Appendix A

FDOT Sunguide TMC Data Sources

- ITS Performance Measures Annual Reports (FY 2009 & 2009)
- Quarterly Incident Duration Reports for FY 2010 – District Seven
- Sample output from STEWARD

Intelligent Transportation System (ITS) Program

Performance Measures Review

Florida Department of Transportation
Traffic Engineering and Operations Office

August 2008

Intelligent Transportation Systems

Performance Measures Section for FDOT ITS Annual Report

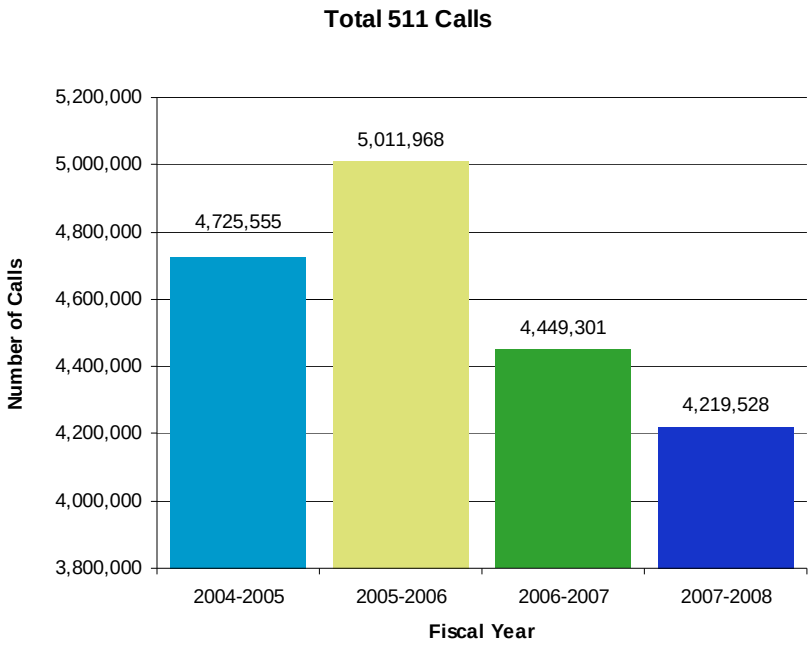
The Florida Department of Transportation (FDOT) is committed to implementing a statewide, fully integrated Intelligent Transportation Systems (ITS) in a cost-efficient manner to better accommodate our rapid growth in population, tourism, and commerce. ITS represents the use of real-time information systems and advanced technologies as transportation management tools to improve the movement of people, goods, and services. ITS uses advanced technologies to remedy mobility and safety problems, so the building of new roads and expansion of existing ones is accomplished efficiently.

As ITS is evolving in Florida, the development and reporting of operations performance measures is a high priority for FDOT to demonstrate and document the benefits of ITS. When the ITS Program began addressing performance in 2004, the Districts had no automated data collection systems and were initially limited to measures of basic production and usage (*output*). The initial output measures reported statewide were: 1) 511 calls, 2) Road Ranger assists and 3) centerline miles of limited access highways managed by ITS.

As ITS deployment and integration proliferate, measures of performance and resulting benefits (or *outcome*) can be more accurately documented and reported. Three ITS *outcome* performance measures were identified by FDOT and subsequently approved by the Florida Transportation Commission (FTC) in 2005. These measures are: 1) incident duration; 2) travel-time reliability; and 3) customer satisfaction. Available data for the incident duration and customer satisfaction measures were collected and reported beginning in 2006. For 2008, all three output and three outcome measures will be reported. The data for all of the 2008 measures was collected for the period beginning July 1, 2007 and ending June 30, 2008.

Total Annual 511 Calls

Background: In July 2000, the Federal Communications Commission designated 511 as the national three-digit telephone number for traveler information. To date, over 112 million calls have been made to 511 systems throughout the country. The ultimate national goal is to provide coverage throughout the United States by 2010. Over 2.3 million calls per month are now being made to these existing systems (43 locations in 33 states) and the 511 system is available to over 128 million people.[1] In Florida, most urban areas of the State currently offer this service to travelers. Following are the coverage areas and launch dates: Southeast (2002) - Miami-Dade, Monroe, Broward, Palm Beach, Indian River, Martin, and St Lucie counties; Central (2002) - along I-4 in greater Orlando; Tampa Bay (2004) - Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk and Sarasota counties; Northeast (November 2006) - Duval, St. Johns, Clay and Nassau counties; and Southwest (April 2007) - Charlotte, Lee and Collier counties. The Statewide service covers all areas not covered by regional services and was launched in November 2005. In 2008, Florida's statewide 511 service will integrate all the Florida regional 511 services into one statewide system. Since inception of the aforementioned systems, over 23 million 511 calls have been made in Florida.



Purpose: To provide accurate, real-time information on traffic and road conditions, alternate route information (during incidents), construction information, weather-related problems, and public transportation information/options.

Objective: To reduce traveler delay and improve the overall quality of trip-making as evidenced by growth in the number of 511 calls and different callers, and maintaining a high level of user satisfaction.

Methodology: Compilation of annual monthly (and ultimately, annual hourly) 511 service calls by each of the service providers. Currently, *Logic Tree* manages the Statewide, Southeast, and Central Florida systems. The Tampa Bay area system and the Southwest system are both managed by *Mobility Technologies (now Traffic.Com)* and Smartroutes manages the Northeast system. FDOT is responsible for assessing statewide user satisfaction, including 511 impact on

[1] www.deploy511.org, July 2007.

travel behavior, and the extent of **different** callers utilizing the service. The results of customer satisfaction for the 511 service are included in another section of this document.

511 calls

July 1, 2007 – June 30, 2008

	2007					
	July	**August**	**September**	**October**	**November**	**December**
Central Florida	109,159	95,234	71,154	93,007	114,499	115,559
S.E. Florida	152,003	158,550	175,470	197,807	185,723	163,628
Tampa Bay	28,684	32,882	29,801	36,328	36,241	28,545
Statewide	41,210	37,200	35,361	41,612	43,212	38,570
N.E. Florida	5,015	3,814	3,889	6,530	6,162	4,655
S.W. Florida	1,203	1,629	1,253	1,548	2,447	2,017
State Total	337,274	329,309	316,928	376,832	388,284	352,974
National Total	1,743,296	1,748,132	1,575,278	2,607,382	2,662,488	4,745,867

	2008					
	January	**February**	**March**	**April**	**May**	**June**
Central Florida	105,643	88,955	98,441	73,996	110,934	69,494
S.E. Florida	188,980	198,374	213,776	171,407	182,726	139,818
Tampa Bay	43,389	37,548	41,018	34,839	29,726	33,619
Statewide	30,064	36,881	43,645	29,024	33,574	34,700
N.E. Florida	3,307	7,749	10,914	5,197	4,441	4,915
S.W. Florida	1,476	2,211	1,902	1,346	2071	1,827
State Total	372,859	371,718	409,696	315,809	363,472	284,373
National Total	4,166,661	4,232,197	2,982,155	2,471,742	N/A**	N/A**

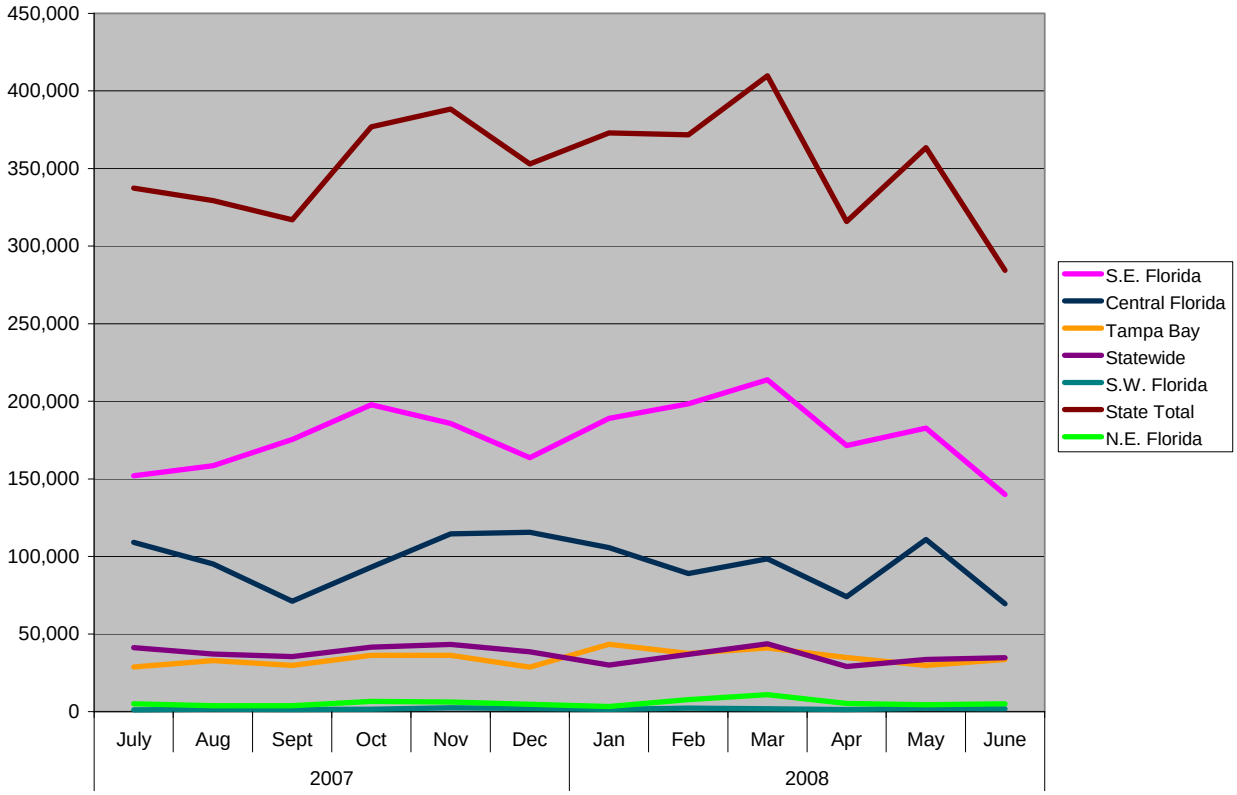
Totals	
Central Florida	1,146,075
S.E. Florida	2,128,262
Tampa Bay	412,620
Statewide	445,053
N.E. Florida	66,588
S.W. Florida	20,930
State Total	4,219,528
National Total	28,935,198**

** May and June 2008 National Total is not available

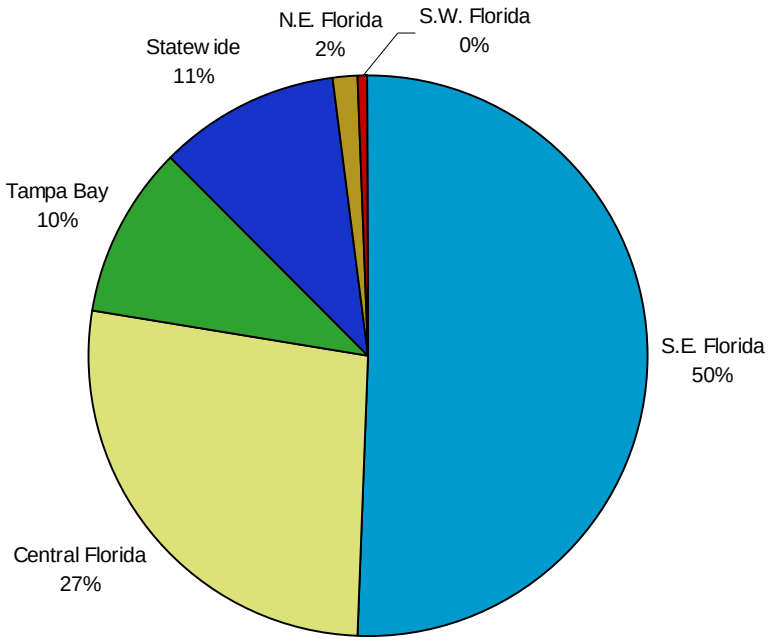
Results: Approximately 4.2 million 511 calls were made during the 12-month period from July 2007 through June 2008 under the six Florida systems. This represents 15 percent of the total 511 calls made in the entire country during this same period. As can be seen in the graphic and corresponding table below, the number of total monthly 511 calls now being made in Florida is approaching one-half million. Total statewide calls have an 5 percent overall decrease over 2007. This could be attributed to significantly less hurricane activity during the 2007 season.

15 % of the total 511 calls made in the entire country occurred under the six Florida systems in fiscal year 2007-08.

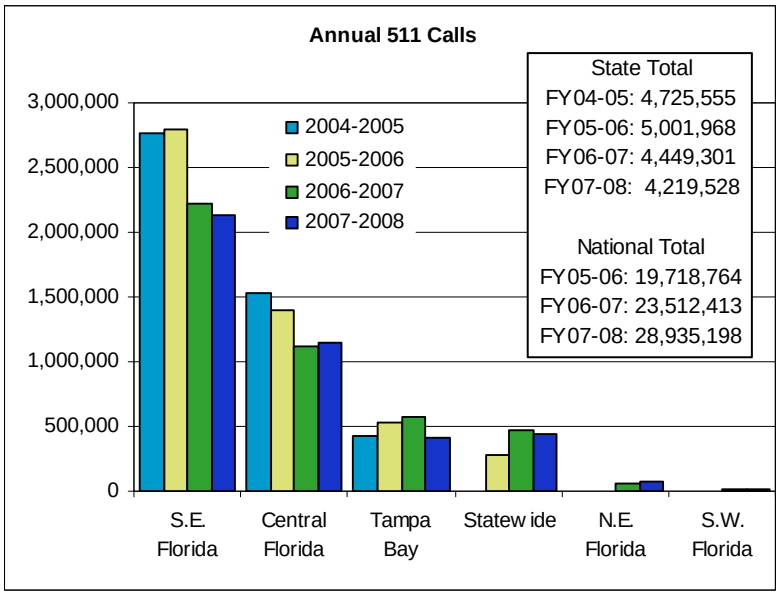
Monthly 511 Calls



Annual 511 Calls by System



Additional Comments: There were two monthly spikes in 511 call activity in Florida in this period. One was in October 2007 where the largest increase in calls was in Central and Southeast Florida, likely due to winter residents traveling to Florida. The other peak month was May 2008, which was caused by large wildfires in north and central Florida and in the Everglades occurring in May. The largest increases in calls at that time were in Central Florida.



Nationally, peak activities occur during winter months when weather causes delays and road closures.

Significant improvements (e.g., interactive voice response (IVR), intensified awareness marketing, trip planning applications, expanded real-time speed and travel-time data gathering capabilities, and related web site enhancements) are underway for the six systems.

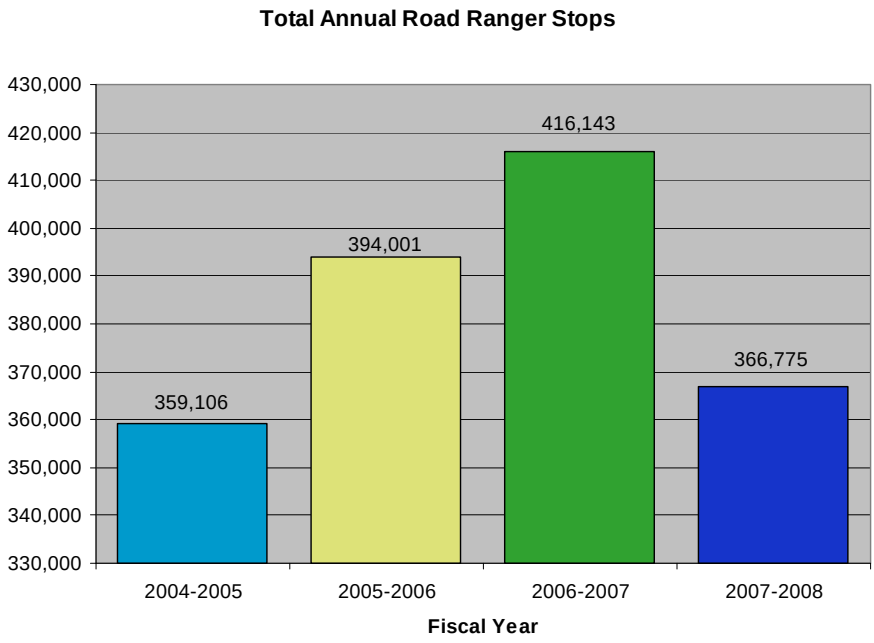
Total Annual Road Ranger Stops

Background: The Department began funding the Road Ranger Program in December 1999. Except for District 5, which is contracted to the local transit provider, LYNX, Road Ranger Services are contracted to private contractors. The Road Rangers are roving vehicles which patrol congested areas and high-incident locations of the urban freeway, and provide ***free*** highway assistance services during incidents to reduce delay and improve safety for the motoring public and responders. All of the districts and the Turnpike Enterprise currently operate a Road Rangers Program. However, the specific services provided, hours of operation, fleet size, and area coverage differs among these entities. Some districts routinely break down assists by Road Ranger route, shift, or corridor.

Purpose: **T**he primary mission of the Road Rangers is to support emergency response personnel during incidents though establishing Maintenance of Traffic (MOT) for the incident and providing other assistance as needed for the incident . By providing quick response and clearance the number of secondary incidents will be reduced and the roadways will return to capacity sooner. Road Rangers will be called upon to assist in hurricane evacuations by providing support to evacuees and responders. Road Rangers still also provide service to disabled vehicles.

Objective: To help reduce the overall travel delay associated with incidents by providing quick response to motorists in need and assistance to other emergency responders.

Methodology:
Compilation and summary of Road Ranger Log Forms (mostly in electronic format). As mentioned previously, consistency in data reporting and assessment must be established for more meaningful performance reporting. The FDOT Central Office Program Manager for Road Rangers and Statewide Traffic Incident Management is working to "standardize" Road Ranger performance reporting among all districts and the Turnpike Enterprise. All of the districts are now providing Road Ranger data to the Central Office on a quarterly basis.



Results: For the period July 2007-June 2008, there were 366,775 Road Ranger stops made statewide along 1,062.4 miles of coverage, as summarized in the table and graphic on the following page. Five of the Districts currently provide Road Ranger service on a "24/7" basis. Also, 70 percent of the 109 total statewide Road Ranger vehicle fleet is operating with automatic vehicle location (AVL) capabilities.

Additional Comments: The general motorist reaction has been overwhelmingly positive regarding this service. The specific findings for existing Road Ranger customer satisfaction is reported in the customer satisfaction section of this report.

Compared to the previous period of documentation (July 2006-June 2007), the total annual stops decreased by 12 percent. One reason for this decrease is that District 3 has discontinued the I-10/I-110 service during construction and has not yet started permanent services in the Pensacola area (planned for 2009). Another reason is that the definition of a Road Ranger stop has been refined as the program has progressed, so the new definition may now indicate lower stops numbers in some Districts. The previous years stops numbers have not been changed to reflect the current definition. Also the District 6 stops are lower than past years since MDX Road Ranger service is not included in the 2008 figures.

Road Ranger Stops
July 1, 2007 to June 30, 2008

District	Total Annual Stops	Total Fleet Vehicles[a]	Fleet Coverage (Centerline-Miles)	Hours of Operation
1	29,270	13 (11 with AVL)[b]	222.9	5:00 AM to 9:00 PM, Mon. – Fri. 7:00 AM to 11:00 PM, Sat. – Sun.
2	18,255	8 (all with AVL)	103.5	6:30 AM to 6:30 PM, 5 days/week
3	1,831[c]	2 (without AVL)	16	24/7
4	82,968	30 (without AVL)	111	24/7
5	33,340	12 (all with AVL)	74	24/7
6	69,869	16 (all with AVL)	66[e]	24/7
7	34,134	9 (all with AVL)	101	24/7
Turnpike Enterprise	97,108	19 (all with AVL)	368	Varies[d]
Statewide	**366,775**	**109**	**1062.4**	**Varies**

a The total fleet vehicles is defined as the vehicles available as defined in the contractual agreement with the service provider.

b District 1 has 2 additional vehicles that are provided under an interstate construction project (IROX) in Lee County.

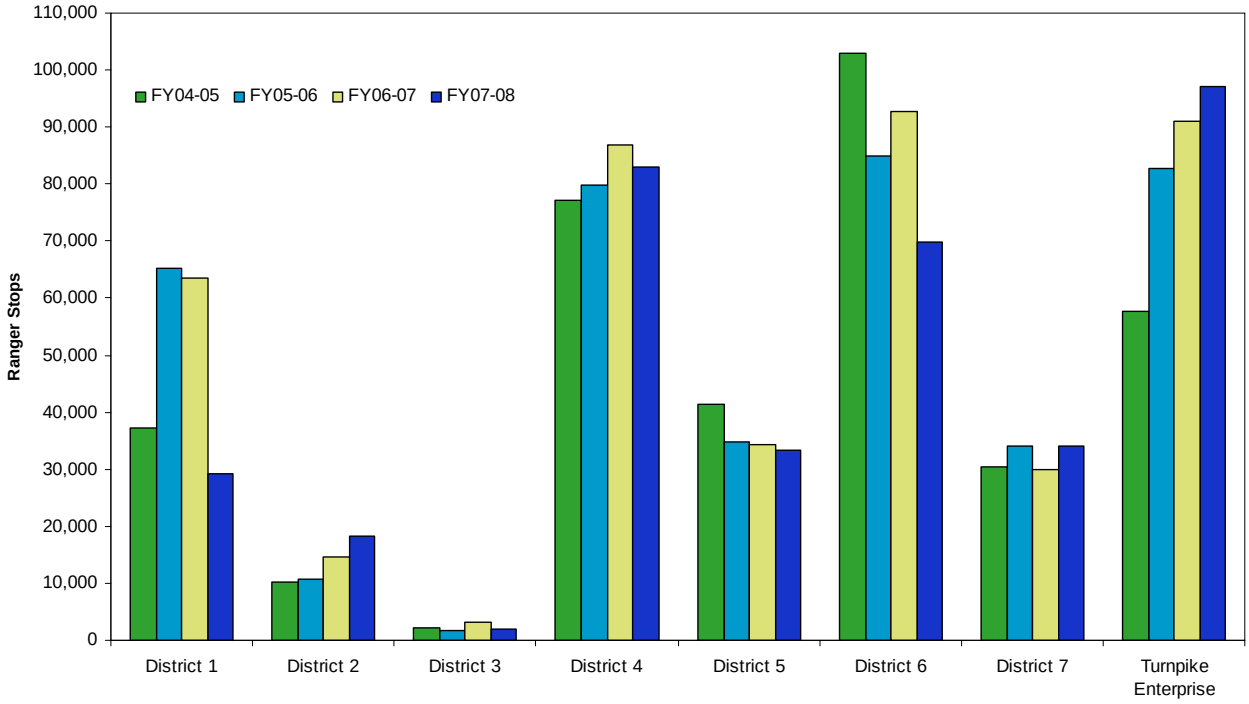
c These numbers are for the I-10 construction project Road Ranger service in Tallahassee. The I-10/I-110 construction project in Pensacola was completed in 2007.

d 24/7 on Florida's Turnpike mainline and Sawgrass Expressway; 6:00 a.m.-7:30 p.m. on weekdays and 6:00 a.m. – 10:00 a.m. and 3:30 p.m. to 7:30 p.m. on weekends on OOCEA partnership roadways (Toll 417/Central Florida Greenway, Toll 528/Bee Line Expressway, Toll 408/East-West Expressway) and on Veteran's Expressway.

e 2008 figures for District 6 does not include MDX Road Ranger services and stops. MDX data was included in past years data.

Annual Road Ranger Stops

State Total
FY04-05: 359,106
FY05-06: 394,001
FY06-07: 416,143
FY07-08: 366,775

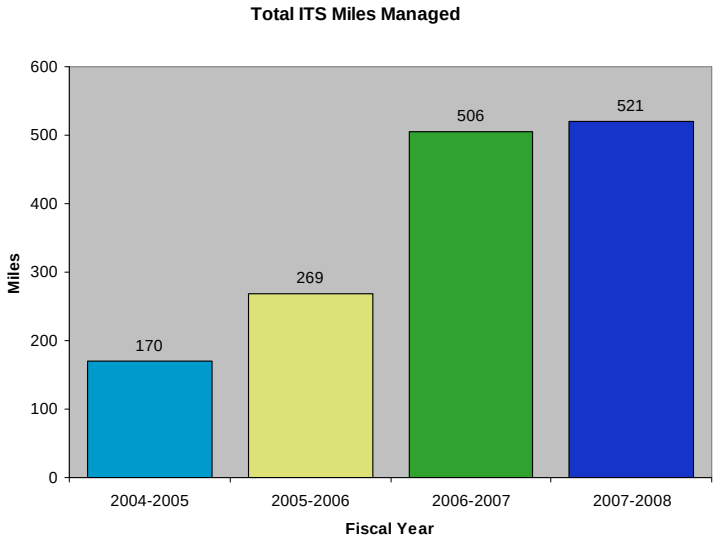


Miles Managed By ITS

Background: All districts and the Turnpike Enterprise are committed to the deployment of ITS, and each has embarked with this deployment in varying stages and pace in accordance with the *FDOT Ten-Year ITS Cost Feasible Plan*. As a percent of the limited-access Florida State Highway System (SHS) mileage in each district, "miles managed by ITS" has been defined as centerline mileage that must include ALL of the following attributes:

1. Traffic probes and/or sensors;
2. Real-time traffic information reporting coverage;
3. Real-time incident response capabilities; and
4. Availability of real-time traffic data to FDOT.

Additionally, all of these attributes must be continuously operated and maintained, permitting contiguous coverage of the mileage noted in order to meet the definition.



Purpose: Report progress in completing deployment of the *FDOT Ten-Year ITS Cost Feasible Plan*, and beyond as appropriate.

Objective: To initially deploy ITS across the limited-access portion of the SHS, and ultimately to integrate all ITS and ITS-related user services across the entire state in a seamless, fully operational, real-time fashion. This deployment will help improve mobility and safety throughout the State.

Methodology: Deployment progress, on an annual basis, as reported by each district and the Turnpike Enterprise. Corresponding geographic coverage also should be reported and mapped in terms of mile point limits.

Results: As of the end of June 2007, 643.6 miles (520.6 miles on Limited Access FIHS, 27.9 miles on Controlled Access FIHS, and 95.0 miles on Arterial Facilities) are managed by ITS, as summarized by the table and graphic below. The limited access FIHS is now 25 percent managed by ITS. Extensive ITS deployment will be taking place during the next year in all districts, as well as the Turnpike Enterprise. Compared to the previous period of documentation (June 2006-July 2007), the Miles Managed on limited access facilities by ITS have increased 3 percent statewide. This percentage would have been greater except that Districts 1 and 3 removed portable systems that were in place during construction that was completed in 2007.

Miles Managed by ITS by District

District	Total ITS Miles on Limited Access Facilities	Limited-Access FIHS Miles**	Facility, Extent, and Location
1	0 (0%)	222.9	See note[a]
2	63.4 (17%)	372.3	I-10: 9 miles (MM 354 to MM 363 in Duval County). I-295: 20.4 miles I-95: 34 miles (MM 332 to MM 366 in Duval County).
3	0 (0%)	242.2	See note[b]
4	89.3 (44%)	203.2	I-95: 46 miles (MP 0 to MP 46 in Palm Beach County) I-95: 40 miles (in Broward County) I-595: 6 miles (in Broward County).[c]
5	243.2 (63%)	386.1	I-4: 74.5 miles I-95: 124.7 miles SR 528: 44 miles.
6	52.2 (98%) + *123 on controlled access FIHS and arterial facilities*	53.5	I-75: 5.44 miles (SR 826/Palmetto Expressway to Miami-Dade/Broward County Line) I-95 :17.26 miles (SR 5/US 1 to Miami-Dade/Broward County Line) I-195 :4.91 miles (NW 11 Avenue to SR 907/Alton Road) SR 826: 24.57 miles (SR 5/US 1 to Golden Glades Interchange)[d] *SR 836: 11.8 miles[e]* *SR 5/US 1: 123 miles in Dade and Monroe Counties[f]*
7	46.5 (28%)	166.5	I-275: 24 miles (MP 25.5 to MP 38.5, MP 43.0 to MP 54.0) I-4: 22.5 miles (MP 0.0 to MP 22.5)
FTE	26 (6%)	460	Sawgrass Expressway: 22 miles (I-595 to SW 10 Street in Broward county). Beachline Expressway/SR 528: 4 miles (I-4 to Florida's Turnpike in Orange County)
Statewide	**520.6 (25%)**	**2106.7***	

Percent indicated under "Total ITS Miles" column is based on the percentage ITS miles on Limited Access FIHS over District total FIHS limited-access miles.

* includes all expressways managed by toll authorities

[a] The I-4 Portable Intelligent Transportation System, which was deployed and utilized during the widening of I-4 in Polk County was retained and remained operational after construction. This system became operational in January 2004, and remained in place until June 2007. The systems were removed and users of the website were directed to the statewide 511 website for traveler information.

[b] The I-10/I-110 Portable Intelligent Transportation System was utilized through the I-10/I-110 Interchange Improvement construction work zones in Escambia County. This temporary system became operational in 2004, and was removed in 2007. It is the intention of District 3 to transition to a continuously operated and maintained permanent system at the beginning of 2009.

[c] This I-95 portable system will be in place until 2008 (anticipated completion of widening). It is the intention of District 4 to immediately transition to a continuously operated and maintained permanent system beyond 2008.

[d] SR 826 from SR 5/US 1 (BMP 0.000) to NW 122 Street (EMP 14.100) in Miami-Dade County has 14.1 Total Centerline ITS Miles operated and maintained with the exception of traffic probes and/or sensors present..

[e] MDX Facility – SR 836 (MP 0.000 to MP 11.756). Total ITS Miles 11.756 – currently traffic probes and/or sensors are not available within the specified limits.

[f] SR 5/US 1 from 0.5 Mi. South of McDonald Avenue in Monroe County to SR 5/US 1 in Miami-Dade County at SR 821/HEFT has 122.97 Total Centerline ITS Miles operated and maintained with the exception of traffic probes and/or sensors present. This includes sections of both controlled access FIHS roadways and arterial roadways.

Incident Duration

Background: In 2005, the FDOT ITS Program identified incident duration as an outcome measure to be reported to the Florida Transportation Commission. Initially an effort was conducted to collect incident timeline data from manual (paper) records. The pilot test results determined that collecting incident timeline data was too complex and time-consuming to be done manually. In 2006, the SunGuide statewide TMC software was modified to include the data collection and reporting requirements for obtaining incident duration data. Last reporting period (FY 2006-07), FDOT District 4 was able to collect this data for the entire year using the modified SunGuide software, while District 6 was able to collect several months of data. In fiscal year 2007-2008, Districts 2, 4, 5, 6, 7, and the Florida Turnpike Enterprise were able to collect and report incident duration data.

Purpose: Report the total time of impact on traffic for an incident.

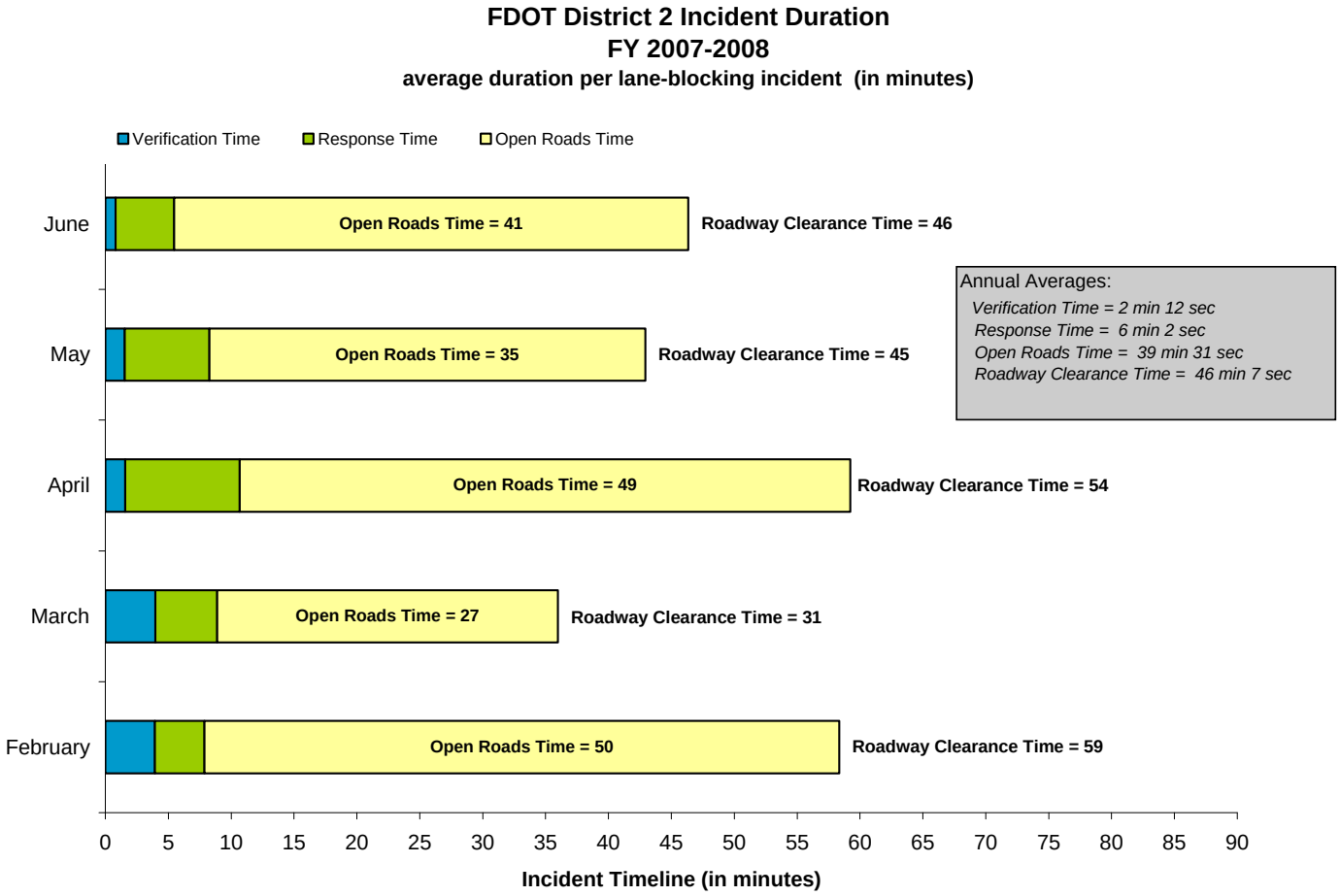
Objective: To minimize the incident timeline from the time any FDOT or FHP staff is notified to the time that all travel lanes are cleared.

Methodology: In 2008, the terminology for reporting incident duration was modified to more closely align with National Traffic Incident Management definitions. The FDOT incident duration timeline includes the following components: notification/verification time, response time, and Open Roads time. The Open Roads time is defined as the time that begins with the arrival of the first responder, either Florida Highway Patrol or FDOT, and ends when all mainlane travel lanes are cleared. The Open Roads time is directly comparable with Florida's Open Roads Policy of clearing all travel lanes in 90 minutes or less. FDOT Roadway Clearance Time is an overall component of incident duration and is defined as the time between first awareness of the incident and the time all mainlane travel lanes are cleared. This component includes notification, verification, and response times, as well as the Open Roads clearance time. Although the terminology changed for FY 2008, the individual components of the incident duration timeline are still the same as that used for FY 2007 reporting.

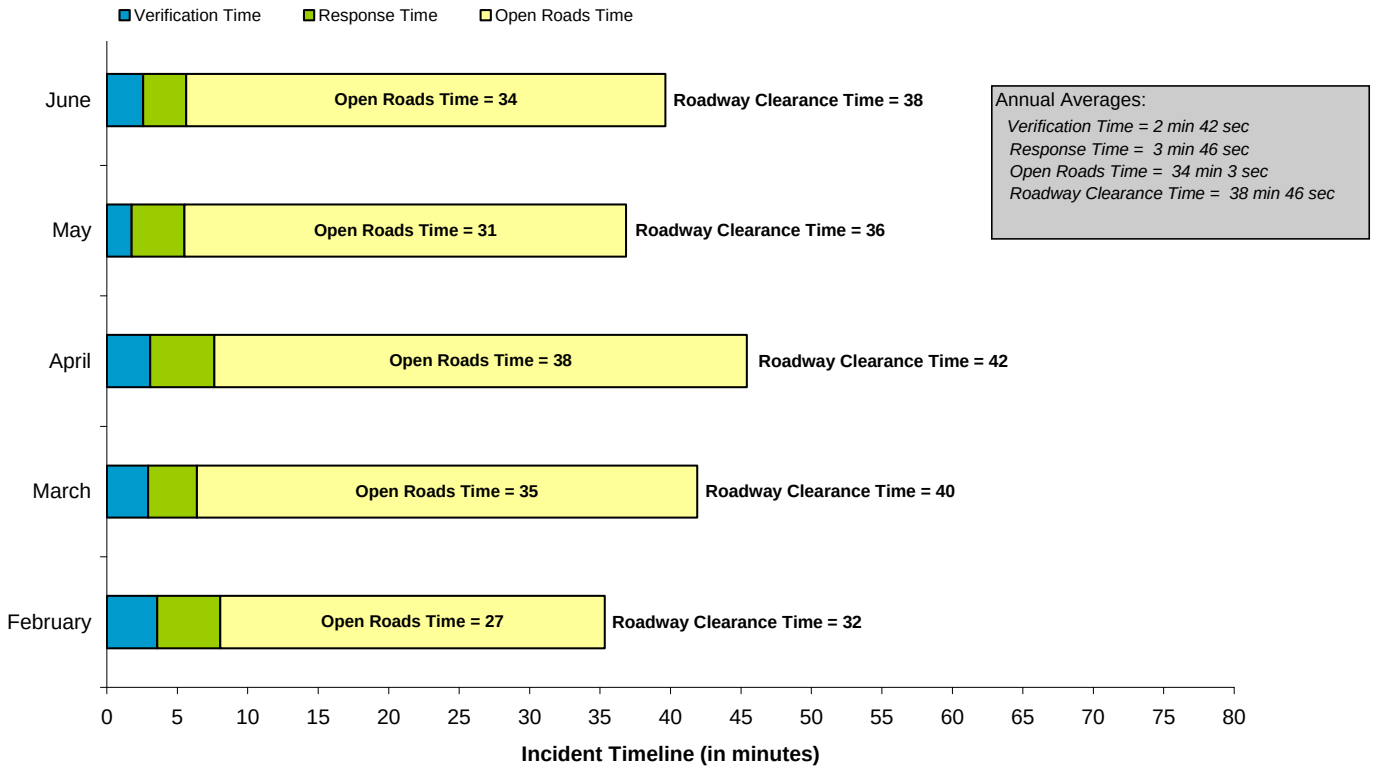
Districts 2, 4, 5, 6, and 7 and the Florida Turnpike Enterprise collected incident duration information for portions of the year from July 2007 to June 2008, depending upon the availability of data collection software. This report shows the data collected from January through June 2008 because these six Districts were able to report that time period. The District incident data was collected directly from reports that are included in the SunGuide version 3.1.2 software. The Turnpike uses SunNav software to collect incident data. District 4 also posts weekly and quarterly performance measure reports on the Smart SunGuide web site.

Results: FDOT Roadway Clearance Time varied from month to month but the average time from the reporting Districts is about 40 minutes, ranging from 31 minutes to 65 minutes for monthly averages. The Open Roads Clearance Time averages about 30 minutes for the reporting Districts. This is well under the Open Roads Policy target of 90 minutes. Graphics showing the Open Roads Time and FDOT Roadway Clearance Time for the five reporting Districts and the Florida Turnpike are below. It should be noted that the Roadway Clearance Times shown are weighted averages based on the number of incidents that occurred that month. Therefore, Roadway

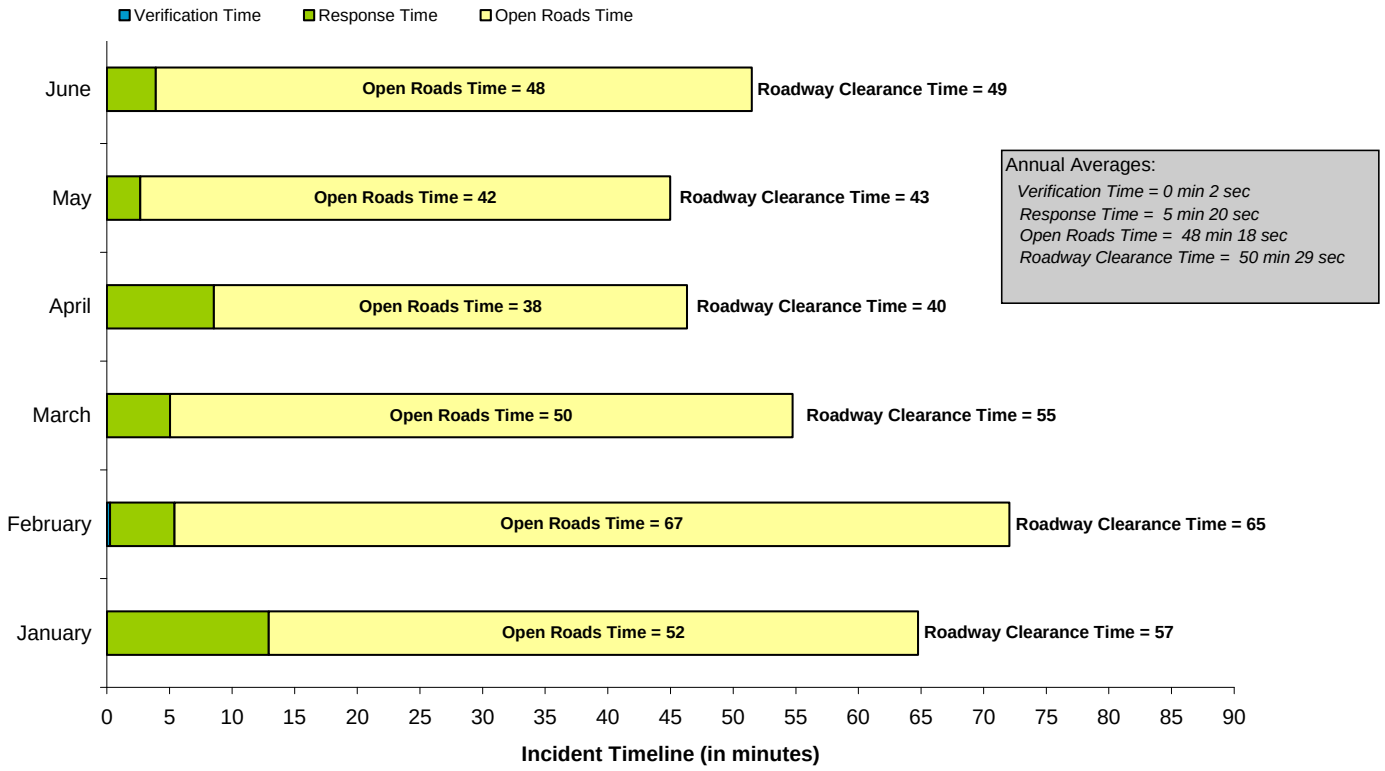
Clearance Times for each month will not necessarily correspond to the sum of the Verification, Response, and Open Roads averages.



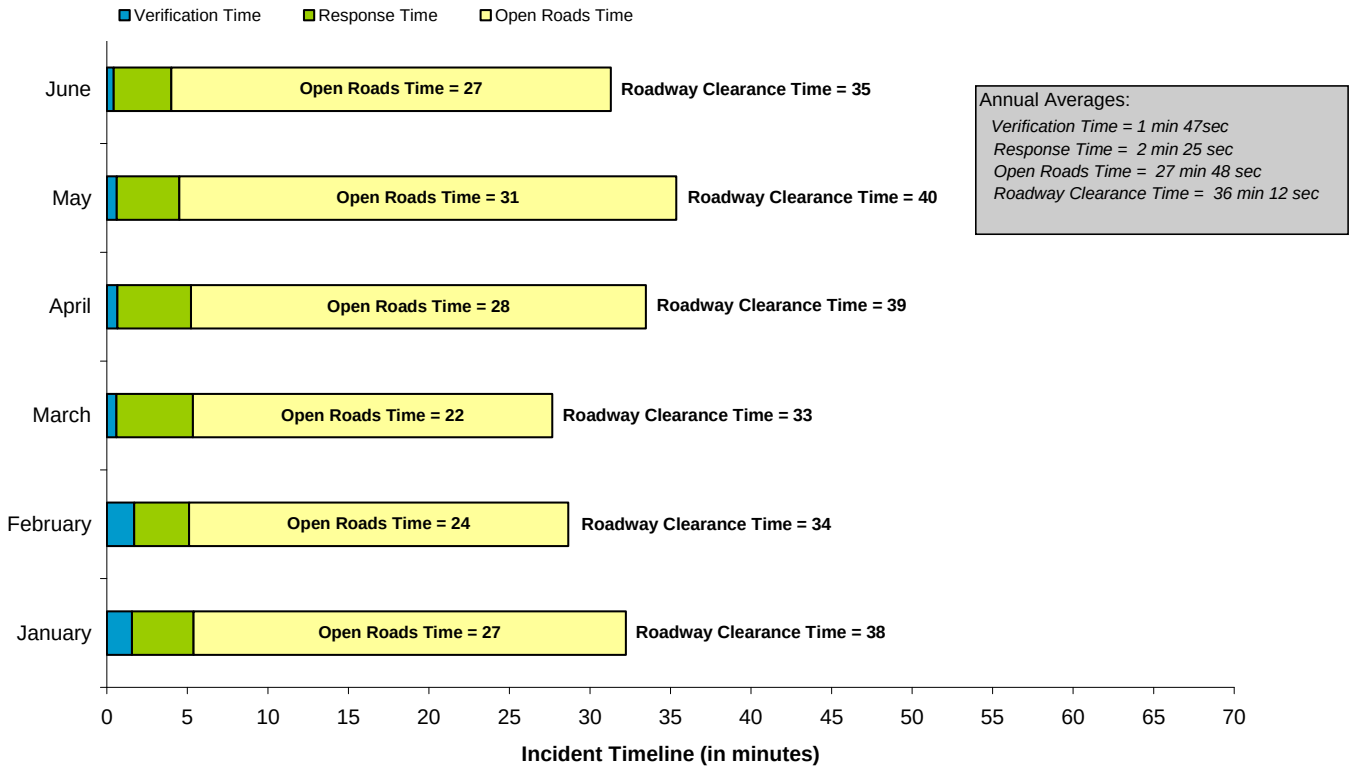
FDOT District 4 Incident Duration
FY 2007-2008
average duration per lane-blocking incident (in minutes)



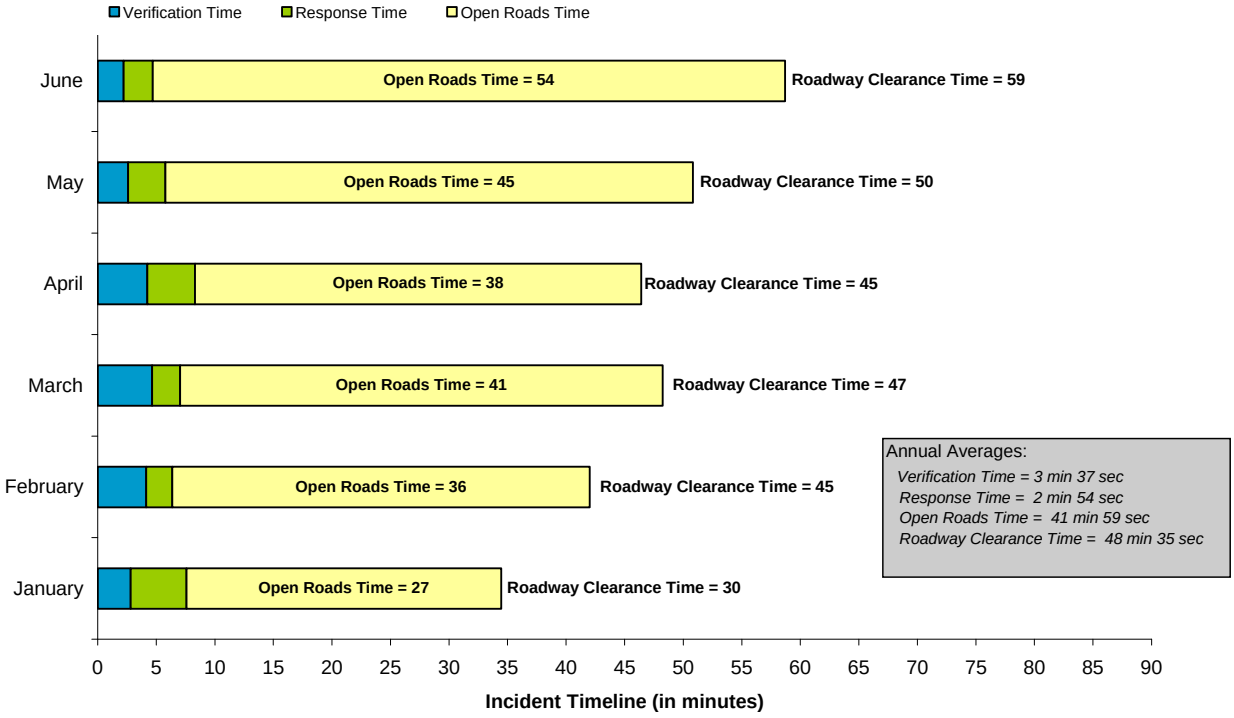
FDOT District 5 Incident Duration
FY 2007-2008
average duration per lane-blocking incident (in minutes)



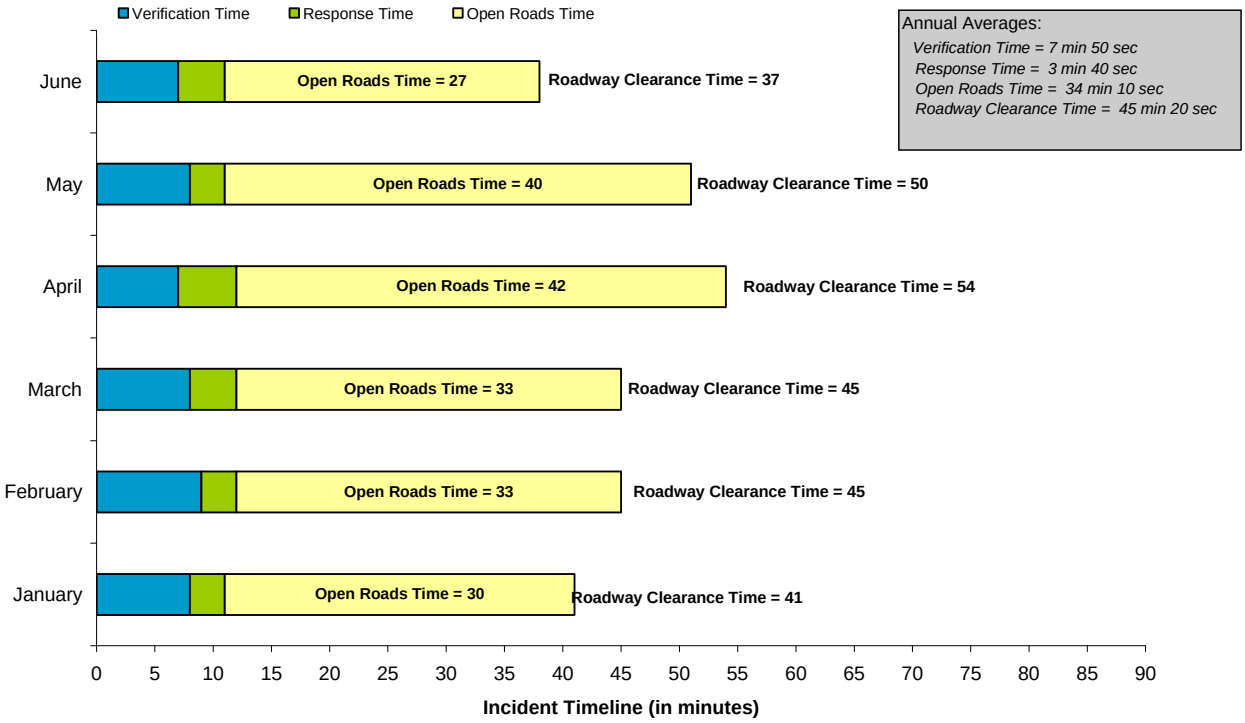
FDOT District 6 Incident Duration
FY 2007-2008
average duration per lane-blocking incident (in minutes)



FDOT District 7 Incident Duration
FY 2007-2008
average duration per lane-blocking incident (in minutes)



Florida Turnpike Enterprise Incident Duration
FY 2007-2008
average duration per lane-blocking incident (in minutes)



Travel Time Reliability

Background: In 2005, Florida DOT adopted reliability as an outcome performance measure to be reported to the Florida Transportation Commission on a statewide basis. Definitions and data needs for reporting reliability were identified in FY 2006. A limited amount of data were available for reporting reliability in FY 2007; however, speed detector data quality issues prohibited reporting of results. For FY 2008, travel time reliability and congestion results are available for Districts 2, 5, and 7.

Purpose: Report a qualitative measure of the variability or uncertainty in the performance of a facility over time.

Objective: To measure and track the variability of roadway congestion, measured through the use of the Buffer Index, as well as measure and track the congestion level, measured through the use of the Travel Time Index.

Methodology: FDOT has identified two metrics to measure travel time reliability and congestion. The Buffer Index is a measure of the reliability of travel service. The Buffer Index is calculated as the ratio between the difference of the 95th percentile travel time and the average travel time divided by the average travel time, i.e. (95th travel time - average travel time)/average travel time. For example, a value of 0.4 means that a traveler should budget an additional 8 minute buffer for a 20-minute average peak trip time to ensure 95% on-time arrival. A secondary metric is the Travel Time Index (TTI), which is a measure of traffic congestion. TTI is calculated as the ratio of average peak travel time to an off-peak (free-flow) standard, in this case 60 mph for freeways. For example, a value of 1.20 means that average peak travel times are 20% longer than off-peak travel times. Travel time, travel speed, and volume data are the basis of these measures. Travel time and speed data are obtained from either speed data from roadside detectors that communicate in real time to TMCs or probe data from various sources that report travel time directly. Volume data are used to compute vehicle miles traveled, which are then used as weights to compute an area wide or corridor wide measure average. The following data were obtained from Districts 2, 5, and 7 for reporting reliability results:

Districts	Data Available
District Two	March 2008, April 2008, May 2008, June 2008
District Five	March 2008, April 2008, May 2008, June 2008
District Seven	Jan 2008, Feb 2008, March 2008, April 2008, May 2008, June 2008

Results: The following tables summarize congestion and reliability results for ITS managed corridors Districts 2, 5, and 7. District 2 experiences the most congestion during the afternoon peak northbound on I-95, with a travel time index of 1.35. This is also the area and time period experiencing the most unreliable travel times, with a buffer index of 1.18. District 5 also experiences the most congestion during the afternoon peak on I-4 eastbound between the Florida

Turnpike and SR 408, with a travel time index of 1.80. This is also the time period and area experiencing the most unreliable travel times, with a buffer index of 1.10. In District 7, the morning peak experiences the most congestion on I-275 southbound between Busch Blvd and the Hillsborough River, with a travel time index of 1.49. The morning peak experiences the most unreliable travel times, with a buffer index of 1.06 on I-275 southbound between Livingston Avenue to Busch Blvd.

The following tables show the top five most congested and most unreliable freeway sections within Districts 2, 5, and 7. [2]

District 2 – Top Five Most Congested Freeway Sections

Sect ID	Route	Direction	From To	Length (miles)	Time Period	Travel Time Index
9	I-95	Northbound	From N Trout River Bridge to Airport	5.5 mile	Evening Off Peak	1.35
5	I-95	Northbound	From Acosta Bridge to 8th St.	4 miles	Afternoon Peak	1.33
6	I-95	Southbound	From 8th St to Acosta Bridge	4 miles	Afternoon Peak	1.18
3	I-95	Northbound	From JTB Blvd to Acosta Bridge	5.5 miles	Afternoon Peak	1.17
9	I-95	Northbound	From N Trout River Bridge to Airport	5.5 mile	Afternoon Peak	1.16

District 2 – Top Five Most Unreliable Freeway Sections

Sect ID	Route	Direction	From To	Length (miles)	Time Period	Buffer Index
9	I-95	Northbound	From N Trout River Bridge to Airport	5.5 mile	Evening Off Peak	1.18
9	I-95	Northbound	From N Trout River Bridge to Airport	5.5 mile	Afternoon Peak	0.99
3	I-95	Northbound	From JTB Blvd to Acosta Bridge	5.5 miles	Afternoon Peak	0.44

[2] Due to the limited data availability, some sections' off-peak periods are more congested and more unreliable than peak periods.

6	I-95	Southbound	From 8th St to Acosta Bridge	4 miles	Afternoon Peak	0.54
4	I-95	Southbound	From Acosta Bridge to JTB Blvd	5.5 miles	Afternoon Peak	0.40

District 5 – Top Five Most Congested Freeway Sections

Sect ID	Route	Direction	From To	Length (miles)	Time Period	Travel Time Index
4	I-4	Eastbound	From Turnpike to SR408	5.5 miles	Afternoon Peak	1.80
5	I-4	Eastbound	From SR408 to SR414	7.5 miles	Afternoon Peak	1.71
4	I-4	Eastbound	From Turnpike to SR408	5.5 miles	Morning Peak	1.52
17	I-4	Westbound	From Lake Mary Blvd to SR408	7.5 miles	Morning Peak	1.40
16	I-4	Westbound	From SR414 to SR408	7.5 miles	Afternoon Peak	1.37

District 5 – Top Five Most Unreliable Freeway Sections

Sect ID	Route	Direction	From To	Length (miles)	Time Period	Buffer Index
4	I-4	Eastbound	From Turnpike to SR408	5.5 miles	Afternoon Peak	1.10
4	I-4	Eastbound	From Turnpike to SR408	5.5 miles	Mid Day	0.68
14	I-4	Westbound	From Turnpike to SR528	5 miles	Afternoon Peak	0.65
15	I-4	Westbound	From SR408 to Turnpike	5.5 miles	Afternoon Peak	0.64
13	I-4	Westbound	From SR528 to Osceola Pkwy	8 miles	Afternoon Peak	0.63

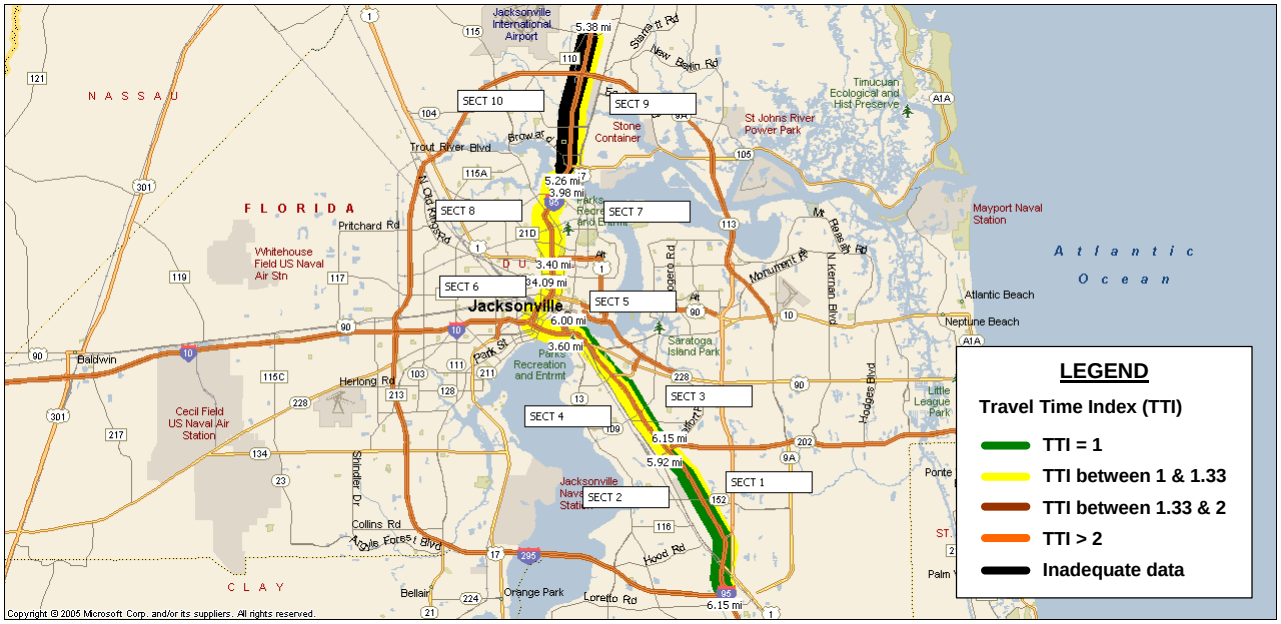
District 7 – Top Five Most Congested Freeway Sections

Sect ID	Route	Direction	From To	Length (miles)	Time Period	Travel Time Index
7	I-275	Southbound	from Busch Blvd to Hillsborough River in downtown	7 miles	Morning Peak	1.49
8	I-275	Southbound	from Livingston Av to Busch Blvd	4 miles	Morning Peak	1.46
2	I-275	Northbound	Howard Frankland Bridge	6.5 miles	Afternoon Peak	1.27
7	I-275	Southbound	from Busch Blvd to Hillsborough River in downtown	7 miles	Afternoon Peak	1.20
3	I-275	Northbound	from Hillsborough River in downtown to Busch Blvd	7 miles	Afternoon Peak	1.19

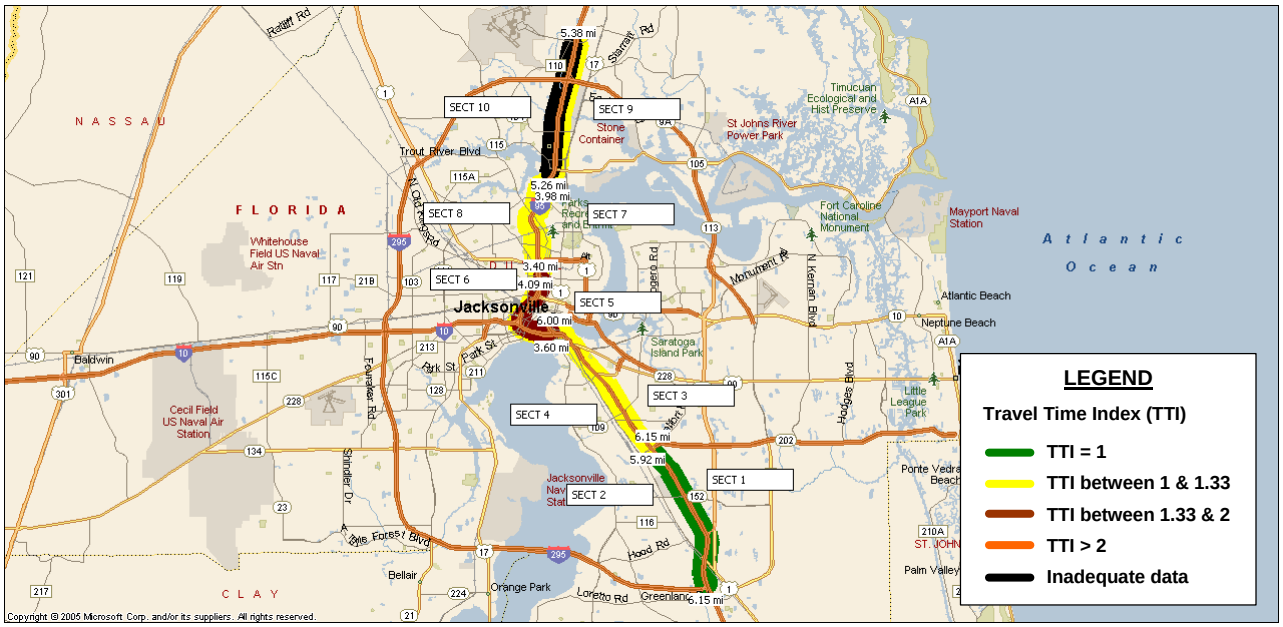
District 7 – Top Five Most Unreliable Freeway Sections

Sect ID	Route	Direction	From To	Length (miles)	Time Period	Buffer Index
8	I-275	Southbound	from Livingston Av to Busch Blvd	4 miles	Morning Peak	1.06
2	I-275	Northbound	Howard Frankland Bridge	6.5 miles	Afternoon Peak	0.68
10	I-4	Eastbound	from MLK Blvd to CR579	5 miles	Afternoon Peak	0.61
7	I-275	Southbound	from Busch Blvd to Hillsborough River in downtown	7 miles	Morning Peak	0.48
2	I-275	Northbound	Howard Frankland Bridge	6.5 miles	Morning Peak	0.36

The following maps show categorized Travel Time Index and Buffer Index during peak hours for each District. Sections with inadequate data are coded as black.

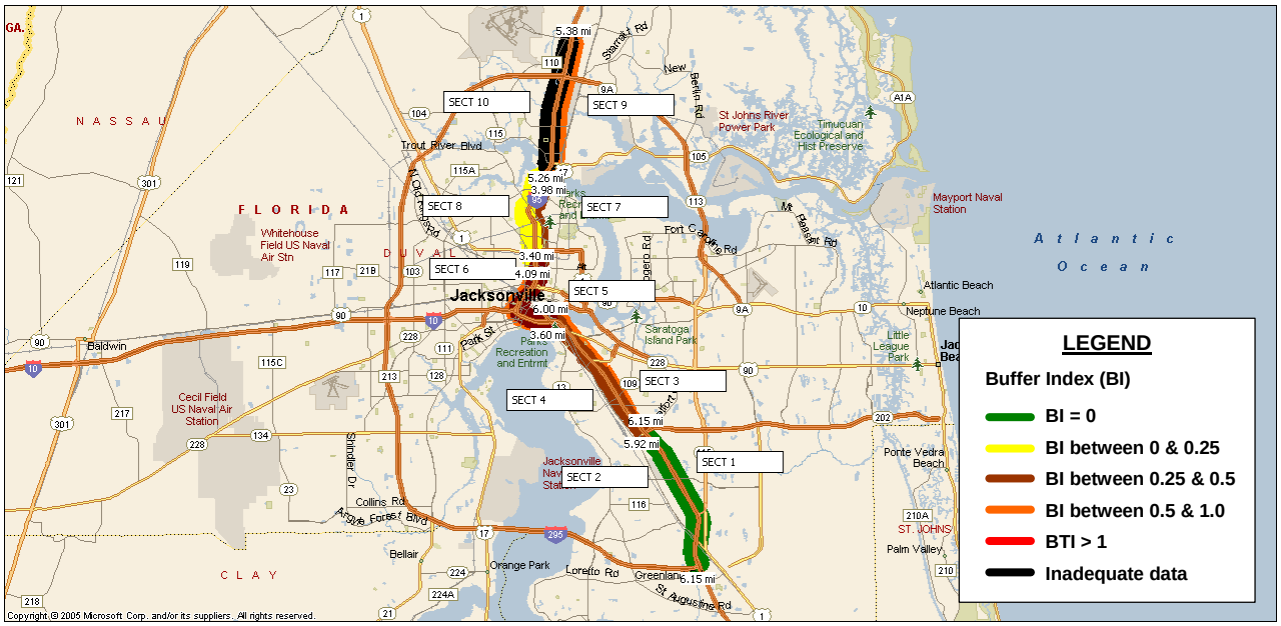


District 2 Travel Time Index - Morning Peak

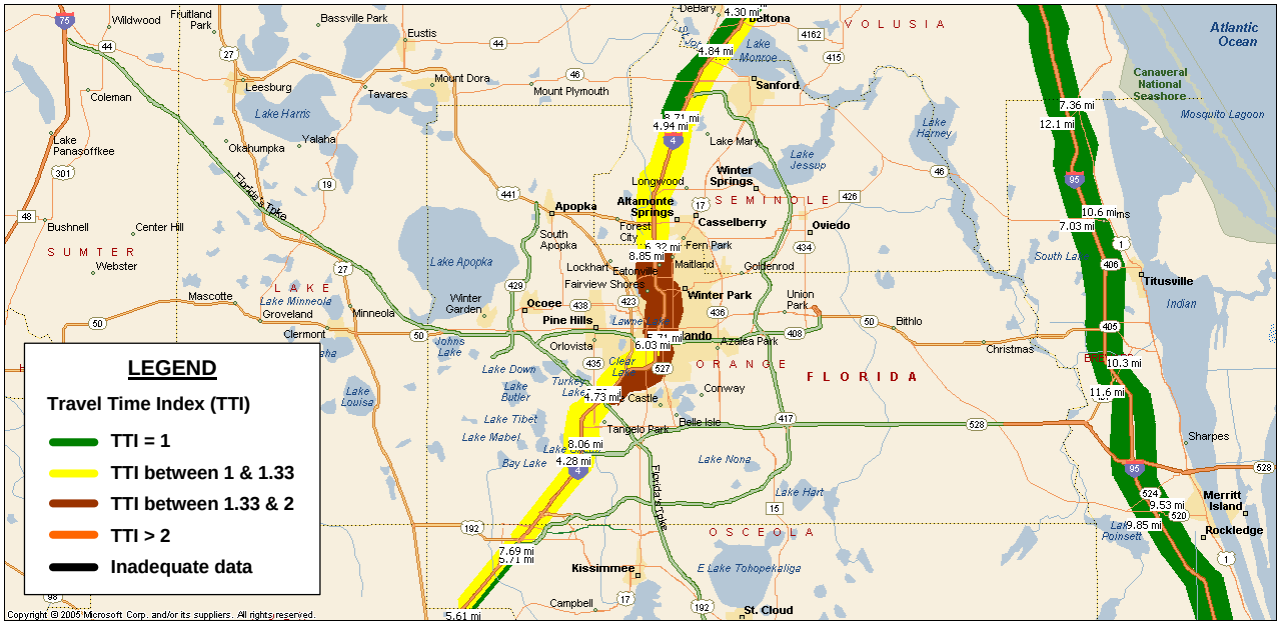


District 2 Travel Time Index - Afternoon Peak

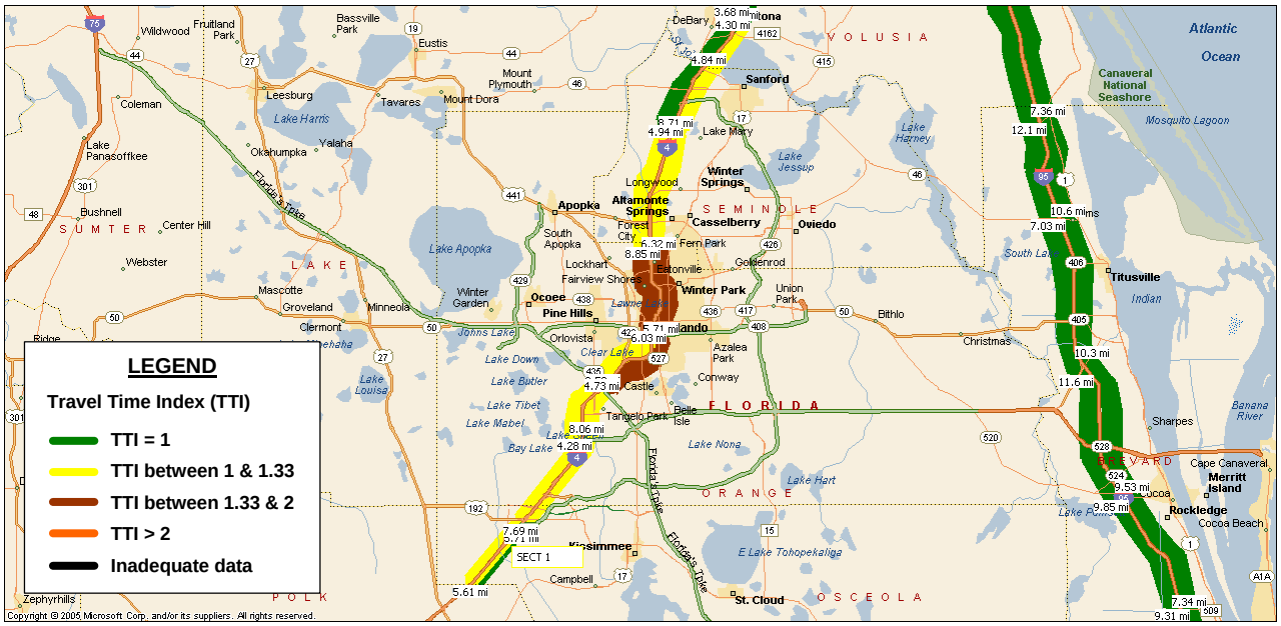
District 2 Buffer Index - Morning Peak



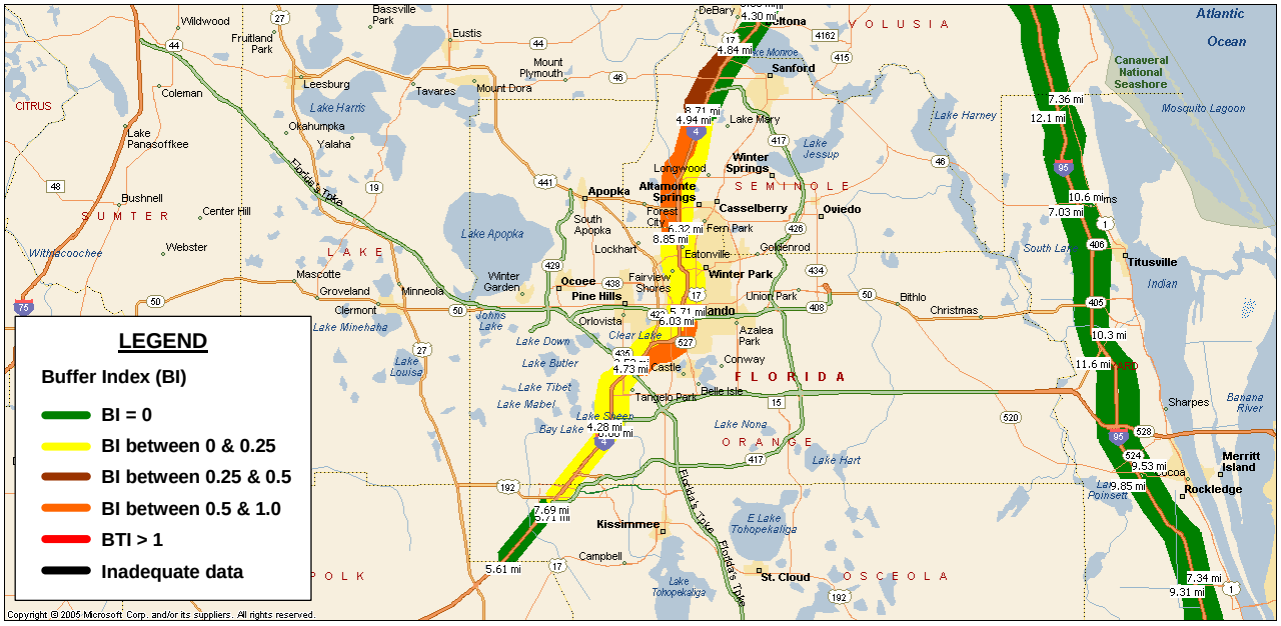
District 2 Buffer Index - Afternoon Peak



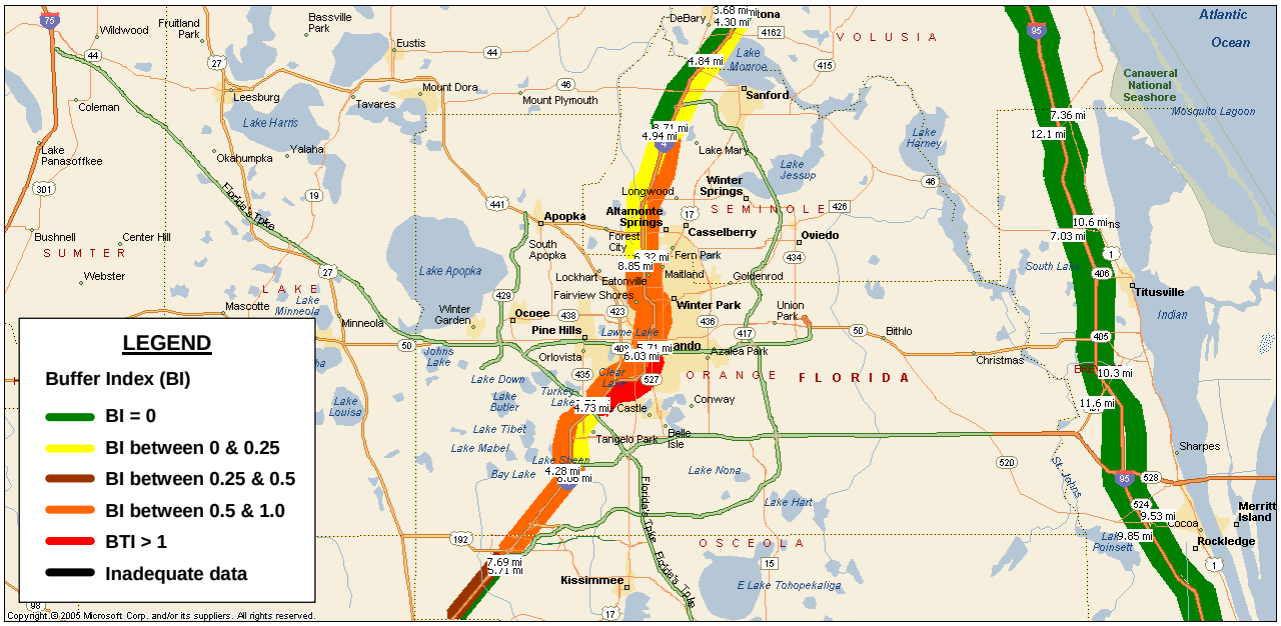
District 5 Travel Time Index - Morning Peak



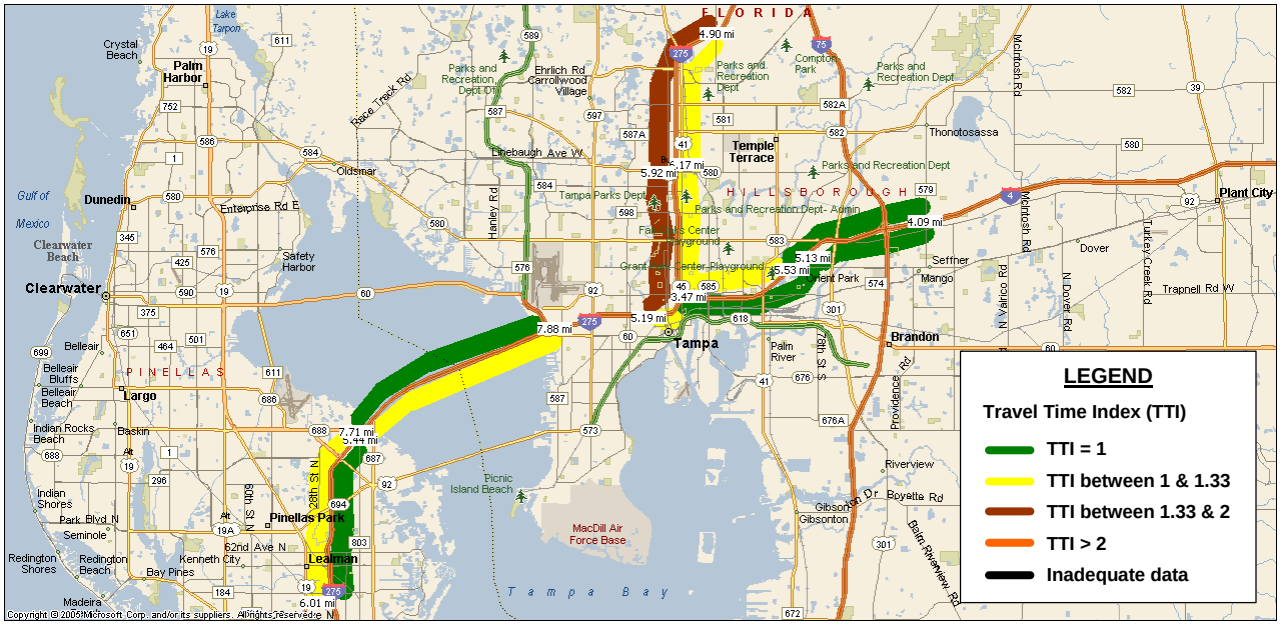
District 5 Travel Time Index - Afternoon Peak



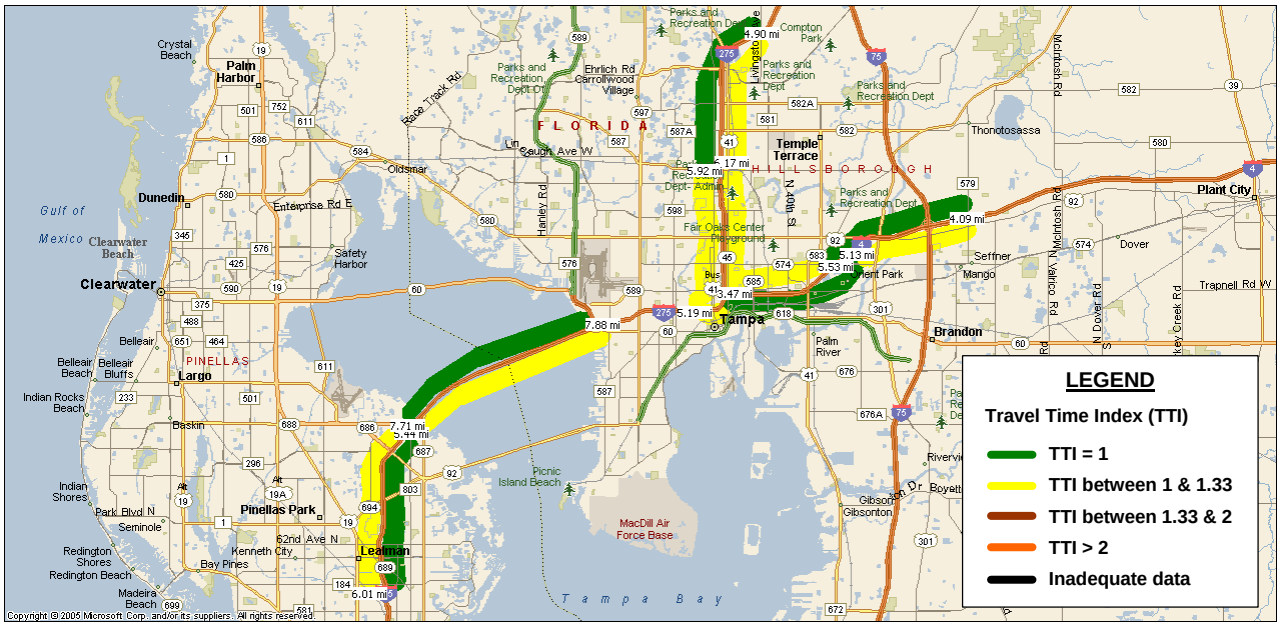
District 5 Buffer Index - Morning Peak



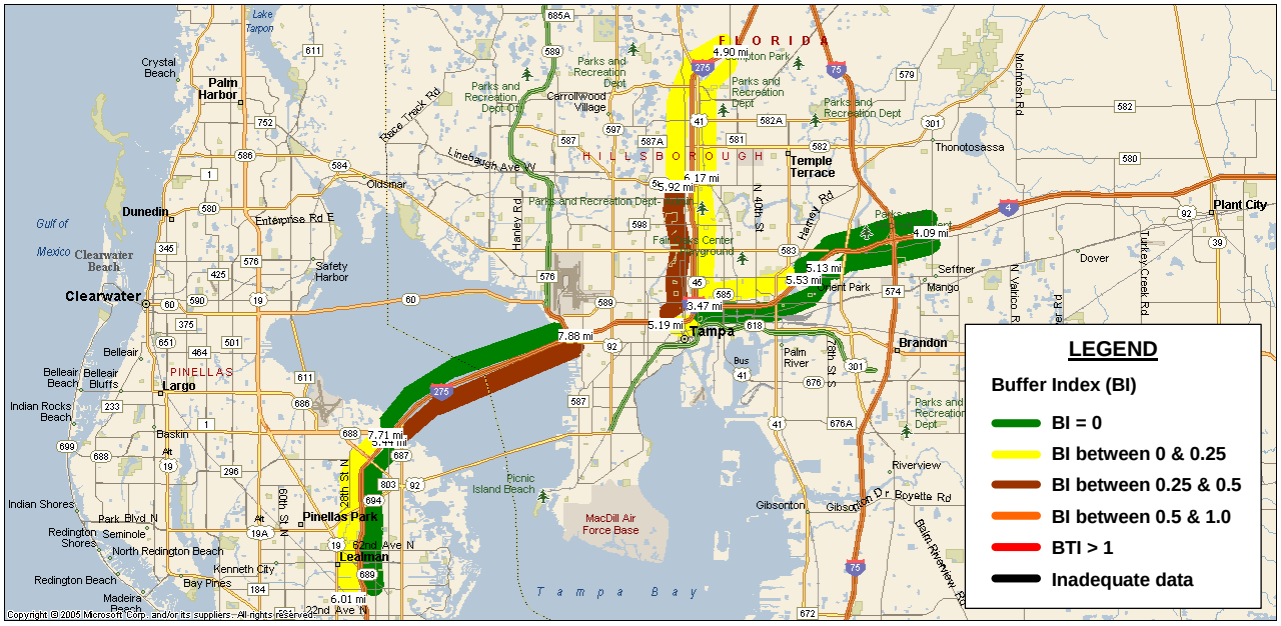
District 5 Buffer Index - Afternoon Peak



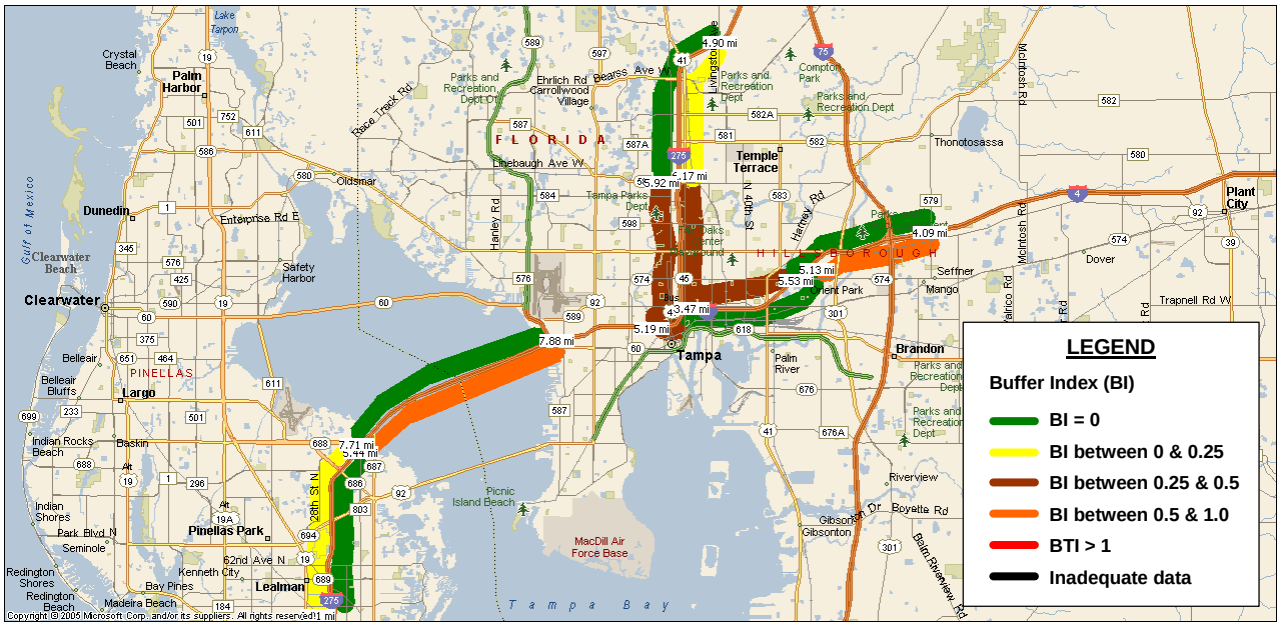
District 7 Travel Time Index - Morning Peak



District 7 Travel Time Index - Afternoon Peak



District 7 Buffer Index - Morning Peak



District 7 Buffer Index - Afternoon Peak

Customer Satisfaction

Background: FDOT contracted with a professional survey firm, The Schapiro Group (TSG), who interviewed 2,800 drivers across Florida to explore usage of, attitudes toward, and perceptions of the Florida Department of Transportation's (FDOT) Intelligent Transportation Systems (ITS) services. The contractor randomly sampled phone numbers within FDOT's seven districts to obtain telephone survey data during March 2008. The margin of sampling error for statewide results is ±1.8%. Because the survey instrument is nearly identical to the instrument FDOT and the contractor fielded in March 2006, most results may be used to track changes in opinions and usage of FDOT's ITS services over the past two years.

