926	.858	.250	.938	.908	.920	.711	.500	.895	.877	.689	.868	.250	.827	.713	.762	.743	.625	.904	.938



NW 107 AVENUE & FLAGLER ST

File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
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Groups Printed- Trucks

	NW 107 AVENUE Southbound				NW 107 AVENUE Northbound				FLAGLER ST Westbound				FLAGLER ST Eastbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	0	3	0	0	1	1	3	0	0	0	2	0	1	2	1	0	14
16:15	0	5	2	0	0	3	1	0	2	3	1	0	5	1	2	0	25
16:30	0	3	3	0	0	4	2	0	2	5	0	0	5	2	1	0	27
16:45	1	1	1	0	0	4	1	0	0	2	1	0	0	5	1	0	17
Total	1	12	6	0	1	12	7	0	4	10	4	0	11	10	5	0	83
17:00	0	3	4	0	0	1	1	0	1	1	0	0	1	1	2	0	15
17:15	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	0	7
17:30	0	5	1	0	1	3	0	0	1	2	0	0	0	1	0	0	14
17:45	0	1	0	0	1	4	2	0	1	0	1	0	3	1	0	0	14
Total	1	9	7	0	2	10	3	0	3	3	1	0	6	3	2	0	50
Grand Total	2	21	13	0	3	22	10	0	7	13	5	0	17	13	7	0	133
Apprch %	5.6	58.3	36.1	0	8.6	62.9	28.6	0	28	52	20	0	45.9	35.1	18.9	0	
Total %	1.5	15.8	9.8	0	2.3	16.5	7.5	0	5.3	9.8	3.8	0	12.8	9.8	5.3	0	

NW 107 AVENUE & FLAGLER ST

File Name : Not Named 1
Site Code : 00000000
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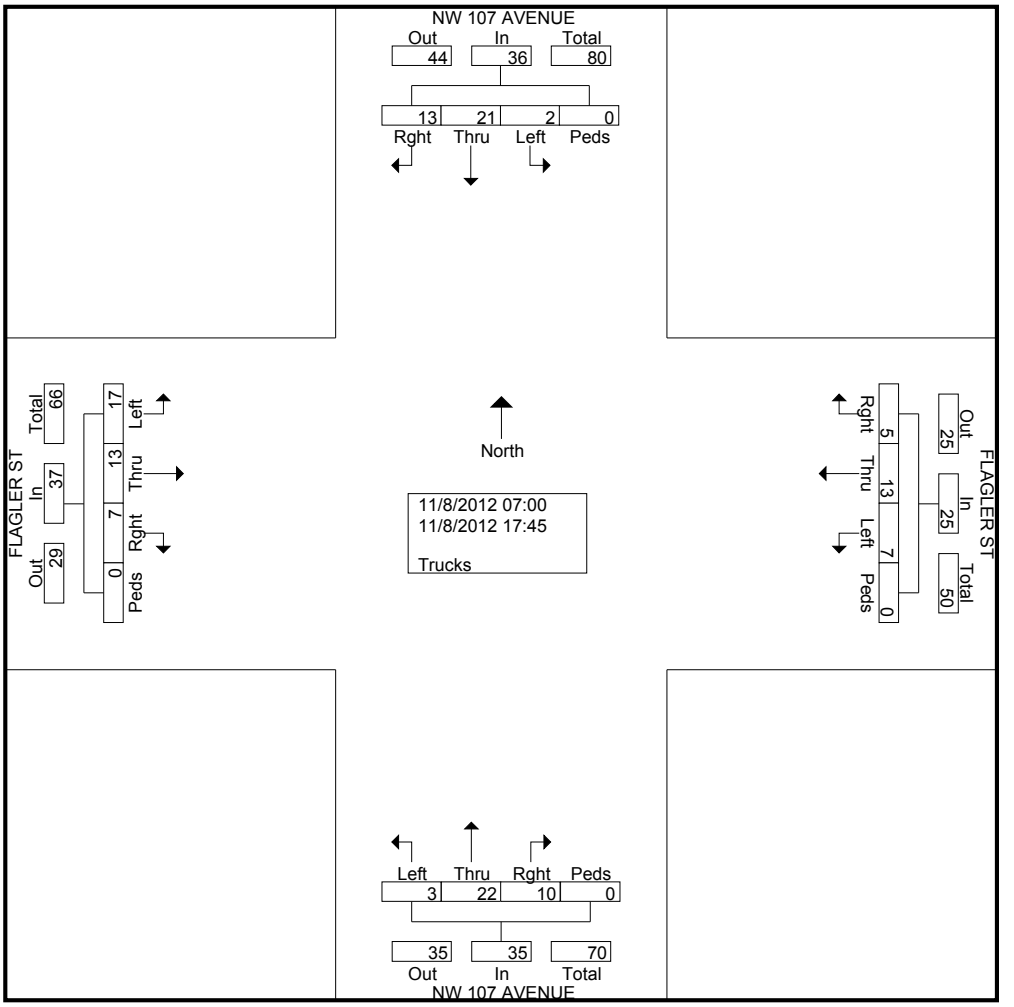
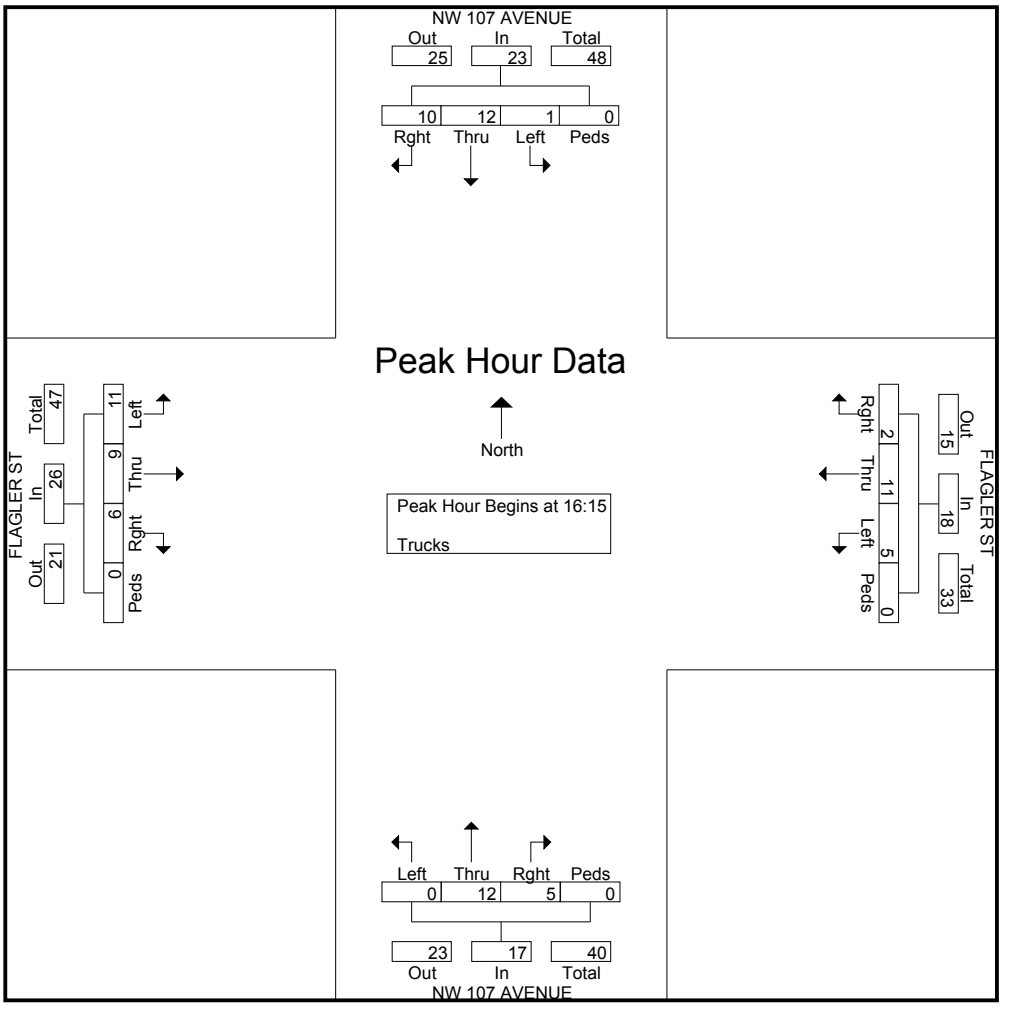


NW 107 AVENUE & FLAGLER ST

File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
Page No : 3

	NW 107 AVENUE Southbound					NW 107 AVENUE Northbound					FLAGLER ST Westbound					FLAGLER ST Eastbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	**5**	2	0	**7**	0	3	1	0	4	**2**	3	**1**	0	6	**5**	1	**2**	0	**8**	25
16:30	0	3	3	0	6	0	**4**	**2**	0	**6**	2	**5**	0	0	**7**	5	2	1	0	8	**27**
16:45	**1**	1	1	0	3	0	4	1	0	5	0	2	1	0	3	0	**5**	1	0	6	17
17:00	0	3	**4**	0	7	0	1	1	0	2	1	1	0	0	2	1	1	2	0	4	15
Total Volume	1	12	10	0	23	0	12	5	0	17	5	11	2	0	18	11	9	6	0	26	84
% App. Total	4.3	52.2	43.5	0		0	70.6	29.4	0		27.8	61.1	11.1	0		42.3	34.6	23.1	0		
PHF	.250	.600	.625	.000	.821	.000	.750	.625	.000	.708	.625	.550	.500	.000	.643	.550	.450	.750	.000	.813	.778



NW 107 AVENUE & FLAGLER ST

File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
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Groups Printed- Cars - Trucks - Turns

	NW 107 AVENUE Southbound				NW 107 AVENUE Northbound				FLAGLER ST Westbound				FLAGLER ST Eastbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	37	173	31	0	41	188	31	0	35	211	45	0	44	151	23	0	1010
16:15	53	218	39	0	26	191	31	0	55	239	47	0	46	151	23	0	1119
16:30	55	181	31	0	36	251	22	0	42	221	49	0	54	160	26	0	1128
16:45	54	207	30	0	49	235	52	0	50	255	60	0	61	234	20	0	1307
Total	199	779	131	0	152	865	136	0	182	926	201	0	205	696	92	0	4564
17:00	66	307	43	0	51	357	68	0	41	230	74	0	44	181	13	0	1475
17:15	63	242	32	0	55	272	47	0	38	195	69	0	35	200	27	0	1275
17:30	76	193	44	0	61	240	54	0	44	203	65	0	38	132	11	0	1161
17:45	130	200	45	0	64	260	53	0	59	248	56	0	41	163	12	0	1331
Total	335	942	164	0	231	1129	222	0	182	876	264	0	158	676	63	0	5242
Grand Total	534	1721	295	0	383	1994	358	0	364	1802	465	0	363	1372	155	0	9806
Apprch %	20.9	67.5	11.6	0	14	72.9	13.1	0	13.8	68.5	17.7	0	19.2	72.6	8.2	0	
Total %	5.4	17.6	3	0	3.9	20.3	3.7	0	3.7	18.4	4.7	0	3.7	14	1.6	0	
Cars	532	1700	282	0	380	1972	348	0	357	1789	460	0	346	1359	148	0	9673
% Cars	99.6	98.8	95.6	0	99.2	98.9	97.2	0	98.1	99.3	98.9	0	95.3	99.1	95.5	0	98.6
Trucks	2	21	13	0	3	22	10	0	7	13	5	0	17	13	7	0	133
% Trucks	0.4	1.2	4.4	0	0.8	1.1	2.8	0	1.9	0.7	1.1	0	4.7	0.9	4.5	0	1.4
U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NW 107 AVENUE & FLAGLER ST

File Name : Not Named 1
Site Code : 00000000
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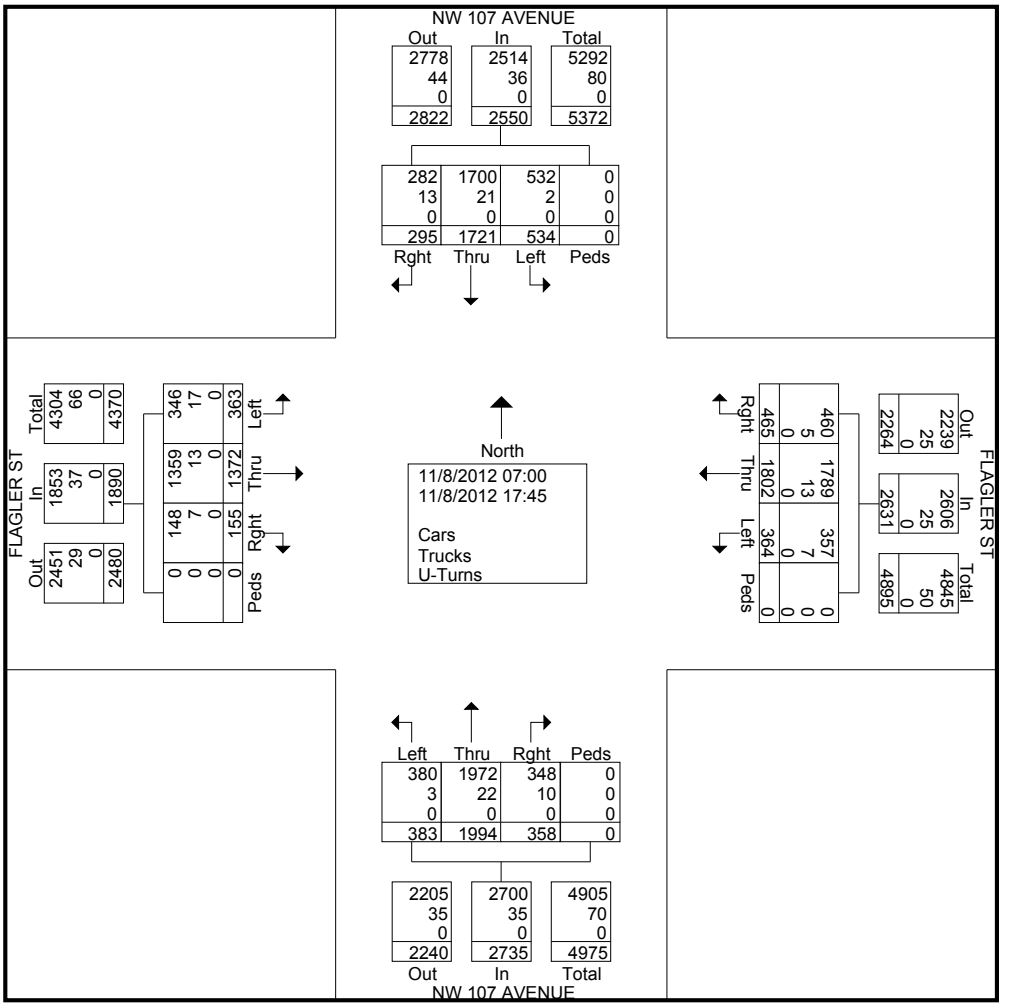

NW 107 AVENUE & FLAGLER ST

File Name : Not Named 1
Site Code : 00000000
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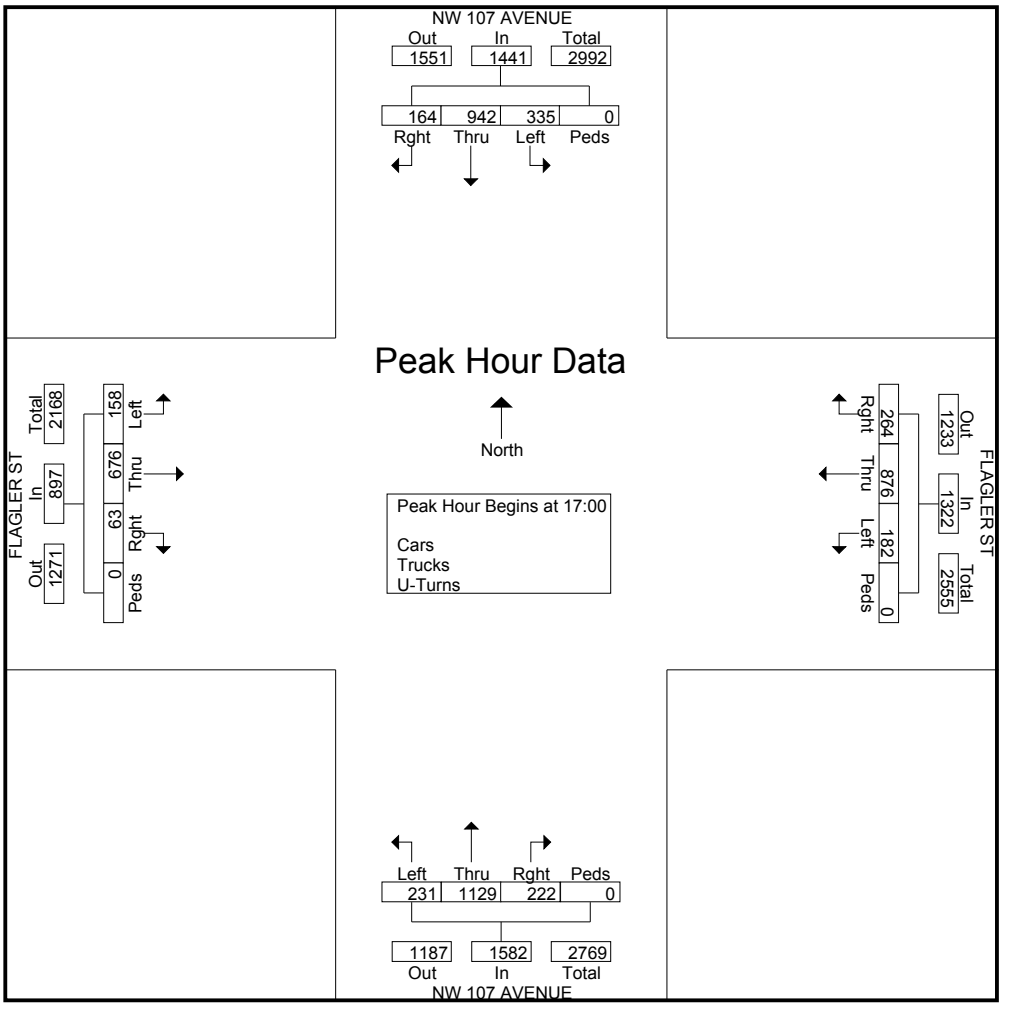
	NW 107 AVENUE Southbound					NW 107 AVENUE Northbound					FLAGLER ST Westbound					FLAGLER ST Eastbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	66	**307**	43	0	**416**	51	**357**	**68**	0	**476**	41	230	**74**	0	345	**44**	181	13	0	238	**1475**
17:15	63	242	32	0	337	55	272	47	0	374	38	195	69	0	302	35	**200**	**27**	0	**262**	1275
17:30	76	193	44	0	313	61	240	54	0	355	44	203	65	0	312	38	132	11	0	181	1161
17:45	**130**	200	**45**	0	375	**64**	260	53	0	377	**59**	**248**	56	0	**363**	41	163	12	0	216	1331
Total Volume	335	942	164	0	1441	231	1129	222	0	1582	182	876	264	0	1322	158	676	63	0	897	5242
% App. Total	23.2	65.4	11.4	0		14.6	71.4	14	0		13.8	66.3	20	0		17.6	75.4	7	0		
PHF	.644	.767	.911	.000	.866	.902	.791	.816	.000	.831	.771	.883	.892	.000	.910	.898	.845	.583	.000	.856	.888



NW 107 AVENUE & FIU ENTRANCE

File Name : Not Named 1
Site Code : 00000000
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Groups Printed- Trucks

	NW 107 AVENUE Southbound				NW 107 AVENUE Northbound				FIU ENTRANCE Westbound				LAGUNA CLUB ENTRANCE Eastbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	8
16:15	0	6	1	0	1	6	1	0	0	0	0	0	0	0	0	0	15
16:30	0	4	0	0	0	1	0	0	0	0	0	0	0	0	1	0	6
16:45	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
Total	0	14	1	0	1	16	1	0	0	0	0	0	0	0	1	0	34
17:00	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
17:15	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
17:30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
Grand Total	0	20	1	0	1	21	1	0	0	0	0	0	0	0	1	0	45
Apprch %	0	95.2	4.8	0	4.3	91.3	4.3	0	0	0	0	0	0	0	100	0	
Total %	0	44.4	2.2	0	2.2	46.7	2.2	0	0	0	0	0	0	0	2.2	0	

NW 107 AVENUE & FIU ENTRANCE

File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
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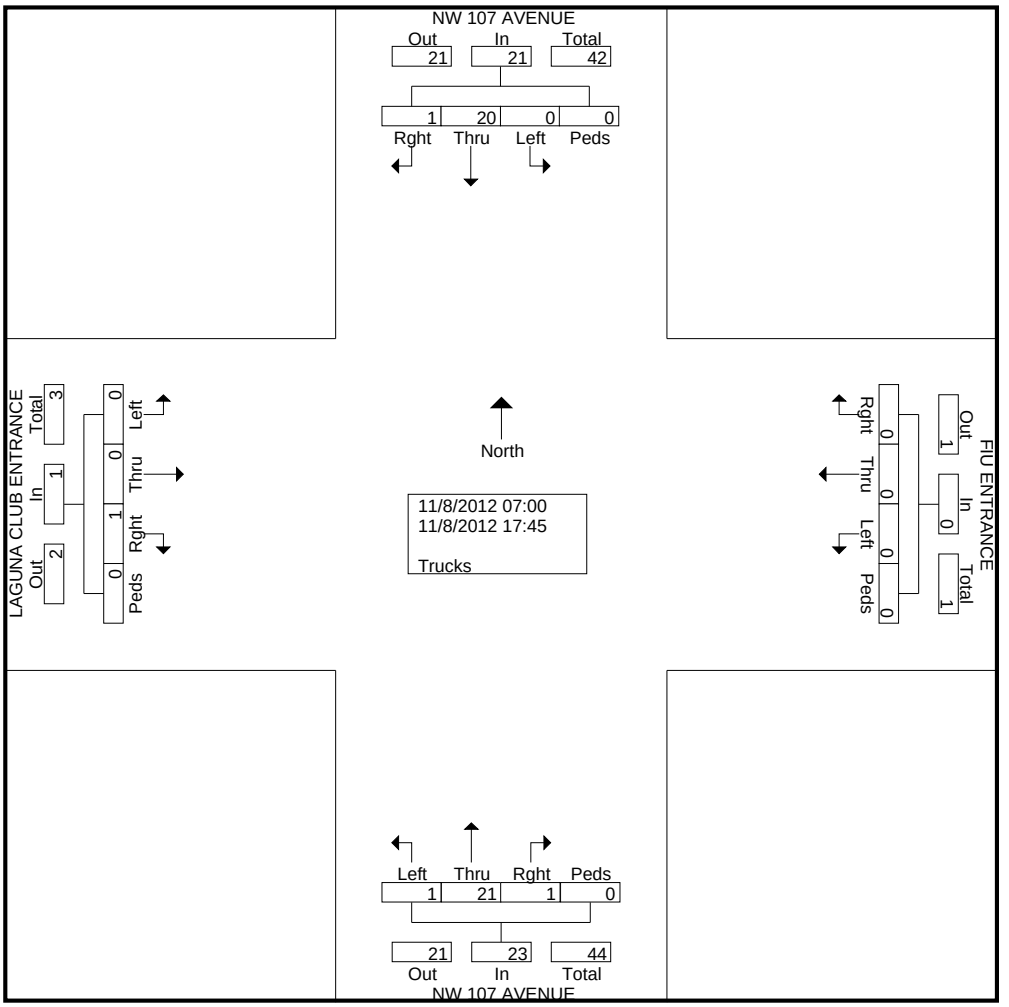
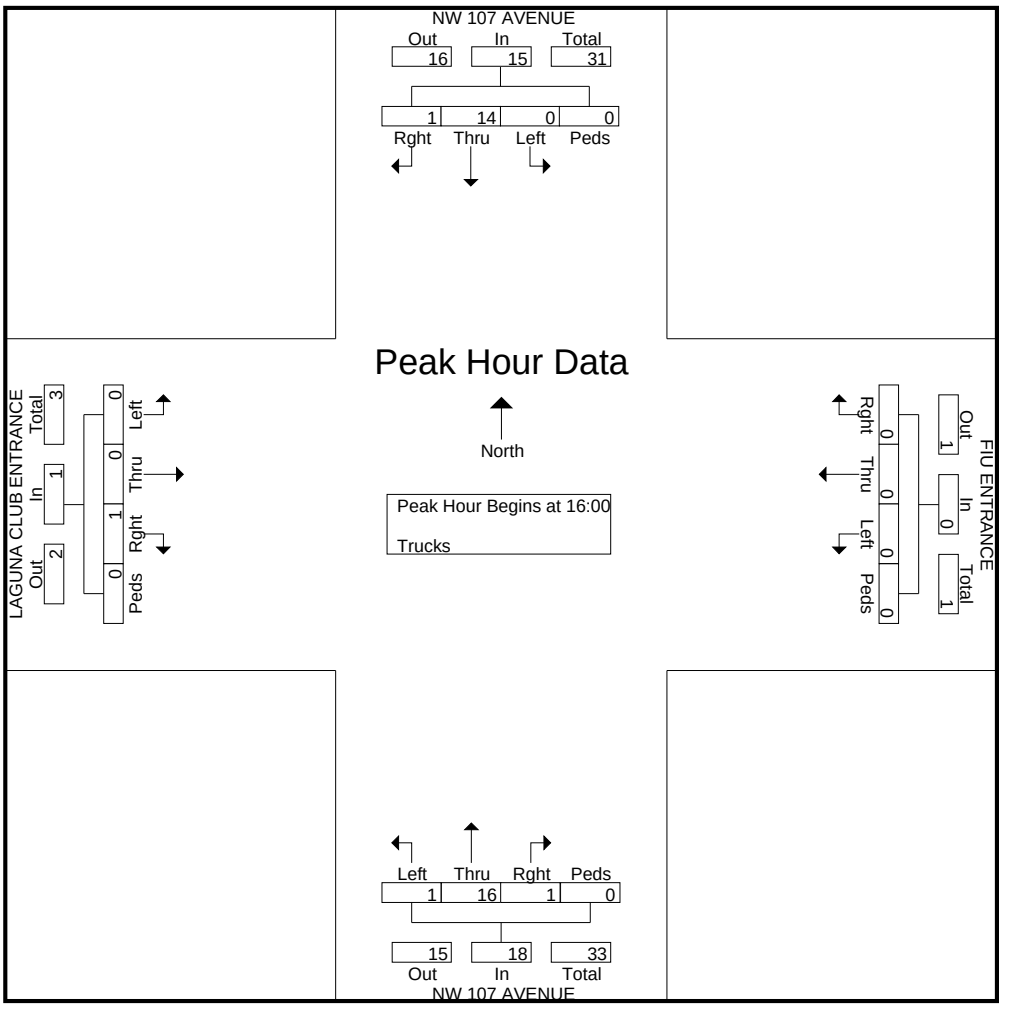


NW 107 AVENUE & FIU ENTRANCE

File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
Page No : 3

	NW 107 AVENUE Southbound					NW 107 AVENUE Northbound					FIU ENTRANCE Westbound					LAGUNA CLUB ENTRANCE Eastbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	2	0	0	2	0	**6**	0	0	6	0	0	0	0	0	0	0	0	0	0	8
16:15	0	**6**	**1**	0	**7**	**1**	6	**1**	0	**8**	0	0	0	0	0	0	0	0	0	0	**15**
16:30	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	0	0	**1**	0	**1**	6
16:45	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
Total Volume	0	14	1	0	15	1	16	1	0	18	0	0	0	0	0	0	0	1	0	1	34
% App. Total	0	93.3	6.7	0		5.6	88.9	5.6	0		0	0	0	0		0	0	100	0		
PHF	.000	.583	.250	.000	.536	.250	.667	.250	.000	.563	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.567