Purpose: Report a qualitative measure of public satisfaction with services provided by the FDOT ITS Program.

Objective: To monitor customer satisfaction with FDOT ITS services including Dynamic Message Signs (DMS) usage and performance, Road Ranger performance, 511 and traveler information web site usage and performance.

Methodology: Customer satisfaction was measured by collecting a statistically valid sample survey data from ITS users throughout the State. This task surveyed via telephone a random sample of 400 adults age 18 and over in each of the seven FDOT districts. Respondents must drive on freeways or the Florida Turnpike within their District three or more times per week to qualify. The purpose of the survey is to gauge awareness and perceived value of the traffic management services offered by FDOT, including Road Ranger services, DMS, and 511. The surveys provide a benchmark against which to measure changes in awareness and perceptions in the future.

Results: The following statements and graphics are excerpts from the June 2008 FDOT Customer Tracking Study draft report indicate some of the most interesting findings from the customer survey:

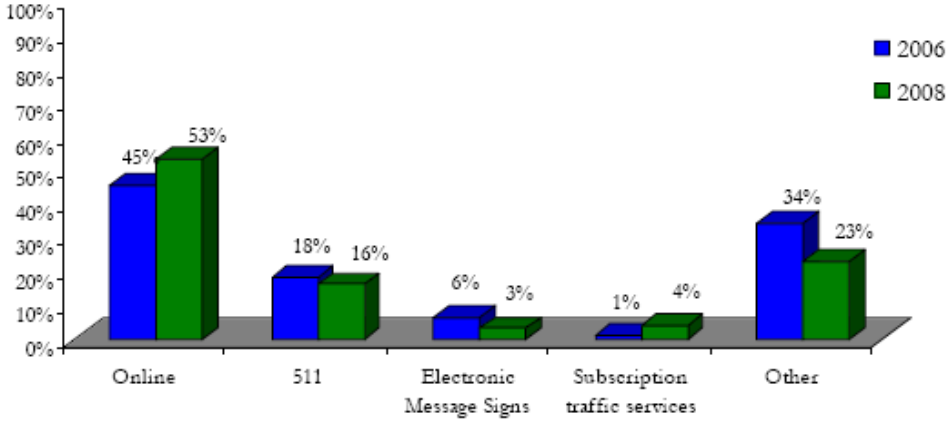
- Over half of drivers listen to radio traffic reports, and most of those listen more than three times per week.

- Just over half of drivers watch traffic reports on television, and most of those do so more than three times per week.

- Since the last study period, there has been a slight increase in the number of drivers who use information sources other than radio and television to obtain traffic information. However, the vast majority still do not use alternative information sources.

- Of that 15% who say they use alternate traffic information sources, most (53%) report relying on the internet, further intensifying the trend from the last study period (Figure 7). Not surprisingly, online traffic information continues to be especially popular among younger drivers ages 18-39. 511, on the other hand, draws most heavily on drivers in the 40-49 age group.

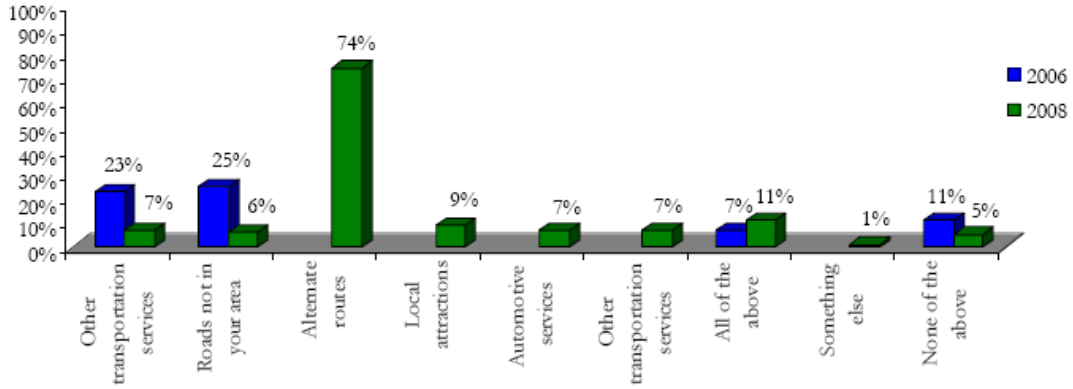
Figure 7: Where else do you go for traffic information?



*Note: This graph reflects the responses ONLY of the 15% of drivers from Figure 6 who report using alternate sources of traffic information aside from television and radio.

- When asked what additional types of traffic information FDOT should provide, most drivers say they would find information on alternate routes useful.

Figure 12: If FDOT were to provide new information to aid travelers in Florida, what would you like it to include?



*Note: Some of the response choices for this question are different between the two study periods. Only choices that were included in the 2008 survey are represented in this figure.

- Awareness of 511 remains about the same as in the last study period, with 23% of drivers knowing something about the service.

- Among those who know about 511, about one-third use it once per week or more, and 11% use it at least two to three times per week. Slightly more drivers in 2008 (5%) say they have never used 511.

- Despite low awareness, 511 has made significant progress in gaining consumers' trust. In 2008, 9% more 511 users say they are "very likely" to change their route based on the information they receive from 511.

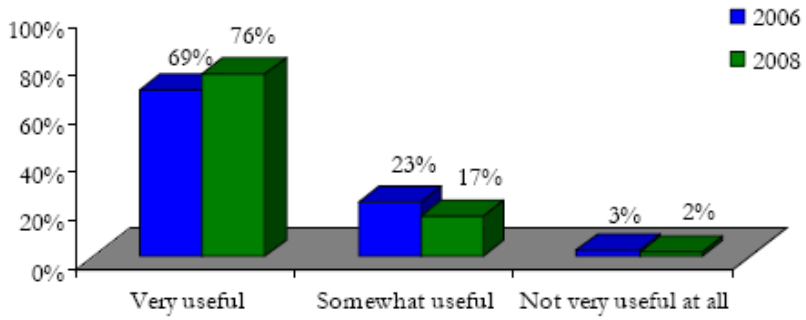
- The vast majority of drivers read electronic message signs at least once per week.

- Because they are so visible, electronic message signs are an excellent way to display information about FDOT's ITS services when appropriate. In fact, since 2006 there has been a slight increase in the number of drivers who first learned about 511 through freeway signage.

- Although many drivers know about Road Rangers, they do not necessarily know how to contact one to request assistance.

- Not only do more drivers in 2008 know about Road Rangers, but they also see more value in the service. Since the last study period, there has been a 7% increase in the number of drivers who believe Road Rangers are "very useful".

Figure 31: How useful do you think the Road Ranger units are?



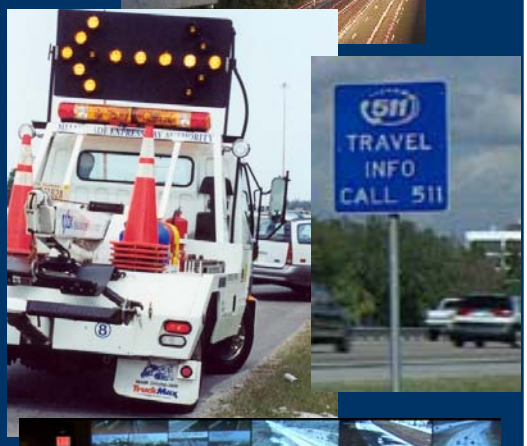
Florida Department of Transportation

Intelligent Transportation Systems Performance Measures Annual Report

FY 2008/2009

Fiscal Year 2008/2009

511 Calls	2
Road Rangers	4
ITS Miles Managed	6
Incident Duration	9
Travel Time Reliability	12



INTELLIGENT TRANSPORTATION SYSTEMS

PERFORMANCE MEASURES ANNUAL REPORT

The Florida Department of Transportation (FDOT) is committed to implementing statewide, fully integrated intelligent transportation systems (ITS) in a cost-efficient manner to better accommodate Florida's rapid growth in population, tourism, and commerce. ITS represents the use of real-time information systems and advanced technologies as transportation management tools to improve the movement of people, goods, and services. ITS uses advanced technologies to remedy mobility and safety problems to efficiently build new roads and expand existing roads.

As ITS evolves in Florida, the development and reporting of operations performance measures is a high priority for FDOT to demonstrate and document the benefits of ITS. When the ITS Program began addressing performance in 2004, the Districts had no automated data collection systems and were initially limited to measures of basic production and usage (*output*). The initial output measures reported statewide were 511 calls, Road Rangers assists, and centerline miles of limited-access highways managed by ITS.

The proliferation of ITS deployments and integration will allow more accurately documented and reported measures of performance and the resulting benefits (*outcome*). FDOT identified three ITS *outcome* performance measures that were subsequently approved by the Florida Transportation Commission (FTC) in 2005. These measures were incident duration, travel-time reliability, and customer satisfaction. Available data for the incident duration and customer satisfaction measures were collected and reported beginning in 2006. For the 2008/2009 fiscal year (FY), three output and two outcome measures—incident duration and travel time reliability—will be reported. The customer satisfaction survey was last conducted in 2008, but will not be performed this year. The next customer satisfaction survey is scheduled for spring 2010. The data for these reported measures was collected for the period beginning July 1, 2008, and ending June 30, 2009.

TOTAL ANNUAL 511 CALLS

ACCURATE, REAL TIME INFORMATION FOR MOTORISTS

Travelers on Florida's highways have an invaluable resource known as "America's Traveler Information Telephone Number" and, in 2009, it was accessible to approximately half of the Florida's population.

Background: In July 2000, the Federal Communications Commission designated 511 as the national three-digit telephone number for traveler information. By May 2009, there were over 146 million calls made to the 511 systems in 46 locations, in 35 states, and three Canadian provinces. Estimates indicate that 511 is accessible to 54 percent of Americans and almost seven million Canadians.

In Florida, most urban areas of the state currently offer this service to travelers. Following are the regional coverage areas and launch dates:

Southeast (2002): Broward, Miami-Dade, Palm Beach, Indian River, Monroe, St Lucie, Martin, Indian River, Palm Beach, Martin, St Lucie, and Miami-Dade Counties
Central (2002): I-4 in greater Orlando
Tampa Bay (2004): Hernando, Pasco, Polk, Pinellas, Hillsborough, Pinellas, Sarasota, Polk, Manatee, Sarasota, and Pasco Counties
Northeast (November 2006): Clay, Nassau, Duval, and St. Johns Counties
Southwest (April 2007): Charlotte, Collier, and Lee Counties
Statewide (2005): Covers all areas not covered by regional services

In June 2009, Florida's statewide 511 services integrated all the Florida regional 511 services into one statewide system. Since inception of the aforementioned systems, 511 calls made in Florida totaled over 40 million.

Purpose: To provide accurate, real-time information on traffic and road conditions, alternate route information (during incidents), construction information, weather-related problems, and public transportation information/options.

Objective: To reduce traveler delay and improve the overall quality of trip-making as evidenced by the growth in the number of 511 calls and different callers, and maintaining a high level of user satisfaction.

Methodology: Compilation of annual monthly (and ultimately, annual hourly) 511 calls by each of the service providers. During FY 2008/2009, LogicTree managed the Statewide, Southeast, and Central Florida systems. Mobility Technologies managed both the Tampa Bay area system and the Southwest system; SmartRoutes managed the Northeast system. As of June 17, 2009, LogicTree began managing all systems as part of the new statewide system.

TOTAL ANNUAL 511 CALLS

2008/2009 RESULTS

Approximately 3.4 million 511 calls were made during the 12-month period from July 2008 through June 2009 under the six Florida systems. Due to the changeover in system operations, the June 2009 numbers are incomplete. As can be seen below, the number of total monthly 511 calls is increasing with over 400,000 calls made in Florida. Total annual statewide calls have a 19 percent overall decrease over 2008.

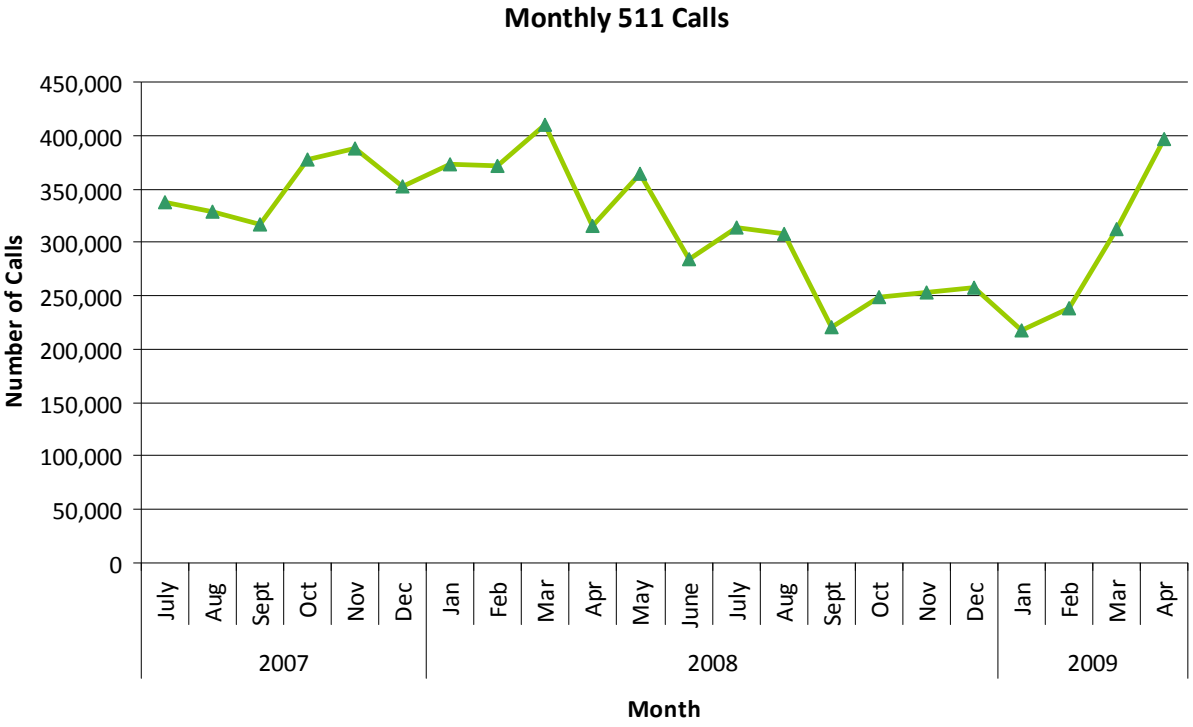
The Southeast Florida 511 system surpassed 13 million calls in August 2008. The Tampa Bay 511 system reached two million calls. Due to Hurricane Fay, the Northeast Florida 511 system showed an 87 percent spike in calls. In September, the Central Florida 511 system reached eight million calls.

WHAT'S NEW

System integration allows users to request customized calls or texts to inform them of incidents in areas of interest to them.

After several media events during the 2008 Thanksgiving holidays, Florida 511 calls were up 61 percent compared to a typical week. In December, the statewide SunGuide® Software installation was completed. Preparation for the Next Generation Florida 511 System advanced featuring one seamless and integrated system, personalized services, new Web site, and additional transfer options. Call volumes in the six Florida 511 services surpassed 25 million calls.

On June 17, 2009, the new Statewide Florida 511 Traveler Information System was launched. The fully integrated, bilingual resource offers statewide roadway coverage, the addition of more than 50 new travel partners, and personalized services.



ROAD RANGERS

QUICK RESPONSE FOR CLEARANCE OF INCIDENTS AND TO MOTORISTS IN NEED

Road Ranger service patrols help motorists in need and thereby assist in clearing the roadway of incidents that may cause secondary incidents. The sooner an incident is removed, the sooner the highway returns to normal capacity.

Background: FDOT began funding the Road Ranger Program in December 1999. The Road Ranger service patrols are roving vehicles that patrol congested areas and high-incident locations of urban freeways, and provide highway assistance services during incidents to reduce delay and improve safety for the motoring public and responders. Districts 1, 2, 4, 5, 6, and 7, and the Florida's Turnpike Enterprise currently operate Road Ranger Programs. However, the specific services provided, hours of operation, fleet size, and area coverage differs among these entities.

Purpose: The primary mission of the Road Ranger service patrol is to support emergency response personnel during incidents by establishing maintenance of traffic (MOT) for the incident and providing other assistance as needed for the incident. Providing quick response and clearance reduces the number of secondary incidents and returns the roadway to capacity sooner. Road Rangers assist in hurricane evacuations by providing support to evacuees and responders. Road Rangers also provide service to disabled vehicles.

Objective: To help reduce the overall travel delay associated with incidents by providing quick response to motorists in need and assistance to other emergency responders.

Methodology: Compilation and summary of Road Ranger Log Forms (mostly in electronic format). All of the Districts are now providing Road Ranger data to the Central Office on a quarterly basis.

ROAD RANGERS

2008/2009 RESULTS

For the period July 2008 to June 2009, there were 255,049 Road Ranger stops made statewide along 1,062.4 miles of coverage. Six Districts and the Florida's Turnpike Enterprise provided Road Ranger services in FY 2008/2009. District 3 is making progress toward implementation of this service in the next fiscal year.

As illustrated in the following graph, changes in funding affected most Districts. Compared to the previous period of documentation (July 2007 to June 2008) annual stops decreased 31 percent. This is due in part to reductions in the number of Road Ranger units, hours and days of operation, and roads covered.

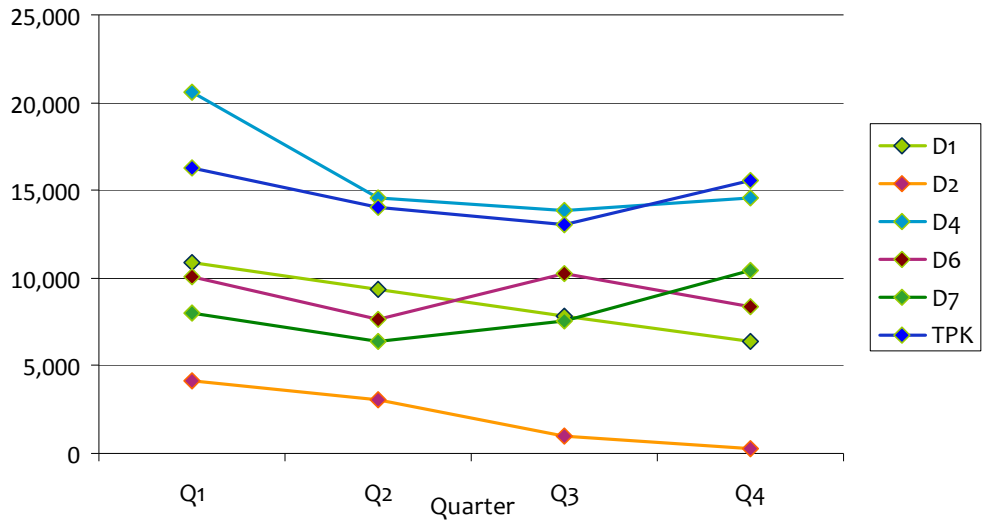
In 2008, the Florida Legislature instituted a 50 percent reduction of funding from the previous year's funding for the Road Ranger Program. By the end of the 2009 session, after reviewing the benefits of the Road Ranger Program, the legislature reversed the 50 percent cap from the prior funding year, made that the floor for 2010, and explicitly allowed other funding sources, such as sponsorships, which were not previously expressly permitted.

WHAT'S NEW

Funding was a challenge in 2008/2009; however, Florida legislators restored funding once they understood the Road Rangers Program benefits.

Examples of some of the specific reductions in Road Ranger services are as follows: District 2 reduced the number of patrols from eight to two, and hours per day to 10. District 5's thirteen Road Ranger service patrols are operational Monday through Friday from 6:30 a.m. to 10:30 p.m. They were previously operating 24-hours a day, 7-days per week. District 2 and District 5 suspended patrol operations for approximately 60 days. District 6 reduced patrols from seven to four, and reduced weekend patrols from five to three. District 6 eliminated coverage on US 1 and I-75, (although they responded to requests on these roads from law enforcement), and reduced weekend coverage on SR 826 to 12-hour daytime-only hours. District 7 eliminated three Road Rangers routes and increased the coverage area of one of the remaining routes to accommodate the reduction in staff.

ROAD RANGERS STOPS BY QUARTER



MILES MANAGED

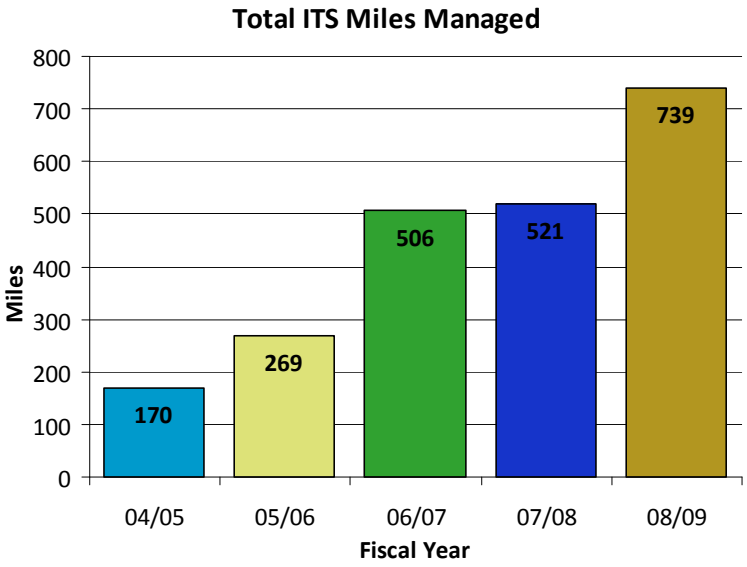
SEAMLESS, OPERATIONAL, REAL-TIME DEPLOYMENT OF ITS ACROSS FLORIDA

FDOT is committed to implementing a statewide, fully integrated ITS in a cost-efficient manner, to better accommodate our rapid growth in population, tourism, and commerce. ITS represents the use of real-time information systems and advanced technologies as transportation management tools to improve the movement of people, goods, and services. ITS uses advanced technologies to remedy mobility and safety problems, to efficiently build new roads and expand existing ones.

Background: All Districts and the Florida's Turnpike Enterprise are committed to the deployment of ITS; each has embarked with this deployment in varying stages and pace in accordance with the FDOT *Ten-Year ITS Cost Feasible Plan*. As a percent of the limited-access Florida State Highway System (SHS) mileage in each District, the definition of "miles managed by ITS" is centerline mileage that must include ALL of the following attributes:

1. Traffic probes and/or sensors,
2. Real-time traffic information reporting coverage,
3. Real-time incident response capabilities, and
4. Real-time traffic data availability to FDOT.

In order to meet the definition of miles managed by ITS, all of these attributes must be continuously operated and maintained, permitting contiguous coverage of the mileage noted.

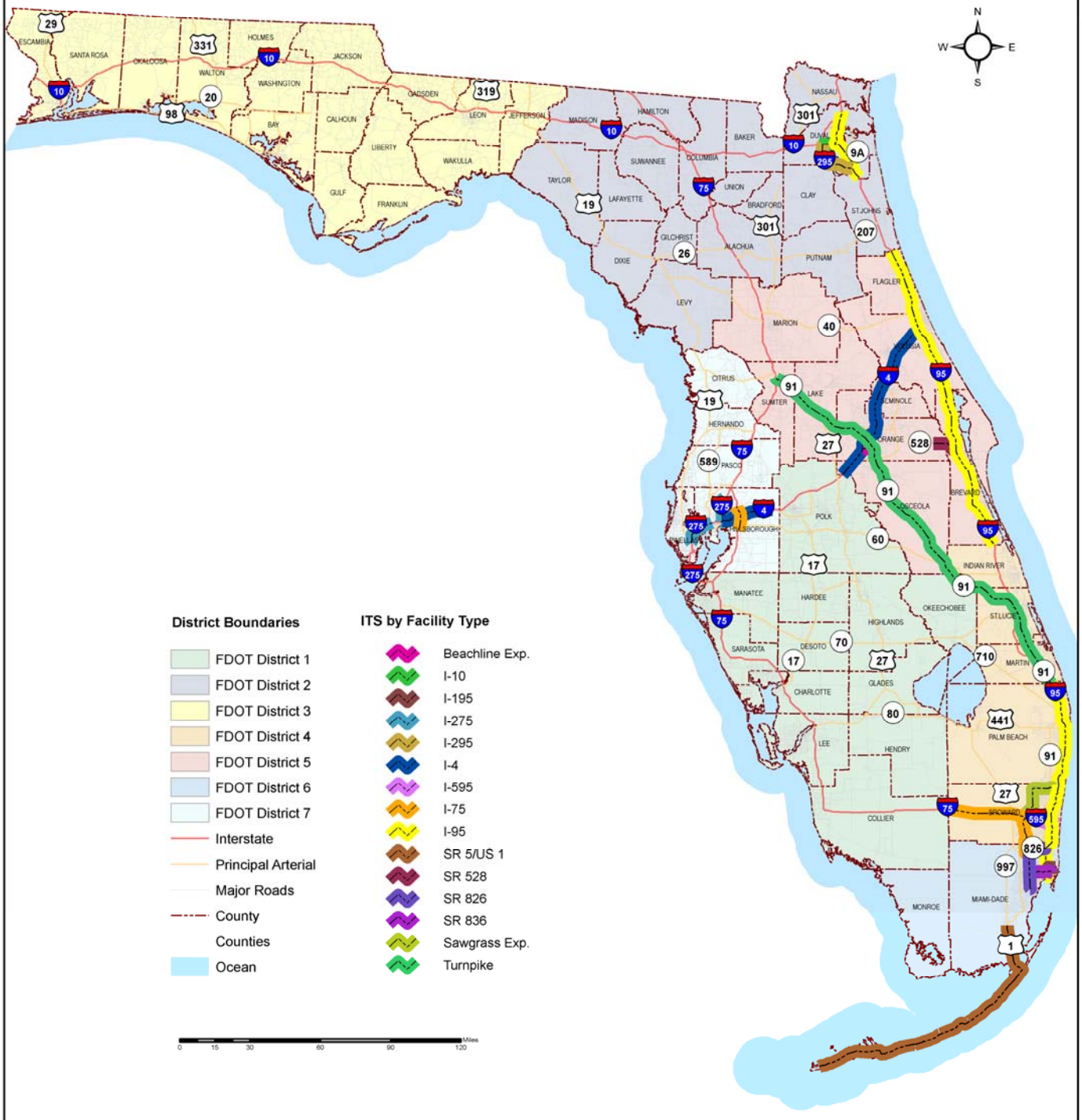


Purpose: Report progress in completing deployment of the FDOT *Ten-Year ITS Cost Feasible Plan* and beyond, as appropriate.

Objective: To initially deploy ITS across the limited-access portion of the SHS, and to ultimately integrate all ITS and ITS-related user services across the entire state in a seamless, fully operational, real-time fashion. This deployment will help improve mobility and safety throughout the state.

Methodology: Deployment progress, on an annual basis, as reported by each District and the Florida's Turnpike Enterprise. Corresponding geographic coverage should also be reported and mapped in terms of mile point limits.

Florida's Intelligent Tranportation Systems Program Coverage



August, 2009

MILES MANAGED

2008/2009 RESULTS

At the end of June 2009, 739 miles are managed by ITS. This represents 35 percent ITS coverage of the Florida Intrastate Highway System (FIHS). Extensive ITS deployment took place during FY 2008/2009 in all Districts and the Florida's Turnpike Enterprise. Compared to the previous period of documentation (June 2007 to July 2008), the miles managed by ITS increased 42 percent statewide.

WHAT'S NEW

A 42 percent increase in miles managed furthers the objective to integrate ITS-related user services across the entire state, improving mobility and safety for travelers.

District	Limited-Access FIHS Miles	Total ITS Miles Managed by FDOT	Facility, Extent, and Location
2	372.3	63.4	I-10: 9 miles (MM 354 to MM 363 in Duval County) I-95: 34 miles (MM 332 to MM 366 in Duval County) I-295: 20.4 miles (MM 0 to MM 20.6)
4	203.2	131.1	I-95: 46 miles (MP 0 to MP 46 in Palm Beach County) I-75: 46.9 miles (MM 0 to MM 45, and 1.9 miles along Sawgrass Exp north if I-75) I-95: 25.3 miles (MM 0 to MM 25.3 in Broward County) I-595: 12.9 miles (MM 0 to MM 12.9 in Broward County)
5	386.1	215.5	I-4: 74.5 miles (MM 58 to MM 130) I-95: 130 miles (MM 298 to MM 160) SR 528: 11 miles (from SR 520 East to I-95)
6	53.5	52.18 plus 123 miles on controlled access FIHS and arterial facilities --->	I-75: 5.44 miles (SR 826/Palmetto Expressway to Miami-Dade/Broward County Line) I-95: 17.26 miles (SR 5/US 1 to Miami-Dade/Broward County Line) I-195: 4.91 miles (NW 11 Avenue to SR 907/Alton Road) SR 826: 24.57 miles (SR 5/US 1 to Golden Glades Interchange) *SR 5/US 1: 123 miles in Dade and Monroe Counties:* SR 836 (SR 826 to MacArthur Causeway Bridge) SR 5/US 1 (N of Atlantic Blvd. to Monroe/Dade County Line) SR 5/US 1 (Monroe/Dade County Line to Card Sound Road) SR 5/US 1 (Card Sound Road to SR 821 HEFT) SR 5/US 1 (S of McDonald Ave to Industrial Road/ Sands Road) SR 5/US 1 (Industrial Road/ Sands Road to Palm Island Road) SR 5/US 1 (Palm Island Road to 1 mile W of Tom Harbor Bridge) SR 5/US 1 (1 mile W of Tom Harbor Bridge to Caloosa Cove Blvd) SR 5/US 1 (Caloosa Cove Blvd to N of Atlantic Blvd.)
7	166.5	59	I-275: 13 miles (MP 25.5 to MP 38.5) I-275: 11 miles (MP 43 to MP 54) I-75: 12.5 miles (MM 253.2 to MM 265.7) I-4: 22.5 miles (MP 0 to MP 22.5)
TPE	460	218	Sawgrass Expressway: 22 miles (I-595 to Atlantic Blvd in Broward county). Beachline Expressway/SR 528: 4 miles (I-4 to Florida's Turnpike in Orange County) Florida's Turnpike: 192 miles (MP 117 to MP 309)
Statewide Total	**2106.7**	**739.18**	**35% of District Total FIHS Limited-Access Miles are ITS Managed Miles**

INCIDENT DURATION

MINIMIZE TRAFFIC INCIDENT TIMELINE

FDOT and its emergency response partners work to ensure that crashes and other incidents have minimal impact on Florida drivers by working to reduce the amount of time of each incident. Determining trends in incident clearance allows for analysis and improvement in the system. Quickly removing an incident, allows the highway to return to normal capacity and traffic flow sooner.

Background: In 2005, the FDOT ITS Program incident duration was identified as an outcome measure to be reported to the Florida Transportation Commission. Initially, FDOT conducted an effort to collect incident timeline data from manual (paper) records. The pilot test results determined that manually collecting incident timeline data was too complex and time-consuming. In 2006, the SunGuide® Software was modified to include the data collection and reporting requirements for obtaining incident duration data.

In order to improve the incident duration timeline, Florida has developed a very active Statewide Traffic Incident Management Program. There are three major components to this program:

- *Open Roads Policy*
- Rapid Incident Scene Clearance (RISC) Program
- Traffic Incident Management (TIM) Teams

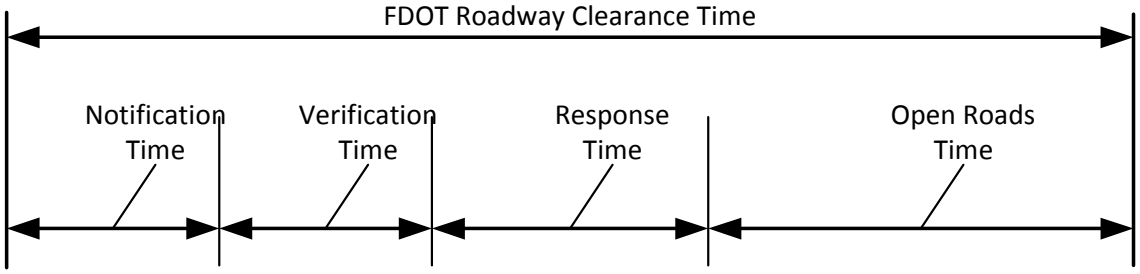
The Florida *Open Roads Policy* is an agreement between FDOT and the Florida Highway Patrol (FHP). Both agencies signed this agreement in November 2002. The agreement states that it is policy of FHP and FDOT to expedite the removal of vehicles, cargo, and debris from state highways and to restore, in an urgent manner, the safe and orderly flow of traffic on Florida's roadways. Both agencies agreed to work together to clear roadways as soon as possible. A goal was set to clear incidents from the roadway within 90 minutes of the arrival of the first responding officer.

The Rapid Incident Scene Clearance (RISC) Program is a highly innovative, incentive-based program to meet the goal of safely clearing major highway incidents and truck crashes. This program pays bonuses of $2,500 to wrecker operators with specialized heavy equipment for successful removal of all wreckage and roadway re-opening within 90 minutes of being given a Notice-to-Proceed. Additionally the wrecker company is paid $1,000 if approval of additional specialty equipment for use during the incident cleanup is given. As a further incentive, if the travel portion of the roadway is not cleared in three hours, the wrecker company can be assessed a penalty of $10/minute ($600/hour) until the roadway is reopened. Most of the seven FDOT Districts and the Florida's Turnpike Enterprise have adopted this program.

TIM Teams bring together all agencies involved in clearing an accident, including FHP and local law enforcement, fire departments, emergency medical personnel, towing companies, and spill response firms, along with FDOT transportation management center (TMC) operators, Road

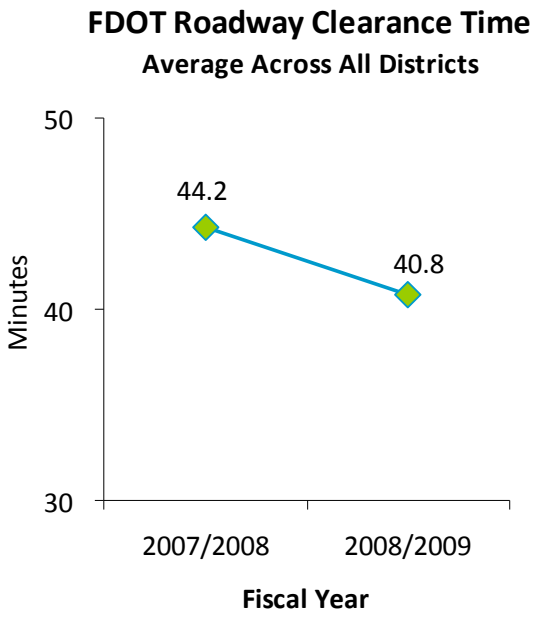
Rangers, and maintenance crews. The TIM Teams may be District-wide or they may be local to one county. These teams strive to reduce the time needed to reopen travel lanes and get traffic moving again by reviewing past response actions, exploring ways to improve incident management, and coordinating upcoming planned events or planning for unplanned events, such as hurricanes, wildfires, and floods. Most TIM Teams have four program areas: incident detection, verification, and response; incident clearance; communications; and training. TIM Teams are currently active in most of FDOT's Districts and The Florida's Turnpike Enterprise.

The incident duration timeline measure is an indicator of the effectiveness of these programs.



Purpose: Report the total time of impact on traffic for an incident.

Objective: To minimize the incident timeline from the time any FDOT or FHP staff is notified to the time that all travel lanes are cleared.



Methodology: In 2008, to more closely align with National Traffic Incident Management definitions, the terminology for reporting incident duration was modified. The FDOT incident duration timeline includes the following components: notification/verification time, response time, and Open Roads Clearance Time. The definition for Open Roads Clearance Time is the amount of time needed to clear all mainline travel lanes, starting with the arrival of the first responder, either FHP or FDOT. The Open Roads Clearance Time is directly comparable with Florida's *Open Roads Policy* for clearing all travel lanes in 90 minutes or less. FDOT Roadway Clearance Time is an overall component of incident duration, defined as the time between first awareness of the incident and the time all mainline travel lanes are cleared. This component includes notification, verification, and response times, as well as the open roads clearance time. Although the terminology changed for FY 2008, the individual components of the incident duration timeline are still the same as that used for FY 2007 reporting.

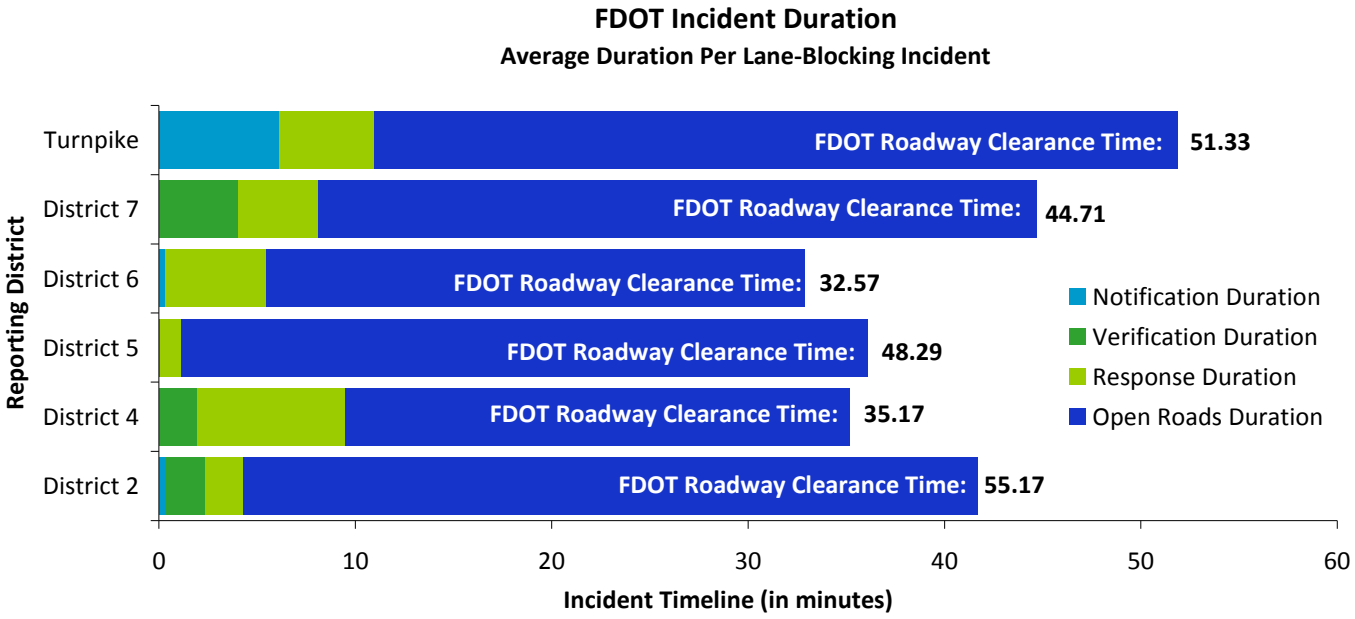
INCIDENT DURATION

2008/2009 RESULTS

FDOT Roadway Clearance Time varied from month to month, but the average time from the reporting Districts is about 40 minutes, ranging from 31 minutes to 96 minutes for monthly averages. The Open Roads Clearance Time averages about 30 minutes for the reporting Districts. This is well under the *Open Roads Policy* target of 90 minutes. The graphic below shows the FDOT Roadway Clearance Time for the five reporting Districts and the Florida's Turnpike Enterprise. The Roadway Clearance Times shown are weighted averages based on the number of incidents that occurred that month. Therefore, Roadway Clearance Times for each month will not necessarily correspond to the sum of the verification, response, and open road's averages.

WHAT'S NEW

With the new integrated system implemented in mid-June 2009, all Districts will report using the same format in fiscal year 2009/2010, fulfilling goal of reporting accurate data.



TRAVEL TIME RELIABILITY

ESTIMATE TRAVEL TIMES FOR TRIP PLANNING

Background: In 2005, FDOT adopted reliability as an outcome performance measure to report to the Florida Transportation Commission on a statewide basis. FDOT identified reliability reporting definitions and data needs in FY 2006. A limited amount of data were available for reporting reliability in FY 2007; however, speed detector data quality issues prohibited reporting of results. For FY 2008, travel time reliability and congestion results are available for Districts 2, 5, and 7. For FY 2009, travel time reliability and congestion results are available for Districts 2, 4, 5, 6, and 7. Districts 5 and 7 provided data, and Districts 2, 4, and 6 provided data collected from the STEWARD system at University of Florida.

Purpose: Report a qualitative measure of the variability or uncertainty in the performance of facilities over time.

Objective: To measure and track the variability of roadway congestion, measured using the Buffer Index as well as measure and track the congestion level, measured using the Travel Time Index.

Methodology: FDOT identified two metrics for measuring travel time reliability and congestion. The Buffer Index is a measure of the reliability of travel service. The Buffer Index is calculated as the ratio between the difference of the 95th percentile travel time and the average travel time divided by the average travel time, i.e. (95th travel time - average travel time)/average travel time. For example, a value of 0.4 means that a traveler should budget an additional 8-minute buffer for a 20-minute average peak trip time to ensure 95 percent on-time arrival. A secondary metric is the Travel Time Index (TTI), which is a measure of traffic congestion. TTI is calculated as the ratio of average peak travel time to an off-peak (free-flow) standard, in this case 60 mph for freeways. For example, a value of 1.20 means that average peak travel times are 20 percent longer than off-peak travel times. Travel time, travel speed, and volume data are the basis of these measures. Travel time and speed data are obtained from either speed data from roadside detectors that communicate in real time to TMCs or probe data from various sources that report travel time directly. Volume data are used to compute vehicle miles traveled, which are then used as weights to compute an area wide or corridor wide measure average. Only non-holiday weekdays select periods are used in index calculations. The periods are:

Morning peak: from 6 a.m. to 9 a.m.
Midday peak: from 9 a.m. to 4 p.m.
Afternoon peak: 4 p.m. to 7 p.m.

Freeway Segments: A typical freeway section is about 3 to 7 miles between major interchanges in urban areas, and can go up to 12 to 13 miles in rural areas with less congestion and fewer interchanges. When possible, congested freeways were separated from freeways that had less congestion.

TRAVEL TIME RELIABILITY

2008/2009 RESULTS

A complete list of sections, including limits and lengths, is included in Appendix A. A complete summary of all results is included in Appendix B.

The following tables summarize congestion and reliability results for ITS managed corridors in Districts 2, 4, 5, 6, and 7. The tables indicate the rank, roadway, direction, limits, peak period, travel time index/buffer time index, and the change in result when compared to 2007/2008 values. NA indicates that a value was not available for the particular segment and period due to data collection gaps.

District 2 experiences the most congestion during the afternoon peak on I-95 northbound from Palm Avenue to the I-95 northbound exit to 8th Street, with a travel time index of 1.32, which reflects a slight decrease when compared to 2007/2008. The most unreliable travel times occur on I-295 westbound from north of I-95 to San Jose Boulevard with a buffer index of 0.53.

In District 4, the most congested section is I-595 westbound from I-95 to east of the Turnpike during the afternoon peak, with a travel time index of 1.40. This is also the period and area experiencing the most unreliable travel times, with a buffer index of 0.77.

In District 5, the most congested section is I-4 eastbound from South Street to State Road 414 during the afternoon peak, with a travel time index of 1.60, which is less than the 2007/2008 value. The most unreliable section is on the Turnpike eastbound from the eastbound ramp to State Road 408 during the afternoon peak, with a buffer index of 0.89. These two sections are reporting the highest statewide travel time and buffer index for the reporting period.

In District 6, the most congested section is I-195 southbound from east of Second Street Bridge to west of North Miami Avenue during the afternoon peak, with a travel time index of 1.42; again, less than the 2007/2008 value. This is also the period and area experiencing the most unreliable travel times, with a buffer index of 0.78.

In District 7, the morning peak experiences the most congestion on I-275 southbound between Busch Boulevard and the Hillsborough River, with a travel time index of 1.38. The afternoon peak on Howard Frankland Bridge northbound experiences the most unreliable travel times, with a buffer index of 0.83.

It is interesting to note that the 2008/2009 values for congestion and travel time reliability have consistently high value segments when compared to 2007/2008. In general, many of the numbers were very close in value or went down slightly in 2008/2009.

District 2 - Travel Time Index

Rank	Roadway	Limits	Peak Time Period	Travel Time Index	Change from 2008
1	I-95	NB -Palm Ave to 8th St	PM	1.32	-0.01
2	I-95	SB - Hendricks Ave to Butler Blvd	PM	1.21	0.09
3	I-295	WB - N of I-95 to San Jose Blvd	AM	1.16	na
4	I-95	NB - Butler Blvd to Acosta Bridge	PM	1.15	-0.02
5	I-95	NB - Palm Ave to 8th St	Midday	1.13	0.01

District 2 - Buffer Time Index

Rank	Roadway	Limits	Peak Time Period	Buffer Time Index	Change from 2008
1	I-295	WB – N. of I-95 to San Jose Blvd.	AM	0.53	na
2	I-95	NB - Butler Blvd. to Acosta Bridge	PM	0.42	-0.12
3	I-95	SB - Hendricks Ave. to Butler Blvd.	PM	0.41	0.01
4	I-95	NB - I-295 S. to NB Entrance from Butler Blvd. WB	AM	0.31	0.06
5	I-95	SB - 8th St. to Palm Ave.	PM	0.28	-0.23
5	I-295	WB - San Jose Blvd. to S. of US-17	AM	0.28	na

District 4 - Travel Time Index

Rank	Roadway	Limits	Peak Time Period	Travel Time Index	Change from 2008
1	I-595	WB - I-95 to E of Turnpike	PM	1.4	na
2	I-595	EB - Hiatus Rd to Davie Rd	AM	1.25	na
3	I-95	SB - S of Palm Beach County line to N of Commercial Blvd	PM	1.15	na
4	I-595	WB - Davie Rd to Hiatus Rd	PM	1.15	na
5	I-95	NB - N of SR-84 to Commercial Blvd	PM	1.13	na

District 4 - Buffer Time Index

Rank	Roadway	Limits	Peak Time Period	Buffer Time Index	Change from 2008
1	I-595	WB - I-95 to E of Turnpike	PM	0.77	na
2	I-95	NB - N of SR-84 to Commercial Blvd	PM	0.48	na
3	I-595	EB - Hiatus Rd to Davie Rd	AM	0.46	na
4	I-95	SB - S of Palm Beach Co/Ln to N of Commercial Blvd	PM	0.43	na
4	I-95	SB - S of Palm Beach Co/Ln to N of Commercial Blvd	AM	0.43	na

District 5 - Travel Time Index

Rank	Roadway	Limits	Peak Time Period	Travel Time Index	Change from 2008
1	I-4	EB - South St to SR 414	PM	1.6	-0.11
2	I-4	EB - Turnpike E/B Ramp to SR 408	PM	1.56	-0.24
3	I-4	WB - E of Lake Mary Rest Area to East of SR 414	AM	1.42	0.02
4	I-4	WB - SR 414 to South St	PM	1.39	0.02
5	I-4	EB - East of SR 414 to Lake Mary Rest Area	PM	1.2	0.03

District 5 - Buffer Time Index

Rank	Roadway	Limits	Peak Time Period	Buffer Time Index	Change from 2008
1	I-4	EB - Turnpike E/B Ramp to SR 408	PM	0.89	-0.21
2	I-4	WB - SR 414 to South St	PM	0.63	0.08
3	I-4	EB - South St to SR 414	PM	0.56	-0.06
4	I-4	WB - E of Lake Mary Rest Area to East of SR 414	AM	0.55	-0.08
4	I-4	WB - 528 E/B Ramp to US 192	PM	0.55	-0.09

District 6 - Travel Time Index

Rank	Roadway	Limits	Peak Time Period	Travel Time Index	Change from 2008
1	I-195	SB - East of 2nd Bridge to West of N Miami Ave	PM	1.42	na
2	I-195	SB - East of 2nd Bridge to I 195 West of N Miami Ave	AM	1.24	na
3	SR 826	WB - East of NW 12 Ave to South of NW 154 St	AM	1.14	na
4	SR 826	EB - South of NW 154 St to East of NW 12 Ave	AM	1.11	na
5	SR 826	WB - East of NW 12 Ave to South of NW 154 St	PM	1.11	na

District 6 - Buffer Time Index

Rank	Roadway	Limits	Peak Time Period	Buffer Time Index	Change from 2008
1	I-195	SB - East of 2nd Bridge to West of N Miami Ave	PM	0.78	na
2	I-195	SB - East of 2nd Bridge to West of N Miami Ave	AM	0.43	Na
3	SR 826	WB - East of NW 12 Ave to South of NW 154 St	AM	0.41	na
4	I-75	NB - West of SR 826 to North of Turnpike	PM	0.33	na
5	I-75	SB - North of Turnpike to West of SR 826	AM	0.32	na

District 7 - Travel Time Index

Rank	Roadway	Limits	Peak Time Period	Travel Time Index	Change from 2008
1	I-275	SB - Busch Blvd to Hillsborough River Downtown	AM	1.38	-0.11
2	I-275	NB - Howard Frankland Bridge	PM	1.35	0.08
3	I-275	SB - Livingston Ave to Bush Blvd	AM	1.31	-0.15
4	I-275	NB - Hillsborough River Downtown to Bush Blvd	PM	1.23	0.04
5	I-275	SB - Busch Blvd to Hillsborough River Downtown	PM	1.18	-0.02

District 7 - Buffer Time Index

Rank	Roadway	Limits	Peak Time Period	Buffer Time Index	Change from 2008
1	I-275	NB - Howard Frankland Bridge	PM	0.83	0.15
2	I-275	SB - Livingston Ave to Busch Blvd	AM	0.81	-0.25
3	I-4	EB - MLK Blvd to CR579	PM	0.64	0.03
4	I-4	WB - MLK Blvd to I-275	AM	0.49	0.25
5	I-275	SB - Busch Blvd to Hillsborough River Downtown	AM	0.42	-0.06

The following tables show the congestion (indicated by travel time index) and reliability (indicated by buffer index) on freeway sections within Districts 2, 4, 5, 6, and 7. The first column in these tables indicates the roadway; second column shows the total number of segments evaluated for that roadway; the remaining columns indicate the percentage of the total segments that exceed the threshold indicated above each column. Note that the number of segments includes both directions. For example, I-95 in District 2 has five segments; however, northbound and southbound direction data are compiled separately and, therefore. there are 10 segments included.

District 2 - Percent of Segments Exceeding Congestion and Reliability Thresholds

	# segments	AM				PM			
		TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4	TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4
I-95	10	0	0	0	0	33	20	40	20
I-295	8	12	25	0	12	0	0	0	0

District 4 - Percent of Segments Exceeding Congestion and Reliability Thresholds

	# segments	AM				PM			
		TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4	TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4
I-95	6	17	0	67	17	50	0	83	50
I-595	4	50	25	50	25	50	25	50	25

District 5 - Percent of Segments Exceeding Congestion and Reliability Thresholds

	# segments	AM				PM			
		TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4	TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4
I-95	28	0	0	0	0	0	0	0	0
I-4	22	18	5	9	5	36	14	18	9

District 6 – Percent of Segments Exceeding Congestion and Reliability Thresholds

	# segments	AM				PM			
		TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4	TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4
I-195	2	50	50	50	50	50	50	50	50
I-75	2	0	0	50	0	0	0	50	0
SR 826	2	100	0	100	0	50	0	100	0

District 7 - Percent of Segments Exceeding Congestion and Reliability Thresholds

	# segments	AM				PM			
		TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4	TTI>1.1	TTI>1.2	BTI>0.2	BTI>0.4
I-275	8	25	25	25	25	38	25	50	13
I-4	6	17	0	17	17	17	0	33	17

The following table shows the Buffer Time Index range for the instrumented freeways within each District. The most unreliable section calculated throughout the state is a section of I-4 south of downtown Orlando in the afternoon peak period (BTI of .89).

Buffer Time Index Range by District and Roadway

	I-95	I-295	I-595	I-4	SR 826	I-75	I-195	I-275
D2	0 - .42	0 - .53						
D4	0 - .48		0 - .77					
D5	0 - .19			0 - .89				
D6					.2 - .41	0 - .33	.04 - .78	
D7				0 - .64				0 - .83

APPENDIX A

FREEWAY SEGMENTS

District	SECT_ID	Road	Direction	From To	Length
2	1	I-95	NB	from I-95 NB North of I-295S to I-95 NB Entrance from Butler Blvd WB	5.88
	2	I-95	SB	from I-95 SB Entrance from Butler Blvd WB to I-95 SB North of I-295S	5.58
	3	I-95	NB	from I-95 NB North of Butler Blvd to I-95 NB Exit to Acosta Bridge	5.64
	4	I-95	SB	from I-95 SB at Hendricks Ave to I-95 SB Exit to Butler Blvd	5.96
	5	I-95	NB	from I-95 NB at Palm Ave to I-95 NB Exit to 8th St	3.88
	6	I-95	SB	from I-95 SB Exit to 8th St to I-95 SB at Palm Ave	3.96
	7	I-95	NB	from I-95 NB Exit to MLK Blvd to I-95 at South Trout River Bridge	4.12
	8	I-95	SB	from I-95 at South Trout River Bridge to I-95 SB Entrance from MLK Blvd	3.71
	9	I-95	NB	from I-95 NB Entrance from Heckscher Blvd to I-95 NB Exit to Airport Rd	5.24
	10	I-95	SB	from I-95 SB Exit to Airport Rd to I-95 SB Entrance from Heckscher Blvd	5.99
	11	I-295	EB	From N of Normandy Blvd to 103rd St	4.24
	12	I-295	WB	From 103rd St to N of Normandy Blvd	4.24
	13	I-295	EB	From S of 103rd St to US-17	6.26
	14	I-295	WB	From US-17 to S of 103rd St	6.26
	15	I-295	EB	From S of US-17 to N of San Jose Blvd	4.25
	16	I-295	WB	From San Jose Blvd to S of US-17	4.24
	17	I-295	EB	From San Jose Blvd to N of I-95	3.49
	18	I-295	WB	From N of I-95 to San Jose Blvd	3.49
4	1	I-95	NB	From N of Miami-Dade Co/Ln to between I-595 and SR-84	8
	2	I-95	NB	From N of SR-84 to Commercial Blvd	7.2
	3	I-95	NB	From N of Commercial Blvd to S of Palm Beach Co/Ln	10
	4	I-95	SB	From between I-595 and SR-84 to N of Miami-Dade Co/Ln	8
	5	I-95	SB	From Commercial Blvd to N of SR-84	7.2
	6	I-95	SB	From S of Palm Beach Co/Ln to N of Commercial Blvd	10
	7	I-595	EB	From Hiatus Rd to Davie Rd	4.95
	8	I-595	EB	From E of Turnpike to I-95	2.95
	9	I-595	WB	From Davie Rd to Hiatus Rd	4.95
	10	I-595	WB	From I-95 to E of Turnpike	2.95
5	1	I-4	EB	from I-4 @ 532 to I-4 @ SR 417	5.75
	2	I-4	EB	from I-4 @ US 192 to I-4 528 E/B Ramp	7.85
	3	I-4	EB	from I-4 528 W/B Ramp to I-4 @ Turnpike	5.05
	4	I-4	EB	from I-4 @ Turnpike E/B Ramp to I-4 @ SR 408	5.75
	5	I-4	EB	from I-4 @ South St to I-4 @ SR 414	7.30
	6	I-4	EB	from I-4 East of SR 414 to I-4 E of Lake Mary Rest Area	7.40
	7	I-4	EB	from I-4 West of Lake Mary to I-4 @ US 17/92	8.15
	8	I-4	EB	from I-4 @ St Johns Bridge to I-4 @ Dirksen Rd	3.80
	9	I-4	EB	from I-4 East of Dirksen Rd to I-4 @ SR 472	5.40
	10	I-4	EB	from I-4 East of SR 472 to I4-SR44 MM 118.4	4.75
	11	I-4	EB	from I4-SR44 MM 120 EB to I4-Just W I95	12.15
	12	I-4	WB	from I-4 @ SR 417 to I-4 @ 532	5.75
	13	I-4	WB	from I-4 528 E/B Ramp to I-4 @ US 192	7.85
	14	I-4	WB	from I-4 @ Turnpike to I-4 528 W/B Ramp	5.05
	15	I-4	WB	from I-4 @ SR 408 to I-4 @ Turnpike E/B Ramp	5.75
	16	I-4	WB	from I-4 @ SR 414 to I-4 @ South St	7.30
	17	I-4	WB	from I-4 E of Lake Mary Rest Area to I-4 East of SR 414	7.40
	18	I-4	WB	from I-4 @ US 17/92 to I-4 West of Lake Mary	8.15
	19	I-4	WB	from I-4 @ Dirksen Rd to I-4 @ St Johns Bridge	3.80

	20	I-4	WB	from I-4 @ SR 472 to I-4 East of Dirksen Rd	5.40
	21	I-4	WB	from I4-SR44 MM 118.4 to I-4 East of SR 472	4.75
	22	I-4	WB	from I4-Just W I95 to I4-SR44 MM 120 WB	12.15
	23	I-95	NB	from I-95 NB @ MM 168 to I-95 NB @ MM 173	5.65
	24	I-95	NB	from I-95 NB @ MM 174.3 to I-95 NB @ MM182.1	9.20
	25	I-95	NB	From I-95 NB @ MM 183.6 to I-95 NB @ MM 191	8.90
	26	I-95	NB	from I-95 NB @ MM 192.5 to I-95 @ SR 520	10.05
	27	I-95	NB	from I-95 @ SR 524 to I-95 NB @ MM 212.9	11.15
	28	I-95	NB	from I-95 NB @ MM 213 to I-95 NB @ MM 223	10.90
	29	I-95	NB	from I-95 NB @ MM 224.7 to I-95 NB @ MM 231.1	7.75
	30	I-95	NB	from I-95 NB @ MM 232.1 to I-95 NB @ SR 442	13.05
	31	I-95	NB	from I-95 NB @ MM 245.3 to I-95 NB @ MM 248.9	4.85
	32	I-95	NB	from I-95 NB @ MM 250.1 to I95-I4	11.35
	33	I-95	NB	from I95-S US 92 to I95-SR40	7.65
	34	I-95	NB	from I95-N of SR40 MM 268.7 to I95-N US1	7.00
	35	I-95	SB	from I-95 SB @ MM 173 to I-95 SB @ MM 168	5.65
	36	I-95	SB	from I-95 SB @ MM 182.1 to I-95 SB @ MM 174.3	9.20
	37	I-95	SB	from I-95 SB @ MM 191 to I-95 SB @ MM 183.6	8.90
	38	I-95	SB	from I-95 @ SR 520 to I-95 SB @ MM 192.5	10.05
	39	I-95	SB	from I-95 SB @ MM 212.9 to I-95 @ SR 524	11.15
	40	I-95	SB	from I-95 SB @ MM 223 to I-95 SB @ MM 213	10.90
	41	I-95	SB	from I-95 SB @ MM 231.1 to I-95 SB @ MM 224.7	7.75
	42	I-95	SB	from I-95 SB @ SR 442 to I-95 SB @ MM 232.1	13.10
	43	I-95	SB	from I-95 SB @ MM 248.9 to I-95 SB @ MM 245.4	4.80
	44	I-95	SB	from I95-I4 to I-95 SB @ MM 250.1	11.35
	45	I-95	SB	from I95-SR40 to I95-S US 92	7.65
	46	I-95	SB	from I95-N US1 to I95-N of SR40 MM 268.7	7.00
	47	I-95	NB	From I-95 @ MM 276 to I-95 @ MM 287.5	12.75
	48	I-95	NB	From I-95 @ MM 289 to I-95 @ MM 298	9.75
	49	I-95	SB	From I-95 @ MM 287.5 to I-95 @ MM 276	9.75
	50	I-95	SB	From I-95 @ MM 298 to I-95 @ MM 289	12.75
6	1	SR-826	EB	From SR 826 SOUTH OF NW 154 ST to SR 826 EAST OF NW 12 AVE	8.00
	2	SR-826	WB	From SR 826 EAST OF NW 12 AVE to SR 826 SOUTH OF NW 154 ST	8.02
	3	I-75	NB	From I 75 WEST OF SR 826 to I 75 NORTH OF TURNPIKE	4.65
	4	I-75	SB	From I 75 NORTH OF TURNPIKE to I 75 WEST OF SR 826	4.65
	5	I-195	NB	From I 195 WEST OF N MIAMI AVE to I 195 EAST OF 2ND BRIDGE	3.63
	6	I-195	SB	From I 195 EAST OF 2ND BRIDGE to I 195 WEST OF N MIAMI AVE	3.63
7	1	I-275	NB	from 38th Av to Howard Frankland Br	6.50
	2	I-275	NB	Howard Frankland Bridge	6.40
	3	I-275	NB	from Hillsborough River in downtown to Bush Blvd	6.90
	4	I-275	NB	from Bush Blvd to Livingston Av	3.80
	5	I-275	SB	from Howard Frankland Br to 38th Av	6.50
	6	I-275	SB	Howard Frankland Br	6.35
	7	I-275	SB	from Bush Blvd to Hillsborough River in downtown	7.15
	8	I-275	SB	from Livingston Av to Bush Blvd	3.90
	9	I-4	EB	from I-275 to MLK Blvd	4.95
	10	I-4	EB	from MLK Blvd to CR579	5.1
	11	I-4	WB	from MLK Blvd to I-275	5.15
	12	I-4	WB	from CR579 to MLK Blvd	5.25
	13	I-4	EB	from CR579 to CR601	12.05
	14	I-4	WB	from CR601 to CR579	12.1

APPENDIX B

2008/2009 RESULTS

District 2 – Travel Time Index and Buffer Index

SECT_ID	PERIOD	TTI	BTI
1	AM_PEAK	1.07	0.31
1	PM_PEAK	1.00	0.00
2	AM_PEAK	1.00	0.00
2	PM_PEAK	1.00	0.00
3	AM_PEAK	1.01	0.00
3	PM_PEAK	1.15	0.42
4	AM_PEAK	1.03	0.11
4	PM_PEAK	1.21	0.41
5	AM_PEAK	1.08	0.05
5	PM_PEAK	1.32	0.27
6	AM_PEAK	1.03	0.12
6	PM_PEAK	1.07	0.28
7	AM_PEAK	1.09	0.06
7	PM_PEAK	1.09	0.06
8	AM_PEAK	1.07	0.09
8	PM_PEAK	1.04	0.07
9	AM_PEAK	1.00	0.03
9	PM_PEAK	1.00	0.00
10	AM_PEAK	1.01	0.05
10	PM_PEAK	1.01	0.00
11	AM_PEAK	1.00	0.00
11	PM_PEAK	1.00	0.00
12	AM_PEAK	1.00	0.00
12	PM_PEAK	1.02	0.02
13	AM_PEAK	1.00	0.00
13	PM_PEAK	1.01	0.00
14	AM_PEAK	1.00	0.00
14	PM_PEAK	1.01	0.00
15	AM_PEAK	1.00	0.00
15	PM_PEAK	1.04	0.12
16	AM_PEAK	1.06	0.28
16	PM_PEAK	1.01	0.00
17	AM_PEAK	1.03	0.15
17	PM_PEAK	1.03	0.05
18	AM_PEAK	1.16	0.53
18	PM_PEAK	1.01	0.00

District 4 – Travel Time Index and Buffer Index

SECT_ID	PERIOD	TTI	BTI
1	AM_PEAK	1.04	0.24
1	PM_PEAK	1.03	0.12
2	AM_PEAK	1.08	0.33
2	PM_PEAK	1.13	0.48
3	AM_PEAK	1.04	0.2
3	PM_PEAK	1.05	0.23
4	AM_PEAK	1.01	0
4	PM_PEAK	1.11	0.36
5	AM_PEAK	1.01	0.06
5	PM_PEAK	1.1	0.42
6	AM_PEAK	1.1	0.43
6	PM_PEAK	1.15	0.43
7	AM_PEAK	1.25	0.46
7	PM_PEAK	1.01	0.04
8	AM_PEAK	1.1	0.26
8	PM_PEAK	1.01	0
9	AM_PEAK	1.01	0
9	PM_PEAK	1.15	0.28
10	AM_PEAK	1.01	0
10	PM_PEAK	1.4	0.77

District 5 – Travel Time Index and Buffer Index

SECT_ID	PERIOD	TTI	BTI
1	AM_PEAK	1.00	0.04
1	PM_PEAK	1.00	0.00
2	AM_PEAK	1.02	0.10
2	PM_PEAK	1.13	0.44
3	AM_PEAK	1.02	0.09
3	PM_PEAK	1.09	0.20
4	AM_PEAK	1.19	0.48
4	PM_PEAK	1.56	0.89
5	AM_PEAK	1.10	0.14
5	PM_PEAK	1.60	0.56
6	AM_PEAK	1.04	0.11
6	PM_PEAK	1.20	0.39
7	AM_PEAK	1.01	0.13
7	PM_PEAK	1.05	0.21
8	AM_PEAK	1.01	0.10
8	PM_PEAK	1.04	0.10
9	AM_PEAK	1.00	0.02
9	PM_PEAK	1.01	0.00
10	AM_PEAK	1.00	0.00
10	PM_PEAK	1.01	0.00
11	AM_PEAK	1.00	0.00
11	PM_PEAK	1.01	0.00
12	AM_PEAK	1.00	0.00
12	PM_PEAK	1.05	0.17
13	AM_PEAK	1.02	0.03
13	PM_PEAK	1.15	0.55
14	AM_PEAK	1.02	0.04
14	PM_PEAK	1.11	0.50
15	AM_PEAK	1.02	0.04
15	PM_PEAK	1.14	0.46
16	AM_PEAK	1.12	0.18
16	PM_PEAK	1.39	0.63
17	AM_PEAK	1.42	0.55
17	PM_PEAK	1.08	0.26
18	AM_PEAK	1.05	0.25
18	PM_PEAK	1.02	0.04
19	AM_PEAK	1.02	0.00
19	PM_PEAK	1.01	0.00
20	AM_PEAK	1.01	0.00
20	PM_PEAK	1.01	0.00
21	AM_PEAK	1.00	0.00
21	PM_PEAK	1.00	0.00
22	AM_PEAK	1.00	0.00
22	PM_PEAK	1.01	0.00
23	AM_PEAK	1.00	0.00
23	PM_PEAK	1.00	0.00
24	AM_PEAK	1.00	0.00
24	PM_PEAK	1.01	0.00
25	AM_PEAK	1.01	0.00
25	PM_PEAK	1.00	0.00
26	AM_PEAK	1.03	0.19
26	PM_PEAK	1.03	0.18
27	AM_PEAK	1.01	0.00
27	PM_PEAK	1.00	0.00
28	AM_PEAK	1.00	0.00
28	PM_PEAK	1.00	0.00
29	AM_PEAK	1.00	0.00
29	PM_PEAK	1.00	0.00
30	AM_PEAK	1.00	0.00
30	PM_PEAK	1.00	0.00
31	AM_PEAK	1.00	0.00
31	PM_PEAK	1.00	0.00
32	AM_PEAK	1.00	0.00
32	PM_PEAK	1.00	0.00
33	AM_PEAK	1.00	0.00
33	PM_PEAK	1.00	0.00
34	AM_PEAK	1.00	0.00
34	PM_PEAK	1.00	0.00
35	AM_PEAK	1.00	0.00
35	PM_PEAK	1.00	0.00
36	AM_PEAK	1.00	0.00
36	PM_PEAK	1.00	0.00
37	AM_PEAK	1.00	0.00
37	PM_PEAK	1.01	0.00
38	AM_PEAK	1.01	0.02
38	PM_PEAK	1.03	0.03
39	AM_PEAK	1.00	0.00
39	PM_PEAK	1.00	0.00
40	AM_PEAK	1.00	0.00
40	PM_PEAK	1.00	0.00
41	AM_PEAK	1.00	0.00
41	PM_PEAK	1.00	0.00
42	AM_PEAK	1.00	0.00
42	PM_PEAK	1.00	0.00
43	AM_PEAK	1.00	0.00
43	PM_PEAK	1.00	0.00
44	AM_PEAK	1.00	0.00
44	PM_PEAK	1.00	0.00
45	AM_PEAK	1.00	0.00
45	PM_PEAK	1.00	0.00
46	AM_PEAK	1.00	0.00
46	PM_PEAK	1.00	0.00
47	AM_PEAK	1.00	0.00
47	PM_PEAK	1.00	0.00
48	AM_PEAK	1.00	0.00
48	PM_PEAK	1.00	0.00
49	AM_PEAK	1.00	0.00
49	PM_PEAK	1.00	0.00
50	AM_PEAK	1.00	0.00
50	PM_PEAK	1.00	0.00

District 6 – Travel Time Index and Buffer Index

SECT_ID	PERIOD	TTI	BTI
1	AM_PEAK	1.11	0.2
1	PM_PEAK	1.06	0.2
2	AM_PEAK	1.14	0.41
2	PM_PEAK	1.11	0.26
3	AM_PEAK	1.01	0.05
3	PM_PEAK	1.07	0.33
4	AM_PEAK	1.07	0.32
4	PM_PEAK	1	0
5	AM_PEAK	1.03	0.07
5	PM_PEAK	1.02	0.04
6	AM_PEAK	1.24	0.43
6	PM_PEAK	1.42	0.78

District 7 – Travel Time Index and Buffer Index

SECT_ID	PERIOD	TTI	BTI
1	AM_PEAK	1.00	0.00
1	PM_PEAK	1.02	0.12
2	AM_PEAK	1.03	0.15
2	PM_PEAK	1.35	0.83
3	AM_PEAK	1.00	0.01
3	PM_PEAK	1.23	0.38
4	AM_PEAK	1.09	0.06
4	PM_PEAK	1.16	0.10
5	AM_PEAK	1.00	0.00
5	PM_PEAK	1.06	0.26
6	AM_PEAK	1.00	0.00
6	PM_PEAK	1.01	0.00
7	AM_PEAK	1.38	0.42
7	PM_PEAK	1.18	0.29
8	AM_PEAK	1.31	0.81
8	PM_PEAK	1.00	0.00
9	AM_PEAK	1.00	0.00
9	PM_PEAK	1.02	0.09
10	AM_PEAK	1.00	0.00
10	PM_PEAK	1.15	0.64
11	AM_PEAK	1.12	0.49
11	PM_PEAK	1.08	0.38
12	AM_PEAK	1.01	0.00
12	PM_PEAK	1.01	0.00
13	AM_PEAK	1.01	0.01
13	PM_PEAK	1.04	0.18
14	AM_PEAK	1.02	0.07
14	PM_PEAK	1.01	0.04

Quarterly Incident Duration

Performance Measures Report

Includes All Responders

District 7

Reporting Period: July 1, 2009 to September 30, 2009

Created on: July 29, 2010 12:20 pm

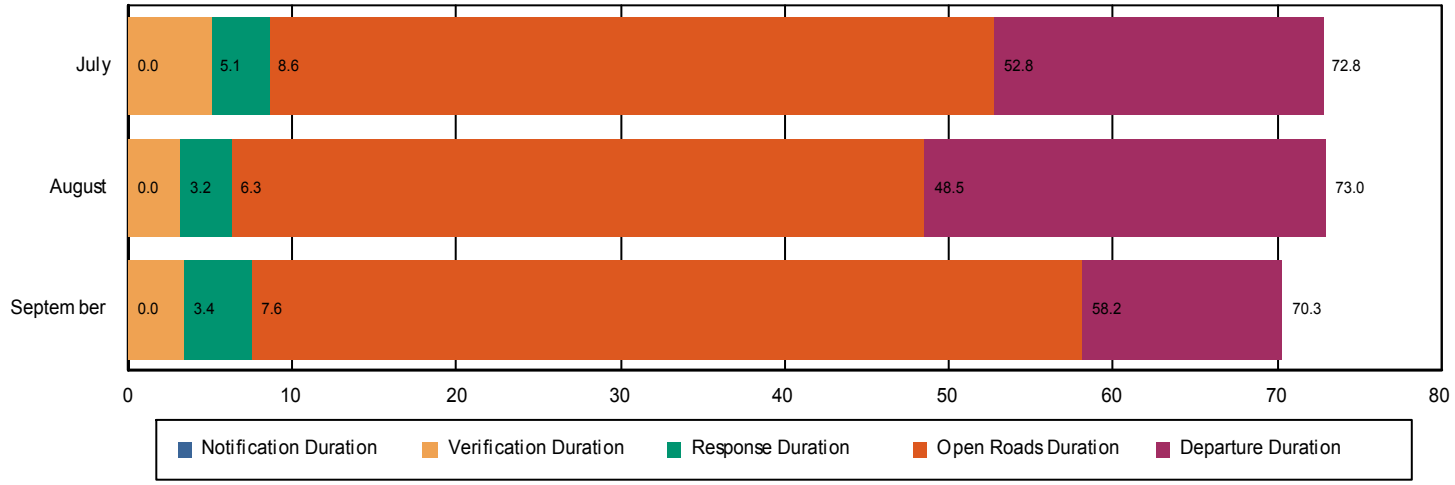
Report Template version 2.3.1

Performance Measures Summary

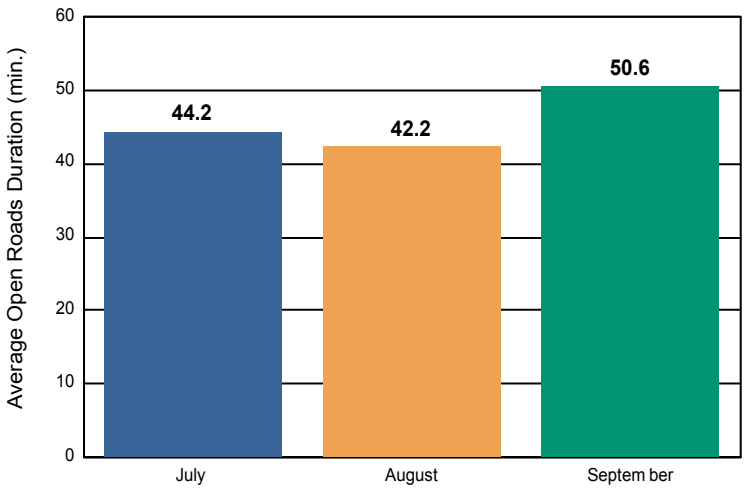
	July	August	September	Total
Events included in Performance Measures	116	100	91	307
Notification Duration (min.)*	0.0	0.0	0.0	0.0
Verification Duration (min.)	5.1	3.2	3.4	4.0
Response Duration (min.)	3.5	3.1	4.2	3.6
Open Roads Duration (min.)	44.2	42.2	50.6	45.5
Departure Duration (min.)	20.0	24.5	12.2	19.1
Roadway Clearance Duration (min.)	**52.8**	**48.5**	**58.2**	**53.0**
Incident Clearance Duration (min.)	**72.8**	**73.0**	**70.3**	**72.1**

*FHP Data is not available for Notification Duration

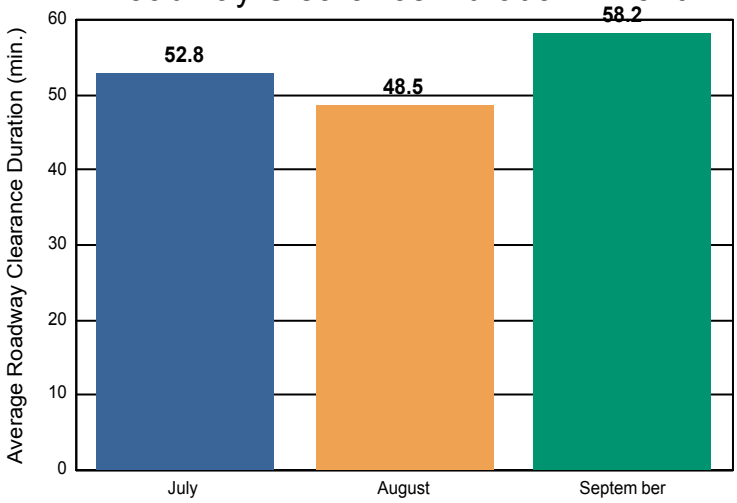
Incident Clearance Duration



Open Roads Duration / Month



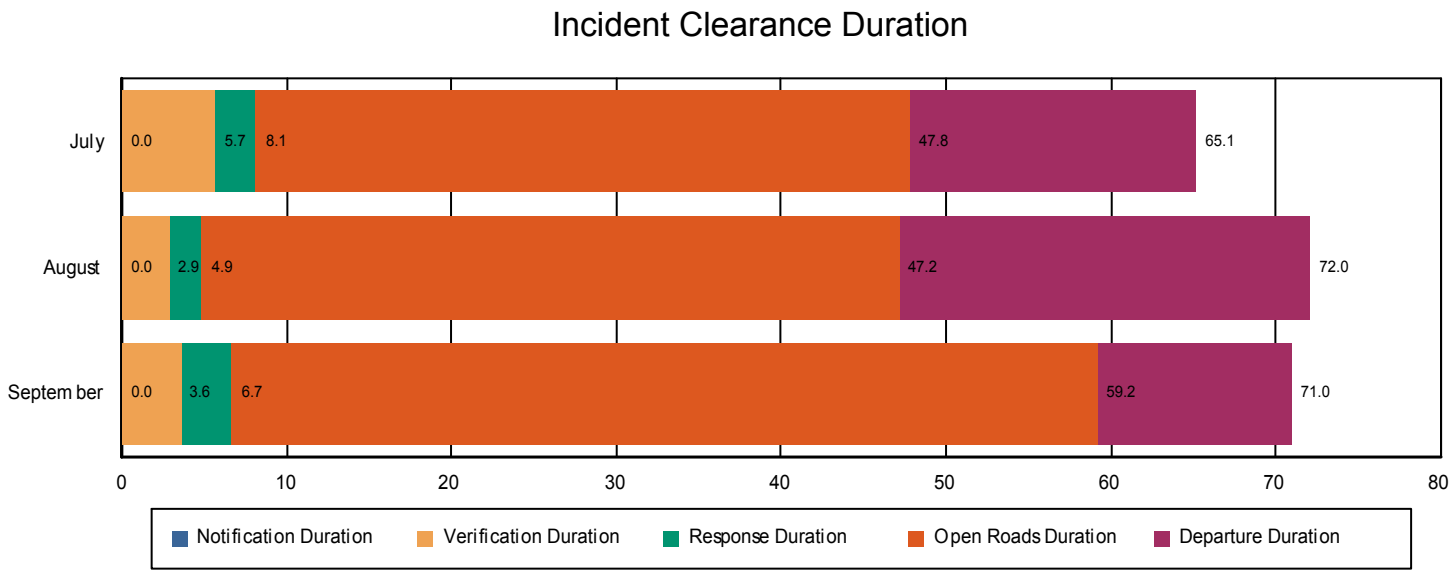
Roadway Clearance Duration / Month

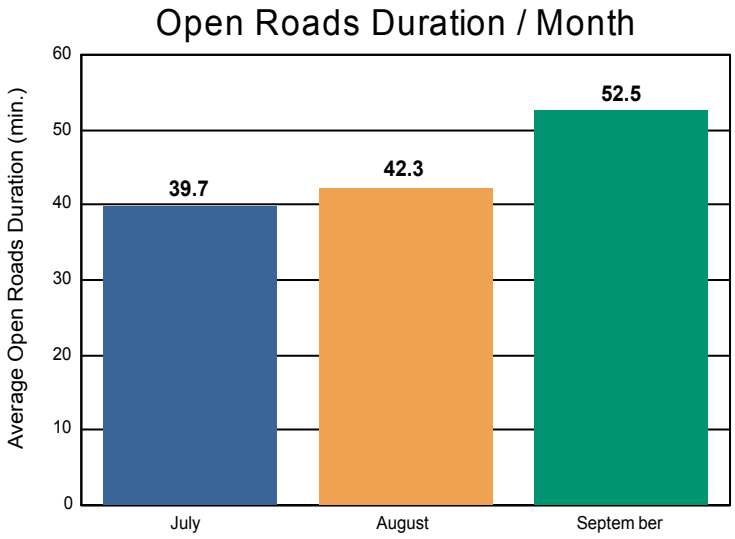


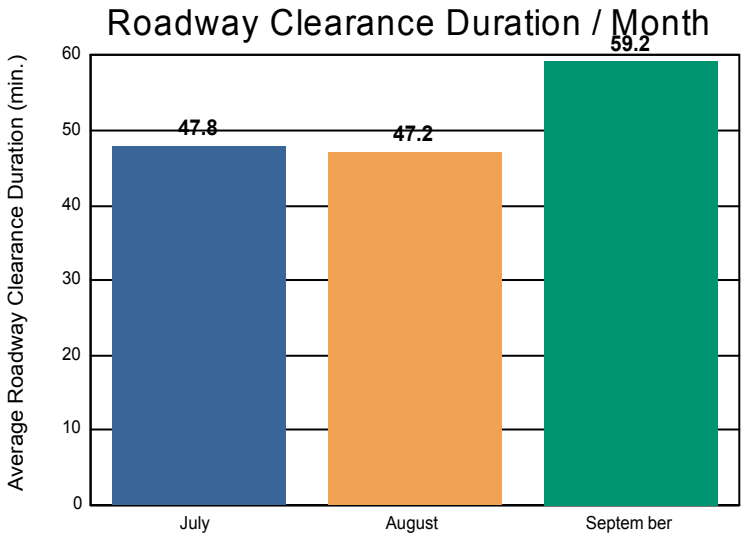
Performance Measures Summary

Incidents with Road Ranger Response

	July	August	September	Total
Events included in Performance Measures	86	72	76	234
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	5.7	2.9	3.6	4.1
Response Duration (min.)	2.4	2.0	3.1	2.5
Open Roads Duration (min.)	39.7	42.3	52.5	44.7
Departure Duration (min.)	17.3	24.9	11.8	17.8
Roadway Clearance Duration (min.)	**47.8**	**47.2**	**59.2**	**51.3**
Incident Clearance Duration (min.)	**65.1**	**72.0**	**71.0**	**69.1**



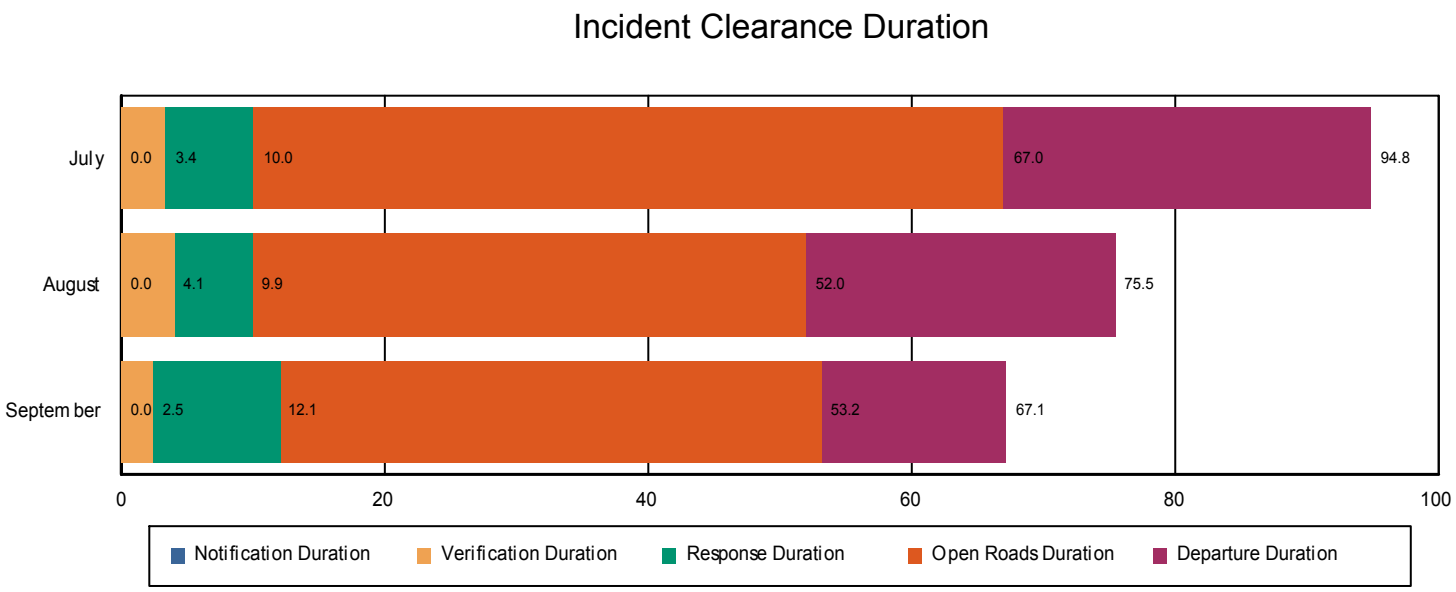


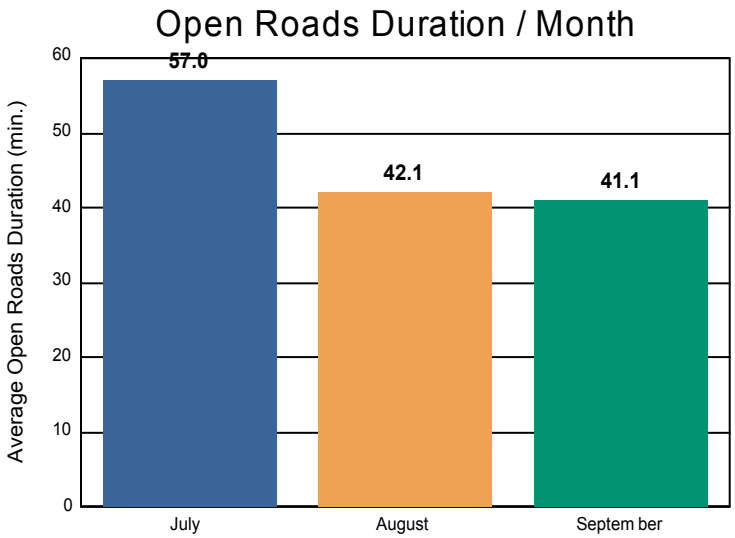


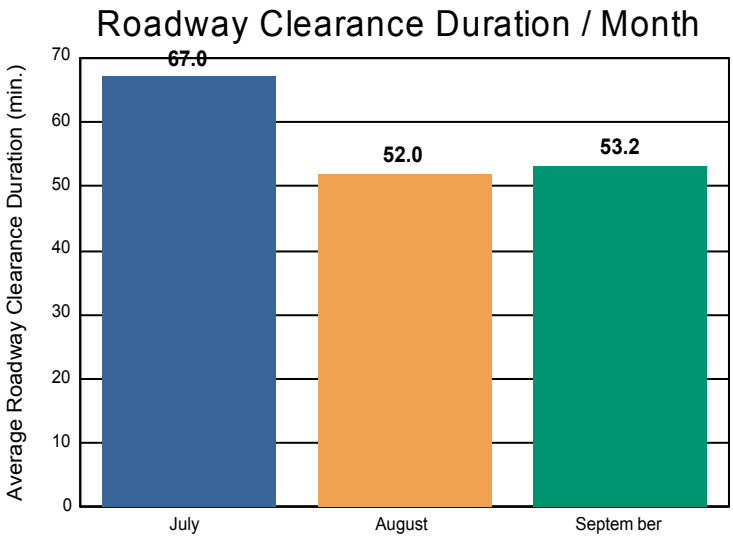
Performance Measures Summary

Incidents without Road Ranger Response

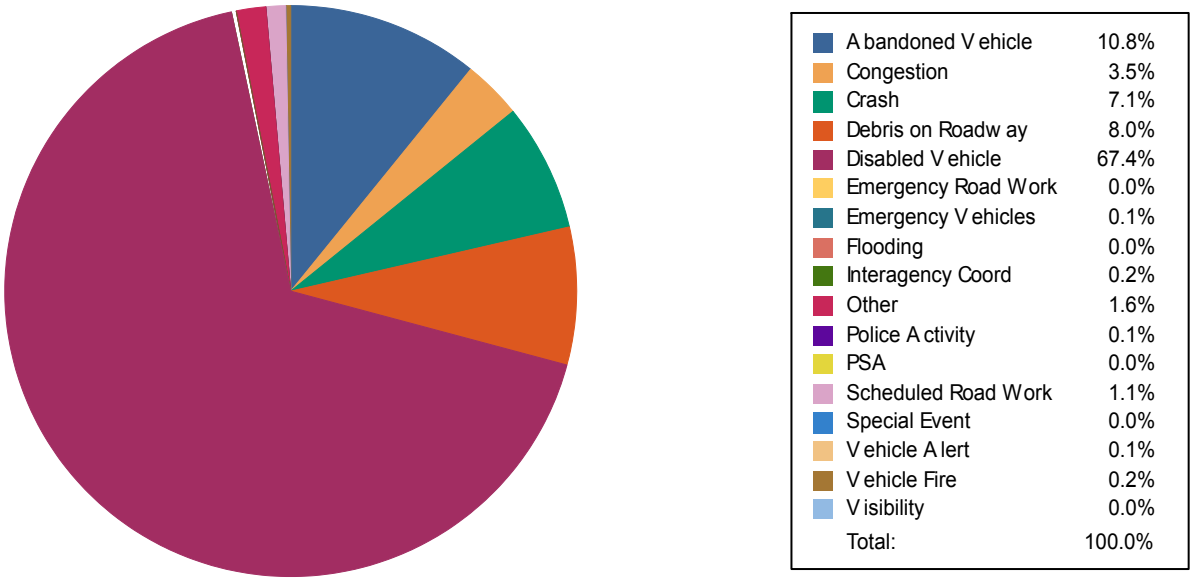
	July	August	September	Total
Events included in Performance Measures	30	28	15	73
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	3.4	4.1	2.5	3.5
Response Duration (min.)	6.7	5.9	9.6	7.0
Open Roads Duration (min.)	57.0	42.1	41.1	48.0
Departure Duration (min.)	27.8	23.4	14.0	23.3
Roadway Clearance Duration (min.)	**67.0**	**52.0**	**53.2**	**58.4**
Incident Clearance Duration (min.)	**94.8**	**75.5**	**67.1**	**81.7**







Percentage of event types for all events in current quarter



Event Types for all Events	July	August	September	Total
Abandoned Vehicle	492	546	634	**1,672**
Congestion	11	263	261	**535**
Crash	335	361	396	**1,092**
Debris on Roadway	378	419	436	**1,233**
Disabled Vehicle	3,033	3,585	3,818	**10,436**
Emergency Road Work	1	1	0	**2**
Emergency Vehicles	4	3	1	**8**
Flooding	0	1	2	**3**
Interagency Coord	9	4	11	**24**
Other	85	85	79	**249**
Police Activity	3	9	3	**15**
PSA	2	0	0	**2**
Scheduled Road Work	71	52	42	**165**
Special Event	1	0	0	**1**
Vehicle Alert	2	6	4	**12**
Vehicle Fire	5	8	11	**24**
Visibility	2	0	0	**2**
Total	**4,434**	**5,343**	**5,698**	**15,475**

Quarterly Incident Duration

Performance Measures Report

Includes All Responders

District 7

Reporting Period: October 1, 2009 to December 31, 2009

Created on: July 29, 2010 12:21 pm

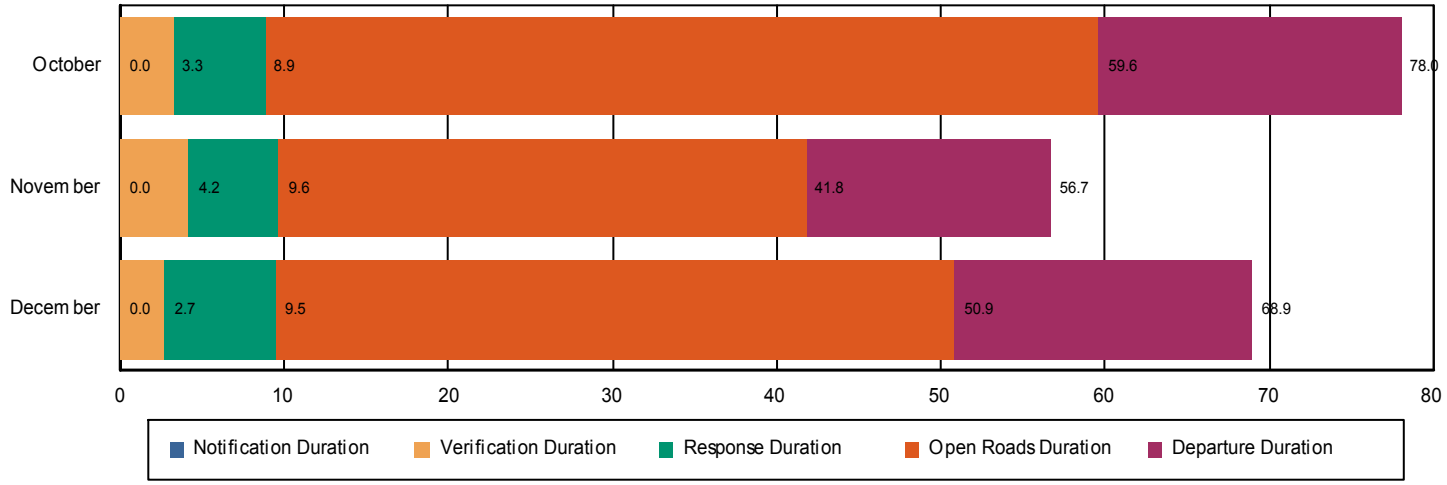
Report Template version 2.3.1

Performance Measures Summary

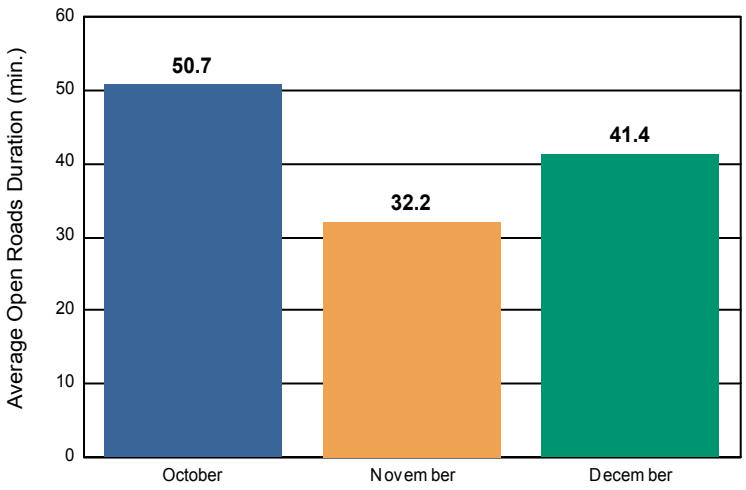
	October	November	December	Total
Events included in Performance Measures	108	99	112	319
Notification Duration (min.)*	0.0	0.0	0.0	0.0
Verification Duration (min.)	3.3	4.2	2.7	3.4
Response Duration (min.)	5.6	5.5	6.8	6.0
Open Roads Duration (min.)	50.7	32.2	41.4	41.7
Departure Duration (min.)	18.5	14.9	18.1	17.2
Roadway Clearance Duration (min.)	**59.6**	**41.8**	**50.9**	**51.0**
Incident Clearance Duration (min.)	**78.0**	**56.7**	**68.9**	**68.2**

*FHP Data is not available for Notification Duration

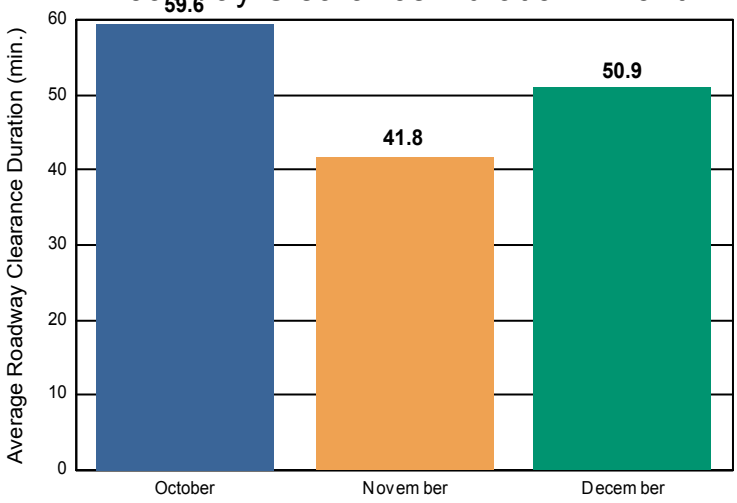
Incident Clearance Duration



Open Roads Duration / Month



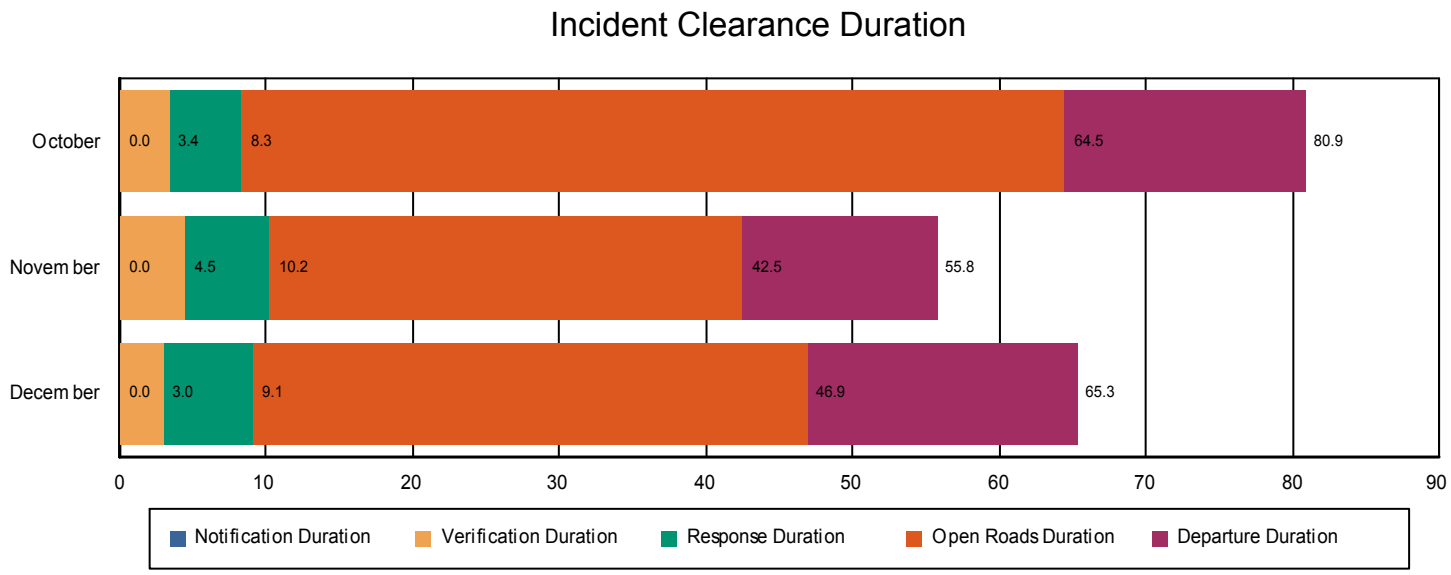
Roadway Clearance Duration / Month

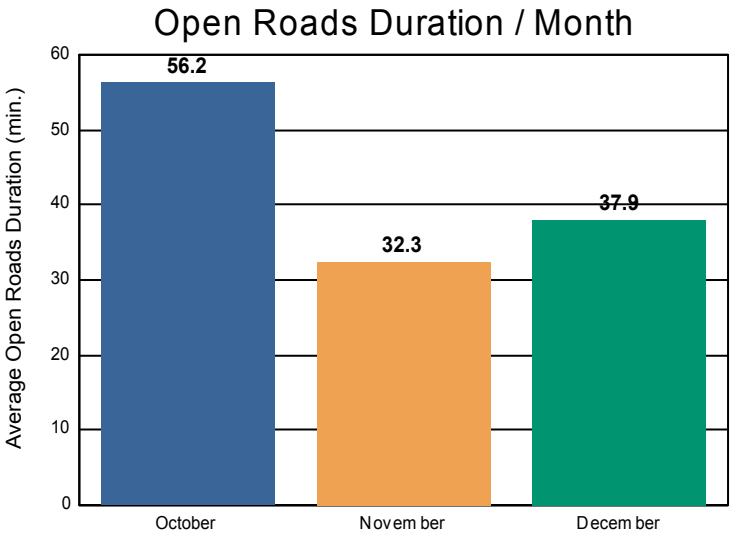


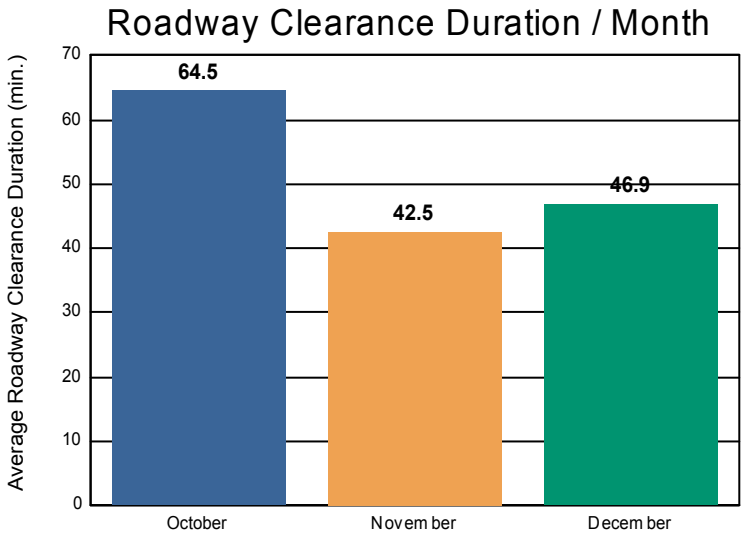
Performance Measures Summary

Incidents with Road Ranger Response

	October	November	December	Total
Events included in Performance Measures	80	88	81	249
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	3.4	4.5	3.0	3.7
Response Duration (min.)	4.9	5.7	6.1	5.6
Open Roads Duration (min.)	56.2	32.3	37.9	41.8
Departure Duration (min.)	16.4	13.3	18.4	15.9
Roadway Clearance Duration (min.)	**64.5**	**42.5**	**46.9**	**51.0**
Incident Clearance Duration (min.)	**80.9**	**55.8**	**65.3**	**66.9**



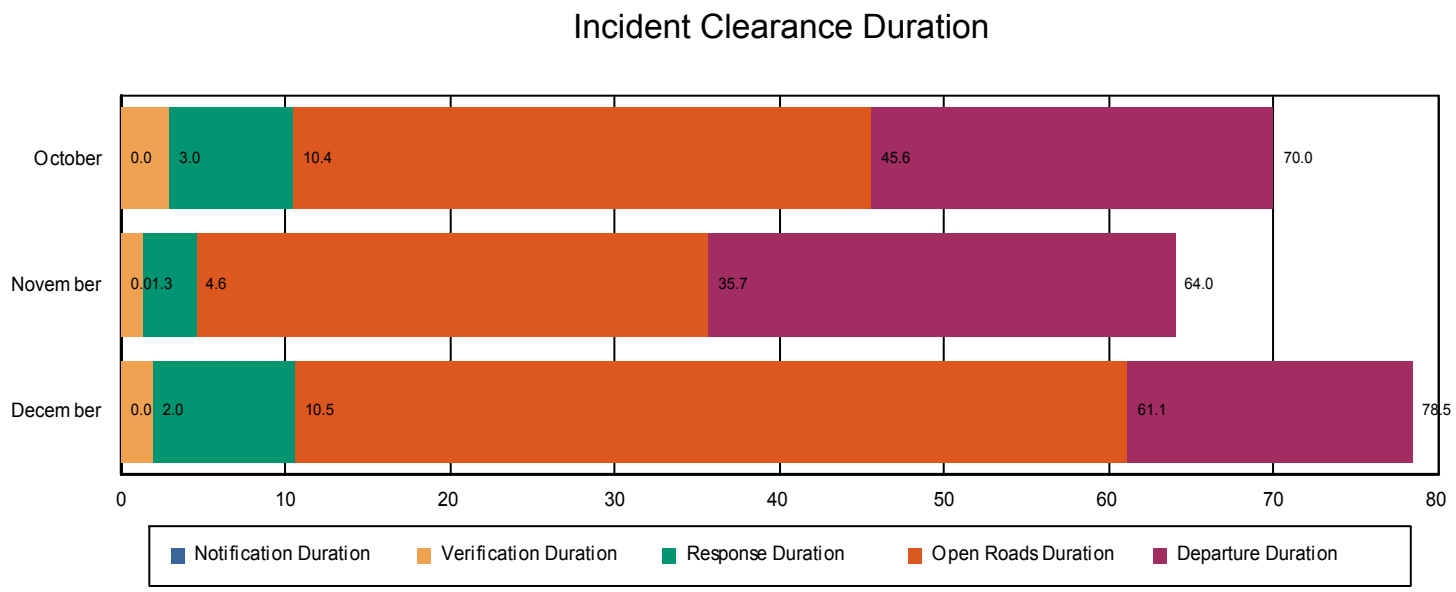


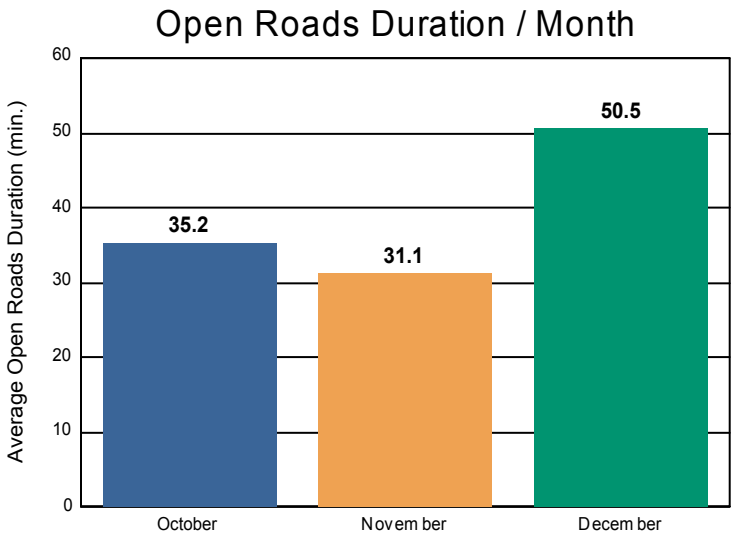


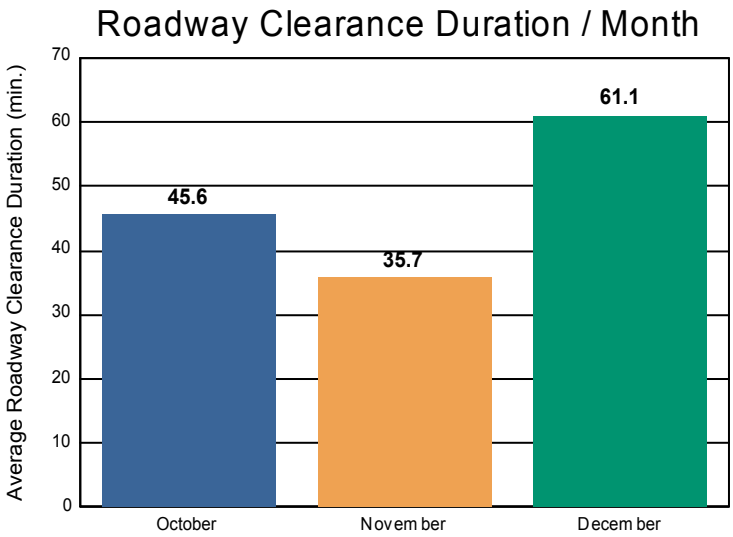
Performance Measures Summary

Incidents without Road Ranger Response

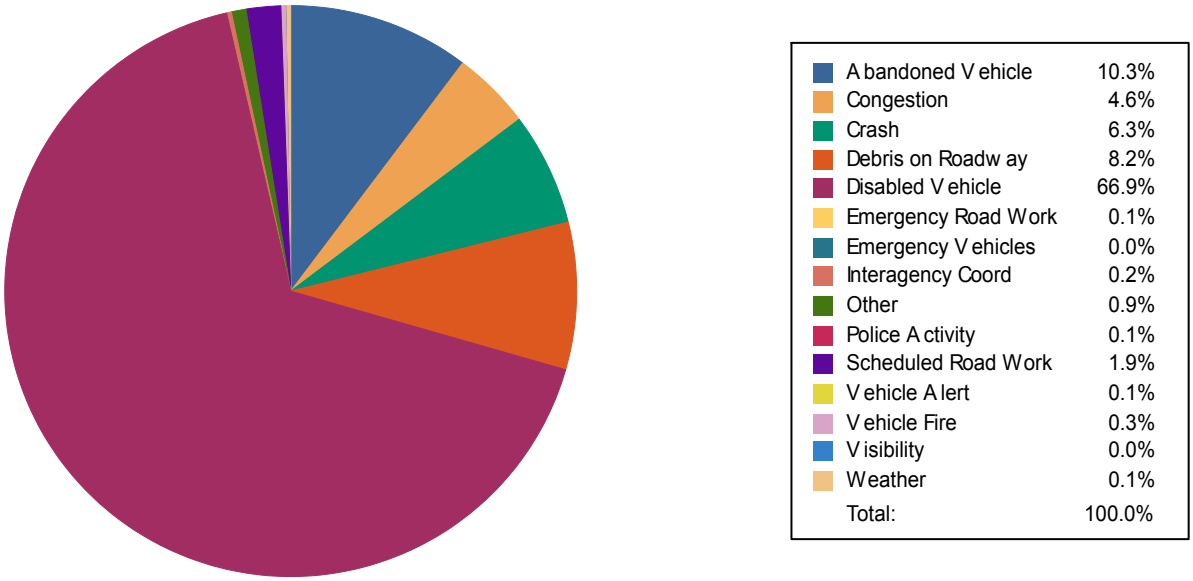
	October	November	December	Total
Events included in Performance Measures	28	11	31	70
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	3.0	1.3	2.0	2.3
Response Duration (min.)	7.5	3.3	8.6	7.3
Open Roads Duration (min.)	35.2	31.1	50.5	41.4
Departure Duration (min.)	24.4	28.3	17.4	21.9
Roadway Clearance Duration (min.)	**45.6**	**35.7**	**61.1**	**50.9**
Incident Clearance Duration (min.)	**70.0**	**64.0**	**78.5**	**72.8**







Percentage of event types for all events in current quarter



Event Types for all Events	October	November	December	Total
Abandoned Vehicle	600	526	617	**1,743**
Congestion	281	233	258	**772**
Crash	365	346	351	**1,062**
Debris on Roadway	493	416	487	**1,396**
Disabled Vehicle	3,972	3,556	3,814	**11,342**
Emergency Road Work	1	5	5	**11**
Emergency Vehicles	3	1	2	**6**
Interagency Coord	12	7	14	**33**
Other	76	42	36	**154**
Police Activity	3	3	5	**11**
Scheduled Road Work	114	106	101	**321**
Vehicle Alert	6	8	8	**22**
Vehicle Fire	22	10	15	**47**
Visibility	0	1	4	**5**
Weather	0	11	14	**25**
Total	**5,948**	**5,271**	**5,731**	**16,950**

Quarterly Incident Duration

Performance Measures Report

Includes All Responders

District 7

Reporting Period: January 1, 2010 to March 31, 2010

Created on: July 29, 2010 12:17 pm

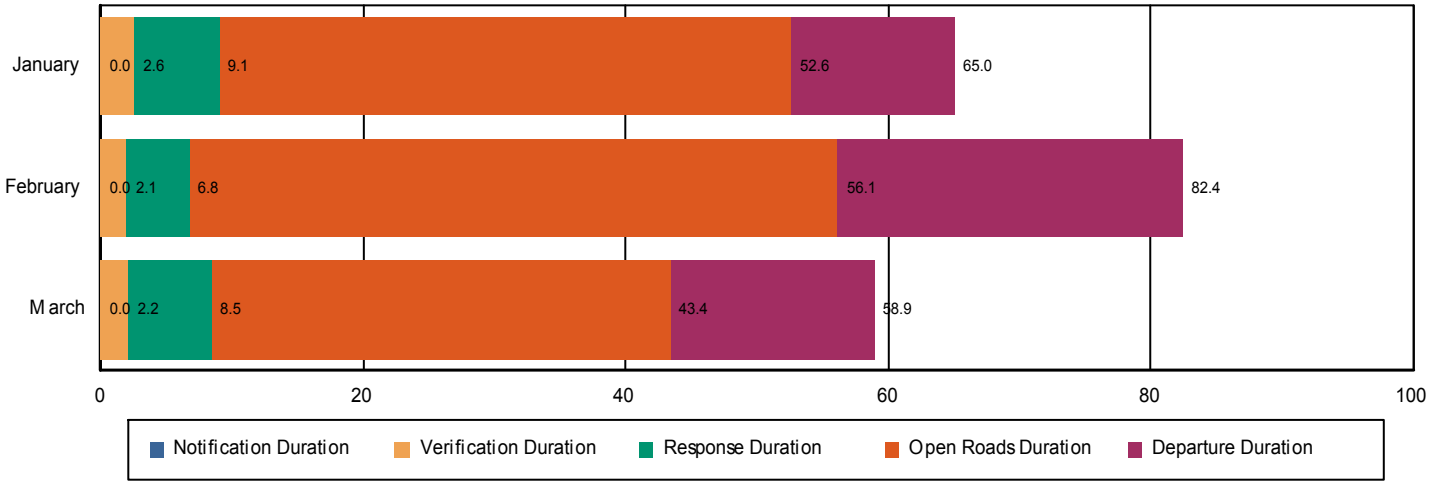
Report Template version 2.3.1

Performance Measures Summary

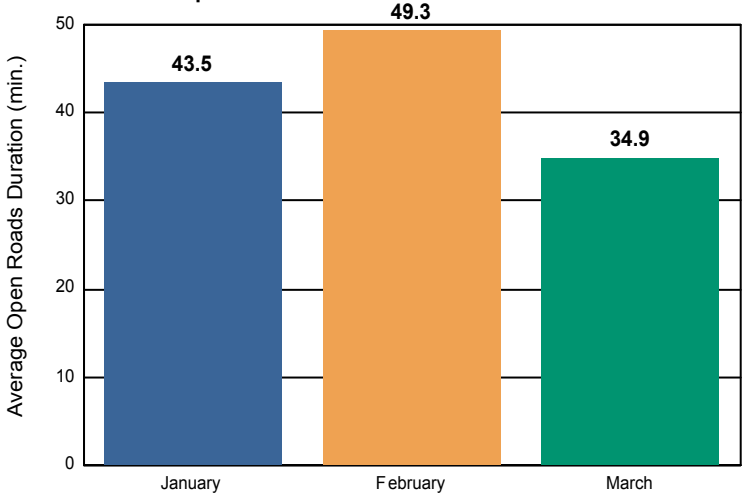
	January	February	March	Total
Events included in Performance Measures	111	91	123	325
Notification Duration (min.)*	0.0	0.0	0.0	0.0
Verification Duration (min.)	2.6	2.1	2.2	2.3
Response Duration (min.)	6.5	4.8	6.3	5.9
Open Roads Duration (min.)	43.5	49.3	34.9	41.9
Departure Duration (min.)	12.4	26.2	15.5	17.5
Roadway Clearance Duration (min.)	**52.6**	**56.1**	**43.4**	**50.1**
Incident Clearance Duration (min.)	**65.0**	**82.4**	**58.9**	**67.6**

*FHP Data is not available for Notification Duration

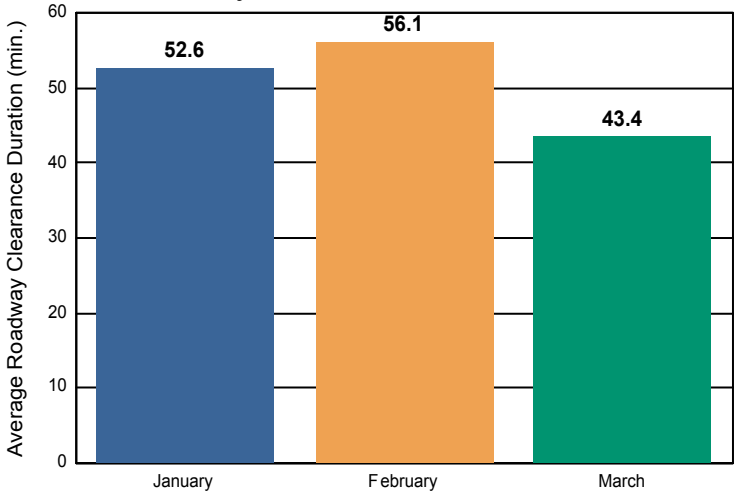
Incident Clearance Duration



Open Roads Duration / Month



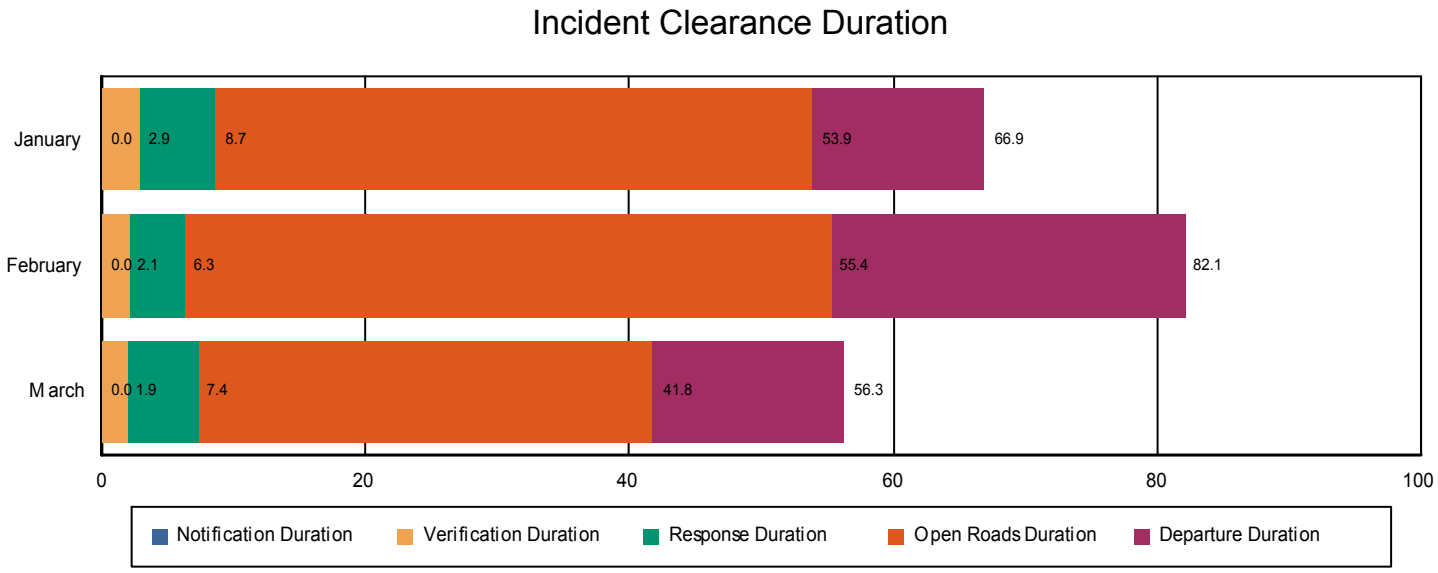
Roadway Clearance Duration / Month

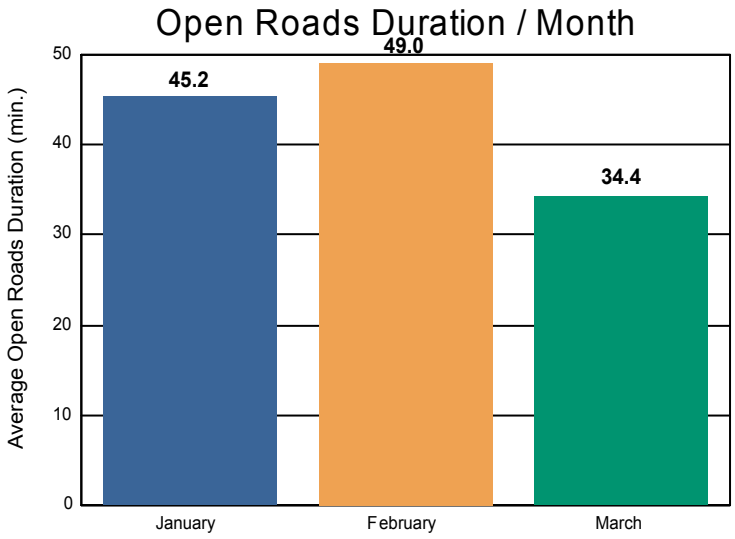


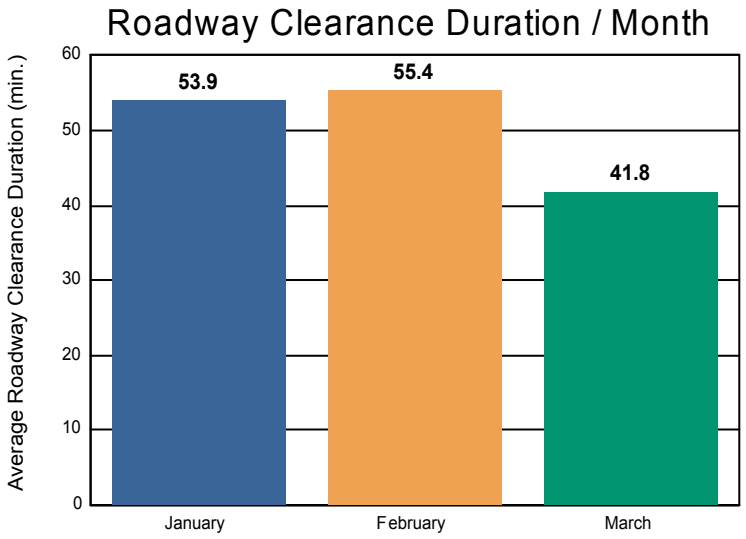
Performance Measures Summary

Incidents with Road Ranger Response

	January	February	March	Total
Events included in Performance Measures	90	74	102	266
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	2.9	2.1	1.9	2.3
Response Duration (min.)	5.8	4.2	5.5	5.2
Open Roads Duration (min.)	45.2	49.0	34.4	42.1
Departure Duration (min.)	13.0	26.8	14.6	17.4
Roadway Clearance Duration (min.)	**53.9**	**55.4**	**41.8**	**49.7**
Incident Clearance Duration (min.)	**66.9**	**82.1**	**56.3**	**67.1**



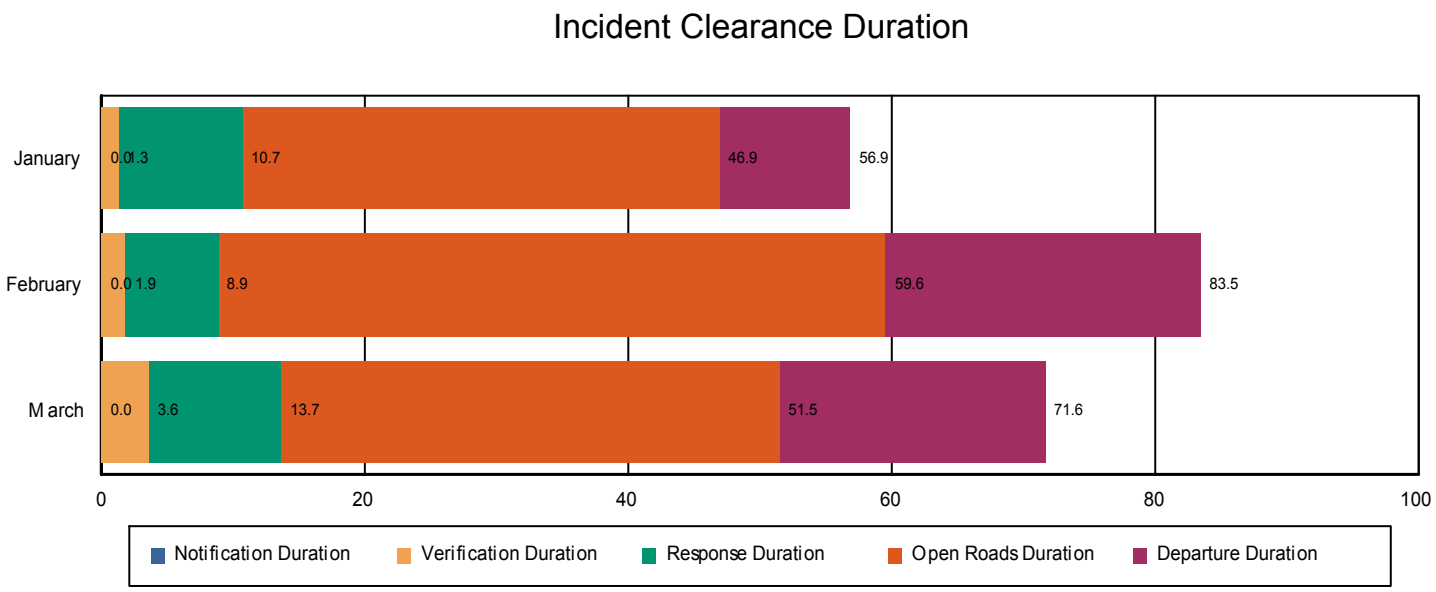


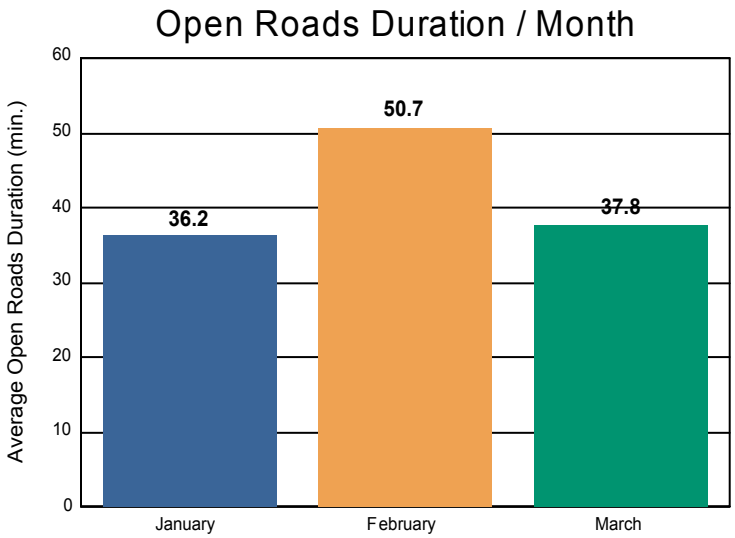


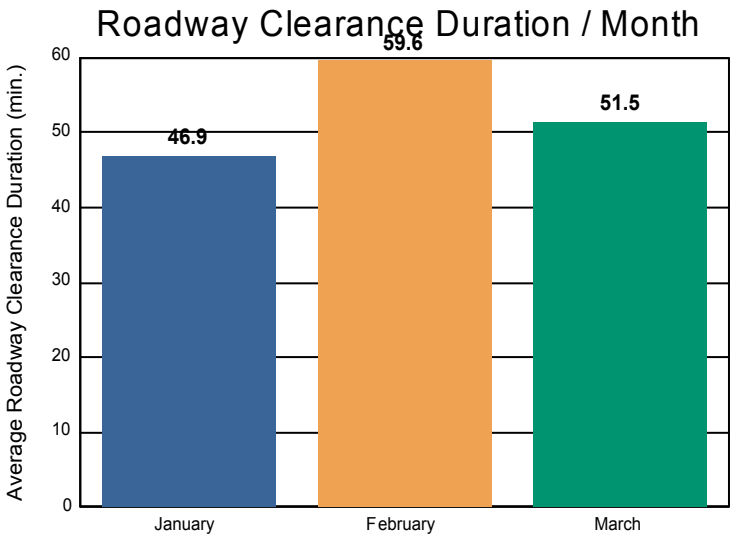
Performance Measures Summary

Incidents without Road Ranger Response

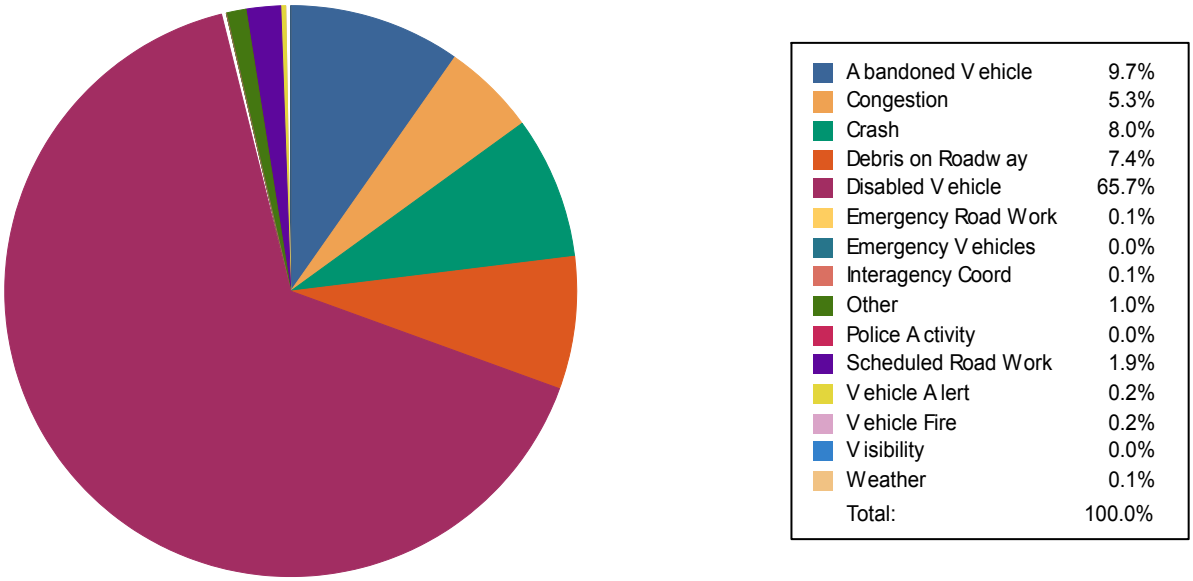
	January	February	March	Total
Events included in Performance Measures	21	17	21	59
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	1.3	1.9	3.6	2.3
Response Duration (min.)	9.4	7.1	10.1	9.0
Open Roads Duration (min.)	36.2	50.7	37.8	40.9
Departure Duration (min.)	9.9	23.9	20.1	17.6
Roadway Clearance Duration (min.)	**46.9**	**59.6**	**51.5**	**52.2**
Incident Clearance Duration (min.)	**56.9**	**83.5**	**71.6**	**69.8**







Percentage of event types for all events in current quarter



Event Types for all Events

Event Types for all Events	January	February	March	Total
Abandoned Vehicle	574	474	530	**1,578**
Congestion	245	281	339	**865**
Crash	387	424	493	**1,304**
Debris on Roadway	401	344	460	**1,205**
Disabled Vehicle	3,531	3,262	3,883	**10,676**
Emergency Road Work	12	2	3	**17**
Emergency Vehicles	3	2	1	**6**
Interagency Coord	5	4	8	**17**
Other	58	52	51	**161**
Police Activity	3	3	2	**8**
Scheduled Road Work	104	90	119	**313**
Vehicle Alert	8	8	11	**27**
Vehicle Fire	15	9	12	**36**
Visibility	3	4	0	**7**
Weather	7	3	8	**18**
Total	**5,356**	**4,962**	**5,920**	**16,238**

Quarterly Incident Duration

Performance Measures Report

Includes All Responders

District 7

Reporting Period: April 1, 2010 to June 30, 2010

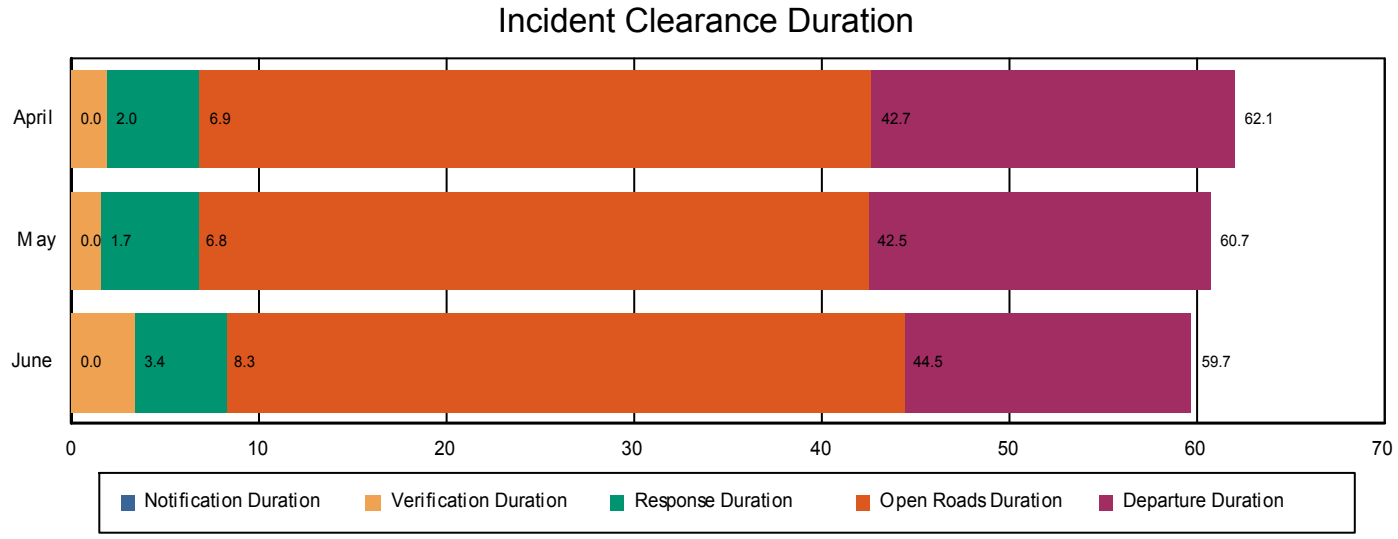
Created on: July 29, 2010 12:10 pm

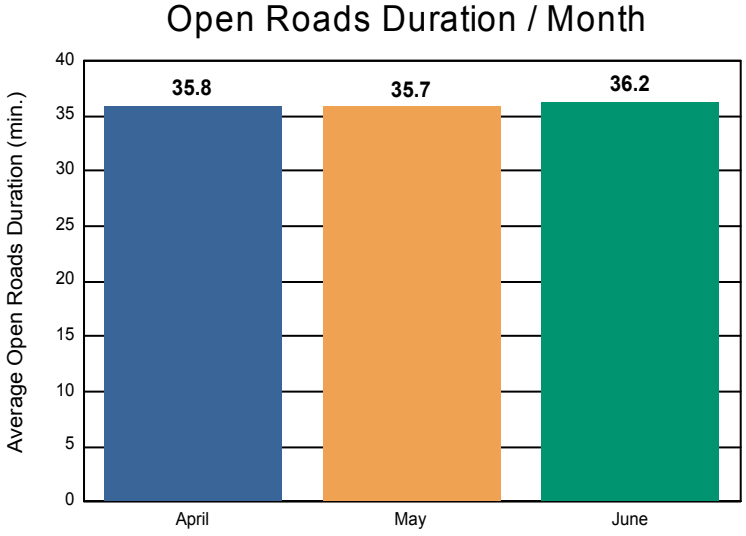
Report Template version 2.3.1

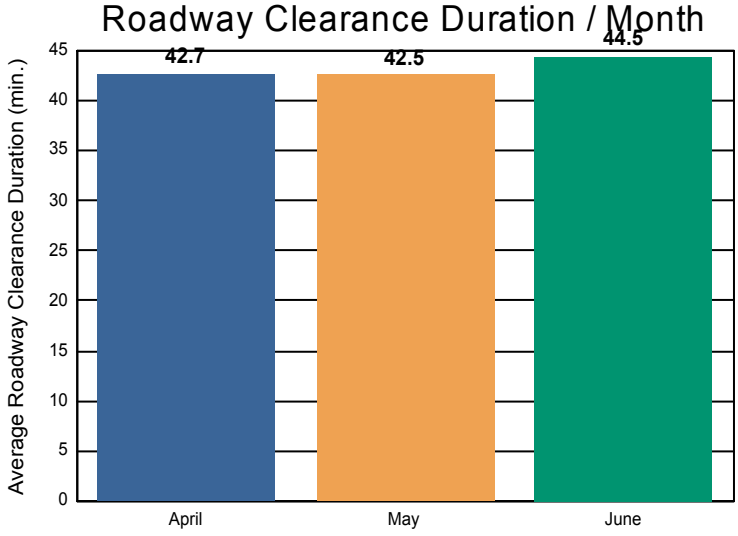
Performance Measures Summary

	April	May	June	Total
Events included in Performance Measures	125	120	107	352
Notification Duration (min.)*	0.0	0.0	0.0	0.0
Verification Duration (min.)	2.0	1.7	3.4	2.3
Response Duration (min.)	4.9	5.1	4.8	4.9
Open Roads Duration (min.)	35.8	35.7	36.2	35.9
Departure Duration (min.)	19.4	18.2	15.3	17.7
Roadway Clearance Duration (min.)	**42.7**	**42.5**	**44.5**	**43.2**
Incident Clearance Duration (min.)	**62.1**	**60.7**	**59.7**	**60.9**

*FHP Data is not available for Notification Duration



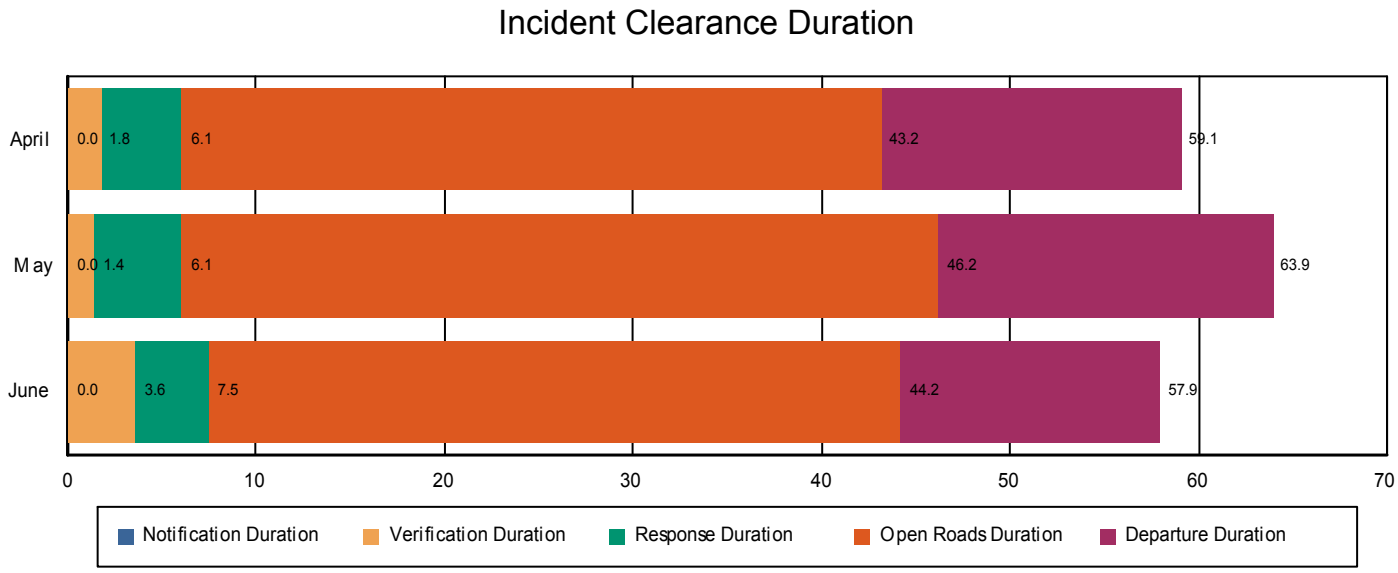


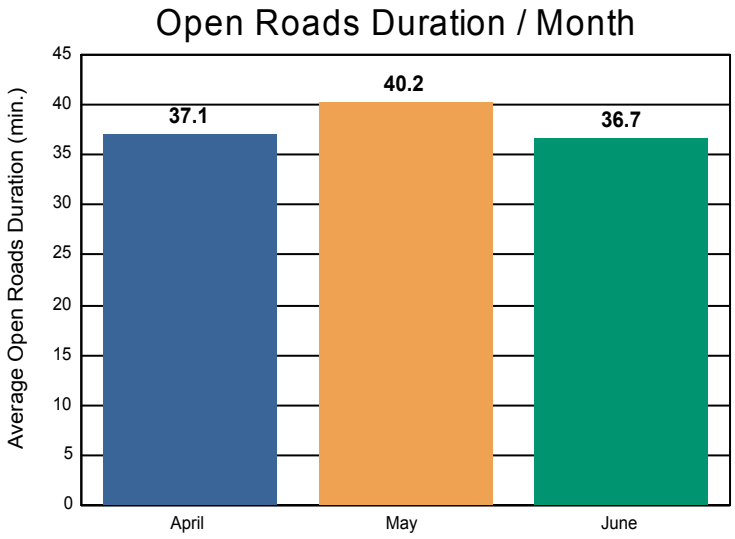


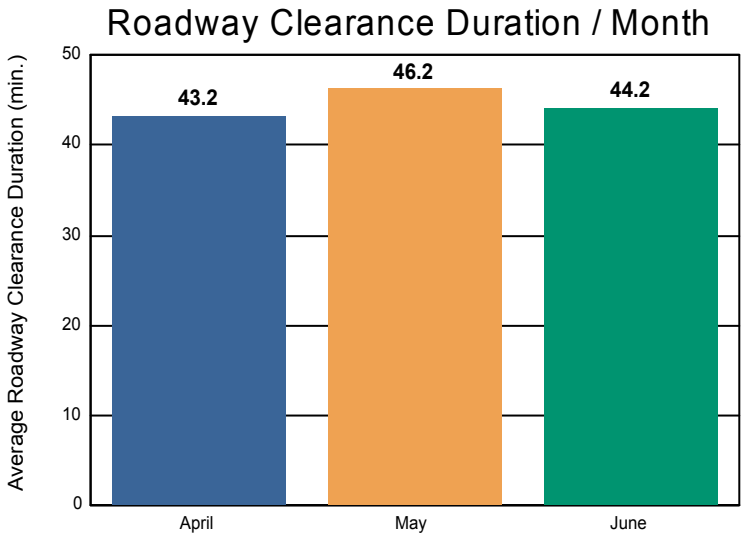
Performance Measures Summary

Incidents with Road Ranger Response

	April	May	June	Total
Events included in Performance Measures	97	97	90	284
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	1.8	1.4	3.6	2.2
Response Duration (min.)	4.3	4.7	3.9	4.3
Open Roads Duration (min.)	37.1	40.2	36.7	38.0
Departure Duration (min.)	15.9	17.7	13.7	15.8
Roadway Clearance Duration (min.)	**43.2**	**46.2**	**44.2**	**44.5**
Incident Clearance Duration (min.)	**59.1**	**63.9**	**57.9**	**60.4**



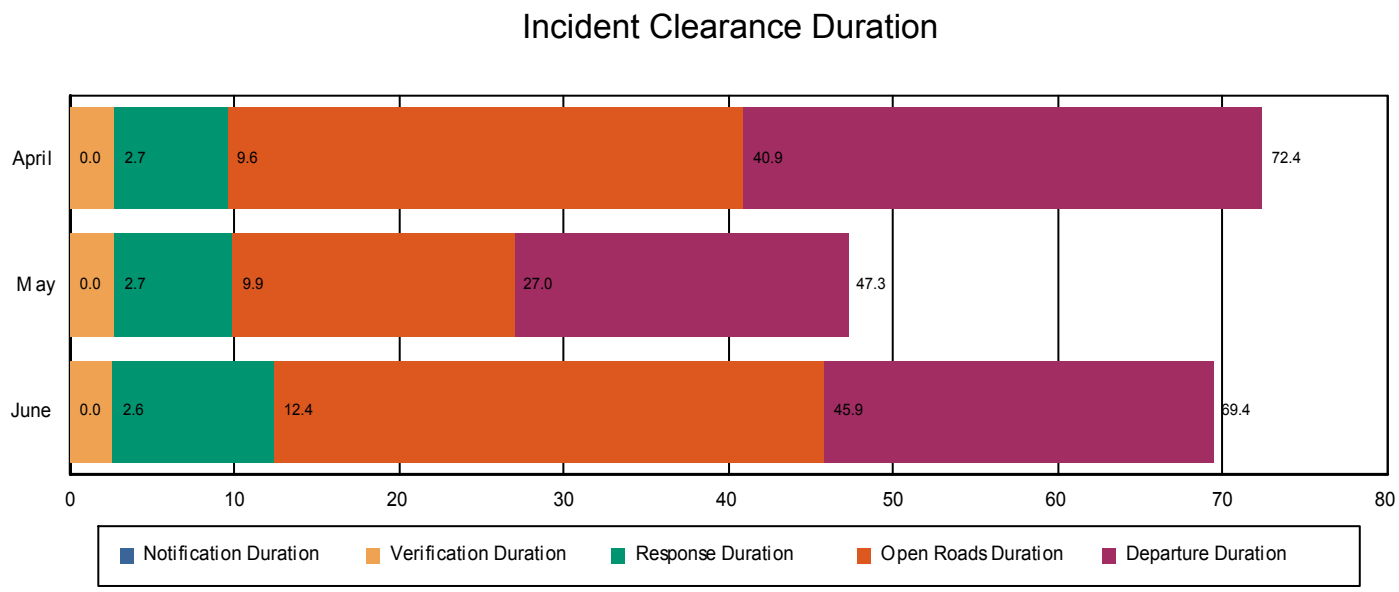


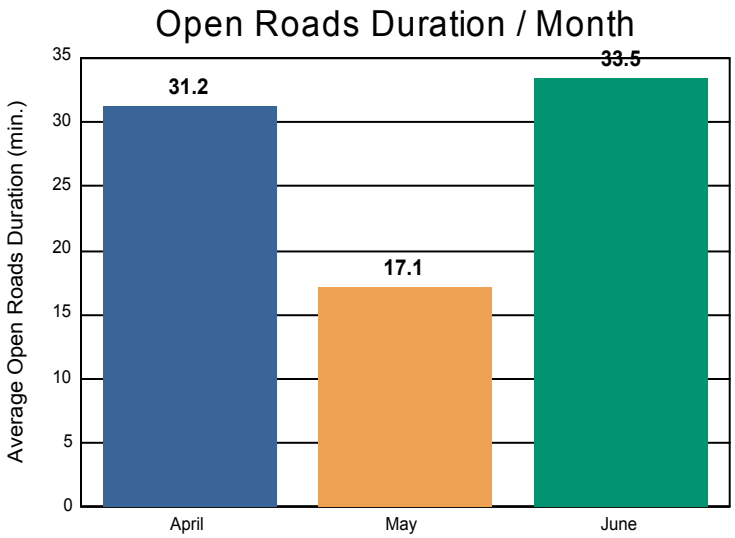


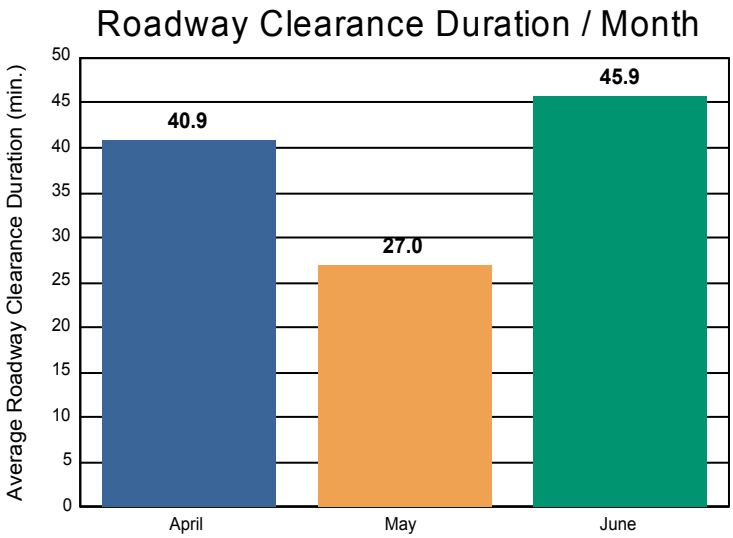
Performance Measures Summary

Incidents without Road Ranger Response

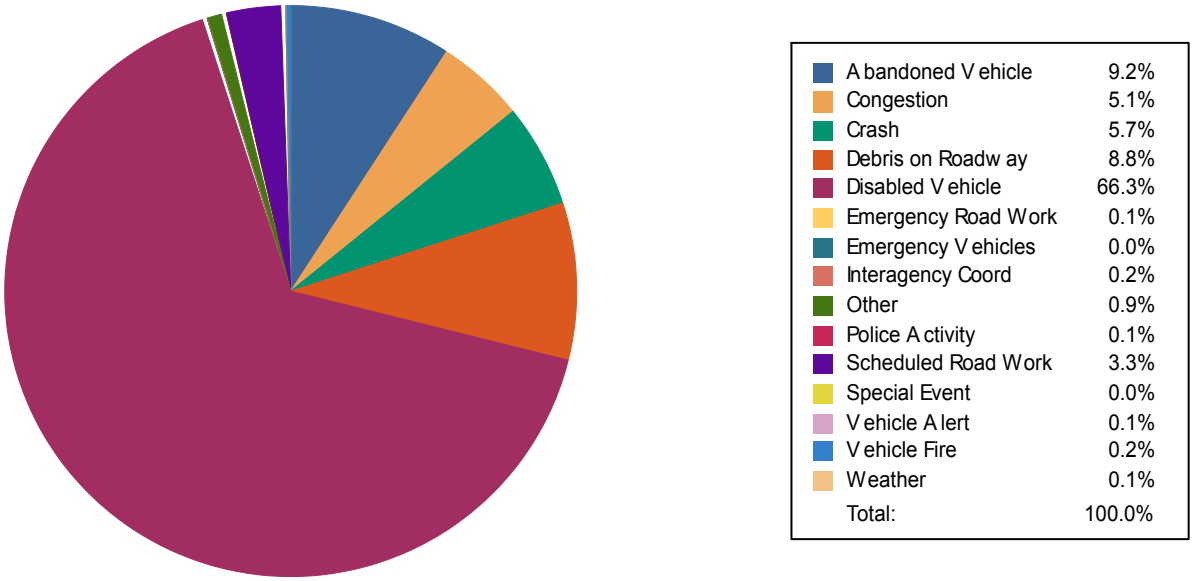
	April	May	June	Total
Events included in Performance Measures	28	23	17	68
Notification Duration (min.)	0.0	0.0	0.0	0.0
Verification Duration (min.)	2.7	2.7	2.6	2.7
Response Duration (min.)	7.0	7.1	9.8	7.7
Open Roads Duration (min.)	31.2	17.1	33.5	27.0
Departure Duration (min.)	31.5	20.3	23.6	25.7
Roadway Clearance Duration (min.)	**40.9**	**27.0**	**45.9**	**37.4**
Incident Clearance Duration (min.)	**72.4**	**47.3**	**69.4**	**63.2**







Percentage of event types for all events in current quarter



Event Types for all Events

Event Types for all Events	April	May	June	Total
Abandoned Vehicle	568	569	576	**1,713**
Congestion	345	293	305	**943**
Crash	389	339	340	**1,068**
Debris on Roadway	480	605	565	**1,650**
Disabled Vehicle	4,132	3,988	4,244	**12,364**
Emergency Road Work	8	2	11	**21**
Emergency Vehicles	1	1	5	**7**
Interagency Coord	9	11	10	**30**
Other	54	50	57	**161**
Police Activity	0	8	3	**11**
Scheduled Road Work	148	240	226	**614**
Special Event	1	0	1	**2**
Vehicle Alert	4	11	11	**26**
Vehicle Fire	19	12	9	**40**
Weather	7	2	3	**12**
Total	**6,165**	**6,131**	**6,366**	**18,662**

Appendix A
Sample STEWARD Report Output

<StewardReport>
<Title>Performance measure</Title>
<Facility>1</Facility>
<Direction>1</Direction>
<StartStation>I-4 East of 532</StartStation>
<EndStation>I-4 Between 532 and 545</EndStation>
<StartDate>12/6/2009</StartDate>
<EndDate>12/12/2009</EndDate>
<StartTime>0:00</StartTime>
<EndTime>23:59</EndTime>
<DayOfWeek>all_days</DayOfWeek>
</StewardReport>

SEGMENT	MP	LENGTH	AVERAGE VOLUME	LANES	VOL per LANE	VEH-MILES	VEH-HOURS	SPEED	DELAY (Veh-Hr)	KINETIC ENERGY	PERCENT OBSERVATIONS	DENSITY	V/C RATIO	LOS
I-4 East of 532														
I-4 Between 532 and 545	58.7	0.2	42446	3	590	8489	128	66.4	0	2.82	100	21.4	0.66	C
Totals:		0.2				8489	128	66.3	0	2.82				

Appendix B

Tampa – Hillsborough Expressway Authority Data Sources

- *2009 Traffic and Revenue Update (excerpt)*

CHAPTER 3

TRAFFIC DATA COLLECTION

For this study, extensive data collection efforts were made to understand current traffic conditions and traffic profiles on the THCEA system and major highways. The data collection focused on obtaining current traffic count profiles on the Selmon Expressway and congestion levels on the freeways and major highways. This chapter of the report explains the data collection activities and presents the results of the data collection.

AUTOMATIC TRAFFIC COUNTS

To obtain current traffic profiles on the Selmon Expressway, automatic traffic counts were conducted over a 48-hour period on all ramps on the Expressway system and the several REL mainlines. The location of the traffic counts is shown in Table 3-1.

The traffic counts were conducted by Florida Transportation Engineering, Inc. (FTE) for the weekday period between February 23, 2009 and March 6, 2009. FTE used automatic traffic counting devices on each of the count locations to capture traffic volumes passing the location. The counts recorded in each location were classified by vehicle class. The counts were also summarized by hour.

For all count locations, traffic volumes by vehicle class were captured for at least 48 hours. Most count locations were recorded with 72-hour-long traffic volumes. On each count location, an average weekday traffic volume was obtained from the 2-day or 3-day data. For comparison purposes, WSA also obtained the 2008 traffic counts on the Selmon Expressway which were collected in September and October of 2008. For the ramp and mainline toll plaza locations, actual toll traffic data collected in February of 2009 was used to compare with the traffic counts obtained by FTE. In addition, WSA reviewed the counts recorded in Florida Traffic Information CD for Tampa Bay Area and used for model calibration.

Table 3-1
Location of Automatic Traffic Counts

Location ID	Count Location	Location ID	Count Location
1	Brandon Connector Eastbound	27	Kennedy Blvd. Off-ramp Westbound
2	Brandon Connector Westbound	28	Jefferson St. On-ramp Eastbound
3	I-75 Northbound	29	Morgan St. On-ramp Westbound
4	I-75 Southbound	30	Morgan St. Off-ramp Westbound
5	I-75 Northbound to Crosstown Westbound	31	Morgan St. Off-ramp Eastbound
6	I-75 Southbound to Crosstown Westbound	32	Tampa St. On-ramp Westbound
7	Falkenburg Rd. On-ramp Westbound	33	Plant Ave. Off-ramp Westbound
8	Falkenburg Rd. Off-ramp Eastbound	34	Plant Ave. On-ramp Eastbound
9	US 301 Off-ramp Westbound	35	Willow Ave. Off-ramp Westbound
10	US 301 On-ramp Eastbound	36	Willow Ave. On-ramp Eastbound
11	US 301 On-ramp Westbound	37	Willow Ave. On-ramp Westbound
12	US 301 Off-ramp Eastbound	38	Willow Ave. Off-ramp Eastbound
13	78th St. On-ramp Westbound	39	Bay To Bay Blvd. On-ramp Eastbound
14	78th St. Off-ramp Eastbound	40	Bay To Bay Blvd. Off-ramp Westbound
15	50th St. Off-ramp Westbound	41	Euclid Ave. On-ramp Eastbound
16	50th St. On-ramp Westbound	42	Euclid Ave. Off-ramp Westbound
17	50th St. Off-ramp Eastbound	43	Dale Mabry Hwy. On-ramp Eastbound
18	50th St. On-ramp Eastbound	44	Gandy Blvd. Off-ramp Westbound
19	39th St. Off-ramp Westbound	45	Gandy Blvd. On-ramp Eastbound
20	39th St. On-ramp Westbound	46	Gandy Blvd. Off-ramp Eastbound
21	39th St. On-ramp Eastbound	47	REL Off-ramp Westbound to Mainlanes - US 301
22	22nd St. Off-ramp Eastbound	48	REL On-ramp Westbound from Mainlanes - 78th St.
23	22nd St. On-ramp Eastbound	49	REL On-ramp Eastbound from Mainlanes - US 301
24	22nd St. Off-ramp Westbound	50	REL Off-ramp Eastbound to Mainlanes - 78th St.
25	22nd St. On-ramp Westbound	51	REL On-ramp Eastbound from Mainlanes - 39th St.
26	Nebraska Ave. On-ramp Eastbound	52	REL to/from Twiggs St.

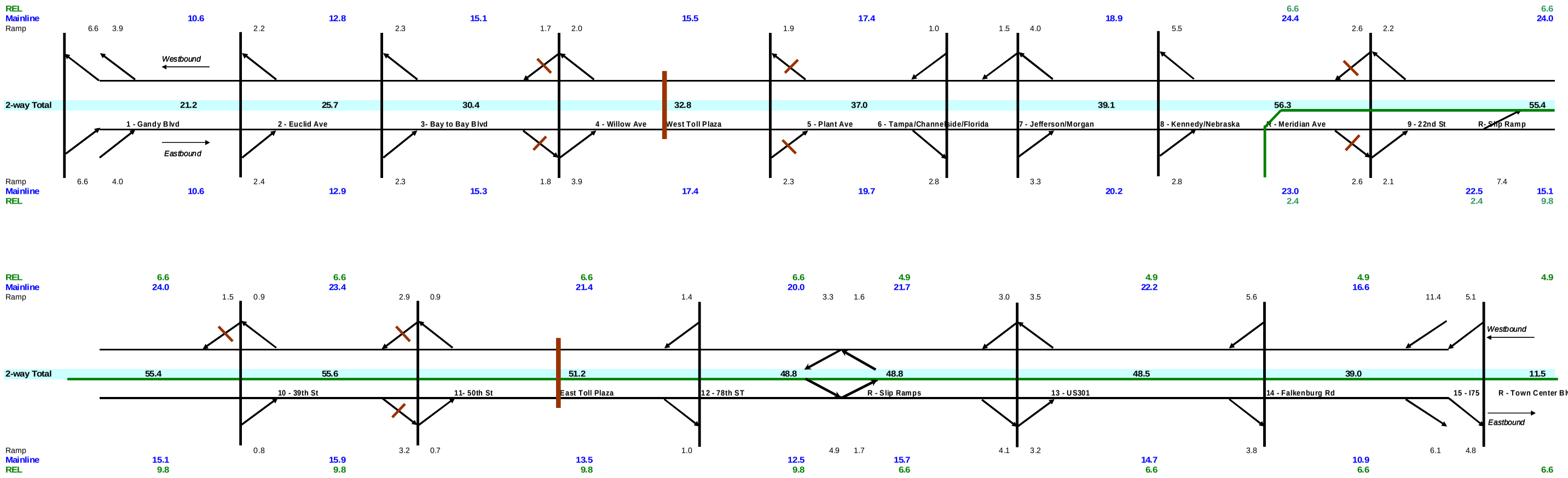
In order to establish a baseline traffic profile, the traffic counts were balanced from the ramp and mainline counts throughout the Selmon Expressway. Figure 3-1 presents a schematic showing the balanced traffic volumes on the expressway system based on the current traffic counts.

Figure 3-2 illustrates the vehicle composition observed from the traffic counts on the Selmon Expressway system. Base on toll traffic, passenger cars comprised about 94 percent of total traffic on the Expressway system. The 2-axle trucks comprised 2.6 percent of total traffic and the trucks with 5 or more axles approximately 1.8 percent. The percentage of trucks on the system was only about 6 percent.

Figure 3-2 also presents the vehicle classifications from toll revenue estimated from the traffic counts and the toll rates at each toll plaza. Actual toll revenues at toll plazas may be different. Based on toll revenue, passenger cars comprised approximately 88 percent of total revenue collected from the Selmon Expressway. Commercial vehicles with 5 or more axles comprised about 6 percent of total revenue.

Figure 3-3 presents hourly distributions of traffic on the local mainline Selmon Expressway and the REL. The automatic traffic counts collected on all ramps and the REL were used to derive the distributions. Both the mainline and the REL showed strong peaking between 7 AM and 8 AM in the morning and another peaking around 5 PM in the evening.

The REL demonstrated a higher concentration of traffic than the local mainline Expressway during the AM and PM peak periods. The REL also showed that the evening peak was higher than the morning peak.