NW 107 AVENUE & FIU ENTRANCE

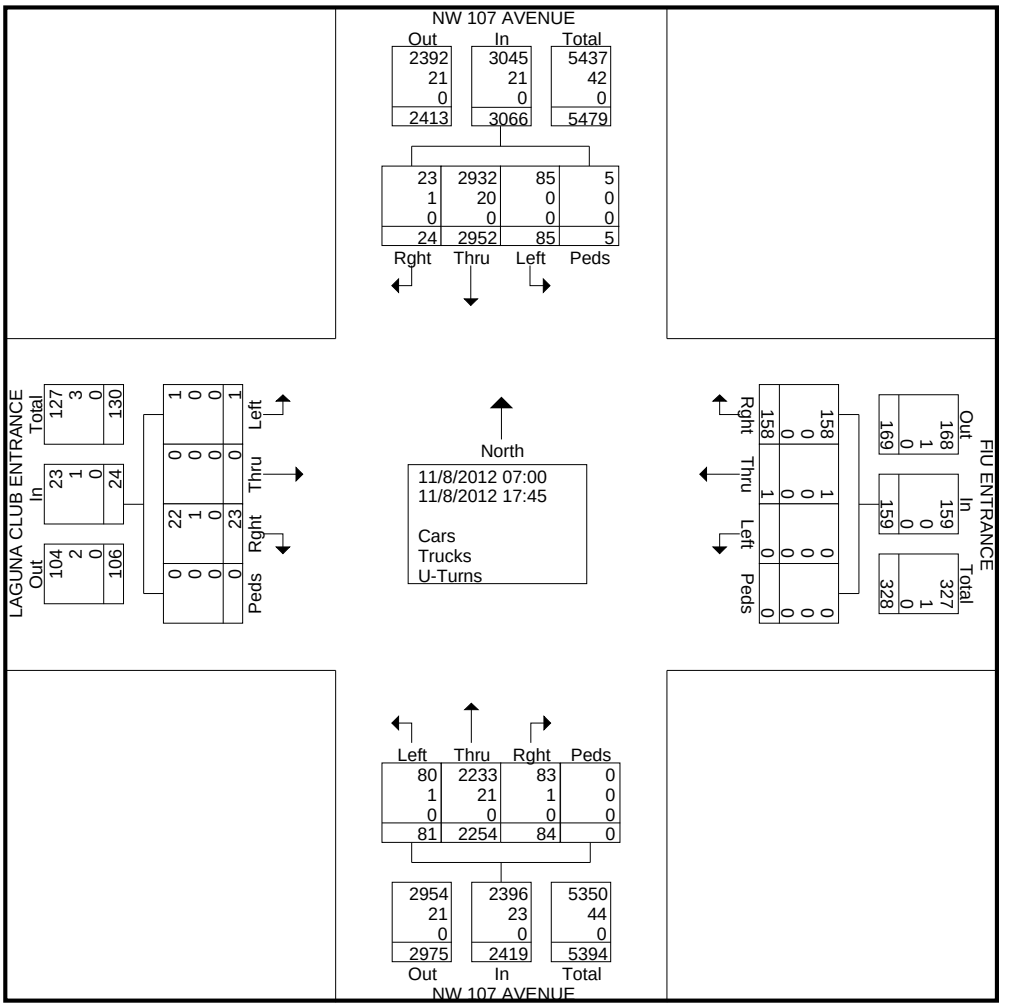
File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	NW 107 AVENUE Southbound				NW 107 AVENUE Northbound				FIU ENTRANCE Westbound				LAGUNA CLUB ENTRANCE Eastbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	3	366	1	0	3	264	11	0	0	1	15	0	0	0	0	0	664
16:15	11	324	5	5	19	258	12	0	0	0	18	0	0	0	0	0	652
16:30	3	335	2	0	7	261	12	0	0	0	11	0	1	0	6	0	638
16:45	20	428	2	0	13	266	19	0	0	0	21	0	0	0	3	0	772
Total	37	1453	10	5	42	1049	54	0	0	1	65	0	1	0	9	0	2726
17:00	12	332	2	0	9	313	11	0	0	0	28	0	0	0	4	0	711
17:15	7	368	4	0	9	313	9	0	0	0	21	0	0	0	2	0	733
17:30	17	406	8	0	13	303	3	0	0	0	19	0	0	0	3	0	772
17:45	12	393	0	0	8	276	7	0	0	0	25	0	0	0	5	0	726
Total	48	1499	14	0	39	1205	30	0	0	0	93	0	0	0	14	0	2942
Grand Total	85	2952	24	5	81	2254	84	0	0	1	158	0	1	0	23	0	5668
Apprch %	2.8	96.3	0.8	0.2	3.3	93.2	3.5	0	0	0.6	99.4	0	4.2	0	95.8	0	
Total %	1.5	52.1	0.4	0.1	1.4	39.8	1.5	0	0	0	2.8	0	0	0	0.4	0	
Cars	85	2932	23	5	80	2233	83	0	0	1	158	0	1	0	22	0	5623
% Cars	100	99.3	95.8	100	98.8	99.1	98.8	0	0	100	100	0	100	0	95.7	0	99.2
Trucks	0	20	1	0	1	21	1	0	0	0	0	0	0	0	1	0	45
% Trucks	0	0.7	4.2	0	1.2	0.9	1.2	0	0	0	0	0	0	0	4.3	0	0.8
U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NW 107 AVENUE & FIU ENTRANCE

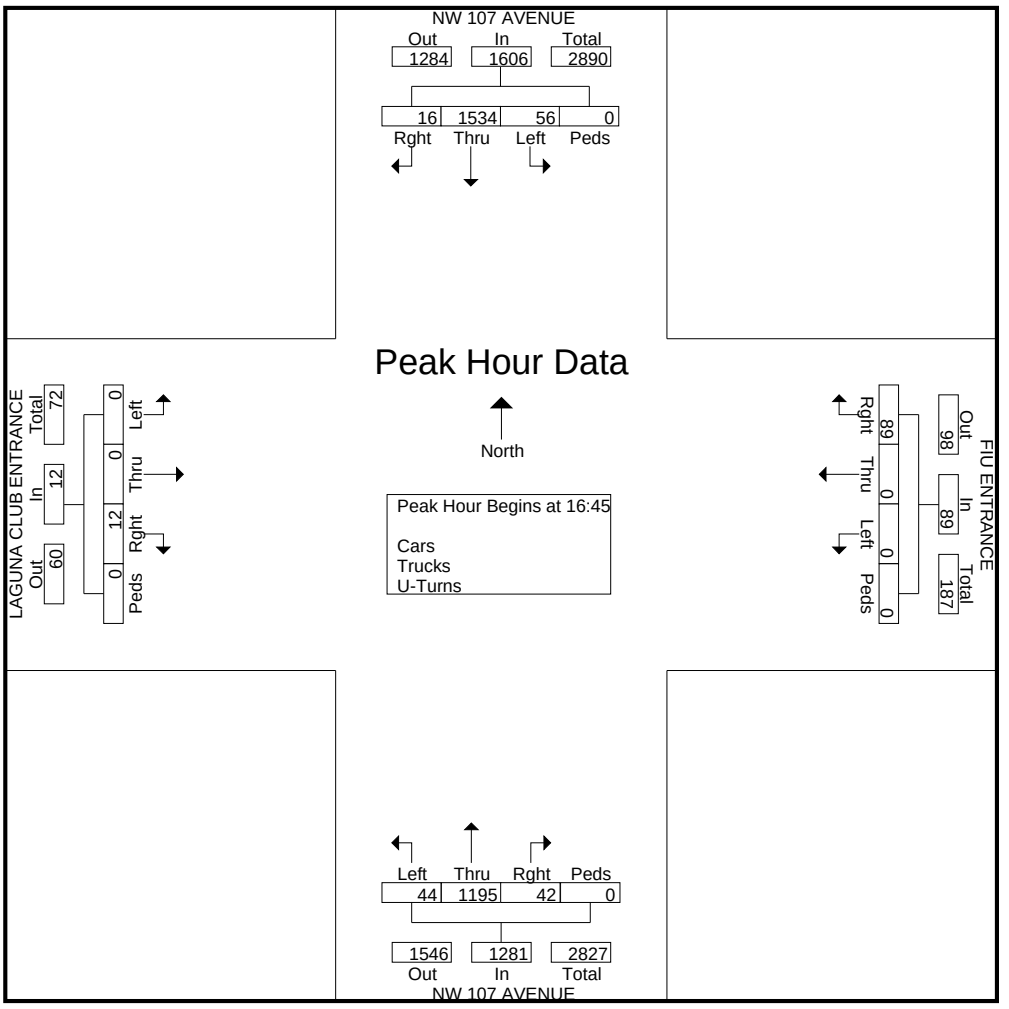
File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
Page No : 2



NW 107 AVENUE & FIU ENTRANCE

File Name : Not Named 1
Site Code : 00000000
Start Date : 11/8/2012
Page No : 3

	NW 107 AVENUE Southbound					NW 107 AVENUE Northbound					FIU ENTRANCE Westbound					LAGUNA CLUB ENTRANCE Eastbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	**20**	**428**	2	0	**450**	**13**	266	**19**	0	298	0	0	21	0	21	0	0	3	0	3	**772**
17:00	12	332	2	0	346	9	**313**	11	0	**333**	0	0	**28**	0	**28**	0	0	**4**	0	**4**	711
17:15	7	368	4	0	379	9	313	9	0	331	0	0	21	0	21	0	0	2	0	2	733
17:30	17	406	**8**	0	431	13	303	3	0	319	0	0	19	0	19	0	0	3	0	3	772
Total Volume	56	1534	16	0	1606	44	1195	42	0	1281	0	0	89	0	89	0	0	12	0	12	2988
% App. Total	3.5	95.5	1	0		3.4	93.3	3.3	0		0	0	100	0		0	0	100	0		
PHF	.700	.896	.500	.000	.892	.846	.954	.553	.000	.962	.000	.000	.795	.000	.795	.000	.000	.750	.000	.750	.968



NE 135 ST & BISCAYNE BLVD

File Name : NE 135 ST & BISCAYNE BLVD.
Site Code : 00000000
Start Date : 09/20/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	BISCAYNE BLVD Northbound				BISCAYNE BLVD Southbound				NE 135 STREET Eastbound				NE 135 STREET Westbound				
Start Time	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Left	Thru	Rght	Pedestrians	Int. Total
*** BREAK ***																	
16:00	59	425	29	0	14	537	65	17	75	48	27	0	24	45	26	1	1392
16:15	66	438	21	0	20	434	43	0	89	62	37	9	29	67	23	0	1338
16:30	83	438	17	0	14	423	58	0	94	90	53	0	23	24	20	0	1337
16:45	64	524	16	0	23	413	60	0	87	39	27	0	27	32	18	1	1331
Total	272	1825	83	0	71	1807	226	17	345	239	144	9	103	168	87	2	5398
17:00	77	462	30	0	14	415	64	0	110	90	56	0	45	34	58	2	1457
17:15	63	416	32	0	13	428	84	0	75	60	33	0	57	11	44	0	1316
17:30	89	456	29	0	46	411	52	0	81	61	30	0	14	26	32	0	1327
17:45	59	467	35	0	28	458	54	0	82	38	36	0	11	16	28	0	1312
Total	288	1801	126	0	101	1712	254	0	348	249	155	0	127	87	162	2	5412
Grand Total	560	3626	209	0	172	3519	480	17	693	488	299	9	230	255	249	4	10810
Apprch %	12.7	82.5	4.8	0	4.1	84	11.5	0.4	46.5	32.8	20.1	0.6	31.2	34.6	33.7	0.5	
Total %	5.2	33.5	1.9	0	1.6	32.6	4.4	0.2	6.4	4.5	2.8	0.1	2.1	2.4	2.3	0	
Cars	533	3593	205	0	171	3485	460	17	680	485	295	9	227	250	243	4	10657
% Cars	95.2	99.1	98.1	0	99.4	99	95.8	100	98.1	99.4	98.7	100	98.7	98	97.6	100	98.6
Trucks	5	31	4	0	1	34	20	0	13	3	4	0	3	5	6	0	129
% Trucks	0.9	0.9	1.9	0	0.6	1	4.2	0	1.9	0.6	1.3	0	1.3	2	2.4	0	1.2
U-Turns	22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
% U-Turns	3.9	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2

NE 135 ST & BISCAYNE BLVD

File Name : NE 135 ST & BISCAYNE BLVD.
Site Code : 00000000
Start Date : 09/20/2012
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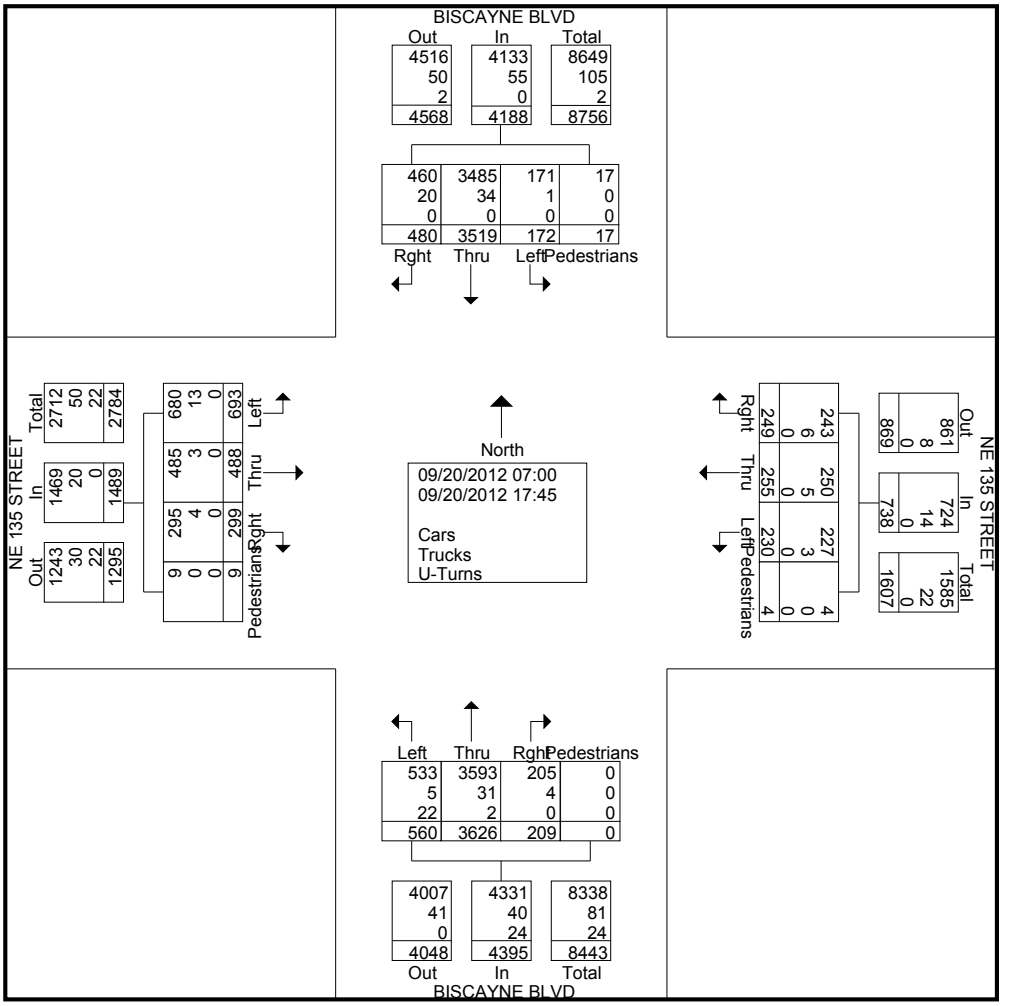
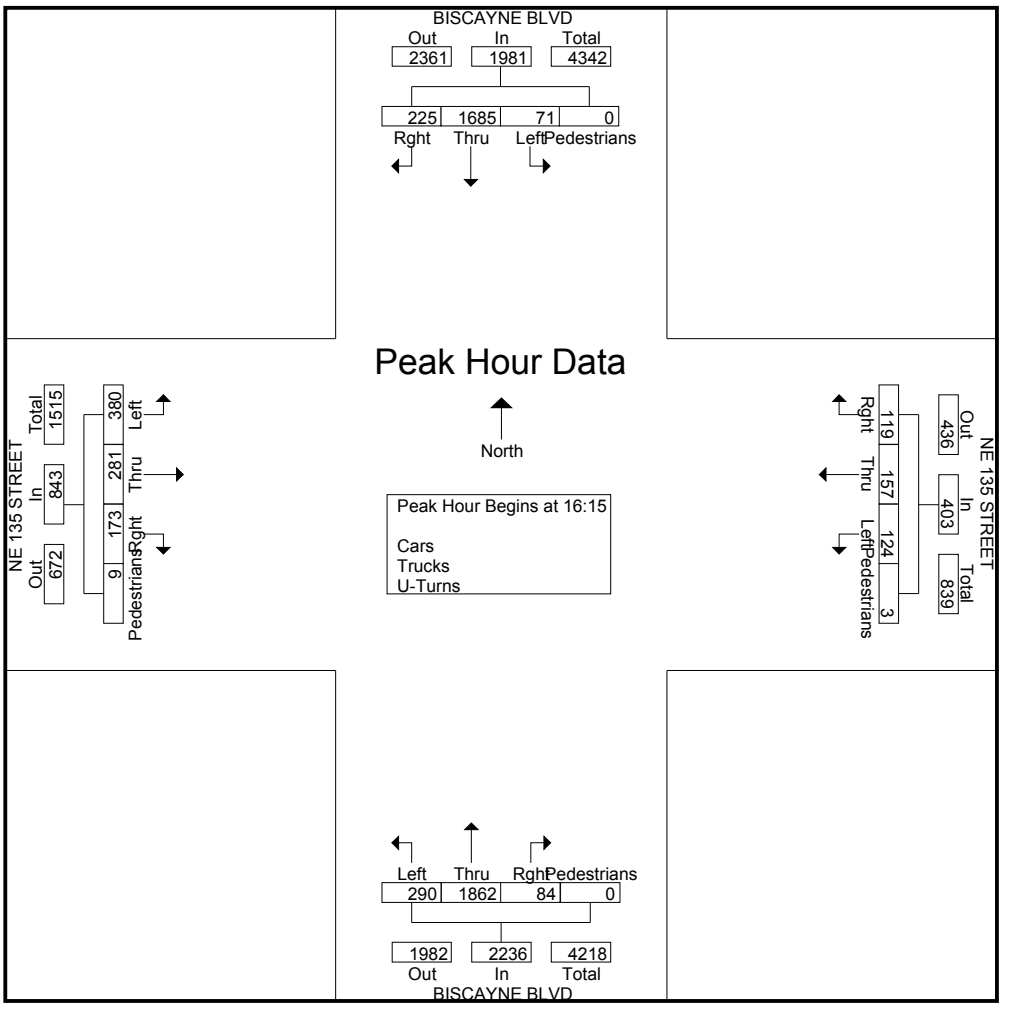


NE 135 ST & BISCAYNE BLVD

File Name : NE 135 ST & BISCAYNE BLVD.
Site Code : 00000000
Start Date : 09/20/2012
Page No : 3

	BISCAYNE BLVD Northbound					BISCAYNE BLVD Southbound					NE 135 STREET Eastbound					NE 135 STREET Westbound					
Start Time	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Left	Thru	Rght	Pedestrians	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	66	438	21	0	525	20	**434**	43	0	**497**	89	62	37	**9**	197	29	**67**	23	0	119	1338
16:30	**83**	438	17	0	538	14	423	58	0	495	94	**90**	53	0	237	23	24	20	0	67	1337
16:45	64	**524**	16	0	**604**	**23**	413	60	0	496	87	39	27	0	153	27	32	18	1	78	1331
17:00	77	462	**30**	0	569	14	415	**64**	0	493	**110**	90	**56**	0	**256**	**45**	34	**58**	**2**	**139**	**1457**
Total Volume	290	1862	84	0	2236	71	1685	225	0	1981	380	281	173	9	843	124	157	119	3	403	5463
% App. Total	13	83.3	3.8	0		3.6	85.1	11.4	0		45.1	33.3	20.5	1.1		30.8	39	29.5	0.7		
PHF	.873	.888	.700	.000	.925	.772	.971	.879	.000	.996	.864	.781	.772	.250	.823	.689	.586	.513	.375	.725	.937



NE 151 ST & FIU ENTRANCE BISCAYNE

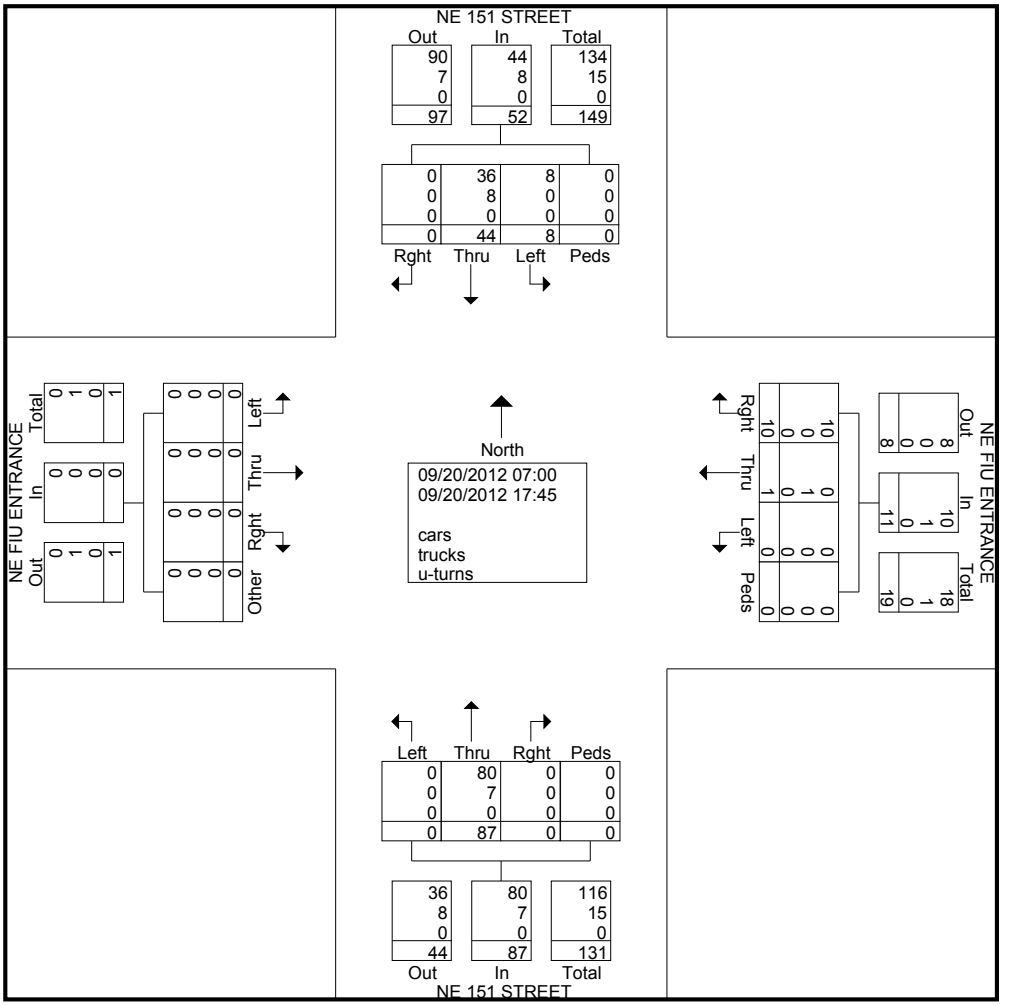
File Name : Not Named 2
Site Code : 00000000
Start Date : 09/20/2012
Page No : 1

Groups Printed- cars - trucks - turns

	NE 151 STREET Northbound				NE 151 STREET Southbound				NE FIU ENTRANCE Eastbound				NE FIU ENTRANCE Westbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Other	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
11:00	0	6	0	0	1	5	0	0	0	0	0	0	0	0	2	0	14
11:15	0	12	0	0	1	5	0	0	0	0	0	0	0	0	0	0	18
11:30	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
11:45	0	10	0	0	0	3	0	0	0	0	0	0	0	0	2	0	15
Total	0	36	0	0	2	13	0	0	0	0	0	0	0	0	4	0	55
12:00	0	21	0	0	2	1	0	0	0	0	0	0	0	0	0	0	24
12:15	0	11	0	0	2	4	0	0	0	0	0	0	0	0	3	0	20
12:30	0	8	0	0	2	13	0	0	0	0	0	0	0	0	3	0	26
12:45	0	11	0	0	0	13	0	0	0	0	0	0	0	1	0	0	25
Total	0	51	0	0	6	31	0	0	0	0	0	0	0	1	6	0	95
*** BREAK ***																	
Grand Total	0	87	0	0	8	44	0	0	0	0	0	0	0	1	10	0	150
Apprch %	0	100	0	0	15.4	84.6	0	0	0	0	0	0	0	9.1	90.9	0	
Total %	0	58	0	0	5.3	29.3	0	0	0	0	0	0	0	0.7	6.7	0	
cars	0	80	0	0	8	36	0	0	0	0	0	0	0	0	10	0	134
% cars	0	92	0	0	100	81.8	0	0	0	0	0	0	0	0	100	0	89.3
trucks	0	7	0	0	0	8	0	0	0	0	0	0	0	1	0	0	16
% trucks	0	8	0	0	0	18.2	0	0	0	0	0	0	0	100	0	0	10.7
u-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% u-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NE 151 ST & FIU ENTRANCE BISCAYNE

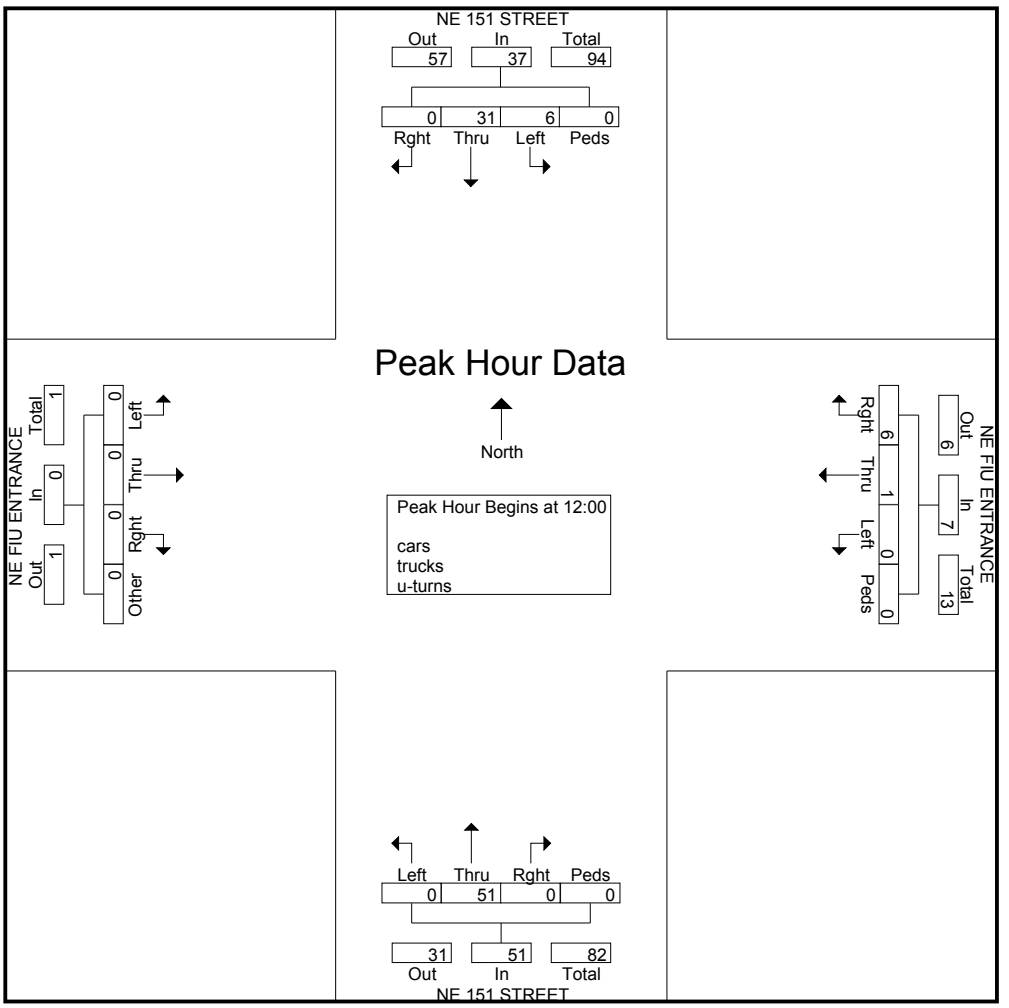
File Name : Not Named 2
Site Code : 00000000
Start Date : 09/20/2012
Page No : 2