Daily Traffic Volume
(in thousands)

REL	00.0
Mainline	00.0
Ramp	00.0
2-way Total	00.0

Facility

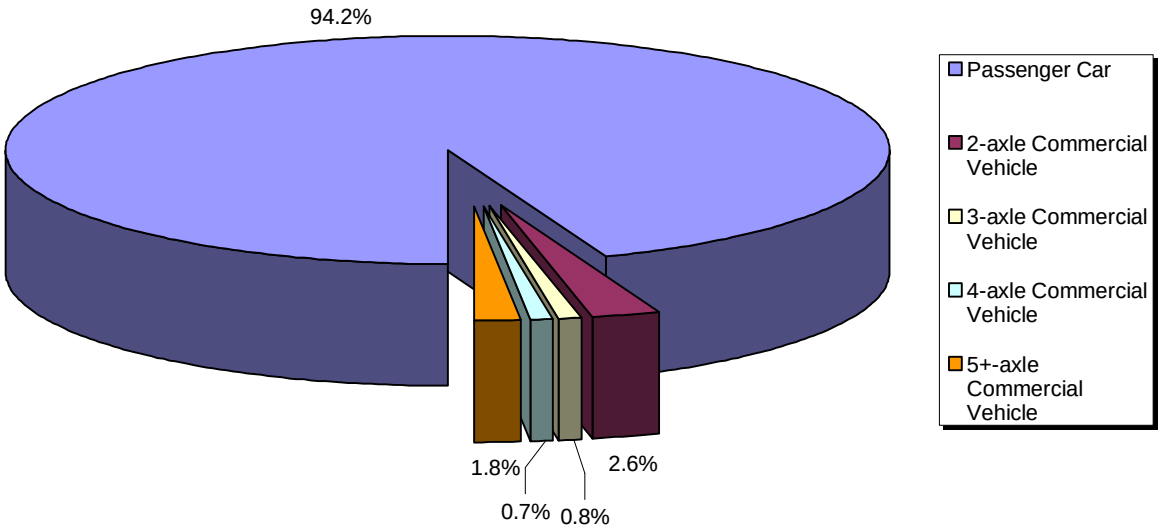
Selmon Expressway
REL
Toll Plaza

WilburSmith ASSOCIATES

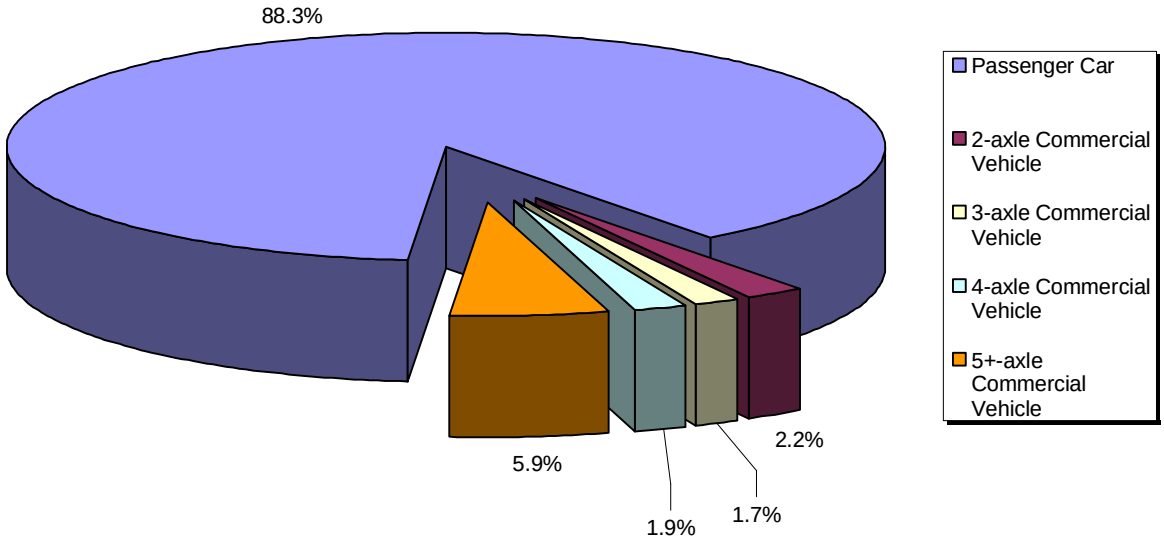
SELMON EXPRESSWAY ESTIMATED CURRENT WEEKDAY TRAFFIC PROFILE

FIGURE 3-1

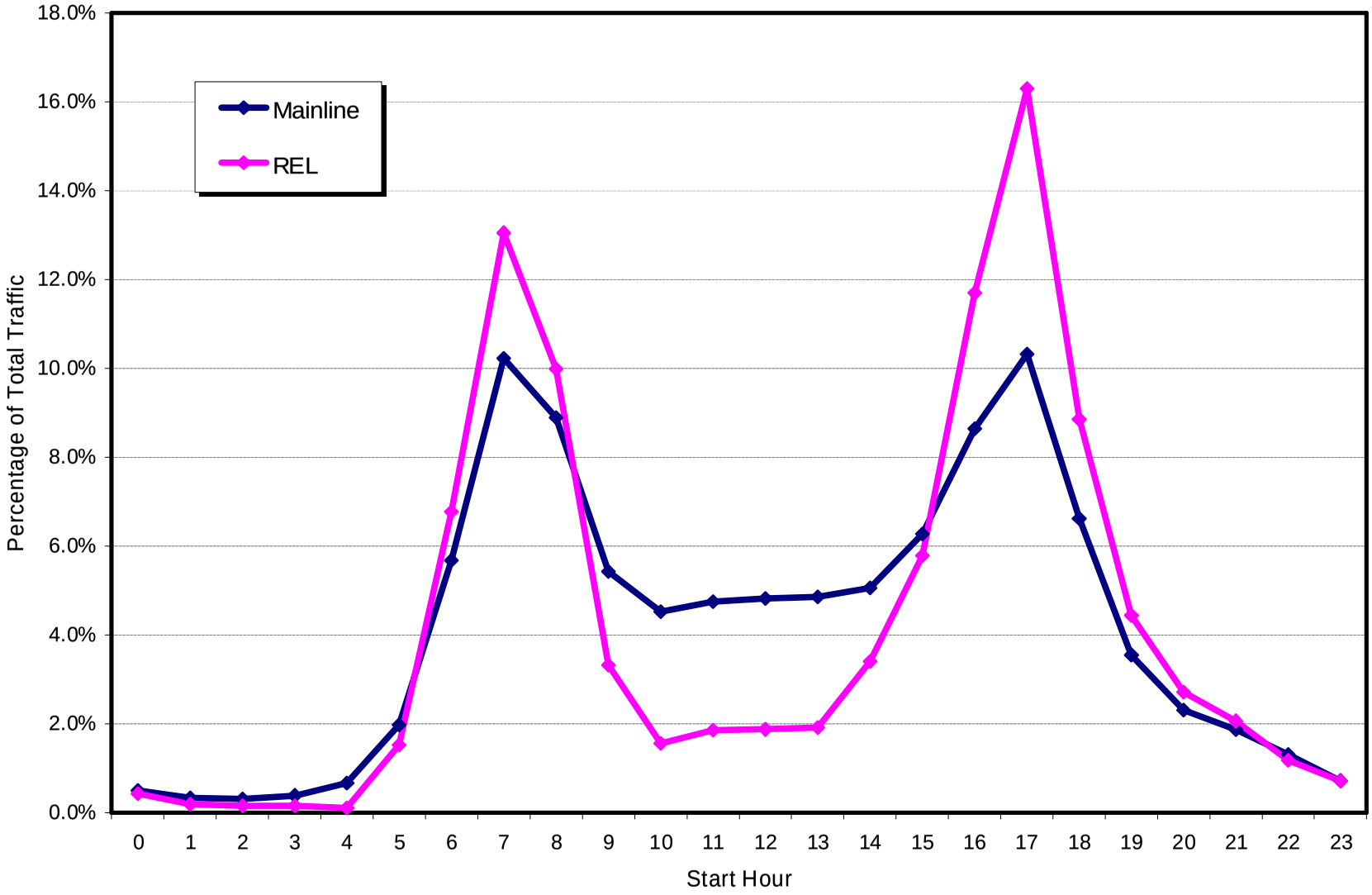
By toll traffic



By toll revenue



Source: Wilbur Smith Associates, Florida Transportation Engineering, 2009
Note: The percentages by toll revenue were based on toll revenue estimated from traffic counts and toll rates at each toll plaza. Actual toll revenues at toll plazas may be different.



Source: Wilbur Smith Associates, Florida Transportation Engineering, 2009
Note: Distributions derived from the automatic traffic counts collected on all ramps and REL

WilburSmith ASSOCIATES

HOURLY DISTRIBUTIONS OF TRAFFIC ON SELMON EXPRESSWAY

FIGURE 3-3

SPEED AND DELAY STUDIES

In order to understand the nature of operations on the facility and the surrounding highway network, speed and delay studies were conducted. Information was collected by traveling the routes under consideration during AM, Midday and PM peak periods. The GPS units recorded data continually during each trip. Since the exact location and time of each vehicle were known for each datum, the travel speeds and delays are known along each route.

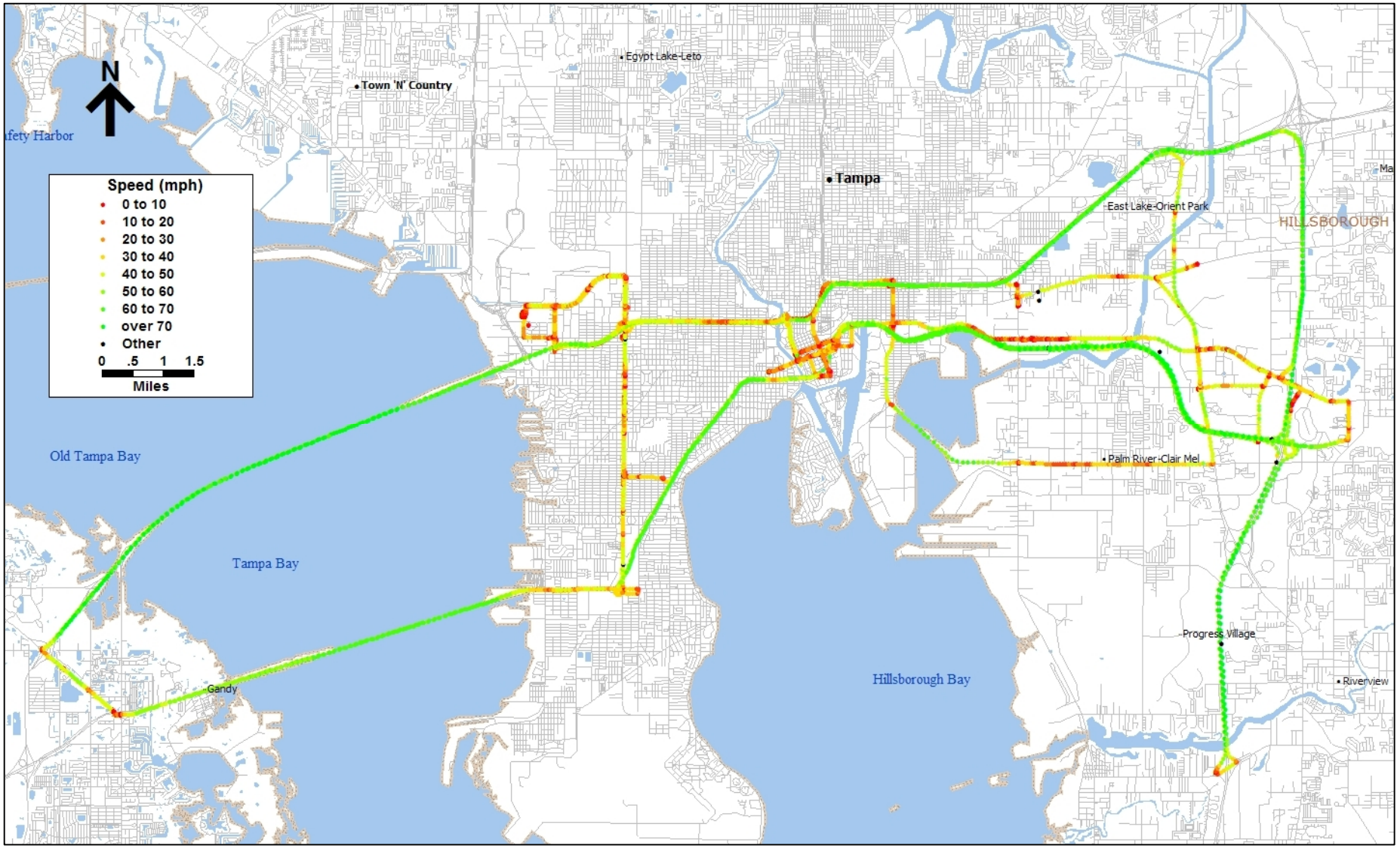
Speed and delay studies were conducted from the AM peak hours on February 24, 2009 (Tuesday) through the Midday peak hours on February 26, 2009 (Thursday). A total of 24 speed runs were implemented during this period.

The studies covered the following key routes in addition to major routes in the Tampa area:

- Selmon Expressway between Gandy Boulevard and the Tampa downtown,
- Selmon Expressway main lanes between Kennedy Boulevard and I-75,
- Reversible Express Lanes (REL),
- SR 60 between I-75 and US 41 Bus east of the Tampa downtown,
- I-275 between the Memorial Highway and Ashley Dr., and
- I-4/I-275 between Ashley Dr. and I-75.

In parallel to the speed and delay studies, route reconnaissance was conducted to inventory key attributes on the Selmon Expressway and major competing/complimentary routes, including number of lanes and posted speeds.

Figure 3-4 shows a map that highlights the routes covered in the speed and delay studies.



WilburSmith ASSOCIATES

ROUTES COVERED IN SPEED AND DELAY STUDIES

FIGURE 3-4

The raw data obtained from the speed and delay studies was reviewed for any recording errors and corrected where necessary. From the observed data, Table 3-2 compares travel times on the REL, lower level of the Selmon Expressway and SR 60 between common origins and destinations. During the AM peak period, travel time on the REL from US 301 to Twiggs St. was observed at 6 minutes and 20 seconds while traveling on the lower level of the Selmon Expressway took 7 minutes from US 301 to Kennedy Blvd close to Twiggs St. Compared to travel time on SR 60, time saving by using the REL was 15 minutes and 36 seconds. For the PM peak period, travel time on the REL between Twiggs St. and US 301 was 6 minutes and 15 seconds, 5 minutes and 25 seconds shorter than travel time observed on SR 60.

Figures 3-5 through 3-16 present speed profiles drawn from the observed data for the Selmon Expressway main lanes, the REL, SR 60, I-275 and I-4. Figures 3-5 through 3-8 provide the speed profiles for the AM peak period in the peak direction for the REL, the Selmon Expressway main lanes in the East Section, and the Selmon Expressway West Section, respectively. Figure 3-5 demonstrates that traffic on the REL maintained its speeds between 60 mph and 70 mph for the time period between 7:05 am and 7:11 am. Traffic on the main lanes in the East Section, on the other hand, showed more fluctuation in its speeds with significantly reduced speeds at the East Plaza because of deceleration and acceleration in the East Plaza area. Except for the plaza area, traffic on the main lanes traveled with speeds between 60 mph and 70 mph. The travel speeds on the West Section were steady above 60 mph before dropping at the West Plaza.

Figures 3-8 through 3-10 show the speed profiles for the same facilities for the PM peak period in the peak direction. The REL demonstrated an uncongested condition for the PM peak period studied. The main lanes in the East Section saw more fluctuations in travel speeds with a slow-down in the East Plaza area. Traffic on the West Section maintained steady speeds in the range of approximately 60 mph after passing the West Plaza area. The speed profiles of the Selmon Expressway were compared with those of the parallel routes which included SR 60, I-275 to the west of the Tampa downtown, and I-4/I-275 between the Tampa downtown and I-75.

Figure 3-11 presents the profile of traffic speeds on SR 60 between Falkenburg Road and west of the 22nd St. in the morning peak period. The profile clearly indicates that the presence of traffic signals along the route and low travel speeds in most sections of the route. Traffic slowed down significantly in the section between west of 78th St. and 50th St. due to high volume of traffic. Traffic speeds in the evening peak period on SR 60, as shown in Figure 3-12, were higher and steadier than the speeds observed in the morning peak period. Figure 3-12 also shows the delays and complete stoppages at traffic signals along the route. The speeds of traffic flows on SR 60 contrasted with those observed on the Selmon Expressway main lanes and the REL.

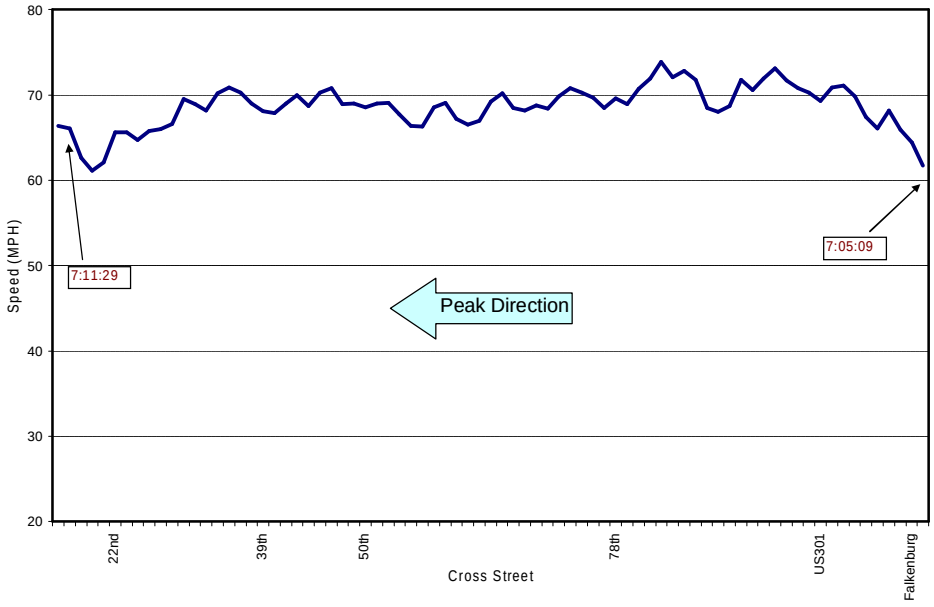
Table 3-2
Comparison of Travel Times from Speed and Delay Studies

Peak Period	Facility	From	To	Elasped Time (mm:ss)	Travel Time Savings [1]
AM	Reversible Express Lanes	US 301	Twiggs St.	06:20	15:36
	Lower Level on Selmon Expressway	US 301	Kennedy Blvd.	07:00	14:56
	State Route 60	US 301	Twiggs St.	21:56	-
PM	Reversible Express Lanes	Twiggs St.	US 301	06:15	05:25
	Lower Level on Selmon Expressway	Kennedy Blvd.	US 301	07:06	04:34
	State Route 60	Twiggs St.	US 301	11:40	-

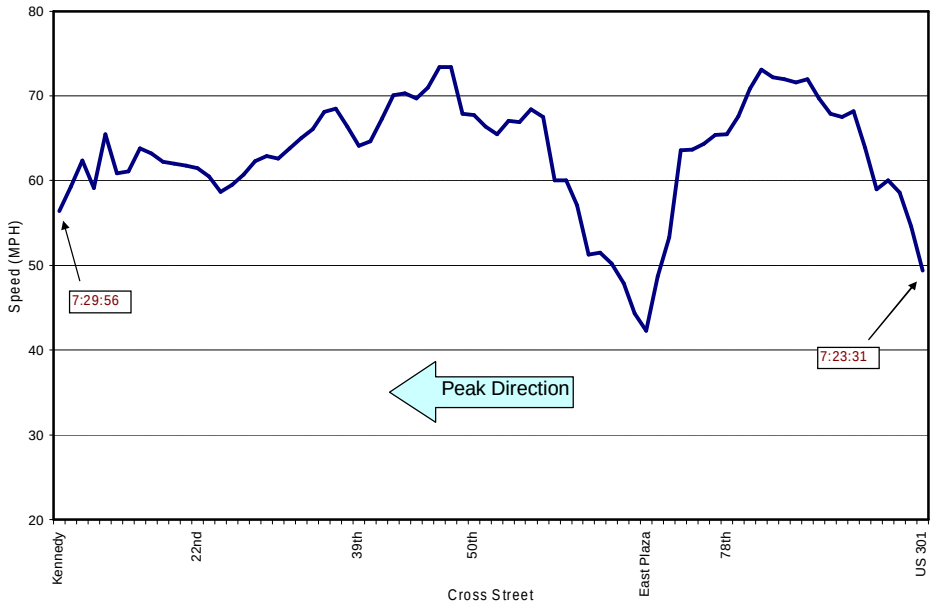
[1] Time savings compared to the travel time on SR 60

Figures 3-13 and 3-14 respectively show speed profiles on I-275 west of the Tampa downtown and I-4/I-275 east of the downtown in the AM peak period in the peak direction. I-275 experienced the fluctuation of low speeds around 30 mph and 40 mph between the Memorial Highway and Ashley Dr. On the other hand, traffic on I-4 maintained higher speeds around 60 mph and 70 mph between I-75 and the 22nd St. Lower speeds were observed between the 22nd St. and Ashley Dr.

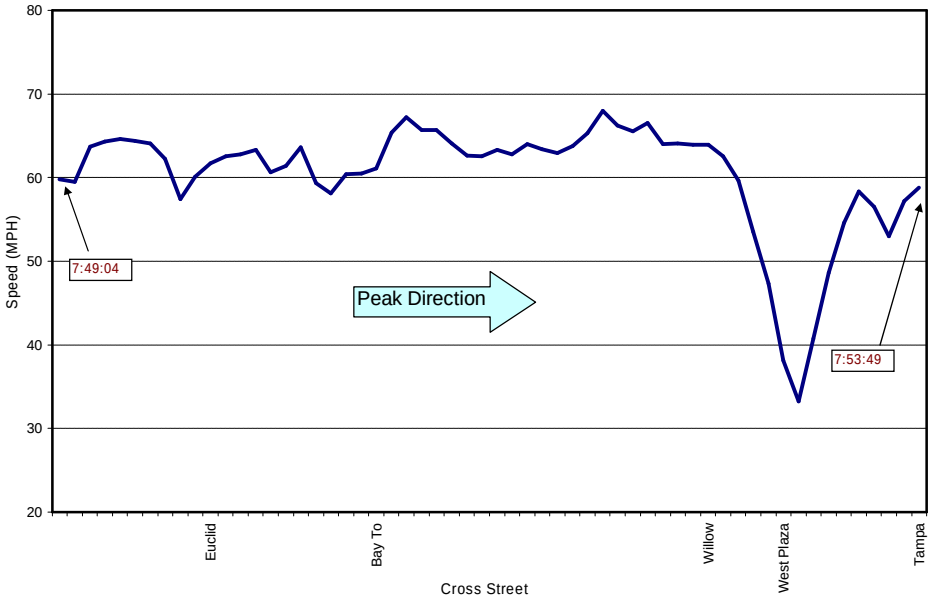
Traffic speeds in the evening peak period for the same facilities are shown in Figures 3-15 and 3-16. High volumes of traffic were observed on I-275 during the PM peak period, causing low traffic speeds around 20 mph and 30 mph from the Tampa downtown area to the Memorial Highway. I-4 in the east of Tampa demonstrated better traffic flows during the PM peak period, showing traffic speeds around 60 mph.



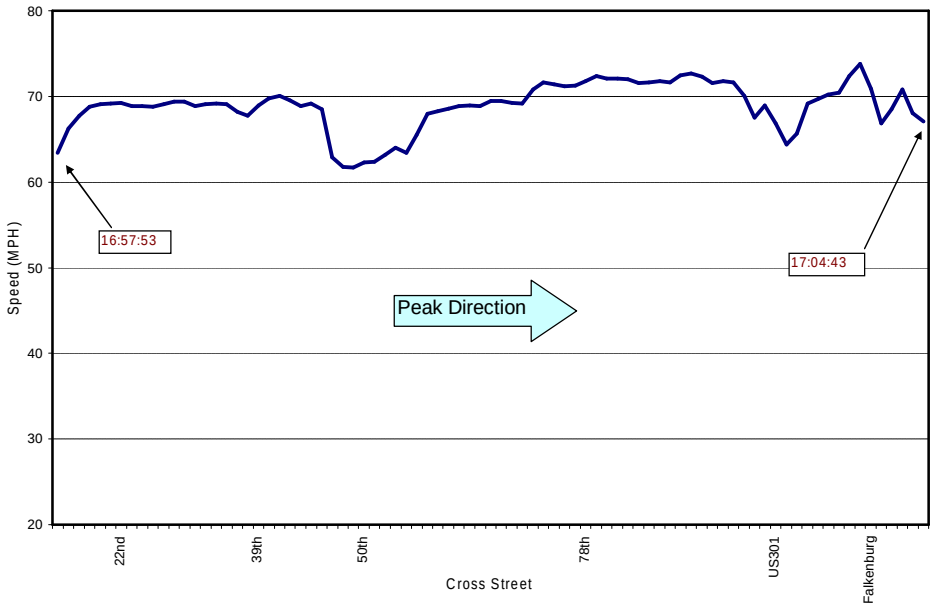
Speed Profiles on REL
(AM Peak, 7:05:09 am – 7:11:29 am, February 26, 2009)
Figure 3-5



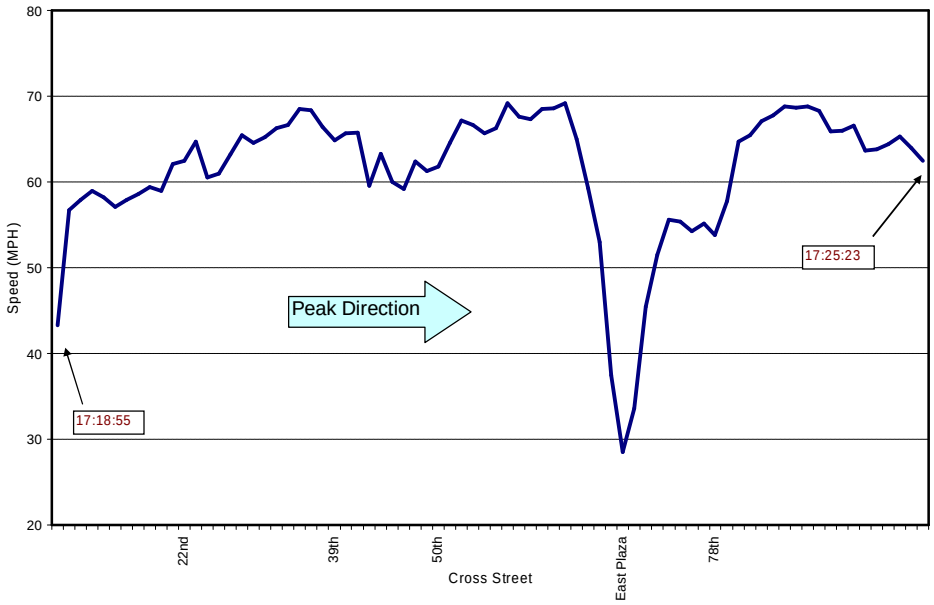
Speed Profiles on East Section Main Lanes
(AM Peak, 7:23:31 am – 7:29:56 am, February 25, 2009)
Figure 3-6



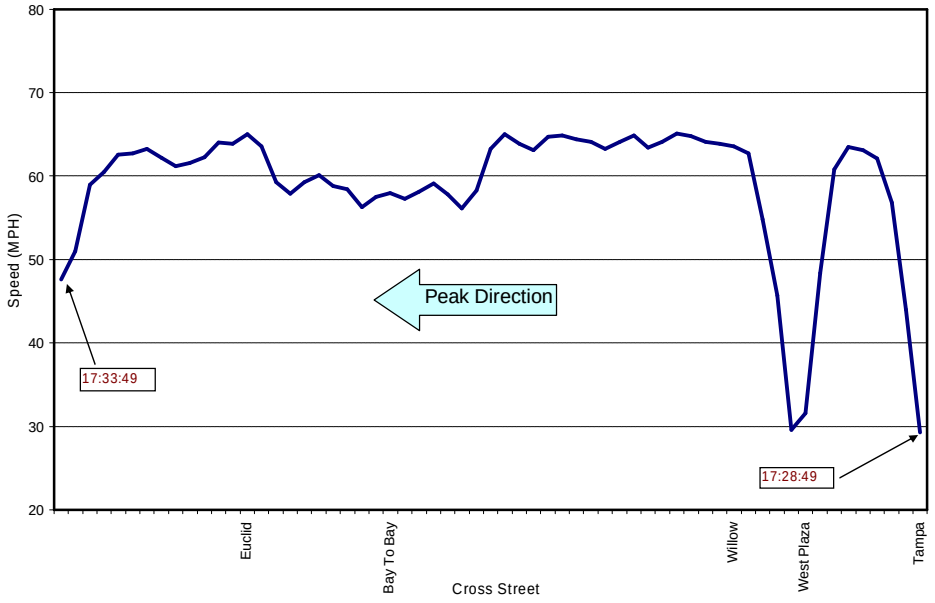
Speed Profiles on West Section
(AM Peak, 7:49:04 am – 7:53:49 am, February 26, 2009)
Figure 3-7



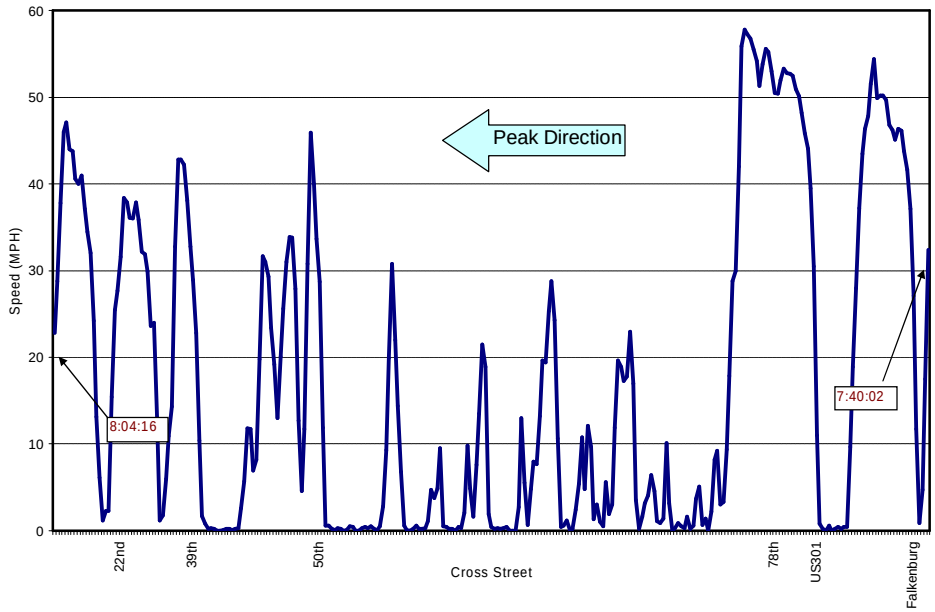
Speed Profiles on REL
(PM Peak, 4:57:53 pm – 5:04:43 pm, February 25, 2009)
Figure 3-8



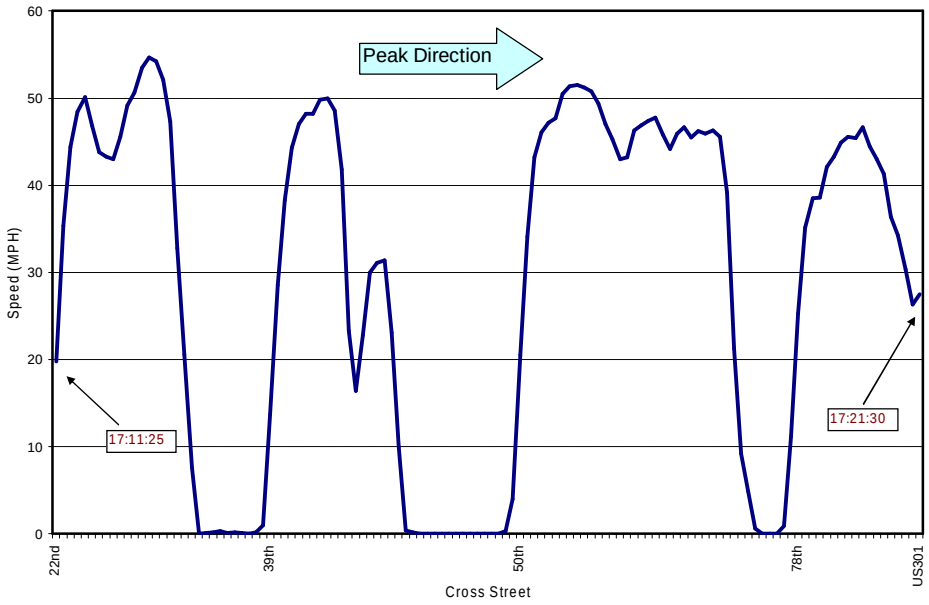
Speed Profiles on East Section Main Lanes
(PM Peak, 5:18:55 pm – 5:25:23 pm, February 25, 2009)
Figure 3-9



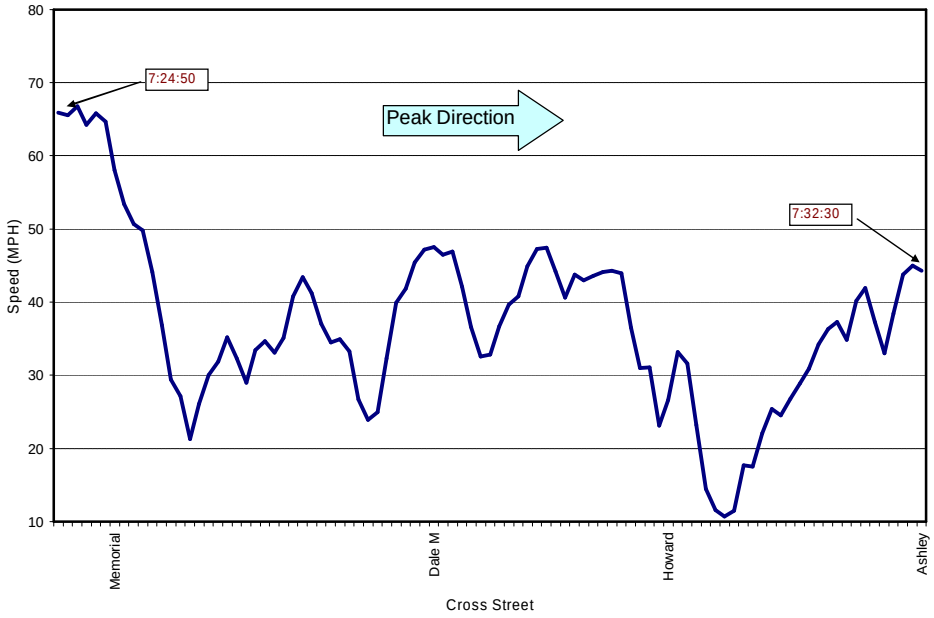
Speed Profiles on West Section
(PM Peak, 5:28:49 pm – 5:33:49 pm, February 24, 2009)
Figure 3-10



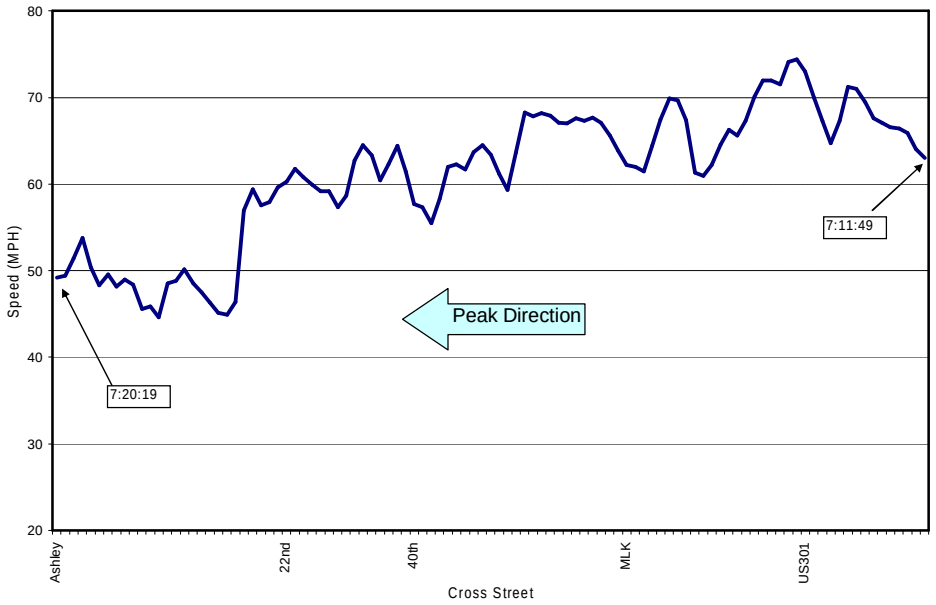
Speed Profiles on SR 60
(AM Peak, 7:40:02 am – 8:04:16 am, February 26, 2009)
Figure 3-11



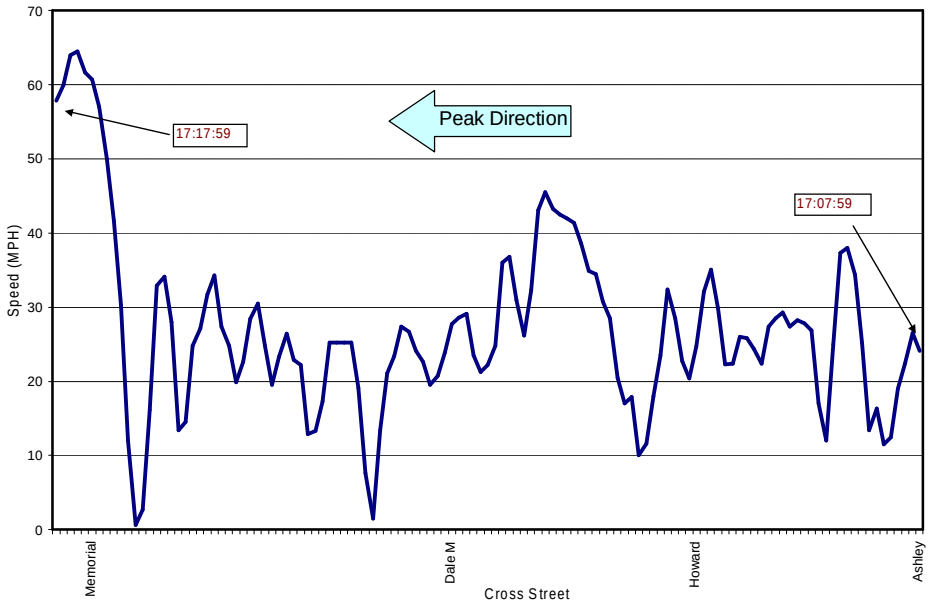
Speed Profiles on SR 60
(PM Peak, 5:11:25 pm – 5:21:30 pm, February 24, 2009)
Figure 3-12



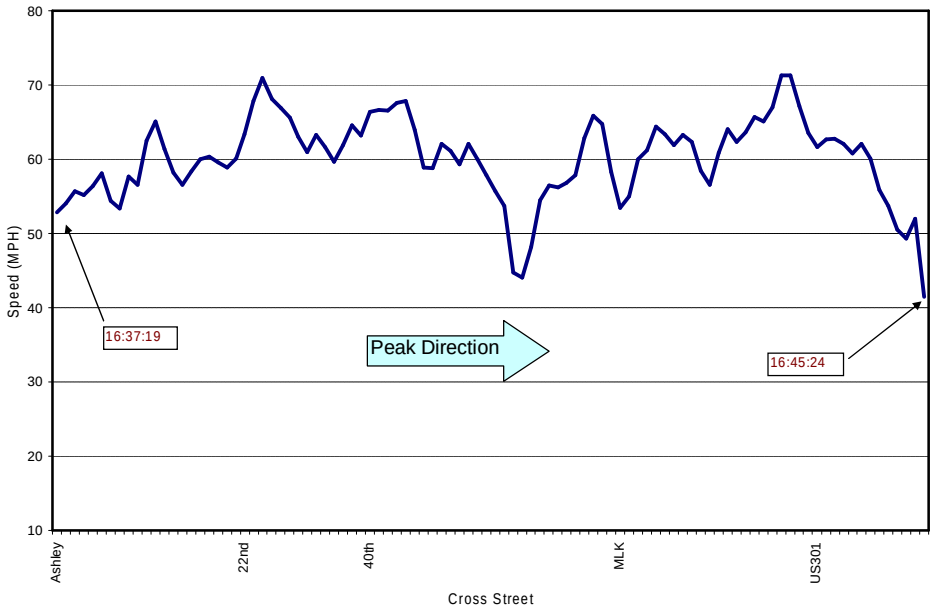
Speed Profiles on I-275
(AM Peak, 7:24:50 am – 7:32:30 am, February 25, 2009)
Figure 3-13



Speed Profiles on I-4
(AM Peak, 7:11:49 am – 7:20:19 am, February 26, 2009)
Figure 3-14



Speed Profiles on I-275
(PM Peak, 5:07:59 pm – 5:17:59 pm, February 25, 2009)
Figure 3-15



Speed Profiles on I-4
(PM Peak, 4:37:19 pm – 4:45:24 pm, February 25, 2009)
Figure 3-16

Appendix C

City of Tampa Data Sources

- Inventory of Roadway Conditions (2008)

City of Tampa Transportation Division Inventory of Roadway Conditions(Existing and Future)

Updated: 9/3/2010

Please NOTE : This spreadsheet is currently using 2005 data(excluding counts) and has not been updated.

ON	From - To (S to N or W to E)	Impact Fee District	Funct Class Funct Class*	Maint. Respons.	Exist Road Type	Date of Count (mm/dd/yr)	Existing Daily Volume	Existing LOS D Capacity	Existing LOS	Existing PM Peak Volume
						Existing				
4th Ave	Channelside Dr (North)(13th St) to 21st St	CET	C	CITY	2LU	04/02/08	2,753	10,300	A	352
4th Ave	21st St to 22nd St	CET	C	CITY	2LU	04/02/08	2,122	10,300	A	279
4th Ave	22nd St to 34th St	CET	C	CITY	2LU	04/09/08	1,094	10,300	A	85
7th Ave	Nebraska Ave to Nuccio Parkway	CET	C	CITY	2LD	07/15/08	7,304	17,200	B	691
7th Ave	Nuccio Parkway to 21st St	CET	C	CITY	2LD	07/15/08	6,289	10,300	B	524
7th Ave	21st St to 22nd St	CET	C	CITY	2LU	07/15/08	13,858	10,300	F	1,155
7th Ave	22nd St to 34th St	CET	C	CITY	2LU	07/15/08	6,857	16,100	B	587
7th Ave	34th St to 39th St	CET	C	CITY	4LU	07/15/08	8,306	22,800	A	777
7th Ave	39th St to 43rd St	CET	C	CITY	4LU	07/15/08	10,751	22,800	B	983
109th Ave	Nebraska Ave to 15th St	NCT	C	CITY	2LU	01/27/08	1,783	10,300	A	173
109th Ave	15th St to 22nd St	NCT	C	CITY	2LU	01/27/08	1,178	10,300	A	149
109th Ave	22nd St to 30th St	NCT	C	CITY	2LU	01/27/08	1,877	10,300	A	186
13th St	Adamo Dr to 4th Ave	CET	C	CITY	2LU	09/07/08	4,049	10,300	A	367
14th St (A.R.D.C.)	Nuccio Parkway to Columbus Dr	CET	OC	COUNTY	2LO	05/14/08	4,518	24,429	A	337
14th St (A.R.D.C.)	Columbus Dr to 21st Ave	CET	OC	COUNTY	2LO	05/14/08	3,321	24,429	A	253
14th St (A.R.D.C.)	21st Ave to Lake Ave	CET	OC	COUNTY	2LO	08/16/96	3,474	24,429	A	244
15th St	Nuccio Parkway to Columbus Dr	CET	OC	CITY	2LO	02/03/08	4,542	21,000	A	709
15th St	Columbus Dr to 21st Ave	CET	OC	CITY	2LO	02/03/08	4,913	21,000	A	751
15th St	21st Ave to Lake Ave	CET	OC	CITY	2LO	02/03/08	7,650	21,000	A	1,036
15th St	Lake Ave to M.L.K. Jr Blvd	CET	C	CITY	4LD	02/03/08	8,686	22,800	A	971
15th St	M.L.K. Jr Blvd to Osborne Ave	CET	C	CITY	2LU	02/03/08	5,416	10,300	B	664
15th St	Osborne Ave to Hillsborough Ave	CET	C	CITY	2LU	02/03/08	4,025	10,300	A	540
15th St	Hillsborough Ave to Hanna Ave	CET	C	CITY	2LU	02/03/08	3,107	10,300	A	389
15th St	Hanna Ave to Sligh Ave	CET	C	CITY	2LU	02/03/08	2,159	10,300	A	264
15th St	Linebaugh Ave to Bougainvillea Ave	NCT	C	CITY	2LU	02/03/08	5,066	10,300	B	218
15th St	Bougainvillea Ave to 109th Ave	NCT	C	CITY	2LU	02/03/08	3,545	10,300	A	327
15th St	109th Ave to Fowler Ave	NCT	C	CITY	2LU	02/03/08	4,546	10,300	B	453
17th Ave	A.R.D.C.(14th St) to 15th St	CET	OM	COUNTY	2LO	07/08/08	5,330	21,000	A	469
17th Ave	15th St to 22nd St	CET	OM	COUNTY	2LO	07/08/08	1,211	21,000	A	186
17th Ave	22nd St to 29th St	CET	OM	COUNTY	2LO	07/08/08	3,588	21,000	A	314
18th Ave	29th St to 36th St	CET	OM	COUNTY	2LO	07/08/08	4,141	21,000	A	370
19th Ave	36th St to 40th St	CET	OM	COUNTY	2LO	07/08/08	2,729	21,000	A	216
19th Ave	40th St to Columbus Dr	CET	OM	COUNTY	2LO	09/05/07	2,883	21,000	A	233
19th St	Durham to Adamo Dr	CET	C	CITY	4LU	02/24/08	6,891	22,800	A	697
20th St	Maritime Blvd to Grant St	CET	M	STATE	6LD	02/17/08	25,912	45,000	B	2,042
20th St	Grant St(Maritime Blvd) to Harper St	CET	M	STATE	6LD	02/05/08	33,840	45,000	C	2,769
20th St	Harper St to Durham	CET	C	CITY	6LD	02/05/08	36,540	45,000	C	2,891
21st Ave	Nebraska Ave to 15th St	CET	C	CITY	2LU	02/05/08	6,014	10,300	B	584
21st Ave	15th St to 22nd St	CET	C	CITY	2LU	02/05/08	4,916	10,300	B	460
21st St	22nd St to Adamo Dr	CET	OM	STATE	3LO	02/05/08	19,088	27,643	C	1,641
21st St	Adamo Dr(4th Ave) to 7th Ave	CET	OM	STATE	3LO	02/05/08	18,837	27,643	C	1,290
21st St	7th Ave to Palm Ave	CET	OM	STATE	3LO	02/05/08	20,538	27,643	C	1,301
21st St	Palm Ave(14th Ave) to Columbus Dr	CET	OM	STATE	3LO	02/05/08	7,022	27,643	A	579
21st St	Columbus Dr to 23rd Ave	CET	OM	STATE	3LO	02/05/08	9,101	27,643	A	648
22nd St	Causeway Blvd to Maritime Blvd	CET	M	STATE	5LU	06/10/96	22,539	42,800	B	817
22nd St	Maritime Blvd(Durham St) to 21st St	CET	M	STATE	3LU	02/17/08	28,819	27,643	D	2,094
22nd St	21st St to Adamo Dr	CET	OM	STATE	3LU	02/17/08	18,413	27,643	C	1,308
22nd St	Adamo(4th) Dr to 7th Ave	CET	OM	STATE	3LO	02/17/08	19,507	27,643	C	1,531
22nd St	7th Ave to 14th Ave	CET	OM	STATE	3LO	02/17/08	17,274	27,643	C	1,244
22nd St	14th Ave to Columbus Dr	CET	OM	STATE	3LO	02/17/08	7,244	27,643	A	624
22nd St	Columbus Dr to 23rd Ave	CET	OM	STATE	2LO	02/17/08	6,349	18,214	A	544
22nd St	23rd Ave to 26th Ave	CET	M	STATE	2LU	02/17/08	9,384	13,400	C	855
22nd St	26th Ave to Lake Ave	CET	M	STATE	2LU	02/17/08	10,014	13,400	C	931
22nd St	Lake Ave to M.L.K.Jr Blvd	CET	M	STATE	2LU	02/17/08	9,867	10,300	D	884
22nd St	M.L.K.Jr Blvd to Osborne Ave	CET	M	STATE	2LU	02/17/08	6,143	10,300	B	555
22nd St	Osborne Ave to Hillsborough Ave	CET	M	STATE	2LU	02/17/08	12,746	10,300	E	1,146
22nd St	Hillsborough Ave to Hanna Ave	CET	C	CITY	2LU	02/17/08	5,698	10,300	B	477
22nd St	Hanna Ave to Sligh Ave	CET	C	CITY	2LU	02/17/08	4,698	17,400	A	443
22nd St	Rowlett Park Dr to Waters Ave	CET	C	CITY	2LU	04/09/08	4,489	10,300	B	398

City of Tampa Transportation Division Inventory of Roadway Conditions(Existing and Future)

Updated: 9/3/2010

Please NOTE : This spreadsheet is currently using 2005 data(excluding counts) and has not been updated.

ON	From - To (S to N or W to E)	Impact Fee District	Funct Class Funct Class*	Maint. Respons.	Exist Road Type	Date of Count (mm/dd/yr)	Existing Daily Volume	Existing LOS D Capacity	Existing LOS	Existing PM Peak Volume
22nd St	Waters Ave to Busch Blvd	CET	C	CITY	2LU	04/09/08	2,136	17,400	A	206
22nd St	Busch Blvd to Linebaugh Ave	NCT	C	CITY	2LU	02/25/08	5,209	10,300	B	584
22nd St	Linebaugh Ave to Bougainvillea Ave	NCT	C	CITY	2LU	02/25/08	3,583	10,300	A	363
22nd St	Bougainvillea Ave to 109th Ave	NCT	C	CITY	2LU	03/12/08	4,320	10,300	B	394
22nd St	109th Ave to Fowler Ave	NCT	C	CITY	2LU	02/25/08	7,546	10,300	C	740
30th St	Hillsborough Ave to Hanna Ave	CET	C	CITY	2LU	01/27/08	10,385	41,500	A	912
30th St	Hanna Ave to Sligh Ave	CET	C	CITY	2LU	01/27/08	4,487	41,500	A	428
30th St	Yukon St to Busch Blvd	CET	C	CITY	2LU	01/27/08	6,862	41,500	A	633
30th St	Busch Blvd to Linebaugh Ave	NCT	M	CITY	5LU	01/27/08	24,722	34,200	C	2,034
30th St	Linebaugh Ave to Bougainvillea Ave	NCT	M	CITY	5LU	01/27/08	25,189	34,200	C	2,107
30th St	Bougainvillea Ave to 109th Ave	NCT	M	CITY	5LU	01/27/08	28,161	41,500	C	2,312
30th St	109th Ave to Fowler Ave	NCT	M	CITY	5LU	01/27/08	28,290	34,200	C	2,339
34th St	Adamo Dr to 7th Ave	CET	C	CITY	4LU	01/29/08	6,519	22,800	A	606
34th St	7th Ave to Columbus Dr	CET	C	CITY	4LU	01/29/08	5,906	22,800	A	553
34th St	Columbus Dr to Lake Ave	CET	C	CITY	2LU	02/12/08	5,801	10,300	B	544
34th St	Lake Ave to M.L.K.Jr Blvd	CET	C	CITY	2LU	01/29/08	8,524	10,300	C	807
34th St	M.L.K.Jr Blvd to Osborne Ave	CET	C	CITY	2LU	02/14/08	510	10,300	A	854
34th St	Osborne Ave to Hillsborough Ave	CET	C	CITY	2LU	01/29/08	4,461	10,300	B	429
39th St	**Adamo Dr to 7th Ave**	**CET**	**P**	**STATE**	**4LD**	**02/24/08**	**11,384**	**29,400**	**A**	**1,072**
39th St	**7th Ave to 12th Av**	**CET**	**P**	**STATE**	**4LD**	**02/24/08**	**10,282**	**29,400**	**A**	**995**
40th St	12th Av to I-4	CET	P	STATE	6LD	02/24/08	13,663	45,000	A	1,268
40th St	I-4 to Columbus Dr	CET	P	STATE	6LD	02/24/08	14,139	45,000	A	1,251
40th St	Columbus Dr(19th Ave) to Melburne Blvd	CET	P	STATE	6LD	02/24/08	16,243	45,000	A	1,483
40th St	Melburne Blvd to Lake Ave	CET	P	STATE	6LD	02/24/08	20,234	45,000	B	1,774
40th St	Lake Ave to M.L.K.Jr Blvd	CET	P	STATE	6LD	02/24/08	19,079	45,000	A	1,837
40th St	M.L.K.Jr Blvd to Osborne Ave	CET	P	STATE	6LD	02/24/08	12,588	45,000	A	1,217
40th St	Osborne Ave to Hillsborough Ave	CET	P	STATE	6LD	02/24/08	29,806	45,000	C	2,651
40th St	Hillsborough Ave to Hanna Ave	CET	M	COUNTY	2LU	02/13/07	14,193	16,100	D	1,306
40th St	Hanna Ave(Yukon St) to Busch Blvd	CET	M	COUNTY	2LU	02/24/08	14,688	16,100	D	1,315
43rd St	Hanna Ave to Sligh Ave	CET	NC	CITY	2LU	02/24/08	4,558	10,300	B	407
46th St	River Hills Dr to Busch Blvd	CET	C	CITY	2LU	02/24/08	2,977	16,400	A	331
46th St	Busch Blvd(Bougainvillea Ave) to Fowler Ave	NCT	C	CITY	2LU	07/20/08	4,113	10,300	A	369
50th St	City Limits to Crosstown Exp	CET	P	STATE	5LU	09/14/08	31,607	34,200	D	2,681
50th St	Crosstown Exp to Adamo Dr	CET	P	STATE	5LU	09/14/08	23,240	38,791	B	2,047
50th St	Adamo Dr to Broadway Ave	CET	P	STATE	6LD	02/16/06	41,034	51,200	C	3,032
50th St	Broadway Ave to Columbus Dr	CET	P	STATE	6LD	09/14/08	39,309	51,200	C	2,858
50th St	Columbus Dr to I4-50th St Ramp	CET	P	STATE	6LD	09/14/08	30,707	51,200	B	2,353
50th St	I4-50th St Ramp to Melburne Blvd	CET	P	STATE	5LU	03/01/06	31,865	34,200	D	2,560
50th St	Melburne Blvd to M.L.K.Jr. Blvd	CET	P	STATE	5LU	02/16/06	25,702	34,200	C	2,116
Adamo Dr	**13th St to 19th St**	**CET**	**P**	**STATE**	**4LU**	**09/07/08**	**33,940**	**36,600**	**D**	**3,529**
Adamo Dr	**19th St to 21nd St**	**CET**	**P**	**STATE**	**4LU**	**09/14/08**	**29,044**	**36,600**	**C**	**3,033**
Adamo Dr	**22nd St to 34th St**	**CET**	**P**	**STATE**	**4LU**	**09/07/08**	**28,714**	**29,400**	**D**	**2,530**
Adamo Dr	**34th St to 39th St**	**CET**	**P**	**STATE**	**4LU**	**09/07/08**	**33,815**	**29,400**	**E**	**2,969**
Adamo Dr	**39th St to 50th St**	**CET**	**P**	**STATE**	**4LU**	**09/07/08**	**33,240**	**57,100**	**B**	**3,175**
Adamo Dr	**50th St to Maydell Dr**	**CET**	**P**	**STATE**	**4LU**	**09/16/08**	**36,413**	**57,100**	**B**	**3,085**
Adamo Dr	**Maydell Dr to Orient Rd**	**CET**	**P**	**STATE**	**4LU**	**09/14/08**	**35,585**	**57,100**	**B**	**2,970**
Adamo Dr	**Orient Rd to City Limits**	**CET**	**P**	**STATE**	**4LU**	**09/14/08**	**38,772**	**57,100**	**C**	**3,433**
Amberly Drive	CR 581 east to Tampa Palms Blvd N.	UN	C	CITY	2LU	04/28/98	9,160	13,400	C	852
Amberly Drive	CR 581 west to Tampa Palms Blvd N.	UN	C	CITY	2LU	04/28/98	3,560	13,400	A	331
Anderson Rd	**Hillsborough Ave to City Limits**	**CET**	**C**	**CITY**	**3LU**	**09/09/07**	**11,885**	**10,815**	**E**	**1,129**
Armenia Ave	Swann Ave to Azeele St	INB	C	CITY	2LU	06/08/08	8,885	10,300	D	762
Armenia Ave	Azeele St to Platt St	INB	OC	CITY	2LO	06/08/08	9,755	18,214	B	797
Armenia Ave	Platt St(Cleveland St) to Kennedy Blvd	INB	OM	COUNTY	3LO	06/08/08	10,775	27,643	A	850
Armenia Ave	Kennedy Blvd(Main St) to Columbus Dr	CET	OM	COUNTY	2LO	06/08/08	11,299	21,000	B	865
Armenia Ave	Columbus Dr to Tampa Bay Blvd	CET	OM	COUNTY	2LO	06/08/08	11,827	21,000	B	915
Armenia Ave	Tampa Bay Blvd to M.L.K.Jr Blvd	CET	M	COUNTY	4LU	06/08/08	25,188	34,200	C	2,155
Armenia Ave	M.L.K.Jr Blvd to Osborne Ave	CET	M	COUNTY	4LU	06/08/08	20,667	34,200	B	1,818
Armenia Ave	Osborne Ave to Hillsborough Ave	CET	M	COUNTY	4LU	06/08/08	26,333	34,200	C	2,164
Armenia Ave	Hillsborough Ave to Sligh Ave	CET	M	COUNTY	4LU	06/08/08	20,696	34,200	B	1,810

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ON	From - To (S to N or W to E)	Impact Fee District	Funct Class Funct Class*	Maint. Respons.	Exist Road Type	Date of Count (mm/dd/yr)	Existing Daily Volume	Existing LOS D Capacity	Existing LOS	Existing PM Peak Volume
							Existing			
Armenia Ave	Sligh Ave to Waters Ave	CET	M	COUNTY	2LU	06/08/08	15,164	22,600	C	1,202
Armenia Ave	Waters Ave to Busch Blvd	CET	M	COUNTY	2LU	06/08/08	14,004	16,100	D	1,261
Armenia Ave	Busch Blvd to Linebaugh Ave	CET	M	COUNTY	2LU	06/08/08	9,621	16,100	B	931
Armenia Ave	Linebaugh Ave to Country Club Dr	CET	M	COUNTY	2LU	06/08/08	10,233	22,600	B	960
Armenia Ave	Country Club Dr to City Limits	CET	M	COUNTY	2LU	06/08/08	6,622	16,100	A	612
Ashley Dr	Channelside Dr (East) to Brorein St	CBD	C	CITY	2LD	08/17/08	2,221	10,300	A	192
Ashley Dr	Brorein St to Jackson St	CBD	C	CITY	4LU	08/17/08	7,478	22,800	A	766
Ashley Dr	Jackson St to Kennedy Blvd	CBD	M	CITY	4LU	08/24/08	20,592	28,800	C	2,010
Ashley Dr	Kennedy Blvd to Madison St	CBD	P	CITY	5LU	08/24/08	28,994	28,800	D	2,697
Ashley Dr	Madison St to Twiggs St	CBD	P	CITY	6LD	08/24/08	34,383	44,100	C	3,214
Ashley Dr	Twiggs St to Zack St	CBD	P	CITY	6LD	08/17/08	26,907	44,100	B	2,243
Ashley Dr	Zack St to Polk St	CBD	P	CITY	6LD	08/24/08	35,311	39,100	D	2,790
Ashley Dr	Polk St to Cass St	CBD	P	CITY	6LD	08/17/08	28,383	44,100	B	2,448
Ashley Dr	Cass St to Tyler St	CBD	P	CITY	6LD	08/17/08	29,010	44,100	C	2,533
Ashley Dr	Tyler St to I-275	CBD	P	CITY	5LU	08/17/08	14,130	39,100	A	974
Azeele St	West Shore Blvd to Lois Ave	INB	NC	CITY	2LU	11/02/06	3,253	10,300	A	453
Azeele St	Lois Ave to Dale Mabry Hwy	INB	NC	CITY	2LU	11/02/06	5,694	10,300	B	610
Azeele St	Dale Mabry Hwy to Himes Ave	INB	C	COUNTY	4LU	11/02/06	9,061	14,800	B	1,014
Azeele St	Himes Ave to MacDill Ave	INB	C	COUNTY	4LU	11/02/06	12,512	29,400	B	1,384
Azeele St	MacDill Ave to Tampania	INB	C	COUNTY	4LU	11/02/06	12,313	29,400	B	1,267
Azeele St	Tampania to Howard Ave	INB	C	CITY	2LU	11/02/06	4,765	10,300	B	394
Bay to Bay Blvd	West Shore Blvd to Manhattan Ave	INB	L	CITY	2LU	03/26/08	8,035	13,400	B	726
Bay to Bay Blvd	Manhattan Ave to Dale Mabry Hwy	INB	M	COUNTY	4LU	03/26/08	12,447	29,400	A	1,146
Bay to Bay Blvd	Dale Mabry Hwy to Himes Ave	INB	M	COUNTY	4LU	03/31/08	17,754	29,400	B	1,536
Bay to Bay Blvd	Himes Ave to MacDill Ave	INB	M	COUNTY	4LU	03/12/08	25,011	29,400	D	2,108
Bay to Bay Blvd	MacDill Ave to Bayshore Dr	INB	M	COUNTY	4LU	03/12/08	15,400	29,400	B	1,294
Bayshore Blvd	MacDill AFB to Interbay Blvd	INB	C	CITY	2LU	01/06/08	11,586	16,100	C	1,894
Bayshore Blvd	Interbay Blvd to Gandy Blvd	INB	C	CITY	2LU	12/09/07	15,802	23,200	C	1,764
Bayshore Blvd	Gandy Blvd to Euclid Ave	INB	M	COUNTY	4LD	12/09/07	26,394	42,800	B	2,820
Bayshore Blvd	Euclid Ave to El Prado Blvd	INB	M	COUNTY	4LD	01/06/08	35,787	42,800	C	3,824
Bayshore Blvd	El Prado Blvd to Bay to Bay Blvd	INB	M	COUNTY	4LD	12/09/07	33,390	42,800	C	3,525
Bayshore Blvd	Bay to Bay Blvd to Howard Ave	INB	M	COUNTY	4LD	12/09/07	36,228	42,800	C	3,745
Bayshore Blvd	Howard Ave to Rome Ave	INB	M	COUNTY	6LD	12/09/07	34,436	64,400	B	3,706
Bayshore Blvd	Rome Ave to Swann Ave	INB	M	COUNTY	6LD	12/09/07	33,190	64,400	B	3,644
Bayshore Blvd	Swann Ave to Verne St	INB	M	COUNTY	4LD	01/06/08	30,714	42,800	C	3,524
Bayshore Blvd	Verne St to Platt St	INB	M	COUNTY	4LD	12/09/07	33,087	42,800	C	3,801
Bayshore Blvd	Platt St to Brorein	INB	M	COUNTY	2LO	12/09/07	16,772	18,214	D	2,042
Bird St	**Florida Ave to I-275**	**CET**	**M**	**COUNTY**	**4LU**	**10/24/06**	**7,016**	**22,800**	**A**	**485**
Bird St	**I-275 to Nebraska Ave**	**CET**	**M**	**COUNTY**	**4LU**	**09/08/08**	**4,772**	**22,800**	**A**	**384**
Bougainvillea Ave	Florida Ave to I-275	CET	C	CITY	2LU	08/07/08	2,675	10,300	A	299
Bougainvillea Ave	I-275 to Nebraska Ave	NCT	C	CITY	2LU	08/07/08	2,673	10,300	A	288
Bougainvillea Ave	Nebraska Ave to 15th St	NCT	C	CITY	2LU	08/07/08	3,119	10,300	A	360
Bougainvillea Ave	15th St to 22nd St	NCT	C	CITY	2LU	10/25/06	6,103	10,300	B	697
Bougainvillea Ave	22nd St to 30th St	NCT	C	CITY	2LU	08/07/08	3,615	10,300	A	376
Bougainvillea Ave	**30th St to McKinley Dr**	**NCT**	**C**	**CITY**	**2LU**	**08/07/08**	**6,333**	**10,300**	**B**	**614**
Bougainvillea Ave	McKinley Dr to 46th St	NCT	C	CITY	2LU	08/07/08	7,875	10,300	C	763
Boulevard	Swann Ave to Platt St	INB	C	CITY	4LU	10/09/06	8,533	22,800	A	846
Boulevard	Platt St to Kennedy Blvd	INB	C	CITY	4LU	10/09/06	10,758	16,200	C	911
Boulevard	Kennedy Blvd to Cass St	CET	M	CITY	4LU	10/11/06	13,249	16,200	C	1,150
Boulevard	Cass St to Cypress St	CET	M	CITY	4LU	10/11/06	11,542	29,400	A	1,173
Boulevard	Cypress St to I-275	CET	M	CITY	4LU	10/11/06	11,142	16,200	C	374
Boulevard	I-275 to Palm Ave	CET	M	CITY	4LU	10/23/06	13,233	29,400	B	1,322
Boulevard	Palm Ave to Columbus Dr	CET	M	CITY	4LU	11/01/06	11,679	29,400	A	1,116
Boulevard	Columbus Dr to M.L.K.Jr Blvd	CET	M	CITY	4LU	10/18/06	7,240	29,400	A	774
Boulevard	M.L.K.Jr Blvd to Osborne Ave	CET	NC	CITY	2LU	10/19/06	5,532	16,200	A	572
Boulevard	Sligh Ave to Waters Ave	CET	C	CITY	2LU	10/19/06	6,306	10,300	B	800
Boulevard	Waters Ave to Busch Blvd	CET	C	CITY	2LU	10/19/06	7,951	10,300	C	701
Boulevard	Busch Blvd to Linebaugh Ave	CET	C	CITY	2LU	10/19/06	8,035	10,300	C	837
Boulevard	Linebaugh Ave to Country Club Dr	CET	C	CITY	2LU	10/19/06	9,001	10,300	D	833

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							Existing			
Boy Scout Blvd(Spruce)	Memorial(Frontage Road) to Westshore Blvd	WS	P	STATE	6LD	06/14/07	45,647	51,200	D	4,134
Boy Scout Blvd	Westshore Blvd to Lois Ave	WS	P	STATE	6LD	03/30/08	37,004	67,700	B	3,551
Boy Scout Blvd	Lois Ave to Columbus Dr	WS	P	STATE	6LD	03/30/08	33,573	51,200	C	3,043
Broadway Ave	43rd St to 50th St	CET	M	COUNTY	4LU	05/14/08	11,989	34,200	A	1,053
Broadway Ave	50th St to Columbus Dr	CET	M	COUNTY	2LU	05/14/08	11,792	20,000	B	950
Broadway Ave	Columbus Dr(Orient Rd) to City Limits	CET	M	COUNTY	2LU	05/14/08	16,237	20,000	C	1,346
Brorein	Plant St to Bayshore Blvd	INB	OM	COUNTY	3LO	03/02/08	10,129	32,143	A	928
Brorein St	Hillsborough River to Tampa St	CBD	OM	COUNTY	4LO	02/17/08	25,261	39,071	C	2,536
Brorein St	Tampa St to Franklin St	CBD	OM	COUNTY	4LO	02/17/08	18,213	39,071	B	1,645
Brorein St	Franklin St(Florida) to Morgan St	CBD	OM	COUNTY	4LO	02/17/08	14,466	39,071	A	1,164
Brorein St	Morgan St(crosstown) to Jefferson St	CBD	OP	CITY	4LO	02/17/08	11,543	39,071	A	837
Brorein St	Jefferson St to Channelside Dr (East)	CBD	OP	CITY	2LO	02/17/08	1,093	20,571	A	683
Busch Blvd	Armenia Ave to Boulevard	CET	P	STATE	4LU	07/20/08	37,707	34,200	E	3,201
Busch Blvd	Boulevard to Florida Ave	CET	P	STATE	4LD	07/20/08	41,466	68,000	B	3,487
Busch Blvd	Florida Ave to I275-Busch Ramp W	CET	P	STATE	6LD	07/20/08	47,786	68,000	C	4,003
Busch Blvd	I-275 to Nebraska Ave	NCT	P	STATE	6LD	08/07/08	46,779	68,000	C	3,481
Busch Blvd	Nebraska Ave to 22nd St	NCT	P	STATE	6LD	07/20/08	41,460	68,000	B	3,280
Busch Blvd	22nd St to 30th St	NCT	P	STATE	6LD	07/20/08	48,879	68,000	C	4,310
Busch Blvd	30th St to 40th St	NCT	P	STATE	6LD	07/20/08	47,780	51,200	D	3,920
Busch Blvd	40th St to 52nd St (City Limits)	NCT	P	STATE	6LD	07/20/08	37,223	68,000	B	3,030
Ceasar St	Channelside Dr (East) Cumberland Ave	CBD	C	CITY	2LU	09/07/08	130	10,300	A	18
Cass St	Howard Ave to Willow Ave	CET	C	CITY	2LU	12/18/07	3,478	10,300	A	406
Cass St	Willow Ave to Boulevard	CET	C	CITY	4LU	12/18/07	4,813	22,800	A	537
Cass St	Boulevard to Hillsborough River	CET	M	COUNTY	4LU	12/18/07	8,448	22,800	A	920
Cass St	Hillsborough River to Ashley Dr	CBD	OM	COUNTY	3LO	12/18/07	5,424	31,500	A	771
Cass St	Ashley Dr to Tampa St	CBD	OC	CITY	3LO	12/18/07	4,922	31,500	A	547
Cass St	Tampa St to Franklin St	CBD	OC	CITY	3LO	12/18/07	5,072	31,500	A	556
Cass St	Franklin St to Florida Ave	CBD	OC	CITY	3LO	12/18/07	7,102	31,500	A	819
Cass St	Florida Ave to Marion St	CBD	OC	CITY	4LO	12/18/07	6,117	39,071	A	644
Cass St	Marion St to Morgan St	CBD	OC	CITY	4LO	12/18/07	6,151	39,071	A	689
Cass St	Morgan St to Pierce St	CBD	OC	CITY	4LO	12/18/07	5,060	39,071	A	666
Cass St	Pierce St to Jefferson St	CBD	C	CITY	4LU	12/18/07	5,208	22,800	A	649
Cass St	Jefferson St to Nebraska Ave	CBD	C	CITY	4LU	12/18/07	6,184	22,800	A	758
Central Ave	Lake Ave to M.L.K.Jr Blvd	CET	C	CITY	2LU	10/24/06	3,976	10,300	A	352
Central Ave	M.L.K.Jr Blvd to Osborne Ave	CET	C	CITY	2LU	10/24/06	4,834	10,300	B	538
Central Ave	Osborne Ave to Hillsborough Ave	CET	C	CITY	2LU	10/24/06	5,331	10,300	B	576
Central Ave	Hillsborough Ave to Hanna Ave	CET	C	CITY	2LU	10/24/06	5,332	10,300	B	649
Central Ave	Hanna Ave to Sligh Ave	CET	C	CITY	2LU	10/24/06	4,636	10,300	B	570
Channelside Dr (East)	Hillsborough River to Franklin St	CBD	OM	COUNTY	4LO	09/07/08	24,482	39,071	C	2,405
Channelside Dr (East)	Franklin St to Florida Ave	CBD	OM	COUNTY	4LO	09/07/08	22,841	39,071	B	2,282
Channelside Dr (East)	Florida Ave to Morgan St	CBD	OM	COUNTY	3LO	09/07/08	12,172	31,500	A	1,392
Channelside Dr (East)	Morgan St to Jefferson St	CBD	OP	COUNTY	3LO	09/07/08	12,877	31,500	A	1,465
Channelside Dr (East)	Brorein St to Cumberland St	CBD	P	COUNTY	4LU	09/07/08	13,652	28,800	B	1,164
Channelside Dr (North)	**Channelside Dr (East) to Kennedy Blvd**	**CBD**	**P**	**STATE**	**4LD**	**09/14/08**	**12,930**	**29,400**	**B**	**1,249**
Channelside Dr (North)	**Kennedy Blvd to Twiggs St**	**CBD**	**P**	**STATE**	**5LU**	**09/07/08**	**26,402**	**29,400**	**D**	**2,586**
Channelside Dr (North)	**Twiggs St to Adamo Dr**	**CBD**	**P**	**STATE**	**5LU**	**09/07/08**	**28,752**	**29,400**	**D**	**2,754**
Church Av	Euclid Ave to Bay to Bay Blvd	INB	NC	CITY	2LU	07/08/08	2,049	10,300	A	173
Church Av	Bay to Bay Blvd to Henderson Blvd	INB	NC	CITY	2LU	07/08/08	2,725	10,300	A	297
Church Av	Henderson Blvd to Swann Ave	INB	C	CITY	2LU	07/08/08	2,691	10,300	A	312
Cleveland St	Armenia Ave to Howard Ave	INB	OM	COUNTY	3LO	12/09/07	6,322	32,143	A	745
Cleveland St	Howard Ave(Willow) to Boulevard	INB	OM	COUNTY	3LO	11/26/07	13,090	32,143	A	1,407
Columbus Dr	Boy Scout Blvd to Dale Mabry Hwy	WS	M	COUNTY	6LD	03/30/08	41,316	51,200	C	3,706
Columbus Dr	Dale Mabry Hwy to Himes Ave	WS	M	COUNTY	4LD	04/30/07	29,514	29,400	D	2,943
Columbus Dr	Himes Ave to MacDill Ave	CET	M	COUNTY	5LU	03/30/08	25,160	29,400	D	2,459
Columbus Dr	MacDill Ave to Habana Ave	CET	M	COUNTY	5LU	06/29/99	22,409	29,400	C	1,273
Columbus Dr	Habana Ave to Armenia	CET	M	COUNTY	4LU	03/30/08	31,498	29,400	E	3,226
Columbus Dr	Armenia to Howard	CET	M	COUNTY	4LU	03/30/08	22,546	29,400	C	2,291
Columbus Dr	Howard to Rome Ave	CET	M	COUNTY	4LU	03/30/08	22,029	29,400	C	2,177
Columbus Dr	Rome Ave to Boulevard	CET	M	COUNTY	4LU	03/30/08	18,754	29,400	B	1,853

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Columbus Dr	Boulevard to Tampa St	CET	M	COUNTY	2LU	06/30/99	14,604	17,800	D	843
Columbus Dr	Tampa St to Florida Ave	CET	M	COUNTY	2LU	03/30/08	13,865	13,400	D	1,333
Columbus Dr	Florida Ave to Nebraska Ave	CET	M	COUNTY	2LU	03/30/08	10,975	17,800	B	1,035
Columbus Dr	Nebraska Ave to ARDC(14th St)	CET	M	COUNTY	2LU	03/30/08	9,802	13,400	C	966
Columbus Dr	ARDC(14th St) to 22nd St	CET	OM	COUNTY	2LO	03/30/08	4,919	16,600	A	551
Columbus Dr	22nd St to 34th St	CET	OM	COUNTY	2LO	03/30/08	4,551	21,000	A	498
Columbus Dr	34th St to 40th St	CET	OM	COUNTY	2LO	03/30/08	3,597	21,000	A	374
Columbus Dr	40th St to 19th Ave	CET	OM	COUNTY	2LO	03/30/08	3,748	17,800	A	406
Columbus Dr	19th Ave(Columbus Dr.) to 50th St	CET	M	COUNTY	4LU	03/30/08	19,590	29,400	C	1,397
Columbus Dr	50th St to Broadway Ave	CET	M	CITY	2LU	05/04/08	13,375	10,300	F	1,048
Commerce Blvd	**Tampa Palms Blvd. to New Tampa Blvd.**	**UN**	**C**	**CITY**	**2LD**	**01/22/01**	**10,990**	**13,400**	**C**	**3,362**
Commerce St	Interbay Blvd to Hoadley(City Limits)	INB	C	CITY	2LU	03/25/08	4,751	10,300	B	363
Country Club Dr	Armenia Ave to Boulevard	CET	C	CITY	2LU	01/10/08	2,304	10,300	A	256
Country Club Dr	Boulevard to Florida Ave	CET	C	CITY	2LU	01/10/08	4,252	10,300	B	453
Courtney Campbell	Rocky Point to Eisenhower	WS	P	STATE	6LD	06/26/05	64,273	67,000	D	5,522
CR 581	City Limits to Amberly Dr	UN	M	COUNTY	4LD	01/20/08	53,666	34,200	F	4,237
CR 581	Amberly Dr to Tampa Palms	UN	M	COUNTY	4LD	01/20/08	53,626	37,800	F	4,483
CR 581	Tampa Palms to I-75	UN	M	COUNTY	4LD	01/20/08	40,277	37,800	E	3,075
CR 581	I-75 to (Dona Michelle)Hunter's Green Dr	UN	M	COUNTY	4LD	01/20/08	64,827	34,200	F	5,196
CR 581	Hunter's Green Dr to New Tampa Blvd/ Cross (	UN	M	COUNTY	4LD	01/20/08	46,034	34,200	F	3,777
CR 581	New Tampa Blvd/ Cross Creek Blvd to County	UN	M	COUNTY	4LD	01/20/08	40,823	37,800	E	3,302
Cross Creek Blvd	CR 581 to Kinnan St	UN	C	CITY	4LD	01/20/08	26,318	37,800	C	2,107
Cross Creek Blvd	Kinnan St to Morris Bridge Road	UN	C	COUNTY	2LU	01/20/08	29,715	10,300	F	2,995
Crosstown Expr	Euclid Ave to Bay To Bay Blvd	INB	I	STATE	4LF	04/08/02	24,000	68,900	A	5,050
Crosstown Expr	Bay To Bay Blvd to Willow Ave	INB	I	STATE	4LF	04/08/02	27,500	68,900	A	2,776
Crosstown Expr	Willow Ave to Plant Ave	INB	I	STATE	4LF	04/08/02	29,000	68,900	B	2,502
Crosstown Expr	Plant Ave to Florida Ave	CBD	I	STATE	4LF	04/08/02	31,500	68,900	B	5,050
Crosstown Expr	Florida Ave to Kennedy Blvd	CBD	I	STATE	4LF	04/08/02	40,000	68,900	B	3,212
Crosstown Expr	Kennedy Blvd to Channelside Dr (North)	CBD	I	STATE	4LF	04/08/02	40,000	68,900	B	4,381
Crosstown Expr	Gandy Blvd to Euclid Ave	INB	I	STATE	4LF	04/08/02	24,000	68,900	A	3,703
Crosstown Expr	13th St to 22nd St	CET	I	STATE	4LF	04/08/02	51,000	68,900	C	2,764
Crosstown Expr	22nd St to I-4 Connector	CET	I	STATE	4LF	04/08/02	58,000	68,900	C	4,635
Crosstown Expr	I-4 Connector to 39th St	CET	I	STATE	4LF	04/08/02	46,000	68,900	C	2,029
Crosstown Expr	39th St to 50th St (US 41)	CET	I	STATE	4LF	04/08/02	44,000	68,900	C	3,516
Crosstown Expr	50th St (US 41) to 78th St	CET	I	STATE	4LF	04/08/02	46,000	68,900	C	1,593
Cumberland Ave	**Jefferson to Caesar**	**CBD**	**OC**	**CITY**	**2LO**	**11/28/06**	**670**	**20,571**	**A**	**175**
Cumberland Ave	Caesar to Meridian	CBD	C	CITY	0L	09/23/97	0	0	A	158
Cumberland Ave	Meridian to Channelside Dr (North)	CBD	C	CITY	2LU	11/29/07	3,828	13,000	A	362
Cypress St	Frontage Road to Westshore Blvd	WS	C	CITY	5LU	03/04/08	16,235	22,800	C	1,785
Cypress St	West Shore Blvd(Trask St) to Lois Ave	WS	C	CITY	5LU	03/04/08	22,245	22,800	D	2,927
Cypress St	Lois Ave to I-275	WS	C	CITY	5LU	03/04/08	14,033	22,800	B	1,828
Cypress St	I-275 to Dale Mabry Hwy	WS	C	CITY	5LU	04/24/07	14,117	22,800	B	1,761
Cypress St	Dale Mabry Hwy to Himes Ave	WS	C	CITY	5LU	03/04/08	14,029	18,800	C	1,764
Cypress St	Himes Ave to MacDill Ave	CET	C	CITY	2LU	03/12/08	7,298	18,800	A	906
Cypress St	MacDill Ave to Armenia Ave	CET	NC	CITY	2LU	03/04/08	6,533	18,800	A	843
Cypress St	Armenia Ave to Howard Ave	CET	NC	CITY	2LU	03/04/08	10,770	18,800	B	1,252
Cypress St	Howard Ave to Willow Ave	CET	NC	CITY	2LU	03/04/08	8,161	10,300	C	394
Cypress St	Willow Ave to Boulevard	CET	NC	CITY	2LU	03/04/08	3,755	10,300	A	889
Dale Mabry Hwy	MacDill AFB to Interbay Blvd	INB	M	STATE	4LD	06/01/08	25,949	34,200	C	2,500
Dale Mabry Hwy	Interbay Blvd to Gandy Blvd	INB	M	STATE	4LD	06/01/08	28,508	34,200	C	2,632
Dale Mabry Hwy	Gandy Blvd to Bay Vista Ave	INB	P	STATE	4LU	06/01/08	28,923	29,400	D	2,168
Dale Mabry Hwy	Bay Vista Ave to Euclid Ave	INB	P	STATE	4LD	06/01/08	42,132	34,200	E	3,240
Dale Mabry Hwy	Euclid Ave to El Prado	INB	P	STATE	4LU	06/01/08	32,941	29,400	E	2,415
Dale Mabry Hwy	El Prado Blvd to Bay to Bay Blvd	INB	P	STATE	4LU	06/01/08	32,334	29,400	E	2,366
Dale Mabry Hwy	Bay to Bay Blvd(Neptune St) to Henderson Blv	INB	P	STATE	4LU	06/08/08	38,196	29,400	F	3,031
Dale Mabry Hwy	Henderson Blvd to Swann Ave	INB	P	STATE	4LD	06/08/08	38,408	34,200	E	2,922
Dale Mabry Hwy	Swann Ave to Azeele St	INB	P	STATE	4LD	06/01/08	45,293	34,200	F	3,483
Dale Mabry Hwy	Azeele St to Kennedy Blvd	INB	P	STATE	4LD	06/01/08	35,217	34,200	D	3,862
Dale Mabry Hwy	Kennedy Blvd to Cypress St	WS	P	STATE	6LD	06/01/08	44,393	51,200	D	3,365

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Dale Mabry Hwy	Cypress St to I-275	WS	P	STATE	6LD	06/01/08	58,052	62,700	D	4,607
Dale Mabry Hwy	I-275 to Spruce St	WS	P	STATE	6LD	06/01/08	67,960	62,700	E	5,327
Dale Mabry Hwy	Spruce St to Columbus Dr	WS	P	STATE	6LD	06/01/08	55,553	62,700	D	4,187
Dale Mabry Hwy	Columbus Dr to Tampa Bay Blvd	WS	P	STATE	6LD	06/01/08	63,048	62,700	D	5,014
Dale Mabry Hwy	Tampa Bay Blvd to M.L.K.Jr Blvd	WS	P	STATE	6LD	06/08/08	37,100	51,200	C	2,958
Dale Mabry Hwy	M.L.K.Jr Blvd to Hillsborough	WS	P	STATE	6LD	07/06/08	53,760	55,200	D	4,162
Dale Mabry Hwy	Hillsborough Ave to City Limits	CET	P	STATE	6LD	06/08/08	66,906	62,700	E	5,682
Davis Blvd	Plant Ave to N.Adalia Ave	INB	M	COUNTY	4LU	09/15/08	24,701	42,800	B	2,250
Davis Blvd	N.Adalia Ave to Baltic Ave	INB	M	COUNTY	4LU	09/15/08	23,143	42,800	B	2,128
Davis Blvd E.	Baltic Ave to S.Davis Blvd	INB	C	CITY	4LU	01/09/08	2,360	22,800	A	225
Davis Blvd W.	S.Davis Blvd to Baltic Ave	INB	C	CITY	4LU	09/15/08	9,294	22,800	A	770
Davis Blvd S.	E.Davis Blvd to W.Davis Blvd	INB	C	CITY	4LU	09/15/08	3,161	22,800	A	314
El Prado Blvd	Westshore Blvd to Manhattan Ave	INB	NC	CITY	4LD	03/26/08	4,009	22,800	A	372
El Prado Blvd	Manhattan Ave to Dale Mabry Hwy	INB	NC	CITY	4LD	03/26/08	8,573	22,800	A	836
El Prado Blvd	Dale Mabry Hwy to MacDill Ave	INB	NC	CITY	4LD	03/26/08	5,345	22,800	A	557
El Prado Blvd	MacDill Ave to Bayshore Blvd	INB	NC	CITY	4LD	03/31/08	1,584	22,800	A	231
Euclid Ave	Westshore Blvd to Manhattan Ave	INB	NC	CITY	2LU	03/26/08	8,543	10,300	C	823
Euclid Ave	Manhattan Ave to Dale Mabry Hwy	INB	NC	CITY	2LU	03/26/08	10,263	10,300	D	1,075
Euclid Ave	Dale Mabry Hwy(Himes Ave) to MacDill Ave	INB	NC	CITY	2LU	03/26/08	9,894	14,800	C	999
Euclid Ave	MacDill Ave to Bayshore Blvd	INB	NC	CITY	2LU	03/26/08	3,385	10,300	A	332
Fletcher Ave	46th St to 50th St	UN	M	COUNTY	4LD	07/20/08	33,408	51,200	B	2,946
Floribraska Ave	Tampa St to Florida Ave	CET	M	COUNTY	4LU	07/08/08	3,189	29,400	A	273
Floribraska Ave	Florida Ave to Nebraska Ave	CET	M	COUNTY	4LU	07/08/08	9,681	29,400	A	886
Florida Ave	St. Pete Times Forum Dr to Channelside Dr (E	CBD	M	CITY	2LU	06/22/08	2,809	13,000	A	251
Florida Ave	Channelside Dr (East) to Brorein St	CBD	OM	CITY	3LO	06/22/08	13,645	31,500	B	1,268
Florida Ave	Brorein St to Whiting st	CBD	OM	CITY	3LO	06/22/08	13,683	31,500	B	1,220
Florida Ave	Whiting St to Jackson St	CBD	OM	CITY	4LO	06/22/08	25,429	39,071	C	3,145
Florida Ave	Jackson St to Kennedy Blvd	CBD	OM	STATE	4LO	06/22/08	16,543	44,400	A	1,905
Florida Ave	Kennedy Blvd to Madison St	CBD	OM	STATE	4LO	06/22/08	16,275	39,071	B	1,931
Florida Ave	Madison St to Twiggs St	CBD	OM	STATE	4LO	06/22/08	16,011	39,071	B	1,893
Florida Ave	Twiggs St to Zack St	CBD	OM	STATE	4LO	06/22/08	18,121	39,071	B	2,176
Florida Ave	Zack St to Polk St	CBD	OM	STATE	4LO	06/22/08	18,679	39,071	B	2,311
Florida Ave	Polk St to Cass St	CBD	OM	STATE	4LO	06/22/08	18,610	39,071	B	2,381
Florida Ave	Cass St to Tyler St	CBD	OM	STATE	4LO	06/22/08	18,206	39,071	B	2,325
Florida Ave	Tyler St to Scott St	CBD	OM	STATE	3LO	06/22/08	17,925	44,400	A	2,322
Florida Ave	Scott St to Palm Ave	CET	OM	STATE	3LO	06/22/08	9,043	32,143	A	1,440
Florida Ave	Palm Ave to Columbus Ave	CET	OM	STATE	3LO	06/22/08	6,058	39,600	A	1,088
Florida Ave	Columbus Ave(Floribraska Ave) to Lake Ave	CET	OM	STATE	3LO	06/22/08	9,717	32,143	A	1,464
Florida Ave	Lake Ave to M.L.K.Jr Blvd	CET	OM	STATE	3LO	06/22/08	9,892	32,143	A	1,509
Florida Ave	M.L.K.Jr Blvd to Osborne Ave	CET	OM	STATE	3LO	06/22/08	9,335	41,700	A	1,498
Florida Ave	Osborne Ave to Hillsborough Ave	CET	M	STATE	4LU	06/22/08	24,746	34,200	A	2,856
Florida Ave	Hillsborough Ave(Hanna Ave) to Sligh Ave	CET	M	STATE	4LU	06/22/08	18,366	34,200	B	1,820
Florida Ave	Sligh Ave(Bird St) to Waters Ave	CET	M	STATE	4LU	07/06/08	30,965	34,200	D	2,745
Florida Ave	Waters Ave(Yukon St) to Busch Blvd	CET	M	STATE	5LU	07/06/08	31,571	29,400	E	2,795
Florida Ave	Busch Blvd to Linebaugh Ave	CET	M	STATE	6LD	07/06/08	30,186	45,000	C	2,935
Florida Ave	Linebaugh Ave to Bougainvillea Ave	CET	M	STATE	4LU	08/07/08	26,445	29,400	D	2,271
Florida Ave	Bougainvillea Ave to Country Club Dr	CET	M	STATE	2LU	07/06/08	25,480	16,100	F	2,166
Fowler Ave	**Florida Ave to I275 Ramp**	**CET**	**P**	**STATE**	**5LU**	**07/06/08**	**31,842**	**93,200**	**A**	**2,701**
Fowler Ave	**Fowler-I275 Ramp N to Nebraska Ave**	**NCT**	**P**	**STATE**	**5LU**	**07/06/08**	**45,248**	**93,200**	**B**	**3,839**
Fowler Ave	Nebraska Ave to 15th St	NCT	P	STATE	8LD	07/06/08	49,543	69,200	C	4,185
Fowler Ave	15th St to 22nd St	NCT	P	STATE	8LD	07/06/08	50,084	69,200	C	4,217
Fowler Ave	22nd St to 30th St	NCT	P	STATE	8LD	07/20/08	48,492	69,200	C	4,025
Fowler Ave	30th St to McKinley Dr	NCT	P	STATE	8LD	07/27/08	50,270	45,900	E	3,977
Fowler Ave	McKinley Dr to 50th St	NCT	P	STATE	8LD	05/22/05	62,199	93,200	C	5,000
Fowler Ave	50th St to 52nd St (City Limits)	NCT	P	STATE	6LD	07/20/08	31,304	45,900	C	2,438
Fowler Ave	Rosewood Dr. and 50th St.	NCT	P	STATE	6LD	07/27/08	50,717	69,200	C	4,218
Frankland Rd	San Miguel to Neptune St	INB	NC	CITY	2LU	06/18/08	3,433	10,300	A	344
Franklin St	Garrison Channel to Ice Palace Dr(East)	CBD	C	CITY	2LU	01/07/08	14,610	10,300	F	1,323
Franklin St	Ice Palace Dr (East)(Ashley Dr) to Channelside	CBD	C	CITY	3LU	11/19/06	13,309	10,815	E	1,249

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						Existing				
Franklin St	Channelside Dr (East) to Brorein St	CBD	C	CITY	3LU	08/24/08	11,033	10,815	D	852
Franklin St	Brorein St to Whiting St	CBD	C	CITY	3LU	11/26/07	2,339	10,815	A	404
Gandy Blvd	Pinellas Co. to Westshore Blvd	INB	P	STATE	4LF	07/14/07	38,191	41,700	D	3,994
Gandy Blvd	Westshore Blvd to Manhattan Ave	INB	P	STATE	4LD	07/14/07	34,511	34,200	D	4,183
Gandy Blvd	Manhattan Ave to Crosstown Express	INB	P	STATE	4LD	07/14/07	23,924	49,214	B	2,423
Gandy Blvd	Crosstown Express to Dale Mabry Hwy	INB	P	STATE	4LD	07/14/07	51,859	49,214	E	4,532
Gandy Blvd	Dale Mabry Hwy to Himes Ave	INB	P	COUNTY	4LD	07/14/07	22,244	22,800	D	1,787
Gandy Blvd	Himes Ave to Bayshore Blvd	INB	M	COUNTY	4LU	07/14/07	13,328	22,800	B	1,167
George Road	Memorial Hwy to Independent Pkwy	WS	C	CITY	2LU	08/05/07	2,485	10,300	A	305
Habana Ave	Main St to Columbus Dr	CET	C	CITY	2LU	12/06/06	1,156	10,300	A	149
Habana Ave	Columbus Dr to Tampa Bay Blvd	CET	C	CITY	2LU	12/06/06	5,918	10,300	B	552
Habana Ave	Tampa Bay Blvd to M.L.K.Jr Blvd	CET	C	CITY	2LU	12/06/06	8,228	10,300	C	775
Habana Ave	M.L.K.Jr Blvd to Hillsborough Ave	CET	C	CITY	5LU	12/06/06	18,829	22,800	C	1,800
Habana Ave	Hillsborough Ave to Henry (City Limits)	CET	C	COUNTY	2LU	12/06/06	9,617	10,300	D	1,004
Hanna Ave	Florida Ave(Central Ave) to Nebraska Ave	CET	C	CITY	2LU	01/10/08	2,547	10,300	A	389
Hanna Ave	Nebraska Ave to 15th St	CET	C	CITY	2LU	01/10/08	5,849	10,300	B	614
Hanna Ave	15th St to 22nd St	CET	C	CITY	2LU	01/10/08	3,412	10,300	A	319
Hanna Ave	22nd St to 30th St	CET	C	CITY	2LU	01/28/08	4,819	10,300	B	482
Hanna Ave	30th St to 40th St	CET	C	CITY	2LU	01/22/07	6,464	10,300	C	671
Hanna Ave	40th St to 43rd St	CET	C	COUNTY	2LU	01/10/08	5,170	10,300	B	431
Harrison St	Franklin St to Jefferson/Orange	CBD	C	CITY	2LU	04/20/08	1,381	10,300	A	132
Henderson Blvd	Bay to Bay Blvd to Manhattan Ave	INB	NC	COUNTY	4LU	12/05/06	2,526	22,800	A	254
Henderson Blvd	Manhattan Ave(Church) to Dale Mabry Hwy	INB	M	COUNTY	4LU	12/17/07	18,332	22,800	C	1,606
Henderson Blvd	Dale Mabry Hwy to Swann Ave	INB	M	STATE	4LU	12/17/07	20,882	22,800	D	1,825
Henderson Blvd	Swann Ave to Azeele St	INB	M	STATE	4LU	12/17/07	18,340	22,800	C	1,680
Henderson Blvd	Azeele St to Kennedy Blvd	INB	M	STATE	4LU	12/17/07	9,838	22,800	B	873
Highland Ave	M.L.K.Jr Blvd to Osborne Ave	CET	OM	STATE	3LO	11/28/07	7,790	36,571	A	565
Highland Ave	Osborne Ave to Violet St	CET	OM	STATE	3LO	11/28/07	8,903	36,571	A	720
Highland Ave	Violet St to Hillsborough Ave	CET	NC	CITY	2LU	12/10/07	6,533	13,400	B	1,029
Highwood Preserve Blvd.	CR 581 to New Tampa Blvd.	UN	C	CITY	2LU	05/18/00	7,830	13,400	B	3,362
Hillsborough Ave	Eisenhower Blvd to Westshore Blvd	WS	P	STATE	6LD	09/09/07	55,708	67,700	C	4,414
Hillsborough Ave	Westshore Blvd to Lois Ave	WS	P	STATE	6LD	09/09/07	64,025	67,700	D	4,707
Hillsborough Ave	Lois Ave to Dale Mabry Hwy	WS	P	STATE	6LD	07/30/06	70,875	67,700	D	2,667
Hillsborough Ave	Dale Mabry Hwy to Himes Ave	WS	P	STATE	6LD	09/09/07	72,615	67,700	E	5,330
Hillsborough Ave	Himes Ave to Armenia Ave	CET	P	STATE	6LD	07/30/06	58,743	67,700	D	2,195
Hillsborough Ave	Armenia Ave to Rome Ave	CET	P	STATE	6LD	07/30/06	58,052	67,700	C	2,070
Hillsborough Ave	Rome Ave to Hillsborough River	CET	P	STATE	6LD	07/30/06	55,920	67,700	C	2,121
Hillsborough Ave	Hillsborough River to Florida Ave	CET	P	STATE	6LD	07/30/06	50,496	67,700	C	3,253
Hillsborough Ave	Florida Ave to I-275	CET	P	STATE	6LD	07/30/06	54,479	67,700	C	1,885
Hillsborough Ave	I-275 to Nebraska Ave	CET	P	STATE	6LD	07/30/06	52,804	67,700	C	1,664
Hillsborough Ave	Nebraska Ave to 15th St	CET	P	STATE	6LD	07/30/06	51,924	67,700	C	1,694
Hillsborough Ave	15th St to 22nd St	CET	P	STATE	6LD	07/30/06	51,667	67,700	C	1,784
Hillsborough Ave	22nd St to 30th St	CET	P	STATE	6LD	07/30/06	54,547	67,700	C	1,978
Hillsborough Ave	30th St to 40th St	CET	P	STATE	6LD	07/30/06	51,911	67,700	C	1,956
Hillsborough Ave	40th St to 50th St (City Limits)	CET	P	STATE	6LD	07/30/06	46,285	67,700	C	1,867
Himes Ave	Interbay Blvd to Gandy Blvd	INB	C	CITY	2LU	12/02/07	3,112	10,300	A	349
Himes Ave	Gandy Blvd to Euclid Ave	INB	C	CITY	4LU	12/02/07	10,445	22,800	B	1,160
Himes Ave	Euclid Ave(El Prado) to Bay to Bay Blvd	INB	C	CITY	2LU	12/09/07	3,315	10,300	A	358
Himes Ave	Bay to Bay Blvd to San Miguel	INB	C	CITY	2LU	12/02/07	5,408	10,300	B	584
Himes Ave	Neptune St(Morrison Ave) to Swann Ave	INB	NC	CITY	2LU	12/02/07	2,094	10,300	A	249
Himes Ave	Swann Ave to Azeele St	INB	NC	CITY	2LU	12/02/07	7,024	21,400	A	807
Himes Ave	Azeele St to Kennedy Blvd	INB	NC	CITY	2LU	12/02/07	6,862	23,600	A	857
Himes Ave	Kennedy Blvd to Cypress St	WS	C	CITY	5LU	12/02/07	14,924	38,000	A	1,489
Himes Ave	Cypress St to I-275	WS	M	CITY	5LU	12/02/07	26,782	34,200	C	2,900
Himes Ave	I-275(Spruce St) to Columbus Dr	WS	M	CITY	5LU	12/02/07	22,671	34,200	C	2,183
Himes Ave	Columbus Dr to Tampa Bay Blvd	WS	M	CITY	4LD	12/10/07	24,706	34,200	C	2,424
Himes Ave	Tampa Bay Blvd to M.L.K.Jr Blvd	WS	M	CITY	4LD	12/02/07	24,107	34,200	C	2,231
Himes Ave	M.L.K.Jr Blvd to Hillsborough Ave	WS	M	CITY	4LD	12/10/07	15,064	23,600	B	1,630
Himes Ave	Hillsborough Ave to Henry (City Limits)	CET	C	COUNTY	2LU	12/11/07	16,623	10,300	F	1,431
Howard Ave	Bayshore Blvd(Morrison Ave) to Swann Ave	INB	C	CITY	2LU	06/10/08	15,332	10,300	F	1,239

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						Existing				
Howard Ave	Swann Ave to Azeele St	INB	C	CITY	2LU	06/10/08	12,811	10,300	E	940
Howard Ave	Azeele St to Platt St	INB	OC	CITY	2LO	06/10/08	11,923	18,214	C	857
Howard Ave	Platt St(Cleveland St) to Kennedy Blvd	INB	OM	CITY	3LO	06/10/08	17,845	27,643	C	1,461
Howard Ave	Kennedy Blvd to Cass St	CET	OM	COUNTY	2LO	06/10/08	17,785	23,000	C	1,594
Howard Ave	Cass St to Cypress St	CET	OM	COUNTY	2LO	06/28/07	20,893	24,429	D	1,719
Howard Ave	Cypress St(Main St) to Columbus Dr	CET	OM	COUNTY	2LO	06/18/08	12,427	24,429	B	1,281
Howard Ave	Columbus Dr to Armenia Ave	CET	OM	COUNTY	2LO	06/18/08	12,073	24,429	B	1,249
Hyde Park Ave	Bayshore On-Ramp to DeLeon St	INB	OM	CITY	2LO	11/21/06	17,031	21,000	C	1,237
Hyde Park Ave	DeLeon St to Platt St	INB	OM	CITY	2LO	10/09/06	14,150	21,000	C	1,038
Hyde Park Ave	Platt St to Kennedy Blvd	INB	OM	CITY	2LO	10/09/06	6,219	21,000	A	393
I-275	City Limits to Kennedy Blvd	WS	I	STATE	4LF	06/01/07	147,000	68,900	F	9,981
I-275	Kennedy Blvd to Memorial Hwy	WS	I	STATE	4LF	06/01/07	86,500	68,900	E	6,633
I-275	Memorial Hwy to Westshore Blvd	WS	I	STATE	6LF	06/01/07	147,000	103,400	F	9,018
I-275	Westshore Blvd to Lois Ave	WS	I	STATE	6LF	06/01/07	169,500	103,400	F	9,261
I-275	Lois Ave to Dale Mabry Hwy	WS	I	STATE	6LF	06/01/07	175,500	103,400	F	9,772
I-275	Dale Mabry Hwy to Himes Ave	WS	I	STATE	6LF	06/01/07	187,000	103,400	F	10,480
I-275	Himes Ave to Armenia/Howard	CET	I	STATE	6LF	06/01/07	191,500	103,400	F	11,887
I-275	Armenia/Howard to Ashley Dr	CET	I	STATE	6LF	06/01/07	204,000	103,400	F	12,500
I-275	Ashley/Scott Ex to Ash. NBOnRamp	CBD	I	STATE	6LF	06/01/07	201,000	103,400	F	12,100
I-275	Ash. NBOnRamp to Oran./Jeff.OnRamp	CBD	I	STATE	6LF	04/08/02	105,000	103,400	D	10,811
I-275	Orange/Jefferson Ramp to I-4	CET	I	STATE	6LF	04/08/02	134,500	103,400	F	9,278
I-275	I-4 to M.L.K.Jr Blvd	CET	I	STATE	6LF	06/01/07	164,500	103,400	F	11,100
I-275	M.L.K.Jr Blvd to Hillsborough Ave	CET	I	STATE	6LF	06/01/07	162,500	103,400	F	10,900
I-275	Hillsborough Ave to Sligh Ave	CET	I	STATE	6LF	06/01/07	163,000	103,400	F	11,000
I-275	Sligh Ave to Bird St	CET	I	STATE	6LF	06/01/07	172,500	103,400	F	11,600
I-275	Bird St to Busch Blvd	CET	I	STATE	6LF	06/01/07	156,500	103,400	F	10,553
I-275	Busch Blvd to City Limits	NCT	I	STATE	6LF	06/01/03	124,500	103,400	E	9,352
I-4	50th St to City Limits	CET	I	STATE	4LF	06/01/06	107,000	68,900	F	8,239
I-4	I-275 to 22nd St	CET	I	STATE	6LF	06/01/07	134,500	103,400	F	9,100
I-4	22th St to 40th St	CET	I	STATE	4LF	06/01/07	131,500	68,900	F	9,950
I-4	40th St to 50th St	CET	I	STATE	4LF	06/01/07	116,500	68,900	F	10,800
I-275	City Limits to Kennedy Blvd	WS	I	STATE	4LF	06/01/07	155,500	68,900	F	10,514
I-275	Kennedy Blvd to Memorial Hwy	WS	I	STATE	4LF	06/01/06	125,399	68,900	F	10,543
I-275	Memorial Hwy to Westshore Blvd	WS	I	STATE	6LF	06/01/06	124,174	103,400	E	10,571
St. Pete Times Forum Dr	Franklin St to Ice Palace Dr (North)	CBD	C	CITY	2LD	07/15/95	510	10,300	A	47
Ice Palace Dr (North)	Ashley Dr to Channelside Dr (East)	CBD	C	CITY	2LU	07/15/95	506	10,300	A	47
Interbay Blvd	Westshore Blvd to Dale Mabry Hwy	INB	C	CITY	2LU	12/02/07	12,092	10,300	E	1,005
Interbay Blvd	Dale Mabry Hwy(MacDill Ave) to Bayshore Blv	INB	NC	CITY	2LU	12/02/07	2,228	10,300	A	203
Jackson St	Ashley Dr to Tampa St	CBD	OM	STATE	3LO	04/20/08	14,984	31,500	B	1,490
Jackson St	Tampa St to Franklin St	CBD	OM	STATE	3LO	04/20/08	13,866	31,500	B	1,410
Jackson St	Franklin St to Florida Ave	CBD	OM	STATE	3LO	05/04/08	11,029	31,500	A	1,182
Jackson St	Florida Ave to Marion St	CBD	OM	STATE	3LO	05/04/08	10,674	31,500	A	1,266
Jackson St	Marion St to Morgan St	CBD	OM	STATE	3LO	04/20/08	10,152	31,500	A	1,234
Jackson St	Morgan St to Pierce St	CBD	OM	STATE	3LO	05/04/08	10,072	31,500	A	1,402
Jackson St	Pierce St to Nebraska Ave	CBD	OM	STATE	3LO	04/20/08	10,925	31,500	A	1,691
Jefferson St/Orange St	Scott St to Cass St	CBD	M	CITY	6LD	04/13/08	10,011	44,100	A	1,232
Jefferson St	**Channelside Dr (East) to Ashley Dr**	**CBD**	**C**	**CITY**	**2LU**	**07/15/95**	**514**	**10,300**	**A**	**827**
Jefferson St	Channelside Dr (East) to Brorein St	CBD	C	CITY	2LO	04/13/08	3,714	10,300	A	574
Jefferson St	Brorein St to Jackson St	CBD	C	CITY	2LU	04/13/08	6,339	10,300	B	830
Jefferson St	Jackson St to Kennedy St	CBD	C	CITY	4LU	04/13/08	6,544	22,800	A	728
Jefferson St	Kennedy Blvd to Twiggs	CBD	C	CITY	4LU	04/13/08	5,805	22,800	A	713
Jefferson St	Twiggs St to Zack St	CBD	C	CITY	4LU	04/20/08	7,082	22,800	A	990
Jefferson St	Zack St to Cass St	CBD	C	CITY	4LU	04/13/08	7,547	22,800	A	1,146
Kay St	Tampa St to Franklin St	CBD	OM	CITY	2LO	01/09/08	7,010	20,571	A	525
Kay St	Franklin St. to Morgan	CBD	OC	CITY	2LO	11/29/07	12,448	20,571	B	1,159
Kennedy Blvd	I-275 to Hoover Blvd	WS	P	STATE	5LU	08/10/08	15,758	42,800	A	1,734
Kennedy Blvd	Hoover Blvd to Memorial Hwy	WS	P	STATE	6LD	08/10/08	21,671	45,000	B	2,246
Kennedy Blvd	Memorial Hwy to Westshore Blvd	WS	P	STATE	6LD	08/17/08	52,022	45,000	E	4,520
Kennedy Blvd	Westshore Blvd to Lois Ave	WS	P	STATE	6LD	08/10/08	39,758	45,000	D	3,521

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ON	From - To (S to N or W to E)	Impact Fee District	Funct Class Funct Class*	Maint. Respons.	Exist Road Type	Date of Count (mm/dd/yr)	Existing Daily Volume	Existing LOS D Capacity	Existing LOS	Existing PM Peak Volume
						Existing				
Kennedy Blvd	Lois Ave to Dale Mabry Hwy	WS	P	STATE	5LU	08/03/08	37,556	29,400	F	3,102
Kennedy Blvd	Dale Mabry Hwy to Himes Ave	WS	P	STATE	5LU	08/10/08	32,636	29,400	E	2,675
Kennedy Blvd	Himes Ave to Henderson Blvd	CET	P	STATE	5LU	08/03/08	32,032	29,400	E	2,757
Kennedy Blvd	Henderson Blvd to MacDill Ave	CET	P	STATE	5LU	08/17/08	46,912	29,400	F	3,962
Kennedy Blvd	MacDill Ave to Armenia Ave	CET	P	STATE	5LU	08/17/08	33,914	29,400	E	2,828
Kennedy Blvd	Armenia Ave to Howard Ave	CET	P	STATE	5LU	08/03/08	33,848	40,800	C	2,898
Kennedy Blvd	Howard Ave(Oregan) to Willow Ave	CET	P	STATE	5LU	08/10/08	32,405	29,400	E	2,791
Kennedy Blvd	Willow Ave(Hyde Park) to Plant Ave	CET	P	STATE	5LU	08/10/08	27,135	29,400	D	2,186
Kennedy Blvd	Plant Ave to Hillsborough River	CET	P	STATE	5LU	08/10/08	36,384	29,400	E	3,282
Kennedy Blvd	Ashley Dr to Tampa St	CBD	OM	STATE	4LO	08/03/08	12,452	39,071	A	833
Kennedy Blvd	Tampa St to Franklin St	CBD	OM	STATE	4LO	08/03/08	15,620	39,071	A	1,962
Kennedy Blvd	Franklin St to Florida Ave	CBD	OM	STATE	4LO	08/03/08	14,617	39,071	A	1,048
Kennedy Blvd	Florida Ave to Marion St	CBD	OM	STATE	4LO	08/03/08	24,509	39,071	C	1,690
Kennedy Blvd	Marion St to Morgan St	CBD	OM	STATE	4LO	08/03/08	14,584	40,800	A	1,080
Kennedy Blvd	Morgan St to Pierce St	CBD	OM	STATE	4LO	08/03/08	14,899	40,800	A	979
Kennedy Blvd	Pierce St to Jefferson St	CBD	OM	STATE	4LO	08/10/08	15,060	39,071	A	1,014
Kennedy Blvd	Jefferson St to Nebraska Ave	CBD	OM	STATE	4LO	08/10/08	15,358	40,800	A	968
Kennedy Blvd	Nebraska Ave to Channelside Dr (North)	CBD	M	STATE	4LU	08/17/08	10,909	40,800	A	1,116
Lake Ave	Florida Ave to Central Ave	CET	C	CITY	2LU	05/29/08	3,373	10,300	A	316
Lake Ave	Central Ave to Nebraska Ave	CET	C	CITY	2LU	05/29/08	5,189	10,300	B	481
Lake Ave	Nebraska Ave to 15th St	CET	C	CITY	2LU	05/14/08	5,265	10,300	B	476
Lake Ave	15th St to 22nd St	CET	C	CITY	2LU	05/29/08	6,175	10,300	B	570
Lake Ave	22nd St to 34th St	CET	C	CITY	2LU	06/19/08	3,568	10,300	A	364
Lake Ave	34th St to 40th St	CET	C	CITY	2LU	05/29/08	5,022	10,300	B	484
Lake Ave	40th St to M.L.K.Jr Blvd	CET	C	CITY	2LU	05/29/08	3,765	10,300	A	307
Laurel St	Hillsborough River to Tampa St	CBD	NC	CITY	4LU	05/04/08	2,584	22,800	A	292
Linebaugh Ave	Armenia Ave to Boulevard	CET	C	CITY	2LU	11/05/06	11,634	10,300	E	1,093
Linebaugh Ave	Boulevard to Florida Ave	CET	C	CITY	2LU	11/15/06	10,074	10,300	D	1,007
Linebaugh Ave	Florida Ave to I-275	CET	C	CITY	2LU	12/06/06	3,302	10,300	A	290
Linebaugh Ave	I-275 to Nebraska Ave	NCT	C	CITY	2LU	11/05/06	4,603	10,300	B	491
Linebaugh Ave	Nebraska Ave to 15th St	NCT	C	CITY	2LU	11/05/06	5,650	10,300	B	554
Linebaugh Ave	15th St to 22nd St	NCT	C	CITY	2LU	11/05/06	2,859	10,300	A	321
Linebaugh Ave	22nd St to 30th St	NCT	C	CITY	2LU	11/05/06	2,488	10,300	A	304
Lois Ave	Henderson Blvd to Swann Ave	INB	C	CITY	2LU	07/08/08	4,700	10,300	B	464
Lois Ave	Swann Ave to Azeele St	INB	C	CITY	2LU	07/08/08	5,930	10,300	B	622
Lois Ave	Azeele St to Kennedy Blvd	INB	C	CITY	2LU	06/24/08	13,893	10,300	F	1,503
Lois Ave	Kennedy Blvd(I-275 S ramp) to I-275 N ramp	WS	C	CITY	4LU	06/24/08	22,920	38,400	B	2,179
Lois Ave	I-275 N ramp to Cypress St	WS	C	CITY	4LU	06/24/08	31,511	38,400	C	3,443
Lois Ave	Cypress St to Spruce St	WS	C	CITY	4LU	06/24/08	17,785	22,800	C	1,773
Lois Ave	Spruce St to Boy Scout Blvd	WS	C	CITY	4LU	06/24/08	15,534	34,600	B	1,720
Lois Ave	Tampa Bay Blvd to M.L.K.Jr Blvd	WS	C	CITY	2LU	06/24/08	3,711	10,300	A	439
Lois Ave	M.L.K.Jr Blvd to Hillsborough Ave	WS	C	CITY	2LU	06/24/08	12,827	10,300	E	1,197
M.L.K.Jr Blvd	Westshore Blvd to Lois Ave	WS	C	CITY	2LU	08/06/08	4,512	10,300	B	418
M.L.K.Jr Blvd	Lois Ave to Dale Mabry Hwy	WS	C	CITY	2LU	08/06/08	7,457	10,300	C	634
M.L.K.Jr Blvd	Dale Mabry Hwy to Himes Ave	WS	P	STATE	6LD	08/27/08	25,307	38,700	C	2,132
M.L.K.Jr Blvd	Himes Ave to MacDill Ave	CET	M	STATE	5LU	07/27/08	32,452	25,500	F	2,803
M.L.K.Jr Blvd	MacDill Ave to Habana Ave	CET	M	STATE	5LU	07/27/08	31,349	25,500	E	2,810
M.L.K.Jr Blvd	Habana Ave to Armenia Ave	CET	M	STATE	5LU	07/27/08	28,778	25,500	E	2,520
M.L.K.Jr Blvd	Armenia Ave to N Boulevard	CET	M	STATE	4LU	07/27/08	29,622	34,200	D	2,566
M.L.K.Jr Blvd	Boulevard to Highland Ave	CET	M	STATE	4LU	07/27/08	31,525	34,200	D	2,794
M.L.K.Jr Blvd	Highland Ave to Tampa St	CET	M	STATE	4LU	07/27/08	29,382	25,500	E	2,515
M.L.K.Jr Blvd	Tampa St to Florida Ave	CET	M	STATE	4LU	07/27/08	30,563	25,500	E	2,617
M.L.K.Jr Blvd	Central Ave to Marguerite St	CET	M	STATE	4LU	07/27/08	34,644	25,500	F	3,102
M.L.K.Jr Blvd	Marguerite St to Taliaferro Ave	CET	M	STATE	5LU	07/27/08	30,930	25,500	E	2,591
M.L.K.Jr Blvd	Taliaferro Ave to Nebraska Ave	CET	M	STATE	4LU	07/27/08	25,141	38,600	B	2,134
M.L.K.Jr Blvd	15th St to 22nd St	CET	M	STATE	4LU	07/29/08	24,556	34,200	C	2,366
M.L.K.Jr Blvd	22nd St to 34th St	CET	M	STATE	5LU	07/16/06	24,786	34,200	C	1,041
M.L.K.Jr Blvd	34th St to 40th St	CET	M	STATE	5LU	07/29/08	16,617	38,600	A	1,605
M.L.K.Jr Blvd	40th St to 50th St	CET	M	STATE	2LU	08/06/08	8,623	16,100	B	801

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							Existing			
M.L.K.Jr Blvd	50th St to 56th St (City Limits)	CET	M	STATE	2LU	06/28/06	11,337	16,100	C	952
MacDill Ave	MacDill AFB to Interbay Blvd	INB	C	CITY	2LU	03/09/08	6,647	16,100	B	1,033
MacDill Ave	Interbay Blvd to Gandy Blvd	INB	C	CITY	2LU	03/09/08	6,217	16,100	A	816
MacDill Ave	Gandy Blvd to Bay to Bay Blvd(Euclid Ave)	INB	C	CITY	2LU	03/25/08	6,737	16,100	B	636
MacDill Ave	Bay to Bay Blvd to Swann Ave(Morrison)	INB	M	CITY	4LU	03/09/08	18,615	34,200	B	1,551
MacDill Ave	Swann Ave to Kennedy Blvd	INB	M	CITY	4LU	03/09/08	18,858	34,200	B	1,570
MacDill Ave	Kennedy Blvd(Cypress St) to I-275	CET	M	CITY	4LU	03/09/08	22,853	20,900	E	2,254
MacDill Ave	I-275 to Spruce St	CET	M	CITY	4LU	03/09/08	15,102	14,700	D	1,518
MacDill Ave	Spruce St to Columbus Dr	CET	M	CITY	4LU	03/09/08	14,583	20,900	C	1,158
MacDill Ave	Columbus Dr to Tampa Bay Blvd	CET	C	CITY	2LU	03/09/08	5,250	10,300	B	422
MacDill Ave	Tampa Bay Blvd to M.L.K.Jr Blvd	CET	C	CITY	2LU	03/09/08	4,714	10,300	B	455
Madison St	Ashley Dr to Tampa St	CBD	C	CITY	2LD	08/17/08	2,372	13,650	A	230
Madison St	Tampa St to Franklin St	CBD	C	CITY	2LD	08/17/08	2,312	13,650	A	226
Madison St	Franklin St(Florida Ave) to Marion St	CBD	C	CITY	2LD	08/24/08	2,573	13,650	A	366
Madison St	Marion St to Morgan St	CBD	C	CITY	2LD	08/24/08	2,272	13,650	A	270
Madison St	Morgan St to Pierce St	CBD	C	CITY	2LD	08/24/08	1,379	13,650	A	146
Main St	MacDill Ave to Armenia Ave	CET	NC	CITY	2LU	01/30/08	3,715	10,300	A	349
Main St	Armenia Ave to Howard Ave	CET	NC	CITY	2LU	01/30/08	3,976	10,300	A	363
Main St	Howard Ave to Rome Ave	CET	NC	CITY	2LU	01/30/08	7,282	10,300	C	627
Main St	Rome Ave to Boulevard	CET	NC	CITY	2LU	01/30/08	8,127	10,300	C	740
Manhattan Ave	Interbay Blvd to Gandy Blvd	INB	C	CITY	2LU	04/21/08	6,034	16,100	A	532
Manhattan Ave	Gandy Blvd to Euclid Ave	INB	M	COUNTY	4LD	04/21/08	19,178	34,200	B	1,687
Manhattan Ave	Euclid Ave(Bay to Bay Blvd) to Henderson Blvd	INB	M	COUNTY	4LU	04/21/08	18,196	29,400	B	1,706
Maritime Blvd	Hookers Point to 22nd St	CET	C	CITY	2LU	02/17/08	14,787	10,300	F	1,224
Maydell Dr	Adamo Dr to Palm River(City Lim.)	CET	C	CITY	2LU	09/14/08	2,672	10,300	A	277
McKinley Dr	Busch Blvd to Busch Gardens Ent.	NCT	M	COUNTY	5LU	01/20/08	14,806	38,800	A	1,322
McKinley Dr	Busch Gardens Ent. to Bougainvillea Ave	NCT	M	COUNTY	4LD	01/28/08	12,646	34,200	A	1,358
McKinley Dr	Bougainvillea Ave to Fowler Ave	NCT	M	COUNTY	4LD	01/20/08	11,842	34,200	A	1,265
Melbourne Blvd	40th St to 50th St	CET	P	STATE	2LU	03/25/08	6,975	10,300	C	595
Memorial Hwy	Kennedy Blvd to I-275	WS	P	STATE	4LD	08/05/07	72,520	49,214	F	5,329
Memorial Hwy	I-275 to Spruce St	WS	P	STATE	8LF	05/22/05	113,182	137,900	C	7,616
Memorial Hwy	Spruce St to Courtney Campbell	WS	P	STATE	8LF	04/24/05	134,041	137,900	D	10,345
Meridian St	Twiggs St to Jackson Street	CBD	C	CITY	6LU	11/26/07	10,681	37,250	A	1,168
Meridian St	Jackson St to Cumberland Ave	CBD	C	CITY	6LU	11/26/07	5,231	37,250	A	604
Morgan St	Channelside Dr (East) to Brorein St	CBD	C	CITY	2LU	08/17/08	2,048	10,300	A	154
Morgan St	Brorein St to Whiting St	CBD	C	CITY	2LU	08/17/08	3,830	10,300	A	461
Morgan St	Whiting St to Jackson St	CBD	C	CITY	4LU	08/24/08	3,881	22,800	A	489
Morgan St	Jackson St to Kennedy Blvd	CBD	C	CITY	4LU	08/10/08	3,856	22,800	A	508
Morgan St	Kennedy Blvd to Madison St	CBD	OC	CITY	4LO	08/24/08	3,918	39,071	A	454
Morgan St	Madison St to Twiggs St	CBD	OC	CITY	4LO	08/10/08	3,470	39,071	A	439
Morgan St	Twiggs St to Zack St	CBD	OC	CITY	4LO	08/10/08	4,053	39,071	A	453
Morgan St	Zack St to Polk St	CBD	OC	CITY	4LO	08/24/08	2,906	39,071	A	373
Morgan St	Polk St to Cass St	CBD	OC	CITY	4LO	08/10/08	4,282	39,071	A	505
Morgan St	Cass St to Tyler St	CBD	OC	CITY	3LO	08/24/08	4,332	31,500	A	492
Morgan St	Tyler St to Scott St	CBD	OC	CITY	3LO	08/10/08	1,372	31,500	A	123
Morrison Ave	Dale Mabry Hwy to MacDill Ave	INB	NC	CITY	2LU	06/03/08	3,312	10,300	A	319
Morrison Ave	MacDill Ave to Howard Ave	INB	NC	CITY	2LU	06/03/08	3,138	10,300	A	286
Morrison Ave	Howard Ave to Rome Ave	INB	NC	CITY	2LU	06/03/08	2,275	10,300	A	215
Nebraska Ave	Jackson St to Kennedy Blvd	CBD	OM	STATE	3LO	08/12/08	2,970	31,500	A	426
Nebraska Ave	Kennedy Blvd to Twiggs St	CBD	M	STATE	4LU	08/12/08	6,895	29,400	A	820
Nebraska Ave	Twiggs St to Cass St	CBD	M	STATE	4LU	08/12/08	8,478	29,400	A	887
Nebraska Ave	Cass St to Scott St	CBD	M	STATE	4LU	08/12/08	6,740	29,400	A	610
Nebraska Ave	Scott to Henderson Ave	CET	M	STATE	4LU	08/13/08	13,874	29,400	B	1,250
Nebraska Ave	Henderson Ave to 7th Ave	CET	M	STATE	4LU	08/13/08	7,046	29,400	A	686
Nebraska Ave	7th Ave to Palm Ave	CET	M	STATE	4LU	08/13/08	11,359	29,400	A	1,423
Nebraska Ave	Palm Ave to Columbus Dr	CET	M	STATE	4LU	08/13/08	13,252	29,400	B	1,303
Nebraska Ave	Columbus Dr(21st Ave) to Lake Ave	CET	M	STATE	4LU	02/21/06	17,706	29,400	B	1,467
Nebraska Ave	Lake Ave to M.L.K.Jr Blvd	CET	M	STATE	4LU	08/13/08	14,742	29,400	B	1,213
Nebraska Ave	M.L.K.Jr Blvd to Osborne Ave	CET	M	STATE	4LU	09/08/08	15,036	29,400	B	1,464

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			Existing							
Nebraska Ave	Osborne Ave to Hillsborough Ave	CET	M	STATE	4LU	09/08/08	14,540	29,400	B	1,291
Nebraska Ave	Hillsborough Ave to Hanna Ave	CET	M	STATE	4LU	09/08/08	20,510	29,400	C	1,964
Nebraska Ave	Hanna Ave to Sligh Ave	CET	M	STATE	4LU	09/08/08	20,779	29,400	C	1,823
Nebraska Ave	Sligh Ave(Bird St) to Waters Ave	CET	M	STATE	4LU	09/08/08	22,105	29,400	C	1,835
Nebraska Ave	Waters Ave to Yukon St	CET	M	STATE	4LU	09/08/08	21,627	29,400	C	1,770
Nebraska Ave	Yukon St to Busch Blvd	CET	M	STATE	4LU	08/26/07	22,765	29,400	C	1,679
Nebraska Ave	Busch Blvd to Linebaugh Ave	NCT	M	STATE	5LU	09/16/08	22,568	29,400	C	1,714
Nebraska Ave	Linebaugh Ave to Bougainvillea Ave	NCT	M	STATE	5LU	09/16/08	24,852	29,400	C	1,944
Nebraska Ave	Bougainvillea Ave to 109th Ave	NCT	M	STATE	5LU	09/16/08	23,727	29,400	C	1,890
Nebraska Ave	109th Ave to Fowler Ave	NCT	M	STATE	5LU	09/16/08	19,987	29,400	C	1,590
Neptune St	Henderson Blvd(Frankland Rd) to Himes Ave	INB	NC	CITY	2LU	07/17/08	4,191	10,300	A	399
New Tampa Blvd	Power Easement to I-75	UN	M	COUNTY	0L	01/01/96	0	0	A	0
New Tampa Blvd	I-75 to CR 581W	UN	M	CITY	2LU	01/13/08	4,117	13,400	A	400
Nuccio Pkwy	15th St to Palm Ave	CET	C	CITY	5LU	07/21/08	5,341	22,800	A	681
Nuccio Pkwy	Palm Ave to 7th Ave	CET	C	CITY	5LU	01/16/08	7,932	22,800	A	880
Nuccio Pkwy	7th Ave to Nebraska Ave	CET	C	CITY	5LU	01/09/08	6,609	22,800	A	726
NW X-Way (Toll Rd)	Spruce St to Courtney Campbell	WS	I	STATE	6LF	01/01/96	118,000	103,400	E	10,974
NW X-Way (Toll Rd)	Courtney Campbell to Memorial Hwy	WS	I	STATE	6LF	01/01/96	136,000	103,400	F	8,370
NW X-Way (Toll Rd)	Memorial Hwy to Hillsborough Ave	WS	I	STATE	6LF	01/01/96	99,000	103,400	D	10,044
NW X-Way FRT E	Courtney Campbell to Hillsborough Ave	WS	C	STATE	4LU	04/08/02	33,500	22,800	F	512
Orient Rd	Adamo Dr to Broadway Ave	CET	C	COUNTY	2LU	09/14/08	6,128	10,300	B	550
Osborne Ave	Boulevard(Highland) to Florida Ave	CET	C	CITY	2LU	07/10/08	1,978	10,300	A	223
Osborne Ave	Florida Ave to Nebraska Ave	CET	C	CITY	2LU	07/10/08	3,560	10,300	A	360
Osborne Ave	Nebraska Ave to 15th St	CET	C	CITY	2LU	07/10/08	2,016	10,300	A	215
Osborne Ave	15th St to 22nd St	CET	C	CITY	2LU	07/10/08	2,232	10,300	A	231
Osborne Ave	22nd St to 34th St	CET	C	CITY	2LU	08/06/08	2,581	10,300	A	285
Osborne Ave	34th St to 40th St	CET	C	CITY	2LU	07/10/08	3,300	10,300	A	300
Palm Ave	Boulevard to Tampa St	CET	C	CITY	4LU	04/01/08	12,893	22,800	B	1,867
Palm Ave	Tampa St to Florida Ave	CET	C	CITY	4LU	04/01/08	9,621	22,800	B	1,311
Palm Ave	Florida Ave to Nebraska Ave	CET	C	CITY	4LU	04/01/08	14,772	22,800	C	1,824
Palm Ave	Nebraska Ave(Nuccio Pkwy) to 15th St	CET	C	CITY	5LU	04/01/08	9,175	34,200	A	1,079
Palm Ave	15th St to 22nd St	CET	C	CITY	5LU	04/09/08	7,540	34,200	A	478
Pierce St	Whiting to Jackson St	CBD	OC	CITY	2LO	08/24/08	3,546	20,571	A	300
Pierce St	Jackson St to Kennedy Blvd	CBD	OC	CITY	4LO	08/24/08	5,406	39,071	A	465
Pierce St	Kennedy Blvd to Madison St	CBD	OC	CITY	4LO	08/24/08	7,115	39,071	A	507
Pierce St	Madison St to Twiggs St	CBD	OC	CITY	4LO	08/24/08	6,105	39,071	A	371
Pierce St	Twiggs St to Zack St	CBD	OC	CITY	4LO	08/24/08	7,763	39,071	A	552
Pierce St	Zack St to Polk St	CBD	OC	CITY	4LO	08/24/08	9,031	39,071	A	549
Pierce St	Polk St to Cass St	CBD	OC	CITY	4LO	08/24/08	9,099	39,071	A	618
Pierce St	Cass St to Tyler St	CBD	OC	CITY	4LO	08/24/08	440	39,071	A	44
Plant Ave	Kennedy Blvd to Cleveland St	INB	OM	CITY	2LO	05/13/08	5,317	21,000	A	475
Plant Ave	Cleveland St to Platt St	INB	OM	CITY	2LO	06/02/08	11,936	21,000	B	1,248
Plant Ave	Platt St to Davis Is Bridge	INB	OM	CITY	2LO	05/13/08	13,539	21,000	C	1,250
Platt St (Park City Way)	Azeele St to Armenia Ave	INB	OM	CITY	3LO	04/22/08	12,383	32,143	A	1,462
Platt St	Armenia Ave to Willow Ave	INB	OM	CITY	3LO	04/22/08	12,075	32,143	A	1,291
Platt St	Willow Ave to Boulevard	INB	OM	CITY	3LO	05/13/08	13,739	32,143	B	1,330
Platt St	Boulevard to Hyde Park Ave	INB	OM	CITY	3LO	05/13/08	18,614	32,143	B	1,602
Platt St	Hyde Park Ave(Plant Ave) to Bayshore Blvd	INB	OM	CITY	2LO	05/13/08	10,913	21,000	B	1,087
Polk St	Ashley Dr to Tampa St	CBD	OC	CITY	2LO	12/12/07	2,391	20,571	A	289
Polk St	Tampa St to Franklin St	CBD	OC	CITY	2LO	12/12/07	2,225	20,571	A	407
Polk St	Franklin St to Florida Ave	CBD	OC	CITY	2LO	12/12/07	1,704	20,571	A	276
Polk St	Florida Ave to Marion St	CBD	OC	CITY	2LO	12/12/07	1,945	20,571	A	328
Polk St	Marion St to Morgan St	CBD	OC	CITY	2LO	12/12/07	1,977	20,571	A	253
Polk St	Morgan St to Pierce St	CBD	OC	CITY	2LO	01/08/08	2,913	20,571	A	322
Polk St	Pierce St to Jefferson St	CBD	OC	CITY	2LO	12/11/07	1,191	20,571	A	148
River Hills Dr	22nd St to 26th St	CET	C	CITY	2LU	01/27/08	6,901	10,300	C	785
River Hills Dr	40th St to 46th St	CET	C	CITY	2LU	04/09/08	4,387	10,300	B	448
River Hills Dr	46th St to City Limits	CET	C	CITY	2LU	04/09/08	2,034	10,300	A	200
Rome Ave	M.L.K.Jr Blvd(Wishart Blvd) to Hillsborough Av	CET	C	CITY	2LU	07/17/08	3,971	10,300	A	305

City of Tampa Transportation Division Inventory of Roadway Conditions(Existing and Future)

Updated: 9/3/2010

Please NOTE : This spreadsheet is currently using 2005 data(excluding counts) and has not been updated.

ON	From - To (S to N or W to E)	Impact Fee District	Funct Class Funct Class*	Maint. Respons.	Exist Road Type	Date of Count (mm/dd/yr)	Existing Daily Volume	Existing LOS D Capacity	Existing LOS	Existing PM Peak Volume
Rome Ave	Hillsborough Ave to Sligh Ave	CET	C	CITY	2LU	07/17/08	3,914	10,300	A	497
Rome Ave	Sligh Ave to Waters Ave	CET	C	CITY	2LU	07/17/08	2,246	10,300	A	239
Rome/Snow/Dakota	Bayshore Blvd(Morrison Ave) to Swann Ave	INB	L	CITY	2LU	08/05/08	3,833	10,300	A	340
Rowlett Park Dr	Waters Ave to 22nd St	CET	C	CITY	2LU	01/27/08	5,462	10,300	B	456
Rowlett Park Dr	22nd St to Sligh Ave	CET	C	CITY	2LU	01/27/08	8,704	10,300	D	808
San Miguel	Himes Ave to Frankland Rd	INB	NC	CITY	2LU	01/16/08	3,599	10,300	A	375
Scott St	Tampa St to Florida Ave	CBD	OM	CITY	3LO	04/20/08	6,128	31,500	A	515
Scott St	Florida Ave to Jefferson/Orange	CBD	OM	CITY	3LO	04/20/08	11,292	31,500	A	1,209
Serena Dr	46th St to 50th St	NCT	C	CITY	2LU	01/22/08	3,855	10,300	A	505
Serena Dr	50th St to 52nd St (City Limits)	NCT	C	CITY	2LU	01/22/08	2,868	10,300	A	314
Sligh Ave	Armenia Ave to Rome Ave	CET	M	COUNTY	4LU	02/03/08	26,726	23,200	E	2,746
Sligh Ave	Rome Ave to Boulevard	CET	M	COUNTY	4LU	02/03/08	23,837	28,900	C	2,405
Sligh Ave	Boulevard to Florida Ave	CET	M	COUNTY	4LU	02/03/08	25,488	39,800	B	2,359
Sligh Ave	Florida Ave to I-275	CET	M	COUNTY	4LU	02/03/08	22,797	39,800	B	2,044
Sligh Ave	I-275 to Nebraska Ave	CET	M	COUNTY	4LU	02/03/08	17,639	29,400	B	1,449
Sligh Ave	Nebraska Ave to 15th St	CET	C	CITY	2LU	02/03/08	5,590	39,800	A	593
Sligh Ave	15th St to 22nd St	CET	C	CITY	2LU	02/03/08	5,256	16,300	A	565
Sligh Ave	22nd St to Rowlett Park Dr	CET	C	CITY	2LU	02/03/08	13,727	39,800	A	1,259
Sligh Ave	Rowlett Park Dr to 30th St	CET	C	CITY	2LU	02/12/08	6,245	23,200	A	635
Spruce St	Lois Ave to Dale Mabry Hwy	WS	NC	CITY	2LU	06/03/08	7,750	15,200	B	935
Spruce St	Dale Mabry Hwy to Himes Ave	WS	NC	CITY	2LU	06/03/08	9,019	10,300	D	859
Spruce St	Himes Ave to MacDill Ave	CET	NC	CITY	2LU	06/03/08	3,648	10,300	A	339
Swann Ave	Lois Ave to Dale Mabry Hwy	INB	C	CITY	2LU	06/19/08	2,662	10,300	A	322
Swann Ave	Dale Mabry Hwy to Henderson Blvd	INB	C	CITY	2LU	06/19/08	7,987	10,300	C	706
Swann Ave	Henderson Blvd to MacDill Ave	INB	C	CITY	2LU	06/19/08	6,189	10,300	B	568
Swann Ave	MacDill Ave to Howard Ave	INB	C	CITY	2LU	06/19/08	14,185	10,300	F	1,240
Swann Ave	Howard Ave(Boulevard) to Bayshore Blvd	INB	C	CITY	2LU	06/19/08	4,419	10,300	B	395
Tampa Bay Blvd	Westshore Blvd to Lois Ave	WS	C	CITY	4LU	06/19/08	2,543	22,800	A	225
Tampa Bay Blvd	Lois Ave to Dale Mabry Hwy	WS	C	CITY	2LD	06/04/08	8,261	10,300	C	786
Tampa Bay Blvd	Dale Mabry Hwy to Himes Ave	WS	C	CITY	4LD	06/04/08	7,128	22,800	A	773
Tampa Bay Blvd	Himes Ave to MacDill Ave	CET	C	CITY	2LU	06/04/08	6,527	10,300	C	694
Tampa Bay Blvd	MacDill Ave(Habana Ave) to Armenia Ave	CET	C	CITY	2LU	06/04/08	7,786	10,300	C	818
Tampa Palms N	CR 581 to Power Easement	UN	C	CITY	4LD	05/05/04	5,636	22,800	A	472
Tampa Palms N	Easement Road to CR 581	UN	C	CITY	4LD	01/20/08	7,857	22,800	A	786
Tampa Palms S	CR 581 to Power Easement	UN	C	CITY	4LD	05/05/04	10,796	22,800	B	891
Tampa Palms S	Power Easement to CR 581	UN	C	CITY	4LD	01/20/08	7,150	22,800	A	702
Tampa St	**Brorein St to Franklin to B**	**CBD**	**OM**	**CITY**	**2LO**	**03/02/08**	**6,489**	**20,571**	**A**	**455**
Tampa St	Brorein St(Whiting St) to Jackson St	CBD	OM	CITY	3LO	03/02/08	10,891	31,500	A	1,023
Tampa St	Jackson St to Kennedy Blvd	CBD	OM	STATE	3LO	03/02/08	13,326	31,500	B	1,054
Tampa St	Kennedy Blvd to Madison St	CBD	OM	STATE	3LO	03/09/08	13,981	31,500	B	1,062
Tampa St	Madison St to Twiggs St	CBD	OM	STATE	3LO	03/09/08	19,432	31,500	B	1,419
Tampa St	Twiggs St to Zack St	CBD	OM	STATE	3LO	03/25/08	13,057	31,500	B	967
Tampa St	Zack St to Polk St	CBD	OM	STATE	3LO	03/09/08	13,877	31,500	B	959
Tampa St	Polk St to Cass St	CBD	OM	STATE	3LO	03/04/08	13,457	31,500	B	1,007
Tampa St	Cass St to Tyler St	CBD	OM	STATE	3LO	03/02/08	13,337	31,500	B	950
Tampa St	Tyler St to Scott St	CBD	OM	STATE	3LO	03/02/08	6,268	31,500	A	417
Tampa St	Scott St to Palm Ave	CET	OM	STATE	3LO	03/31/08	10,181	36,571	A	719
Tampa St	Palm Ave to Columbus Dr	CET	OM	STATE	3LO	03/09/08	7,708	36,571	A	522
Tampa St	Columbus Dr to Floribraska Ave	CET	OM	STATE	3LO	03/02/08	10,380	36,571	A	656
Tampa St	Floribraska Ave to Lake Ave	CET	OM	STATE	3LO	03/09/08	7,338	36,571	A	461
Tampa St	Lake Ave to M.L.K.Jr Blvd	CET	OM	STATE	3LO	03/02/08	7,608	36,571	A	501
Trask St	Kennedy Blvd to Cypress St	WS	C	CITY	2LU	05/13/08	1,097	10,300	A	141
Trask St	Cypress St to Boy Scout	WS	C	CITY	2LU	05/13/08	4,583	10,300	B	617
Twiggs St	Ashley Dr to Tampa St	CBD	OC	CITY	3LO	04/06/08	4,289	31,500	A	357
Twiggs St	Tampa St to Franklin St	CBD	OC	CITY	3LO	04/06/08	6,319	31,500	A	600
Twiggs St	Franklin St to Florida Ave	CBD	OC	CITY	3LO	04/06/08	6,637	31,500	A	663
Twiggs St	Florida Ave to Marion St	CBD	C	CITY	3LO	04/13/08	7,231	31,500	A	588
Twiggs St	Marion St to Morgan St	CBD	OC	CITY	3LO	05/04/08	7,231	31,500	A	589
Twiggs St	Morgan St to Pierce St	CBD	OC	CITY	4LO	04/13/08	8,076	39,071	A	668

City of Tampa Transportation Division Inventory of Roadway Conditions(Existing and Future)

Updated: 9/3/2010

Please NOTE : This spreadsheet is currently using 2005 data(excluding counts) and has not been updated.

ON	From - To (S to N or W to E)	Impact Fee District	Funct Class Funct Class*	Maint. Respons.	Exist Road Type	Date of Count (mm/dd/yr)	Existing Daily Volume	Existing LOS D Capacity	Existing LOS	Existing PM Peak Volume
							Existing			
Twiggs St	Pierce St to Jefferson St	CBD	OC	CITY	4LU	04/13/08	9,766	22,800	B	839
Twiggs St	Jefferson St to Nebraska Ave	CBD	C	CITY	4LU	04/20/08	11,330	22,800	B	512
Twiggs St	Nebraska Ave to Channelside Dr (North)	CBD	C	CITY	4LU	04/13/08	7,725	22,800	A	742
Tyler St	Cass St to Ashley Dr	CBD	OM	CITY	3LO	04/06/08	6,072	31,500	A	525
Tyler St	Ashley Dr to Tampa St	CBD	OC	CITY	3LO	04/06/08	4,496	31,500	A	416
Tyler St	Tampa St to Franklin St	CBD	OC	CITY	3LO	04/06/08	3,707	31,500	A	313
Tyler St	Franklin St to Florida Ave	CBD	OC	CITY	3LO	04/06/08	3,681	31,500	A	294
Tyler St	Florida Ave to Marion St	CBD	OC	CITY	3LO	04/06/08	2,675	31,500	A	236
Tyler St	Marion St to Morgan St	CBD	OC	CITY	3LO	04/06/08	5,377	31,500	A	467
Tyler St	Morgan St to Jefferson St	CBD	OC	CITY	3LO	04/06/08	2,702	31,500	A	204
Washington St	Florida Ave to Jefferson St	CBD	C	CITY	2LU	05/04/08	1,883	10,300	A	249
Waters Ave	City Limits to Armenia Ave	CET	P	COUNTY	5LU	01/27/08	36,211	34,200	E	2,552
Waters Ave	Armenia Ave to Rome Ave	CET	P	COUNTY	4LU	01/27/08	30,736	34,200	D	2,412
Waters Ave	Rome Ave to Boulevard	CET	P	COUNTY	4LU	01/27/08	29,319	34,200	C	2,316
Waters Ave	Boulevard to Florida Ave	CET	P	COUNTY	4LU	01/27/08	28,848	34,200	C	2,242
Waters Ave	Florida Ave to Nebraska Ave	CET	M	CITY	4LU	01/27/08	14,185	22,800	B	1,261
Waters Ave	Nebraska Ave to 22nd St	CET	C	CITY	2LU	01/27/08	4,819	10,300	B	457
Westshore Blvd	Interbay Blvd to Bay Ave	INB	C	COUNTY	2LD	02/10/08	15,195	15,330	D	1,141
Westshore Blvd	Bay Ave to Gandy Blvd	INB	C	COUNTY	2LD	02/10/08	16,021	15,330	D	1,339
Westshore Blvd	Gandy Blvd(El Prado) to Bay to Bay Blvd	INB	M	COUNTY	2LU	02/10/08	22,039	11,680	F	1,671
Westshore Blvd	Bay to Bay Blvd(Swann) to Azeele St	INB	M	COUNTY	2LU	02/10/08	16,480	11,680	F	1,424
Westshore Blvd	Azeele St to Kennedy Blvd	INB	M	COUNTY	4LD	02/10/08	27,882	34,200	C	2,220
Westshore Blvd	Kennedy Blvd to I-275	WS	P	COUNTY	6LD	02/10/08	42,133	46,800	D	3,821
Westshore Blvd	I-275 to Cypress St	WS	P	COUNTY	4LD	02/10/08	40,605	31,100	F	3,452
Westshore Blvd	Cypress St to Spruce/Boy Scout	WS	P	COUNTY	4LD	02/10/08	31,737	31,100	D	3,088
Westshore Blvd	Tampa Bay Blvd to M.L.K.Jr Blvd	WS	C	CITY	2LU	02/10/08	2,766	11,680	A	471
Westshore Blvd	M.L.K.Jr Blvd to Hillsborough Ave	WS	C	CITY	2LU	02/10/08	15,675	11,680	F	1,560
Whiting St	Ashley Dr to Tampa St	CBD	C	CITY	2LU	04/20/08	4,667	10,300	B	475
Whiting St	Tampa St to Florida Ave	CBD	C	CITY	2LU	04/20/08	5,614	10,300	B	501
Whiting St	Florida Ave to Morgan St	CBD	C	CITY	2LU	04/20/08	2,588	10,300	A	332
Whiting St	Morgan St to Jefferson St	CBD	C	CITY	2LU	04/20/08	3,789	10,300	A	490
Whiting St	Jefferson St to Nebraska Ave	CBD	C	CITY	2LU	04/20/08	2,051	10,300	A	222
Willow Ave	Platt St(Cleveland St) to Kennedy Blvd	INB	C	CITY	2LU	06/18/08	9,864	10,300	D	988
Willow Ave	Kennedy Blvd to Cass St	CET	C	CITY	2LU	06/18/08	3,576	10,300	A	351
Willow Ave	Cypress St to Cass St to Cypress St	CET	C	CITY	2LU	06/18/08	3,116	10,300	A	304
Willow Ave	Cypress St to I-275(Green St)	CET	C	CITY	2LU	06/18/08	4,301	10,300	B	414
Willow Ave	I-275(Green St) to Main St	CET	C	CITY	2LU	06/18/08	6,778	10,300	C	250
Wishart Blvd	Armenia Ave to Rome Ave	CET	NC	CITY	2LU	06/04/08	2,976	10,300	A	315
Wishart Blvd	Rome Ave to Hillsborough Ave	CET	NC	CITY	2LU	06/04/08	1,463	10,300	A	139
Yukon St	Florida Ave to Nebraska Ave	CET	C	CITY	2LU	01/22/08	4,549	10,300	B	481
Yukon St	26th St to 30th St	CET	C	CITY	2LU	01/22/08	5,865	10,300	B	555
Yukon St	30th St to 40th St	CET	C	CITY	2LU	01/22/08	3,014	10,300	A	325
Zack St	Ashley Dr to Tampa St	CBD	OC	CITY	3LO	05/04/08	4,610	31,500	A	483
Zack St	Tampa St to Franklin St	CBD	OC	CITY	3LO	05/04/08	7,668	31,500	A	670
Zack St	Franklin St to Florida Ave	CBD	OC	CITY	3LO	05/04/08	6,035	31,500	A	523
Zack St	Florida Ave to Marion St	CBD	OC	CITY	3LO	05/04/08	3,777	31,500	A	365
Zack St	Marion St to Morgan St	CBD	OC	CITY	3LO	05/04/08	3,288	31,500	A	329
Zack St	Morgan St to Pierce St	CBD	OC	CITY	3LO	05/04/08	2,865	31,500	A	278
Zack St	Pierce St to Jefferson St	CBD	OC	CITY	3LO	05/04/08	2,530	31,500	A	289
Zack St	Jefferson St to Nebraska	CBD	C	CITY	2LU	05/04/08	2,036	10,300	A	215

***Functional Classification of roads**

P-Principal Arterial
M- Minor arterial
C-Collector
OM-one-way minor arter
OC-one-way collector
I-Interstate
NC- Neighborhood collector

Appendix D

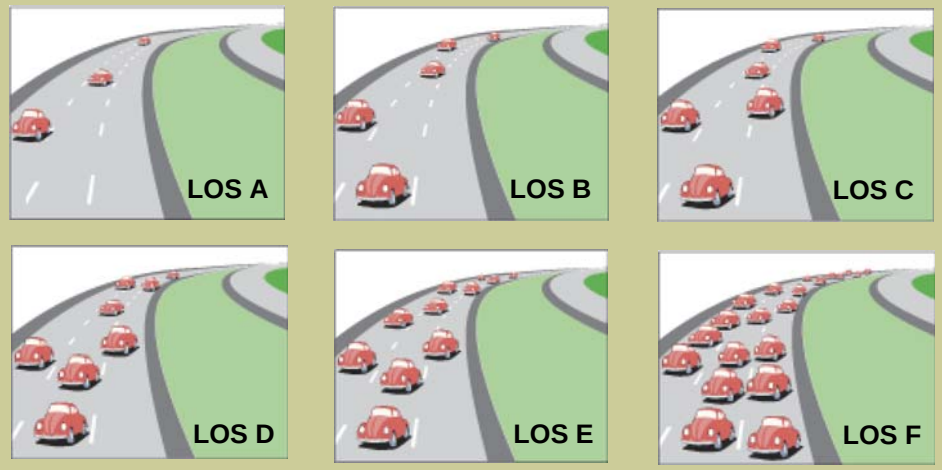
Hillsborough County Data Sources

- 2008 Level of Service Report
- 2008 Deficient Roadways Map
- Signalized Intersection Timing Update Program Map
- SR 60 Signal Retiming Study (June 2009)
- Sample Output from Traffic Accident Inquiries Online (Hillsborough County Sheriff's Office Website)

SEPTEMBER 2008

HILLSBOROUGH COUNTY

2008 LEVEL OF SERVICE REPORT



Designed for Rezoning and Concurrency Reviews

Prepared by:
Planning & Growth Management
Transportation Review Section

Hillsborough County Florida

Planning & Growth Management Department
Transportation and Land Development Review Division

Vision Statement

"To be a professional resource for our customers."

The Hillsborough County Transportation and Land Development Review Division strives to be a credible, sought after resource for addressing planning, policy and community transportation needs while providing responsive customer services and professional products.

Mission Statement

"Setting the path for future mobility."

Hillsborough County Transportation and Land Development Review Division (PGMD) carries out the Board of County Commissioners mission to provide mobility to our residents, businesses and visitors by developing policies, planning, programming and seeking funds to respond to community transportation needs.

Hillsborough County
Florida

Roadway Level of Service (LOS) Report

Designed for
Rezoning & Concurrency Reviews

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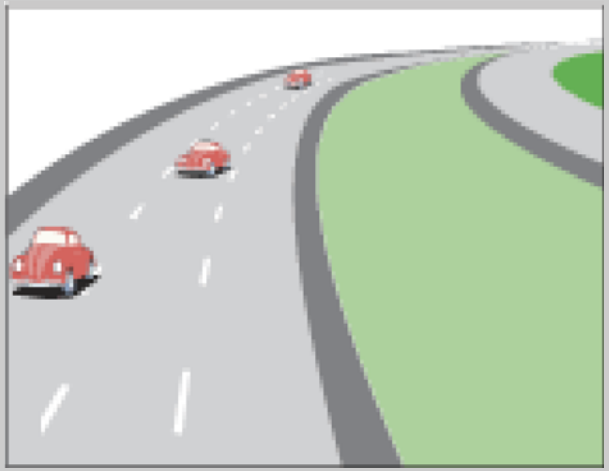
SEPTEMBER 2008

***LOS A** represents the best operating conditions and is considered free flow. Individual users are virtually unaffected by the presence of others in the traffic.*

COUNTY ROADWAYS



HILLSBOROUGH COUNTY
AUTOMOBILE LEVEL OF SERVICE REPORT
COUNTY ROADWAYS

Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
131ST AVE: (NEBRASKA AVE -to-15TH ST)	Y	C	2U	45	D	0.50	6.00	6,688		14,630	397	770	0.52	C	E	Y	
131ST AVE: (15TH ST-to-30TH ST)	Y	C	2U	45	E	1.04	1.92	6,688		16,055	397	846	0.47	C	E	Y	
12TH ST/INTERCHANGE: (US 41-to-SHELL POINT)	Y	C	2U	40	D	1.70	1.18	5,216	*	14,725	264	779	0.34	C	B	Y	
14TH AVE SE (US 41-to-24TH ST SE)	Y	C	2U	45	D	2.03	0.99	1,692		14,725	95	779	0.12	B	B	Y	
14TH ST NW: (19TH AVE NW-to-SHELL POINT)	Y	C	2U	40	D	1.00	2.00	1,175	*	13,775	59	722	0.08	B	A	N	V
15TH ST: (FOWLER AVE-to-E 131ST ST)	Y	C	2U	45	E	0.24	8.33	7,021	*	14,725	365	770	0.47	C	D	Y	
15TH ST: (E 131ST AVE-to-FLETCHER AVE)	Y	C	2U	45	D	0.75	2.67	7,021	*	14,630	365	770	0.47	C	D	Y	
19TH AVE NW: (EG SIMMONS PARK -to-US HWY 41)	Y	C	2U	45	D	2.32	0.86	3,067		14,725	165	779	0.21	B	A	Y	
19TH AVE NE: (US HWY 41-TO-30TH ST)	Y	MA	2U	45	D	2.25	0.44	5,717		14,725	240	779	0.31	C	A	Y	
19TH AVE NE: (30TH ST-to-CYPRESS VILLAGE DRIVE)	Y	MA	2U	50	D	1.00	1.00	4,898	*	14,725	242	779	0.31	C		Y	
19TH AVE NE: (CYPRESS VILLAGE DRIVE-to-US HWY 301)	Y	MA	2U	50	D	2.85	0.00	3,974		17,290	294	827	0.36	B		Y	V
22ND ST: (FLETCHER AVE-to-BEARSS AVE)	Y	C	2U	45	E	0.77	2.60	9,086		15,485	520	808	0.64	C	D	Y	CIP
30TH ST: (SR 674-to-19TH AVE)	Y	C	2U	45	D	1.50	0.67	5,181	*	14,725	269	779	0.35	C		Y	
46TH ST: (FLETCHER AVE -to-SKIPPER RD)	Y	C	2U	45	D	.79	1.27	18,124	*	15,580	965	817	1.18	F	E	N	
50TH ST: (FOWLER AVE -to-FLETCHER AVE)	Y	C	2U	45	D	.99	1.01	13,146		15,580	539	817	0.66	C	D	Y	
56TH ST: (FOWLER AVE -to-FLETCHER AVE)	Y	MA	4D	50	D	1.02	0.98	26,591		33,915	1,238	1,625	0.76	C	E	Y	
78TH ST: (SR 60/ADAMO DR-to-PALM RIVER RD)	Y	C	4D	45	D	0.80	2.50	16,185		31,065	804	1,625	0.50	C	F	Y	
78TH ST: (PALM RIVER RD-to-CAUSEWAY BLVD)	Y	C	4D	45	E	1.28	1.56	16,185		33,915	804	1,710	0.47	B	F	Y	
78TH ST: (CAUSEWAY BLVD-to-MADISON AVE)	Y	C	2U	45	E	1.61	0.62	16,765		16,055	882	846	1.04	F	F	N	
78TH ST: (MADISON AVE -to-RIVERVIEW DR)	Y	C	2U	50	D	2.40	0.42	5,799		15,580	320	817	0.39	C	C	Y	
ANDERSON RD: (HILLSBOROUGH AVE-to-SLIGH AVE)	Y	MA	4D	45	D	1.07	1.87	28,394		33,915	1,717	1,767	0.97	D	F	Y	
ANDERSON RD: (SLIGH AVE-to-WATERS AVE)	Y	MA	4D	45	E	1.08	2.78	28,394		32,775	1,717	1,710	1.00	F	F	N	
ANDERSON RD: (WATERS AVE-to-LINEBAUGH AVE)	Y	MA	4D	45	E	1.08	2.78	30,824		32,775	1,818	1,710	1.06	F	F	N	
ANDERSON RD: (LINEBAUGH AVE -to-GUNN HWY)	Y	MA	4D	50	D	1.49	1.34	21,823		33,915	1,553	1,767	0.88	C	F	Y	
APOLLO BEACH BLVD: (SURFSIDE BLVD -to-US HWY 41)	Y	C	4D	45	D	2.49	0.80	11,809		33,915	603	1,625	0.37	B	D	Y	
ARMENIA AVE: (SLIGH AVE -to-BUSCH BLVD)	Y	C	2U	45	D	1.59	1.26	16,295		15,580	838	817	1.03	E	F	N	
ARMENIA AVE: (BUSCH BLVD -to-FLETCHER AVE)	Y	C	2U	45	D	2.59	1.16	8,642		15,580	792	817	0.97	D	C	Y	A
BALM BOYETTE RD: (CR 672 -to-BOYETTE RD)	Y	C	2U	45	C	4.11	0.00	1,251		12,255	102	656	0.16	B		Y	

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Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
BALM RIVERVIEW RD: (US HWY 301-to-BOYETTE RD)	Y	C	2U	45	D	1.23	0.81	8,937		15,580	532	817	0.65	C	E	Y	A-V
BALM RIVERVIEW RD: (BOYETTE RD-to-RHODINE RD)	Y	C	2U	45	D	2.51	0.40	10,982		15,580	832	817	1.02	E	E	N	A-V
BALM RIVERVIEW RD: (RHODINE RD -to-BIG BEND RD)	Y	C	2U	45	C	1.55	0.65	8,618		12,445	470	656	0.72	C	B	Y	A-V
BALM RIVERVIEW RD: (BIG BEND RD-to-BALM RD)	Y	C	2U	55	C	2.36	0.42	2,891		12,445	157	656	0.24	B	A	Y	HP
BALM WIMAUMA RD: (SR 674 -to-CR 672)	Y	MAC	2U	45	C	3.97	0.25	2,747		10,450	205	561	0.37	C		Y	
BARRY RD: (HANLEY RD -to-BENJAMIN RD)	Y	C	2U	45	D	1.29	0.78	4,137		15,580	370	817	0.45	C		Y	
BEARSS AVE: (BRUCE B DOWNS BLVD -to-22ND AVE)	Y	MA	4D	45	D	0.59	5.08	33,360		27,455	1,232	1,435	0.86	D	F	Y	
BEARSS AVE: (22ND AVE-to-SKIPPER RD)	Y	MA	4D	45	E	0.50	4.00	33,360		39,330	1,232	2,052	0.60	C	F	Y	
BEARS AVE: (SKIPPER RD-to-NEBRASKA AVE)	Y	MA	4D	45	D	0.78	2.56	36,165		31,065	1,398	1,625	0.86	D	F	Y	
BEARSS AVE: (FLORIDA AVE-to-DALE MABRY HWY)	Y	MA	4D	45	D	2.86	2.10	40,935		46,600	1,907	2,100	0.91	D	F	Y	A
BELL SHOALS RD: (LITHIA PINECREST-to-BLOOMINGDALE AVE)	Y	C	2U	35	D	2.00	1.00	10,604		9,100	593	530	1.12	F	F	N	CIP-A
BELL SHOALS RD: (BLOOMINGDALE AVE-to-BOYETTE RD)	Y	C	2U	45	D	2.76	0.72	29,233		15,580	1,450	817	1.78	F	F	N	A
BENJAMIN RD: (SLIGH AVE-to-HILLSBOROUGH AVE)	Y	C	2U	45	D	1.01	1.98	14,132		15,580	801	817	0.98	D	C	Y	A
BENJAMIN RD: (SLIGH AVE-to-WATERS AVE)	Y	C	2U	45	D	1.03	0.97	15,321		15,580	1,112	817	1.36	F	E	N	A
BIG BEND RD: (US HWY 41 -to-I-75)	Y	MA	4D	55	D	1.70	1.76	23,494		33,800	1,365	1,450	0.94	D	F	N	A-V
BIG BEND RD: (I-75 -to-US HWY 301)	Y	MA	4D	55	D	1.30	0.77	32,945		38,300	2,008	2,285	0.88	D	E	N	HCS-V
BIG BEND RD: (US HWY 301 -to-SUMMERFIELD BLVD)	Y	C	4D	35	D	1.04	0.00	20,887		29,300	1,441	2,930	0.49	B	E	N	HP-V
BIG BEND RD: (SUMMERFIELD BLVD -to-BALM RIVERVIEW)	Y	C	2U	55	D	2.12	0.47	11,258		11,700	723	620	1.17	E	A	N	A-V
BLOOMINGDALE AVE: (US HWY 301 -to-PROVIDANCE RD)	Y	MA	4D	45	E	1.18	2.54	38,580		40,000	2,258	2,030	1.11	F	F	N	A
BLOOMINGDALE AVE: (PROVIDANCE RD-to-KINGS AVE)	Y	MA	4D	45	D	1.52	1.97	38,580		40,000	2,258	2,030	1.11	F	F	N	A-V
BLOOMINGDALE AVE: (KINGS AVE-to-BELL SHOALS RD)	Y	MA	4D	45	D	1.50	2.00	47,162		42,700	2,720	2,360	1.15	F	F	N	A-V
BLOOMINGDALE AVE: (BELL SHOALS RD-to-LITHIA PINECREST)	Y	MA	4D	45	D	1.60	2.50	32,190		34,700	1,627	1,810	0.90	D	E	N	A-V
BLOOMINGDALE AVE: (LITHIA PINECREST -to-LITTLE RD)	Y	C	2U	45	D	1.47	1.36	10,373		15,580	582	817	0.71	C		N	
BOY SCOUT RD: (RACE TRACK RD -to-TARPON SPRINGS)	Y	MIC	2U	40	C	3.82	0.00	7,988		12,065	454	570	0.80	C		Y	
BOYETTE RD: (US HWY 301 -to-MCMULLEN DR)	Y	MA	4D	45	D	1.58	1.27	21,755		46,400	1,050	2,430	0.43	B	E	Y	CIP-A-IC
BOYETTE RD: (MCMULLEN DR -to-BELL SHOALS RD)	Y	MA	2U	45	D	2.02	0.50	22,506		15,580	1,176	817	1.44	F	F	N	CIP
BOYETTE RD: (BELL SHOALS RD-to-BALM BOYETTE)	Y	C	2U	40	D	4.70	0.00	3,211		14,300	159	800	0.20	B	C	Y	A
BOYETTE RD: (BALM BOYETTE-to-LITHIA PINECREST)	Y	C	2U	40	D	4.65	0.22	2,305		11,600	159	510	0.31	B	E	Y	HP

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Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
BROADWAY AVE: (ORIENT RD -to-FALKENBURG)	Y	C	2U	45	D	2.38	0.42	15,592		18,000	746	1,140	0.65	B	C	Y	A
BROADWAY AVE: (FALKENBURG -to-WILLIAMS RD)	Y	C	2U	45	D	1.00	2.00	10,190		14,630	984	770	1.28	F	E	N	
BROADWAY AVE: (WILLIAMS RD-to-LAKEWOOD)	Y	C	2U	45	E	0.55	3.64	10,190		15,485	984	808	1.22	F	E	N	
BROADWAY AVE: (LAKEWOOD -to-M L KING BLVD)	Y	C	2U	45	D	0.50	2.00	5,326		4,800	310	482	0.64	C	C	Y	A
BROOKER RD: (BRYAN RD -to-VALRICO RD)	Y	C	2U	45	D	1.51	0.66	3,785		15,580	269	817	0.33	C	A	Y	
BRUCE B DOWNS BLVD: (FOWLER AVE-to-FLETCHER AVE)	Y	MA	6D	45	E	1.00	5.00	42,791		51,200	2,070	2,310	0.90	D	F	Y	A
BRUCE B DOWNS BLVD: (FLETCHER-to-BEARSS AVE)	Y	MA	6D	45	E	0.90	5.56	47,050		51,200	2,618	2,310	1.13	F	F	N	A
BRUCE B DOWNS BLVD: (BEARSS AVE -to-TAMPA PALMS BLVD)	Y	MA	4D	45	D	2.16	1.85	69,962		40,400	3,747	2,180	1.72	F	F	N	A
BRUCE B DOWNS BLVD: (TAMPA PALMS BLVD-to-I-75)	Y	MA	4D	45	D	2.23	1.35	50,804		41,000	2,149	2,250	0.96	D	F	Y	CIP-A
BRUCE B DOWNS BLVD: (I-75 -to-CROSS CREEK BLVD)	Y	MA	4D	45	D	1.97	2.03	51,984		40,800	2,585	2,480	1.04	E	F	N	CIP-A
BRUCE B DOWNS BLVD: (CROSS CREEK BLVD -to-COUNTY LINE RD)	Y	MA	4D	45	D	1.90	2.11	40,861		48,700	1,844	2,250	0.82	C	F	Y	CIP-V-A
BRYAN RD: (SR 60-to-BLOOMINGDALE)	Y	C	2U	35	D	3.06	0.33	12,518		15,580	703	817	0.86	D	E	Y	
CARLTON LAKE RD: (SR 674 -to-CR 672)	Y	MAC	2U	45	C	4.01	0.00	971	*	12,065	52	570	0.09	B		Y	
CASEY RD: (GUNN HWY-to-S VILLAGE DR)	Y	C	2U	40	D	2.10	0.95	13,801		16,500	987	1,000	0.99	D	C	Y	A
CASEY RD/DAWNVIEW DR: (EHRLICH RD-to-NORTHDALE BLVD)	Y	C	2U	40	D	1.04	0.96	12,590		16,500	728	950	0.77	D	E	Y	A
CAUSEWAY BLVD: (US HWY 301-to-FALKENBURG RD)	Y	MA	6D	50	D	0.74	1.35	27,314		50,825	1,333	2,651	0.50	B	F	Y	
CAUSEWAY BLVD: (FALKENBURG RD-to-PROVIDENCE RD)	Y	MA	6D	50	D	1.20	2.50	50,633		57,500	2,452	3,470	0.71	D	F	Y	A
CHARLIE GRIFFIN RD: (MUD LAKE RD - to SR 39)	Y	C	2U	50	C	1.20	0.83	2,455	*	12,445	138	656	0.21	B		Y	
CHARLIE TAYLOR RD: (US 92-to-KNIGHTS GRIFFIN)	N	MIC	2U	50	C	4.11	0.24	2,105	*	12,445	105	656	0.16	B		Y	
CLAY PIT RD: (WILLIAMS-to-CR579)	Y	C	2U	40	D	1.00	1.00	5,438	*	5,800	400	480	0.83	D	C	Y	A
COCKROACH BAY RD: (TAMPA BAY-to-US 41)	Y	MIC	2U	50	C	3.10	0.00	2,613	*	12,065	143	570	0.25	B	A	Y	
CORONET RD: (MEDULLA RD -to-PARK RD)	N	C	2U	45	D	2.48	0.40	7,578	*	14,725	400	779	0.51	C		Y	
COUNTRYWAY BLVD: (HILLSBOROUGH AVE -to-LINEBAUGH AVE)	Y	C	4D	35	D	3.03	0.66	12,685		33,915	791	1,625	0.49	B	D	Y	IC
COUNTRYWAY BLVD: (LINEBAUGH AVE -to-RACE TRACK RD)	Y	C	4D	45	D	1.22	0.82	11,352		32,490	922	1,720	0.54	B	F	Y	
COUNTY LINE RD: (DALE MABRY HWY -to-LIVINGSTON AVE)	Y	C	2U	45	C	2.90	0.34	11,731		18,000	622	1,100	0.57	C	C	Y	HP
COUNTY LINE RD: (LIVINGSTON AVE -to-BRUCE B DOWNS)	Y	MA	2U	45	C	4.54	0.22	13,067		18,300	720	1,120	0.64	C	C	Y	HP-V
COUNTY LINE RD: (SR 60 -to-MEDULLA RD)	Y	C	2U	50	C	3.78	0.26	11,893	*	10,450	642	561	1.15	D	F	N	
COUNTY LINE RD: (MEDULLA RD -to-I-4)	Y	C	4D	50	D	3.89	0.51	13,682	*	32,490	821	1,720	0.48	B		Y	

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CR 39: (MANATEE COUNTY -to-SR 674)	Y	MAC	2U	50	C	4.05	0.25	3,527	*	10,450	197	561	0.35	C		Y	
CR 39: (SR 674 -to-CR 672/BALM RD)	Y	MA	2U	50	C	4.00	0.25	3,997		10,450	308	561	0.55	C		Y	
CR 39: (CR 672/BALM RD-to-LITHIA PINECREST)	Y	MA	2U	50	C	6.05	0.17	7,624		10,450	425	561	0.76	C	B	Y	
CR 39: (LITHIA PINECREST-to-SR 60)	Y	MA	2U	50	C	6.49	0.15	10,138		10,450	560	561	1.00	C	C	N	
CR 579: (I-4-to-M L KING BLVD)	Y	C	2U	45	D	1.40	0.71	14,399		12,500	792	700	1.13	F	E	N	A
CR 579: (I-4-to-US 301)	Y	C	2U	50	C	4.40	0.91	12,850		12,445	845	656	1.29	E	E	N	
CR 579: (MANATEE COUNTY -to-SR 674)	Y	MIC	2U	50	C	5.06	0.00	1,176	*	12,065	118	570	0.21	B		Y	
CR 672 (BALM RD): (US HWY 301-to-BALM RIVERVIEW)	Y	MA	2U	55	D	3.81	0.00	6,162		17,290	319	827	0.39	B		Y	
CR 672 (BALM RD): (BALM RIVERVIEW-to-BALM BOYETTE RD)	Y	MA	2U	55	D	1.47	0.00	6,641		17,290	381	827	0.46	C		Y	
CR 672 (BALM RD): (BALM BOYETTE RD-to-CR 39)	Y	MA	2U	55	D	6.56	0.00	2,435	*	16,435	129	779	0.17	B		Y	
CRAWLEY RD: (BOY SCOUT RD -to-TARPON SPRINGS)	Y	MIC	2U	45	C	2.94	0.34	1,883		10,450	191	561	0.34	C		Y	
CRENSHAW LAKE RD: (SIMMONS RD -to-US HWY 41)	Y	C	2U	45	D	1.23	0.00	7,387		17,290	643	827	0.78	C		Y	
CROSS CREEK BLVD: (BBDOWNS-to-KINNAN ST)	N	C	4D	35	D	1.62	0.62	23,267		32,300	1,302	1,780	0.73	D	E	Y	CIP-A
CROSS CREEK BLVD: (KINNAN ST -to-MORRIS BRIDGE RD)	N	C	2U	45	D	2.70	0.37	12,652		15,580	950	817	1.16	F	E	N	CIP-NF
CRYSTAL LAKE RD: (SIMMONS RD -to-US HWY 41)	Y	C	2U	45	C	1.12	0.00	5,028		12,255	306	656	0.47	B		Y	
DOVER RD: (ML KING BLVD-to-SYDNEY)	Y	C	2U	45	C	2.02	0.99	5,897		9,400	381	530	0.72	C	C	Y	A
DOVER RD: (SYDNEY RD-to-SR 60)	Y	C	2U	45	D	1.92	0.52	6,862		10,400	404	530	0.76	C	D	Y	A
DOVER RD/LITTLE RD: (SR 60 -to-BLOOMINGDALE AVE)	Y	C	2U	45	D	3.03	0.99	6,477		15,580	425	817	0.52	C		Y	
DUNCAN RD: (BLOOMINGDALE AVE-to-US HWY 301)	N	C	2U	35	D	.45	2.22	12,185		14,630	556	770	0.72	C	E	Y	
DURANT RD: (LUMSDEN RD -to-DOVER RD/LITTLE RD)	Y	C	2U	45	D	1.12	3.57	10,641		14,630	578	770	0.75	D	F	Y	
DURANT RD: (DOVER RD/LITTLE RD -to-TURKEY CREEK RD)	Y	C	2U	45	C	3.09	0.32	2,667	*	12,445	142	656	0.22	B		Y	
EASTBAY RD: (GIBSONTON-to-SYMMES)	Y	C	2U	45	D	1.00	1.00	10,079		14,725	744	779	0.96	D	C	Y	A-V
EHRLICH RD: (DALE MABRY HWY -to-HUTCHINSON RD)	Y	MA	4D	45	D	2.27	1.76	36,198		40,500	1,573	1,690	0.93	D	F	Y	A
EHRLICH RD: (GUNN HWY-to-VETERANS EXPWY)	Y	MA	4D	45	D	0.48	4.17	34,229		38,200	1,695	1,620	1.05	E	F	N	A-V
EHRLICH RD: (VETERANS EXPWY-to-HUTCHINSON RD)	Y	MA	4D	45	D	1.47	3.40	31,338		38,200	1,343	1,620	0.83	C	F	N	V
FALKENBURG RD: (US HWY 92-to-M L KING BLVD)	Y	C	2U	45	D	1.00	2.00	10,159		11,900	771	690	1.12	E	F	N	A
FALKENBURG RD: (M L KING BLVD -to-BROADWAY AVE)	Y	MA	4D	45	D	0.60	1.52	26,805		29,700	1,387	1,650	0.84	D	F	Y	A
FALKENBURG RD: (BROADWAY AVE-to-SR 60/ADAMO DR)	Y	MA	4D	45	D	1.98	2.53	26,691		29,700	1,352	1,650	0.82	D	F	Y	A