NE 151 ST & FIU ENTRANCE BISCAYNE

File Name : Not Named 2
Site Code : 00000000
Start Date : 09/20/2012
Page No : 3

	NE 151 STREET Northbound					NE 151 STREET Southbound					NE FIU ENTRANCE Eastbound					NE FIU ENTRANCE Westbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00																					
12:00	0	**21**	0	0	**21**	**2**	1	0	0	3	0	0	0	0	0	0	0	0	0	0	24
12:15	0	11	0	0	11	2	4	0	0	6	0	0	0	0	0	0	0	**3**	0	**3**	20
12:30	0	8	0	0	8	2	**13**	0	0	**15**	0	0	0	0	0	0	0	3	0	3	**26**
12:45	0	11	0	0	11	0	13	0	0	13	0	0	0	0	0	0	**1**	0	0	1	25
Total Volume	0	51	0	0	51	6	31	0	0	37	0	0	0	0	0	0	1	6	0	7	95
% App. Total	0	100	0	0		16.2	83.8	0	0		0	0	0	0		0	14.3	85.7	0		
PHF	.000	.607	.000	.000	.607	.750	.596	.000	.000	.617	.000	.000	.000	.000	.000	.000	.250	.500	.000	.583	.913



NE 151 STreet & BISCAYNE BLVD

File Name : Not Named 1
Site Code : 00000000
Start Date : 09/20/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	BISCAYNE BLVD Northbound				BISCAYNE BLVD Southbound				NE 151 STREET Eastbound				NE 151 STREET Westbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
*** BREAK ***																	
16:00	30	370	32	0	45	360	37	0	49	19	28	0	46	37	81	0	1134
16:15	38	475	40	0	52	419	40	0	56	30	44	0	39	41	64	0	1338
16:30	51	410	62	0	50	404	68	0	38	51	46	0	67	65	59	0	1371
16:45	38	487	74	0	49	519	92	0	45	50	47	0	42	42	72	0	1557
Total	157	1742	208	0	196	1702	237	0	188	150	165	0	194	185	276	0	5400
17:00	38	495	59	0	38	463	64	0	47	42	40	0	56	82	73	0	1497
17:15	44	506	46	0	56	443	51	0	43	28	36	0	65	69	80	0	1467
17:30	45	438	37	0	64	454	39	0	40	37	42	0	53	71	77	0	1397
17:45	37	524	44	0	29	398	37	0	46	35	26	0	48	24	63	0	1311
Total	164	1963	186	0	187	1758	191	0	176	142	144	0	222	246	293	0	5672
Grand Total	321	3705	394	0	383	3460	428	0	364	292	309	0	416	431	569	0	11072
Apprch %	7.3	83.8	8.9	0	9	81	10	0	37.7	30.3	32	0	29.4	30.4	40.2	0	
Total %	2.9	33.5	3.6	0	3.5	31.2	3.9	0	3.3	2.6	2.8	0	3.8	3.9	5.1	0	
Cars	295	3667	389	0	357	3415	422	0	360	290	301	0	408	427	559	0	10890
% Cars	91.9	99	98.7	0	93.2	98.7	98.6	0	98.9	99.3	97.4	0	98.1	99.1	98.2	0	98.4
Trucks	3	38	5	0	5	45	6	0	4	2	8	0	8	4	10	0	138
% Trucks	0.9	1	1.3	0	1.3	1.3	1.4	0	1.1	0.7	2.6	0	1.9	0.9	1.8	0	1.2
U-Turns	23	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	44
% U-Turns	7.2	0	0	0	5.5	0	0	0	0	0	0	0	0	0	0	0	0.4

NE 151 STreet & BISCAYNE BLVD

File Name : Not Named 1
Site Code : 00000000
Start Date : 09/20/2012
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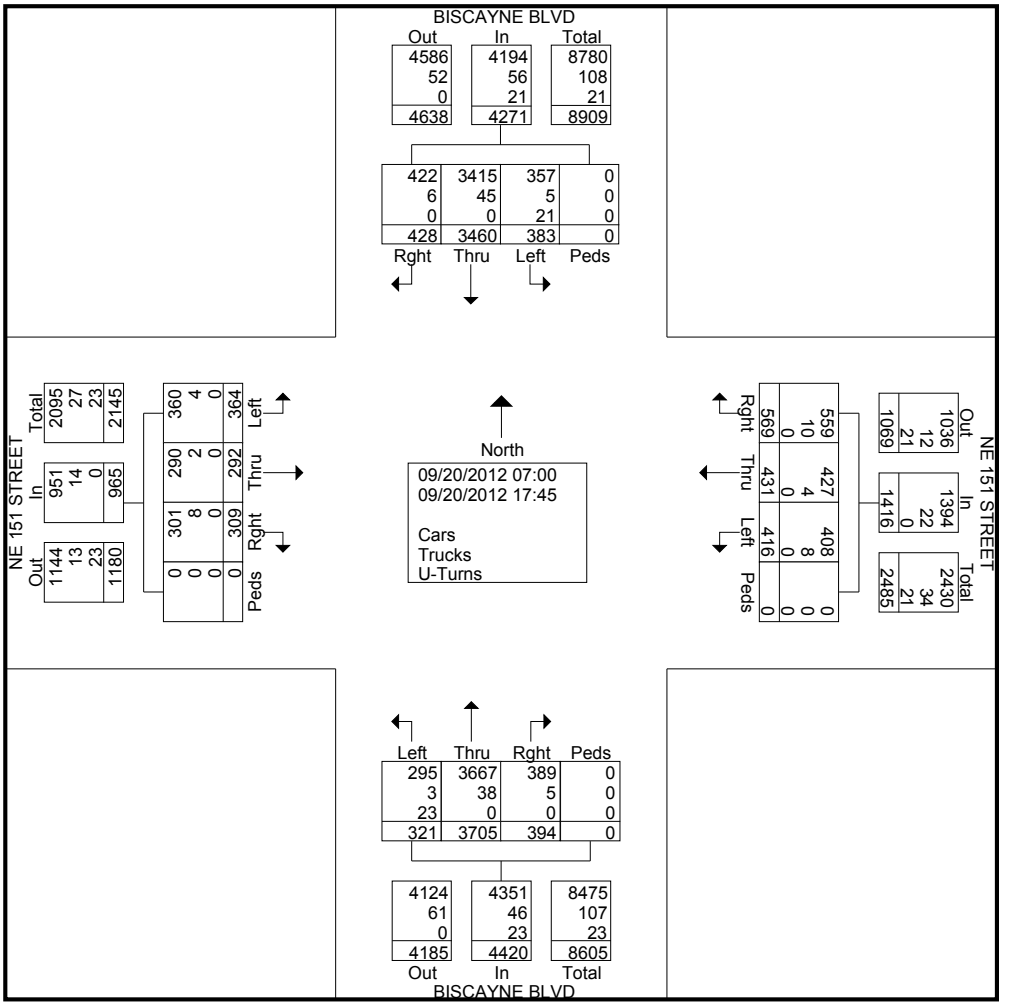
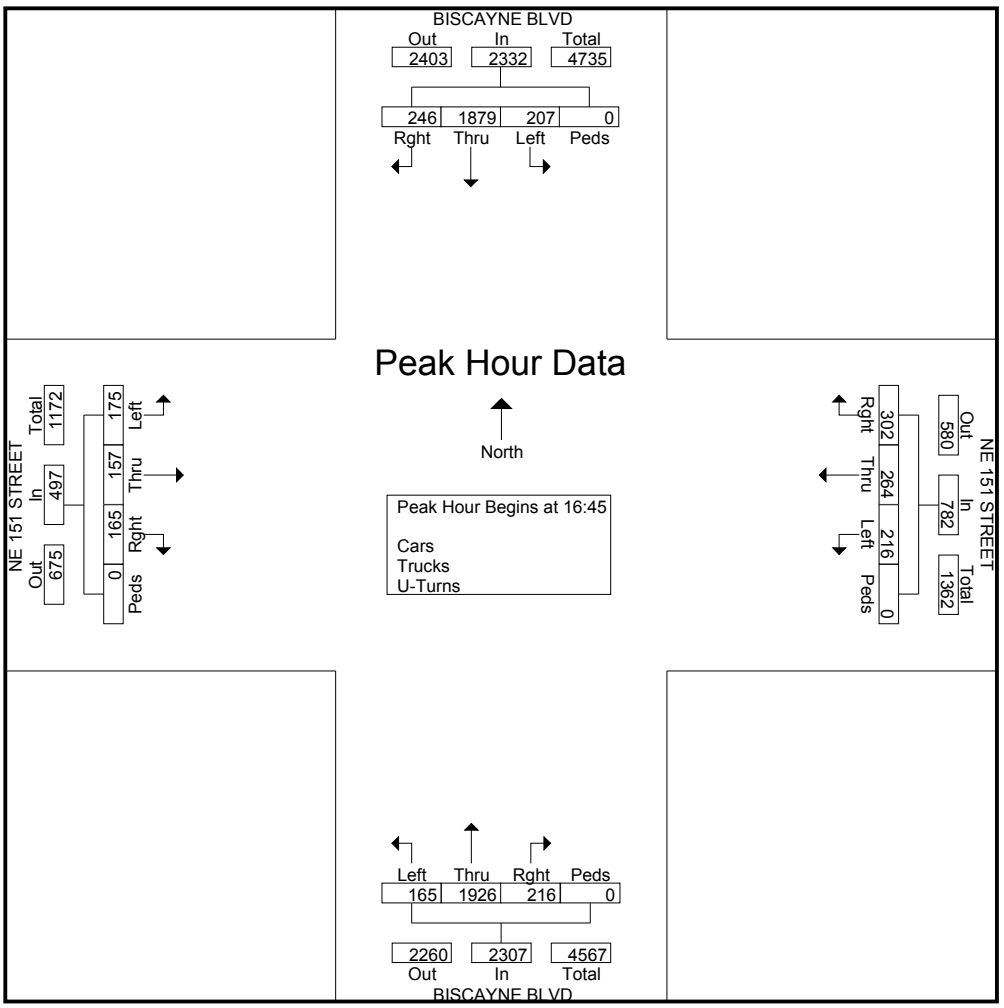


NE 151 STreet & BISCAYNE BLVD

File Name : Not Named 1
Site Code : 00000000
Start Date : 09/20/2012
Page No : 3

	BISCAYNE BLVD Northbound					BISCAYNE BLVD Southbound					NE 151 STREET Eastbound					NE 151 STREET Westbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	38	487	**74**	0	**599**	49	**519**	**92**	0	**660**	45	**50**	**47**	0	**142**	42	42	72	0	156	**1557**
17:00	38	495	59	0	592	38	463	64	0	565	**47**	42	40	0	129	56	**82**	73	0	211	1497
17:15	44	**506**	46	0	596	56	443	51	0	550	43	28	36	0	107	**65**	69	**80**	0	**214**	1467
17:30	**45**	438	37	0	520	**64**	454	39	0	557	40	37	42	0	119	53	71	77	0	201	1397
Total Volume	165	1926	216	0	2307	207	1879	246	0	2332	175	157	165	0	497	216	264	302	0	782	5918
% App. Total	7.2	83.5	9.4	0		8.9	80.6	10.5	0		35.2	31.6	33.2	0		27.6	33.8	38.6	0		
PHF	.917	.952	.730	.000	.963	.809	.905	.668	.000	.883	.931	.785	.878	.000	.875	.831	.805	.944	.000	.914	.950



NE 151 STREET & NE 145 STREET

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : Not Named 1
Site Code : 00000000
Start Date : 09/20/2012
Page No : 1

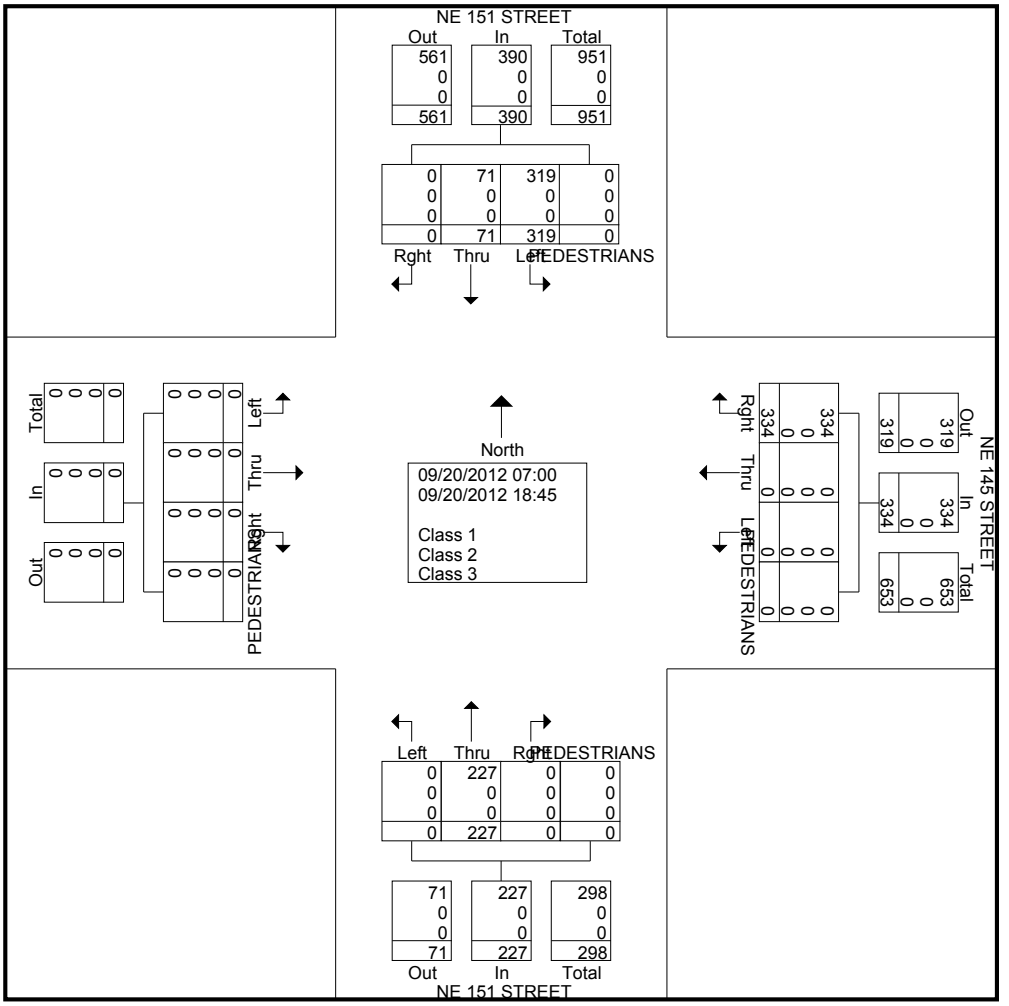
Groups Printed- Class 1 - Class 2 - Class 3

	NE 151 STREET Northbound				NE 151 STREET Southbound				Eastbound				NE 145 STREET Westbound				
Start Time	Left	Thru	Rght	PEDESTRIANS	Left	Thru	Rght	PEDESTRIANS	Left	Thru	Rght	PEDESTRIANS	Left	Thru	Rght	PEDESTRIANS	Int. Total
*** BREAK ***																	
11:00	0	25	0	0	54	13	0	0	0	0	0	0	0	0	43	0	135
11:15	0	17	0	0	67	15	0	0	0	0	0	0	0	0	42	0	141
11:30	0	48	0	0	53	5	0	0	0	0	0	0	0	0	53	0	159
11:45	0	37	0	0	36	13	0	0	0	0	0	0	0	0	46	0	132
Total	0	127	0	0	210	46	0	0	0	0	0	0	0	0	184	0	567
12:00	0	21	0	0	26	5	0	0	0	0	0	0	0	0	37	0	89
12:15	0	27	0	0	34	7	0	0	0	0	0	0	0	0	31	0	99
12:30	0	26	0	0	26	6	0	0	0	0	0	0	0	0	41	0	99
12:45	0	26	0	0	23	7	0	0	0	0	0	0	0	0	41	0	97
Total	0	100	0	0	109	25	0	0	0	0	0	0	0	0	150	0	384
*** BREAK ***																	
Grand Total	0	227	0	0	319	71	0	0	0	0	0	0	0	0	334	0	951
Apprch %	0	100	0	0	81.8	18.2	0	0	0	0	0	0	0	0	100	0	
Total %	0	23.9	0	0	33.5	7.5	0	0	0	0	0	0	0	0	35.1	0	
Class 1	0	227	0	0	319	71	0	0	0	0	0	0	0	0	334	0	951
% Class 1	0	100	0	0	100	100	0	0	0	0	0	0	0	0	100	0	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Class 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NE 151 STREET & NE 145 STREET

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : Not Named 1
Site Code : 00000000
Start Date : 09/20/2012
Page No : 2

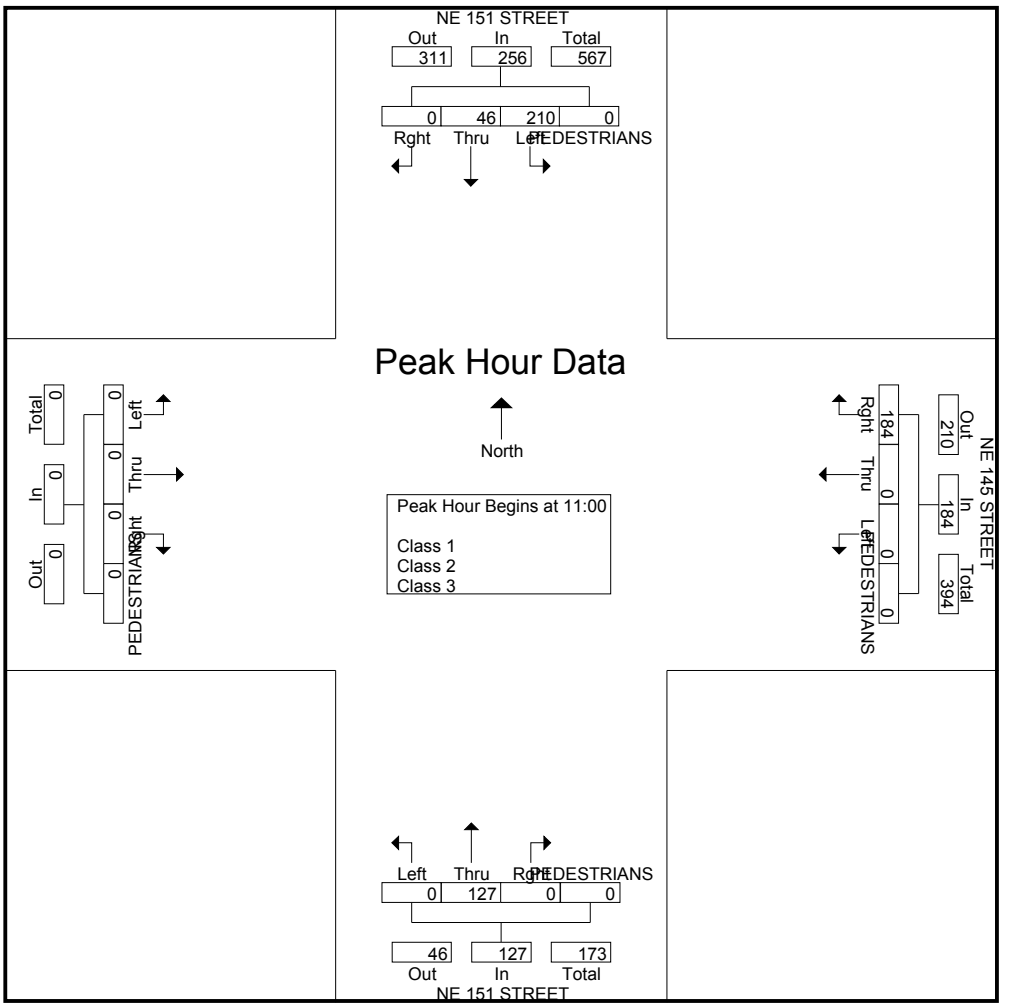


NE 151 STREET & NE 145 STREET

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : Not Named 1
Site Code : 00000000
Start Date : 09/20/2012
Page No : 3

	NE 151 STREET Northbound					NE 151 STREET Southbound					Eastbound					NE 145 STREET Westbound					
Start Time	Left	Thru	Rght	PEDESTRIANS	App. Total	Left	Thru	Rght	PEDESTRIANS	App. Total	Left	Thru	Rght	PEDESTRIANS	App. Total	Left	Thru	Rght	PEDESTRIANS	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00																					
11:00	0	25	0	0	25	54	13	0	0	67	0	0	0	0	0	0	0	43	0	43	135
11:15	0	17	0	0	17	**67**	**15**	0	0	**82**	0	0	0	0	0	0	0	42	0	42	141
11:30	0	**48**	0	0	**48**	53	5	0	0	58	0	0	0	0	0	0	0	**53**	0	**53**	**159**
11:45	0	37	0	0	37	36	13	0	0	49	0	0	0	0	0	0	0	46	0	46	132
Total Volume	0	127	0	0	127	210	46	0	0	256	0	0	0	0	0	0	0	184	0	184	567
% App. Total	0	100	0	0		82	18	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.661	.000	.000	.661	.784	.767	.000	.000	.780	.000	.000	.000	.000	.000	.000	.000	.868	.000	.868	.892



NE 163 STREET AND BISCAYNE BLVD

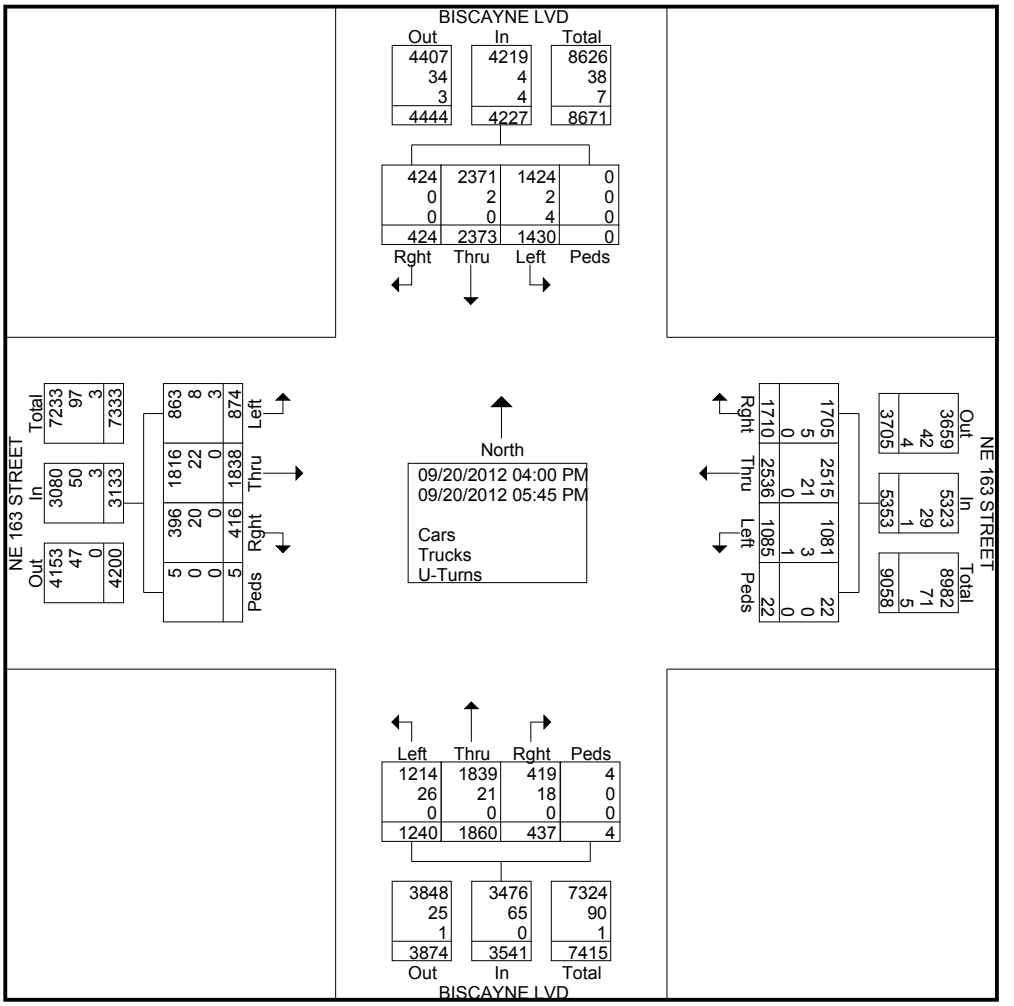
File Name : NE 163 Street and Biscayne
Site Code : 00000000
Start Date : 09/20/2012
Page No : 1

Groups Printed- Cars - Trucks - Turns

	BISCAYNE LVD Northbound				BISCAYNE LVD Southbound				NE 163 STREET Eastbound				NE 163 STREET Westbound				
Start Time	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Left	Thru	Rght	Peds	Int. Total
04:00 PM	88	205	33	2	186	290	0	0	75	182	40	0	71	307	205	0	1684
04:15 PM	264	185	31	0	166	291	21	0	84	230	50	0	127	299	186	0	1934
04:30 PM	194	184	36	0	159	358	19	0	141	183	45	0	165	340	209	1	2034
04:45 PM	128	280	53	0	164	335	53	0	85	208	65	0	149	313	229	2	2064
Total	674	854	153	2	675	1274	93	0	385	803	200	0	512	1259	829	3	7716
05:00 PM	124	250	60	0	177	285	5	0	85	281	56	1	103	296	199	4	1926
05:15 PM	180	287	80	0	199	247	90	0	148	286	72	0	162	367	201	3	2322
05:30 PM	153	214	55	0	163	284	67	0	122	206	34	0	130	330	244	10	2012
05:45 PM	109	255	89	2	216	283	169	0	134	262	54	4	178	284	237	2	2278
Total	566	1006	284	2	755	1099	331	0	489	1035	216	5	573	1277	881	19	8538
Grand Total	1240	1860	437	4	1430	2373	424	0	874	1838	416	5	1085	2536	1710	22	16254
Apprch %	35	52.5	12.3	0.1	33.8	56.1	10	0	27.9	58.7	13.3	0.2	20.3	47.4	31.9	0.4	
Total %	7.6	11.4	2.7	0	8.8	14.6	2.6	0	5.4	11.3	2.6	0	6.7	15.6	10.5	0.1	
Cars	1214	1839	419	4	1424	2371	424	0	863	1816	396	5	1081	2515	1705	22	16098
% Cars	97.9	98.9	95.9	100	99.6	99.9	100	0	98.7	98.8	95.2	100	99.6	99.2	99.7	100	99
Trucks	26	21	18	0	2	2	0	0	8	22	20	0	3	21	5	0	148
% Trucks	2.1	1.1	4.1	0	0.1	0.1	0	0	0.9	1.2	4.8	0	0.3	0.8	0.3	0	0.9
U-Turns	0	0	0	0	4	0	0	0	3	0	0	0	1	0	0	0	8
% U-Turns	0	0	0	0	0.3	0	0	0	0.3	0	0	0	0.1	0	0	0	0