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Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
FALKENBURG RD: (SR 60/ADAMO DR -to-CAUSEWAY BLVD)	Y	MA	4D	45	D	1.46	2.05	21,688		27,300	1,369	1,670	0.82	D	F	Y	A-IC
FALKENBURG RD: (CAUSEWAY BLVD-to-US HWY 301)	Y	MA	4D	45	D	1.15	1.74	14,351		33,915	660	1,625	0.41	B	F	Y	
FALKENBURG RD: (US HWY 301 -to-PROGRESS BLVD)	Y	C	4D	35	D	1.51	1.32	9,973		33,915	737	1,625	0.45	B	D	N	V
FALKENBURG RD: (PROGRESS BLVD-to-EAGLE PALM DR)	Y	C	4D	35	D	1.21	0.83	8,573		33,915	549	1,625	0.34	B	D	N	V
FISH HAWK BLVD: (BELL SHOALS RD -to-LITHIA PINECREST)	Y	MA	2U	45	D	4.59	0.44	15,734		14,725	829	779	1.06	E	C	N	HP-V
FLETCHER AVE: (BRUCE B DOWNS-to-NEBRASKA AVE)	Y	MA	4D	45	E	1.53	3.27	52,356		39,330	1,944	2,052	0.95	E	F	Y	
FLETCHER AVE: (FLORIDA AVE-to-ORANGE GROVE RD)	Y	MA	4D	45	D	2.59	0.77	36,931		33,915	1,819	1,625	1.12	F	F	N	
FLETCHER AVE: (ORANGE GROVE RD-to-DALE MABRY HWY)	Y	MA	4D	45	E	0.25	8.00	36,931		37,392	1,819	1,961	0.93	E	F	Y	
FLETCHER AVE: (BRUCE B DOWNS-to-46TH ST)	Y	MA	4D	45	E	0.98	5.10	40,196		31,160	1,711	1,634	1.05	F	F	N	
FLETCHER AVE: (46TH ST-to-56TH ST)	Y	MA	4D	46	D	0.98	3.06	40,196		31,065	1,711	1,625	1.05	F	F	N	
FLETCHER AVE: (56TH ST -to-I-75)	Y	MA	4D	45	D	2.96	1.35	37,329		33,915	1,926	1,625	1.19	F	F	N	
FORBES RD: (TRAPNELL RD -to-M L KING BLVD)	Y	C	2U	45	C	2.45	1.22	5,212		10,450	354	561	0.63	C	B	Y	
FORBES RD: (M L KING BLVD -to-I-4)	Y	C	2U	45	C	1.69	1.18	15,253		12,445	891	656	1.36	F	C	N	
FORBES RD: (I-4 -to- THONOTOSASSA RD)	Y	C	2U	45	C	1.38	1.45	9,220	*	12,445	237	656	0.36	C	C	Y	
FORT KING RD: (MAIN ST -to-KNIGHTS GRIFFIN)	Y	MAC	2U	50	C	1.37	0.00	1,892	*	12,255	101	656	0.15	B		Y	
GEORGE RD: (MEMORIAL HWY -to-HILLSBOROUGH AVE)	N	C	2U	45	D	1.01	0.99	10,118		10,600	670	620	1.08	E	F	N	A
GERACI RD: (SIMMONS RD-to-DALE MABRY HWY)	Y	C	2U	35	C	1.72	0.58	4,720	*	12,445	250	656	0.38	C		Y	
GIBSONTON DR: (US HWY 41 -to-I-75)	Y	MA	4D	50	D	2.00	0.50	14,677		34,300	714	1,690	0.42	A	F	Y	A
GIBSONTON DR: (I-75 -to-US HWY 301)	Y	MA	4D	50	D	1.31	0.76	33,920		26,100	1,806	1,490	1.21	F	F	N	A
GORNTO LAKE RD: (CAUSEWAY BLVD-to-PROVIDENCE LAKES BLVD)	Y	C	4D	40	E	0.73	1.37	15,225		33,915	972	1,710	0.57	B	D	Y	IC-V
GRONTO LAKE RD: (PROVIDENCE LAKES BLVD-to-BLOOMINGDALE AVE)	Y	C	2U	35	D	1.45	0.69	13,579		15,580	807	817	0.99	D	D	Y	V
GRAND REGENCY BLVD: (WOODBERRY RD-to-SR 60)	Y	C	4D	45	D	.97	1.03	10,195	*	33,915	575	1,625	0.35	B	E	Y	
GULF CITY RD: (COCKROACH BAY R -to-US HWY 41)	Y	MIC	2U	50	C	4.24	0.00	2,613	*	12,065	143	570	0.25	B	A	Y	
GUNN HWY: (DALE MABRY HWY -to-LINEBAUGH AVE)	Y	MA	4D	45	E	0.30	3.80	42,177		32,775	2,630	1,710	1.54	F	F	N	
GUNN HWY: (LINEBAUGH AVE -to-ANDERSON RD)	Y	MA	4D	45	E	2.50	2.00	36,445		32,775	2,272	1,710	1.33	F	F	N	
GUNN HWY: (ANDERSON RD-to-VETERANS EXPWY)	Y	MA	4D	45	E	1.65	1.21	33,057		33,915	1,502	1,710	0.88	C	F	Y	
GUNN HWY/CITRUS PARK DR: (VETERANS EXPWY-to-SHELDON RD)	Y	MA	6D	45	E	0.97	3.09	23,110		46,740	1,025	2,442	0.42	C	C	Y	A
GUNN HWY: (CITRUS PARK DR -to-EHRLICH RD)	Y	MA	2D	45	D	.93	2.15	14,851		15,400	864	810	1.07	F	D	N	

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Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
GUNN HWY: (EHRLICH-to-S MOBLEY)	Y	MA	4D	45	D	0.95	3.16	31,961	*	40,000	1,434	2,350	0.61	D	F	Y	CIP-A
GUNN HWY: (S MOBLEY-to-VAN DYKE RD)	Y	MA	2U	45	E	3.25	0.92	21,016		20,300	1,115	1,090	1.02	F	E	N	A
GUNN HWY: (VAN DYKE RD -to-LUTZ LAKE FERN)	Y	MA	2U	45	E	2.07	0.97	19,267		23,100	1,046	1,200	0.87	E	E	Y	A
GUNN HWY: (LUTZ LAKE FERN-to-PASCO COUNTY)	Y	MA	2U	45	D	1.44	0.00	11,904		16,700	650	779	0.83	D	D	Y	HP
HABANA AVE: (HILLSBOROUGH AV -to-WATERS AVE)	Y	C	2U	40	D	2.01	1.00	10,663		15,580	753	817	0.92	D	E	Y	A
HANLEY: (HILLSBOROUGH AVE -to-WILSKY BLVD)	Y	C	4D	50	E	2.58	2.33	38,826		32,775	2,131	1,710	1.25	F	F	N	
HANNA AVE: (40TH ST-to-HARNEY)	Y	C	2U	45	D	2.04	0.49	4,329		15,580	227	817	0.28	C		Y	
HARNEY RD: (56TH ST -to-SLIGH AVE)	Y	C	2U	45	D	1.98	1.01	10,458		15,580	601	817	0.74	C	F	Y	
HARNEY RD: (SLIGH AVE-to-MORRIS BRIDGE)	Y	MA	2U	45	D	2.50	0.80	6,832		15,580	436	817	0.53	C	F	Y	IC
HARNEY RD: (MORRIS BRIDGE-to-US 301)	Y	MA	2U	45	D	2.89	0.00	5,389		17,290	501	827	0.61	C	D	Y	
HENDERSON RD: (WATERS AVE-to-LINEBAUGH AVE)	Y	C	2U	45	D	1.03	0.97	12,422		13,500	1,090	800	1.36	F	F	N	A
HENDERSON RD: (LINEBAUGH AVE-to-GUNN HWY)	Y	C	2U	45	E	1.60	0.63	15,605		17,600	1,041	970	1.07	F	D	N	A
HIGHVIEW RD: (SR 574/MLK-to-WINDHORST RD)	Y	C	2U	40	D	1.50	1.33	8,104		15,580	420	817	0.51	C	E	Y	A
HIMES AVE: (HILLSBOROUGH AVE -to-BUSCH BLVD)	Y	MA	2U	45	E	2.74	1.82	13,210		13,600	639	770	0.83	D	F	Y	A
HOOVER BLVD: (HILLSBOROUGH AVE -to-ANDERSON RD)	Y	MA	2U	45	D	1.05	0.95	18,487		16,000	1,243	950	1.31	F	E	N	A
HUTCHISON RD: (EHRLICH RD-to-N MOBLEY RD)	Y	C	2U	45	D	3.23	0.62	13,348		15,580	810	817	0.99	D	F	N	
JACKSON SPRINGS RD: (HANLEY RD-to-SHELDON RD)	Y	C	2U	35	D	1.78	2.25	3,155		14,630	318	770	0.41	C		Y	
JAP TUCKER RD: (TRAPNELL RD -to-JIM JOHNSON RD)	Y	C	2U	50	C	1.00	0.00	4,147	*	12,255	221	656	0.34	B		Y	
JOE EBERT RD: (WILLIAMS RD -to-CR 579)	Y	C	2U	40	C	2.00	0.50	3,868	*	8,400	224	470	0.48	A	C	Y	A
JOHN MOORE RD: (LUMSDEN RD-to-BLOOMINGDALE AVE)	Y	C	2U	45	D	2.03	0.49	9,892		11,400	654	640	1.02	E	F	N	A
KELLY RD: (MEMORIAL HWY -to-HILLSBOROUGH AVE)	Y	C	2U	45	E	1.01	0.99	8,533		16,055	499	846	0.59	C	C	Y	
KEYSVILLE RD: (TURKEY CREEK RD -to-CR 39)	Y	C	2U	45	C	2.64	0.00	2,754		12,065	210	570	0.37	B		Y	
KEYSVILLE RD: (CR 39 -to-LITHIA PINECREST)	Y	MAC	2U	45	C	4.67	0.00	1,834	*	12,065	119	570	0.21	B		Y	
KINGS AVE: (VICTORIA ST-to-SR 60)	Y	C	2U	35	D	.51	1.96	10,662		15,580	545	817	0.67	C	E	Y	
KINGS AVE: (SR 60-to-LUMSDEN RD)	Y	C	4D	45	D	1.01	1.98	22,729		25,500	1,194	1,360	0.88	D	F	Y	A
KINGS AVE: (LUMSDEN RD -to-BLOOMINGDALE AVE)	Y	C	4D	45	D	2.03	0.99	20,058		21,700	1,166	1,150	1.01	F	F	N	A
KINGSWAY RD: (US HWY 92 -to-ML KING BLVD)	Y	C	2U	40	D	1.64	0.61	9,822		9,500	567	860	0.66	C	C	Y	A
KINGSWAY RD: (ML KING BLVD -to-WINDHORST RD)	Y	C	2U	40	D	1.59	2.52	11,541		14,630	563	770	0.73	D	C	Y	

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Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
KINGSWAY RD: (WINDHORST RD-to-SR 60)	Y	C	2U	40	D	1.51	2.65	12,669		14,630	675	770	0.88	D	C	Y	
KINGSWAY RD: (US HWY 92-to-THONOTOSASSA RD)	Y	C	2U	45	C	3.11	0.32	612		15,400	37	880	0.04	B	B	Y	HP
KNIGHTS GRIFFIN RD: (US HWY 301-to-MCINTOSH RD)	Y	MA	2U	50	D	2.64	0.00	4,652		16,435	346	779	0.44	C		Y	
KNIGHTS GRIFFIN RD: (MCINTOSH RD -to-SR 39)	Y	MA	2U	50	D	6.80	0.00	4,787		16,435	354	779	0.45	C		Y	
KNIGHTS GRIFFIN RD: (SR 39-to-POLK COUNTY)	Y	MA	2U	50	D	5.05	0.00	6,399	*	16,435	389	779	0.50	C	A	Y	
KRYCUL AVE: (US HWY 301-to-RIVERVIEW DR)	N	C	2U	40	D	1.06	1.89	9,516		15,580	515	817	0.63	C	C	Y	
LAKE MAGDALENE BLVD: (FLETCHER AVE -to-BEARSS AVE)	Y	C	2U	40	D	1.70	1.18	7,287		15,580	512	817	0.63	C	D	Y	
LAKE MAGDALENE BLVD: (BEARSS AVE -to-FLORIDA AVE)	Y	C	2U	40	D	2.20	0.45	3,375		15,580	185	817	0.23	B	F	Y	
LAKESHORE DR: (WILCOX-to-VAN DYKE)	Y	C	2U	40	C	1.50	0.67	6,241		10,200	434	510	0.85	C	B	Y	A
LAKEWOOD DR: (M L KING BLVD-to-CLAY PIT RD)	Y	C	2U	35	D	0.50	2.00	4,640		6,700	262	500	0.52	C	D	Y	A
LAKEWOOD DR: (M L KING BLVD-to-BROADWAY AVE)	Y	C	2U	40	E	0.32	6.25	20,232		14,725	1,001	770	1.30	F	E	N	
LAKEWOOD DR: (BROADWAY AVE-to-SR 60)	Y	C	2U	40	D	2.69	1.49	20,232		14,630	1,001	770	1.30	F	E	N	
LAKEWOOD DR/PROVIDENCE RD : (SR 60-to-LUMSDEN RD)	Y	MA	4D	45	D	1.17	4.27	23,594		31,065	1,058	1,625	0.65	C	F	Y	
LAMBRIGHT RD: (ARMENIA AVE -to-DALE MABRY HWY)	Y	MA	4U	45	D	1.36	0.74	22,496		26,775	1,166	1,395	0.84	B	E	Y	
LIGHTFOOT RD: (US HWY 41-to-LONE PALM DR)	Y	MAC	2U	50	C	5.95	0.00	7,533	*	12,065	406	570	0.71	C		Y	
LIGHTFOOT RD: (ARROWSMITH-to-US HWY 301)	Y	MAC	2U	50	C	1.60	0.63	7,533	*	10,450	406	561	0.73	C		Y	
LINEBAUGH AVE: (DALE MABRY HWY -to-ANDERSON RD)	Y	MA	4D	45	D	2.30	2.17	26,602		37,100	1,257	1,800	0.70	D	F	Y	V
LINEBAUGH AVE: (ANDERSON RD -to-HENDERSON RD)	Y	MA	4D	45	E	0.48	4.17	30,763		32,775	1,646	1,710	0.96	E	F	Y	
LINEBAUGH AVE: (HENDERSON RD-to-SHELDON RD)	Y	MA	4D	46	D	2.12	1.89	30,763		31,065	1,646	1,625	1.01	E	F	N	
LINEBAUGH AVE: (SHELDON RD -to-COUNTRYWAY BLVD)	Y	MA	4D	45	D	2.70	1.11	33,991		39,000	1,633	2,200	0.74	C	F	Y	A
LINEBAUGH AVE: (COUNTRY WAY BLVD -to-RACE TRACK RD)	Y	MA	2U	45	D	1.50	0.67	18,844		15,580	1,048	817	1.28	F	F	N	A
LITHIA PINECREST RD: (SR 60 -to-LUMSDEN RD)	Y	MA	2U	45	D	1.25	1.60	15,009		13,600	797	730	1.09	F	F	N	A-V
LITHIA PINECREST RD: (LUMSDEN RD-to-BLOOMINGDALE AVE)	Y	MA	2U	45	D	2.60	0.77	19,605		23,200	1,217	1,050	1.16	F	F	N	HCS-V
LITHIA PINECREST RD: (BLOOMINGDALE AVE -to-FISH HAWK)	Y	MA	2U	45	D	3.84	0.27	18,497		21,100	887	1,000	0.89	D	E	Y	HP-V
LITHIA PINECREST RD: (FISH HAWK -to-CR 39)	Y	MA	2U	45	D	3.68	0.27	16,603		20,100	866	880	0.98	D	B	Y	HP-V
LITHIA PINECREST RD: (CR 39 -to-KEYSVILLE RD)	Y	MA	2U	45	D	3.52	0.28	6,340		13,205	281	703	0.40	C	B	Y	
LITHIA PINECREST RD: (KEYSVILLE RD -to-POLK COUNTY)	Y	MA	2U	45	D	1.98	0.00	3,917	*	16,435	227	779	0.29	B	B	Y	
LIVINGSTON AVE: (BEARSS RD -to-SINCLAIR HILLS DR)	Y	MA	2U	45	E	0.79	1.27	20,918		22,400	1,258	1,400	0.90	D	F	Y	A

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LIVINGSTON AVE: (SINCLAIR HILLS DR -to-SUNSET LANE)	Y	MA	2U	45	C	3.48	0.29	10,396	*	12,445	744	656	1.14	D	F	N	
LIVINGSTON AVE: (SUNSET LANE -to-COUNTY LINE RD)	Y	MA	2U	45	C	2.10	0.48	12,514		12,445	738	656	1.13	D	F	N	
LUMSDEN RD: (PROVIDENCE RD -to-KINGS AVE)	Y	MA	6D	45	D	1.48	1.35	39,427		50,825	1,859	2,651	0.70	B	F	Y	HCS
LUMSDEN RD: (KINGS AVE -to-LITHIA PINECREST)	Y	MA	4D	45	D	1.47	2.04	27,276		31,065	1,668	1,625	1.03	E	F	N	A
LUMSDEN RD: (LITHIA PINECREST -to-VALRICO RD)	Y	C	2U	45	D	1.04	1.92	12,929		15,580	775	817	0.95	D	E	Y	
LUTZ LAKE FERN RD: (US HWY 41-to-DALE MABRY HWY)	Y	C	2U	35	C	1.72	0.58	6,468		13,110	350	684	0.51	C	E	Y	
LUTZ LAKE FERN RD: (DALE MABRY HWY-to-SUNCOAST)	Y	MA	2U	50	D	3.00	0.33	13,273		15,580	755	817	0.92	D	F	Y	CIP-NF HP
LUTZ LAKE FERN RD: (SUNCOAST -to-GUNN HWY)	Y	MA	2U	50	D	3.00	0.33	8,130		14,725	427	779	0.55	C		Y	
LYNN TURNER: (GUNN HWY -to-EHRLICH RD)	Y	MA	2U	40	D	1.51	0.66	21,559		19,300	1,118	1,150	0.97	D	E	Y	A
MADISON AVE: (US HWY 41 -to-78TH ST)	Y	MA	2U	45	D	2.06	0.49	9,835		12,300	616	1,060	0.58	D	C	N	A-V
MAIN ST: (US HWY 301 -to-FORT KING RD)	Y	C	2U	45	C	2.45	0.41	5,313		12,445	329	656	0.50	C	E	Y	
MANHATTAN AVE: (HENRY -to- HUMPREY ST)	Y	C	2U	45	D	2.27	0.88	12,253		15,580	699	817	0.86	D		Y	A
MAYDELL DR: (SR 60-to-CAUSEWAY BLVD)	Y	C	2U	40	D	1.83	0.55	2,651		15,580	149	817	0.18	B		Y	
MCINTOSH RD: (M L KING BLVD -to-US 92)	Y	C	2U	45	C	1.82	0.00	10,666		12,255	592	656	0.90	C	D	Y	
MCINTOSH RD: (US 92 -to-I-4)	Y	C	2U	45	C	0.47	0.00	16,922		12,255	935	656	1.43	E	D	N	
MCINTOSH RD: (I-4 -to-THONOTOSASSA RD)	Y	C	2U	50	C	1.91	0.00	5,022		12,065	312	570	0.55	B	C	Y	
MCINTOSH RD: (THONOTOSASSA RD -to-KNIGHTS GRIFFIN)	Y	C	2U	50	C	2.01	0.00	4,329	*	12,065	236	570	0.42	B		Y	
MCINTOSH RD: (KNIGHTS GRIFFIN -to-US HWY 301)	Y	C	2U	50	C	2.06	0.00	4,113	*	12,065	231	570	0.41	B		Y	
MCMULLEN RD: (BALM RIVERVIEW-TO-BOYETTE)	Y	C	2U	40	D	1.70	0.59	9,169		19,300	467	1,020	0.46	C	D	Y	A
MEDULLA RD: (CORONET RD -to-COUNTY LINE RD)	Y	C	2U	50	C	1.42	0.00	3,305	*	12,255	179	656	0.27	B		Y	
MEMORIAL HWY: (VETERANS EXPWY -to-HILLSBOROUGH AVE)	Y	MA	4D	45	D	2.64	3.41	50,328		31,065	2,580	1,625	1.59	F	F	N	
MILLER RD: (SR 60-to-LITHIA PINECREST)	Y	C	2U	40	D	2.95	0.68	5,573	*	15,580	355	817	0.44	C	F	Y	
MONTAGUE ST: (HILLSBOROUGH AVE -to-WATERS AVE)	Y	C	2U	45	D	1.93	0.52	4,885		15,580	488	850	0.57	B	F	Y	A
MOORES LAKE RD: (M L KING BLVD -to-US HWY 92)	Y	C	2U	50	C	1.91	0.00	3,505	*	12,255	189	656	0.29	B		Y	
MORRIS BRIDGE RD: (TEMPLE TERRACE -to-FOWLER AVE)	Y	C	2U	40	D	1.92	0.52	3,068	*	15,580	211	817	0.26	C	E	Y	
MORRIS BRIDGE RD: (FOWLER AVE -to-FLETCHER AVE)	Y	C	2U	40	D	1.64	0.61	4,355		15,580	344	817	0.42	C	F	Y	
MORRIS BRIDGE RD: (I-75 -to-CROSS CREEK BLVD)	Y	MA	2U	40	D	7.33	0.00	14,007		14,500	1,321	1,000	1.32	E	E	N	HP
MORRIS BRIDGE RD: (CROSS CREEK BLVD -to-PASCO COUNTY)	Y	MA	2U	45	D	2.51	0.00	9,125		17,290	708	827	0.86	D		Y	V

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AUTOMOBILE LEVEL OF SERVICE REPORT
COUNTY ROADWAYS

Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
MT CARMEL/FRONT ST: (SEFFNER VALRICO-to-SR 60)	Y	C	2U	30	D	1.00	2.00	12,106		9,400	813	515	1.58	F	D	N	A
MT CARMEL: (SR 60-to-LUMSDEN RD)	Y	C	2U	35	D	1.05	0.95	8,246	*	15,580	597	817	0.73	C	D	Y	
MUD LAKE RD: (SR 60 -to-ALEXANDER ST)	Y	C	2U	50	C	4.26	0.00	4,631	*	12,065	253	570	0.44	B		Y	
MULRENNAN/PEARSON: (SR 60-to-BLOOMINGDALE)	Y	C	2U	40	D	3.04	0.66	9,313	*	15,580	601	817	0.74	C	C	Y	
N BOULEVARD: (COUNTRY CLUB DR -to-LAKE MAGDALANE BLVD)	Y	C	2U	40	D	2.82	1.06	7,498		15,580	674	817	0.83	C	E	Y	
N MOBLEY: (CRAWLEY RD -to-HUTCHINSON)	Y	C	2U	45	C	0.68	0.00	3,194		12,255	185	656	0.28	B		Y	
N VILLAGE DR: (DALE MABRY HWY -to-S VILLAGE DR)	Y	C	2U	35	D	1.53	0.65	4,170		10,400	254	670	0.38	C	D	Y	A
NICHOLS RD: (KEYSVILLE RD -to-POLK COUNTY)	Y	MIC	2U	50	C	2.48	0.00	1,856	*	12,065	99	570	0.17	B		Y	
NIXON RD: (LINEBAUGH AVE -to-GUNN HWY)	Y	C	2U	45	D	1.17	0.85	5,284		15,580	401	817	0.49	C	C	Y	
NORTHDALE BLV: (DALE MABRY HWY-to-NEWKIRK DR)	Y	C	4D	45	D	2.26	1.77	8,062		33,915	512	1,625	0.32	C	C	Y	
OAKFIELD DR: (LAKEWOOD DR -to-PARSONS AVE)	Y	C	4D	40	D	1.60	2.50	14,574		31,065	799	1,625	0.49	C	C	Y	
OLD MEMORIAL HWY: (SHELDON RD -to-SEA FAIRER DR)	N	C	2U	40	D	1.85	0.00	5,154		18,620	276	903	0.31	B		Y	
OLD MEMORIAL HWY: (MONTAGUE BLVD -to-HILLSBOROUGH AVE)	N	C	2U	40	D	1.91	0.52	575	*	15,580	126	817	0.16	B		Y	
OLD MULBERRY: (TRAPNELL RD -to-MEDULLA RD)	Y	C	2U	50	C	1.01	0.00	4,357	*	12,065	284	570	0.50	B		Y	
ORIENT RD: (SR 60-to-BROADWAY AVE)	N	C	2U	45	D	1.00	0.98	10,425		15,580	477	817	0.58	C	E	Y	
ORIENT RD: (BROADWAY AVE -to-HILLSBOROUGH AVE)	Y	C	2U	45	E	1.00	2.00	13,197		15,485	555	808	0.69	C	E	Y	
PALM RIVER RD: (US HWY 41 -to-78TH ST)	Y	C	2U	35	E	2.09	0.48	13,169		16,055	543	846	0.64	C	F	Y	
PALM RIVER RD: (78TH ST -to-FALKENBURG RD)	Y	C	2U	45	D	1.97	1.02	12,136		12,000	565	760	0.74	D	F	Y	A
PARSONS AVE: (US HWY 92 -to-ML KING BLVD)	Y	MA	2U	40	D	1.62	0.62	9,273		15,580	501	817	0.61	C	F	Y	
PARSONS AVE: (ML KING BLVD -to-SR 60)	Y	MA	4D	45	D	3.03	1.65	24,104		33,915	1,101	1,625	0.68	C	E	Y	
PARSONS AVE: (SR 60-to-LUMSDEN RD)	Y	C	2U	45	D	1.00	2.00	13,526		14,630	630	770	0.82	D	D	Y	
PATTERSON RD: (RACE TRACK RD -to-TARPON SPRINGS)	Y	MAC	2U	45	C	4.31	0.23	3,041		10,450	241	561	0.43	C		Y	
PAULS DR: (SR 60-to-LAKEWOOD DR)	Y	C	2U	45	D	.99	1.01	5,070		15,580	426	817	0.52	C	B	Y	
PROGRESS BLVD: (78TH ST -to-US 301)	Y	MA	2U	45	E	1.40	1.43	20,524		16,055	1,397	846	1.65	F	F	N	IC
PROVIDENCE LAKE BLVD: (GORNTO LAKE RD -to-PROVIDENCE RD)	Y	C	4D	45	E	.57	1.75	6,746		28,600	519	1,500	0.35	C		Y	A
PROVIDENCE RIDGE BLVD: (GORNTO LAKE RD -to-PROVIDENCE RD)	N	C	2U	35	D	.83	1.20	7,752	*	14,800	114	740	0.15	C		Y	A
PROVIDENCE RD: (SR 60 -to-BRANDON PKWY)	Y	MA	2U	45	D	.77	2.60	10,312		14,630	538	770	0.70	C	E	Y	
PROVIDENCE RD: (LUMSDEN RD -to-PROVIDANCE LAKE BLVD)	Y	MA	4D	45	D	0.78	3.85	20,218		34,900	1,064	1,810	0.59	C	F	Y	A

County Roadways
*** Growth Factor Applied to 2007 Count**

HILLSBOROUGH COUNTY
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COUNTY ROADWAYS

Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
PROVIDANCE RD: (PROVIDANCE LAKE BLVD-to-BLOOMINGDALE AVE)	Y	MA	4D	45	E	1.27	2.36	20,218		35,900	1,064	1,860	0.57	C	F	Y	A
PROVIDENCE RD: (BLOOMINGDALE AVE -to-RIVERVIEW DR)	Y	C	2U	45	D	1.51	1.32	11,092		15,580	561	817	0.69	C	F	Y	A
RACE TRACK RD: (HILLSBOROUGH AVE -to-LINEBAUGH AVE)	Y	MA	2U	45	D	1.55	1.29	14,777		15,580	693	817	0.85	D	D	Y	CIP-NF
RACE TRACK RD: (LINEBAUGH AVE -to-COUNTRYWAY BLVD)	Y	MA	4D	45	D	1.42	0.70	17,295		40,300	1,099	2,620	0.42	B	E	Y	CIP-A
RACE TRACK RD: (COUNTRYWAY BLVD-to-S MOBLEY RD)	Y	MA	4D	45	D	1.58	0.00	17,716		40,300	1,218	2,620	0.47	C	D	Y	CIP-HP
RACE TRACK RD: (S MOBLEY RD-to-GUNN HWY)	Y	C	2U	45	C	2.85	0.35	11,556		13,600	914	750	1.22	D	D	N	A-V
RHODINE RD: (US HWY 301 -to-BALM RIVERVIEW)	Y	C	2U	45	D	2.03	0.49	2,365		10,800	149	760	0.20	B	E	Y	A
RHODINE RD: (BALM RIVERVIEW -to-BOYETTE RD)	Y	C	2U	45	D	3.37	0.30	4,227		14,725	323	779	0.42	C		Y	
RICE RD: (JIM JOHNSON RD -to-CORONET RD)	N	C	2U	45	D	0.75	0.00	3,168	*	17,290	179	827	0.22	B		Y	
RIVERVIEW DR: (US HWY 41 -to-PROVIDENCE RD)	Y	C	2U	45	D	4.50	0.44	6,951		15,580	341	817	0.42	C		Y	
S MOBLEY RD: (RACE TRACK RD -to-GUNN HWY)	Y	C	2U	35	C	2.16	0.46	9,179		8,800	496	440	1.13	F		N	V
S VILLAGE DR: (DALE MABRY HWY -to-EHRLICH RD)	Y	C	4D	45	D	2.14	1.87	18,776		33,915	1,198	1,625	0.74	B	F	Y	A
SAINT CLOUD AVE: (SR 60-to-DURANT RD)	Y	C	2U	40	D	2.03	0.99	5,429		15,580	368	817	0.45	C	C	Y	
SAM ALLEN RD: (FORBES RD -to-SR 39)	Y	C	2U	45	C	3.52	0.00	4,315		12,255	198	656	0.30	B	C	Y	
SAM ALLEN RD: (SR 39 -to-WILDER RD)	Y	C	2U	50	C	1.97	0.00	5,347	*	12,255	284	656	0.43	B	C	Y	
SEFFNER VALRICO: (WHEELER-to-FRONT ST)	Y	C	2U	40	D	2.20	0.00	5,093		11,200	297	610	0.49	C	D	Y	HP
SHELDON RD: (HILLSBOROUGH AVE -to-WATERS AVE)	Y	MA	4D	45	E	2.06	0.97	33,183		31,800	1,509	1,650	0.91	E	F	Y	A
SHELDON RD: (WATERS AVE-to-LINEBAUGH AVE)	Y	MA	4D	45	E	1.28	1.56	32,569		40,500	1,492	1,700	0.88	D	F	Y	A
SHELDON RD: (LINEBAUGH AVE-to-CITRUS PARK DR)	Y	MA	4D	45	E	1.40	1.43	39,263		41,300	1,822	1,860	0.98	E	F	Y	A
SHELDON RD: (CITRUS PARK DR -to-GUNN HWY)	Y	MA	4D	45	D	1.06	1.89	20,275		46,200	829	1,970	0.42	B	C	Y	A
SHELL POINT RD: (SEA GRAPE DR-to-US HWY 41)	Y	C	2U	40	D	2.35	0.43	1,647		18,200	78	880	0.09	B	B	Y	HP-V
SHELL POINT RD/21ST: (US 41 -to-SR 674)	Y	C	2U	40	D	2.21	0.45	5,419		16,700	252	750	0.34	B	B	Y	A
SIMMONS RD: (CRENSHAW LAKE-to-CRYSTAL LAKE RD)	Y	C	2U	35	C	1.11	1.80	6,166		13,110	462	684	0.68	C		Y	
SKIPPER RD: (NEBRASKA AVE -to-BEARSS AVE)	Y	C	2U	45	E	.54	1.85	6,779		16,055	368	846	0.44	C	C	Y	
SKIPPER RD/46th St: (BRUCE B DOWNS-to-FLETCHER AVE)	Y	C	2U	45	D	1.19	1.68	13,778		15,580	834	817	1.02	E	E	N	
SLIGH AVE/PINECREST MANOR: (DALE MABRY HWY -to-BENJAMIN AVE)	Y	MA	2U	45	D	2.30	0.43	11,445		17,600	729	1,000	0.73	D	F	Y	A
SLIGH AVE/43RD ST: (HANNA AVE-to-50TH ST)	Y	C	2U	45	D	1.00	2.00	8,586	*	14,630	455	770	0.59	C		Y	
SLIGH AVE/43RD ST: (50TH ST-to-56TH ST)	Y	C	2U	45	E	0.51	3.92	8,586	*	15,485	455	808	0.56	C		Y	

County Roadways
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Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
SLIGH AVE: (56TH ST -to-US HWY 301)	Y	C	2U	45	D	2.37	0.42	5,640		15,580	319	817	0.39	C	F	Y	
SLIGH AVE: (US 301-to-WILLIAMS RD)	Y	C	2U	40	C	2.73	0.00	3,818	*	12,255	168	656	0.26	B	C	Y	
SMITH-RYALS RD: (SR 60 -to-TRAPNELL RD)	Y	C	2U	50	C	2.10	0.00	1,968	*	12,065	116	570	0.20	B		Y	
SUMMERFIELD BLVD: (BIG BEND-to-RHODINE RD)	Y	C	2U	35	D	2.08	0.48	2,052	*	15,580	148	817	0.18	B		Y	
SUNLAKE BLVD: (DALE MABRY HWY -to-LUTZ LAKE FERN)	Y	C	4D	40	D	0.36	2.78	8,995		8,500	552	790	0.70	D	E	Y	V
SUNSET LANE: (US HWY 41 -to-LIVINGSTON AVE)	Y	C	2U	45	C	1.97	1.02	10,884		12,445	641	656	0.98	C	F	Y	
SYDNEY RD: (VALRICO RD -to-DOVER RD)	Y	C	2U	45	C	2.03	0.49	3,473		8,400	191	500	0.38	A	C	Y	A
SYDNEY RD: (DOVER RD -to-TURKEY CREEK)	Y	C	2U	45	C	3.48	0.57	4,522		10,450	294	561	0.52	C		Y	
SYMMES RD: (US HWY 41-to-EAST BAY RD)	Y	C	2U	40	D	1.78	0.00	8,517		14,500	487	700	0.70	C	B	N	A-V
SYMMES RD: (EAST BAY RD-to-US HWY 301)	Y	C	2U	45	D	1.50	0.67	9,890		15,580	645	817	0.79	C	F	Y	HCS-V
SYMMES RD: (US HWY 301-to-BALM RIVERVIEW RD)	Y	C	2U	45	D	1.48	0.68	8,547		15,580	594	817	0.73	C	F	Y	
TAMPA EAST BLVD: (US 301 -to-BROADWAY AVE)	Y	C	2U	45	D	.55	0.00	7,053	*	18,620	426	903	0.47	C		Y	
TARPON SPRINGS RD: (GUNN HWY -to-PINELLAS COUNTY)	Y	MA	2U	45	D	4.62	0.00	7,976		19,300	379	1,050	0.36	D	C	Y	HP
TAYLOR RD: (THONOTOSASSA RD -to-MAIN ST)	Y	MAC	2U	40	C	.38	0.00	3,864		12,065	249	570	0.44	B		Y	
TEMPLE TERRACE HWY: (56TH ST -to-HARNEY RD)	Y	MA	4D	35	D	2.56	2.34	30,534		31,065	1,755	1,625	1.08	F	F	N	
THONOTOSASSA RD: (TAYLOR RD -to-MCINTOSH RD)	Y	MAC	2U	45	C	2.61	0.00	2,563		12,065	198	570	0.35	B		Y	
THONOTOSASSA RD: (MCINTOSH RD -to-BRANCH-FORBES R)	Y	MAC	2U	45	C	3.79	0.00	2,860		12,065	203	570	0.36	B		Y	
THONOTOSASSA RD: (BRANCH-FORBES-to-I-4)	Y	MAC	2U	45	C	2.40	0.42	8,133		10,450	390	561	0.70	C		Y	
TOBACCO RD: (VAN DYKE RD -to-HUTCHINSON RD)	Y	C	2U	45	C	1.58	0.00	669	*	12,255	38	656	0.06	A	B	Y	
TRAPNELL RD: (FORBES RD-to-SR 39)	Y	C	2U	45	C	4.00	0.50	6,768		12,445	440	656	0.67	C	B	Y	
TRAPNELL RD: (SR 39-to-OLD MULBERRY)	Y	C	2U	45	C	3.50	0.57	4,749		10,450	300	561	0.54	C	B	Y	
TURKEY CREEK RD: (KEYSVILLE RD -to-SR 60)	Y	MAC	2U	45	C	3.52	0.28	4,931		10,450	336	561	0.60	C	A	Y	
TURKEY CREEK RD: (SR 60 -to-TRAPNELL RD)	Y	C	2U	45	C	2.02	0.00	8,425		12,255	403	656	0.62	C	B	Y	
TURKEY CREEK RD: (TRAPNELL RD -to-US HWY 92)	Y	C	2U	45	D	3.76	0.80	7,952		14,725	394	779	0.51	C	F	Y	
VALRICO RD: (ML KING BLVD-to-SR 60)	Y	C	2U	45	D	3.45	1.16	9,627		9,800	567	650	0.87	C	D	Y	A
VALRICO RD: (SR 60-to-LITHIA PINECREST)	Y	C	2U	45	D	2.38	2.10	12,449		14,630	661	770	0.86	D	E	Y	
VANDERVORT RD: (HANNA RD -to-LIVINGSTONE AVE)	Y	C	2U	50	D	.75	1.33	2,145		15,580	116	817	0.14	B		Y	
VAN DYKE RD: (SIMMONS RD -to-DALE MABRY HWY)	Y	C	2U	45	C	1.34	0.75	10,039		12,445	586	656	0.89	C	E	Y	

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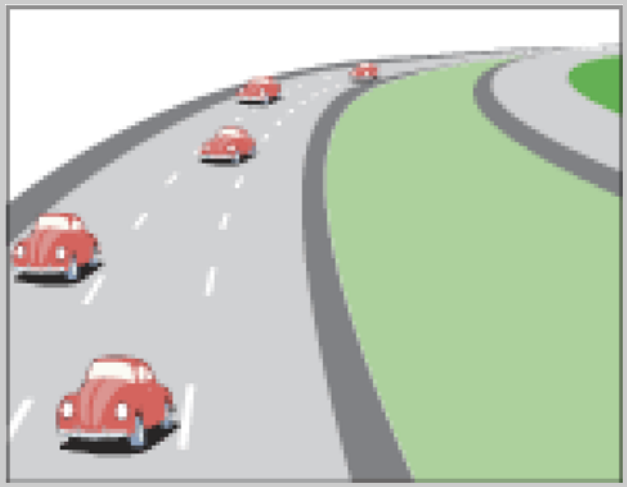
VAN DYKE RD: (DALE MABRY HWY -to- VETERANS EXPWY)	Y	MA	2U	50	D	2.70	1.11	20,080		27,600	1,017	1,250	0.81	D	E	Y	V
VAN DYKE RD: (VETERANS EXPWY -to-GUNN HWY)	Y	MA	2U	50	D	2.10	0.95	15,886		17,800	759	1,000	0.76	D	E	Y	V
VICTORIA ST/LIMONA RD: (LAKEWOOD DR-to-PARSONS AVE)	Y	C	2U	35	D	2.01	1.49	4,123	*	15,580	170	817	0.21	B	E	Y	
W VILLAGE DR: (S VILLAGE DR-to-EHRLICH)	Y	C	2U	35	D	1.59	0.63	9,687	*	15,580	544	817	0.67	C	B	Y	
WATERS AVE: (ARMENIA AVE -to-DALE MABRY HWY)	Y	MA	4D	45	E	1.27	2.36	33,801		32,775	1,369	1,710	0.80	D	F	Y	
WATERS AVE: (DALE MABRY HWY -to-ANDERSON RD)	Y	MA	6D	45	D	2.00	2.00	43,789		46,740	2,043	2,442	0.84	D	F	Y	
WATERS AVE: (ANDERSON RD-to-HANLEY RD)	Y	MA	6D	45	D	1.94	3.61	32,786		46,740	1,813	2,442	0.74	C	F	Y	
WATERS AVE: (HANLEY RD-to-SHELDON RD)	Y	MA	6D	45	E	1.26	3.17	32,786		49,210	1,813	2,575	0.70	C	F	Y	
WATERS AVE: (SHELDON RD -to-MONTAGUE RD)	Y	C	4D	45	D	0.92	0.81	19,082		33,915	1,327	1,625	0.82	B	E	Y	
WATERS AVE: (MONTAGUE RD -to-COUNTRYWAY BLVD)	Y	C	4D	45	D	1.54	0.81	20,334		33,915	1,167	1,625	0.72	B	E	Y	
WEBB RD: (MEMORIAL HWY -to-JACKSON SPRINGS)	Y	C	2U	45	D	1.18	1.69	8,489		15,580	379	817	0.46	C	F	Y	
WESTLAKE RD: (BILL TUCKER RD-to-SR 674)	N	C	2U	45	D	2.56	0.00	2,135		18,620	130	903	0.14	B		Y	
WESTLAKE RD: (SR 674-to-BISHOP RD)	N	C	2U	45	C	1.52	0.00	1,789	*	12,065	106	570	0.19	B		Y	
WHEELER RD: (LAKEWOOD DR-to-PARSONS RD)	Y	C	2U	35	D	1.58	1.27	7,479		8,000	560	630	0.89	D	F	Y	A
WHEELER RD: (PARSONS RD -to-VALRICO RD)	Y	C	2U	40	D	2.02	0.99	9,864		7,200	625	490	1.28	F	C	N	A
WHITAKER RD/VANDERHORT: (LIVINGSTON-to-US HWY 41)	Y	C	2U	45	C	2.18	0.46	7,711	*	12,445	417	656	0.64	C		Y	
WILCOX/NEWKIRK RD: (NORTHDALE BLVD-to-HUCTHINSON RD)	Y	C	2U	45	C	1.00	1.00	5,327		12,445	339	656	0.52	C		Y	
WILDER RD: (US HWY 92-to-I-4 FRONTAGE S)	Y	C	2U	45	C	1.20	1.67	1,095	*	12,445	55	656	0.08	B		Y	
WILDER RD: (I-4 FRONTAGE N-to-KNIGHTS-GRIFFIN)	Y	C	2U	45	C	3.00	0.67	2,686		12,445	171	656	0.26	B		Y	
WILLIAMS RD: (BROADWAY AVE -to-MLK BLVD)	Y	C	2U	40	E	2.30	0.87	6,114		6,200	374	410	0.91	E	E	Y	A
WILLIAMS RD: (MLK BLVD-to-US HWY 92)	Y	C	2U	45	D	1.20	0.83	7,863		13,300	531	550	0.97	D	F	Y	HP
WILLIAMS RD: (US HWY 92-to-FOWLER AVE)	Y	C	2U	45	C	4.32	0.69	5,724		9,000	381	480	0.79	C	C	Y	A
WILSKY BLVD: (HANLEY RD -to-VETERAN'S EXPWY)	Y	C	2U	45	D	.98	1.02	14,503		15,580	744	817	0.91	D	E	Y	
WINDHORST RD: (LAKEWOOD RD-to-SEFFNER VALRICO RD)	Y	C	2U	35	D	2.02	0.50	8,714		15,580	635	817	0.78	C	D	Y	
WOODBERRY RD: (FALKENBURG RD -to-LAKEWOOD DR)	Y	C	2U	45	D	1.51	1.32	11,831		18,500	926	1,370	0.68	D	F	Y	A

***LOS B** represents reasonably free-flowing conditions but with some influence by others.*

STATE ROADWAYS



HILLSBOROUGH COUNTY
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STATE ROADWAYS

Roadway (From/To)	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
50TH/56TH ST: (ML KING JR BLVD -to-HILLSBOROUGH AVE)	PA	4D	45	E	1.35	1.48	27,000		35,700	1,500	1,860	0.81	B	B	Y	
56TH ST: (HILLSBOROUGH AVE-to-RIVERHILLS DRIVE)	PA	4D	45	E	2.08	1.44	48,000		35,700	2,600	1,860	1.40	F	F	N	
56TH ST: (RIVERHILLS DR -to-FOWLER AVE)	PA	4D	45	E	1.93	2.59	39,500		34,500	2,100	1,800	1.17	F	F	N	
BEARSS AVE: (NEBRASKA AVE -to-FLORIDA AVE)	MA	4D	45	E	0.5	8.00	53,000		32,800	2,900	1,720	1.69	F	F	N	
BUSCH BLVD: (ARMENIA AVE-to-DALE MABRY)	PA	4U	45	E	1.30	2.31	54,500		32,775	2,900	1,710	1.70	F	F	N	
CAUSEWAY BLVD: (US 41-to-US 301)	PA	4D	45	D	3.18	0.94	23,000		35,700	1,300	1,860	0.70	B	E	Y	CIP
DALE MABRY HWY: (HILLSBOROUGH AVE-to-WATERS AVE)	PA	6D	45	E	2.00	1.50	76,500		53,500	4,000	2,790	1.43	F	F	N	
DALE MABRY HWY: (WATERS AVE-to-FLETCHER AVE)	PA	6D	45	E	2.76	2.17	76,500		51,800	4,000	2,710	1.48	F	F	N	
DALE MABRY HWY: (FLETCHER AVE-to-BEARSS/EHRLICH)	PA	6D	45	E	1.35	2.22	66,500		51,800	3,500	2,710	1.29	F	F	N	
DALE MABRY HWY: (BEARSS/EHRLICH-to-VAN DYKE)	PA	6D	50	D	2.49	2.81	67,000		49,200	3,600	2,570	1.40	F	E	N	
DALE MABRY HWY: (VAN DYKE-to-LUTZ LAKE FERN)	PA	4D	55	D	1.20	1.67	47,000		35,700	2,500	1,860	1.34	F	F	N	
DALE MABRY HWY: (LUTZ LAKE FERN-to-COUNTYLINE RD)	PA	4D	55	D	2.58	0.39	36,500		35,700	2,000	1,860	1.08	F		N	V
FLETCHER AVE: (NEBRASKA AVE -to-FLORIDA AVE)	MA	4D	45	E	0.5	8.00	47,000		32,800	2,600	1,720	1.51	F		N	
FLORIDA AVE: (FOWLER AVE-to-FLETCHER AVE)	MA	4D	45	E	1.00	2.00	29,000		34,500	1,600	1,800	0.89	D	E	Y	
FLORIDA AVE: (FLETCHER AVE -to-BEARSS AVE)	MA	4D	45	E	1.28	1.56	26,000		35,700	1,400	1,860	0.75	B	E	Y	
FLORIDA AVE: (BEARSS AVE -to-FLORIDA/ NEBRASKA APEX)	MA	4D	45	D	1.64	1.22	27,500		35,700	1,500	1,860	0.81	B	E	Y	
FOWLER AVE: (FLORIDA AVE--to-BRUCE B DOWNS)	PA	8D	50	D	2.00	3.00	63,000		63,800	3,300	3,330	0.99	D		N	IC
FOWLER AVE: (BRUCE B DOWNS-to-56TH ST)	PA	6D	50	D	1.97	2.54	66,500		49,200	3,500	2,570	1.36	F	F	N	
FOWLER AVE: (56TH ST-to-I-75)	PA	6D	55	D	2.46	2.03	58,500		49,200	3,100	2,570	1.21	F	F	N	
FOWLER AVE: (I-75-to-US 301)	PA	4D	55	D	1.43	0.70	20,000		35,700	1,100	1,860	0.59	B	C	Y	
HILLSBOROUGH AVE: (ANDERSON-to-VETERANS EXPWY)	PA	6D	45	E	1.41	2.84	70,000		51,800	3,700	2,710	1.37	F	E	N	
HILLSBOROUGH AVE: (VETERANS EXPWY -to-SHELDON RD)	PA	6D	45	E	2.20	3.18	63,500		51,800	3,400	2,710	1.26	F	E	N	
HILLSBOROUGH AVE: (SHELDON RD -to-COUNTRYWAY BLVD)	PA	6D	50	D	3.00	1.00	59,000		53,500	3,000	2,790	1.08	F	D	N	
HILLSBOROUGH AVE: (COUNTRYWAY BLVD-to-RACE TRACK RD)	PA	8D	55	D	1.85	1.08	54,500		67,800	2,900	3,540	0.82	B	D	Y	IC
HILLSBOROUGH AVE: (50TH ST -to-US HWY 301)	PA	4D	45	E	2.71	1.48	47,500		35,700	2,500	1,860	1.34	F	E	N	
I-4: (US 41/50TH-to-ML KING JR BLVD)	F	6F	55	D	1.42		135,000		105,800	7,000	5,410	1.29	F		N	

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Roadway (From/To)	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT	Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
I-4: (ML KING JR BLVD -to-US HWY 301)	F	6F	55	D	1.96		117,000	105,800	6,000	5,410	1.11	E		N	
I-4: (US HWY 301 -to-I-75)	F	6F	55	D	1.95		144,000	105,800	7,400	5,410	1.37	F		N	
I-4: (I-75 -to-CR 579)	F	6F	65	D	1.53		147,000	105,800	7,600	5,410	1.41	F		N	
I-4: (CR 579 -to-MCINTOSH RD)	F	6F	65	D	3.73		129,000	103,600	6,900	5,530	1.25	F		N	
I-4: (MCINTOSH RD -to-BRANCH FORBES RD)	F	6F	65	D	2.10		138,000	103,600	7,400	5,530	1.34	F		N	
I-4: (BRANCH FORBES RD-to-THONOTOSASSA)	F	6F	65	D	3.56		119,000	103,600	6,400	5,530	1.16	F		N	
I-4: (THONOTOSASSA-to-SR 39)	F	6F	65	D	1.78		119,000	103,600	6,400	5,530	1.16	F		N	
I-4: (SR 39-to-COUNTY LINE RD)	F	6F	65	D	4.28		118,000	105,800	6,300	5,410	1.17	F		N	
I-75: (I-4-to-ML KING JR BLVD)	F	6F	70	D	1.48		155,000	105,800	8,000	5,410	1.48	F		N	
I-75: (ML KING JR BLVD -to-SR 60)	F	6F	70	D	2.80		138,000	103,600	7,400	5,530	1.34	F		N	
I-75: (SR 60-to-LEE ROY SELMON)	F	6F	70	D	0.98		90,000	105,800	4,700	5,410	0.87	D		Y	
I-75: (LEE ROY SELMON -to-US HWY 301)	F	8F	70	D	2.00		65,800	144,300	3,400	7,380	0.46	B		Y	
I-75: (US HWY 301-to-GIBSONTON DR)	F	8F	70	D	3.60		114,000	140,200	6,100	7,480	0.82	C		Y	
I-75: (GIBSONTON DR -to-BIG BEND RD)	F	6F	70	D	4.20		93,500	103,600	5,000	5,530	0.90	D		Y	V
I-75: (BIG BEND RD-to-SR 674)	F	6F	70	D	5.85		71,500	103,600	3,900	5,530	0.71	C		Y	V
I-75: (SR 674-to-MANATEE COUNTY)	F	6F	70	B	6.30		59,500	54,300	3,500	3,110	1.13	F		N	
I-75: (I-4-to-FOWLER AVE)	F	6F	70	D	4.00		127,000	103,600	6,800	5,530	1.23	F		N	
I-75: (FOWLER AVE -to-FLETCHER AVE)	F	6F	70	D	1.10		124,000	105,800	6,400	5,410	1.18	F		N	
I-75: (FLETCHER AVE -to-BRUCE B DOWNS BLVD)	F	4F	70	D	3.85		92,500	54,300	5,000	3,580	1.40	F		N	
I-75: (BRUCE B DOWNS BLVD -to-I-275)	F	4F	70	D	3.30		69,000	67,100	3,700	3,580	1.03	E		N	
I-275: (FOWLER AVE-to-FLETCHER AVE)	F	6F	55	D	1.00		105,000	105,800	5,400	5,410	1.00	D		N	V
I-275: (FLETCHER AVE-to-BEARSS AVE)	F	6F	55	D	1.28		96,500	105,800	5,000	5,410	0.92	D		Y	
I-275: (BEARSS AVE -to-I-75)	F	4F	70	D	6.80		55,500	67,100	3,000	3,580	0.84	D		Y	
LEE ROY SELMON EXPWY: (US 41/50TH-to-US HWY 301)	F	4F	65	D	3.84		42,500	67,200	2,200	3,440	0.64	C		Y	
LEE ROY SELMON EXPWY: (US HWY 301 -to-I-75)	F	4F	65	D	1.22		44,000	67,200	2,300	3,440	0.67	C		Y	
M L KING BLVD: (40TH ST-to-I-4)	MA	2U	45	E	1.83	1.09	23,500	16,900	1,300	890	1.46	F		N	

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Roadway (From/To)	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
M L KING BLVD: (I-4 -to-US HWY 301)	PA	6D	50	D	1.46	2.05	41,000		49,200	2,200	2,570	0.86	D	D	Y	
M L KING BLVD: (US HWY 301-to-FALKENBURG)	PA	6D	50	E	1.50	0.67	34,000		53,500	1,800	2,790	0.65	B	F	Y	
M L KING BLVD: (FALKENBURG-to-WILLIAMS RD)	PA	4D	50	E	1.00	1.00	38,500		35,700	2,100	1,860	1.13	F	E	N	
M L KING BLVD: (WILLIAMS RD-to-CR 579)	PA	6D	50	E	1.00	3.00	39,500		51,800	2,200	2,710	0.81	D	D	Y	
M L KING BLVD: (CR 579-to-PARSONS AVE)	MA	2U	45	D	1.50	2.00	28,000		15,400	1,500	1,240	1.21	F	F	N	
M L KING BLVD: (PARSONS AVE-to-MCINTOSH RD)	MA	2U	45	D	2.64	0.38	19,800		16,400	1,100	860	1.28	F	F	N	
M L KING BLVD: (MCINTOSH RD-to-FORBES RD)	MA	2U	45	D	3.60	0.56	11,800		15,500	630	820	0.77	C	D	Y	
M L KING BLVD: (FORBES RD-to-TURKEY CREEK RD)	MA	2U	45	D	1.00	1.00	10,700		15,500	570	820	0.70	C	B	Y	
NEBRASKA AVE: (FOWLER AVE -to-FLETCHER AVE)	PA	4D	45	E	0.98	2.04	25,500		34,500	1,400	1,800	0.78	D	F	Y	
NEBRASKA AVE: (FLETCHER AVE -to-BEARSS AVE)	PA	4D	45	E	1.29	2.33	26,000		34,500	1,400	1,800	0.78	D	E	Y	
NEBRASKA AVE: (BEARSS AVE -to-NEBRASKA/FLORIDA)	PA	4D	45	D	1.77	1.13	27,000		35,700	1,500	1,860	0.81	B	E	Y	
SR 39: (SR 60 -to-ALEXANDER ST)	PA	4D	45	D	3.50	0.57	17,300		29,400	930	1,570	0.59	C	B	Y	
SR 39: (SAM ALLEN RD-to-KNIGHTS-GRIFFIN)	PA	2U	45	C	2.10	0.48	14,600		13,100	780	690	1.13	D	A	N	
SR 39: (KNIGHTS-GRIFFIN -to-PASCO COUNTY)	PA	2U	45	C	6.59	0.00	8,900		12,700	480	600	0.80	C	C	Y	
SR 60 / ADAMO DR: (US HWY 41-to-US 301)	PA	4D	50	D	3.00	1.33	44,000		35,700	2,300	1,860	1.24	F	F	N	
SR 60 / BRANDON BLVD: (US 301-to-FALKENBURG)	PA	4D	50	D	1.25	1.60	50,500		43,600	2,900	2,450	1.18	F	F	N	A
SR 60 / BRANDON BLVD: (FALKENBURG-to-LAKEWOOD)	PA	8D	45	D	1.50	3.33	85,500		73,500	4,500	3,900	1.15	F	F	N	A
SR 60 / BRANDON BLVD: (LAKEWOOD DR-to-LITHIA PINECREST)	PA	6D	45	D	1.75	2.86	75,500		55,000	4,000	3,130	1.28	F	E	N	A
SR 60 / BRANDON BLVD: (LITHIA PINECREST-to-VALRICO RD)	PA	8D	50	D	1.90	2.11	57,000		66,000	3,400	3,600	0.94	D	D	Y	A
SR 60 / BRANDON BLVD: (VALRICO RD -to-DOVER RD)	PA	4D	55	D	2.04	1.96	38,000		42,700	2,200	2,460	0.89	D	F	Y	A-V
SR 60 / EAST: (DOVER RD -to-TURKEY CREEK RD)	PA	4D	55	D	3.00	0.33	29,500		34,200	1,600	1,810	0.88	C	E	Y	
SR 60 / EAST: (TURKEY CREEK RD -to-SR 39)	PA	4D	55	D	3.01	0.33	23,000		34,200	1,300	1,810	0.72	B	C	Y	
SR 60 / EAST: (SR 39-to-COUNTY LINE RD)	PA	4D	55	C	4.25	0.24	19,100		25,500	1,100	1,360	0.81	C	C	Y	
SR 674: (I-75-to-US HWY 41)	MA	4D	55	D	3.02	0.99	24,500		34,200	1,400	1,810	0.77	B	C	Y	V
SR 674: (I-75 -to-US HWY 301)	MA	4D	45	D	3.04	1.97	34,000		34,200	1,800	1,810	0.99	D	E	N	V
SR 674: (US HWY 301-to-CR 579)	PA	2U	50	D	2.41	0.00	22,000		18,200	1,200	870	1.38	E		N	V

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Roadway (From/To)	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
SR 674: (CR 579 -to-CARLTON LAKE RD)	PA	2U	50	C	3.27	0.00	6,480		12,700	350	600	0.58	C		Y	
SR 674: (CARLTON LAKE RD -to-CR 39)	PA	2U	50	C	6.04	0.17	6,480		11,000	350	590	0.59	C		Y	
SR 674: (CR 39 -to-POLK COUNTY)	PA	2U	50	C	5.61	0.00	2,300		12,700	130	600	0.22	B		Y	
SUNCOAST PKWY: (VETERANS EXPWY-to-PASCO COUNTY)	F	4F	65	D	3.71		35,400		62,200	2,000	3,420	0.59	B		Y	
US HWY 41: (NEBRASKA/FLORIDA-to-CRYSTAL LAKE)	PA	6D	45	D	1.08	1.85	45,500		53,500	2,400	2,790	0.86	C		Y	IC
US HWY 41: (CRYSTAL LAKE-to-LUTZ LAKE FERN)	PA	6D	45	D	1.00	2.00	46,000		49,200	2,500	2,570	0.97	D		Y	
US HWY 41: (LUTZ LAKE FERN-to-COUNTY LINE RD)	PA	6D	45	D	1.47	0.68	35,500		53,500	1,900	2,790	0.68	B	C	Y	
US HWY 41: (SR 60 / ADAMO DR-to-CAUSEWAY)	PA	6D	45	D	2.00	2.00	32,500		49,200	1,700	2,570	0.66	C	F	Y	
US HWY 41: (CAUSEWAY-to-MADISON)	PA	4D	50	D	1.50	1.33	36,000		35,700	1,900	1,860	1.02	F	F	N	V
US HWY 41: (MADISON-to-GIBSONTON)	PA	4D	50	D	3.80	0.53	25,000		35,700	1,400	1,860	0.75	B	E	Y	
US HWY 41: (GIBSONTON-to-BIG BEND RD)	PA	4D	50	D	3.90	0.51	23,000		35,700	1,500	1,860	0.81	B	C	N	V
US HWY 41: (BIG BEND RD-to-APOLLO BEACH BLVD)	PA	4D	50	D	1.74	0.57	31,500		35,700	1,700	1,860	0.91	C	D	N	V
US HWY 41: (APOLLO BEACH BLVD-to-19TH AVE NE)	PA	4D	50	D	3.33	0.30	29,000		34,200	1,600	1,810	0.88	C		N	V
US HWY 41: (19TH AVE NE-to-SR 674)	PA	4D	50	D	1.55	1.29	15,800		34,200	760	1,810	0.42	B		N	V
US HWY 41: (SR 674-to-FOX PLACE)	PA	4D	55	D	1.60	1.88	14,000		29,400	700	1,570	0.45	C		Y	
US HWY 41: (FOX PLACE-to-MANATEE COUNTY)	PA	4D	50	C	5.80	0.00	8,600		41,800	460	2,230	0.21	A		Y	
US HWY 92: (US HWY 301-to-WILLIAMS RD)	PA	2U	45	D	2.34	0.85	14,300		16,400	930	860	1.08	F	C	N	
US HWY 92: (WILLIAMS RD-to-CR 579)	PA	2U	45	D	1.20	0.83	15,100		16,400	980	860	1.14	F	E	N	
US HWY 92: (CR 579-to-KINGSWAY RD)	PA	2U	45	D	1.50	0.67	15,100		16,400	790	860	0.92	D	E	Y	
US HWY 92: (KINGSWAY RD -to-MCINTOSH RD)	PA	2U	45	D	2.13	0.47	10,100		16,400	530	860	0.62	C	C	Y	
US HWY 92: (MCINTOSH RD-to-FORBES)	PA	2U	45	D	3.46	0.29	8,300		15,500	440	820	0.54	C		Y	
US HWY 92: (FORBES-to-THONOTOSASSA)	PA	2U	45	D	2.62	1.15	13,100		15,500	700	820	0.85	D		Y	
US HWY 92: (PARK RD-to-COUNTYLINE RD)	PA	2U	50	D	3.06	0.65	9,700		15,500	520	820	0.63	C		Y	
US HWY 301: (I-4 NORTH-to-MLK BLVD/ SR 574)	PA	4D	50	D	1.00	1.00	37,500		35,700	2,000	1,860	1.08	F	D	N	
US HWY 301: (MLK BLVD/ SR 574-to-SR 60/ADAMO DR)	PA	4D	50	D	2.30	1.30	44,000		35,700	2,300	1,860	1.24	F	E	N	
US HWY 301: (SR 60/ ADAMO-to-CAUSEWAY)	PA	4D	50	D	1.90	2.11	38,000		32,700	2,000	1,710	1.17	F	F	N	IC

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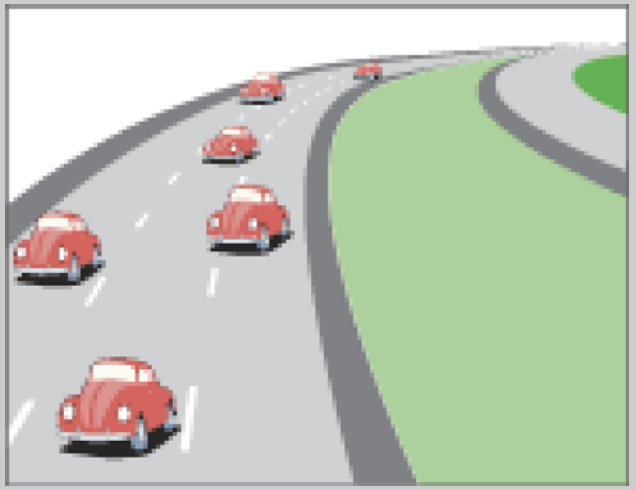
Roadway (From/To)	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/Mi	AADT		Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
US HWY 301: (CAUSEWAY-to-BLOOMINGDALE)	PA	4D	50	D	2.14	1.40	44,500		54,000	2,600	2,850	0.91	D	F	N	A-V
US HWY 301: (BLOOMINGDALE-to-GIBSONTON DR)	PA	6D	50	D	2.80	1.79	46,500		50,000	2,900	2,650	1.09	F	F	N	A-IC
US HWY 301: (GIBSONTON-to-BIG BEND RD)	PA	2U	55	D	4.50	0.67	29,000		16,400	1,700	860	1.98	F	E	N	CIP-V
US HWY 301: (BIG BEND RD-to-SR 674)	PA	2U	55	D	5.50	0.18	10,300		15,500	550	820	0.67	C	E	N	CIP-NF-V
US HWY 301: (SR 674-to-MANATEE COUNTY)	PA	2U	55	C	5.70	0.00	3,600		12,700	200	600	0.33	B		Y	
US HWY 301: (I-4 NORTH-to-HARNEY RD)	PA	2U	45	D	2.60	1.15	28,500		16,400	1,500	1,860	0.81	C	D	Y	CIP
US HWY 301: (HARNEY RD -to-FOWLER AVE)	PA	2U	45	D	1.93	0.00	20,500		19,600	1,200	950	1.26	E	D	N	
US HWY 301: (FOWLER AVE-to-CR 579)	PA	2U	55	D	2.10	0.00	23,500		17,500	1,400	1,220	1.15	E	D	N	HP
US HWY 301: (CR 579-to-MCINTOSH RD)	PA	2U	50	C	4.40	0.00	12,200		12,700	720	600	1.20	D		N	
US HWY 301: (MCINTOSH RD -to-PASCO COUNTY)	PA	2U	50	C	5.11	0.00	12,400		12,700	730	600	1.22	D		N	
VETERANS EXPWY: (COURTNEY CAMPBELL-to-INDEPENDENCE)	F	10F	55	D	0.72		58,800		176,900	3,100	9,440	0.33	A		Y	
VETERANS EXPWY: (INDEPENDENCE-to-MEMORIAL HWY)	F	8F	55	D	0.77		60,300		144,300	3,100	7,380	0.42	B		Y	
VETERANS EXPWY: (MEMORIAL HWY-to-HILLSBOROUGH AVE)	F	6F	55	D	1.02		63,200		105,800	3,300	5,410	0.61	C		Y	
VETERANS EXPWY: (HILLSBOROUGH AVE -to-WATERS AVE)	F	4F	55	D	1.99		67,900		67,200	3,500	3,440	1.02	E		N	
VETERANS EXPWY: (WATERS AVE-to-LINEBAUGH)	F	4F	65	D	1.59		62,400		67,200	3,200	3,440	0.93	D		Y	
VETERANS EXPWY: (LINEBAUGH-to-GUNN HWY)	F	4F	65	D	2.00		52,200		67,200	2,700	3,440	0.79	D		Y	
VETERANS EXPWY: (GUNN HWY-to-EHRLICH)	F	4F	65	D	1.00		55,600		67,200	2,900	3,440	0.84	D		Y	
VETERANS EXPWY: (EHRLICH-to-HUTCHINSON RD)	F	4F	65	D	1.90		48,500		67,200	2,500	3,440	0.73	C		Y	
VETERANS EXPWY: (HUTCHINSON RD-to-SUNCOAST)	F	4F	65	D	1.70		48,400		67,100	2,600	3,580	0.73	C		Y	
VETERANS EXPWY: (SUNCOAST-to-DALE MABRY)	F	4F	65	D	3.00		13,000		67,100	700	3,580	0.20	A		Y	

***LOS C** represents constrained constant flow below speed limits, with additional attention required by the drivers to maintain safe operations. Comfort and convenience levels of the driver decline.*

Appendix A



Appendix A
LEGEND OF VARIABLES USED IN THE *ROADWAY LEVEL OF SERVICE REPORT*

The following legend provides a definition or description for each variable in the *Roadway Level of Service Report*. In this legend, each variable is given a number.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/ Mi	AADT	Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
131ST AVE: (NEBRASKA AVE -to-30THST)	Y	C	2U	45	E	1.54	2.60	7,830	15,485	561	808	0.70	D		Y	

1 **Roadway (From/To):** The common name assigned to the road segment (street name), the cross street or location at which the segment begins, and the crossing street or location at which the segment ends.

2 **Reg (Regulated Roadways):** Roadways that are considered as part of the Concurrency Management System and defined in the Adequate Public Facilities Ordinance ("Y"- Yes, "N"- No).

3 **FC (Functional Classification):** The assignment of roads into systems according to the character of service they provide in relation to the total road network. The abbreviations used for the **FC** are:

PA – Principal Arterial MA – Minor Arterial

MAC – Rural Major Collector C – Collector

MIC – Rural Minor Collector F – Limited Access

4 **Road Type (Existing Road System/Type):** Existing number of lanes and whether the facility type is Divided (D), Undivided (U), One Way (O), or Freeway (F).

5 **Spd Lmt (Speed Limit):** Speed limit currently posted for the roadway.

6 **LOS Std. (Level of Service (LOS) Standard):** The **LOS Std.** for the particular roadway as adopted and documented in the Hillsborough County Comprehensive Plan. The LOS for roadways within incorporated areas is governed by the jurisdiction's Comprehensive Plan. The LOS standards in this report may differ. *See Appendix C - Level of Service (LOS) Standards.*

7 **Len (mi):** The **Length** of the roadway segment specified in miles.

8 **Sig/Mi (Number of Signals per mile on the Segment):** The number of signalized intersections per mile on a roadway analysis segment as identified in this report.

9 **AADT (Annual Average Daily Traffic):** The **AADT** is the number of vehicles that travel on a specified segment of a road on an average day. For aggregated segments, traffic counts may be weighted according to the length of each individual link and may not match a specific count.

10 **Daily Cap (Daily Capacity):** The **Daily Cap** is the maximum rate of flow at which vehicles can traverse a point or uniform segment roadway and maintain the performance standard as measured by speed for interrupted flow facilities and V/C ratio for uninterrupted flow facilities during the daily (AADT) period.

11 **Peak Hr Dir Vol (Peak Hour Directional Volume):** The 100th highest hour traffic volume determined by (AADT x K_{100} x Directional Factor).

12 **Peak Hr Dir Cap (Peak Hour Directional Capacity):** The **Peak Hr Dir Cap** is the maximum rate of flow at which vehicles can traverse a point or uniform segment roadway and maintain the performance standard as measured by speed for interrupted flow facilities and V/C ratio for uninterrupted flow facilities during the peak hour period for the peak direction.

Appendix A (continued)

Roadway (From/To)	Reg	FC	Road Type	Spd Lmt	LOS Std.	Len (mi)	Sig/ Mi	AADT	Daily Cap	Peak Hr Dir Vol	Peak Hr Dir Cap	V/C Ratio	LOS	INT LOS	Cap Avail	Spc Note
131ST AVE: (NEBRASKA AVE -to-30THST)	Y	C	2U	45	E	1.54	2.60	7,830	15,485	561	808	0.70	D		Y	

13 **V/C Ratio:** PM Peak Hour Directional Volume to capacity of the roadway. V/C greater than 1.0 indicates a roadway exceeds the available capacity.

14 **LOS (Level of Service):** Current **LOS** for the roadway.

15 **INT LOS:** Intersection LOS is based upon a detailed traffic analysis for the roadway facility. The Intersection LOS is the worst intersection LOS along the roadway. Deficient intersections may need to be addressed in Concurrency, if it is determined that the project's study network includes a deficient intersection. The Deficient Intersections are denoted on the Hillsborough County Deficient Roadways Map.

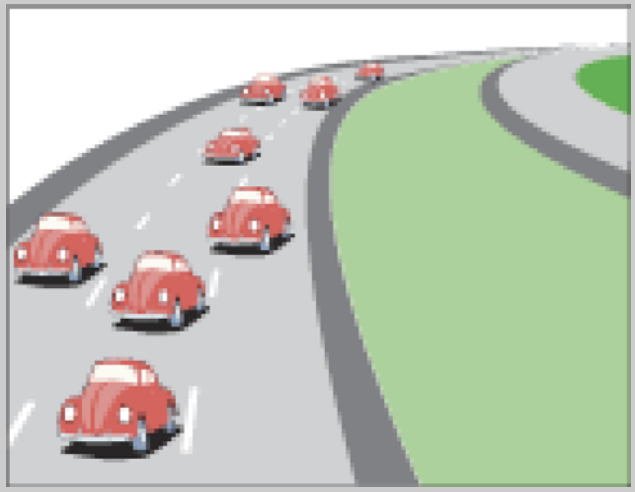
16 **Cap Avail (Capacity Available):** If an "N", is identified in the Capacity Available column, then it means that the roadway is already presently deficient and does not have available capacity, or based on existing traffic volumes and vested trips from approved developments, capacity is no longer available.

17 **Spc Note:** The values in the special notes field stand for the following:

"A" ……. indicates an ART-Plan analysis was conducted for the Roadway
"HP" ….. indicates a HIGH-Plan analysis was conducted for the Roadway
"CIP" ..... indicates that the roadway or a major intersection is identified in the Five-Year Capital Improvements Program (CIP)
"HCS"..... indicates that a Highway Capacity Analysis has been conducted for the Roadway
"IC"..... indicates that the roadway has an inconsistent cross-section (e.g., different number of lanes over the length of the identified facility)
"NF" ..... Not funded in the Five-Year CIP
"V" ……. indicates that with the addition of vested traffic, roadway capacity is not available.

***LOS D** represents traffic operations approaching unstable flow with high passing demand and passing capacity near zero, characterized by drivers being severely restricted in maneuverability.*

Appendix B



Appendix B

DEFINITION OF LEVEL OF SERVICE (LOS)

Levels of Service (LOS) are qualitative measures describing operational conditions of highways. Six LOS are defined for each facility type and are given designations ranging from "A" (the best) to "F" (the worst). LOS indicates quality of flow measured by a scale of driver satisfaction.

- **Level of Service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to drivers is excellent.

- **Level of Service B** allows speeds at or near free-flow speeds, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream relative to LOS A.

- **Level of Service C** speeds at or near free-flow speeds, but the freedom to maneuver is noticeably restricted (lane changes require careful attention on the part of drivers). The general level of comfort and convenience declines significantly at this level. Disruptions in the traffic stream, such as an incident (for example, vehicular accident or disablement), can result in significant queue formation and vehicular delay. In contrast, the effect of incidents at LOS A or LOS B are minimal, and cause only minor delay in the immediate vicinity of the event.

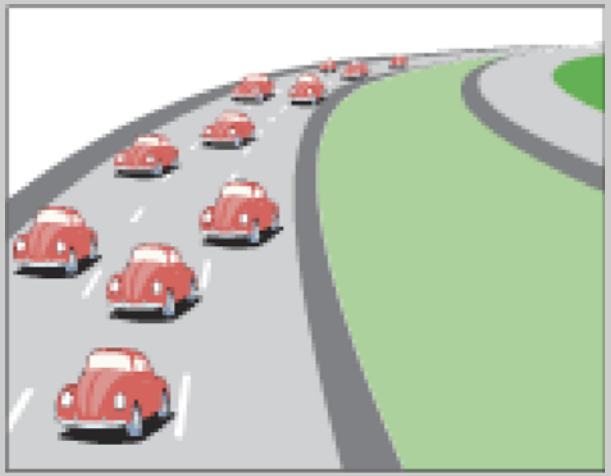
- **Level of Service D** conditions where speeds begin to decline slightly with increasing flow. The freedom to maneuver becomes more restricted and drivers experience reductions in physical and psychological comfort. Incidents can generate lengthy queues because the higher density associated with this LOS provides little space to absorb disruption in the traffic flow.

- **Level of Service E** represents operating conditions at or near the roadway's capacity. Even minor disruptions to the traffic stream, such as vehicles entering from a ramp or 2 vehicles changing lanes, can cause delays as other vehicles give way to allow such maneuvers. In general, maneuverability is extremely limited and drivers experience considerable physical and psychological discomfort.

- **Level of Service F** describes a breakdown in vehicular flow. Queues form quickly behind points in the roadway where the arrival flow rate temporarily exceeds the departure rate, as determined by the roadway's capacity. Vehicles typically operate at low speeds in these conditions and are often required to come to a complete stop, usually in a cyclic fashion. The cyclic formation and dissipation of queues is a key characterization of LOS F.

LOS E ***represents unstable flow near capacity. LOS E often changes to LOS F very quickly because of disturbances (road conditions, accidents, etc.) in traffic flow.***

Appendix C



Appendix C

LEVEL OF SERVICE (LOS) STANDARDS

For County roadways, an operational LOS "D" (peak hour, peak directional) shall be maintained on all roadways in urbanized areas and arterial roads in transitioning and rural areas. An operational LOS "C" (peak hour, peak directional) shall be maintained on all collector roadways in rural and transitional areas.

To ensure transportation infrastructure has sufficient capacity to serve development at the adopted LOS standard concurrent with development, the County shall maintain the minimum peak hour LOS standard for regulated county roads as set forth below.

LEVEL OF SERVICE STANDARDS FOR COUNTY ROADS

(Table 1 of the Transportation Element of the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County, Florida)*

	Urban Service Area*	**Outside of Urban Service Area**	**Constrained and Deficient Roads**	**High Transit LOS Corridor**	**High Transit LOS Corridor on Constrained Roads**
Arterials	D	D	E	E	120% of LOS "E"
Collectors	D	C		E	120% of LOS "E"

** Including roadways that serve as the boundary.*

Appendix C *(continued)*

For State roadways, an operational LOS "D" peak hour shall be maintained on all roadways in urbanized areas. State roads in transitioning areas have a LOS "C" standard; rural areas have a LOS "B" standard except for two-lane roads which have a LOS "C" standard. In some cases, the MAX V/C for concurrency management purposes supersedes the general LOS standard. The adopted peak hour minimum LOS for State roads shall be as follows:

LEVEL OF SERVICE STANDARDS FOR STATE ROADS

LOS standards inside parentheses apply to general use lanes only when exclusive through-lanes exist.

(Transportation Element of the *Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County, Florida)*

	SIS and FIHS Facilities		**TRIP Funded Facilities**		**Other State Roads[3]**	
	Limited Access Highway[4] (Freeway)	**Controlled Access Highway[4]**	**Other Multilane[4]**	**Two Lane[4]**	**Other Multilane [4]**	**Two Lane[4]**
Rural Areas	B	B[1]	B	C	B	B
Transitioning Urbanized Areas, Urban Areas, or Communities	C	C	C	C	C	C
Urbanized Areas Under 500,000	C(D)	C	D	D	D	D
Urbanized Areas Over 500,000	D(E)	D	D	D	D	D
Roadways Parallel to Exclusive Transit Facilities	E	E	E	E	E	E
Inside TCMAs	D(E)[2]	E[2]	--[2]	--[2]	--[2]	--[2]
Inside TCEAs and MMTDs	--[2]	--[2]	--[2]	--[2]	--[2]	--[2]
High Transit LOS Corridor	--[2]	--[2]	--[2]	--[2]	E	E
High Transit LOS & Constrained and Deficient Corridors	--[2]	--[2]	--[2]	--[2]	120% of LOS "E"	120% of LOS "E"

The Level of Service standards inside of parentheses applies to general use lanes only when exclusive through lanes exist.

1. For rural two-lane facilities, the standard is C.
2. Means FDOT must be consulted as provided by Florida Statutes, regarding level of service standards set on SIS or TRIP facilities impacted by TCMAs, MMTDs, or TCEAs.
3. Means the level of service standards for non TRIP facilities may be set by local governments.
4. It is recognized that certain roadways (i.e. constrained roadways) will not be expanded by the addition of through lanes for physical, environmental, or policy reasons. In such instances, a variance to the level of service may be sought pursuant to Florida Statutes Section 120.542.

Appendix C *(continued)*

The following roadways are identified as High Transit LOS Roadways per the requirements of the Hillsborough County Adequate Public Facilities Ordinance:

High TLOS Corridors in the Unincorporated County
Using 2008 Transit Level of Service

Road Name	From Limits	To Limits	Regulated ?	LOS Std (1)	Constrained ?	LOS Std (2)
15th St	Fowler Ave	Fletcher Ave	Y	E	N	
22nd St	Club Dr	Bearss Ave	Y	E	N	
50th/56th St	M L King Blvd	Hillsborough Ave	Y	E	N	
56th St	Hillsborough Ave	Riverhills Drive	Y	E	N	
56th St	Riverhills Ave	Fowler Ave	Y	E	N	
78th Street	Madison Ave	Causeway Blvd	Y	E	N	
78th Street	Causeway Blvd	SR 60	Y	E	N	
Anderson Rd	Waters Ave	Linebaugh Ave	Y	E	N	
Bearss Ave	Dale Mabry Hwy	I-275	Y	E	N	
Bearss Ave	I-275	Bruce B Downs Blvd	Y	E	N	
Broadway Ave	M L King Blvd	Lakewood Dr	Y	E	N	
Bruce B Downs Blvd/30th St	Fowler Ave	Fletcher Ave	Y	E	N	
Bruce B Downs Blvd/30th St	Fletcher Ave	Bearss Ave	Y	E	N	
Busch Blvd	Dale Mabry Hwy	Armenia Ave	Y	E	Y	120%
Citrus Park Dr	Sheldon Rd	Gunn Hwy	Y	E	N	
Dale Mabry Hwy	Waters Ave	Fletcher Ave	Y	E	Y	120%
Fletcher Ave	Dale Mabry Hwy	I-275	Y	E	N	
Fletcher Ave	I-275	Bruce B Downs Blvd	Y	E	Y	120%
Fletcher Ave	Bruce B Downs Blvd	56th St	Y	E	N	
Florida Ave	Fowler Ave	Fletcher Ave	Y	E	Y	120%
Florida Ave	Fletcher Ave	Bearss Ave	Y	E	Y	120%
Fowler Ave	Florida Ave	Bruce B Downs Blvd	Y	E	N	
Gornto Lake Rd	Providence Lakes Blvd	Causeway Blvd	Y	E	N	
Gunn Hwy	Veteran's Expwy	Anderson Rd	Y	E	N	
Gunn Hwy	Anderson Rd	Linebaugh Ave	Y	E	N	
Gunn Hwy	Linebaugh Ave	Dale Mabry Hwy	Y	E	N	
Gunn Hwy/Citrus Park Dr	Sheldon Rd	Veteran's Expwy	Y	E	Y	120%
Hanley Rd	Hillsborough Ave	Wilsky Blvd	Y	E	N	
Henderson Rd	Linebaugh Ave	Gunn Hwy	Y	E	N	
Hillsborough Ave	Sheldon Rd	Veterans Expwy	Y	E	N	
Hillsborough Ave	Veterans Expwy	Anderson Rd	Y	E	Y	120%

High TLOS Corridors in the Unincorporated County
Using 2008 Transit Level of Service

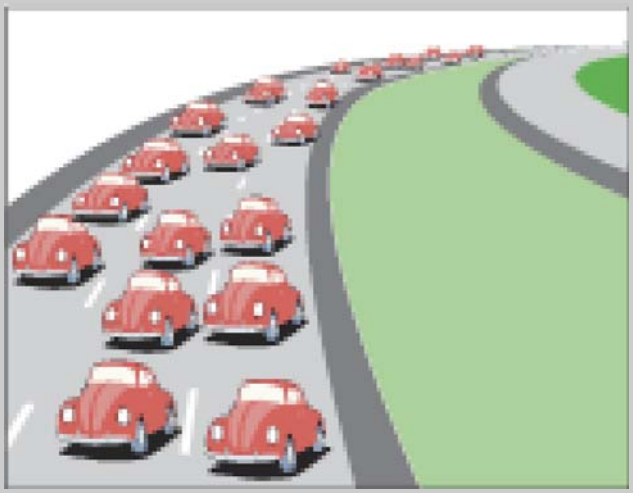
Road Name	From Limits	To Limits	Regulated ?	LOS Std (1)	Constrained ?	LOS Std (2)
Hillsborough Ave	50th St	US 301	Y	E	N	
Himes Ave	Hillsborough Ave	Busch Blvd	Y	E	N	
Kelly Rd	Memorial Hwy	Hillsborough Ave	Y	E	N	
Linebaugh Ave	Dale Mabry Hwy	Anderson Rd	Y	E	N	
Livingston Ave	Bearss Ave	Sinclair Hills Dr	Y	E	N	
M L King Blvd	I-4	US 301	Y	E	N	
M L King Blvd	US 301	Falkenburg Rd	Y	E	N	
M L King Blvd	Falkenburg Rd	Williams Rd	Y	E	N	
M L King Blvd	Williams Rd	CR 579	Y	E	N	
Manhattan Ave	Henry Ave	Humphrey St	Y	E	N	
Nebraska Ave	Fowler Ave	Fletcher Ave	Y	E	N	
Nebraska Ave	Fletcher Ave	Bearss Ave	Y	E	N	
Orient Rd	Broadway Ave	Sligh Ave	Y	E	N	
Progress Blvd	78th St	US 301	Y	E	N	
Providence Lake Blvd	Lumsden Rd	Bloomingdale Ave	Y	E	N	
Providence Lake Blvd	Gornto Lake Rd	Providence Rd	Y	E	N	
Providence Rd	Bloomingdale Ave	Providence Lakes Blvd	Y	E	N	
Sheldon Rd	Hillsborough Ave	Waters Ave	Y	E	N	
Sheldon Rd	Waters Ave	Linebaugh Ave	Y	E	N	
Sheldon Rd	Linebaugh Ave	Citrus Park Dr	Y	E	N	
Skipper Rd	Nebraska Ave	Bearss Ave	Y	E	N	
Sligh Ave/43rd St	Hanna Ave	56th St	Y	E	N	
Veteran's Expwy	Courtney	Independence Pkwy	Y	E	N	
Veteran's Expwy	Independence Pkwy	Memorial Hwy	Y	E	N	
Williams Rd	Broadway Ave	M L King Blvd	Y	E	N	

(1) - LOS Standard of "E" is applied to segments where at least 50% of the segment is served by a transit route with LOS C or D.

(2) - Increasing the LOS Standard to 120% of E is applied to links when at least 50% of the segment is constrained by the Comprehensive Plan and 50% of the segment is served by a transit route with LOS C or D.