NE 163 STREET AND BISCAYNE BLVD

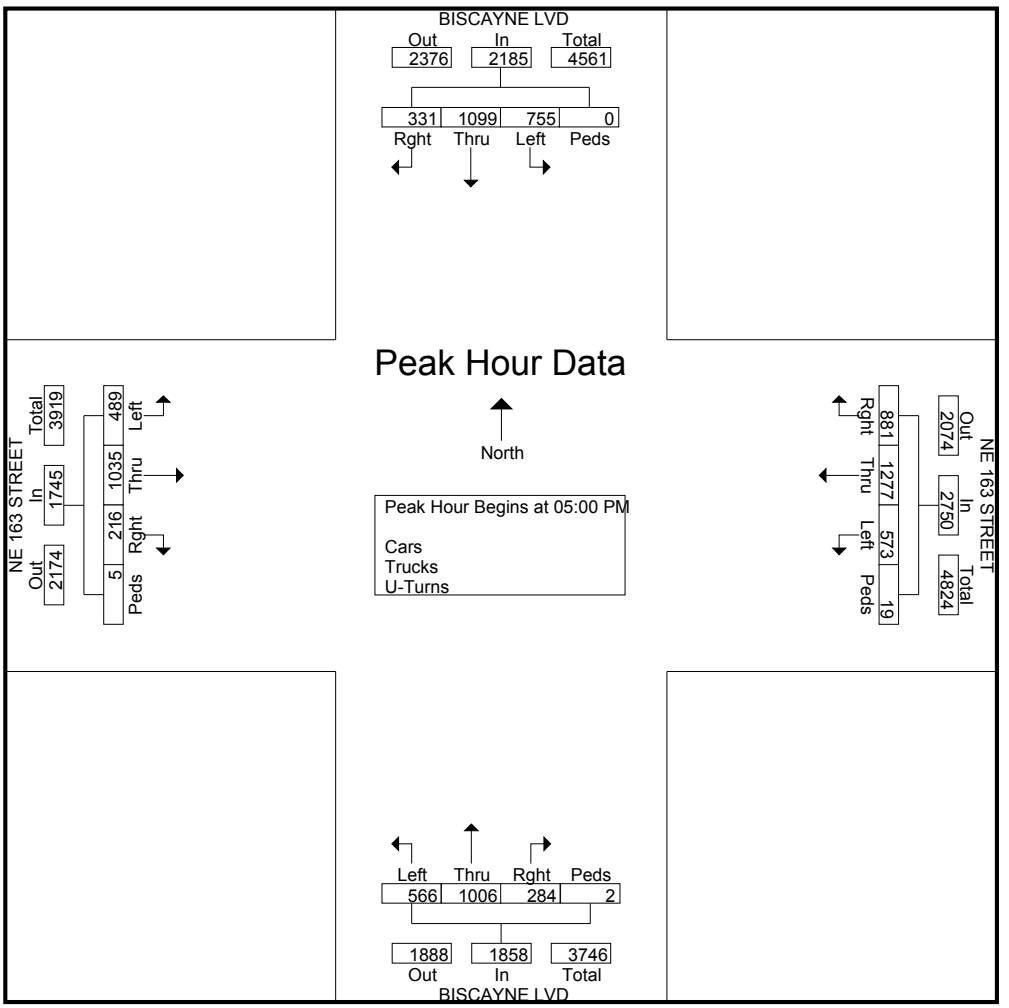
File Name : NE 163 Street and Biscayne
Site Code : 00000000
Start Date : 09/20/2012
Page No : 2



NE 163 STREET AND BISCAYNE BLVD

File Name : NE 163 Street and Biscayne
Site Code : 00000000
Start Date : 09/20/2012
Page No : 3

	BISCAYNE LVD Northbound					BISCAYNE LVD Southbound					NE 163 STREET Eastbound					NE 163 STREET Westbound					
Start Time	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	124	250	60	0	434	177	**285**	5	0	467	85	281	56	1	423	103	296	199	4	602	1926
05:15 PM	**180**	**287**	80	0	**547**	199	247	90	0	536	**148**	**286**	**72**	0	**506**	162	**367**	201	3	**733**	**2322**
05:30 PM	153	214	55	0	422	163	284	67	0	514	122	206	34	0	362	130	330	**244**	**10**	714	2012
05:45 PM	109	255	**89**	**2**	455	**216**	283	**169**	0	**668**	134	262	54	**4**	454	**178**	284	237	2	701	2278
Total Volume	566	1006	284	2	1858	755	1099	331	0	2185	489	1035	216	5	1745	573	1277	881	19	2750	8538
% App. Total	30.5	54.1	15.3	0.1		34.6	50.3	15.1	0		28	59.3	12.4	0.3		20.8	46.4	32	0.7		
PHF	.786	.876	.798	.250	.849	.874	.964	.490	.000	.818	.826	.905	.750	.313	.862	.805	.870	.903	.475	.938	.919



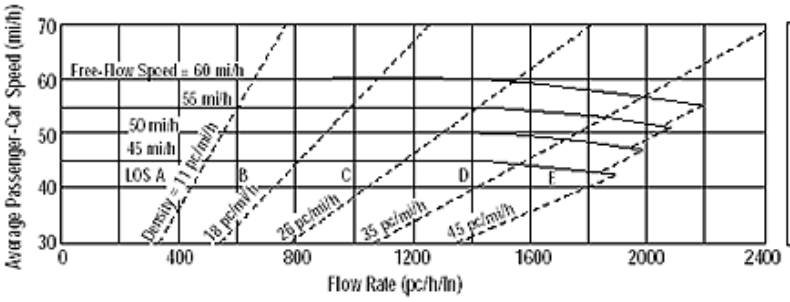
APPENDIX C

Capacity Analysis (Segment) (HCS 2010 Capacity Analysis) – Year 2012 (MMC)

Capacity Analysis (Segment) (HCS 2010 Capacity Analysis) – Year 2012 (EC)

Capacity Analysis (Segment) (HCS 2010 Capacity Analysis) – Year 2012 (BBC)

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	N/O SW 108th Avenue_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1525	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	555
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.3
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*552.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.18*
Bicycle level of service (Exhibit 15-4)	*B*

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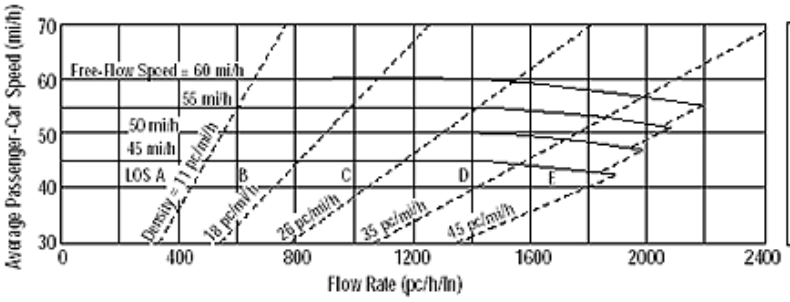
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	N/O SW 108th Avenue_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1800	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	655
Speed, S (mi/h)	45.0
D (pc/mi/ln)	14.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*652.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.26*
Bicycle level of service (Exhibit 15-4)	*B*

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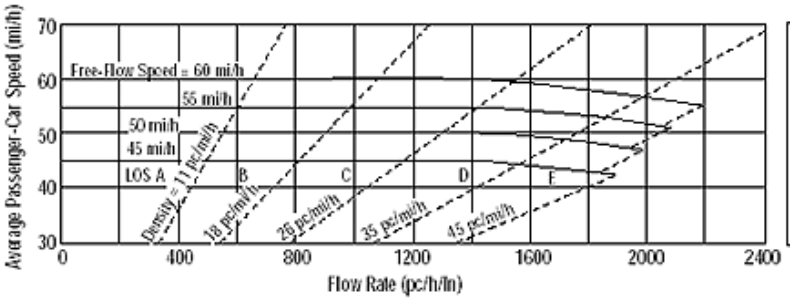
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	N/O SW 12th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2170	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	790
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.6
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*786.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.36*
Bicycle level of service (Exhibit 15-4)	*B*

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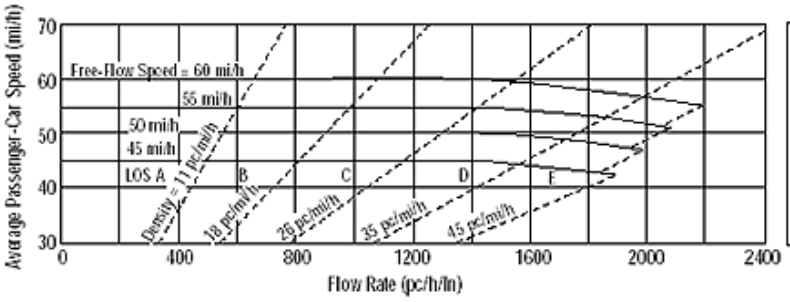
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	N/O SW 12th Street_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2067	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	752
Speed, S (mi/h)	45.0
D (pc/mi/ln)	16.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*748.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.33*
Bicycle level of service (Exhibit 15-4)	*B*

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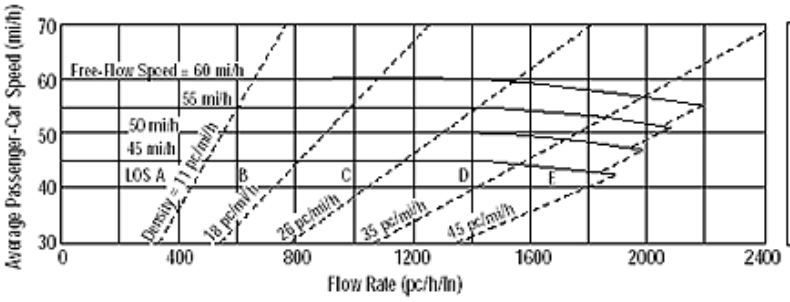
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	N/O SW 16th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1465	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	533
Speed, S (mi/h)	45.0
D (pc/mi/ln)	11.8
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*530.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.36*
Bicycle level of service (Exhibit 15-4)	*B*

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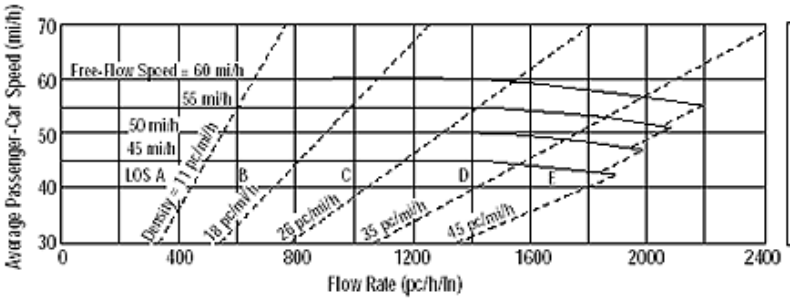
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	N/O SW 16th Street_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1571	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	572
Speed, S (mi/h)	45.0
D (pc/mi/ln)	12.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*569.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.40*
Bicycle level of service (Exhibit 15-4)	*B*

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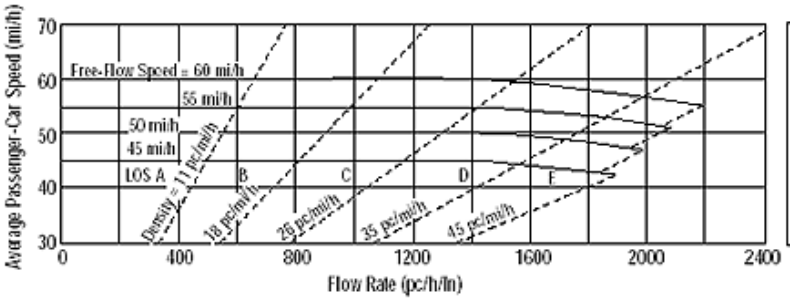
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	S/O SW 108th Avenue_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1869	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	680
Speed, S (mi/h)	45.0
D (pc/mi/ln)	15.1
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*677.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.28*
Bicycle level of service (Exhibit 15-4)	*B*

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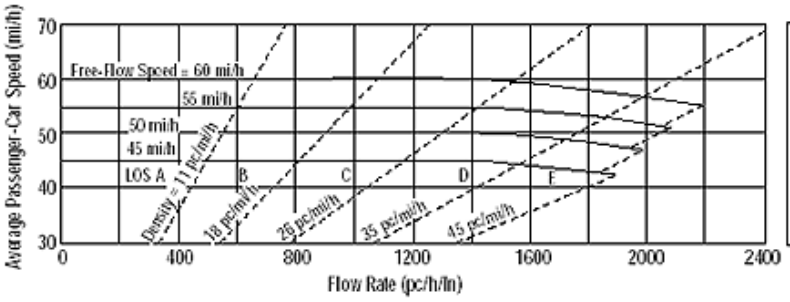
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	S/O SW 108th Avenue_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1869	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	680
Speed, S (mi/h)	45.0
D (pc/mi/ln)	15.1
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*677.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.28*
Bicycle level of service (Exhibit 15-4)	*B*

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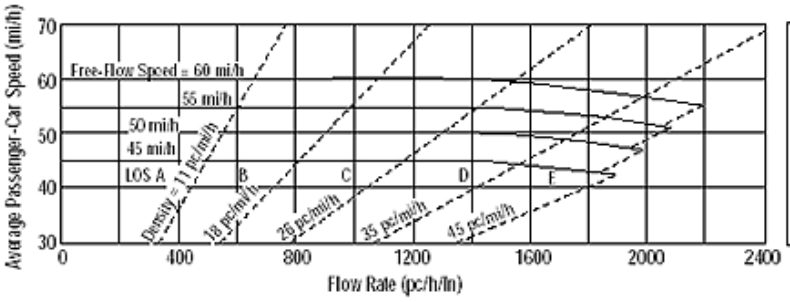
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	S/O SW 12th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2215	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	806
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.9
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*802.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.37*
Bicycle level of service (Exhibit 15-4)	*B*

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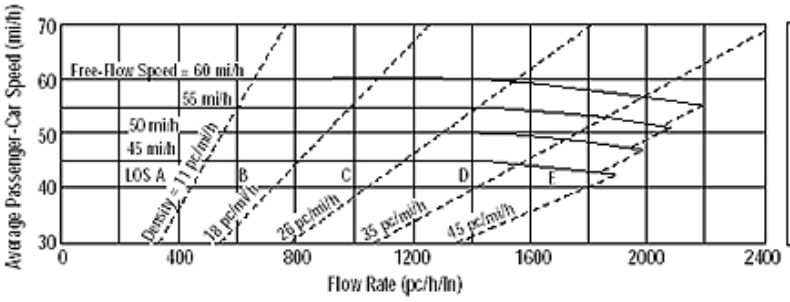
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	S/O SW 12th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1941	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	706
Speed, S (mi/h)	45.0
D (pc/mi/ln)	15.7
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*703.3*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.30*
Bicycle level of service (Exhibit 15-4)	*B*

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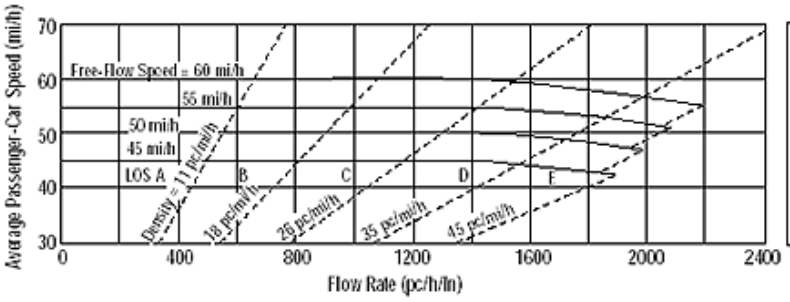
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	S/O SW 16th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1258	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	458
Speed, S (mi/h)	45.0
D (pc/mi/ln)	10.2
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*455.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.08*
Bicycle level of service (Exhibit 15-4)	*B*

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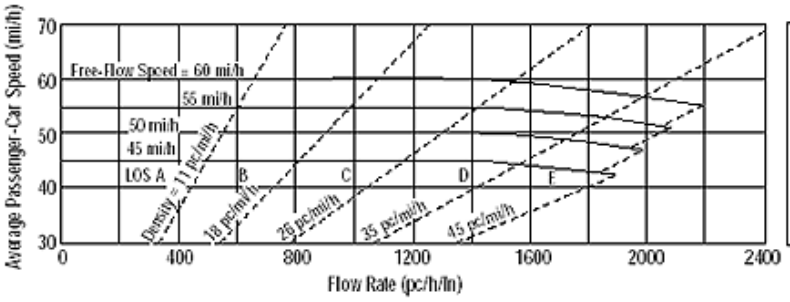
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 107th Avenue
From/To	S/O SW 16th Street_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1772	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	645
Speed, S (mi/h)	45.0
D (pc/mi/ln)	14.3
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*642.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.25*
Bicycle level of service (Exhibit 15-4)	*B*

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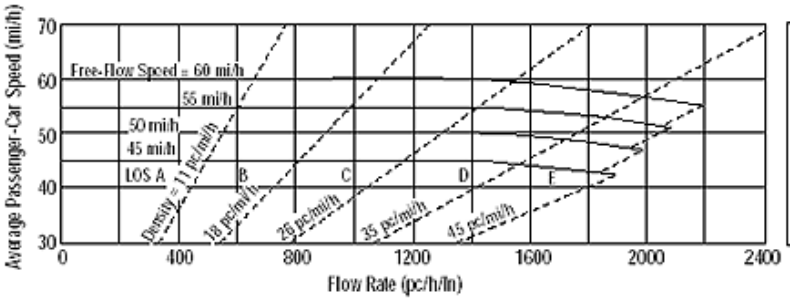
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 108th Avenue
From/To	W/O SW 107th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	97	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	52
Speed, S (mi/h)	45.0
D (pc/mi/ln)	1.2
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*52.7*

Effective width, W_v (Eq. 15-29) ft	*33.27*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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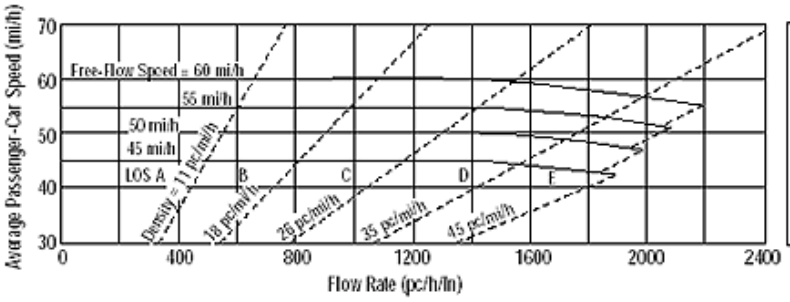
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 108th Avenue
From/To	W/O SW 107th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	116	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	63
Speed, S (mi/h)	45.0
D (pc/mi/ln)	1.4
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*63.0*

Effective width, W_v (Eq. 15-29) ft	*31.56*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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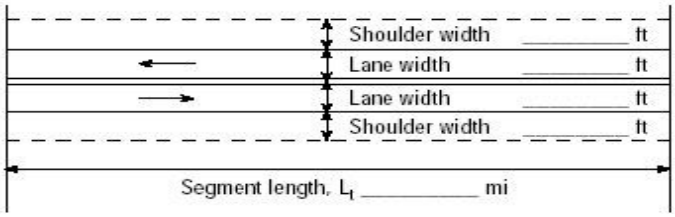
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 109th Avenue*
Agency or Company	*Miller Legg*	From/To	*N/O SW 8th Street_NB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Show North Arrow

() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Analysis direction vol., V_d	*442*veh/h	Grade Length mi	Up/down
Opposing direction vol., V_o	*623*veh/h	Peak-hour factor, PHF	*0.85*
Shoulder width ft	*6.0*	No-passing zone	*20*%
Lane Width ft	*12.0*	% Trucks and Buses , P_T	*1* %
Segment Length mi	*0.0*	% Recreational vehicles, P_R	*1*%
		Access points *mi*	*8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.2*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.998*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*521*	*734*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.9 mi/h*
		Percent free flow speed, PFFS	*76.6* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*520*	*733*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*55.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*21.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*64.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.31*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*520.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.96*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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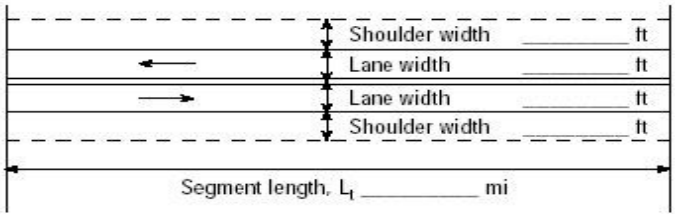
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 109th Avenue*
Agency or Company	*Miller Legg*	From/To	*N/O SW 8th Street_SB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

Analysis direction vol., V_d *623*veh/h

% Trucks and Buses , P_T *1* %

Opposing direction vol., V_o *442*veh/h

% Recreational vehicles, P_R *1%*

Shoulder width ft *6.0*

Access points *mi* *8*/mi

Lane Width ft *12.0*

Segment Length mi *0.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.2*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*0.998*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*734*	*521*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.6 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.7 mi/h*
		Percent free flow speed, PFFS	*76.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*733*	*520*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*21.5*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*77.1*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.43*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1697*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*76.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*732.9*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.13*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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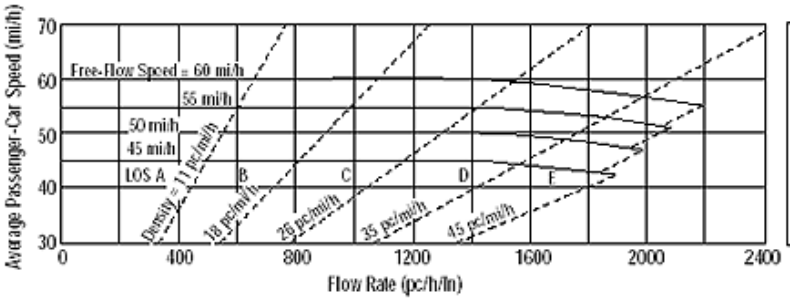
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 109th Avenue
From/To	S/O SW 8th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	726	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	396
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.8
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*394.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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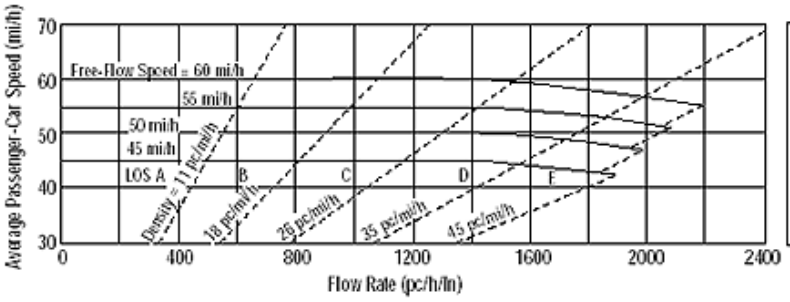
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 109th Avenue
From/To	S/O SW 8th Street_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	535	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	292
Speed, S (mi/h)	45.0
D (pc/mi/ln)	6.5
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*290.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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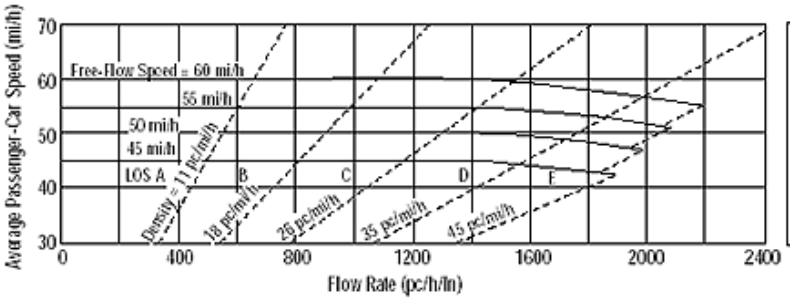
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 112th Avenue
From/To	S/O SW 8th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	678	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	370
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.2
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*368.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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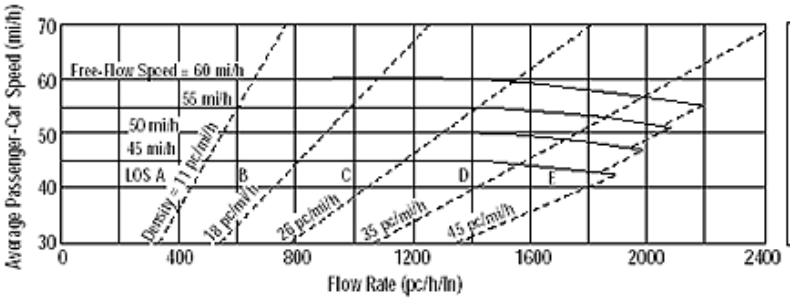
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 112th Avenue
From/To	S/O SW 8th Street_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	717	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	391
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.7
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*389.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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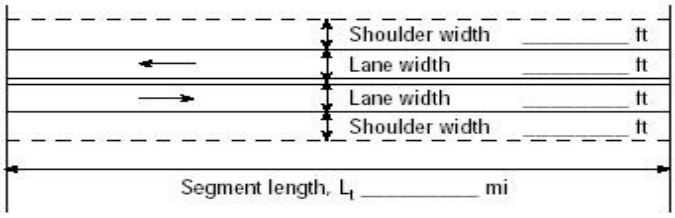
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 117th Avenue*
Agency or Company	*Miller Legg*	From/To	*N/O SW 17th Street_NB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Show North Arrow

() Class I highway () Class II highway (θ) Class III highway

Terrain (θ) Level () Rolling

Analysis direction vol., V_d	*595*veh/h	Grade Length	mi Up/down
Opposing direction vol., V_o	*506*veh/h	Peak-hour factor, PHF	*0.85*
Shoulder width ft	*6.0*	No-passing zone	*20*%
Lane Width ft	*12.0*	% Trucks and Buses , P_T	*1* %
Segment Length mi	*0.0*	% Recreational vehicles, P_R	*1*%
		Access points *mi*	*8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*701*	*596*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.5 mi/h*
		Percent free flow speed, PFFS	*75.6* %

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*700*	*595*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*62.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*21.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*74.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.41*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*700.0*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.11*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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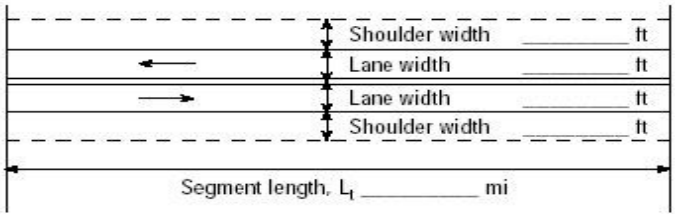
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 117th Avenue*
Agency or Company	*Miller Legg*	From/To	*N/O SW 17th Street_SB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Analysis direction vol., V_d *506*veh/h

Opposing direction vol., V_o *595*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *0.0*

0 Class I highway 0 Class II highway 0 Class III highway

Terrain 0 Level 0 Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.85*
No-passing zone *20%*
% Trucks and Buses , P_T *1 %*
% Recreational vehicles, P_R *1%*
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*596*	*701*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*32.6 mi/h*
		Percent free flow speed, PFFS	*75.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*595*	*700*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*59.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*21.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*69.4*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.35*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*75.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*595.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.03*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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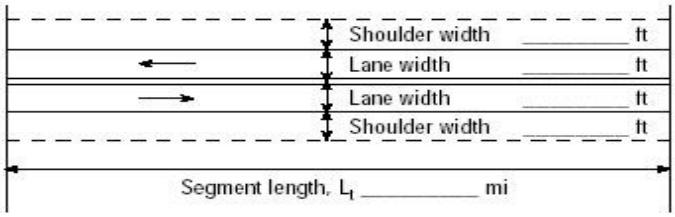
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 117th Avenue*
Agency or Company	*Miller Legg*	From/To	*S/O SW 17th Street_NB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Analysis direction vol., V_d *540*veh/h

Opposing direction vol., V_o *877*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.0*

() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

% Trucks and Buses , P_T *1 %*

% Recreational vehicles, P_R *1%*

Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*636*	*1032*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.8 mi/h*
		Percent free flow speed, PFFS	*69.2 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*635*	*1032*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*64.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*15.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*70.9*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.37*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*69.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*635.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.06*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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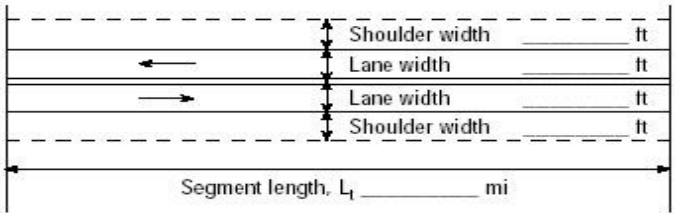
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 117th Avenue*
Agency or Company	*Miller Legg*	From/To	*S/O SW 17th Street_SB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Show North Arrow

() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

Analysis direction vol., V_d *877*veh/h

% Trucks and Buses , P_T *1* %

Opposing direction vol., V_o *540*veh/h

% Recreational vehicles, P_R *1%*

Shoulder width ft *6.0*

Access points *mi* *8*/mi

Lane Width ft *12.0*

Segment Length mi *0.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*1032*	*636*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*29.7 mi/h*
		Percent free flow speed, PFFS	*69.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*1032*	*635*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*75.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*15.7*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*85.2*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.61*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*69.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1031.8*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.31*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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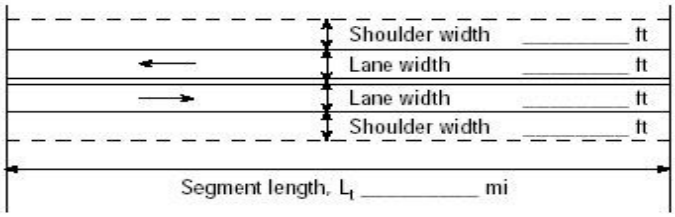
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 12th Street*
Agency or Company	*Miller Legg*	From/To	*E/O SW 107th Avenue_EB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Analysis direction vol., V_d *227*veh/h
Opposing direction vol., V_o *0*veh/h
Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *0.0*