LOS F ***represent the worst conditions with heavily congested flow and traffic demand exceeding capacity, characterized by stop-and-go waves, poor travel time, low comfort and convenience, and increased accident exposure.***

Appendix D



Appendix D

ADEQUATE PUBLIC FACILITIES STANDARDS / LEVEL OF SERVICE (LOS) STANDARD

(Adequate Public Facilities requirements in the Hillsborough County Land Development Code, Sections 4.02.02. and 4.02.03)

A. Regulated Roads.

1. For the purpose of issuing Development Orders, the minimum peak hour, peak direction level of service standard for regulated state and county roads shall be the level of service in the Transportation Element of the Hillsborough Comprehensive Plan in effect at the time of the application, including the LOS standard designated therein for High Transit Level of Service (HTLOS) Roadways. HTLOS roadways are those roads with an existing Transit Level of Service (TLOS) of "D" or better, on which buses operate at least 12 hours per day and arrive every 30 minutes or less during peak periods. For the purpose of issuing development orders, HTLOS roadways shall be those roadways listed as such in the current Hillsborough County Comprehensive Plan in effect at the time of application, plus any new HTLOS roadways created by increased bus service.

2. If a developer chooses to provide for additional transit services which would allow application of High Transit Level of Service (HTLOS) standards for roadway capacity, then one of the following must apply: 1) either the developer would cause HARTline to agree to provide a HTLOS on the roadway segment; or 2) the developer would agree to provide funding for both capital and operating needs for at least 10 years or until HARTline agrees to assume its operation; or 3) until sufficient roadway capacity exists to meet concurrency without the HTLOS.

B. Measurement of Road Capacities.
The Florida Department of Transportation (FDOT) Tables of Generalized Daily Level-of-Service Maximum Volumes will be used to determine initial highway capacities. The measurement of capacity may also be determined by substantiation in the form of engineering studies signed by a licensed Professional Engineer. Traffic analysis techniques must be technically sound and justifiable as determined by the County and described in the Concurrency Management System Administrative Procedures Manual. The current edition of the Hillsborough County Roadway Inventory and Level of Service Report will provide a basis for Average Daily Traffic (ADT). These daily counts are to be used in traffic studies for Concurrency Application Review. Any counts, especially those older than two years, can be updated using the above mentioned acceptable traffic analysis techniques, which may include more detailed analysis involving peak hour counts. Alterations to capacity on the State Highway System beyond ranges established by agreement between the County and FDOT shall require FDOT review and approval.

C. Concurrency Information Requests.
Hillsborough County shall provide the public, upon request, information on existing and anticipated capacities and levels of service of all services addressed by the adequate public facilities regulations.

Sec. 4.02.03. Required Determinations for Roads.

A. If the proposed Development will not create a Deficient Regulated Road Segment, or place trips on a Deficient Regulated Road Segment, it will be allowed under concurrency.

B. A proposed Development that will create a Deficient Regulated Road Segment, or place trips on a Deficient Regulated Road Segment will be allowed under concurrency if:

1. The necessary road and/or transit improvements to provide the capacity necessary to ensure the adopted level of service will be maintained, are under construction, or will be under construction within the next two fiscal years from the issuance of the Certificate of Capacity. The determination of the construction schedule shall be based on the fiscal year of commencement of actual construction and the fiscal year of project completion shown in the Schedule of Projects of the adopted Capital Improvements Element of the

Hillsborough County Comprehensive Plan. This Schedule of Projects includes the County Capital Improvements Program, the adopted FDOT District Seven Five Year Work Program and funded projects in the HARTline Transit Development Plan.

2. The necessary road and/or transit improvements to provide the capacity necessary to ensure the adopted level of service will be maintained are the subject of an executed contract for the commencement of construction of the facilities within two years of the issuance of a Certificate of Capacity.

3. The necessary road and/or transit improvements to provide the capacity necessary to ensure the adopted level of service will be maintained have been included in the Capital Improvements Element of the County or the State for the period set in the Hillsborough Comprehensive Plan; or

4. The road and/or transit improvements necessary to accommodate all transportation impacts of the proposed Development are provided for in an enforceable Development Agreement approved by the Board. An enforceable Development Agreement may include, but is not limited to, Development Agreements pursuant to Section 163.3220, Florida Statutes. Road improvements required by an enforceable Development Agreement shall not be considered for the purpose of the adequacy of public facilities for Development outside of the boundaries of the property subject to the enforceable Development Agreement unless the criteria in subsections 1, 2, or 3 above are met; or

5. The proposed Development is a government facility which the Board finds is essential to the health or safety of persons residing in or using previously approved or existing Development.

6. If the availability of public facilities is determined pursuant to subsections 1, 2, or 3 above, it must be reasonably anticipated that the necessary road improvements will be available prior to the time required by the Hillsborough Comprehensive Plan.

C. The impact of proposed Development on roads shall be determined as follows:

1. Development that impacts a deficient roadway is allowed if the proposed development is found to have a de minimis impact. A de minimis impact is an impact of not more than one percent (1%) of the maximum volume at the adopted level of service of the affected transportation facility as determined by the County Administrator.

2. No impact will be de minimis if the sum of existing roadway volumes and the projected volumes from approved projects on a regulated transportation facility would exceed 110 percent of the maximum volume at the adopted level of service of the affected regulated transportation facility; provided however that in impact of a single family home on an existing lot will constitute a de minimis impact on all roadways regardless of the level of deficiency of the roadway. Further, no impact will be de minimis if it would exceed the adopted level of service of any affected designated hurricane evacuation routes. The County shall allow the development of a single-family home on an existing lot that impacts a designated hurricane evacuation route if denial of the single-family home would constitute a taking.

3. Development that creates infill opportunities is allowed if the proposed Development meets the following criteria:
   a. It generates less than five percent (5%) of the maximum service volume flow rate at the adopted level of service standard, but not more than 1696 average daily trips; and
   b. It is existing Development or is adjacent to existing Development or proposed Development subject to a valid Certificate of Capacity or is vested; and
   c. It is a parent tract/parcel or a lot of record established prior to February 1, 1990; and

d. It is located in a portion of an urban service area that has been designated as a Special Activity Center as defined in the Comprehensive Plan, or a Regional Activity Center as defined in the Comprehensive Plan, or on a High Transit Level of Service Roadway as defined in the current Hillsborough County Comprehensive Plan in effect at the time of the application, plus any new HTLOS roadways created by increased bus service;
e. It is characterized as a residential project or a high employment use, such as, but not limited to, office, industrial, hospital or college centers; and
f. It makes provisions for shared access of existing curb cuts or provides for shared access to its curb cut that could reasonably be expected to be used in the future; and
g. The density of the proposed Development other than change in use or expansion is not less than 1/4 of the density allowed by the existing land use; or
h. The proposed development meets all the above criteria except d. and e. above and would result in an impact of less than 150 average daily trips on each Deficient or Potentially Deficient Regulated Road Segment.

D. Trip Distribution Requirements: In determining the boundaries of a development's impacts on the roadway system, the applicant must demonstrate the following:

1. For the issuance of development orders, the standards for Levels of Service shall be applied to all regulated roads within one quarter (1/4) mile, or the nearest regulated road when none are within one quarter mile, of any point on the proposed development boundary.

2. For those regulated roads identified in Section 4.02.03.D.1. above, the development's area of influence is as determined by the table below. Each access point shall be identified as a center of radius. There shall be one area of influence for each access point, based on the maximum radius indicated in the table below. The standards for Level of Service shall be applied to all segments of those roads identified in Section 4.02.03.D.1 that lie in whole or in part in the development's area of influence.

3. ***Intersection Review:*** The developer of any development which would, during the build-out period of the project, result in net trips equal to or more than ten (10) percent of the total traffic on an AADT basis, on any link that lies in whole or in part within the project's radius of development influence and connects to a major intersection, shall provide a detailed analysis of the critical volumes in the intersection, and may be required as a condition of approval to provide intersection improvements.

Proposed projects net daily trip generation	Maximum radius of development's area of influence
0-200	Address only the segments of regulated roads that are directly accessed by the proposed project.
201 - 500	0.5 miles
501 - 1,000	1.0 miles
1,001 - 5,000	2.0 miles
5,001 - 10,000	3.0 miles
10,001 - 20,000	4.0 miles
Over 20,000	5.0 miles

The County Administrator may find a development's area of influence to be different than the maximum radius indicated in the table above if conditions or circumstances warrant.

Sec. 4.02.05. Submittal Requirements and Review Procedures

A. Mandatory Determination
   1. Application. An application for a mandatory determination of capacity shall be submitted concurrently with either a Preliminary Plat or Preliminary Site Development Plan submittal, and shall contain the information required by the Development Review Procedures Manual, Sections 4.1.4 and 4.1.5. A determination of capacity shall only apply to those specific land uses, densities and intensities as described in the application.

B. Review and Determination
   Applications shall be reviewed as provided in the Development Review Manual.

C. Duration of Capacity Reservation Approval
   1. Upon determination that capacity exists to meet concurrency requirements in all elements applicable to the proposed development, a Concurrency Certificate of Capacity shall be issued at the time of Preliminary Site Development Plan Approval. The Certificate shall be good for a period of six months or until construction plan approval is obtained, whichever is sooner. If construction plan approval is not obtained within the allowed period, the Certificate will expire and a new determination of capacity will be required at the time of construction plan review. If a construction plan has been submitted, but not approved, Hillsborough County may consider a 3-month extension of the Certificate of Capacity.
   2. The Certificate of Capacity is good for a two-year period upon construction plan approval.
   3. At issuance of the Certificate of Occupancy the Certificate of Capacity becomes permanent.
   4. A Certificate of Capacity shall run with the land.

D. Extension of Certificate of Capacity
   1. The two-year Certificate of Capacity may be extended, concurrent with extension of the proposed development's construction plan approval in two-year increments if a request is made to the Administrator at least 30 days prior to the termination of the original approval.
   2. The extension shall be for the original site use and configuration only. Approval for extension will not be granted if the project is not in compliance with all current requirements.
   3. The holder of a Certificate of Capacity may cancel the Certificate at any time. That development's reserved capacity will then be returned to the system for use by other developments.

E. Appeals
   The Administrator's decision may be appealed to a Land Use Hearing Officer in accordance with the requirements of 10.05.01. (Ord. No. 01-26, § 2, 9-12-01)

Sec. 4.02.06. Optional Determination

A. Application
   1. An application for an optional determination may be made at any time.
   2. The application shall contain all information as required under Mandatory Determination.

B. Review and Determination
   1. The reviewing entities and time frame shall be the same as those required under Mandatory Determination.
   2. A determination that capacity is adequate does not convey the right to reserve the capacity needed for the proposed development. Capacity is only reserved under a mandatory review.

Sec. 4.02.07. Proportionate Fair-Share Program

A. Purpose and Intent
The purpose of this Section is to establish a method whereby the impacts of development on transportation facilities can be mitigated by the cooperative efforts of the public and private sectors, to be known as the Proportionate Fair-Share Program, as required by and in a manner consistent with F.S. § 163.3180(16).

B. Applicability
The Proportionate Fair-Share Program shall apply to all developments in County that have been notified of a lack of capacity to satisfy the transportation adequate public facilities requirements of this Part (transportation concurrency) on a transportation facility addressed by these adequate public facilities regulations, including transportation facilities maintained by FDOT or another jurisdiction that are relied upon for transportation concurrency determinations, pursuant to the requirements of section C. The Proportionate Fair-Share Program does not apply to developments of regional impact (DRIs) using proportionate fair share under F.S. § 163.3180(12), or to developments exempted from concurrency as provided in this Part.

C. General Requirements
1. An applicant may choose to satisfy transportation concurrency requirements by making a proportionate fair-share contribution toward a transportation improvement, pursuant to the following requirements:

   (a) The proposed development is consistent with the Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County and applicable requirements of this Code.

   (b) The five-year schedule of capital improvements in the Capital Improvement Element of the Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County (CIE) includes a transportation improvement that, upon completion will satisfy the transportation concurrency requirements of the County. The provisions of Subsection C.(2) or C.(3) may apply if a project or projects needed to satisfy transportation concurrency are not presently contained within the CIE.

2. The County, at its option, may choose to allow an applicant to satisfy transportation concurrency through the Proportionate Fair-Share Program by contributing to an improvement that, upon completion, will satisfy transportation concurrency requirements, but is not contained in the five-year schedule of capital improvements in the CIE, where the following apply:

   (a) The County adopts, by resolution or ordinance, a commitment to add the improvement to the five-year schedule of capital improvements in the CIE no later than the next regularly scheduled update. To qualify for consideration under this section, the proposed improvement must be determined by the Board of County Commissioners to be financially feasible as defined in F.S. § 163.3164(32), consistent with the comprehensive plan, and in compliance with the provisions of this Code.

   As provided in F.S. § 163.3180(16)(b)1., updates to the CIE which reflect proportionate fair share contributions shall not be found to not be financially feasible if additional contributions, payments or funding sources are reasonably anticipated during a period not to exceed ten years to fully mitigate impacts on the transportation facilities.

3. If the funds allocated for the five-year schedule of capital improvements in the CIE are insufficient to fully fund construction of a transportation improvement required by the transportation concurrency regulations, or the five-year schedule of capital improvements in the CIE does not include a transportation improvement required for a proposed project to satisfy the requirements of transportation concurrency the County, at its option, may still enter into a binding proportionate fair-share agreement with the applicant authorizing construction of that amount of development on which the proportionate fair share is calculated if the proportionate fair-share amount in such agreement is sufficient to pay for one or more improvements that will, in the opinion of the governmental entity or entities maintaining the transportation facilities, significantly

benefit the impacted transportation system. The entire proportionate fair-share amount shall be allocated to transportation improvements that significantly benefit the impacted transportation system and/or are contained in the five-year schedule of capital improvements in the CIE. To qualify for consideration under this section, the proposed improvement must be determined by the Board of County Commissioners to be financially feasible as defined in F.S. § 163.3164(32), consistent with the comprehensive plan, and in compliance with the provisions of this Code. Additionally, if the improvement funded by the proportionate-share component is not contained in the five-year schedule of capital improvements in the CIE, the County shall adopt, by resolution or ordinance, a commitment to add the improvement to the five-year schedule of capital improvements in the CIE no later than the next regularly scheduled update.

An improvement that may be considered as one that will significantly benefit the impacted transportation system shall meet the following criteria:

(a) The improvement is included in the current Metropolitan Planning Organization Transportation Improvement Program, or the current Metropolitan Planning Organization Long Range Transportation Plan Highway Needs Assessment, or the current Metropolitan Planning Organization Transit Bus Route Needs for Hillsborough County, or the current Hillsborough County Capital Project Request List for Transportation (a.k.a. Unfunded Transportation CIP), or the current HARTLine Transit Development Plan; and

(b) The improvement lies within or eliminates transportation deficiencies within the development's Area of Influence as described in Section 4.02.03.D.2 of this Code; and

(c) The improvement lies on a regulated road or eliminates deficiencies on a regulated road listed in the Transportation Element of the Hillsborough County Comprehensive Plan; and

(d) The improvement provides new capacity equal to or greater than the new traffic generated by the proposed new development.

4. Any improvement project proposed to meet the developer's fair-share obligation must meet design standards of the entity maintaining the facility; however, improvements on the state highway system shall meet the design standards of the Florida Department of Transportation (FDOT) regardless of the entity maintaining the facility.

D. Intergovernmental Coordination

The County shall coordinate with affected jurisdictions, including FDOT, regarding mitigation to impacted facilities regulated by this Part for transportation concurrency but not under the jurisdiction of Hillsborough County.

E. Application Process

1. Upon notification of a lack of capacity to satisfy transportation concurrency, the applicant shall also be notified in writing of the opportunity to satisfy transportation concurrency through the proportionate fair-share program pursuant to the requirements of section C.

2. Prior to submitting an application for a proportionate fair-share agreement, a pre-application meeting shall be held to discuss eligibility, application submittal requirements, potential mitigation options, and related issues. If the impacted facility is on the Strategic Intermodal System (SIS) or any other transportation facility under the jurisdiction of the FDOT or any other governmental body, agency or authority, then FDOT or such other governmental body, agency, or authority will be notified and invited to participate in the pre-application meeting.

3. Proposed proportionate fair-share contributions to facilities on the SIS or any other transportation facility under the jurisdiction of the FDOT or any other governmental body, agency or authority requires the concurrence of FDOT or such other governmental body, agency, or authority. The applicant shall submit evidence

of an agreement between the applicant and the FDOT or other applicable governmental body, agency, or authority for inclusion in the proportionate fair-share agreement.

F. Determining Proportionate Fair-Share Obligation

1. Proportionate fair-share mitigation for concurrency impacts may include, without limitation, separately or collectively, private funds, contributions of land, and construction and contribution of facilities.

2. A development shall not be required to pay more than its proportionate fair share. The fair market value of the proportionate fair-share mitigation for the impacted facilities shall not differ regardless of the method of mitigation.

3. The methodology used to calculate an applicant's proportionate fair-share obligation shall be as provided for in F.S. § 163.3180(12).

OR

Proportionate Fair Share = Σ [[(Development Trips$_i$)/ (SV Increase$_i$)] × Cost$_i$]

Where:
Development Trips$_i$ = Those trips from the stage or phase of development under review that are assigned to roadway segment "i", which is the roadway segment necessary for the development to satisfy the transportation concurrency requirements, or for projects utilizing the option under Section 4.02.07.C.(3) the roadway improvement that would provide the capacity needed for the development to satisfy the transportation concurrency requirements, and have triggered a deficiency per the provisions of this Part;

SV Increase$_i$ = Service volume increase provided by the eligible improvement to roadway segment "i", which is the roadway segment necessary for the development to satisfy the transportation concurrency requirements, or for projects utilizing the option under Section 4.02.07.C.(3) the roadway improvement that would provide the capacity needed for the development to satisfy the transportation concurrency requirements, per section C;

Cost$_i$ = Adjusted cost of the improvement to segment "i", which is the roadway segment necessary for the development to satisfy the transportation concurrency requirements, or for projects utilizing the option under Section 4.02.07.C.(3) the roadway improvement that would provide the capacity needed for the development to satisfy the transportation concurrency requirements. Cost shall include all improvements and associated costs, such as design, right-of-way acquisition, planning, engineering, inspection, and physical development costs directly associated with construction at the anticipated cost in the year it will be incurred. In the event that an improvement extends beyond the limits of segment "i", the entire cost of the improvement shall be averaged to determine a cost per unit of measurement that shall be used to determine the cost of the improvement to segment "i."

4. For the purposes of determining proportionate fair-share obligations, the County shall determine improvement costs based upon the best estimate of the actual cost of the improvement using the most current cost estimates as obtained from the Capital Improvements Element, the MPO Transportation Improvement Program, the FDOT Work Program or the Hillsborough County Project Information Management System (PIMS). Improvement costs shall be escalated to the proposed year of construction using the Method for Cost Escalation as provided in Section I unless the costs are already escalated to the actual year of construction within the aforementioned sources. Where such information is not available or at the County's discretion when necessary to ascertain the best estimate of the actual cost, improvement cost shall be determined using the following method:

   (a) The most recent issue of FDOT Transportation Costs, as adjusted based upon the type of cross section (urban or rural); locally available data from recent projects on land acquisition, drainage, and utility costs; and significant changes in the cost of materials due to unforeseeable events. Cost estimates for state road improvements not included in the adopted FDOT Work Program shall be determined using this method in coordination with the FDOT District. Improvement costs determined using this method shall be adjusted using the

Method for Cost Escalation as provided in Section I.

5. If the County has accepted an improvement project proposed by the applicant, then the value of the improvement shall be determined using one of the methods provided in this section.

6. If the County has accepted right-of-way dedication for the proportionate fair-share payment, credit for the dedication of the non-site related right-of-way shall be valued on the date of the dedication by fair market value established by an independent appraisal approved by the County and at no expense to the County. The applicant shall supply a drawing and legal description of the land and a certificate of title or title search of the land to the County at no expense to the County. If the estimated value of the right-of-way dedication proposed by the applicant is less than the County estimated total proportionate fair-share obligation for that development, then the applicant must also pay the difference. Prior to purchase or acquisition of any real estate or acceptance of donations of real estate intended to be used for the proportionate fair share, public or private partners should contact FDOT for essential information about compliance with federal law and regulations.

G. Proportionate Fair-Share Agreements

1. Upon execution of a proportionate fair-share agreement (Agreement) the applicant shall receive a certificate of capacity for transportation concurrency for the development covered by such agreement. The certificate of capacity shall be effective for the time periods specified in Section 4.02.05 C. of this Code. Should the certificate of capacity expire, then the Agreement shall be considered null and void, and the applicant shall be required to reapply. Upon payment of the proportional fair share contribution, as provided in Section G.(2), the certificate of capacity shall become permanent.

2. Payment of the proportionate fair-share contribution is due in full prior to issuance of any building permit or recording of the final plat and shall be nonrefundable. If the payment is submitted more than 12 months from the date of execution of the Agreement, then the proportionate fair-share cost shall be recalculated at the time of payment based on the best estimate of the construction cost of the required improvement at the time of payment, pursuant to section F. and adjusted accordingly.

3. All developer improvements authorized under this Code must be completed prior to issuance of a certificate of occupancy, or as otherwise established in a binding agreement that is accompanied by a security instrument that is sufficient to ensure the completion of all required improvements. It is the intent of this section that any required improvements be completed before issuance of certificates of occupancy.

4. Dedication of necessary right-of-way for facility improvements pursuant to a proportionate fair-share agreement must be completed prior to issuance of the final development order or recording of the final plat.

5. Any requested change to a development project subsequent to a development order may be subject to additional proportionate fair-share contributions to the extent the change would generate additional traffic that would require mitigation.

6. Applicants may submit a letter to withdraw from the proportionate fair-share agreement at any time prior to the execution of the agreement. The application fee and any associated advertising costs to the County will be nonrefundable.

H. Appropriation of Fair-Share Revenues

1. Proportionate fair-share revenues shall be placed in the appropriate project account for funding of scheduled improvements in the County capital improvements element, or as otherwise established in the terms of the proportionate fair-share agreement. Proportionate fair-share revenues may also be used as the 50 percent local match for funding under the FDOT Transportation Regional Incentive Program (TRIP).

2. In the event a scheduled facility improvement is removed from the CIE, then the revenues collected for its construction may be applied toward the construction of another improvement within that same corridor or sector that would mitigate the impacts of development pursuant to the requirements of subsection C.(3).

3. Where an impacted regional facility has been designated as a regionally significant transportation facility in an adopted regional transportation plan as provided in F.S. § 339.155, then the County may coordinate with other impacted jurisdictions and agencies to apply proportionate fair-share contributions and public contributions to seek funding for improving the impacted regional facility under the FDOT Transportation Regional Incentive Program (TRIP). Such coordination shall be ratified by the County through an interlocal agreement that establishes a procedure for earmarking of the developer contributions for this purpose.

I. Method for Cost Escalation

This Section contains a method to estimate growth in costs, through the computation of a three-year average of the actual cost growth rates. This will provide a growth rate that should be smoothed to avoid overcompensating for major fluctuations in costs that have occurred due to short term material shortages.

$$Cost_n = Cost_0 \times (1 + Cost\_growth_{3yr})^n$$

Where:

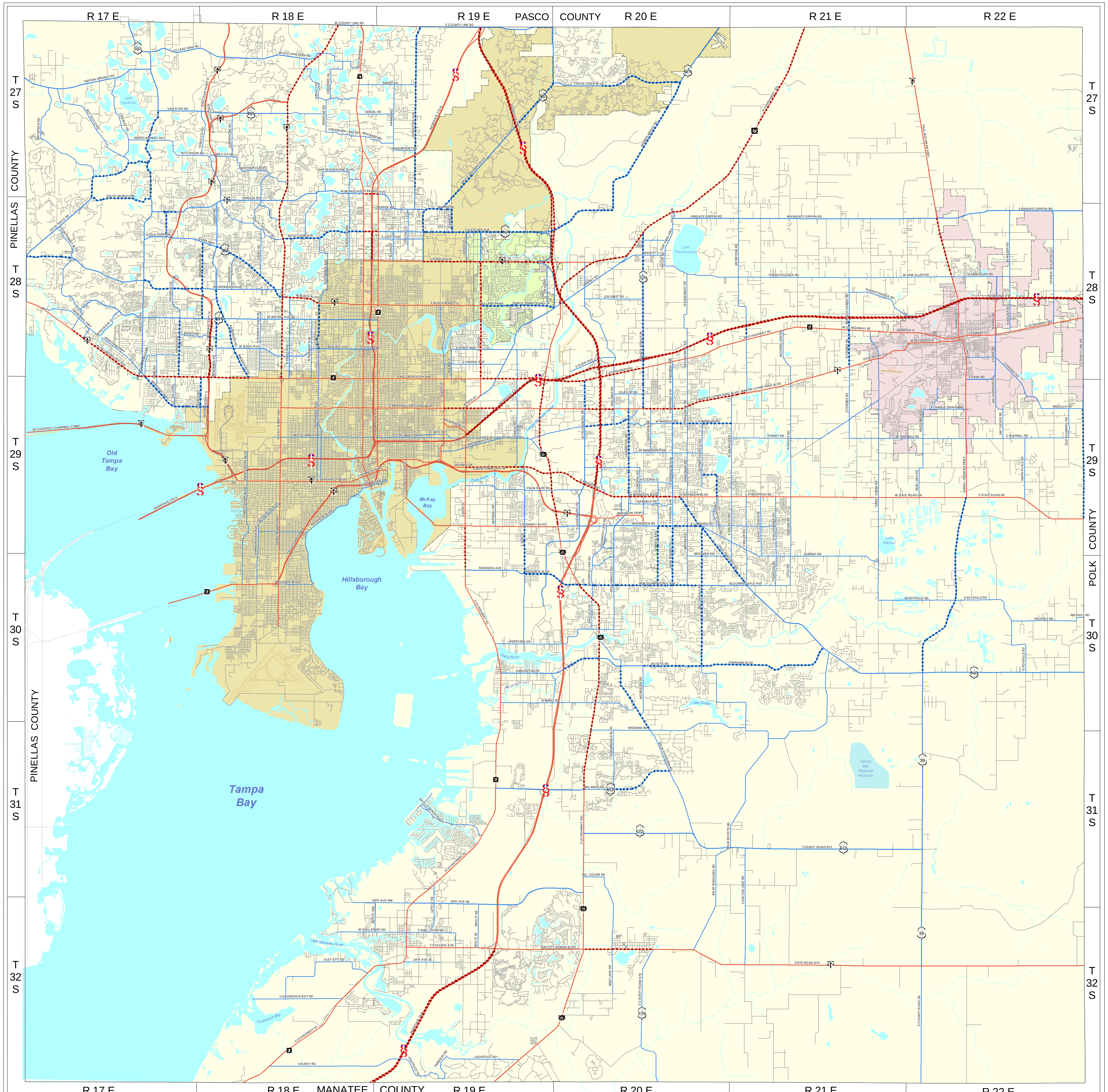
$Cost_n$ = The cost of the improvements and associated costs in year n;
$Cost_0$ = The cost of the improvement and associated costs in the current year;
$Cost\_growth_{3yr}$ = The growth rate of costs over the last three years using the FDOT District 7 rates;
N = The number of years until the improvement is constructed.

The three-year growth rate is determined by the following formula:

$$Cost\_growth_{3yr} = [Cost\_growth_{-1} + Cost\_growth_{-2} + Cost\_growth_{-3}]/3$$

Where:
$Cost\_growth_{3yr}$ = The growth rate of costs over the last three years;
$Cost\_growth_{-1}$ = The growth rate of costs in the previous year;
$Cost\_growth_{-2}$ = The growth rate of costs two years prior;
$Cost\_growth_{-3}$ = The growth rate of costs three years prior.
The growth rate shall be determined using the FDOT District 7 rates.

(Ord. No. 06-35, § 2(Exh. A), 11-2-06)



Hillsborough County

Deficient Roadways 2008

STATE ROADS

COUNTY ROADS

DEFICIENT ROADWAYS

STATE

COUNTY

Failed State Roadways (From/To)

56TH ST: (HILLSBOROUGH AVE-to-RIVERHILLS DRIVE)
56TH ST: (RIVERHILLS DR -to-FOWLER AVE)
BUSCH BLVD: (ARMENIA AVE-to-DALE MABRY)
DALE MABRY HWY: (BEARSS/EHRLICH-to-VAN DYKE)
DALE MABRY HWY: (FLETCHER AVE-to-BEARSS/EHRLICH)
DALE MABRY HWY: (HILLSBOROUGH AVE-to-WATERS AVE)
DALE MABRY HWY: (LUTZ LAKE FERN-to-COUNTYLINE RD)
DALE MABRY HWY: (VAN DYKE-to-LUTZ LAKE FERN)
DALE MABRY HWY: (WATERS AVE-to-FLETCHER AVE)
FOWLER AVE: (56TH ST-to-I-75)
FOWLER AVE: (BRUCE B DOWNS-to-56TH ST)
HILLSBOROUGH AVE: (50TH ST -to-US HWY 301)
HILLSBOROUGH AVE: (ANDERSON-to-VETERANS EXPWY)
HILLSBOROUGH AVE: (SHELDON RD -to-COUNTRYWAY BLVD)
HILLSBOROUGH AVE: (VETERANS EXPWY -to-SHELDON RD)
I-275: (FOWLER AVE-to-FLETCHER AVE)
I-4: (BRANCH FORBES RD-to-THONOTOSASSA)
I-4: (CR 579 -to-MCINTOSH RD)
I-4: (I-75 -to-CR 579)
I-4: (MCINTOSH RD -to-BRANCH FORBES RD)
I-4: (ML KING JR BLVD -to-US HWY 301)
I-4: (SR 39-to-COUNTY LINE RD)
I-4: (THONOTOSASSA-to-SR 39)
I-4: (US 41/50TH-to-ML KING JR BLVD)
I-4: (US HWY 301 -to-I-75)
I-75: (BRUCE B DOWNS BLVD -to-I-275)
I-75: (FLETCHER AVE -to-BRUCE B DOWNS BLVD)
I-75: (FOWLER AVE -to-FLETCHER AVE)
I-75: (I-4-to-FOWLER AVE)
I-75: (I-4-to-ML KING JR BLVD)
I-75: (ML KING JR BLVD -to-SR 60)
I-75: (SR 674-to-MANATEE COUNTY)
M L KING BLVD: (40TH ST-to-I-4)
M L KING BLVD: (CR 579-to-PARSONS AVE)
M L KING BLVD: (FALKENBURG-to-WILLIAMS RD)
M L KING BLVD: (PARSONS AVE-to-MCINTOSH RD)
SR 39: (SAM ALLEN RD-to-KNIGHTS-GRIFFIN)
SR 60 / ADAMO DR: (US HWY 41-to-US 301)
SR 60 / BRANDON BLVD: (FALKENBURG-to-LAKEWOOD)
SR 60 / BRANDON BLVD: (LAKEWOOD DR-to-LITHIA PINECREST)
SR 60 / BRANDON BLVD: (US 301-to-FALKENBURG)
SR 674: (US HWY 301-to-CR 579)
US HWY 301: (BLOOMINGDALE-to-GIBSONTON DR)
US HWY 301: (CR 579-to-MCINTOSH RD)
US HWY 301: (FOWLER AVE-to-CR 579)
US HWY 301: (GIBSONTON-to-BIG BEND RD)
US HWY 301: (HARNEY RD -to-FOWLER AVE)
US HWY 301: (I-4 NORTH-to-MLK BLVD/ SR 574)
US HWY 301: (MCINTOSH RD -to-PASCO COUNTY)
US HWY 301: (MLK BLVD/ SR 574-to-SR 60/ADAMO DR)
US HWY 301: (SR 60/ ADAMO-to-CAUSEWAY)
US HWY 41: (CAUSEWAY-to-MADISON)
US HWY 92: (US HWY 301-to-WILLIAMS RD)
US HWY 92: (WILLIAMS RD-to-CR 579)
VETERANS EXPWY: (HILLSBOROUGH AVE -to-WATERS AVE)
BEARSS AVE: (NEBRASKA AVE -to-FLORIDA AVE)
FLETCHER AVE: (NEBRASKA AVE -to-FLORIDA AVE)

Failed County Roadways (From/To)

46TH ST: (FLETCHER AVE -to-SKIPPER RD)
78TH ST: (CAUSEWAY BLVD-to-MADISON AVE)
ANDERSON RD/HOOVER BLVD:(SLIGH AVE-to-WATERS AVE)
ANDERSON RD: (HILLSBOROUGH AVE -to-HOOVER BLVD)
ANDERSON RD: (WATERS AVE-to-LINEBAUGH AVE)
ARMENIA AVE: (SLIGH AVE -to-BUSCH BLVD)
BALM RIVERVIEW RD: (BOYETTE RD-to-RHODINE RD)
BELL SHOALS RD: (BLOOMINGDALE AVE-to-BOYETTE RD)
BELL SHOALS RD: (LITHIA PINECREST-to-BLOOMINGDALE AVE)
BENJAMIN RD: (SLIGH AVE-to-WATERS AVE)
BIG BEND RD: (SUMMERFIELD BLVD -to-BALM RIVERVIEW)
BLOOMINGDALE AVE: (KINGS AVE-to-BELL SHOALS RD)
BLOOMINGDALE AVE: (PROVIDANCE RD-to-KINGS AVE)
BLOOMINGDALE AVE: (US HWY 301 -to-PROVIDANCE RD)
BOYETTE RD: (MCMULLEN DR -to-BELL SHOALS RD)
BROADWAY AVE: (FALKENBURG -to-WILLIAMS RD)
BROADWAY AVE: (WILLIAMS RD-to-LAKEWOOD)
BRUCE B DOWNS BLVD: (BEARSS AVE -to-TAMPA PALMS BLVD)
BRUCE B DOWNS BLVD: (FLETCHER-to-BEARSS AVE)
BRUCE B DOWNS BLVD: (I-75 -to-CROSS CREEK BLVD)
COUNTY LINE RD: (SR 60 -to-MEDULLA RD)
CR 39: (LITHIA PINECREST-to-SR 60)
CR 579: (I-4-to-M L KING BLVD)
CR 579: (I-4-to-US 301)
CROSS CREEK BLVD: (KINNAN ST -to-MORRIS BRIDGE RD)
EHRLICH RD: (GUNN HWY-to-VETERANS EXPWY)
FALKENBURG RD: (US HWY 92-to-M L KING BLVD)
FISH HAWK BLVD: (BELL SHOALS RD -to-LITHIA PINECREST)
FLETCHER AVE: (46TH ST-to-56TH ST)
FLETCHER AVE: (56TH ST -to-I-75)
FLETCHER AVE: (BRUCE B DOWNS-to-46TH ST)
FLETCHER AVE: (FLORIDA AVE-to-ORANGE GROVE RD)
FORBES RD: (M L KING BLVD -to-I-4)
GEORGE RD: (MEMORIAL HWY -to-HILLSBOROUGH AVE)
GIBSONTON DR: (I-75 -to-US HWY 301)
GUNN HWY: (CITRUS PARK DR -to-EHRLICH RD)
GUNN HWY: (DALE MABRY HWY -to-LINEBAUGH AVE)
GUNN HWY: (LINEBAUGH AVE -to-ANDERSON RD)
GUNN HWY: (S MOBLEY-to-VAN DYKE RD)
HANLEY: (HILLSBOROUGH AVE -to-WILSKY BLVD)
HENDERSON RD: (LINEBAUGH AVE-to-GUNN HWY)
HENDERSON RD: (WATERS AVE-to-LINEBAUGH AVE)
JOHN MOORE RD: (LUMSDEN RD-to-BLOOMINGDALE AVE)
KINGS AVE: (LUMSDEN RD -to-BLOOMINGDALE AVE)
LAKEWOOD DR: (BROADWAY AVE-to-SR 60)
LAKEWOOD DR: (M L KING BLVD-to-BROADWAY AVE)
LINEBAUGH AVE: (COUNTRY WAY BLVD -to-RACE TRACK RD)
LINEBAUGH AVE: (HENDERSON RD-to-SHELDON RD)
LITHIA PINECREST RD: (LUMSDEN RD-to-BLOOMINGDALE AVE)
LITHIA PINECREST RD: (SR 60 -to-LUMSDEN RD)
LIVINGSTON AVE: (SINCLAIR HILLS DR -to-SUNSET LANE)
LIVINGSTON AVE: (SUNSET LANE -to-COUNTY LINE RD)
LUMSDEN RD: (KINGS AVE -to-LITHIA PINECREST)
MCINTOSH RD: (US 92 -to-I-4)
MEMORIAL HWY: (VETERANS EXPWY -to-HILLSBOROUGH AVE)
MORRIS BRIDGE RD: (I-75 -to-CROSS CREEK BLVD)
MT CARMEL/FRONT ST: (SEFFNER VALRICO-to-SR 60)
PROGRESS BLVD: (78TH ST -to-US 301)
RACE TRACK RD: (S MOBLEY RD-to-GUNN HWY)
S MOBLEY RD: (RACE TRACK RD -to-GUNN HWY)
SKIPPER RD/46th St: (BRUCE B DOWNS-to-FLETCHER AVE)
TEMPLE TERRACE HWY: (56TH ST -to-HARNEY RD)
WHEELER RD: (PARSONS RD -to-VALRICO RD)

INCORPORATED AREAS

CITY OF TAMPA

PLANT CITY

TEMPLE TERRACE

0 3 6 Miles

DATA SOURCES: Roads from Hillsborough County 9-1-1 Streets & Addresses/ City of Tampa GIS Department. Level of Service roadways from Planning & Growth Management LOS Report data. Water features from Hillsborough County Real Estate Department.
ACCURACY: It is intended that the accuracy of the base map comply with U.S. national map accuracy standards. However, such accuracy, or any other level of accuracy is not guaranteed by Hillsborough County.
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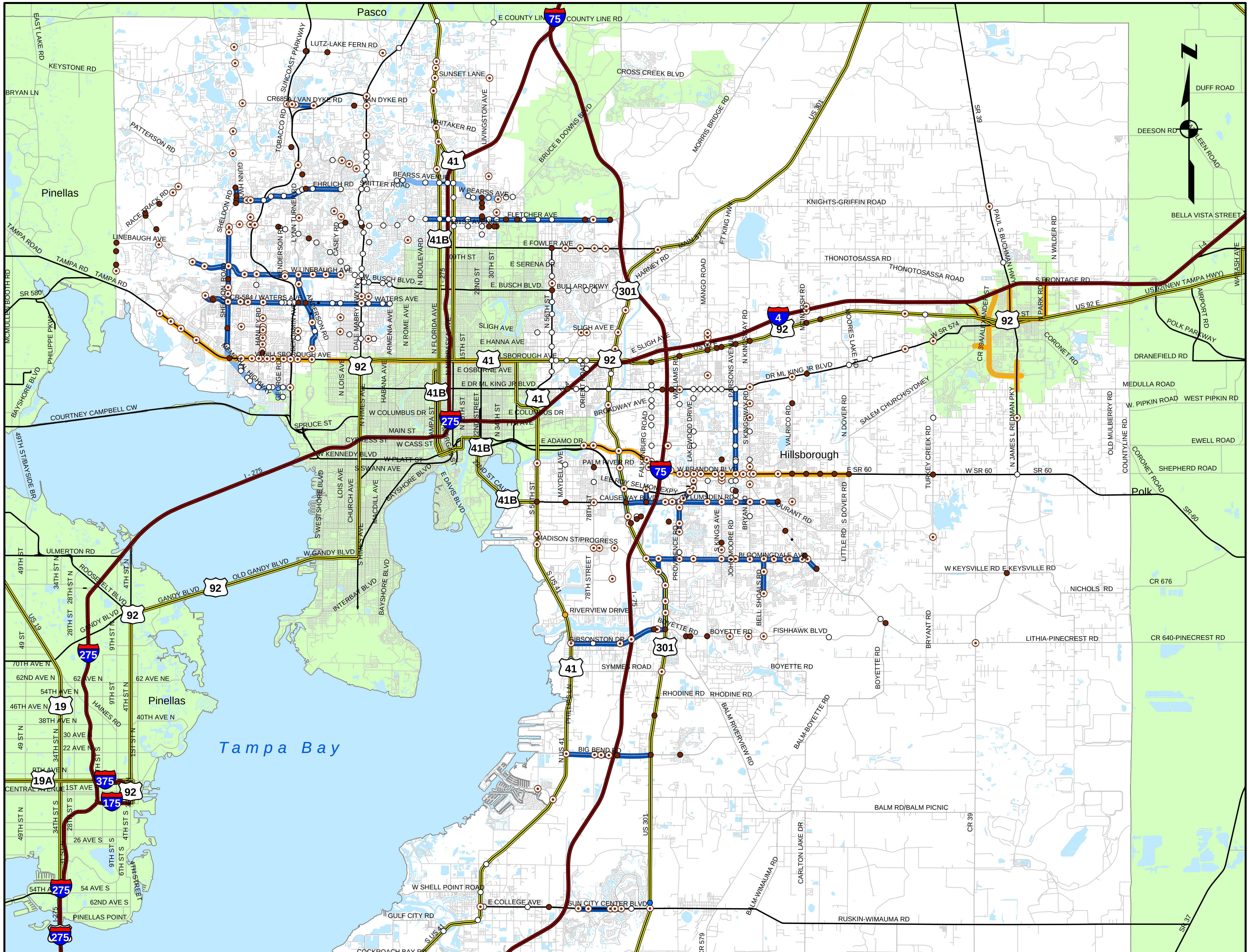
Hillsborough County, Florida
Planning & Growth Management

File: G:/../Projects/Transp/LOS/Def_Roads2008_EL.mxd, Date: September 2008



LEGEND

Signal Timing Updates

- Full Review
- Light Review
- FDOT Project

Controller Conversions

●	Naztec TS2 Type I	93
◉	Naztec TS2 Type II	229
○	LMD	167
●	Econolite	1
●	Transyt	1

25 May 2010

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Miles

Hillsborough County
Florida

Albeck Gerken, Inc.
TRANSPORTATION ENGINEERS

Hillsborough County Signalized Intersection Timing Update Program (SITUP)

Final Report

District-Wide Traffic Signal Retiming

Contract Number: C8R26
Financial Project: 254526-1-32-05
Task Work Order 0001

SR 60

Orient Road to Dover Road

Prepared for:

Florida Department of Transportation
District 7

Prepared by:

Albeck Gerken, Inc.

1741 South Kings Avenue
Brandon, Florida 33511

June 2009

Professional Engineer: Jeff G. Gerken
Florida PE No.: 61111

EXECUTIVE SUMMARY

This report summarizes the traffic signal timing activities for the traffic signals located on SR 60 in Brandon, Florida. The tasks involved in this analysis were:

- Collected existing geometric, volume, and traffic signal timing data.
- Conducted field visits to develop understanding of intersection and corridor issues.
- Conducted travel time runs to benchmark existing conditions.
- Developed existing traffic operations modeling to benchmark existing capacity analysis.
- Updated basic timing parameters.
- Developed seven timing patterns for weekdays and weekends.
- Modified day plan schedule.
- Implemented new signal timing plans.
- Performed post-implementation observation and fine-tuning of timing and conducted travel time runs.
- Developed implemented operations models to compare and measure improvements.
- Evaluated capacity and operational improvements and provided recommendations, if necessary.
- Updated timing sheets where appropriate.
- Documented all work performed and summarized findings in this technical report.

The traffic signals included in this project include:

No.	ID	Intersection	No.	ID	Intersection
1	1082	SR 60 (Adamo Dr) & Orient Rd	13	1035	SR 60 (Brandon Blvd) & Publix
2	1083	SR 60 (Adamo Dr) & 78th St	14	1036	SR 60 (Brandon Blvd) & Kings Av
3	1045	SR 60 (Adamo Dr) & US 301	15	1037	SR 60 (Brandon Blvd) & Parsons Av
4	1027	SR 60 (Adamo Dr) & Brandon Crossing	16	1038	SR 60 (Brandon Blvd) & Lithia Pinecrest Rd
5	1028	SR 60 (Adamo Dr) & Falkenburg Rd	17	1039	SR 60 (Brandon Blvd) & Kingsway Rd
6	1029	SR 60 (Adamo Dr) & I-75 SB Ramp	18	1040	SR 60 (Brandon Blvd) & Ridgewood Av
7	1030	SR 60 (Brandon Blvd) & I-75 NB Ramp	19	1367	SR 60 (Brandon Blvd) & Mt Carmel Rd
8	1031	SR 60 (Brandon Blvd) & Grand Regency Blvd	20	1385	SR 60 (Brandon Blvd) & Valrico Rd
9	1086	SR 60 (Brandon Blvd) & Gornto Lake Rd	21	1366	SR 60 (Brandon Blvd) & Miller Rd
10	1032	SR 60 (Brandon Blvd) & Providence Rd	22	1383	SR 60 & St Cloud Av
11	1033	SR 60 (Brandon Blvd) & Lakewood Dr	23	1422	SR 60 & Mulrennan Rd
12	1034	SR 60 (Brandon Blvd) & Hilltop Rd	24	1382	SR 60 & Dover Rd

The portion of SR 60 within the scope of this project is an east-west principal arterial that serves the greater Tampa area. SR 60 is a four-lane roadway west of Brandon Crossing and east of Valrico Road, and a six-lane to eight-lane roadway between Brandon Crossing and Valrico Road.

The results and recommendations of these activities are presented hereafter.

Traffic Operations Analysis Summary

Network Performance Measures are summarized in the tables below. These tables summarize data developed by models (not field-measured) for all vehicles in the network.

Synchro Network Performance Measures

	AM Peak			MD Peak			PM Peak			PM Off-peak		
	Existing	Implemented		Existing	Implemented		Existing	Implemented		Existing	Implemented	
Total Delay (hr)	2,031	1,880	-7.4%	1,497	1,239	-17.2%	2,250	2,094	-6.9%	558	448	-19.7%
Total Stops	78,613	75,896	-3.5%	77,536	72,401	-6.6%	92,445	91,208	-1.3%	39,768	38,259	-3.8%
Total Travel Time (hr)	3,049	2,898	-5.0%	2,487	2,229	-10.4%	3,405	3,249	-4.6%	1,168	1,058	-9.4%
Fuel Consumed (gal)	4,216	4,069	-3.5%	3,734	3,468	-7.1%	4,780	4,658	-2.6%	1,915	1,812	-5.4%
	Weekend AM Off-peak			Weekend MD Peak			Weekend PM Off-peak					
	Existing	Implemented		Existing	Implemented		Existing	Implemented				
Total Delay (hr)	384	297	-22.7%	2,233	1,776	-20.5%	551	448	-18.7%			
Total Stops	33,254	27,469	-17.4%	86,292	86,838	0.6%	40,009	38,259	-4.4%			
Total Travel Time (hr)	899	811	-9.8%	3,286	2,829	-13.9%	1,161	1,058	-8.9%			
Fuel Consumed (gal)	1,563	1,420	-9.1%	4,495	4,172	-7.2%	1,914	1,812	-5.3%			

SimTraffic Network Performance Measures

	AM Peak			MD Peak			PM Peak			PM Off-peak		
	Existing	Implemented		Existing	Implemented		Existing	Implemented		Existing	Implemented	
Total Delay (hr)	2,855	2,794	-2.2%	2,699	2,333	-13.6%	4,486	4,342	-3.2%	846	561	-33.6%
Total Stops	93,495	78,130	-16.4%	86,444	74,234	-14.1%	104,309	95,502	-8.4%	35,372	32,334	-8.6%
Total Travel Time (hr)	4,038	3,992	-1.1%	3,875	3,540	-8.6%	5,757	5,642	-2.0%	1,611	1,343	-16.6%
Fuel Consumed (gal)	23,561	23,583	0.1%	23,141	22,556	-2.5%	28,736	28,662	-0.3%	12,892	12,440	-3.5%
	Weekend AM Off-peak			Weekend MD Peak			Weekend PM Off-peak					
	Existing	Implemented		Existing	Implemented		Existing	Implemented				
Total Delay (hr)	365	343	-6.2%	3,921	3,624	-7.6%	793	535	-32.6%			
Total Stops	24,999	23,002	-8.0%	103,475	91,222	-11.8%	35,173	31,776	-9.7%			
Total Travel Time (hr)	1,019	1,000	-1.8%	5,083	4,807	-5.4%	1,562	1,316	-15.7%			
Fuel Consumed (gal)	10,251	10,176	-0.7%	25,651	25,176	-1.9%	12,821	12,386	-3.4%			

Travel Time Summary

For the SR 60 corridor, travel time runs were conducted in three segments: 1) Orient Road to US 301, 2) Falkenburg Road to Kingsway Road / Bryan Road, and 3) Mt Carmel Road to Dover Road.

Between Orient Road and US 301, travel time decreased significantly during all periods. In the eastbound direction, delay decreased between 44% - 86%. In the westbound direction, delay decreased between 31% - 92%.

Between Falkenburg Road and Kingsway Road, travel time decreased during every period as well. In the eastbound direction, delay decreased between 43% - 96%, reducing travel time by 1.2 – 4.3 minutes. In the westbound direction, delay decreased between 56% - 92%, saving drivers 1.0 – 4.4 minutes of travel time.

Between Mount Carmel Road and Dover Road in the eastbound direction, delay decreased 22% - 85%, saving drivers up to 2.3 minutes of travel time. In the westbound direction, delay decreased between 52% - 79%, reducing travel time between 0.5 – 2.3 minutes of travel time.

Overall, network performance measures improved significantly during all periods. A major contributing factor to such significant improvements, especially during off-peaks, was the utilization of lead-lag left turn phasing by time of day.

Benefit-Cost Ratio

Given the benefits realized from savings in travel time and fuel consumption, and overall project costs, the benefit-cost ratio for this project is 114:1.

Recommendations

Recommendations for Safety Improvements

Various Intersections

- Consider installing back plates on signal heads to increase visibility at the following locations:

Intersection	Signal Heads
SR 60 & US 301	Inside westbound left turn, outside eastbound left turn heads
SR 60 & Falkenburg Rd	Outside eastbound head
SR 60 & I-75 Southbound Ramps	Inside eastbound and westbound heads
SR 60 & Grand Regency Blvd	Second-from-left westbound, outside eastbound, and inside eastbound left turn heads
SR 60 & Lithia Pinecrest Rd	All eastbound and westbound heads
SR 60 & Dover Rd	All eastbound and westbound heads

SR 60 & US 301

- Currently, this intersection has pedestrian push buttons but no pedestrian signal heads or crosswalk pavement markings. Consider installing heads and crosswalks.
- Consider distinguishing the westbound right turn lane for US 301 from the westbound right turn lane that serves the car dealership on the northeast corner of this intersection. Drivers were repeatedly observed entering the lane for the car dealership and then swerving back into the lane for US 301.

Recommendations for Capacity and Operational Improvements

General

- Currently, SR 60 has an eight-lane cross section between I-75 and Valrico Road, except for a six-lane segment between Kings Avenue and Kingsway Road. Consider converting the six-lane section to an eight-lane section.
- The lane drop on eastbound SR 60 east of Valrico Road causes significant friction resulting in congestion and reduces speeds. Consider moving the lane drop downstream to provide a longer merge distance.
- On weekends, the queue at the unsignalized eastbound left turn lane (between Ridgewood Avenue and Mount Carmel Road) that serves the Walmart shopping center extends into the through lanes. Consider extending this lane.

Various Intersections

Long pedestrian crossing distances cause major offset errors at many intersections along the corridor. *Walk* intervals of 5 seconds and *flashing don't walk* intervals based on a walking speed of 4 feet/second were implemented for side-street pedestrian movements at Falkenburg Road, Grand Regency Boulevard, Kings Avenue, and Parsons Avenue. Consider installing median pedestrian refuges with pushbuttons at the aforementioned locations as well as Lakewood Drive, Hilltop Road, Mount Carmel Road, Valrico Road, and Saint Cloud Avenue. These refuges would allow the clearance interval to be reduced by half and reduce the frequency of signals operating out of coordination.

SR 60 & Kings Avenue

- Consider eliminating the southbound pedestrian crosswalk to minimize the potential for offset-seeking.
- Occasionally, vehicles departing this intersection were observed making a left turn into the shopping center just north of this intersection, which causes a queue to extend back into the intersection. Consider installing a *NO LEFT TURN* (R3-2) sign or a median barrier to prohibit this movement.

SR 60 & Lakewood Drive

Consider extending the southbound right turn lane. Vehicles were observed using the shoulder to bypass the queues for the southbound left and through movements.

SR 60 & Miller Road

Consider extending the eastbound right turn lane.

SR 60 & Mulrennan Road
Consider extending the eastbound right turn lane.

Other Potential Improvements
At FDOT's request, the intersections of Grand Regency Boulevard, Kings Avenue, and Parsons Avenue were evaluated to determine if split phase, or sequential, operation on the side streets would improve intersection performance. Changes to lane configuration on side street approaches were only considered if no heavy construction is required. The following lane configuration changes were determined to be operationally optimal for split phase operation:

- Grand Regency Boulevard: no changes required
- Kings Avenue: convert the northbound through lane to a shared left/through lane.
- Parsons Avenue: convert the northbound left turn lane to a shared left/through lane.

While the lane configuration change at Parsons Avenue would improve intersection performance, northbound drivers would be required to jog to the right as they drive through the intersection. If such a change is made, additional pavement markings should be installed to provide drivers guidance through the intersection.

Intersection performance with split phase operation and lane configuration changes can be found on Figure 21, Figure 27, and Figure 28 on pages 29, 35, and 36, respectively.

In conclusion, the modeling results do not support a recommendation to implement split phasing at these intersections during all times of day. However, based on extensive field time, implementing split phase operations and lane configuration changes at these intersections could provide benefit to intersection operations.

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1.0 INTRODUCTION

1.1 Purpose

This report summarizes the traffic signal timing activities for the traffic signals located on SR 60 in Brandon, Florida. The tasks involved in this analysis were:

- Collected existing geometric, volume, and traffic signal timing data.
- Conducted field visits to develop understanding of intersection and corridor issues.
- Conducted travel time runs to benchmark existing conditions.
- Developed existing traffic operations modeling to benchmark existing capacity analysis.
- Updated basic timing parameters.
- Developed seven timing patterns for weekdays and weekends.
- Modified day plan schedule.
- Implemented new signal timing plans.
- Performed post-implementation observation and fine-tuning of timing and conducted travel time runs.
- Developed implemented operations models to compare and measure improvements.
- Evaluated capacity and operational improvements and provided recommendations, if necessary.
- Updated timing sheets where appropriate.
- Documented all work performed and summarized findings in this technical report.

1.2 Traffic Signal Locations

The traffic signals included in this project include:

No.	ID	Intersection	No.	ID	Intersection
1	1082	SR 60 (Adamo Dr) & Orient Rd	13	1035	SR 60 (Brandon Blvd) & Strip Center
2	1083	SR 60 (Adamo Dr) & 78th St	14	1036	SR 60 (Brandon Blvd) & Kings Av
3	1045	SR 60 (Adamo Dr) & US 301	15	1037	SR 60 (Brandon Blvd) & Parsons Av
4	1027	SR 60 (Adamo Dr) & Brandon Crossing	16	1038	SR 60 (Brandon Blvd) & Pinewood Av
5	1028	SR 60 (Adamo Dr) & Falkenburg Rd	17	1039	SR 60 (Brandon Blvd) & Kingsway Rd
6	1029	SR 60 (Adamo Dr) & I-75 SB Ramp	18	1040	SR 60 (Brandon Blvd) & Ridgewood Av
7	1030	SR 60 (Brandon Blvd) & I-75 NB Ramp	19	1367	SR 60 (Brandon Blvd) & Mt Carmel Rd
8	1031	SR 60 (Brandon Blvd) & Grand Regency Blvd	20	1385	SR 60 (Brandon Blvd) & Valrico Rd
9	1086	SR 60 (Brandon Blvd) & Gornto Lake Rd	21	1366	SR 60 (Brandon Blvd) & Miller Rd
10	1032	SR 60 (Brandon Blvd) & Providence Rd	22	1383	SR 60 & St Cloud Av
11	1033	SR 60 (Brandon Blvd) & Lakewood Dr	23	1422	SR 60 & Mulrennan Rd
12	1034	SR 60 (Brandon Blvd) & Hilltop Rd	24	1382	SR 60 & Dover Rd

The portion of SR 60 within the scope of this project is an east-west principal arterial that serves the greater Tampa area. SR 60 is a four-lane roadway west of Brandon Crossing and east of Valrico Road, a six-lane to eight-lane roadway between Brandon Crossing and Valrico Road. Figure 1 illustrates the locations of the signals included in this report.

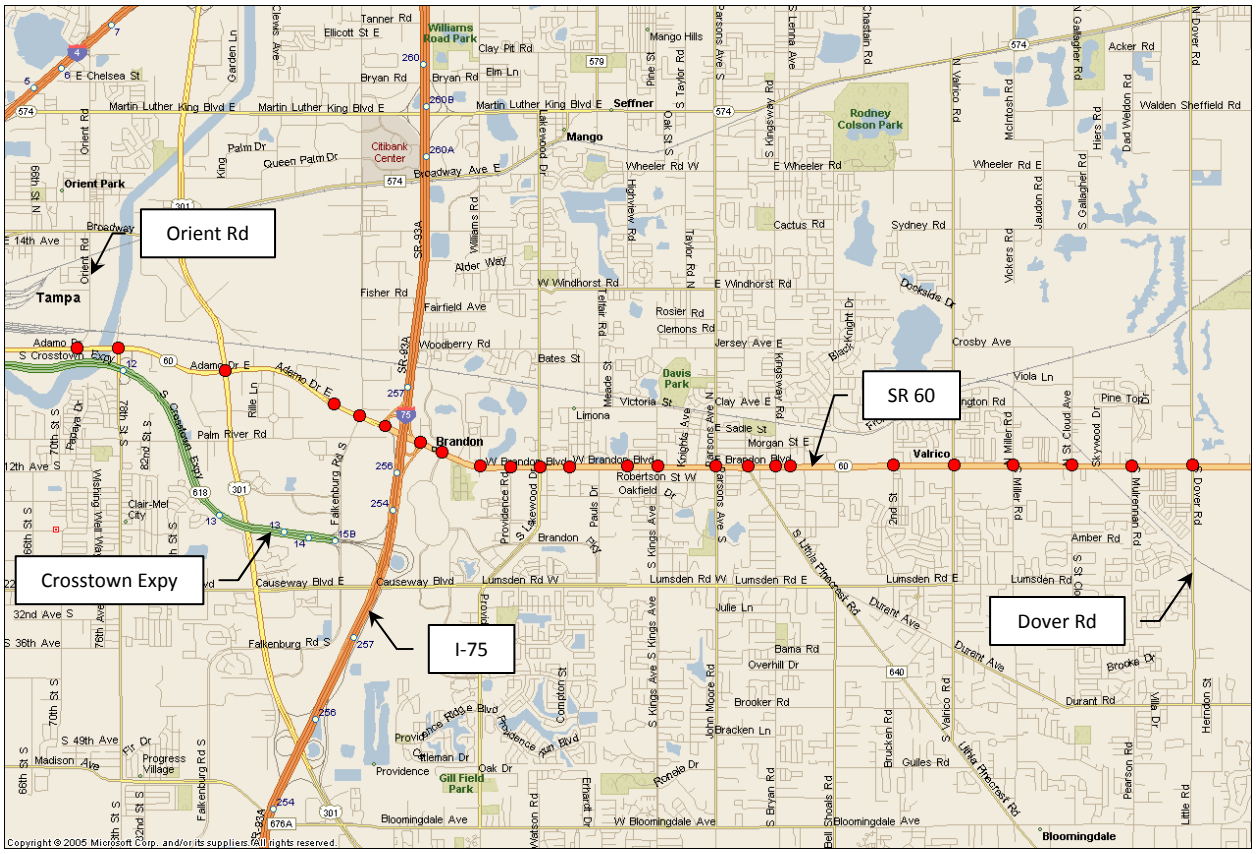


Figure 1 – Location Map

2.0 DATA COLLECTION

2.1 24-Hour Volumes

24-hour approach counts were conducted by Albeck Gerken, Inc. staff and are located in the Appendix. These counts were conducted at several locations along the corridor in one-hour intervals over a 7-day period to illustrate the various traffic patterns that occur during a typical day. Average Daily Traffic (ADT) weekday volumes along SR 60 range from 32,200 (near Dover Road) to 108,500 (near Brandon Town Center Drive). On the weekends, ADT ranges from 20,900 to 82,300. Detailed data for each count location can be found in the Appendix. Figure 2 to Figure 4 below illustrate average 24-hour weekday volume data for three SR 60 segments.

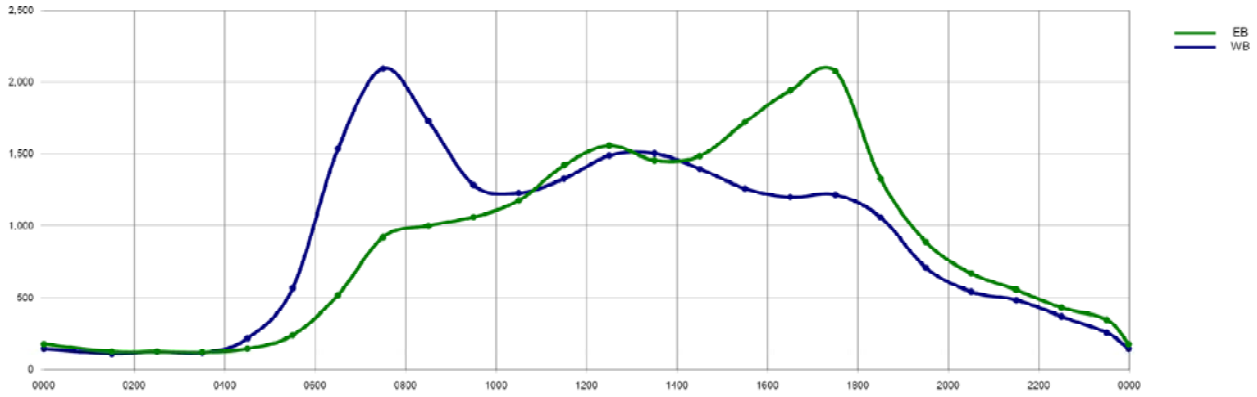


Figure 2 – Weekday 24-Hour Volumes – Average of Two Locations between Orient Rd and Brandon Crossing

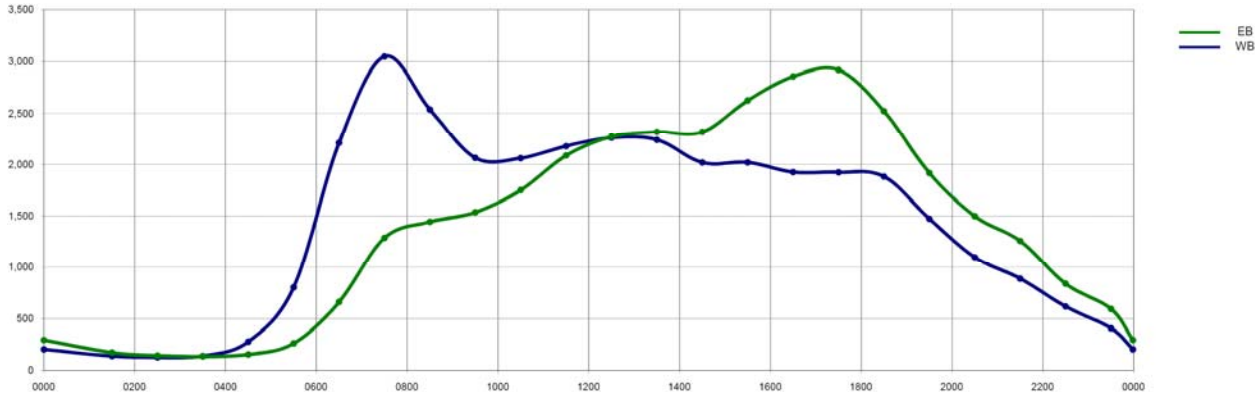


Figure 3 – Weekday 24-Hour Volumes – Average of Five Locations between Falkenburg Rd and Kingsway Rd

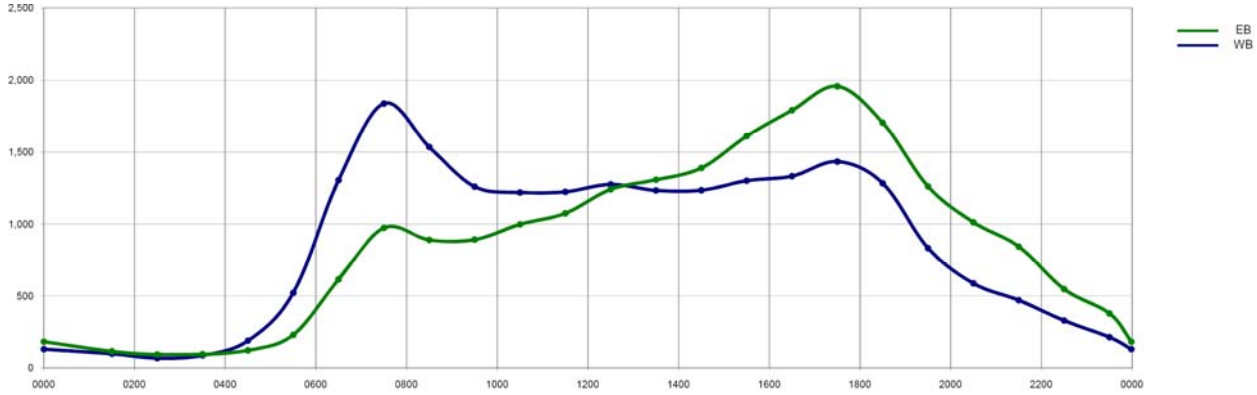


Figure 4 – Weekday 24-Hour Volumes – Average of Three Locations between Mt Carmel Rd and Dover Rd

2.2 Turning Movement Counts

Weekday turning movement counts (TMCs) were conducted by Albeck Gerken, Inc. staff during January and February 2009. Data was generally collected from 6:30 am – 8:30 am, 11:30 am – 1:30 pm, and 4:00 pm – 6:00 pm, and 6:30 pm – 8:30 pm on weekdays, and 8:00 am – 10:00 am, 11:00 am – 2:00 pm, and 3:00 pm – 6:00 pm on weekends. TMC diagrams illustrating hourly volumes for each developed timing pattern can be found on Figure 14 - Figure 37 on pages 22 - 45. Raw TMC data can be found in the Appendix.

2.3 Travel Time Runs

Travel time runs were conducted under existing and implemented signal timings. This data is collected to both fine-tune implemented signal timing as well as provide a field-measured metric by which existing and implemented signal timing can be compared. Travel time data is presented and analyzed in Section 0 of this report. Complete travel time data can be found in the Appendix.

2.4 Traffic Signal Timing and Phasing

Existing data files were uploaded via direct connect in the field and copied into ATMS.now.

2.5 Field Notes & Approach Photographs

Field notes were collected and diagrams were sketched by Albeck Gerken, Inc. staff at each intersection on various intersection, signal, and traffic characteristics to assist in model development and signal optimization. The diagrams contain the lane geometry at the stop bar, measured lane storage lengths, number of signal heads, and locations of signal poles and the cabinet.

For each approach, vehicle and pedestrian clearance distances and median widths were measured. Posted speed limits, left turn types (protected, protected/permitted, or permitted), turn restrictions, and the presence of roadway lighting and signal back plates were noted. Pedestrian push buttons (if present) were tested for proper operation. Other unique characteristics were also recorded.

Photographs were also taken on each approach. The photos are a record of the current geometrics and other intersection, signal, and roadside characteristics. They also may illustrate a safety hazard such as a sight distance limitation or poor lane alignment.

Field notes and approach photos can be found in the Appendix.

2.6 Aerial Photographs

Aerial photographs (accessed from various online sources such as Google Earth and Microsoft Virtual Earth) were utilized to gain a wider perspective of the intersection and corridor. The type of land use along the corridor and the number and location of access points (driveways and unsignalized intersections) between signalized intersections were observed using aerials.

All approach and aerial photographs can be found in the Appendix.

3.0 TRAFFIC OPERATIONS MODELS

Synchro and SimTraffic models were developed for each analysis period. Synchro is a software package for modeling and optimizing traffic signal timings. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis methodology as specified in the 2000 Highway Capacity Manual (HCM), Chapter 16. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the intersections. Equations are used to determine measures of effectiveness such as delay and queue length. Traditional HCM based models do not account for "bottleneck" situations where upstream traffic deficiencies reduce the amount of traffic reaching downstream intersections.

SimTraffic is a microscopic model used to simulate a wide variety of traffic controls, including a network with traffic signals operating on different cycle lengths or operating under fully actuated conditions. SimTraffic also models unsignalized intersections, roundabouts and channelized right turn lanes.

In SimTraffic, each vehicle in the traffic system is individually tracked through the model and comprehensive operational measures of effectiveness are collected on every vehicle during each 0.1-second of the simulation. Driver behavior characteristics (ranging from passive to aggressive) are assigned to each vehicle by the model, affecting the vehicle's free-flow speed, queue discharge headways, and other behavioral attributes. The variation of each vehicle's behavior is simulated in a manner reflecting real-world operations. Since SimTraffic is microscopic, the model measures the full impact of queuing and blocking. This is a situation where SimTraffic may show more delay when compared to Synchro.

The intention is to use Synchro and SimTraffic as companion models. Synchro is used to determine macro level LOS and delays (as the 2000 HCM), and SimTraffic to simulate and animate to determine the 'problems' that may not be fully realized with a macro-level model.

Each model requires a significant amount of data to code all of the necessary components. The process of coding the models and the assumptions that were made are discussed below.

3.1 Roadway Network Layout

The basic link-node structure of the roadway network in Synchro was built on a county-wide, coordinate-specific, centerline drawing of roads. This type of reference ensures precise intersection placement as well as proper link curvature and length.

In general, signalized intersections adjacent to the network may be included in the model if it is determined that the intersection could have an impact on the study area. Furthermore, unsignalized intersections or driveways between signalized intersections within the study area may be modeled if it is believed that a significant amount of traffic enters or exits the network at those locations. For this corridor, no additional intersections were included in the models.

3.2 Settings

Lane Settings

Stop bar lane geometry, lane storage lengths, link speeds, and right-turn-on-red restrictions were obtained from the field notes. Saturation flow rate samples indicate that an ideal saturation flow rate of 1900 veh/h/ln is appropriate for this area. Synchro default values of 12 feet were used for lane widths and all grades were assumed to be zero percent. Lane utilization factors, left and right turn factors, and pedestrian factors were calculated by Synchro. Lane utilization factors may have been adjusted based on field observations where a merge has an effect on upstream lane balance.

Volume Settings

For each model, the traffic volumes and peak hour factors were imported for the appropriate hour. Adjustments were made to the raw count data to balance flow between intersections. In addition, traffic volumes were grown by 5-10% (depending on location within the corridor) to account for demand that was not being served under existing signal timing. Heavy vehicle percentages were calculated from the turning movement counts. Conflicting pedestrians were coded if available from the TMC data. Bus blockages and parking lanes are not applicable to this corridor and were therefore not coded. The percent of traffic from midblock was estimated based on the land use and the number of driveways between signalized intersections. Origin-destination flows were estimated as necessary.

Timing & Phasing Settings

The timing and phasing at each intersection in the study area was modeled in Synchro to the fullest extent possible. For each timing plan, the control type, and phasing structure (including the phases in use, the associated turning movements, and the sequence of phases) were coded from the timing data files. For each phase, the basic timing including the minimum green, yellow change, all-red clearance, extensions, and recalls was coded. If pedestrian phases are present, the walk and flashing don't walk intervals were coded. The number of pedestrian calls was not coded.

In addition to the basic timing, splits were coded for each phase. For coordinated intersections, the cycle lengths, offsets, and appropriate reference phases and intervals were coded as well.

Detector Settings

Detector layouts were not available for all intersections along this corridor. Typically, left turn lanes and side street lanes were assumed to have one detector located at the stop bar. The major-street through lanes were assumed to have advanced detectors. Where visible, actual detector sizes and locations were recorded in the field notes and coded into Synchro. Additional individual detector delays (programmed via racks) were coded if noted on the field notes.

Median widths were obtained from the field notes. Turn lane taper lengths were assumed to be 50 feet per lane. Turning speeds (for right turns) were updated if the right turn lane is channelized with a large radius.

3.3 Model Calibration

At this point, test simulations were conducted on each model to ensure no coding errors were made and all signals operate as expected. The settings for lane alignment, enter blocked intersection, and lane change distances may have been modified at several intersections to calibrate vehicular movements.

Ideally, the models that have been created are fully calibrated at this point. In other words, the models precisely and accurately represent the actual conditions present in the field, and can now be used to develop optimized signal timing plans. These timing plans could then be downloaded to the controllers and put into operation. In reality, however, the models are not fully calibrated. The degree of calibration, which affects the accuracy of its optimized timings and other output, depends on the amount and quality of the input data.

Therefore, the "optimized" timing plans developed by the models alone may not perform in the field as well as the software indicates. However, with some fine-tuning of splits and offsets in the field after the optimized timings have been implemented, the lack of full model calibration is overcome in a less expensive and less time-consuming manner. The process of optimization, implementation, and fine-tuning is discussed later in this report.

4.0 SITE SURVEY

Prior to conducting any analysis, a site survey was performed to observe the signal equipment in the cabinet and operation of the traffic signal as well as the geometric, traffic, and signal timing characteristics of each intersection.

4.1 Intersection Observation

A general observation of the interaction between traffic, the signal, and intersection design was also made during the site survey. The purpose of these observations was to note any characteristics (such as low lane utilization) that may not be inferred from any other available data sources but could significantly affect the performance of the new signal timings. Any potential safety hazards observed during the site survey, such as missing, damaged, or obstructed signs, signals, or pavement markings were also noted. An observation of all signals was conducted during daytime operation.

4.2 Summary of Field Observations

The following observations were noted during the site survey:

SR 60 & US 301

- Extensive queues develop for the eastbound left turn movement during the AM period, and on the eastbound and southbound approaches during the PM period.

SR 60 & Grand Regency Boulevard / Brandon Town Center Drive

- Extensive queues develop on the northbound and southbound approaches during the MD, PM, and weekend MD periods, and for the westbound left turn movement during the PM period.

SR 60 & Kings Avenue

- Extensive queues develop on the northbound, southbound, and eastbound approaches and the westbound left turn movement during the PM period.

SR 60 & Parsons Avenue

- Extensive queues develop on the westbound approach and eastbound left turn movement during the AM period, for the eastbound left turn movement during the MD period, and on the northbound, southbound, and eastbound approaches during the PM period.

SR 60 & Lithia Pinecrest Road

- Extensive queues develop on the northbound approach during the AM period.

SR 60 & Mt Carmel Road

- Extensive queues develop for the eastbound left turn movement during the weekend MD period.

SR 60 & Valrico Road

- Extensive queues develop on the eastbound approach during the PM period due to lane drop.

SR 60 & Miller Road

- Extensive queues develop on the northbound approach during the AM period due to permissive northbound left turn and heavy oncoming southbound right turn traffic.

SR 60 & Mulrennan Road

- Extensive queues develop on the northbound approach during the AM period due to permissive northbound left turn and heavy oncoming southbound right turn traffic.

5.0 SIGNAL TIMING OPTIMIZATION

Once all existing geometric, volume, and signal timing data were coded into the models and general field observations were completed, new signal timings were developed.

5.1 Basic Signal Timing Parameters

The first step in developing new signal timings was to evaluate and, if necessary, update the basic timing parameters, such as minimum green, yellow change, all-red clearance, vehicle extension, recall mode, walk time, and pedestrian clearance (flashing don't walk) for each traffic signal phase. These parameters are discussed in greater detail below.

Minimum Initial

The following values for minimum initial were used:

- Main street through phase – 15 seconds
- Minor street through phase – 10 seconds
- Protected/permissive left turn phase – 5 seconds
- Protected-only left turn phases – 7 seconds

Yellow Change

The yellow change interval was taken from a table in the FDOT *Traffic Engineering Manual* (TEM) Section 3.6, shown below.

Speed (mph)	20	25	30	35	40	45	50	55	60	65
Interval (s)	3.5	3.5	3.5	4.0	4.0	4.3	4.7	5.0	5.4	5.8

All-Red Clearance

Like the yellow change interval, the all-red clearance interval was taken from the TEM, and is shown below.

Speed (mph)	20	25	30	35	40	45	50	55	60	65
Interval (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0

It must be noted that the yellow change and all-red clearance intervals are minimums, and may be increased as necessary to fit the conditions at each intersection based on professional engineering judgment. In general, if an existing all-red clearance time was higher than what was obtained from the table above, the existing value was retained.

Walk Time

A value of 7 seconds was typically used if pedestrian phases are present. A value of 5 seconds was used for side street pedestrian movements at Falkenburg Road, Grand Regency Boulevard, Kings Avenue, and Parsons Avenue.

Pedestrian Clearance (Flashing Don't Walk)

The length of this interval is a function of the crosswalk length and a standard pedestrian walking speed of 3.5 ft/s. Where a walk time of 5 seconds was used, a walking speed of 4 ft/s, rather than 3.5 ft/s, was used.

Based on the basic timing parameters described above, Table 1 summarizes the basic timing parameters to which changes were made. For specific information, the existing and implemented timing sheets can be found in the Appendix.

Table 1 – Summary of Basic Timing Updates

Node	Intersection	Min. Green	Veh. Extension	Yellow Change	All-Red Clearance	Recall Mode	Walk Time	Don't Walk Clearance
1082	SR 60 (Adamo Dr) & Orient Rd	x	x	x				x
1083	SR 60 (Adamo Dr) & 78th St	x	x				x	x
1045	SR 60 (Adamo Dr) & US 301	x			x	x	x	x
1027	SR 60 (Adamo Dr) & Brandon Crossing	x		x				x
1028	SR 60 (Adamo Dr) & Falkenburg Rd			x	x		x	x
1029	SR 60 (Adamo Dr) & I-75 SB Ramp			x				
1030	SR 60 (Brandon Blvd) & I-75 NB Ramp			x				
1031	SR 60 (Brandon Blvd) & Grand Regency Blvd	x	x	x	x			x
1086	SR 60 (Brandon Blvd) & Gornto Lake Rd	x		x			x	x
1032	SR 60 (Brandon Blvd) & Providence Rd	x		x				x
1033	SR 60 (Brandon Blvd) & Lakewood Dr	x		x	x			x
1034	SR 60 (Brandon Blvd) & Hilltop Rd	x		x	x			x
1035	SR 60 (Brandon Blvd) & Strip Center	x		x				x
1036	SR 60 (Brandon Blvd) & Kings Av	x		x	x		x	x
1037	SR 60 (Brandon Blvd) & Parsons Av	x		x	x		x	x
1038	SR 60 (Brandon Blvd) & Pinewood Av	x		x			x	x
1039	SR 60 (Brandon Blvd) & Kingsway Rd	x		x	x			x
1040	SR 60 (Brandon Blvd) & Ridgewood Av	x		x	x			
1367	SR 60 (Brandon Blvd) & Mt Carmel Rd	x	x				x	x
1385	SR 60 (Brandon Blvd) & Valrico Rd	x		x	x			x
1366	SR 60 (Brandon Blvd) & Miller Rd	x		x	x			x
1383	SR 60 & St Cloud Av	x		x	x			x
1422	SR 60 & Mulrennan Rd	x	x		x			x
1382	SR 60 & Dover Rd	x	x	x	x			x

5.2 Phasing

During the optimization process, it may be determined that the basic phasing structure of the intersection should be changed or further evaluated to improve the operation and/or safety of the intersection or corridor. If such a change cannot be made during implementation due to time or policy constraints, it will be listed as a recommendation in Section 8.0 at the end of this report. This may include, but is not limited to:

- the number of phases in use
- the conversion to standard NEMA phasing
- the conversion of the type of left turn (permitted, protected/permitted, or protected only)
- the addition of right-turn overlaps

5.3 Coordination

All intersections located within the study area are evaluated for coordination in one or more signal systems. In addition, the number of systems and the number of intersections within a system can change throughout the day based on traffic conditions.

The primary method used in evaluating the desirability of coordination is general field observation and engineering judgment. The Synchro coordinatability factor, which is calculated for each link in the network, is used to further refine the intersections that will make up the coordinated signal system(s). This factor is a value between 0 and 100+, where a higher value indicates a higher desirability to coordinate two signals. The factor is a function of travel time, amount of storage space, proportion of traffic in a platoon, traffic volumes, and existing cycle lengths.

FDOT approved the use of lead-lag left turn phasing by time of day. Measures were taken to ensure yellow traps would not be introduced.

5.4 Pattern Optimization

For uncoordinated or "free" intersections, Synchro attempts to find the lowest cycle length that can accommodate splits that are long enough to serve the 90th percentile traffic volumes (subject to several constraints).

For coordinated intersections, a system cycle length must be determined. All intersections within the system must operate on the same cycle length (or a multiple of the cycle length) in order for coordination to work. In Synchro, the system cycle length is determined by the lowest performance index, which is a function of the combination of stops and delay for all possible cycle lengths between a certain minimum and maximum. However, for movements that are over capacity, splits will be adjusted to balance v/c ratios.

Once cycle lengths and splits have been determined, offsets for coordinated intersections are selected by determining the value which results in the lowest delay.

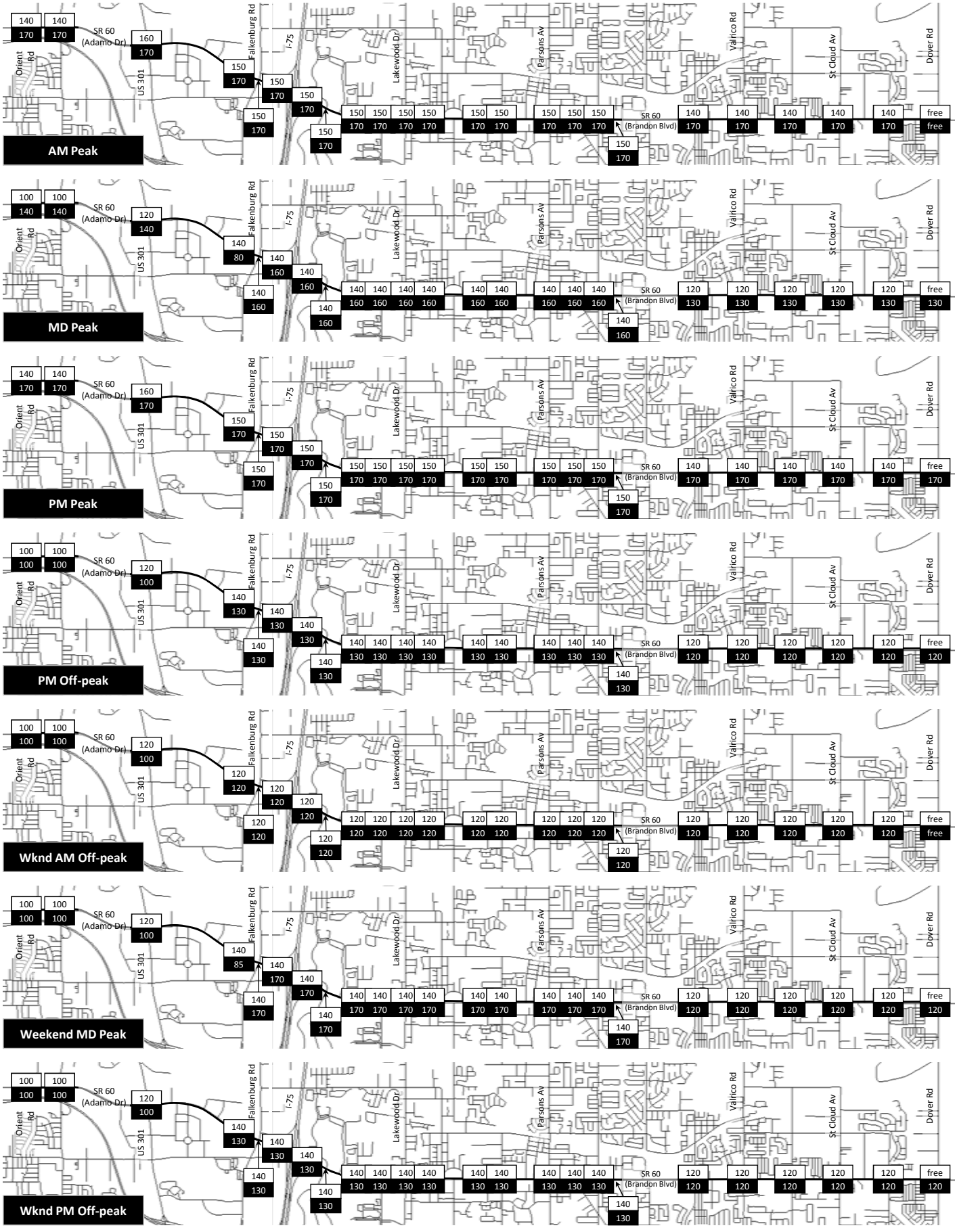
The list below summarizes information regarding each pattern that was developed.