() Class I highway () Class II highway (•) Class III highway
Terrain (•) Level () Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.85*
No-passing zone *20%*
% Trucks and Buses , P_T *1 %*
% Recreational vehicles, P_R *1%*
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.9*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.996*	*0.991*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*268*	*0*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.1 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*40.8 mi/h*
		Percent free flow speed, PFFS	*94.9 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*0.999*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*267*	*0*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*27.5*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*22.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*50.3*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*A*
Volume to capacity ratio, *v/c*	*0.16*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1685*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1698*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*94.9*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*267.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.81*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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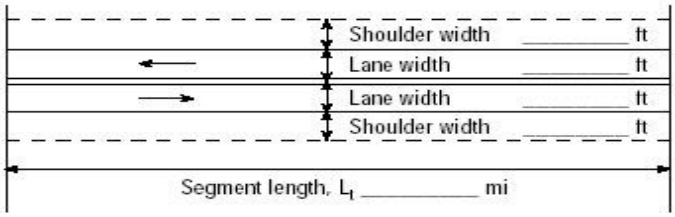
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 12th Street*
Agency or Company	*Miller Legg*	From/To	*E/O SW 107th Avenue_WB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Analysis direction vol., V_d *0*veh/h

Opposing direction vol., V_o *227*veh/h

Shoulder width ft *6.0*
Lane Width ft *12.0*
Segment Length mi *0.0*

0 Class I highway 0 Class II highway 0 Class III highway

Terrain 0 Level 0 Rolling
Grade Length mi Up/down
Peak-hour factor, PHF *0.85*
No-passing zone *20%*
% Trucks and Buses , P_T *1 %*
% Recreational vehicles, P_R *1%*
Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.9*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.991*	*0.996*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*0*	*268*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*40.0 mi/h*
		Percent free flow speed, PFFS	*93.1 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*0.999*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*0*	*267*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*0.0*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*22.8*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*0.0*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*A*
Volume to capacity ratio, *v/c*	*0.00*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1693*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1698*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*93.1*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*0.0*
Effective width, Wv (Eq. 15-29) ft	*42.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*-6.96*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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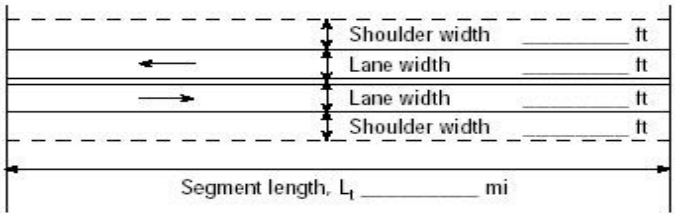
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 12th Street*
Agency or Company	*Miller Legg*	From/To	*W/O SW 107th Avenue_EB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Show North Arrow

() Class I highway () Class II highway (θ) Class III highway

Terrain (θ) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

% Trucks and Buses , P_T *1 %*

% Recreational vehicles, P_R *1%*

Access points *mi* *8*/mi

Analysis direction vol., V_d *745*veh/h

Opposing direction vol., V_o *542*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*876*	*638*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*30.9 mi/h*
		Percent free flow speed, PFFS	*71.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*876*	*638*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*70.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*18.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.52*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*876.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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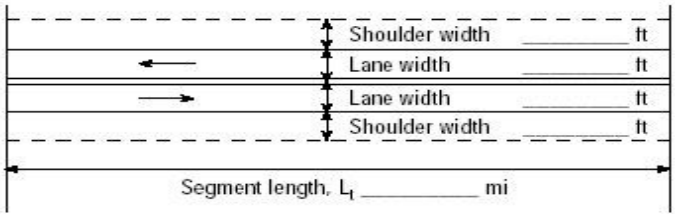
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 12th Street*
Agency or Company	*Miller Legg*	From/To	*W/O SW 107th Avenue_WB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Show North Arrow

() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

% Trucks and Buses , P_T *1 %*

% Recreational vehicles, P_R *1%*

Access points *mi* *8*/mi

Analysis direction vol., V_d *745*veh/h

Opposing direction vol., V_o *542*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*876*	*638*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.4 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*30.9 mi/h*
		Percent free flow speed, PFFS	*71.8 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*876*	*638*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*70.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*18.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*80.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*D*
Volume to capacity ratio, *v/c*	*0.52*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*71.8*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*876.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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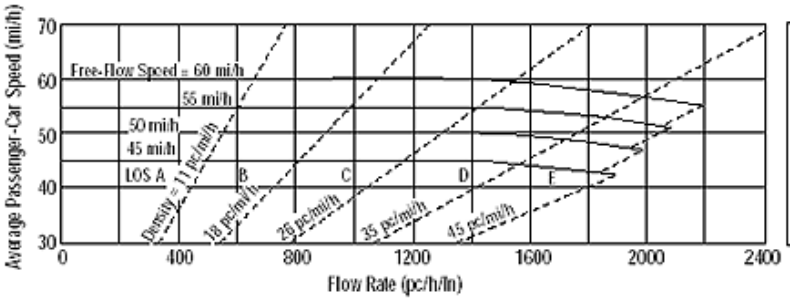
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 16th Street
From/To	E/O SW 107th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	531	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	290
Speed, S (mi/h)	45.0
D (pc/mi/ln)	6.4
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*288.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.66*
Bicycle level of service (Exhibit 15-4)	*B*

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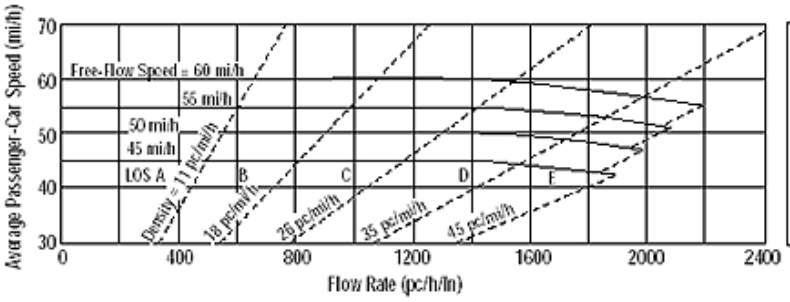
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 16th Street
From/To	E/O SW 107th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	798	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	435
Speed, S (mi/h)	45.0
D (pc/mi/ln)	9.7
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*433.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.87*
Bicycle level of service (Exhibit 15-4)	*B*

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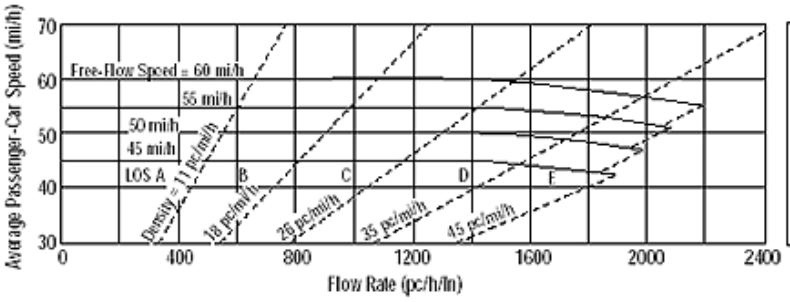
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 16th Street
From/To	W/O SW 107th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	820	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	447
Speed, S (mi/h)	45.0
D (pc/mi/ln)	9.9
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*445.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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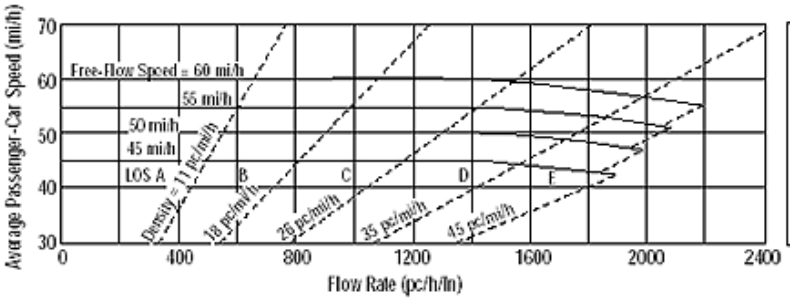
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 16th Street
From/To	W/O SW 107th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	679	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	370
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.2
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*369.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*

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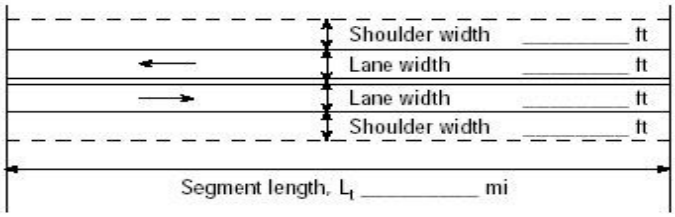
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 17th Street*
Agency or Company	*Miller Legg*	From/To	*E/O SW 117th Avenue_EB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Analysis direction vol., V_d *217*veh/h

Opposing direction vol., V_o *643*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.0*

() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

% Trucks and Buses , P_T *1 %*

% Recreational vehicles, P_R *1%*

Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.4*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.996*	*0.999*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*256*	*757*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.3 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.8 mi/h*
		Percent free flow speed, PFFS	*81.0 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.0*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*256*	*756*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*35.9*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*18.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*40.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.15*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1698*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*81.0*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*255.3*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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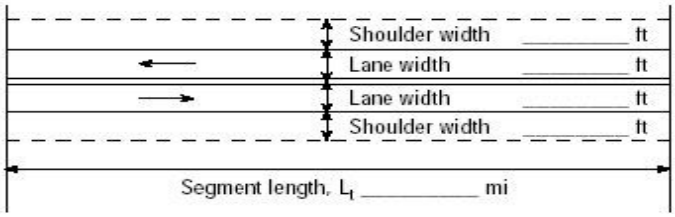
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*SW 17th Street*
Agency or Company	*Miller Legg*	From/To	*E/O SW 117th Avenue_WB*
Date Performed	*11/30/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Analysis direction vol., V_d *643*veh/h

Opposing direction vol., V_o *217*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.0*

() Class I highway () Class II highway (θ) Class III highway

Terrain (θ) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

% Trucks and Buses , P_T *1 %*

% Recreational vehicles, P_R *1%*

Access points *mi* *8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.1*	*1.4*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*0.999*	*0.996*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*757*	*256*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	*34.2 mi/h*
		Percent free flow speed, PFFS	*79.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.0*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*0.999*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*756*	*256*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*60.2*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*18.1*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*73.7*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*C*
Volume to capacity ratio, *v/c*	*0.45*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1693*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1698*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*79.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*756.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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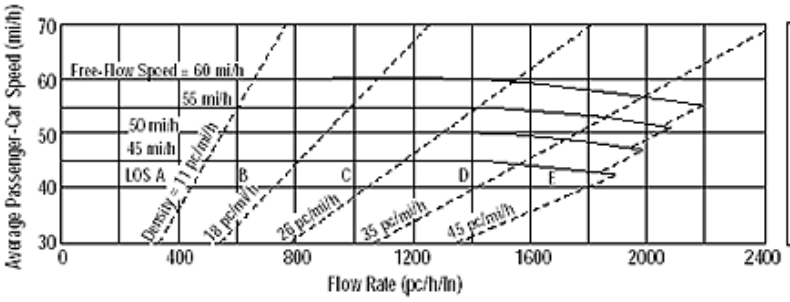
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	E/O SW 109th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2240	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	815
Speed, S (mi/h)	45.0
D (pc/mi/ln)	18.1
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*811.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.43*
Bicycle level of service (Exhibit 15-4)	*B*

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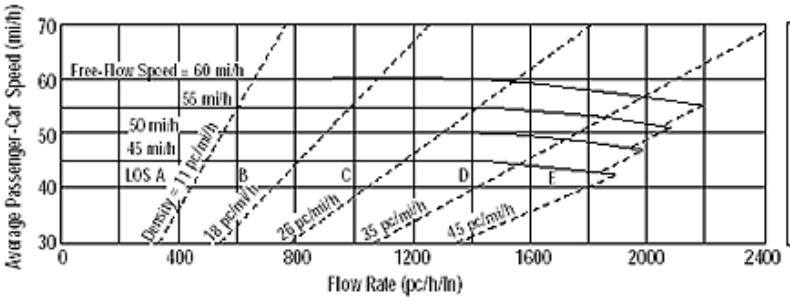
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	E/O SW 109th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2038	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	742
Speed, S (mi/h)	45.0
D (pc/mi/ln)	16.5
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*738.4*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.39*
Bicycle level of service (Exhibit 15-4)	*B*

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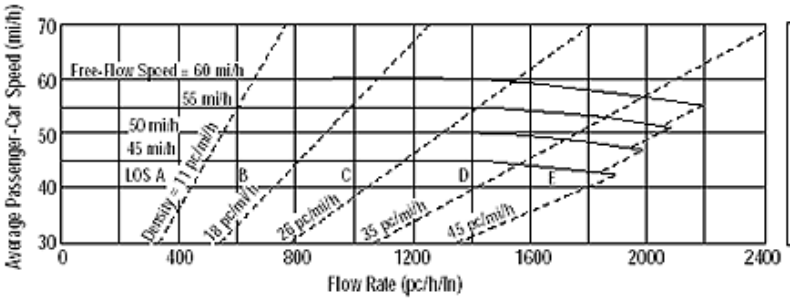
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	E/O SW 112th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2353	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	856
Speed, S (mi/h)	45.0
D (pc/mi/ln)	19.0
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*852.5*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.46*
Bicycle level of service (Exhibit 15-4)	*B*

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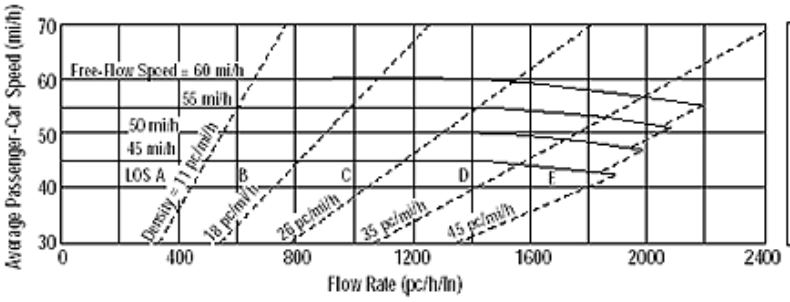
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	E/O SW 112th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2839	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1033
Speed, S (mi/h)	45.0
D (pc/mi/ln)	23.0
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1028.6*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.55*
Bicycle level of service (Exhibit 15-4)	*C*

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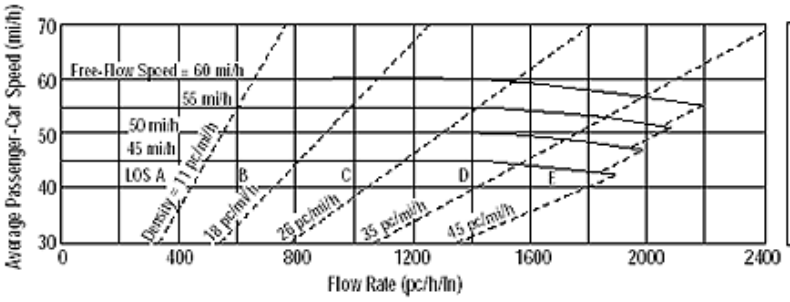
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	W/O SW 109th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2163	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	787
Speed, S (mi/h)	45.0
D (pc/mi/ln)	17.5
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*783.7*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.42*
Bicycle level of service (Exhibit 15-4)	*B*

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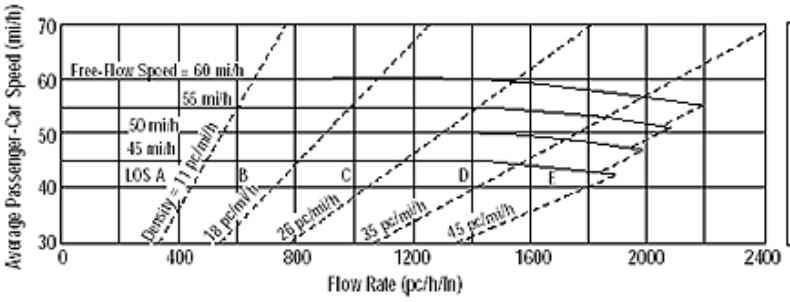
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	W/O SW 109th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2333	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	849
Speed, S (mi/h)	45.0
D (pc/mi/ln)	18.9
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*845.3*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.45*
Bicycle level of service (Exhibit 15-4)	*B*

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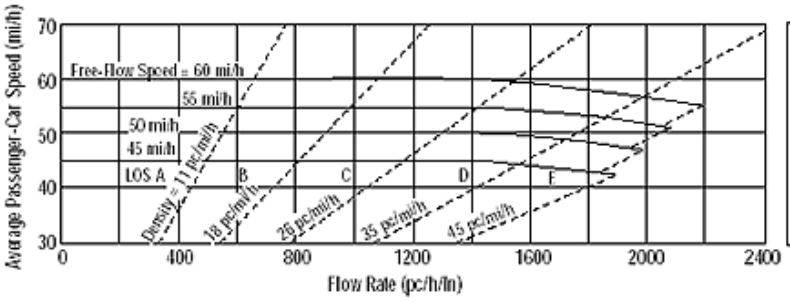
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	W/O SW 112th Avenue_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2520	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	917
Speed, S (mi/h)	45.0
D (pc/mi/ln)	20.4
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*913.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.49*
Bicycle level of service (Exhibit 15-4)	*B*

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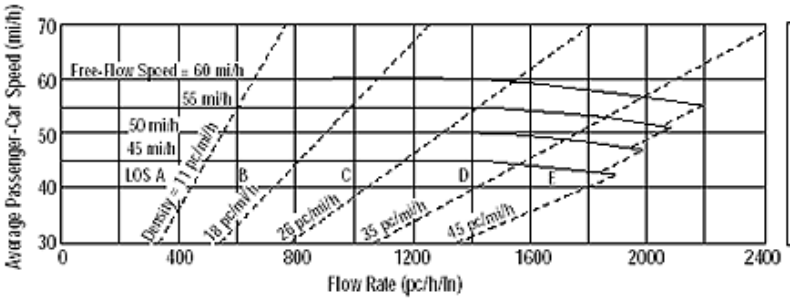
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	SW 8th Street
From/To	W/O SW 112th Avenue_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	2967	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	1080
Speed, S (mi/h)	45.0
D (pc/mi/ln)	24.0
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*1075.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.42*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.58*
Bicycle level of service (Exhibit 15-4)	*C*

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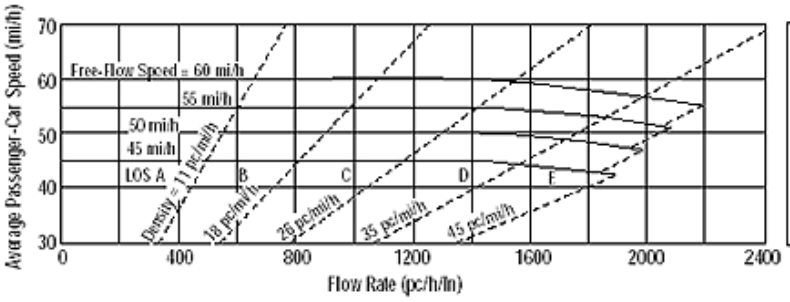
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	Flagler Street
From/To	E/O EC Entrance_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1051	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	384
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.5
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*380.8*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.19*
Bicycle level of service (Exhibit 15-4)	*B*

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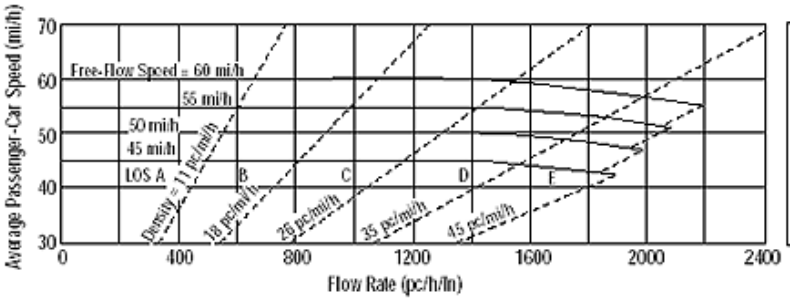
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	Flagler Street
From/To	E/O EC Entrance_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1203	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	440
Speed, S (mi/h)	45.0
D (pc/mi/ln)	9.8
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*435.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.46*
Bicycle level of service (Exhibit 15-4)	*B*

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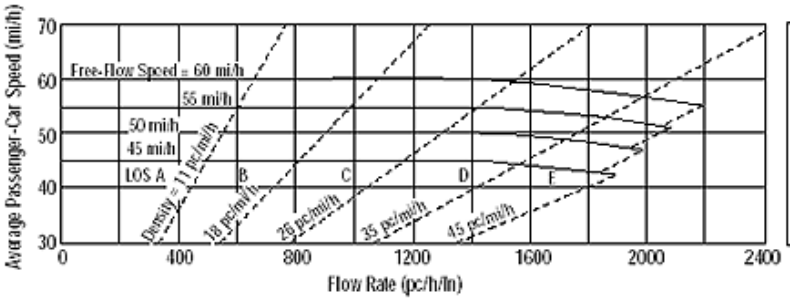
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	Flagler Street
From/To	W/O EC Entrance_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1010	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	369
Speed, S (mi/h)	45.0
D (pc/mi/ln)	8.2
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*365.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.17*
Bicycle level of service (Exhibit 15-4)	*B*

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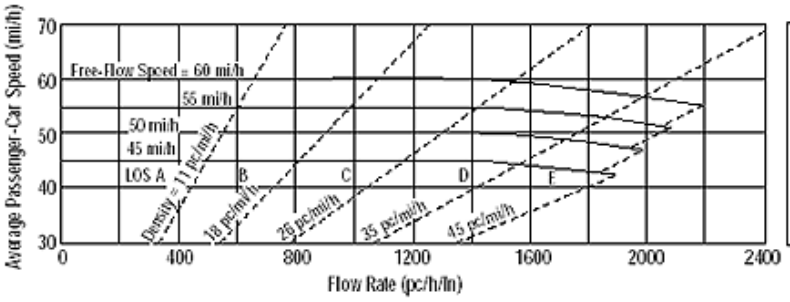
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	Flagler Street
From/To	W/O EC Entrance_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1223	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	447
Speed, S (mi/h)	45.0
D (pc/mi/ln)	9.9
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*443.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.27*
Bicycle level of service (Exhibit 15-4)	*B*

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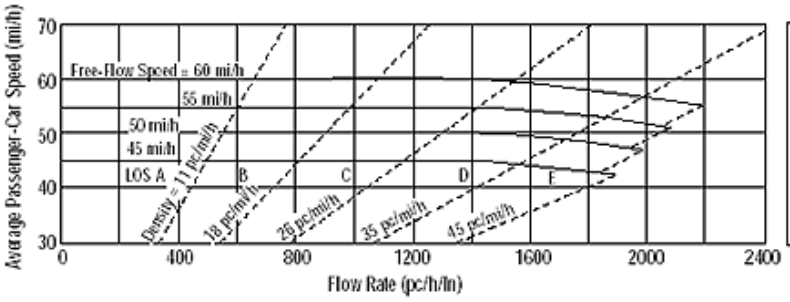
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NW 107th Avenue
From/To	N/O EC Entrance_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1284	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	469
Speed, S (mi/h)	45.0
D (pc/mi/ln)	10.4
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*465.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.29*
Bicycle level of service (Exhibit 15-4)	*B*

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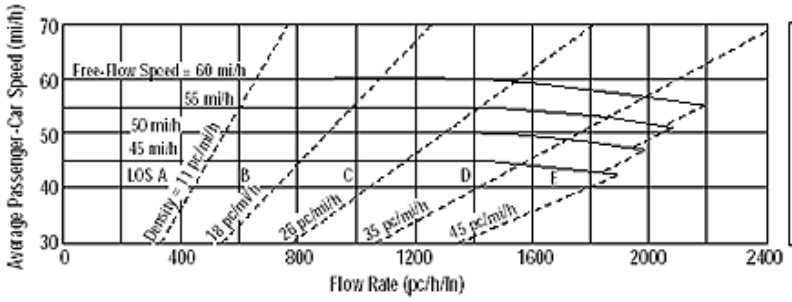
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NW 107th Avenue
From/To	N/O EC Entrance_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1606	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	587
Speed, S (mi/h)	45.0
D (pc/mi/ln)	13.0
LOS	B

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*581.9*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.40*
Bicycle level of service (Exhibit 15-4)	*B*

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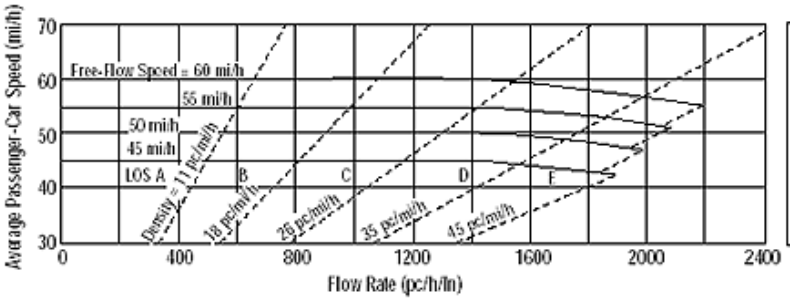
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NW 107th Avenue
From/To	S/O EC Entrance_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1281	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	468
Speed, S (mi/h)	45.0
D (pc/mi/ln)	10.4
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*464.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.29*
Bicycle level of service (Exhibit 15-4)	*B*

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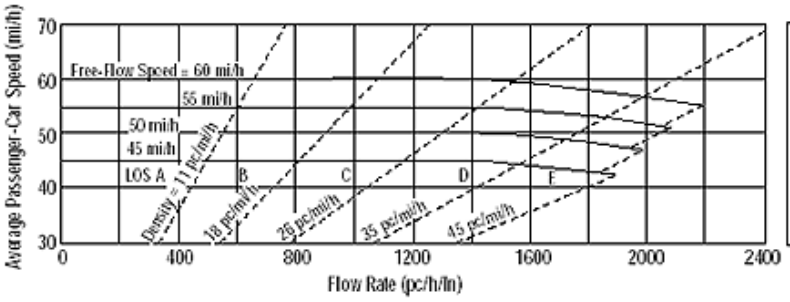
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/4/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NW 107th Avenue
From/To	S/O EC Entrance_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	1546	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	2
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.990

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	848
Speed, S (mi/h)	45.0
D (pc/mi/ln)	18.8
LOS	C

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*840.2*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.17*
Bicycle level of service score, BLOS (Eq. 15-31)	*2.59*
Bicycle level of service (Exhibit 15-4)	*C*

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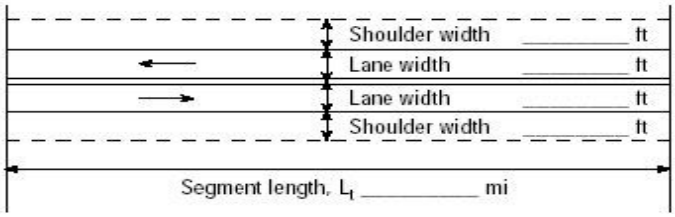
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*NE 145th Street*
Agency or Company	*Miller Legg*	From/To	*E/O NE 151st Street_EB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



Show North Arrow

() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Analysis direction vol., V_d	*210*veh/h	Grade Length mi	Up/down
Opposing direction vol., V_o	*184*veh/h	Peak-hour factor, PHF	*0.85*
Shoulder width ft	*6.0*	No-passing zone	*20*%
Lane Width ft	*12.0*	% Trucks and Buses , P_T	*0* %
Segment Length mi	*0.0*	% Recreational vehicles, P_R	*0*%
		Access points *mi*	*8*/mi

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*247*	*216*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*38.5 mi/h*
		Percent free flow speed, PFFS	*89.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*247*	*216*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*26.8*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*38.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*47.6*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.15*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*89.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*247.1*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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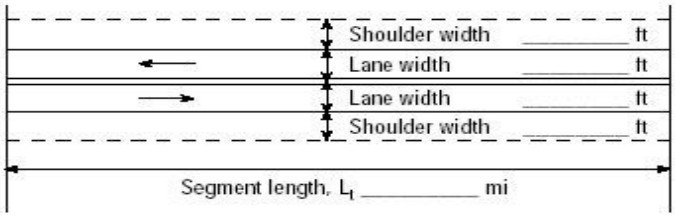
DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		***Site Information***	
Analyst	*SHA*	Highway / Direction of Travel	*NE 145th Street*
Agency or Company	*Miller Legg*	From/To	*E/O NE 151st Street_WB*
Date Performed	*12/03/2012*	Jurisdiction	
Analysis Time Period	*PM Peak Hour*	Analysis Year	*2012*

Project Description: *Existing 2012 PM Peak Hour*

Input Data



() Class I highway () Class II highway (•) Class III highway

Terrain (•) Level () Rolling

Grade Length mi Up/down

Peak-hour factor, PHF *0.85*

No-passing zone *20%*

% Trucks and Buses , P_T *0 %*

% Recreational vehicles, P_R *0%*

Access points *mi* *8*/mi

Analysis direction vol., V_d *184*veh/h

Opposing direction vol., V_o *210*veh/h

Shoulder width ft *6.0*

Lane Width ft *12.0*

Segment Length mi *0.0*

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	*1.5*	*1.5*
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	*1.00*	*1.00*
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	*216*	*247*

Free-Flow Speed from Field Measurement		**Estimated Free-Flow Speed**	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	*45.0 mi/h*
Total demand flow rate, both directions, *v*		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	*0.0 mi/h*
Free-flow speed, FFS=S_{FM}+0.00776(*v*/ $f_{HV,ATS}$)		Adj. for access points[4], f_A (Exhibit 15-8)	*2.0 mi/h*
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	*0.9 mi/h*	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	*43.0 mi/h*
		Average travel speed, ATS_d=FFS-0.00776($v_{d,ATS}$ + $v_{o,ATS}$) - $f_{np,ATS}$	*38.5 mi/h*
		Percent free flow speed, PFFS	*89.6 %*

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	*1.1*	*1.1*
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	*1.0*	*1.0*
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	*1.000*	*1.000*
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	*1.00*	*1.00*
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	*216*	*247*
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	*24.4*	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	*38.9*	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	*42.5*	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	*B*
Volume to capacity ratio, *v/c*	*0.13*

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*89.6*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*216.5*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*-1.#J*
Bicycle level of service score, BLOS (Eq. 15-31)	*-1.#J*
Bicycle level of service (Exhibit 15-4)	*A*
Notes	

1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain.
2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only
5. Exhibit 15-20 provides coefficients a and b for Equation 15-10.
6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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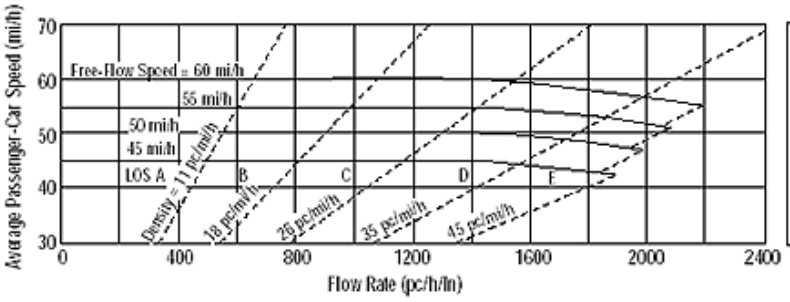
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NE 151st Street
From/To	E/O Biscayne Blvd_EB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	580	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	211
Speed, S (mi/h)	45.0
D (pc/mi/ln)	4.7
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*210.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.70*
Bicycle level of service (Exhibit 15-4)	*B*

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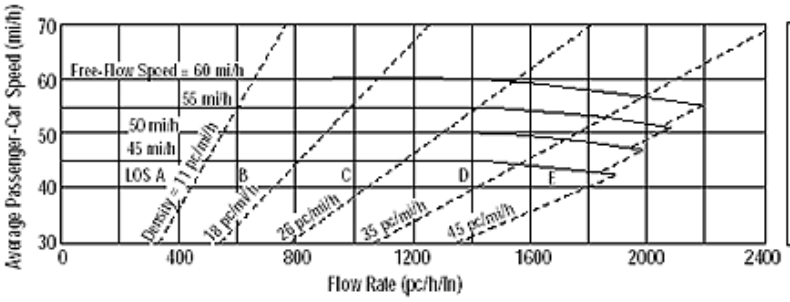
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NE 151st Street
From/To	E/O Biscayne Blvd_WB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	782	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	1
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	3

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.995

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	284
Speed, S (mi/h)	45.0
D (pc/mi/ln)	6.3
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*283.3*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.86*
Bicycle level of service (Exhibit 15-4)	*B*

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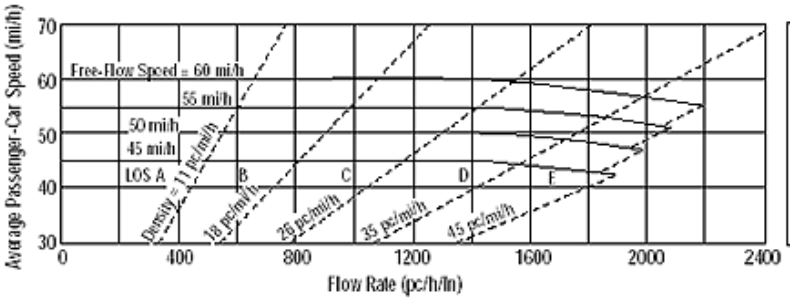
MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NE 151st Street
From/To	N/O 145th Street_NB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	311	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	0
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	1.000

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	169
Speed, S (mi/h)	45.0
D (pc/mi/ln)	3.8
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*169.0*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.24*
Bicycle level of service (Exhibit 15-4)	*A*

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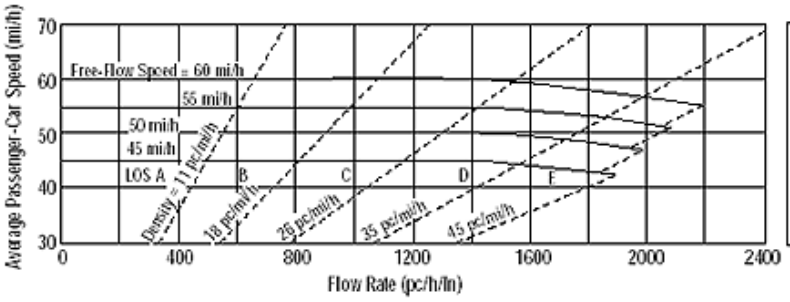
MULTILANE HIGHWAYS WORKSHEET(Direction 2)



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	SHA
Agency or Company	Miller Legg
Date Performed	12/3/2012
Analysis Time Period	PM Peak Hour

Site Information

Highway/Direction to Travel	NE 151st Street
From/To	N/O 145th Street_SB
Jurisdiction	
Analysis Year	2012

Project Description Existing 2012 PM Peak Hour

○ Oper.(LOS) ○ Des. (N) ○ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	256	Peak-Hour Factor, PHF	0.92
AADT(veh/h)		%Trucks and Buses, P_T	0
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	1.000

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearance, LC (ft)	12.0
Access Points, A (A/mi)	0
Median Type, M	
FFS (measured)	45.0
Base Free-Flow Speed, BFFS	

Calc Speed Adj and FFS

f_{LW} (mi/h)	
f_{LC} (mi/h)	
f_A (mi/h)	
f_M (mi/h)	
FFS (mi/h)	45.0

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	139
Speed, S (mi/h)	45.0
D (pc/mi/ln)	3.1
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Bicycle Level of Service

Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*139.1*

Effective width, W_v (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*3.39*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.14*
Bicycle level of service (Exhibit 15-4)	*A*

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APPENDIX D

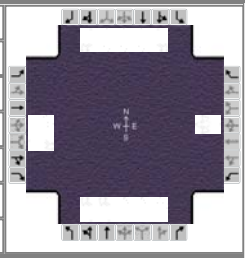
Capacity Analysis (Segment) (HCS 2010 Capacity Analysis) – Year 2012 (MMC)

Capacity Analysis (Segment) (HCS 2010 Capacity Analysis) – Year 2012 (EC)

Capacity Analysis (Segment) (HCS 2010 Capacity Analysis) – Year 2012 (BBC)

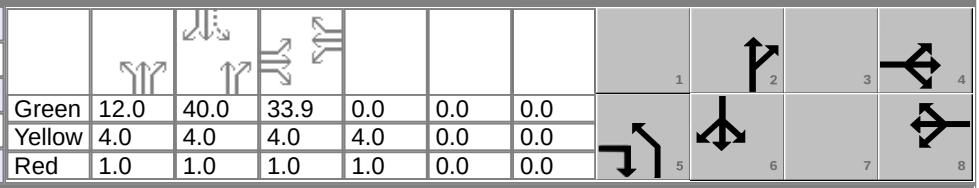
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/30/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 107th Avenue / SW 12t	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_SW 107 AVE & SW 12 ST.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	369	147	229	0	0	0	288	1801	126	101	1712	254

Signal Information			
Cycle, s	100.9	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	12.0	40.0	33.9	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	1.0	1.0	1.0	1.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		11.0		12.0	2.0	4.0		5.3
Phase Duration, s		38.9		0.0	17.0	62.0		45.0
Change Period, *(Y+Rc)*, s		5.0		5.0	5.0	5.0		5.0
Max Allow Headway *(MAH)*, s		3.4		0.0	3.1	3.4		3.4
Queue Clearance Time *(g_s)*, s		32.4			10.8	28.6		42.0
Green Extension Time *(g_e)*, s		1.5		0.0	0.5	10.0		0.0
Phase Call Probability		1.00			1.00	1.00		1.00
Max Out Probability		0.23			0.00	0.89		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate *(v)*, veh/h		561	249		0		313	1410	685	110	1861	276
Adjusted Saturation Flow Rate *(s)*, veh/h/ln		1798	1556		0		1740	1881	1816	197	1708	1548
Queue Service Time *(g_s)*, s		30.4	10.5		0.0		8.8	26.3	26.6	30.4	34.7	13.2
Cycle Queue Clearance Time *(g_c)*, s		30.4	10.5		0.0		8.8	26.3	26.6	40.0	34.7	13.2
Capacity *(c)*, veh/h		604	712				414	2126	1026	131	2032	614
Volume-to-Capacity Ratio *(X)*		0.929	0.350		0.000		0.756	0.663	0.667	0.840	0.916	0.450
Available Capacity *(c_a)*, veh/h		713	807				690	2126	1026	131	2032	614
Back of Queue *(Q)*, veh/ln (50th percentile)		15.8	3.8				3.7	10.2	10.1	4.0	14.5	4.6
Overflow Queue *(Q_3)*, veh/ln		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio *(RQ)* (50th percentile)		0.00	0.00		0.00		0.22	0.00	0.00	0.50	0.00	0.48
Uniform Delay *(d_1)*, s/veh		32.3	17.9				43.0	15.3	15.3	42.2	28.8	22.3
Incremental Delay *(d_2)*, s/veh		15.8	0.1		0.0		1.1	0.6	1.4	34.4	6.9	0.2
Initial Queue Delay *(d_3)*, s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay *(d)*, s/veh		48.2	18.0				44.1	15.9	16.7	76.6	35.7	22.5
Level of Service (LOS)		D	B				D	B	B	E	D	C
Approach Delay, s/veh / LOS	38.9	D		0.0			19.8	B		36.1	D	
Intersection Delay, s/veh / LOS	29.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.4	C	2.1	B	2.7	B
Bicycle LOS Score / LOS	1.8	A	0.5	A	1.8	A	1.7	A

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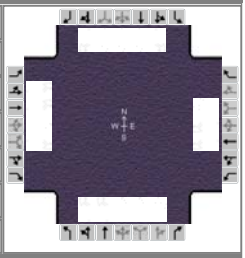
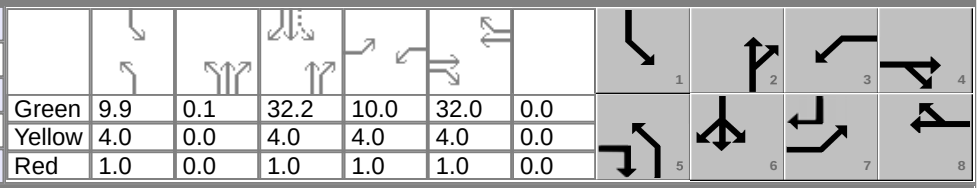
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/30/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 107th Avenue / SW 16t	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_SW 107 AVE & SW 16 ST.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	371	278	171	444	196	158	205	936	117	136	1157	278

Signal Information			
Cycle, s	104.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	9.9	0.1	32.2	10.0	32.0	0.0	1	2	3	4		
Yellow	4.0	0.0	4.0	4.0	4.0	0.0	5	6	7	8		
Red	1.0	0.0	1.0	1.0	1.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	4.0	2.0	4.0	1.1	3.0
Phase Duration, s	15.0	37.0	15.0	37.0	15.0	37.3	14.9	37.2
Change Period, *(Y+Rc)*, s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway *(MAH)*, s	3.3	3.3	3.2	3.3	3.1	3.0	3.1	3.0
Queue Clearance Time *(g_s)*, s	12.0	15.8	12.0	22.5	8.4	20.8	7.5	25.4
Green Extension Time *(g_e)*, s	0.0	2.0	0.0	1.9	0.4	7.6	0.2	6.7
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00
Max Out Probability	1.00	0.00	1.00	0.01	0.00	0.22	0.00	0.34

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate *(v)*, veh/h	403	302	186	483	385		223	778	367	148	1258	302
Adjusted Saturation Flow Rate *(s)*, veh/h/ln	1757	1881	1596	1740	1741		1740	1881	1771	1810	1708	1609
Queue Service Time *(g_s)*, s	10.0	13.8	8.2	10.0	20.5		6.4	18.7	18.8	5.5	23.4	14.3
Cycle Queue Clearance Time *(g_c)*, s	10.0	13.8	8.2	10.0	20.5		6.4	18.7	18.8	5.5	23.4	14.3
Capacity *(c)*, veh/h	337	578	645	334	535		334	1166	549	305	1583	651
Volume-to-Capacity Ratio *(X)*	1.195	0.523	0.288	1.445	0.719		0.668	0.667	0.668	0.484	0.795	0.464
Available Capacity *(c_a)*, veh/h	337	722	767	334	669		668	1445	680	481	1968	772
Back of Queue *(Q)*, veh/ln (50th percentile)	9.7	6.4	3.1	14.3	8.8		2.8	8.2	7.8	2.3	9.5	5.2
Overflow Queue *(Q_3)*, veh/ln	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio *(RQ)* (50th percentile)	1.06	0.00	0.60	1.57	0.00		0.29	0.00	0.00	0.19	0.00	0.35
Uniform Delay *(d_1)*, s/veh	47.1	29.8	21.0	47.1	32.1		45.5	31.3	31.3	22.5	33.0	22.7
Incremental Delay *(d_2)*, s/veh	113.2	0.3	0.1	216.3	1.9		0.9	0.5	1.0	0.4	1.5	0.2
Initial Queue Delay *(d_3)*, s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay *(d)*, s/veh	160.3	30.0	21.1	263.4	33.9		46.3	31.7	32.3	23.0	34.4	22.9
Level of Service (LOS)	F	C	C	F	C		D	C	C	C	C	C
Approach Delay, s/veh / LOS	87.1	F		161.6	F		34.3	C		31.4	C	
Intersection Delay, s/veh / LOS	65.8						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.4	C	2.4	B	3.0	C
Bicycle LOS Score / LOS	2.0	A	1.9	A	1.2	A	1.4	A

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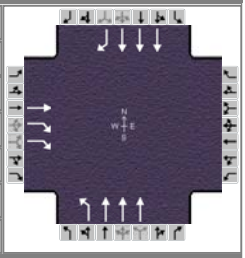
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/30/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 107th Avenue / SW 10	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_SW 107 AVE & SW 108 AVE.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		0	97				88	1525			1770	28

Signal Information												
Cycle, s	61.6	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	8.1	30.1	8.4	0.0	0.0	0.0		
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0		
				Red	1.0	1.0	1.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4			5	2		6
Case Number		11.0			2.0	4.0		7.3
Phase Duration, s		13.4			13.1	48.2		35.1
Change Period, *(Y+Rc)*, s		5.0			5.0	5.0		5.0
Max Allow Headway *(MAH)*, s		3.6			3.1	3.0		3.0
Queue Clearance Time *(g_s)*, s		3.9			5.3	10.8		20.9
Green Extension Time *(g_e)*, s		0.3			0.1	15.0		8.8
Phase Call Probability		0.84			0.81	1.00		1.00
Max Out Probability		0.00			0.00	0.30		0.47

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		4	14				5	2			6	16
Adjusted Flow Rate *(v)*, veh/h		0	105				96	1658			1924	30
Adjusted Saturation Flow Rate *(s)*, veh/h/ln		1900	1307				1645	1708			1708	1342
Queue Service Time *(g_s)*, s		0.0	1.9				3.3	8.8			18.9	0.7
Cycle Queue Clearance Time *(g_c)*, s		0.0	1.9				3.3	8.8			18.9	0.7
Capacity *(c)*, veh/h		258	698				215	3596			2509	657
Volume-to-Capacity Ratio *(X)*		0.000	0.151				0.444	0.461			0.767	0.046
Available Capacity *(c_a)*, veh/h		926	1616				801	3596			3328	871
Back of Queue *(Q)*, veh/ln (50th percentile)		0.0	0.6				1.2	1.5			5.7	0.2
Overflow Queue *(Q_3)*, veh/ln		0.0	0.0				0.0	0.0			0.0	0.0
Queue Storage Ratio *(RQ)* (50th percentile)		0.00	0.00				0.06	0.00			0.00	0.04
Uniform Delay *(d_1)*, s/veh		0.0	17.2				24.7	4.1			12.8	8.2
Incremental Delay *(d_2)*, s/veh		0.0	0.0				0.5	0.0			0.5	0.0
Initial Queue Delay *(d_3)*, s/veh		0.0	0.0				0.0	0.0			0.0	0.0
Control Delay *(d)*, s/veh		0.0	17.3				25.2	4.1			13.4	8.2
Level of Service (LOS)			B				C	A			B	A
Approach Delay, s/veh / LOS	17.3	B		0.0			5.2	A		13.3	B	
Intersection Delay, s/veh / LOS	9.7						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.3	C	3.3	C	1.8	A	2.4	B
Bicycle LOS Score / LOS	0.7	A			1.5	A	1.6	A

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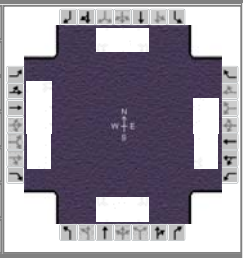
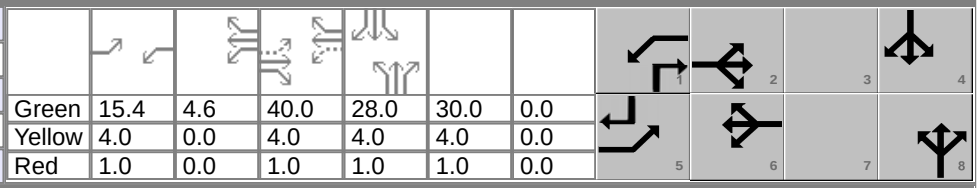
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 8th Street / SW 109th A	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_SW 8 ST & SW 109 AVE.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	213	1798	152	306	1655	77	352	152	222	220	77	326

Signal Information			
Cycle, s	138.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	15.4	4.6	40.0	28.0	30.0	0.0
Yellow	4.0	0.0	4.0	4.0	4.0	0.0
Red	1.0	0.0	1.0	1.0	1.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		9.0		9.0
Phase Duration, s	20.4	45.0	25.0	49.6		35.0		33.0
Change Period, $(Y+R_c)$, s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway *(MAH)*, s	3.0	2.9	3.0	2.9		3.4		3.3
Queue Clearance Time (g_s), s	15.3	41.8	22.0	46.6		31.3		29.0
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		0.0		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.19	1.00	1.00	1.00		1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	232	1612	508	333	1265	618	383	165	241	239	84	354
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1863	1759	1792	1881	1835	1792	1881	1555	1792	1827	1594
Queue Service Time (g_s), s	13.3	39.7	39.8	20.0	44.6	44.6	29.3	10.4	16.2	16.9	5.3	27.0
Cycle Queue Clearance Time (g_c), s	13.3	39.7	39.8	20.0	44.6	44.6	29.3	10.4	16.2	16.9	5.3	27.0
Capacity (*c*), veh/h	256	1620	510	312	1215	592	389	409	567	364	371	502
Volume-to-Capacity Ratio (*X*)	0.904	0.995	0.996	1.065	1.041	1.043	0.982	0.404	0.426	0.658	0.226	0.706
Available Capacity (c_a), veh/h	315	1620	510	312	1215	592	389	409	567	364	371	502
Back of Queue (*Q*), veh/ln (50th percentile)	7.2	21.0	22.3	16.6	26.4	27.6	17.8	5.0	6.3	8.0	2.4	11.2
Overflow Queue (Q_3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio *(RQ)* (50th percentile)	0.91	0.00	0.00	2.33	0.00	0.00	5.98	0.00	0.00	4.02	0.00	0.00
Uniform Delay (d_1), s/veh	38.8	48.9	48.9	45.2	46.7	46.7	53.7	46.3	33.2	50.6	45.9	41.7
Incremental Delay (d_2), s/veh	22.3	21.2	38.7	69.3	37.1	48.7	40.7	0.2	0.2	3.5	0.1	3.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	61.2	70.1	87.6	114.6	83.8	95.4	94.4	46.6	33.4	54.0	46.1	45.5
Level of Service (LOS)	E	E	F	F	F	F	F	D	C	D	D	D
Approach Delay, s/veh / LOS	73.0	E		91.7	F		65.7	E		48.6	D	
Intersection Delay, s/veh / LOS	76.1						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.5	B	2.4	B	3.6	D	3.4	C
Bicycle LOS Score / LOS	1.5	A	1.7	A	1.8	A	1.6	A

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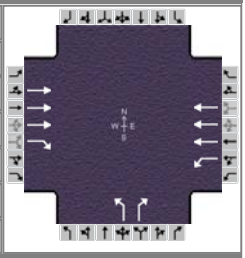
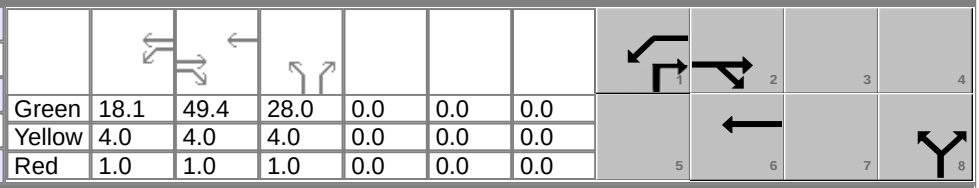
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 8th Street / SW 112th A	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_SW 8 ST & SW 112 AVE.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		2046	474	243	2596		371		307			

Signal Information			
Cycle, s	110.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	18.1	49.4	28.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		
Case Number		7.3	2.0	4.0		9.0		
Phase Duration, s		54.4	23.1	77.5		33.0		
Change Period, ($Y+R_c$), s		5.0	5.0	5.0		5.0		
Max Allow Headway (*MAH*), s		3.0	3.0	3.0		3.5		
Queue Clearance Time (g_s), s		48.8	18.0	49.6		26.0		
Green Extension Time (g_e), s		0.5	0.1	18.1		0.9		
Phase Call Probability		1.00	1.00	1.00		1.00		
Max Out Probability		1.00	1.00	0.86		0.80		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (*v*), veh/h		2224	515	264	2822		403		334			
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1708	1584	1792	1691		1792		1573			
Queue Service Time (g_s), s		46.8	29.5	16.0	47.6		24.0		17.3			
Cycle Queue Clearance Time (g_c), s		46.8	29.5	16.0	47.6		24.0		17.3			
Capacity (*c*), veh/h		2291	708	293	3329		454		660			
Volume-to-Capacity Ratio (*X*)		0.971	0.728	0.900	0.848		0.888		0.506			
Available Capacity (c_a), veh/h		2318	716	324	3329		486		688			
Back of Queue (*Q*), veh/ln (50th percentile)		20.2	10.9	8.8	15.5		12.7		6.6			
Overflow Queue (Q_3), veh/ln		0.0	0.0	0.0	0.0		0.0		0.0			
Queue Storage Ratio (*RQ*) (50th percentile)		0.00	1.10	1.11	0.00		0.00		0.00			
Uniform Delay (d_1), s/veh		29.8	25.0	45.3	14.7		39.8		23.8			
Incremental Delay (d_2), s/veh		12.4	3.2	23.8	2.1		16.3		0.2			
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (*d*), s/veh		42.2	28.2	69.2	16.8		56.1		24.1			
Level of Service (LOS)		D	C	E	B		E		C			
Approach Delay, s/veh / LOS	39.6	D		21.3	C		41.6	D		0.0		
Intersection Delay, s/veh / LOS	31.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	0.7	A	3.3	C	3.3	C
Bicycle LOS Score / LOS	2.0	A	2.2	B		F		

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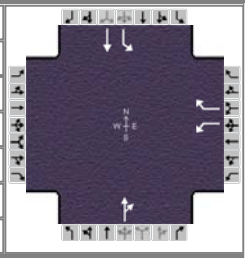
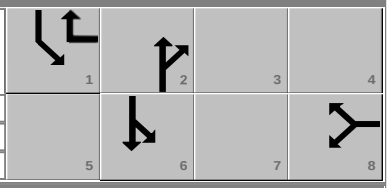
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/30/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.85
Intersection	SW 117th Avenue / SW 17t	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_SW 117 AVE & SW 17 ST.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				433		210		385	155	62	444	

Signal Information			
Cycle, s	95.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	4.3	35.6	32.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				9.0		8.3	1.0	4.0
Phase Duration, s				37.0		40.6	9.3	49.9
Change Period, *(Y+Rc)*, s				5.0		5.0	5.0	5.0
Max Allow Headway *(MAH)*, s				3.3		3.1	3.2	3.1
Queue Clearance Time *(g_s)*, s				27.1		34.8	4.4	21.3
Green Extension Time *(g_e)*, s				1.5		0.9	0.0	2.5
Phase Call Probability				1.00		1.00	0.85	1.00
Max Out Probability				0.02		0.56	0.03	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3		18		2	12	1	6	
Adjusted Flow Rate *(v)*, veh/h				509		247		635		73	522	
Adjusted Saturation Flow Rate *(s)*, veh/h/ln				1792		1579		1788		1723	1881	
Queue Service Time *(g_s)*, s				25.1		10.9		32.8		2.4	19.3	
Cycle Queue Clearance Time *(g_c)*, s				25.1		10.9		32.8		2.4	19.3	
Capacity *(c)*, veh/h				603		602		670		176	889	
Volume-to-Capacity Ratio *(X)*				0.845		0.410		0.948		0.413	0.588	
Available Capacity *(c_a)*, veh/h				754		735		752		280	889	
Back of Queue *(Q)*, veh/ln (50th percentile)				11.4		4.0		17.0		0.9	8.2	
Overflow Queue *(Q_3)*, veh/ln				0.0		0.0		0.0		0.0	0.0	
Queue Storage Ratio *(RQ)* (50th percentile)				0.00		0.00		0.00		0.08	0.00	
Uniform Delay *(d_1)*, s/veh				29.2		21.6		28.8		22.5	18.3	
Incremental Delay *(d_2)*, s/veh				6.0		0.2		19.2		0.6	0.7	
Initial Queue Delay *(d_3)*, s/veh				0.0		0.0		0.0		0.0	0.0	
Control Delay *(d)*, s/veh				35.3		21.7		48.0		23.1	19.0	
Level of Service (LOS)				D		C		D		C	B	
Approach Delay, s/veh / LOS	0.0			30.9		C	48.0		D	19.5		B
Intersection Delay, s/veh / LOS	32.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.3	B	2.3	B	0.7	A
Bicycle LOS Score / LOS				F	1.5	A	1.5	A

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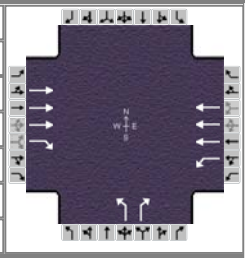
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Miami Dade			Duration, h	0.25
Analyst	Mo	Analysis Date	11/7/2012	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.92
Intersection	SW 8 Street & SW 112 Ave	Analysis Year	2012	Analysis Period	1> 16:00
File Name	SW_8_ST_and_SW_112_Ave_PM_peak_existing_rev121112.xus				
Project Description	2012 PM Peak Hour (Existing)				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		2046	474	243	2596		371		307			

Signal Information			
Cycle, s	110.5	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	18.1	49.4	28.0	0.0	0.0	0.0	5	6	7	8
Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Red	1.0	1.0	1.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		
Case Number		7.3	2.0	4.0		9.0		
Phase Duration, s		54.4	23.1	77.5		33.0		
Change Period, *(Y+Rc)*, s		5.0	5.0	5.0		5.0		
Max Allow Headway *(MAH)*, s		3.0	3.0	3.0		3.1		
Queue Clearance Time *(g_s)*, s		48.8	18.0	49.6		26.0		
Green Extension Time *(g_e)*, s		0.5	0.1	18.1		0.8		
Phase Call Probability		1.00	1.00	1.00		1.00		
Max Out Probability		1.00	1.00	0.86		0.67		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate *(v)*, veh/h		2224	515	264	2822		403		334			
Adjusted Saturation Flow Rate *(s)*, veh/h/ln		1708	1584	1792	1691		1792		1594			
Queue Service Time *(g_s)*, s		46.8	29.5	16.0	47.6		24.0		17.0			
Cycle Queue Clearance Time *(g_c)*, s		46.8	29.5	16.0	47.6		24.0		17.0			
Capacity *(c)*, veh/h		2291	708	293	3329		454		665			
Volume-to-Capacity Ratio *(X)*		0.971	0.728	0.901	0.848		0.888		0.502			
Available Capacity *(c_a)*, veh/h		2319	717	324	3329		487		694			
Back of Queue *(Q)*, veh/ln (50th percentile)		20.2	10.8	8.8	15.5		12.1		6.1			
Overflow Queue *(Q_3)*, veh/ln		0.0	0.0	0.0	0.0		0.0		0.0			
Queue Storage Ratio *(RQ)* (50th percentile)		0.00	1.09	1.11	0.00		0.00		0.00			
Uniform Delay *(d_1)*, s/veh		29.8	25.0	45.3	14.7		39.7		23.7			
Incremental Delay *(d_2)*, s/veh		12.4	3.2	23.9	2.1		16.3		0.2			
Initial Queue Delay *(d_3)*, s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay *(d)*, s/veh		42.2	28.2	69.2	16.8		56.0		23.9			
Level of Service (LOS)		D	C	E	B		E		C			
Approach Delay, s/veh / LOS	39.6	D		21.3	C		41.5	D		0.0		
Intersection Delay, s/veh / LOS	31.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	0.7	A	3.3	C	3.3	C
Bicycle LOS Score / LOS	2.0	A	2.2	B		F		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*SHA*
Agency/Co.	*Miller Legg*
Date Performed	*11/15/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*SW 112 Ave & University Dr*
Jurisdiction	
Analysis Year	*2012*

Project Description

East/West Street: *University Drive* | North/South Street: *SW 112 Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*9*	*94*	*18*	*23*	*62*	*128*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*9*	*94*	*18*	*23*	*62*	*128*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*2*	*0*
Configuration	*LT*		*TR*	*LT*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*341*	*233*	*0*	*0*	*173*	*277*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*341*	*233*	*0*	*0*	*173*	*277*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*	*LT*		*LTR*			*LTR*	
v (veh/h)	*9*	*23*		*450*			*574*	
C (m) (veh/h)	*1396*	*1486*		*771*			*405*	
v/c	*0.01*	*0.02*		*0.58*			*1.42*	
95% queue length	*0.02*	*0.05*		*3.84*			*28.64*	
Control Delay (s/veh)	*7.6*	*7.5*		*16.0*			*228.1*	
LOS	*A*	*A*		*C*			*F*	
Approach Delay (s/veh)	--	--	*16.0*			*228.1*		
Approach LOS	--	--	*C*			*F*		

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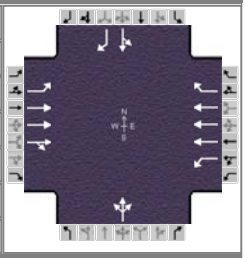
HCS+™ Version 5.6

Generated: 11/27/2012 4:13 PM

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	Flagler Street / SW 105th P	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_FLAGLER ST & SW 105 PL.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	21	970	22	39	1142	22	26	1	30	51	17	55

Signal Information			
Cycle, s	110.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	5.0	31.5	20.0	17.0	0.0	0.0	5	6	7	8
Yellow	4.0	4.0	4.0	4.0	0.0	0.0				
Red	1.0	1.0	1.0	1.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6		8		4
Case Number	1.0	4.0		5.3		12.0		11.0
Phase Duration, s	10.0	46.6		36.5		22.0		25.0
Change Period, *(Y+Rc)*, s	5.0	5.0		5.0		5.0		5.0
Max Allow Headway *(MAH)*, s	3.1	3.1		3.1		3.3		3.4
Queue Clearance Time *(g_s)*, s	2.9	18.5		27.1		19.0		22.0
Green Extension Time *(g_e)*, s	0.0	7.0		4.0		0.0		0.0
Phase Call Probability	0.50	1.00		1.00		0.85		0.98
Max Out Probability	0.00	0.11		0.31		1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate *(v)*, veh/h	23	722	357	42	1241	24		62			74	60
Adjusted Saturation Flow Rate *(s)*, veh/h/ln	1810	1863	1840	531	1708	1599		1438			1831	1579
Queue Service Time *(g_s)*, s	0.9	16.5	16.5	7.4	25.1	1.2		4.2			3.8	3.3
Cycle Queue Clearance Time *(g_c)*, s	0.9	16.5	16.5	13.8	25.1	1.2		4.2			3.8	3.3
Capacity *(c)*, veh/h	174	1406	695	186	1468	458		222			333	359
Volume-to-Capacity Ratio *(X)*	0.131	0.513	0.514	0.227	0.846	0.052		0.279			0.222	0.167
Available Capacity *(c_a)*, veh/h	420	1406	695	227	1862	581		261			333	359
Back of Queue *(Q)*, veh/ln (50th percentile)	0.4	7.0	7.0	0.9	10.4	0.5		1.5			1.8	1.3
Overflow Queue *(Q_3)*, veh/ln	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Queue Storage Ratio *(RQ)* (50th percentile)	0.03	0.00	0.00	0.39	0.00	0.09		0.00			0.00	0.00
Uniform Delay *(d_1)*, s/veh	27.1	26.5	26.5	35.7	37.0	28.5		41.1			38.4	34.2
Incremental Delay *(d_2)*, s/veh	0.1	0.1	0.3	0.2	2.5	0.0		0.3			0.1	0.1
Initial Queue Delay *(d_3)*, s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay *(d)*, s/veh	27.2	26.6	26.8	35.9	39.5	28.5		41.4			38.5	34.2
Level of Service (LOS)	C	C	C	D	D	C		D			D	C
Approach Delay, s/veh / LOS	26.7	C		39.2	D		41.4	D		36.6	D	
Intersection Delay, s/veh / LOS	33.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.3	B	3.4	C	3.3	C
Bicycle LOS Score / LOS	1.1	A	1.2	A	0.6	A	0.7	A

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*SHA*
Agency/Co.	*Miller Legg*
Date Performed	*12/4/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*NW 107th AVE / EC ENTRANCE*
Jurisdiction	
Analysis Year	*2012*

Project Description *Existing 2012 PM Peak Hour*

East/West Street: *EC Entrance* | North/South Street: *NW 107th Avenue*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*56*	*1534*	*16*	*44*	*1195*	*42*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*56*	*1534*	*16*	*44*	*1195*	*42*
Percent Heavy Vehicles	*0*	--	--	*1*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*1*	*1*	*2*	*1*
Configuration	*L*	*T*	*R*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)			*12*			*89*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*12*	*0*	*0*	*89*
Percent Heavy Vehicles	*0*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*0*	*1*
Configuration			*R*			*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*			*R*			*R*
v (veh/h)	*56*	*44*			*89*			*12*
C (m) (veh/h)	*570*	*428*			*405*			*495*
v/c	*0.10*	*0.10*			*0.22*			*0.02*
95% queue length	*0.33*	*0.34*			*0.83*			*0.07*
Control Delay (s/veh)	*12.0*	*14.4*			*16.4*			*12.5*
LOS	*B*	*B*			*C*			*B*
Approach Delay (s/veh)	--	--	*16.4*			*12.5*		
Approach LOS	--	--	*C*			*B*		

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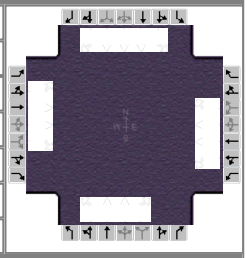
HCS 2010 Signalized Intersection Results Summary

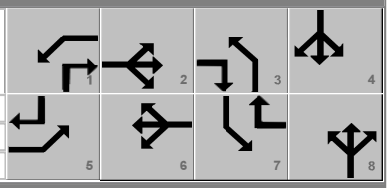
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	Biscayne Blvd/NE 151 Stre	Analysis Year	2012	Analysis Period	1> 7:00
File Name	EXISTING_NE 151 ST & BISCAYNE BLVD.xus				
Project Description	Existing 2012 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	175	157	165	216	264	302	165	1926	216	207	1879	246

Signal Information			
Cycle, s	88.6	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	0.0	0.0	0.0	0.0	0.0	0.0						
Yellow	0.0	0.0	0.0	0.0	0.0	0.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	14.9	23.4	16.0	24.5	12.8	35.0	14.2	36.4
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Clearance Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max Out Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Saturation Flow Rate (*s*), veh/h/ln	0	0	0	0	0	0	0	0	0	0	0	0
Queue Service Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Queue Clearance Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capacity (*c*), veh/h	405	737	477	478	789	520	243	1212	725	267	1761	742
Volume-to-Capacity Ratio (*X*)	0.469	0.231	0.376	0.491	0.364	0.631	0.737	1.727	0.324	0.842	1.160	0.360
Available Capacity (c_a), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Back of Queue (*Q*), veh/ln (50th percentile)	2.8	1.4	2.8	3.4	2.5	5.5	2.4	68.4	3.0	2.9	24.7	3.3
Overflow Queue (Q_3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio (*RQ*) (50th percentile)	0.36	0.00	0.00	0.48	0.00	0.00	0.82	0.00	0.00	1.46	0.00	0.00
Uniform Delay (d_1), s/veh	23.1	29.2	24.7	22.1	29.3	25.5	21.2	29.3	15.1	20.5	28.6	15.2
Incremental Delay (d_2), s/veh	0.3	0.1	0.2	0.3	0.1	0.5	1.6	330.5	0.1	2.8	78.7	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	23.4	29.3	24.9	22.4	29.4	25.9	22.9	359.8	15.2	23.2	107.4	15.3
Level of Service (LOS)	C	C	C	C	C	C	C	F	B	C	F	B
Approach Delay, s/veh / LOS	25.8	C		26.1	C		303.5	F		90.2	F	
Intersection Delay, s/veh / LOS	159.5						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.3	C	3.1	C	2.9	C	2.9	C
Bicycle LOS Score / LOS	0.9	A	1.2	A	2.6	B	1.9	A

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*SHA*
Agency/Co.	*Miller Legg*
Date Performed	*12/3/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*NE 151st ST / NE 145th ST*
Jurisdiction	
Analysis Year	*2012*

Project ID *Existing 2012 PM Peak Hour*

East/West Street: *NE 145th Street* | North/South Street: *NE 151th Street*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*0*	*0*	*184*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*0*	*127*	*0*	*210*	*46*	*0*
%Thrus Left Lane	*50*					

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			*L*	*R*	*T*	*TR*	*L*	*T*
PHF			*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Flow Rate (veh/h)			*0*	*184*	*63*	*64*	*210*	46
% Heavy Vehicles			*0*	*0*	*0*	*0*	*0*	*0*
No. Lanes	*0*		*2*		*2*		*2*	
Geometry Group			*1*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns			*0.0*	*0.0*	*0.0*	*0.0*	*1.0*	*0.0*
Prop. Right-Turns			*0.0*	*1.0*	*0.0*	*0.0*	*0.0*	*0.0*
Prop. Heavy Vehicle			*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
hLT-adj			*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj			*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj			*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed			*0.0*	*-0.6*	*0.0*	*0.0*	*0.5*	*0.0*

Departure Headway and Service Time

hd, initial value (s)			*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial			*0.00*	*0.16*	*0.06*	*0.06*	*0.19*	*0.04*
hd, final value (s)			*4.85*	*4.25*	*5.18*	*5.18*	*5.55*	*5.04*
x, final value			*0.00*	*0.22*	*0.09*	*0.09*	*0.32*	*0.06*
Move-up time, m (s)			*2.0*		*2.3*		*2.3*	
Service Time, t_s (s)			*2.8*	*2.2*	*2.9*	*2.9*	*3.2*	*2.7*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)			*0*	*434*	*313*	*314*	*460*	*296*
Delay (s/veh)			*7.85*	*8.42*	*8.40*	*8.41*	*10.88*	*8.09*
LOS			*A*	*A*	*A*	*A*	*B*	*A*
Approach: Delay (s/veh)			*8.42*		*8.41*		*10.38*	
LOS			*A*		*A*		*B*	
Intersection Delay (s/veh)	*9.30*							
Intersection LOS	*A*							

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APPENDIX E

Miami Dade MPO: Transportation Improvement Program

HIGHWAYS

MPO Project Num:	DT4124792
LRTP Ref.:	p. 4-36
County:	MIAMI-DADE
Roadway ID:	072000
Lanes Exist:	3
Lanes Improved:	3
Lanes Added:	1
Project Length:	0.379
District:	6

Project Description: **SR 985/SW 107 AVENUE** **FROM SW 5TH STREET** **TO N OF WEST FLAGLER ST.**

Type of Work: **ADD LANES & REHABILITATE PVMNT**

		Proposed Funding (in $000s)							
	Funding Source	<2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	>2017	All Years
PHASE : **Preliminary Engineering**	DDR	283	0	0	0	0	0	0	283
PHASE : **Preliminary Engineering**	DIH	48	0	0	0	0	0	0	48
PHASE : **Preliminary Engineering**	DIH	133	0	0	0	0	0	0	133
PHASE : **Preliminary Engineering**	DS	110	0	130	0	0	0	0	240
	Totals	**574**	**0**	**130**	**0**	**0**	**0**	**0**	**704**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Right of Way**	DDR	0	0	0	3,553	2,365	0	0	5,918
PHASE : **Right of Way**	DIH	0	0	0	166	0	0	0	166
	Totals	**0**	**0**	**0**	**3,719**	**2,365**	**0**	**0**	**6,084**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Construction**	DS	0	0	0	0	0	4,999	0	4,999
PHASE : **Construction**	DIH	0	0	0	0	0	76	0	76
	Totals	**0**	**0**	**0**	**0**	**0**	**5,075**	**0**	**5,075**

RESPONSIBLE AGENCY: **Managed by FDOT**

HIGHWAYS

MPO Project Num:	DT4124793
LRTP Ref.:	p. 4-36
County:	MIAMI-DADE
Roadway ID:	072000
Lanes Exist:	6
Lanes Improved:	6
Lanes Added:	2
Project Length:	0.472
District:	6

Project Description: **SR 985/SW 107 AVENUE** **FROM SW 12 STREET** **TO SW 4 STREET**

Type of Work: **ADD LANES & REHABILITATE PVMNT**

	Funding Source	Proposed Funding (in $000s) <2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	>2017	All Years
PHASE : **Preliminary Engineering**	DIH	91	0	0	0	0	0	0	91
PHASE : **Preliminary Engineering**	DS	169	60	0	0	0	0	0	229
	Totals	**260**	**60**	**0**	**0**	**0**	**0**	**0**	**320**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Right of Way**	DIH	0	0	420	0	0	0	0	420
PHASE : **Right of Way**	DDR	0	0	33	1,893	0	0	0	1,926
PHASE : **Right of Way**	SA	0	0	1,576	0	0	0	0	1,576
PHASE : **Right of Way**	DS	0	0	650	1,978	0	0	0	2,628
PHASE : **Right of Way**	SU	0	0	2,362	0	0	0	0	2,362
PHASE : **Right of Way**	EB	0	0	797	0	0	0	0	797
PHASE : **Right of Way**	BNDS	0	0	1,003	0	0	0	0	1,003
	Totals	**0**	**0**	**6,841**	**3,871**	**0**	**0**	**0**	**10,712**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Construction**	SA	0	0	0	0	1,089	0	0	1,089
PHASE : **Construction**	HSP	0	0	0	0	2,908	0	0	2,908

HIGHWAYS

MPO Project Num:	DT4291623
LRTP Ref.:	p. F-9
County:	MIAMI-DADE
Roadway ID:	120000
Lanes Exist:	8
Lanes Improved:	8
Lanes Added:	0
Project Length:	0.808
District:	6

Project Description: **SR 90/TAMIAMI TRAIL** **FROM E OF SW 127TH AVENUE** **TO TURNPIKE EXT. ON-RAMP**

Type of Work: **RESURFACING**

	Funding Source	Proposed Funding (in $000s) <2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	>2017	All Years
PHASE : **Preliminary Engineering**	DIH	40	0	0	0	0	0	0	40
PHASE : **Preliminary Engineering**	DS	38	0	0	0	0	0	0	38
Totals		**78**	**0**	**0**	**0**	**0**	**0**	**0**	**78**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Construction**	DDR	0	0	2,399	0	0	0	0	2,399
PHASE : **Construction**	DIH	0	0	27	0	0	0	0	27
Totals		**0**	**0**	**2,426**	**0**	**0**	**0**	**0**	**2,426**

RESPONSIBLE AGENCY: **Managed by FDOT**

HIGHWAYS

MPO Project Num:	**DT4291901**
LRTP Ref.:	p. F-9
County:	MIAMI-DADE
Roadway ID:	030000
Lanes Exist:	6
Lanes Improved:	6
Lanes Added:	0
Project Length:	1.94
District:	6

Project Description: **SR 5/BISCAYNE BLVD** **FROM N OF NE 121 STREET** **TO NE 151 STREET**

Type of Work: **RESURFACING**

		Proposed Funding (in $000s)							
	Funding Source	<2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	>2017	All Years
PHASE : **Preliminary Engineering**	DIH	40	0	0	0	0	0	0	40
PHASE : **Preliminary Engineering**	SU	511	0	0	0	0	0	0	511
	Totals	**551**	**0**	**0**	**0**	**0**	**0**	**0**	**551**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Construction**	DIH	0	0	50	0	0	0	0	50
PHASE : **Construction**	DDR	0	0	27	0	0	0	0	27
PHASE : **Construction**	SA	0	0	3,858	0	0	0	0	3,858
	Totals	**0**	**0**	**3,935**	**0**	**0**	**0**	**0**	**3,935**

RESPONSIBLE AGENCY: **Managed by FDOT**

HIGHWAYS

MPO Project Num:	DT4291902
LRTP Ref.:	p. F-9
County:	MIAMI-DADE
Roadway ID:	030000
Lanes Exist:	6
Lanes Improved:	0
Lanes Added:	0
Project Length:	0.001
District:	6

Project Description: **SR 5/BISCAYNE BLVD AT SR 916/NE 135 STREET**

Type of Work: **INTERSECTION IMPROVEMENT**

	Funding Source	Proposed Funding (in $000s) <2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	>2017	All Years
PHASE : **Preliminary Engineering**	DIH	8	0	0	0	0	0	0	8
PHASE : **Preliminary Engineering**	HSP	80	0	0	0	0	0	0	80
	Totals	**88**	**0**	**0**	**0**	**0**	**0**	**0**	**88**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Construction**	HSP	0	0	451	0	0	0	0	451
	Totals	**0**	**0**	**451**	**0**	**0**	**0**	**0**	**451**

RESPONSIBLE AGENCY: **Managed by FDOT**

HIGHWAYS

MPO Project Num:	DT4311771
LRTP Ref.:	p. F-9
County:	MIAMI-DADE
Roadway ID:	072000
Lanes Exist:	6
Lanes Improved:	6
Lanes Added:	0
Project Length:	0.766
District:	6

Project Description: **SR 985/SW 107 AVENUE** **FROM SW 24 STREET/CORAL WAY** **TO 1100 BLOCK**

Type of Work: **RESURFACING**

	Funding Source	Proposed Funding (in $000s) <2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	>2017	All Years
PHASE : **Preliminary Engineering**	DIH	0	15	0	0	0	0	0	15
PHASE : **Preliminary Engineering**	DS	0	130	0	0	0	0	0	130
Totals		**0**	**145**	**0**	**0**	**0**	**0**	**0**	**145**

RESPONSIBLE AGENCY: **Managed by FDOT**

PHASE : **Construction**	DDR	0	0	0	909	0	0	0	909
PHASE : **Construction**	DIH	0	0	0	11	0	0	0	11
PHASE : **Construction**	DS	0	0	0	115	0	0	0	115
Totals		**0**	**0**	**0**	**1,035**	**0**	**0**	**0**	**1,035**

RESPONSIBLE AGENCY: **Managed by FDOT**

APPENDIX F

Traffic Impact Analysis (Segments)
(HCS 2010 Capacity Analysis) – Year 2020 (MMC)

Traffic Impact Analysis (Segments)
(HCS 2010 Capacity Analysis) – Year 2020 (EC)

Traffic Impact Analysis (Segments)
(HCS 2010 Capacity Analysis) – Year 2020 (BBC)

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 127 AVE
From/To: SW 7 ST to NW 6 ST
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 9770

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	877	vph	877	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	238		238	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	488	pcphpl	488	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	488	pcphpl	488	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	A		A	
Density, D	10.8	pc/mi/ln	10.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	35	35
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	476.6	476.6
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	3.84	3.84
Bicycle LOS Score, BLOS	2.86	2.86
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 127 AVE
From/To: SW 8 ST to SW 26 ST
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 9772

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1195	vph	1194	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	325		324	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	665	pcphpl	665	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	665	pcphpl	665	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		B	
Density, D	14.8	pc/mi/ln	14.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	35	35
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	649.5	648.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	3.84	3.84
Bicycle LOS Score, BLOS	3.02	3.02
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 122 AVE
From/To: SW 8 ST to SW 26 ST
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 877046

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1402	vph	1007	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	381		274	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	781	pcphpl	560	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	781	pcphpl	560	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		B	
Density, D	17.4	pc/mi/ln	12.4	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	30	30
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	762.0	547.3
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	3.39	3.39
Bicycle LOS Score, BLOS	2.89	2.72
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	MG
Agency or Company:	Miller Legg
Date Performed:	2/8/2013
Analysis Time Period:	Peak Hour
Freeway/Direction:	HEFT
From/To:	300' N of SW 8 ST
Jurisdiction:	
Analysis Year:	2020
Description:	Two-Way Analysis - Station No. 2250

Flow Inputs and Adjustments

Volume, V	7287	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1938	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1589	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	5	
Free-flow speed:	Measured	
FFS or BFFS	60.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	60.0	mi/h

LOS and Performance Measures

Flow rate, vp	1589	pc/h/ln
Free-flow speed, FFS	60.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	5	
Density, D	26.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	SHA
Agency or Company:	Miller Legg
Date Performed:	2/8/2013
Analysis Time Period:	Peak Hour
Freeway/Direction:	HEFT
From/To:	1000' N of Bird Rd
Jurisdiction:	
Analysis Year:	2020
Description:	Two-Way Analysis - Station No. 2270

Flow Inputs and Adjustments

Volume, V	6654	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1770	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2419	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	60.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	60.0	mi/h

LOS and Performance Measures

Flow rate, vp	2419	pc/h/ln
Free-flow speed, FFS	60.0	mi/h
Average passenger-car speed, S	47.8	mi/h
Number of lanes, N	3	
Density, D	50.6	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/8/2013
Analysis Period:	Peak Hour
Highway:	NW 107 AVE
From/To:	W Flagler ST to SR 836
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 1218

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3841	vph	2759	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	1044		750	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1426	pcphpl	1024	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1426	pcphpl	1024	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	44.9	mph	45.0	mph
Level of service, LOS	D		C	
Density, D	31.7	pc/mi/ln	22.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1391.7	999.6
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.55	3.39
Bicycle LOS	D	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/8/2013
Analysis Period:	Peak Hour
Highway:	SW 107 AVE
From/To:	W Flagler ST to SW 8 ST
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 2580

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3748	vph	2692	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	1018		732	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	2087	pcphpl	1499	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2087	pcphpl	1499	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S		mph	44.7	mph
Level of service, LOS	F		D	
Density, D		pc/mi/ln	33.6	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	2037.0	1463.0
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.75	3.58
Bicycle LOS	D	D

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 107 AVE
From/To: SW 8 ST to SW 24 ST
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 1090

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3182	vph	2285	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	865		621	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1181	pcphpl	848	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1181	pcphpl	848	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	D		C	
Density, D	26.2	pc/mi/ln	18.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1152.9	827.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.46	3.29
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	MG
Agency/Co.	Miller Legg
Date Performed	2/8/2013
Analysis Time Period	Peak Hour
Highway	SW 97 AVE
From/To	SW 8 ST to SW 40 ST
Jurisdiction	
Analysis Year	2020
Description	Two-Way Analysis - STA 9698

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	5	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	75	%
Up/down	-	%	Access point density	12	/mi

Analysis direction volume, Vd	697	veh/h
Opposing direction volume, Vo	697	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.995		0.995	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	796	pc/h	796	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	3.0	mi/h
Free-flow speed, FFSd	42.0	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATSd	28.6	mi/h
Percent Free Flow Speed, PFFS	68.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	792 pc/h	792 pc/h
Base percent time-spent-following,(note-4) BPTSFd	69.2 %	
Adjustment for no-passing zones, fnp	24.3	
Percent time-spent-following, PTSFd	81.3 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.47	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1692	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1692	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	28.6	mi/h
Percent time-spent-following, PTSFd (from above)	81.3	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	35
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	792.0
Effective width of outside lane, We	24.00
Effective speed factor, St	3.84
Bicycle LOS Score, BLOS	3.12
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/8/2013
Analysis Period:	Peak Hour
Highway:	SW 26 ST
From/To:	SW 117 AVE to SW 127 AVE
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 9130

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	2316	vph	2316	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	629		629	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1290	pcphpl	1290	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1290	pcphpl	1290	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	D		D	
Density, D	28.7	pc/mi/ln	28.7	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1258.7	1258.7
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.50	3.50
Bicycle LOS	D	D

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/8/2013
Analysis Period:	Peak Hour
Highway:	SW 24 ST
From/To:	SW 107 AVE to SW 117 AVE
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 9126

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1895	vph	1895	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	515		515	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1055	pcphpl	1055	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1055	pcphpl	1055	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	C		C	
Density, D	23.4	pc/mi/ln	23.4	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1029.9	1029.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.40	3.40
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 24 ST
From/To: SW 97 AVE to SW 107 AVE
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 9126

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1845	vph	1845	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	501		501	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1027	pcphpl	1027	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1027	pcphpl	1027	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	C		C	
Density, D	22.8	pc/mi/ln	22.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1002.7	1002.7
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.39	3.39
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 8 ST
From/To: SW 127 AVE to SW 137 AVE
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 88

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3165	vph	2273	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	860		618	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1175	pcphpl	844	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1175	pcphpl	844	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	D		C	
Density, D	26.1	pc/mi/ln	18.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1146.7	823.6
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.57	3.40
Bicycle LOS	D	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 8 ST
From/To: SW 117 AVE to SW 127 AVE
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 2561

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3409	vph	2448	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	926		665	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1266	pcphpl	909	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1266	pcphpl	909	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	D		C	
Density, D	28.1	pc/mi/ln	20.2	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1235.1	887.0
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.61	3.44
Bicycle LOS	D	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/8/2013
Analysis Period: Peak Hour
Highway: SW 8 ST
From/To: SW 107 AVE to SW 117 AVE
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 90

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3345	vph	2402	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	909		653	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1242	pcphpl	892	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1242	pcphpl	892	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	D		C	
Density, D	27.6	pc/mi/ln	19.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1212.0	870.3
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.60	3.43
Bicycle LOS	D	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/11/2013
Analysis Period:	Peak Hour
Highway:	W Flagler ST
From/To:	NW 107 AVE to NW 114 AVE
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 9158

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1766	vph	1766	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	480		480	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	655	pcphpl	655	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	655	pcphpl	655	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		B	
Density, D	14.6	pc/mi/ln	14.6	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	639.9	639.9
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.16	3.16
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/11/2013
Analysis Period:	Peak Hour
Highway:	W Flagler ST
From/To:	NW 97 AVE to NW 107 AVE
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 9156

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1815	vph	1815	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	493		493	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	674	pcphpl	674	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	674	pcphpl	674	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		B	
Density, D	15.0	pc/mi/ln	15.0	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	657.6	657.6
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.17	3.17
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/11/2013
Analysis Period: Peak Hour
Highway: West Dixie Hwy
From/To: NE 16 AVE to NE 163 ST
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Station No. 531

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	755	vph	615	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	205		167	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	420	pcphpl	342	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	420	pcphpl	342	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	A		A	
Density, D	9.3	pc/mi/ln	7.6	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	410.3	334.2
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	2.93	2.83
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/11/2013
Analysis Period:	Peak Hour
Highway:	Biscayne Blvd
From/To:	NE 135 ST to NE 163 ST
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 5219

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3097	vph	2524	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	842		686	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1150	pcphpl	937	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1150	pcphpl	937	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	C		C	
Density, D	25.6	pc/mi/ln	20.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1122.1	914.5
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.56	3.46
Bicycle LOS	D	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/11/2013
Analysis Period:	Peak Hour
Highway:	Biscayne Blvd
From/To:	NE 135 ST to NE 163 ST
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 5219

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	3097	vph	2524	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	842		686	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1150	pcphpl	937	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1150	pcphpl	937	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	C		C	
Density, D	25.6	pc/mi/ln	20.8	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1122.1	914.5
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.56	3.46
Bicycle LOS	D	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/11/2013
Analysis Period:	Peak Hour
Highway:	Biscayne BLVD
From/To:	NE 121 ST to NE 135 ST
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 524

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1932	vph	1574	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	525		428	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	717	pcphpl	584	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	717	pcphpl	584	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		B	
Density, D	15.9	pc/mi/ln	13.0	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	45	45
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	700.0	570.3
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.42	4.42
Bicycle LOS Score, BLOS	3.32	3.22
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	MG
Agency/Co:	Miller Legg
Date:	2/11/2013
Analysis Period:	Peak Hour
Highway:	NE 135 ST
From/To:	NE 12 AVE to Biscayne BLVD
Jurisdiction:	
Analysis Year:	2020
Project ID:	Two-Way Analysis - Station No. 1026

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1056	vph	860	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	287		234	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	588	pcphpl	479	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	588	pcphpl	479	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		A	
Density, D	13.1	pc/mi/ln	10.6	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	40	40
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	573.9	467.4
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	4.17	4.17
Bicycle LOS Score, BLOS	3.10	3.00
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/11/2013
Analysis Period: Peak Hour
Highway: NE 151 ST
From/To: Biscayne Blvd to E-B landing
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - Biscayne Blvd to E-B landing

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1911	vph	1910	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	519		519	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	1064	pcphpl	1063	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1064	pcphpl	1063	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	C		C	
Density, D	23.6	pc/mi/ln	23.6	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	30	30
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	1038.6	1038.0
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	3.39	3.39
Bicycle LOS Score, BLOS	3.05	3.05
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: MG
Agency/Co: Miller Legg
Date: 2/11/2013
Analysis Period: Peak Hour
Highway: NE 151 ST
From/To: E Biscayne Landing to FIU BBC
Jurisdiction:
Analysis Year: 2020
Project ID: Two-Way Analysis - E Biscayne Landing to FIU BBC

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type				
Free-flow speed:	Measured		Measured	
FFS or BFFS	45.0	mph	45.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	45.0	mph	45.0	mph

VOLUME

Direction	1		2	
Volume, V	1185	vph	965	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	322		262	
Trucks and buses	5	%	5	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.976		0.976	
Flow rate, vp	660	pcphpl	537	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	660	pcphpl	537	pcphpl
Free-flow speed, FFS	45.0	mph	45.0	mph
Avg. passenger-car travel speed, S	45.0	mph	45.0	mph
Level of service, LOS	B		B	
Density, D	14.7	pc/mi/ln	11.9	pc/mi/ln

Bicycle Level of Service

Posted speed limit, Sp	30	30
Percent of segment with occupied on-highway parking	0	0
Pavement rating, P	3	3
Flow rate in outside lane, vOL	644.0	524.5
Effective width of outside lane, We	24.00	24.00
Effective speed factor, St	3.39	3.39
Bicycle LOS Score, BLOS	2.80	2.70
Bicycle LOS	C	C

Overall results are not computed when free-flow speed is less than 45 mph.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	MG
Agency/Co.	Miller Legg
Date Performed	2/11/2013
Analysis Time Period	Peak Hour
Highway	Bay Vista Blvd
From/To	Golden Panther Dr-Magnet Entr
Jurisdiction	
Analysis Year	2020
Description	Two-Way Analysis - STA NA2

Input Data

Highway class	Class 3		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	5	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	12	/mi

Analysis direction volume, Vd	254	veh/h
Opposing direction volume, Vo	253	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.980		0.980	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	295	pc/h	293	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	3.0	mi/h
Free-flow speed, FFSd	42.0	mi/h
Adjustment for no-passing zones, fnp	3.4	mi/h
Average travel speed, ATSd	34.0	mi/h
Percent Free Flow Speed, PFFS	81.1	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.995		0.995	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	290	pc/h	289	pc/h
Base percent time-spent-following,(note-4) BPTSFd	32.7	%		
Adjustment for no-passing zones, fnp	57.7			
Percent time-spent-following, PTSFd	61.6	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1666	veh/h
Capacity from PTSF, CdPTSF	1692	veh/h
Directional Capacity	1666	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	34.0	mi/h
Percent time-spent-following, PTSFd (from above)	61.6	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	35
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	288.6
Effective width of outside lane, We	24.00
Effective speed factor, St	3.84
Bicycle LOS Score, BLOS	2.61
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

APPENDIX G

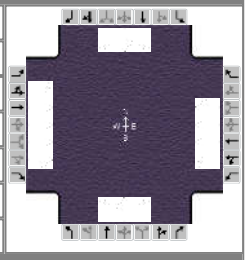
Traffic Impact Analysis (Intersections)
(HCS 2010 Capacity Analysis) – Year 2020 (MMC)

Traffic Impact Analysis (Intersections)
(HCS 2010 Capacity Analysis) – Year 2020 (EC)

Traffic Impact Analysis (Intersections)
(HCS 2010 Capacity Analysis) – Year 2020 (BBC)

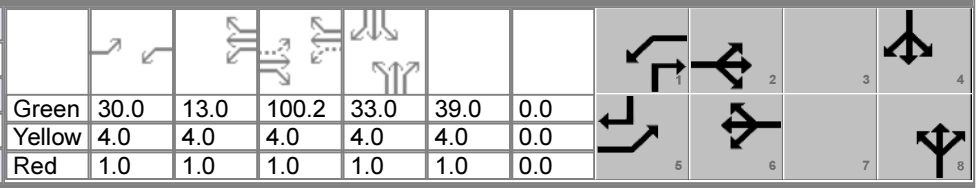
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 8th Street / SW 109th A	Analysis Year	2012	Analysis Period	1> 7:00
File Name	Prop_2020_SW 8 ST & SW 109 AVE.xus				
Project Description	Prop 2020 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	285	2366	200	428	2309	114	486	213	315	305	105	453

Signal Information			
Cycle, s	240.2	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	30.0	13.0	100.2	33.0	39.0	0.0
Yellow	4.0	4.0	4.0	4.0	4.0	0.0
Red	1.0	1.0	1.0	1.0	1.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		9.0		9.0
Phase Duration, s	35.0	105.2	53.0	123.2		44.0		38.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	3.0	2.9	3.0	2.9		3.4		3.3
Queue Clearance Time (g_s), s	32.0	88.8	50.0	112.8		41.0		35.0
Green Extension Time (g_e), s	0.0	4.9	0.0	5.4		0.0		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	1.00	0.98	1.00	0.91		1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	310	2116	673	465	1761	873	528	232	342	332	114	492
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1863	1760	1792	1881	1833	1792	1881	1547	1792	1827	1594
Queue Service Time (g_s), s	30.0	85.3	86.8	48.0	107.4	110.8	39.0	28.2	39.0	33.0	13.8	33.0
Cycle Queue Clearance Time (g_c), s	30.0	85.3	86.8	48.0	107.4	110.8	39.0	28.2	39.0	33.0	13.8	33.0
Capacity (*c*), veh/h	257	2332	734	393	1852	902	291	305	566	246	251	418
Volume-to-Capacity Ratio (*X*)	1.204	0.907	0.917	1.182	0.951	0.967	1.816	0.758	0.604	1.347	0.455	1.178
Available Capacity (c_a), veh/h	257	2332	734	393	1958	954	291	305	566	246	251	418
Back of Queue (*Q*), veh/ln (50th percentile)	24.9	41.3	41.8	36.0	52.9	55.7	49.3	14.9	17.8	28.0	6.7	38.1
Overflow Queue (Q_3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio (*RQ*) (50th percentile)	3.13	0.00	0.00	5.03	0.00	0.00	16.57	0.00	0.00	14.09	0.00	0.00
Uniform Delay (d_1), s/veh	88.8	65.6	66.1	87.4	58.2	59.1	100.6	96.1	62.8	103.6	95.3	88.6
Incremental Delay (d_2), s/veh	122.8	5.5	16.0	105.2	10.4	20.6	380.6	9.4	1.3	180.7	0.5	102.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	211.5	71.2	82.1	192.6	68.7	79.8	481.3	105.6	64.1	284.4	95.8	190.9
Level of Service (LOS)	F	E	F	F	E	E	F	F	E	F	F	F
Approach Delay, s/veh / LOS	87.6	F		90.4	F		272.8	F		212.4	F	
Intersection Delay, s/veh / LOS	127.6						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.5	B	2.4	B	3.6	D	3.4	C
Bicycle LOS Score / LOS	1.8	A	2.2	B	2.3	B	2.0	B

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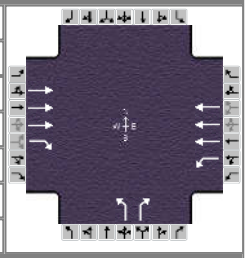
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 8th Street / SW 112th A	Analysis Year	2012	Analysis Period	1> 7:00
File Name	Prop_2020_SW 8 ST & SW 112 AVE.xus				
Project Description	Prop 2020 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		2847	668	293	2958		522		427			

Signal Information			
Cycle, s	115.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	0.0	0.0	0.0	0.0	0.0	0.0						
Yellow	0.0	0.0	0.0	0.0	0.0	0.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0	5	6	7	8		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		
Case Number		7.3	2.0	4.0		9.0		
Phase Duration, s		55.0	25.0	80.0		35.0		
Change Period, (*Y+Rc*), s		5.0	5.0	5.0		5.0		
Max Allow Headway (*MAH*), s		0.0	0.0	0.0		0.0		
Queue Clearance Time (g_s), s		0.0	0.0	0.0		0.0		
Green Extension Time (g_e), s		0.0	0.0	0.0		0.0		
Phase Call Probability		0.00	0.00	0.00		0.00		
Max Out Probability		0.00	0.00	0.00		0.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (*v*), veh/h		0	0	0	0		0		0			
Adjusted Saturation Flow Rate (*s*), veh/h/ln		0	0	0	0		0		0			
Queue Service Time (g_s), s		0.0	0.0	0.0	0.0		0.0		0.0			
Cycle Queue Clearance Time (g_c), s		0.0	0.0	0.0	0.0		0.0		0.0			
Capacity (*c*), veh/h		2228	688	312	3309		467		688			
Volume-to-Capacity Ratio (*X*)		1.389	1.055	1.022	0.972		1.214		0.675			
Available Capacity (c_a), veh/h		0	0	0	0		0		0			
Back of Queue (*Q*), veh/ln (50th percentile)		55.7	27.1	13.5	25.2		28.3		10.7			
Overflow Queue (Q_3), veh/ln		0.0	0.0	0.0	0.0		0.0		0.0			
Queue Storage Ratio (*RQ*) (50th percentile)		0.00	2.73	1.70	0.00		0.00		0.00			
Uniform Delay (d_1), s/veh		32.5	32.5	47.5	19.0		42.5		26.1			
Incremental Delay (d_2), s/veh		177.9	49.7	56.8	9.9		114.6		2.1			
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (*d*), s/veh		210.4	82.2	104.3	28.9		157.1		28.2			
Level of Service (LOS)		F	F	F	C		F		C			
Approach Delay, s/veh / LOS	186.0	F		35.7	D		99.1	F		0.0		
Intersection Delay, s/veh / LOS	112.0						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	0.7	A	3.3	C	3.3	C
Bicycle LOS Score / LOS	2.6	B	2.4	B		F		

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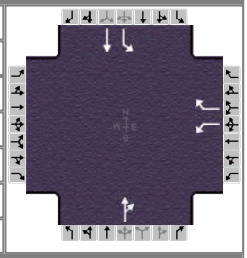
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/30/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.85
Intersection	SW 117th Avenue / SW 17t	Analysis Year	2012	Analysis Period	1> 7:00
File Name	prop_SW 117 AVE & SW 17 ST.xus				
Project Description	2020 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				602		292		535	215	86	617	

Signal Information					EB			WB			NB			SB		
Cycle, s	100.0	Reference Phase	2		L	T	R	L	T	R	L	T	R	L	T	R
Offset, s	0	Reference Point	End	Green	5.0	40.0		40.0	0.0	0.0						
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0		4.0	0.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0		1.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				9.0		8.3	1.0	4.0
Phase Duration, s				45.0		45.0	10.0	55.0
Change Period, *(Y+Rc)*, s				5.0		5.0	5.0	5.0
Max Allow Headway *(MAH)*, s				3.3		3.1	3.2	3.1
Queue Clearance Time *(gs)*, s				41.3		42.0	5.3	33.4
Green Extension Time *(ge)*, s				0.0		0.0	0.1	2.7
Phase Call Probability				1.00		1.00	0.94	1.00
Max Out Probability				1.00		1.00	0.14	0.56

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3		18		2	12	1	6	
Adjusted Flow Rate *(v)*, veh/h				708		344		882		101	726	
Adjusted Saturation Flow Rate *(s)*, veh/h/ln				1792		1579		1788		1723	1881	
Queue Service Time *(gs)*, s				39.3		15.3		40.0		3.3	31.4	
Cycle Queue Clearance Time *(gc)*, s				39.3		15.3		40.0		3.3	31.4	
Capacity *(c)*, veh/h				716		711		715		159	941	
Volume-to-Capacity Ratio *(X)*				0.989		0.483		1.234		0.637	0.771	
Available Capacity *(ca)*, veh/h				716		711		715		244	941	
Back of Queue *(Q)*, veh/ln (50th percentile)				22.2		5.5		39.7		1.3	14.0	
Overflow Queue *(Q3)*, veh/ln				0.0		0.0		0.0		0.0	0.0	
Queue Storage Ratio *(RQ)* (50th percentile)				0.00		0.00		0.00		0.12	0.00	
Uniform Delay *(d1)*, s/veh				29.8		19.3		30.0		23.7	20.3	
Incremental Delay *(d2)*, s/veh				30.6		0.2		117.3		1.6	3.6	
Initial Queue Delay *(d3)*, s/veh				0.0		0.0		0.0		0.0	0.0	
Control Delay *(d)*, s/veh				60.4		19.5		147.3		25.3	24.0	
Level of Service (LOS)				E		B		F		C	C	
Approach Delay, s/veh / LOS	0.0			47.1		D	147.3		F	24.1		C
Intersection Delay, s/veh / LOS	72.2						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.3	B	2.3	B	0.7	A
Bicycle LOS Score / LOS				F	1.9	A	1.9	A

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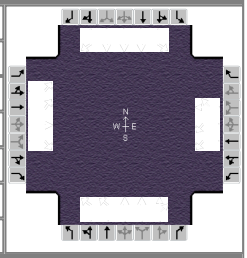
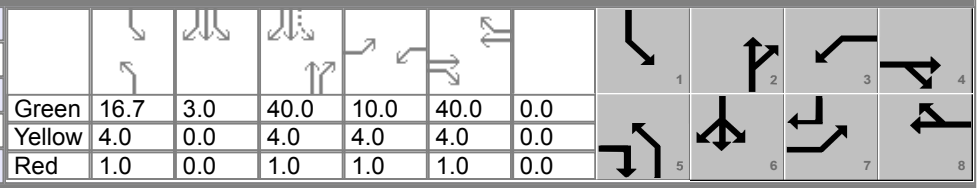
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/30/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	SW 107th Avenue / SW 16t	Analysis Year	2012	Analysis Period	1> 7:00
File Name	Prop_2020_SW 107 AVE & SW 16 ST.xus				
Project Description	Prop 2020 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	734	555	343	889	397	318	360	1666	203	282	2318	564

Signal Information			
Cycle, s	129.7	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	16.7	3.0	40.0	10.0	40.0	0.0	
Yellow	4.0	0.0	4.0	4.0	4.0	0.0	
Red	1.0	0.0	1.0	1.0	1.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	2.0	3.0	2.0	4.0	2.0	4.0	1.1	3.0
Phase Duration, s	15.0	45.0	15.0	45.0	21.7	45.0	24.7	48.0
Change Period, (*Y+Rc*), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	3.3	3.3	3.2	3.3	3.1	3.0	3.1	3.0
Queue Clearance Time (g_s), s	12.0	42.0	12.0	42.0	16.3	42.0	19.6	45.0
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	798	603	373	966	777		391	1377	655	307	2520	613
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1757	1881	1596	1740	1742		1740	1881	1774	1810	1708	1609
Queue Service Time (g_s), s	10.0	40.0	22.2	10.0	40.0		14.3	40.0	40.0	17.6	43.0	43.0
Cycle Queue Clearance Time (g_c), s	10.0	40.0	22.2	10.0	40.0		14.3	40.0	40.0	17.6	43.0	43.0
Capacity (*c*), veh/h	271	580	700	268	537		448	1161	547	330	1698	657
Volume-to-Capacity Ratio (*X*)	2.944	1.040	0.533	3.601	1.446		0.874	1.186	1.197	0.929	1.483	0.933
Available Capacity (c_a), veh/h	271	580	700	268	537		537	1161	547	335	1698	657
Back of Queue (*Q*), veh/ln (50th percentile)	37.8	26.6	8.7	48.4	48.6		6.9	33.0	33.1	12.5	52.3	21.4
Overflow Queue (Q_3), veh/ln	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio (*RQ*) (50th percentile)	4.11	0.00	1.68	5.30	0.00		0.72	0.00	0.00	1.06	0.00	1.43
Uniform Delay (d_1), s/veh	59.8	44.8	26.8	59.8	44.8		55.5	44.8	44.8	40.4	43.3	36.6
Incremental Delay (d_2), s/veh	884.7	48.0	0.4	1179.8	211.2		11.6	92.7	105.4	30.7	220.7	20.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	944.6	92.9	27.2	1239.6	256.1		67.0	137.6	150.2	71.1	264.1	56.6
Level of Service (LOS)	F	F	C	F	F		E	F	F	E	F	E
Approach Delay, s/veh / LOS	462.1	F		801.2	F		129.6	F		209.9	F	
Intersection Delay, s/veh / LOS	346.8						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.4	C	3.4	C	2.4	B	3.0	C
Bicycle LOS Score / LOS	3.4	C	3.4	C	1.8	A	2.4	B

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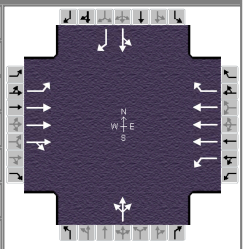
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	Flagler Street / SW 105th P	Analysis Year	2012	Analysis Period	1> 7:00
File Name	Prop_2020_FLAGLER ST & SW 105 PL.xus				
Project Description	Prop 2020 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	36	1713	36	54	1695	36	46	2	53	89	30	97

Signal Information			
Cycle, s	106.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	0.0	0.0	0.0	0.0	0.0	0.0	5	6	7	8		
Yellow	0.0	0.0	0.0	0.0	0.0	0.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6		8		4
Case Number	1.0	4.0		5.3		12.0		11.0
Phase Duration, s	11.8	56.8		45.0		24.2		25.0
Change Period, *(Y+Rc)*, s	5.0	5.0		5.0		5.0		5.0
Max Allow Headway *(MAH)*, s	0.0	0.0		0.0		0.0		0.0
Queue Clearance Time *(g_s)*, s	0.0	0.0		0.0		0.0		0.0
Green Extension Time *(g_e)*, s	0.0	0.0		0.0		0.0		0.0
Phase Call Probability	0.00	0.00		0.00		0.00		0.00
Max Out Probability	0.00	0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate *(v)*, veh/h	0	0	0	0	0	0		0			0	0
Adjusted Saturation Flow Rate *(s)*, veh/h/ln	0	0	0	0	0	0		0			0	0
Queue Service Time *(g_s)*, s	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Cycle Queue Clearance Time *(g_c)*, s	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Capacity *(c)*, veh/h	191	1821	901	122	1933	604		261			345	399
Volume-to-Capacity Ratio *(X)*	0.204	0.698	0.699	0.482	0.953	0.065		0.421			0.375	0.264
Available Capacity *(c_a)*, veh/h	0	0	0	0	0	0		0			0	0
Back of Queue *(Q)*, veh/ln (50th percentile)	0.5	11.5	11.7	1.6	16.4	0.6		2.6			3.0	2.2
Overflow Queue *(Q_3)*, veh/ln	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Queue Storage Ratio *(RQ)* (50th percentile)	0.04	0.00	0.00	0.65	0.00	0.12		0.00			0.00	0.00
Uniform Delay *(d_1)*, s/veh	23.8	21.0	21.0	42.1	32.1	21.1		38.5			37.6	31.7
Incremental Delay *(d_2)*, s/veh	0.2	1.0	2.0	1.1	11.3	0.0		0.4			0.3	0.1
Initial Queue Delay *(d_3)*, s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Control Delay *(d)*, s/veh	24.0	22.0	23.1	43.2	43.4	21.1		38.9			37.8	31.8
Level of Service (LOS)	C	C	C	D	D	C		D			D	C
Approach Delay, s/veh / LOS	22.4	C		42.9	D		38.9	D		35.1	D	
Intersection Delay, s/veh / LOS	33.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.3	B	3.4	C	3.3	C
Bicycle LOS Score / LOS	1.6	A	1.6	A	0.7	A	0.9	A

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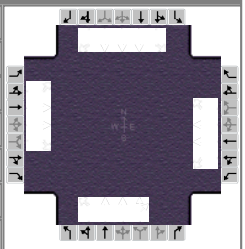
HCS 2010 Signalized Intersection Results Summary

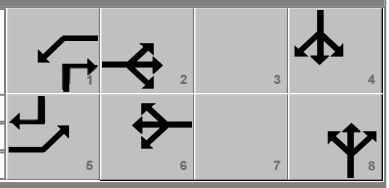
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst		Analysis Date	11/29/2012	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Intersection	Biscayne Blvd / NE 151 St	Analysis Year	2012	Analysis Period	1> 7:00
File Name	Prop_2020_NE 151 ST & BISCAYNE BLVD.xus				
Project Description	Prop 2020 PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	175	1362	397	358	1522	496	444	3040	387	837	2719	246

Signal Information			
Cycle, s	138.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	12.4	2.6	40.0	28.0	30.0	0.0						
Yellow	4.0	4.0	4.0	4.0	4.0	0.0						
Red	1.0	1.0	1.0	1.0	1.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		10.0		9.0
Phase Duration, s	17.4	45.0	25.0	52.6		35.0		33.0
Change Period, (*Y+Rc*), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	3.0	3.0	3.0	3.0		3.3		3.1
Queue Clearance Time (*gs*), s	12.2	42.0	22.0	49.6		32.0		30.0
Green Extension Time (*ge*), s	0.2	0.0	0.0	0.0		0.0		0.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.01	1.00	1.00	1.00		1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	190	1480	432	389	1654	539	483	2483	1242	910	2955	267
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1792	1773	1609	1792	1791	1605	1792	1881	1763	1792	1659	1594
Queue Service Time (*gs*), s	10.2	40.0	35.9	20.0	47.6	45.7	30.0	30.0	30.0	28.0	28.0	19.7
Cycle Queue Clearance Time (*gc*), s	10.2	40.0	35.9	20.0	47.6	45.7	30.0	30.0	30.0	28.0	28.0	19.7
Capacity (*c*), veh/h	216	1028	466	312	1236	554	389	818	383	364	1010	466
Volume-to-Capacity Ratio (*X*)	0.883	1.440	0.926	1.248	1.339	0.974	1.239	3.036	3.240	2.503	2.927	0.573
Available Capacity (*ca*), veh/h	314	1028	466	312	1236	554	389	818	383	364	1010	466
Back of Queue (*Q*), veh/ln (50th percentile)	5.1	46.2	17.1	22.3	47.4	22.3	27.5	118.9	121.5	81.7	93.0	7.9
Overflow Queue (*Q3*), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Storage Ratio (*RQ*) (50th percentile)	0.64	0.00	0.00	3.13	0.00	0.00	9.25	0.00	0.00	41.19	0.00	0.00
Uniform Delay (*d1*), s/veh	35.7	49.0	47.6	45.9	45.2	44.6	54.0	54.0	54.0	55.0	55.0	41.5
Incremental Delay (*d2*), s/veh	13.6	203.6	24.1	135.5	157.9	31.4	127.8	919.6	1014.7	684.4	869.8	1.1
Initial Queue Delay (*d3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	49.3	252.6	71.6	181.4	203.1	75.9	181.8	973.6	1068.7	739.4	924.8	42.6
Level of Service (LOS)	D	F	E	F	F	E	F	F	F	F	F	D
Approach Delay, s/veh / LOS	197.1	F		173.3	F		910.8	F		826.9	F	
Intersection Delay, s/veh / LOS	622.8						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.3	C	3.4	C	3.0	C	3.0	C
Bicycle LOS Score / LOS	2.2	B	2.6	B	2.8	C	2.8	C

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HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: MG
Agency/Co.: Miller Legg
Date Performed: 2/11/2013
Analysis Time Period: PM Peak Hour
Intersection: NE 151st ST / NE 145th ST
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2020
Project ID: Prop 2020 PM Peak Hour
East/West Street: NE 145th Street
North/South Street: NE 151th Street

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	0	0	981	0	860	0	555	286	0
% Thrus Left Lane								50				

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			L	R	T	TR	L	T
PHF			1.00	1.00	1.00	1.00	1.00	1.00
Flow Rate			0	981	430	430	555	286
% Heavy Veh			0	0	0	0	0	0
No. Lanes			2		2		2	
Opposing-Lanes			0		2		2	
Conflicting-lanes			2		2		2	
Geometry group			1		5		5	
Duration, T 0.25 hrs.								

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			0	981	430	430	555	286
Left-Turn			0	0	0	0	555	0
Right-Turn			0	981	0	0	0	0
Prop. Left-Turns			0.0	0.0	0.0	0.0	1.0	0.0
Prop. Right-Turns			0.0	1.0	0.0	0.0	0.0	0.0
Prop. Heavy Vehicle			0.0	0.0	0.0	0.0	0.0	0.0
Geometry Group			1		5		5	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.5		0.5	

hRT-adj				-0.6			-0.7			-0.7	
hHV-adj				1.7			1.7			1.7	
hadj, computed			0.0	-0.6	0.0	0.0		0.5	0.0		

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			0	981	430	430	555	286
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.00	0.87	0.38	0.38	0.49	0.25
hd, final value			7.03	6.42	7.84	7.84	8.41	7.89
x, final value			0.00	1.75	0.94	0.94	1.30	0.63
Move-up time, m				2.0		2.3		2.3
Service Time			5.0	4.4	5.5	5.5	6.1	5.6

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			0	981	430	430	555	286
Service Time			5.0	4.4	5.5	5.5	6.1	5.6
Utilization, x			0.00	1.75	0.94	0.94	1.30	0.63
Dep. headway, hd			7.03	6.42	7.84	7.84	8.41	7.89
Capacity			0	981	459	459	555	457
Delay			10.03	360.77	55.61	55.61	174.40	22.93
LOS			B	F	F	F	F	C
Approach:								
Delay				360.77		55.61		122.89
LOS				F		F		F

Intersection Delay 188.33 Intersection LOS F