Time-of-Day	Abbreviation	Pattern No.	Design Volumes
AM Peak	AM	1	7:15 am - 8:15 am
MD Peak	MD	2	12:15 pm - 1:15 pm
PM Peak	PM	3	5:00 pm - 6:00 pm
PM Off-peak	PO	4	7:30 pm - 8:30 pm
Weekend AM Off-peak	WA	5	8:00 am - 9:00 am
Weekend MD Peak	WM	6	12:00 pm - 1:00 pm
Weekend PM Off-peak	WP	7	7:30 pm - 8:30 pm

Additional patterns (such as Patterns 8 and 9) were created and implemented at some intersections during various periods to accommodate unique traffic patterns (school or mall traffic).

Figure 5 on page 11 illustrates the existing and implemented cycle lengths for each intersection during each pattern. Intersections that are labeled "free" are not coordinated. The corridor was broken into three subsystems: west (Orient Road to US 301), central (Brandon Crossing to Ridgewood Avenue), and east (Mt Carmel Road to Dover Road). Some lower-volume signals (such as Brandon Crossing) may operate on half cycles during certain periods to minimize delay at those intersections.

Once the optimized timings have been developed, simulations are generally conducted to ensure the signals are operating as expected. Minor adjustments to splits and offsets may be made at this point.



Existing Cycle Length (s)

Implemented Cycle Length (s)

Figure 5

Cycle Lengths

6.0 SIGNAL TIMING IMPLEMENTATION

6.1 Development of a Day Plan Schedule

Once the new timing plans have been optimized, it is necessary to develop a day plan which specifies the start time of each timing plan that will be utilized throughout the day. The process of determining the day plan schedule is primarily based on 24-hour traffic volume counts and engineering judgment. Figure 6 and Figure 7 on pages 13 and 14 illustrate the existing and implemented day plan schedules.

Under the implemented day plan schedule, all signals (except Dover Road) operate four coordinated timing patterns on the weekdays and three patterns on weekends. Coordination generally begins at 6:00 am and ends either at midnight (Brandon Crossing to Ridgewood Avenue) or 9:00 pm (all other signals).

6.2 Phase Diagrams & Operating Plans

Phase diagrams and operating plans are shown in Figure 8 to Figure 12 on pages 15 to 22. These diagrams illustrate the phasing at each intersection as well as the sequences that are used with existing and implemented timing patterns.

6.3 Controller Programming

After the basic timing parameters were updated, optimized signal timings were developed, and a day plan schedule was created, this information was downloaded to the controller. At this point, the signals were observed for proper operation and the controller was observed to address any issues that could have occurred during the data transfer.

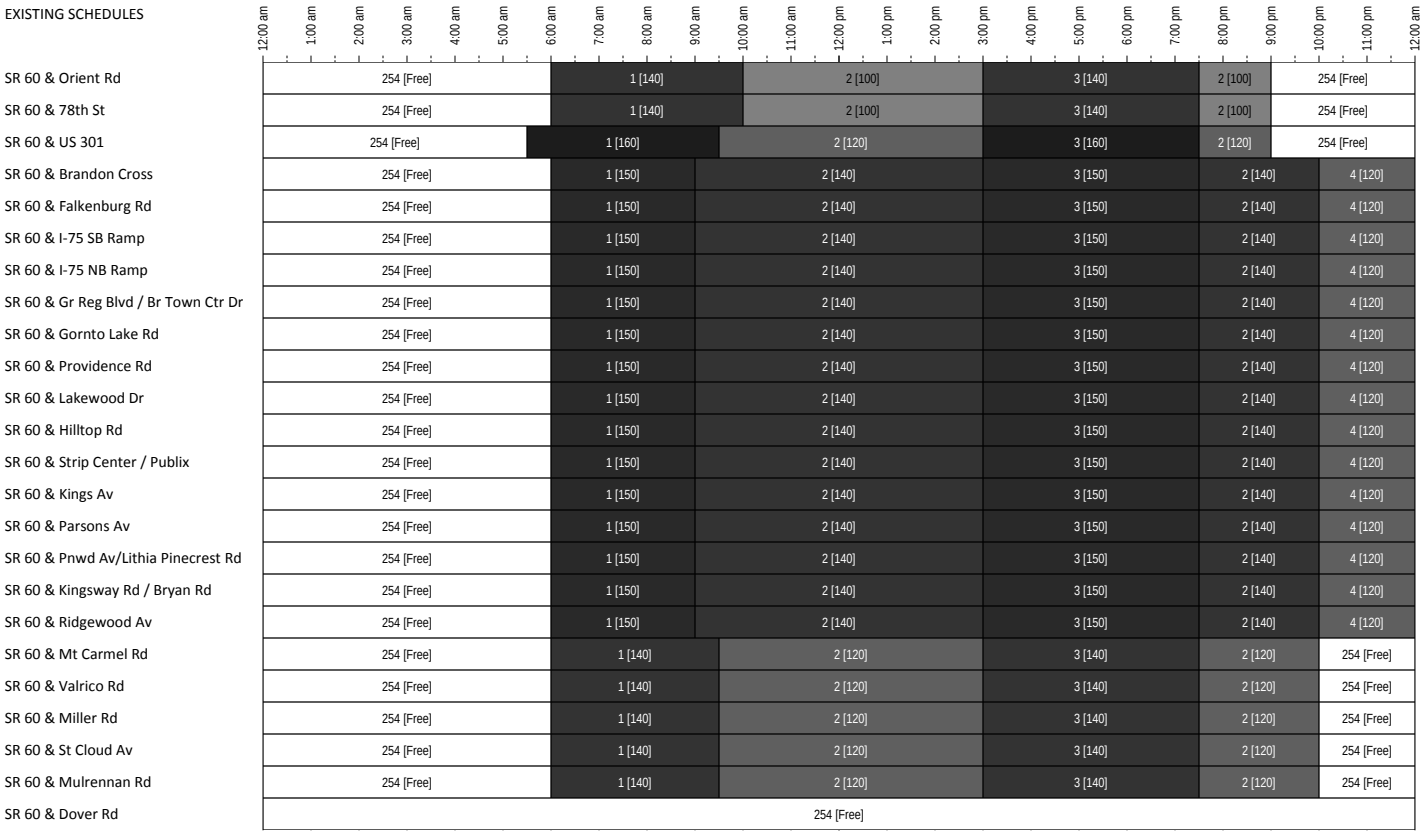
6.4 Fine-Tuning of Signal Timings

While traffic models are extremely important and useful tools, the quality of the output is only as good as the quality of the input. Therefore, the optimized signal timings that were provided by the models may not work as intended when implemented in the field. Thus, signal timing needs to be observed and fine-tuned in the field.

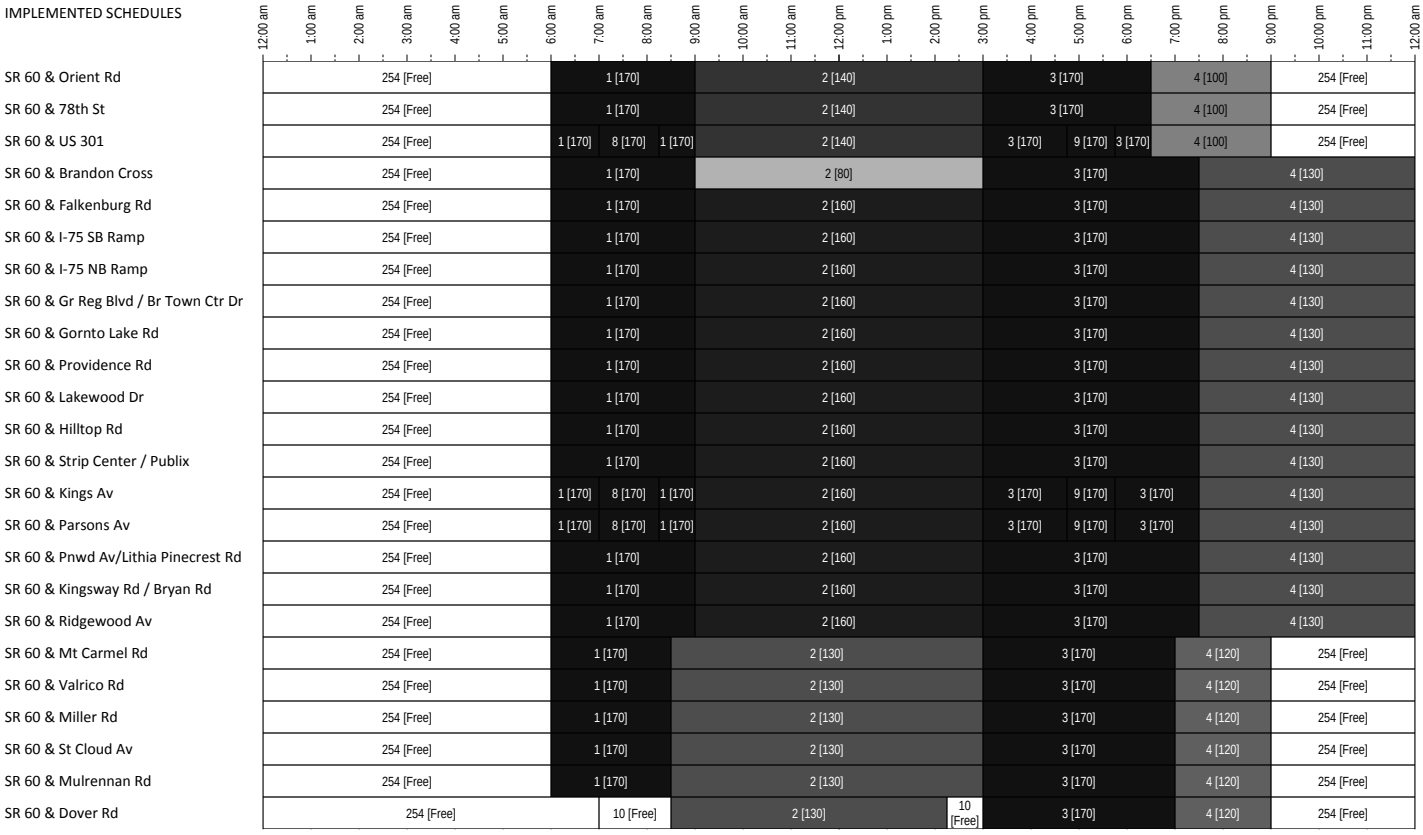
Each new timing plan was observed at each intersection at some point during its respective peak hour to ensure each phase split was appropriate for the traffic conditions present. At some intersections, fine-tuning may consist of simply increasing or decreasing a split for one or more phases. If a movement or intersection is over capacity, split adjustments may be required to manage queue spillback and blockage.

In addition to fine-tuning splits, offset adjustments often have a larger effect on the performance of the network. Offsets were adjusted at the coordinated intersections by conducting travel time runs along the corridor. Travel time runs were conducted using TS/PP-Draft (Time-Space/Platoon-Progression Diagram Generator) software. TS/PP-Draft, in conjunction with a direct connect GPS unit, tracks the location of the test vehicle within the traffic signal system. Because the software uses the actual traffic signal timing settings and an actual vehicle in the traffic stream, this fine-tuning tool can be very powerful. This also provides the user dynamic information about the performance of the traffic signal system such as travel time and delay. Results of the travel time runs under existing timings (the “before” runs) and implemented signal timings (the “after” runs) are discussed in the next section of this report.

EXISTING SCHEDULES



IMPLEMENTED SCHEDULES



On Fridays, Pattern 8 [170] operates at Grand Regency Blvd / Brandon Town Center Drive to accommodate heavy mall traffic.

A white box indicates free operation, a shaded box indicates coordinated operation.
The first number specifies the pattern, the second number [in brackets] is the cycle length (s).
Darker shades represents a longer cycle length.

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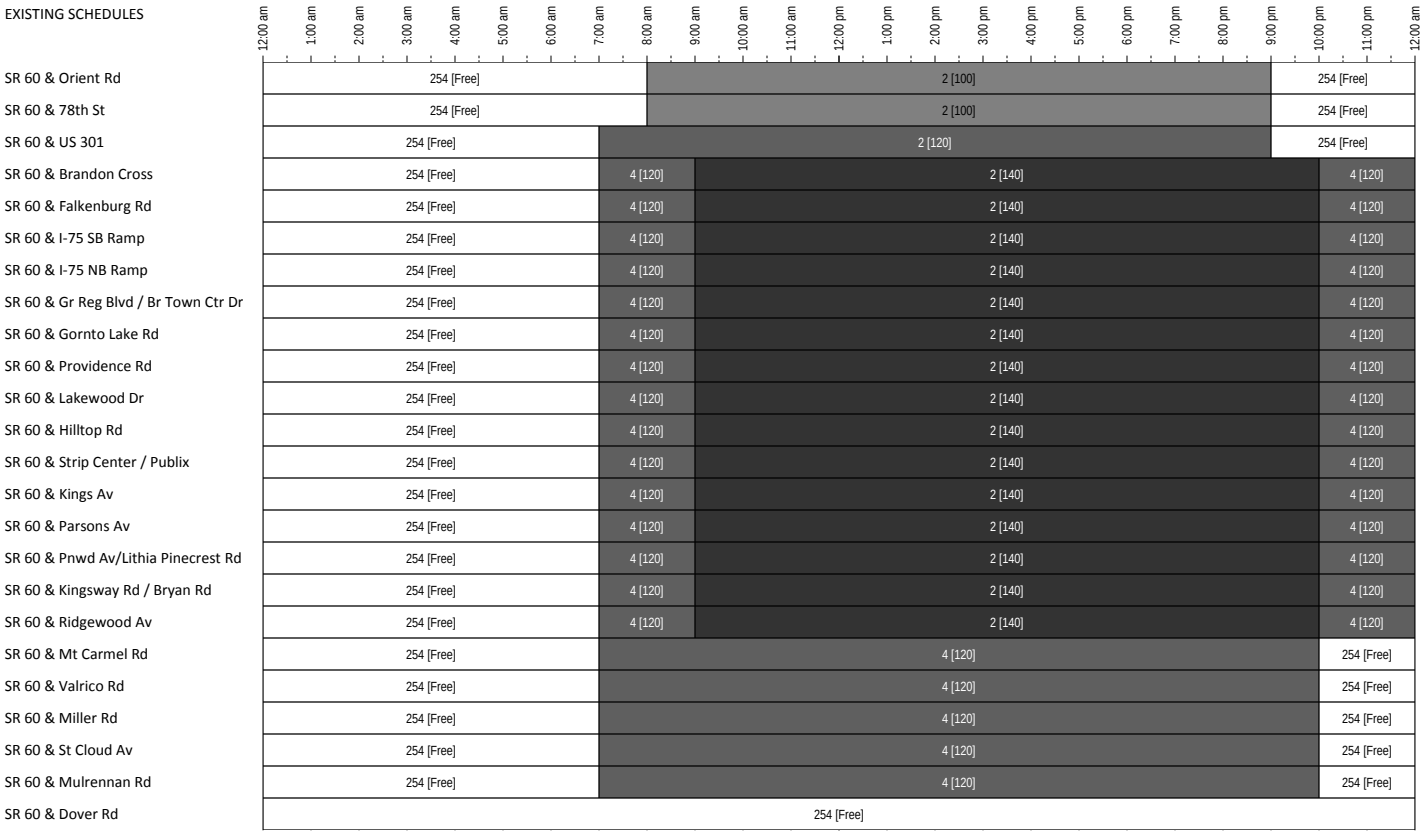
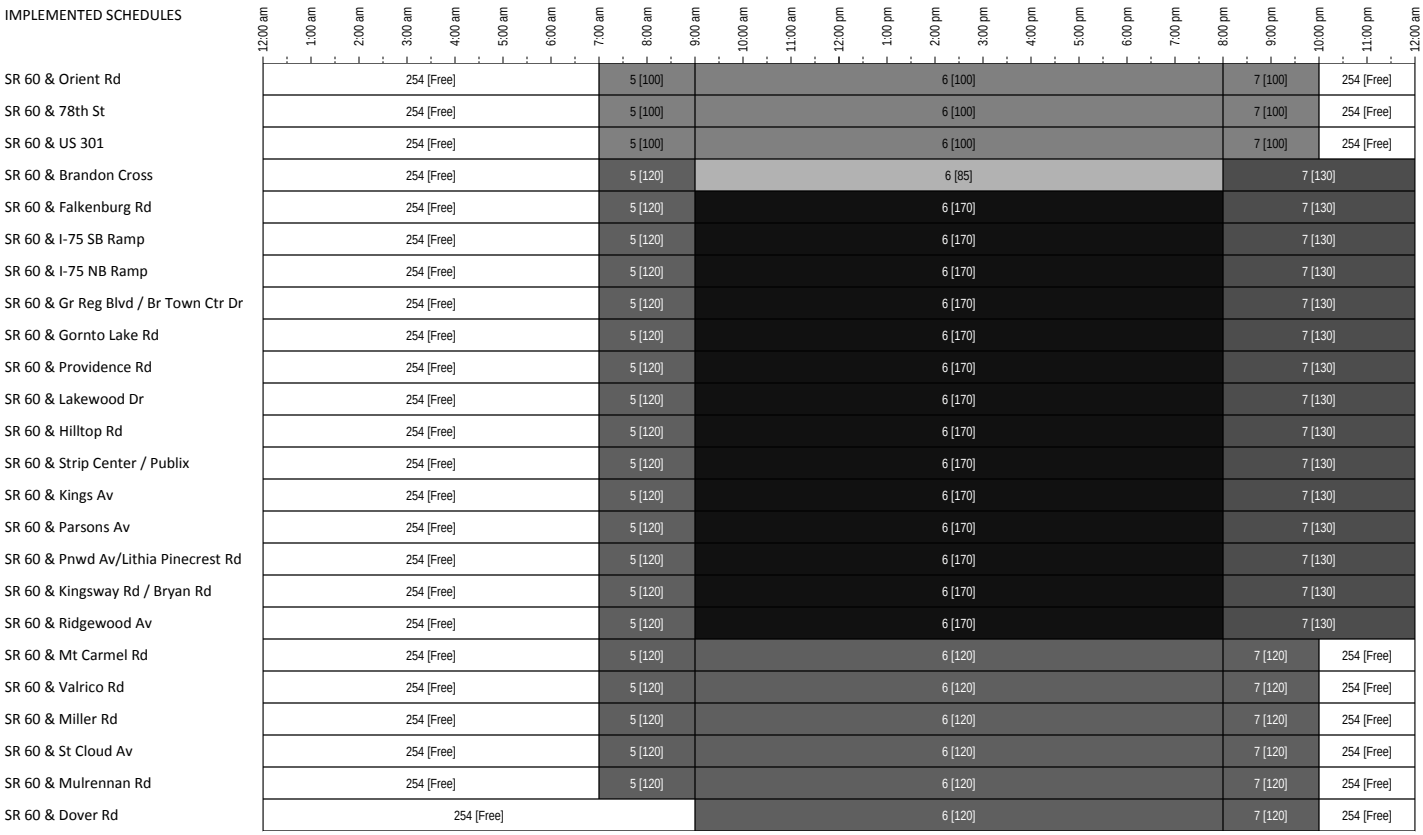
Figure 6

Weekday Day Plan Schedules

EXISTING SCHEDULES



IMPLEMENTED SCHEDULES



Note: Signals operate same patterns on Sunday, however, start time and duration differ slightly.

LEGEND

A white box indicates free operation, a shaded box indicates coordinated operation.
The first number specifies the pattern, the second number [in brackets] is the cycle length (s).
Darker shades represents a longer cycle length.

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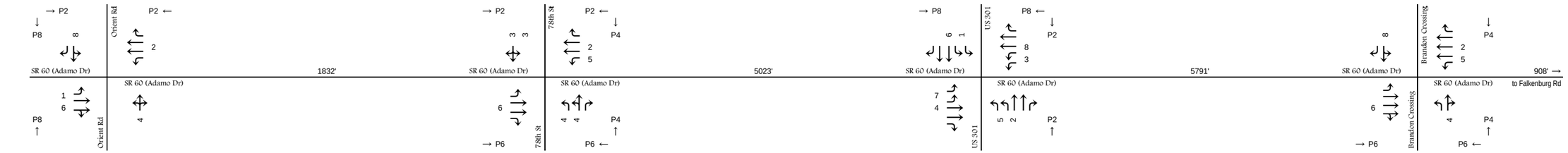
Figure 7

Saturday Day Plan Schedules

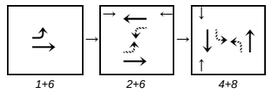


Signal ID: 1082 SOP: 11

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

SEQUENCE 1

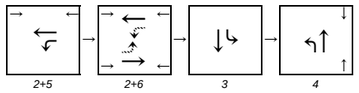


Signal ID: 1083 SOP: 9 Mod

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

SEQUENCE 1

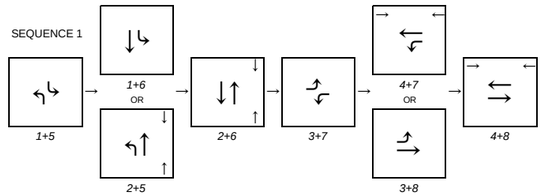


Signal ID: 1045 SOP: 10

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	9	1	9	1	9	9	1

SEQUENCE 1

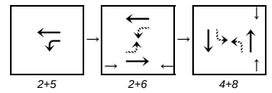


Signal ID: 1027 SOP: 11

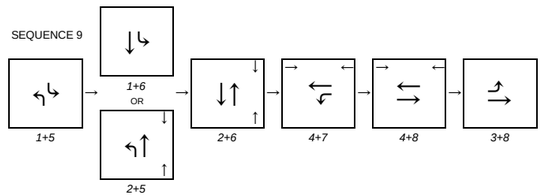
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

SEQUENCE 1



SEQUENCE 9



LEGEND
SOP - Standard Signal Operating Plan
Per - Period, or time-of-day
Ex - Existing
Imp - Implemented

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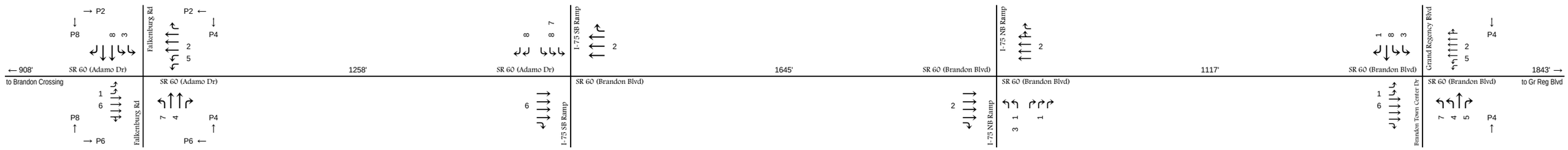
Figure 8

Sequence Diagrams

Orient Rd to Brandon Crossing



Signal ID: 1028 SOP: 10

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	2	2	2	1	1	2	1

Signal ID: 1029 SOP: 14 Mod

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

Signal ID: 1030 SOP: 15 Mod

Phase Sequences

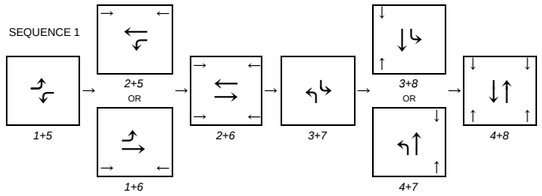
Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

Signal ID: 1031 SOP: 10

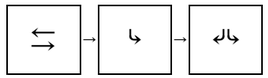
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	2	2	2	2	2	2	2
Imp	3	3	3	2	2	3	2

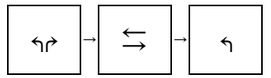
SEQUENCE 1



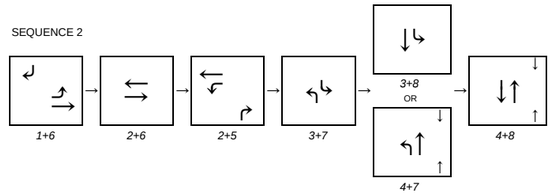
SEQUENCE 1



SEQUENCE 1



SEQUENCE 2



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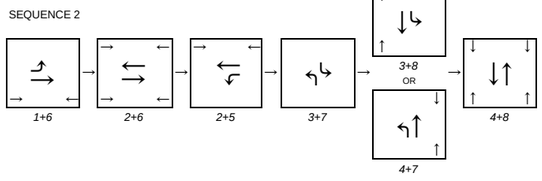
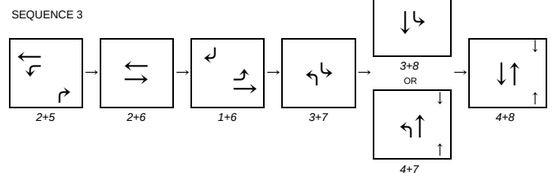


SEQUENCE 3



LEGEND

SOP - Standard Signal Operating Plan
Per - Period, or time-of-day
Ex - Existing
Imp - Implemented

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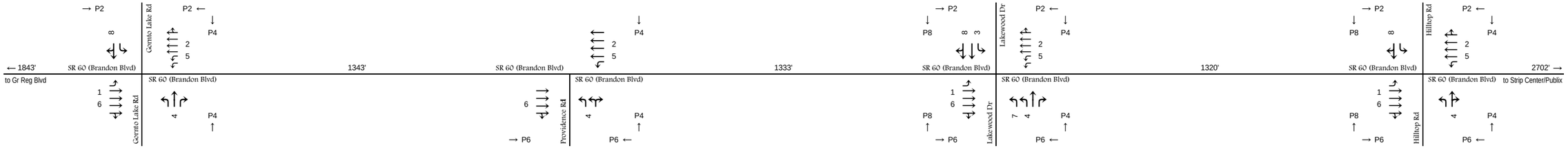
Figure 9

Sequence Diagrams

Falkenburg Rd to Grand Regency Blvd

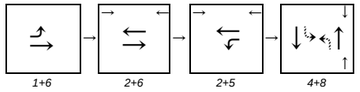


Signal ID: 1086 SOP: 7

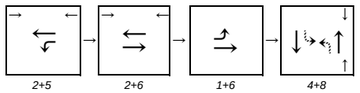
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	3	3	3	3	3	3	3
Imp	2	2	2	3	3	2	3

SEQUENCE 2



SEQUENCE 3

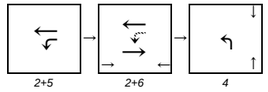


Signal ID: 1032 SOP: 12

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

SEQUENCE 1

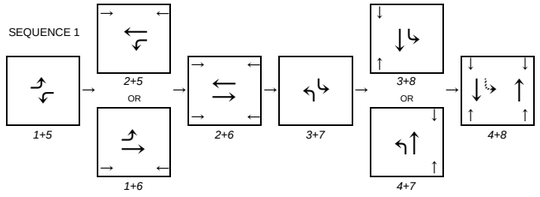


Signal ID: 1033 SOP: 10

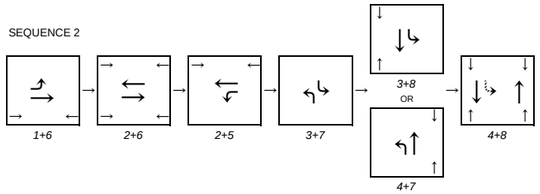
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	3	3	3	2	1	1	2

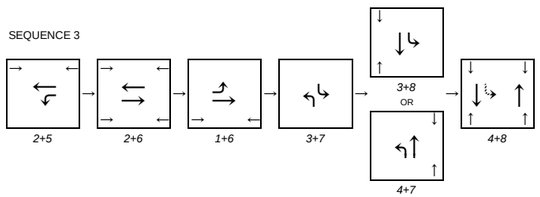
SEQUENCE 1



SEQUENCE 2



SEQUENCE 3

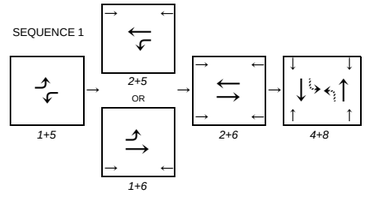


Signal ID: 1034 SOP: 7

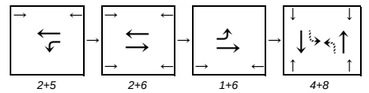
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	3	3	3	1	3	3	1

SEQUENCE 1



SEQUENCE 3



LEGEND

SOP - Standard Signal Operating Plan
Per - Period, or time-of-day
Ex - Existing
Imp - Implemented

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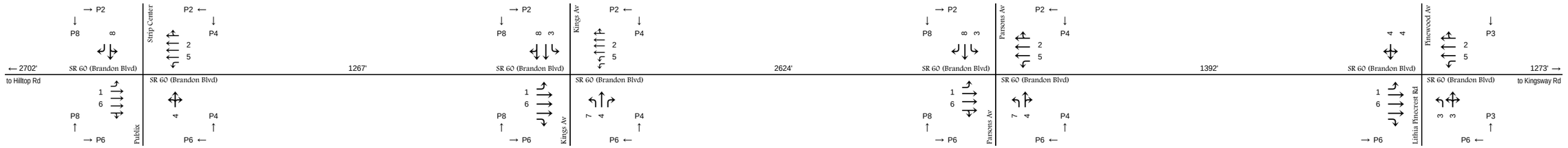
Figure 10

Sequence Diagrams

Gornto Lake Rd to Hilltop Rd



Signal ID: 1035 SOP: 7

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	2	1	2	1	2	2

Signal ID: 1036 SOP: 10

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	3	3	3	1	3	1	1

Signal ID: 1037 SOP: 10

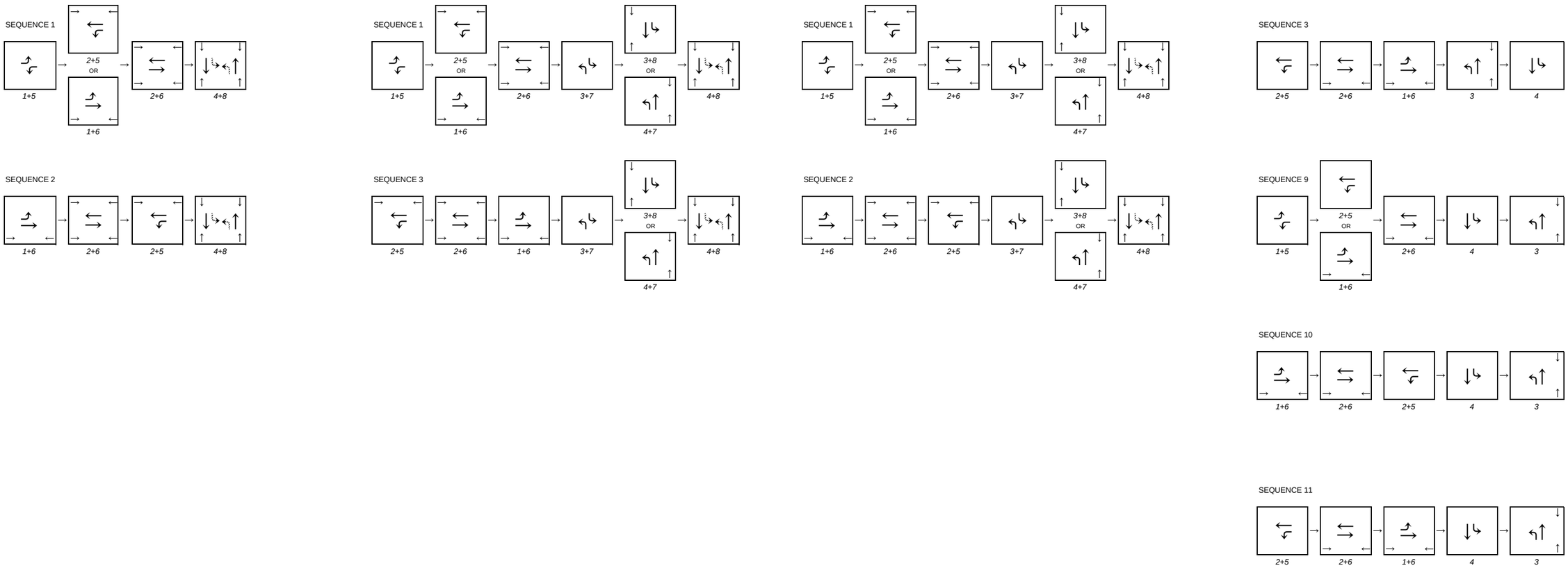
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	2	2	2	2	1	2	2

Signal ID: 1038 SOP: 9

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	3	3	3	3	3	3	3
Imp	10	9	10	9	11	9	9



LEGEND

SOP - Standard Signal Operating Plan

Per - Period, or time-of-day

Ex - Existing

Imp - Implemented

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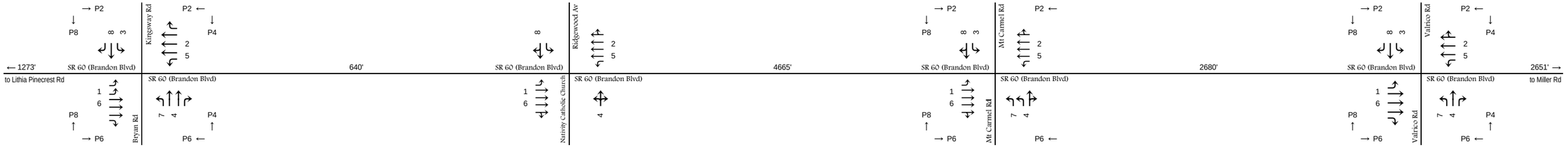
Figure 11

Sequence Diagrams

Publix to Lithia Pinecrest Rd



Signal ID: 1039 SOP: 10

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	3	3	3	2	3	3

Signal ID: 1040 SOP: 7

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	3	3	3	1	1	3

Signal ID: 1367 SOP: 10

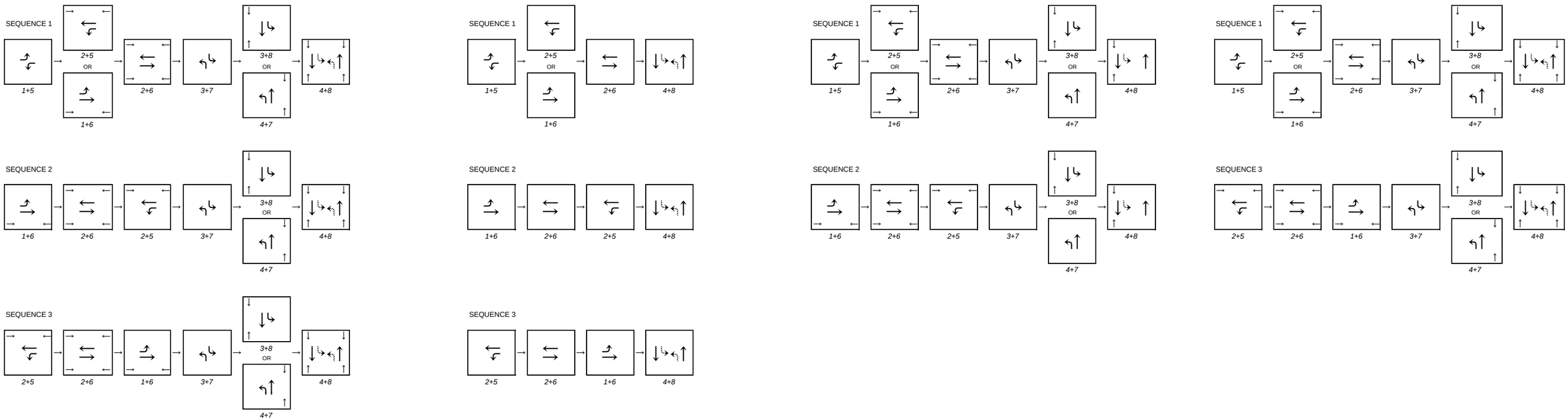
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	2	2	1	2	2	2	2

Signal ID: 1385 SOP: 10

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	3	3	3	3	3	3	3



LEGEND

SOP - Standard Signal Operating Plan
Per - Period, or time-of-day
Ex - Existing
Imp - Implemented

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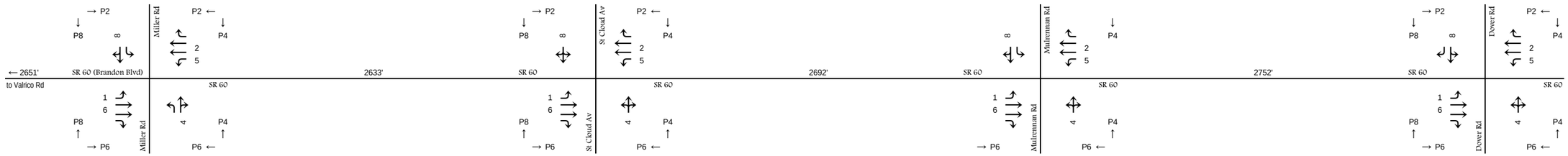
Figure 12

Sequence Diagrams

Kingsway Rd / Bryan Rd to Valrico Rd

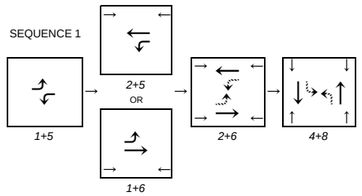


Signal ID: 1366 SOP: 7

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

SEQUENCE 1

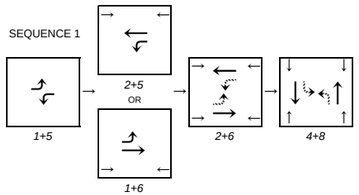


Signal ID: 1383 SOP: 7

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	1	1	1	1	1

SEQUENCE 1

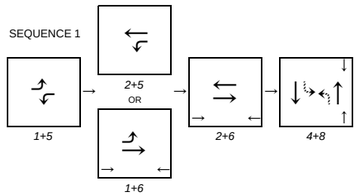


Signal ID: 1422 SOP: 7

Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	1	1	2	1	1	1	1

SEQUENCE 1

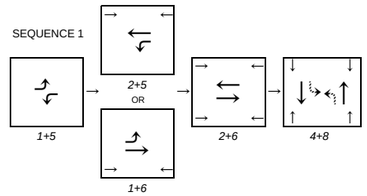


Signal ID: 1382 SOP: 7

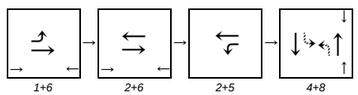
Phase Sequences

Per	AM	MD	PM	PO	WA	WM	WP
Ex	1	1	1	1	1	1	1
Imp	3	3	1	3	1	3	3

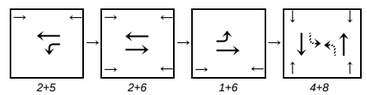
SEQUENCE 1



SEQUENCE 2



SEQUENCE 3



LEGEND

SOP - Standard Signal Operating Plan
Per - Period, or time-of-day
Ex - Existing
Imp - Implemented

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Figure 13

Sequence Diagrams

Miller Rd to Dover Rd

7.0 TRAFFIC OPERATIONS ANALYSIS

Operations analysis was conducted using the traffic models on each of the periods with existing signal timings. This analysis established a benchmark by which traffic operations with implemented signal timings are compared. In addition to the models, travel time runs were conducted in the field to specifically measure the change in travel time and delay on the primary corridor.

7.1 Intersection Performance Measures

Synchro (v7) was used to determine the delay (in seconds per vehicle) for each lane group as well as the delay and level of service (LOS) for the intersection. SimTraffic was used to determine the delay for each movement and the intersection by averaging five, one-hour simulations. The intersection capacity utilization (ICU) and LOS were also determined for each intersection.

The delay, LOS, and ICU for each intersection can be found in Figure 14 to Figure 37 on pages 27 to 45.

The figures illustrate traffic operations at the same intersection for the various periods and scenarios analyzed. The top row illustrates each period with existing signal timings. The second row illustrates each period with implemented signal timings. The bottom row, if present, summarizes traffic operations for each period *if* specific improvements are made at the intersection. These improvements are described in the Section 8.0 of this report. This arrangement allows comparison of traffic operations across all periods and scenarios.

In general, intersections may experience an increase in overall intersection delay when 1) the cycle length is significantly adjusted from its optimal cycle length to provide coordination, or 2) green times are allocated with the objective of providing maximum progression on the major street. Table 2 summarizes the number of intersections that experienced an increase or decrease in overall intersection delay during each period.

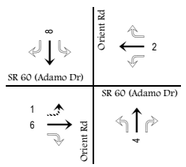
Table 2 – Summary of Changes in Intersection Delay

Number of intersections where:	AM	MD	PM	PO	WA	WM	WP
delay decreased	18	19	16	21	21	20	21
delay increased ≤ 5 sec/veh	4	3	6	2	3	2	2
delay increased > 5 sec/veh	2	2	2	1	0	2	1

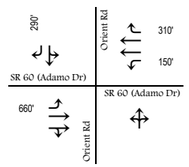
Table 3 below summarizes the intersections where delay increased greater than 5 seconds/vehicle. The intersections of Falkenburg Road, Grand Regency Boulevard, and Parsons Avenue are simply over capacity, so small changes to timing to provide progression can have a negative effect on overall delay. At I-75 Northbound Ramps, more green time was provided to clear queues on the ramps. At Miller Road, more green time was provided to clear the northbound left turn. At Hilltop Road, more green time was provided to clear the eastbound and westbound left turn movements. Finally, at Dover Road, the signal was converted from free to coordinated operation, which increased the effective cycle length.

Table 3 – Summary of Changes in Intersection Delay

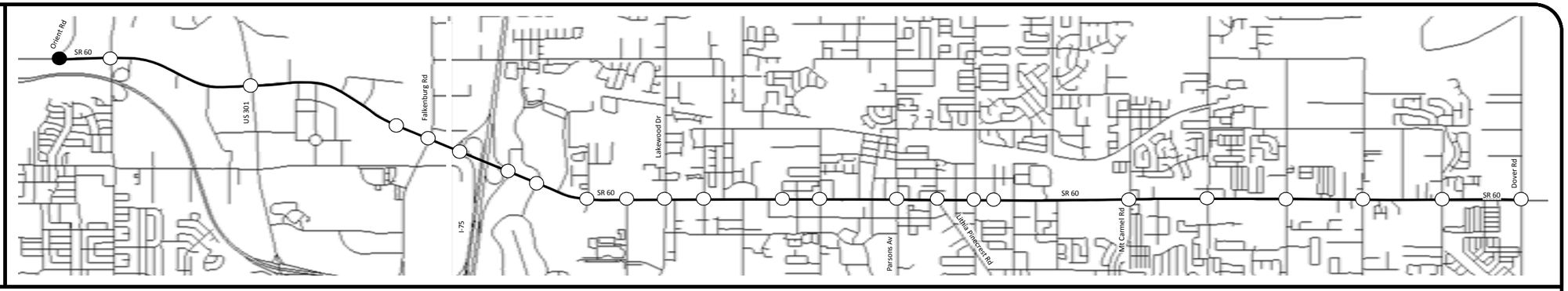
Intersection	Period	Existing Delay - LOS	Implemented Delay - LOS
SR 60 & Falkenburg Rd	MD Peak	89 - F	96 - F
SR 60 & I-75 NB Ramps	AM Peak	56 - E	69 - E
SR 60 & Grand Regency Blvd	PM Peak	95 - F	101 - F
	Wknd MD Peak	104 - F	111 - F
SR 60 & Hilltop Rd	PM Peak	21 - C	27 - C
SR 60 & Parsons Av	Wknd MD Peak	86 - F	98 - F
SR 60 & Miller Rd	AM Peak	59 - E	67 - E
SR 60 & Dover Rd	MD Peak	25 - C	31 - C
	PM Off-peak	15 - B	26 - C
	Wknd PM Off-peak	15 - B	26 - C



Phasing Diagram

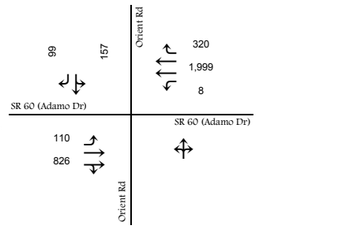


Intersection Geometry

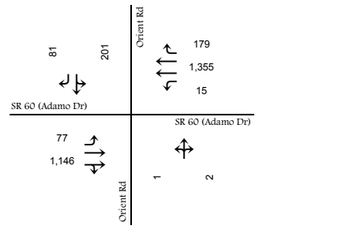


Hourly Volumes

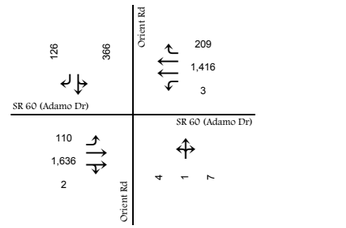
AM Peak ~ 7:15 am - 8:15 am



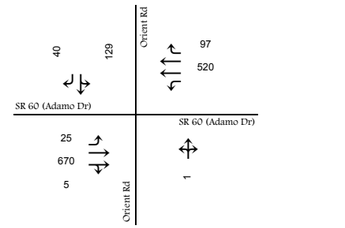
MD Peak ~ 12:15 pm - 1:15 pm



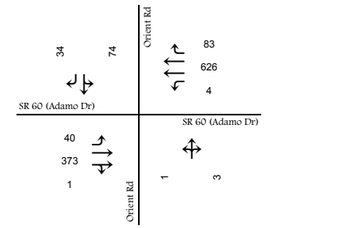
PM Peak ~ 5:00 pm - 6:00 pm



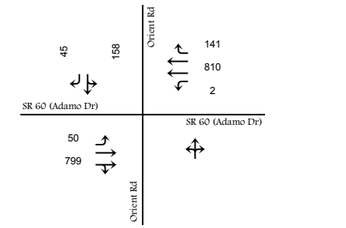
PM Offpeak ~ 7:30 pm - 8:30 pm



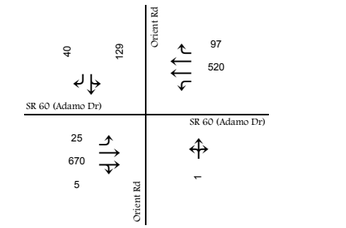
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

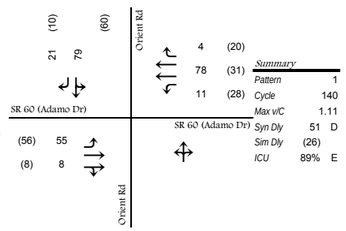


Weekend PM Peak ~ 7:30 pm - 8:30 pm

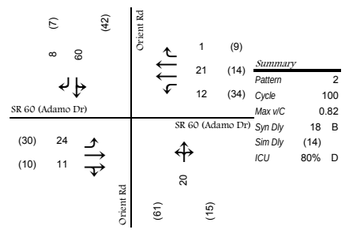


Existing Operations

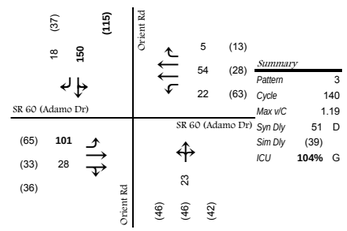
AM Peak ~ 7:15 am - 8:15 am



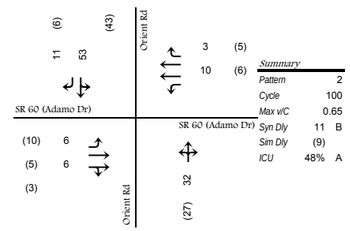
MD Peak ~ 12:15 pm - 1:15 pm



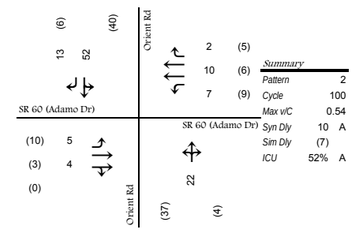
PM Peak ~ 5:00 pm - 6:00 pm



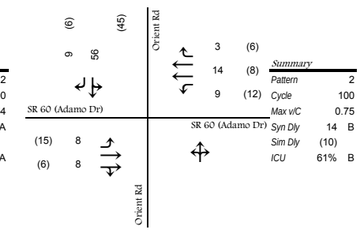
PM Offpeak ~ 7:30 pm - 8:30 pm



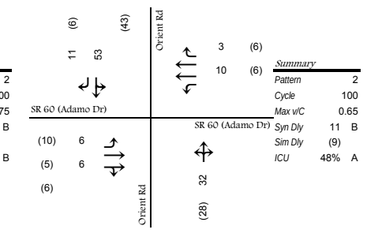
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

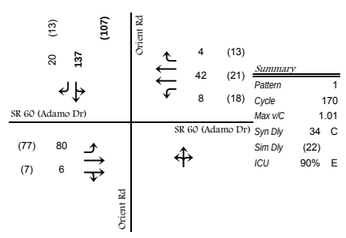


Weekend PM Peak ~ 7:30 pm - 8:30 pm

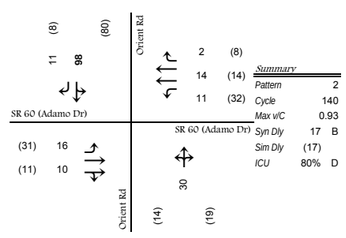


Implemented Operations

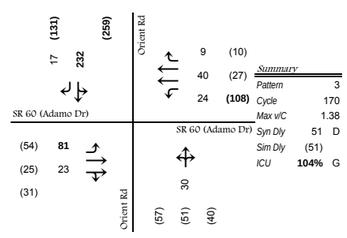
AM Peak ~ 7:15 am - 8:15 am



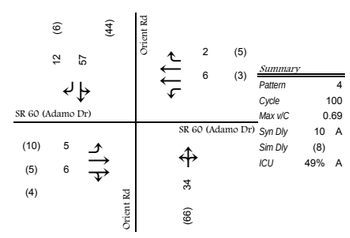
MD Peak ~ 12:15 pm - 1:15 pm



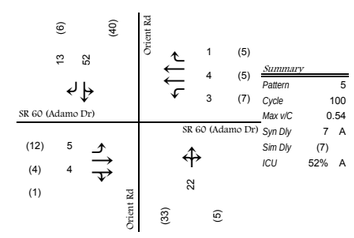
PM Peak ~ 5:00 pm - 6:00 pm



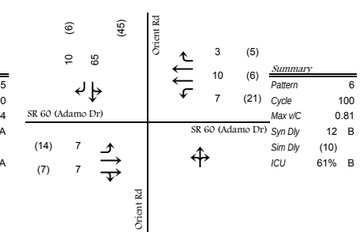
PM Offpeak ~ 7:30 pm - 8:30 pm



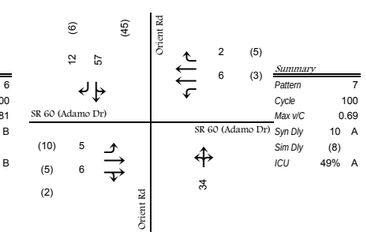
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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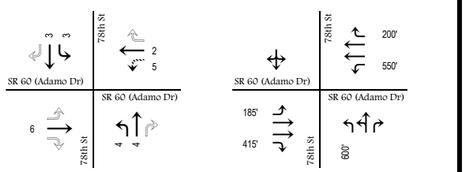
Figure 14

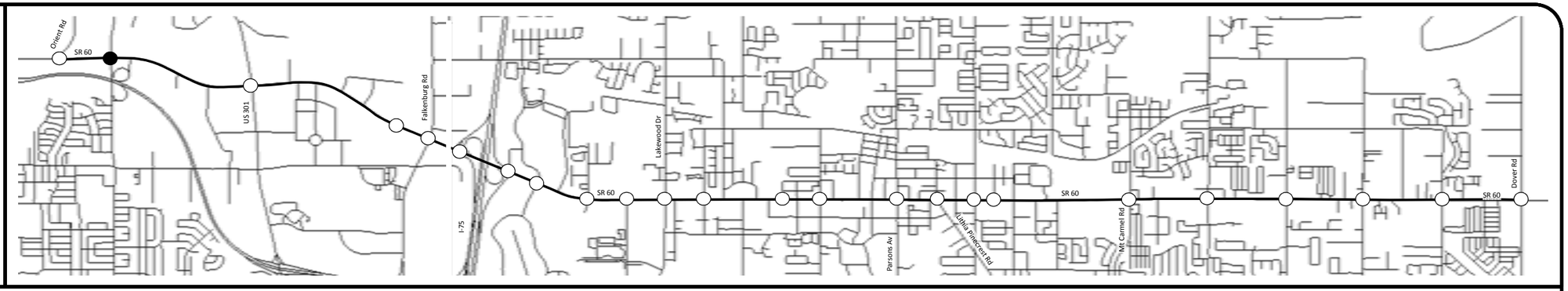
SR 60 (Adamo Dr) & Orient Rd

Traffic Operations Analysis



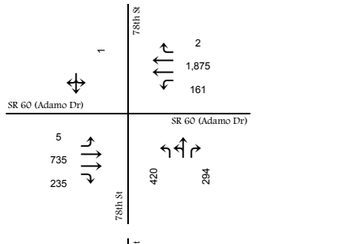
Phasing Diagram

Intersection Geometry

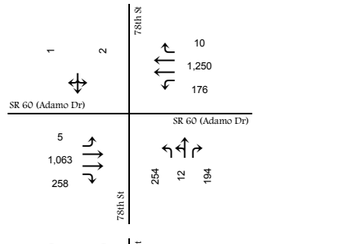


Hourly Volumes

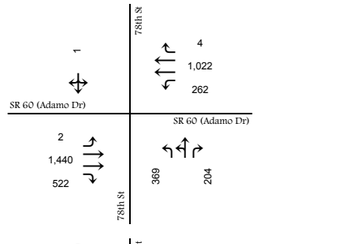
AM Peak ~ 7:15 am - 8:15 am



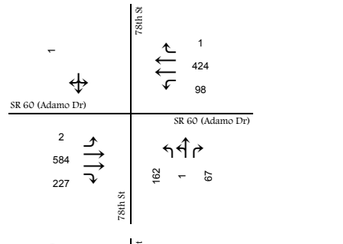
MD Peak ~ 12:15 pm - 1:15 pm



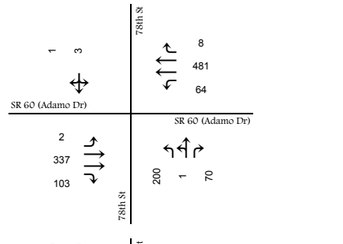
PM Peak ~ 5:00 pm - 6:00 pm



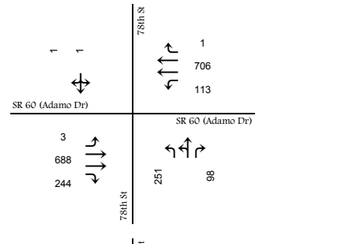
PM Offpeak ~ 7:30 pm - 8:30 pm



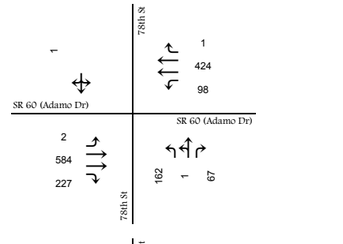
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

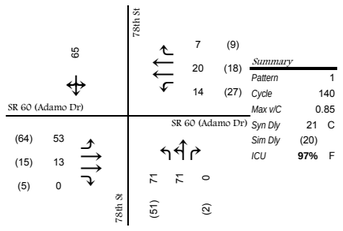


Weekend PM Peak ~ 7:30 pm - 8:30 pm

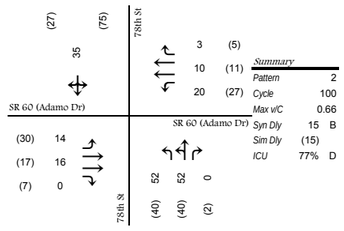


Existing Operations

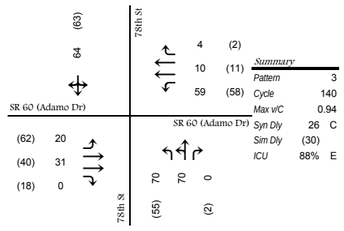
AM Peak ~ 7:15 am - 8:15 am



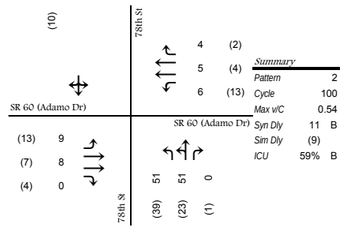
MD Peak ~ 12:15 pm - 1:15 pm



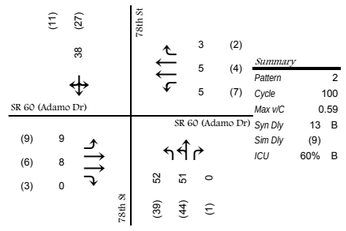
PM Peak ~ 5:00 pm - 6:00 pm



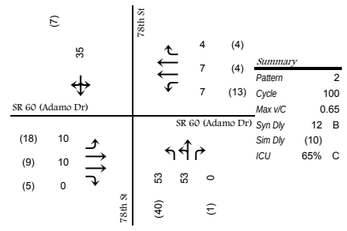
PM Offpeak ~ 7:30 pm - 8:30 pm



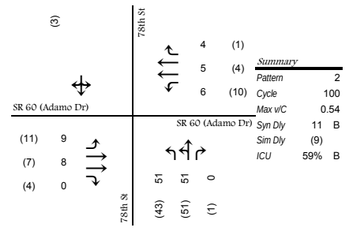
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

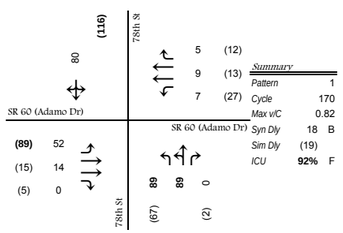


Weekend PM Peak ~ 7:30 pm - 8:30 pm

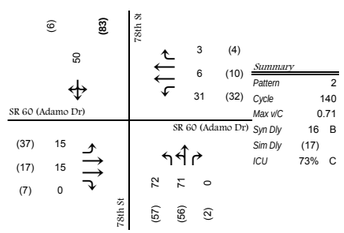


Implemented Operations

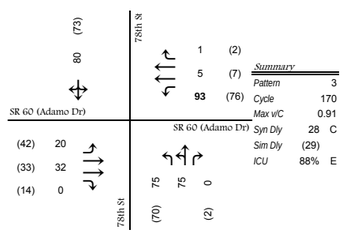
AM Peak ~ 7:15 am - 8:15 am



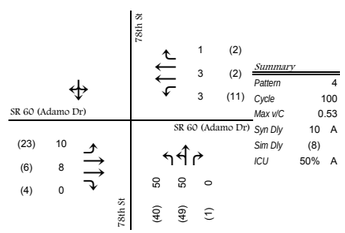
MD Peak ~ 12:15 pm - 1:15 pm



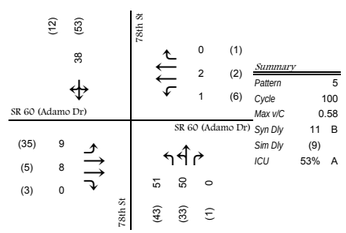
PM Peak ~ 5:00 pm - 6:00 pm



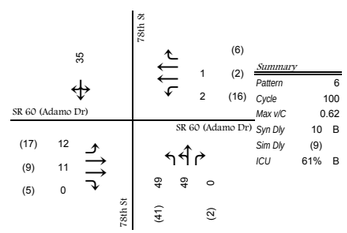
PM Offpeak ~ 7:30 pm - 8:30 pm



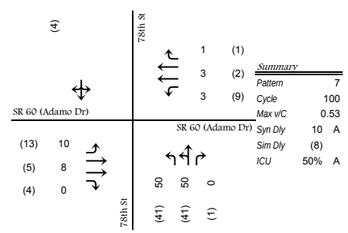
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



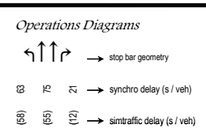
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



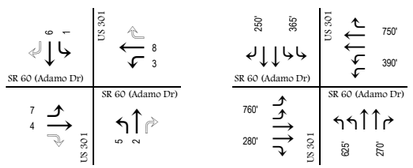
Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc.
TRANSPORTATION ENGINEERS

Figure 15

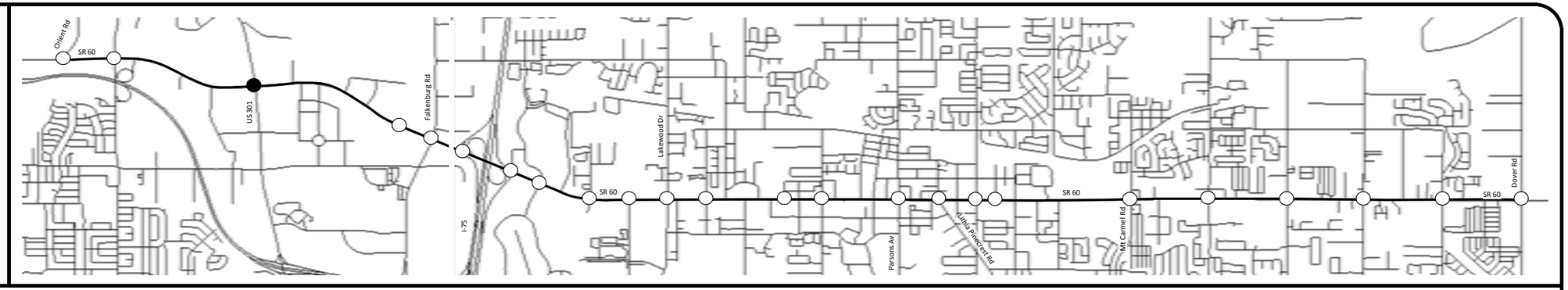
SR 60 (Adamo Dr) & 78th St

Traffic Operations Analysis



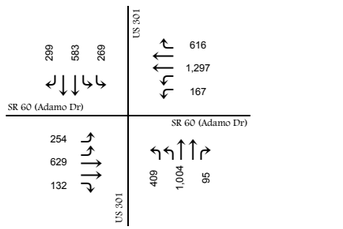
Phasing Diagram

Intersection Geometry

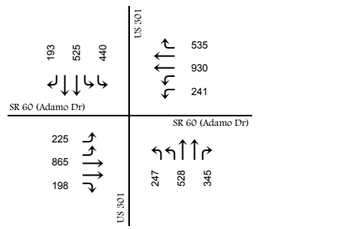


Hourly Volumes

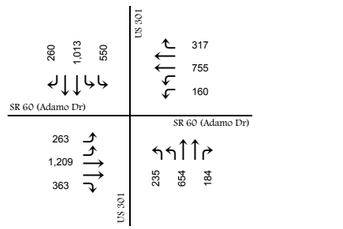
AM Peak ~ 7:15 am - 8:15 am



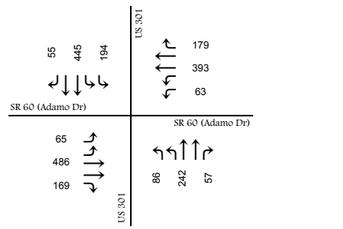
MD Peak ~ 12:15 pm - 1:15 pm



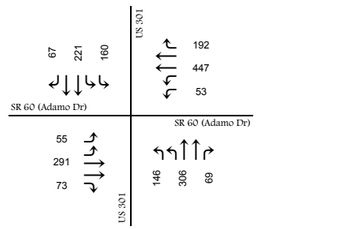
PM Peak ~ 5:00 pm - 6:00 pm



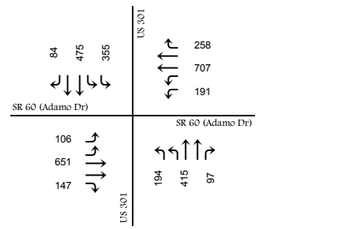
PM Offpeak ~ 7:30 pm - 8:30 pm



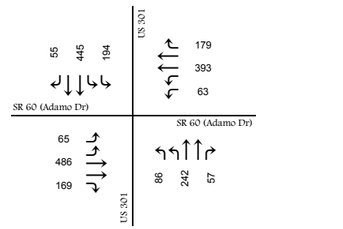
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

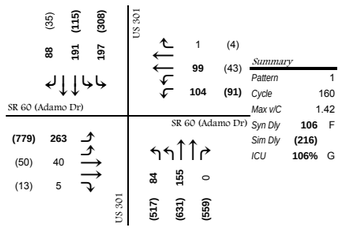


Weekend PM Peak ~ 7:30 pm - 8:30 pm

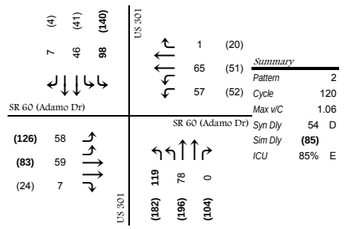


Existing Operations

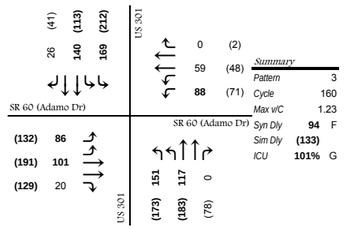
AM Peak ~ 7:15 am - 8:15 am



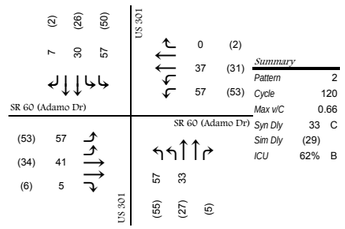
MD Peak ~ 12:15 pm - 1:15 pm



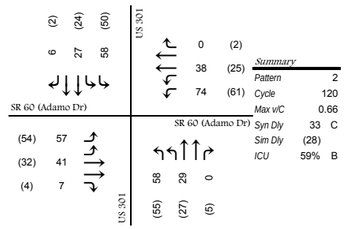
PM Peak ~ 5:00 pm - 6:00 pm



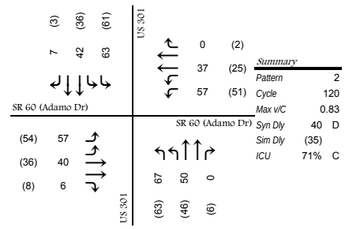
PM Offpeak ~ 7:30 pm - 8:30 pm



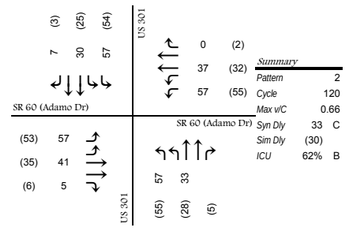
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

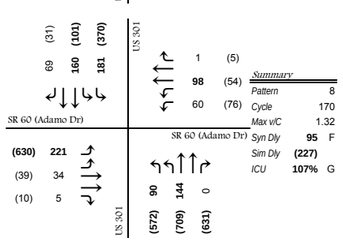


Weekend PM Peak ~ 7:30 pm - 8:30 pm

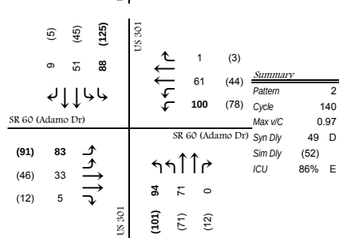


Implemented Operations

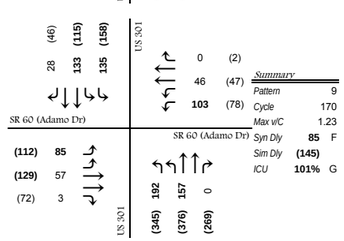
AM Peak ~ 7:15 am - 8:15 am



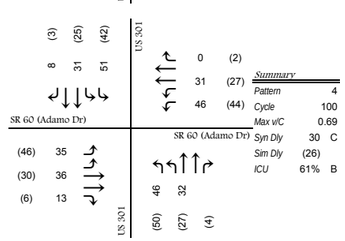
MD Peak ~ 12:15 pm - 1:15 pm



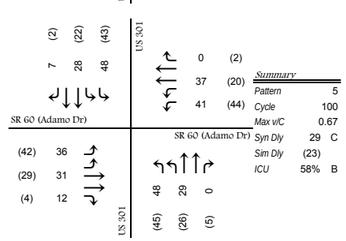
PM Peak ~ 5:00 pm - 6:00 pm



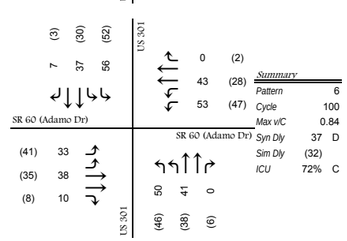
PM Offpeak ~ 7:30 pm - 8:30 pm



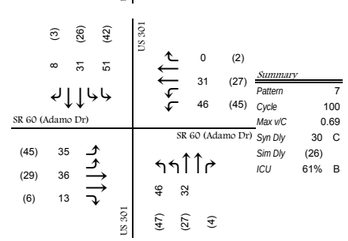
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
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D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

↰↑↑↱ → stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

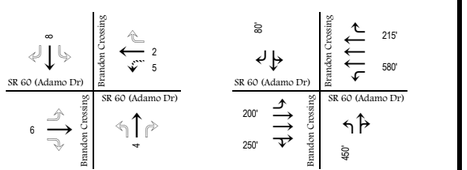
Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc.
TRANSPORTATION ENGINEERS

Figure 16

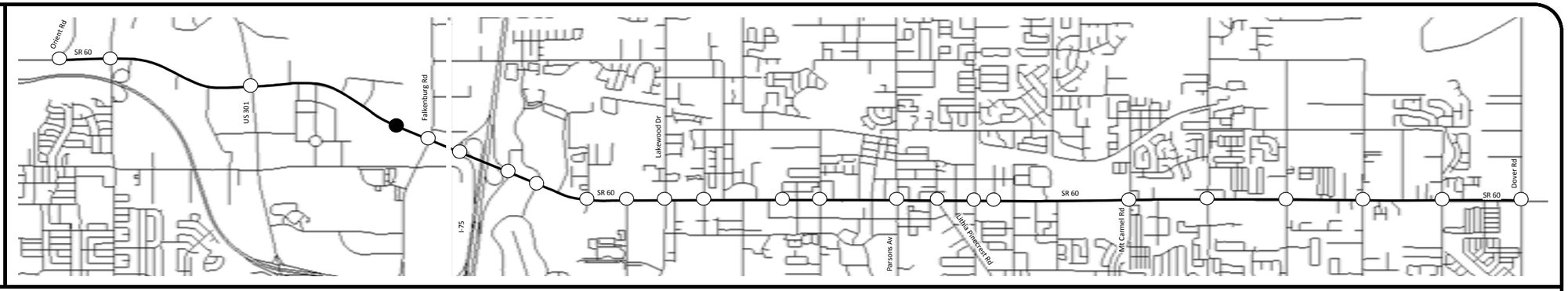
SR 60 (Adamo Dr) & US 301

Traffic Operations Analysis



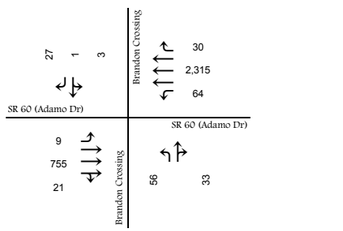
Phasing Diagram

Intersection Geometry

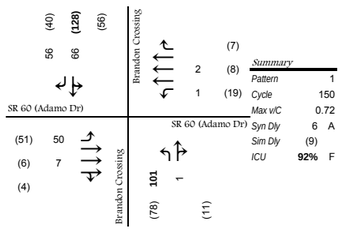


AM Peak ~ 7:15 am - 8:15 am

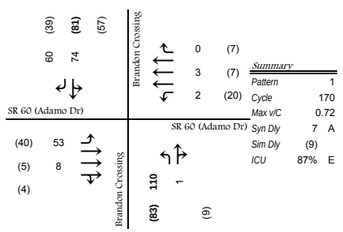
Hourly Volumes



Existing Operations

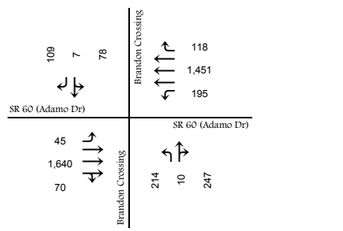


Implemented Operations

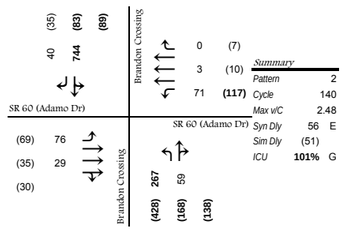


MD Peak ~ 12:15 pm - 1:15 pm

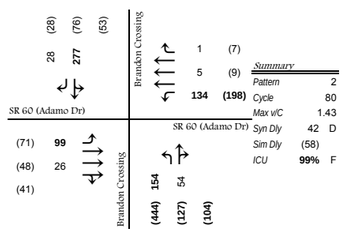
Hourly Volumes



Existing Operations

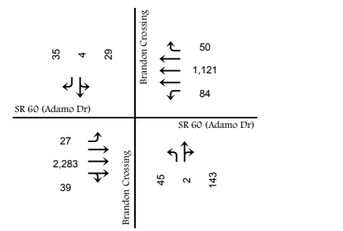


Implemented Operations

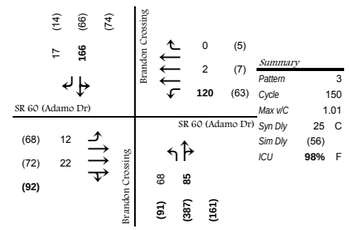


PM Peak ~ 5:00 pm - 6:00 pm

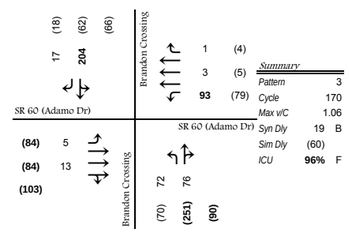
Hourly Volumes



Existing Operations

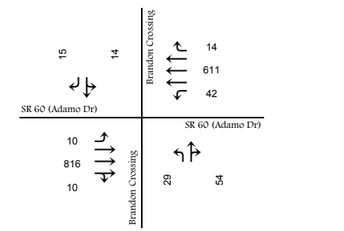


Implemented Operations

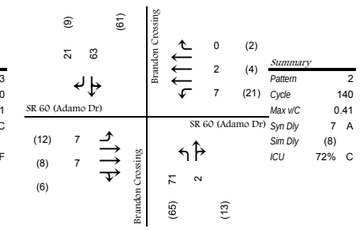


PM Offpeak ~ 7:30 pm - 8:30 pm

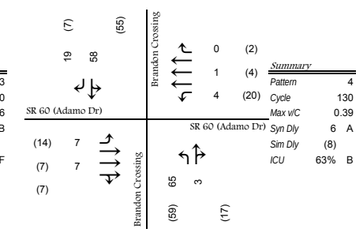
Hourly Volumes



Existing Operations

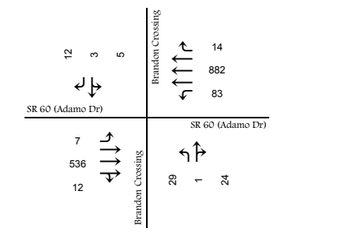


Implemented Operations

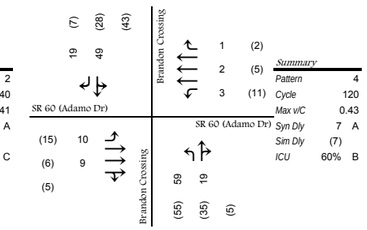


Weekend AM Peak ~ 8:00 am - 9:00 am

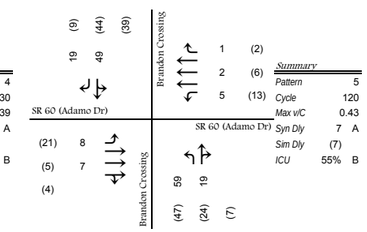
Hourly Volumes



Existing Operations

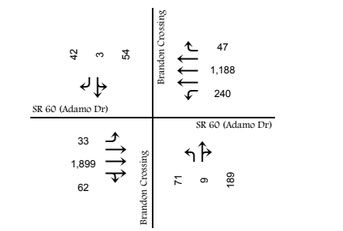


Implemented Operations

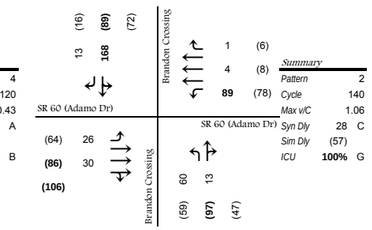


Weekend MD Peak ~ 12:00 pm - 1:00 pm

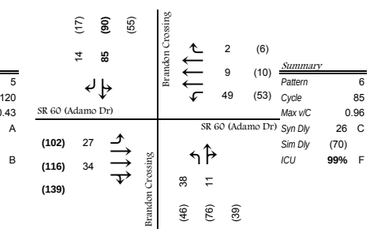
Hourly Volumes



Existing Operations

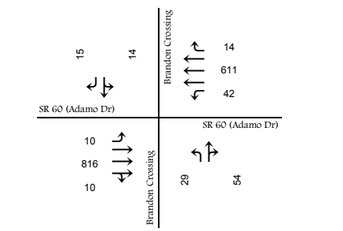


Implemented Operations

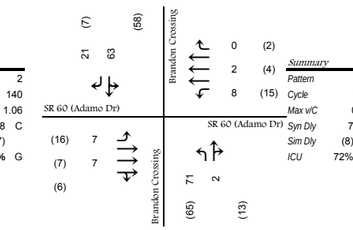


Weekend PM Peak ~ 7:30 pm - 8:30 pm

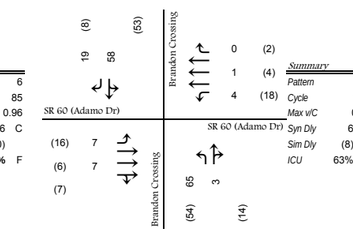
Hourly Volumes



Existing Operations



Implemented Operations



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
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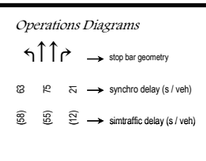
Operations Diagrams



Note:
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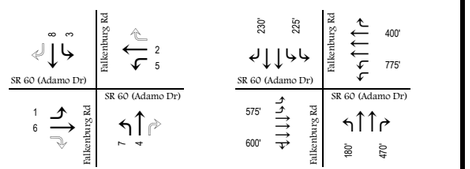
Albeck Gerken, Inc.
TRANSPORTATION ENGINEERS

Figure 17

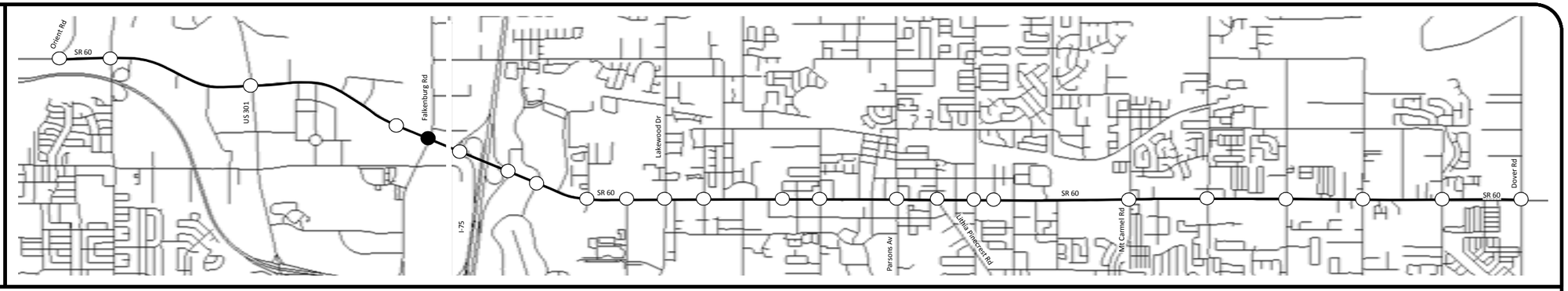
SR 60 (Adamo Dr) & Brandon Crossing

Traffic Operations Analysis



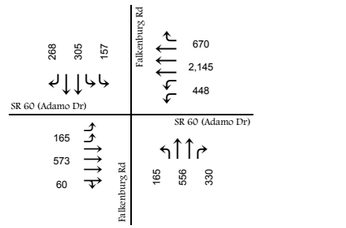
Phasing Diagram

Intersection Geometry

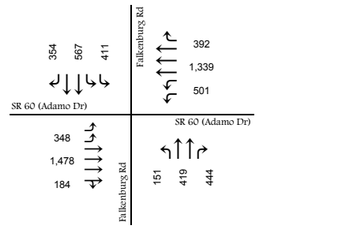


Hourly Volumes

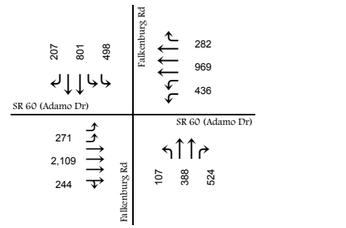
AM Peak ~ 7:15 am - 8:15 am



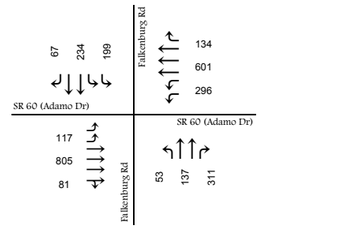
MD Peak ~ 12:15 pm - 1:15 pm



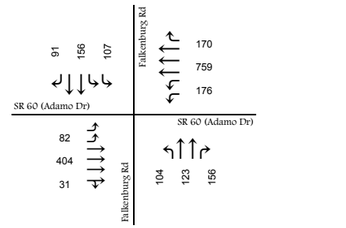
PM Peak ~ 5:00 pm - 6:00 pm



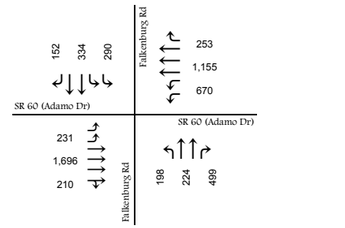
PM Offpeak ~ 7:30 pm - 8:30 pm



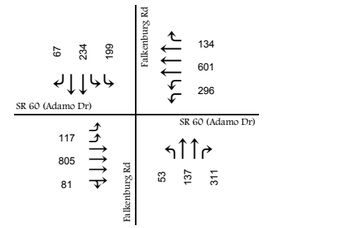
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

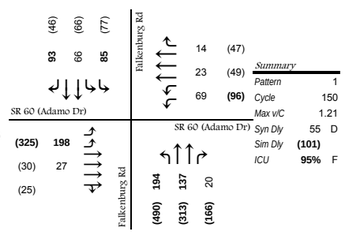


Weekend PM Peak ~ 7:30 pm - 8:30 pm

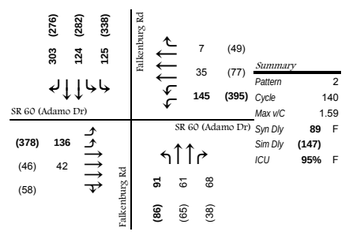


Existing Operations

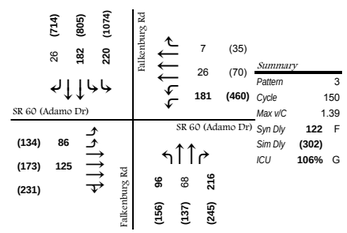
AM Peak ~ 7:15 am - 8:15 am



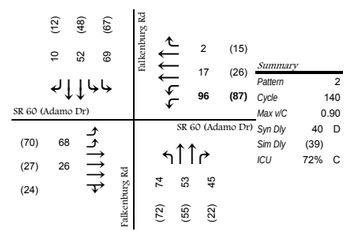
MD Peak ~ 12:15 pm - 1:15 pm



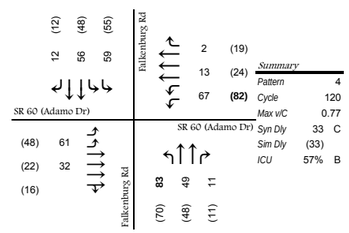
PM Peak ~ 5:00 pm - 6:00 pm



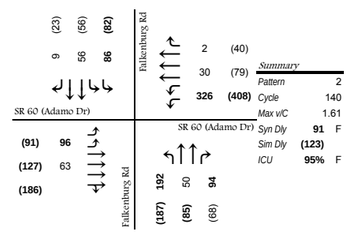
PM Offpeak ~ 7:30 pm - 8:30 pm



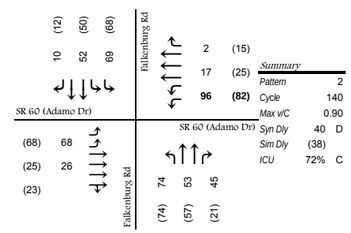
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

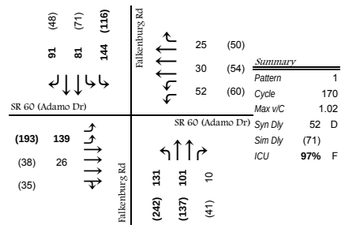


Weekend PM Peak ~ 7:30 pm - 8:30 pm

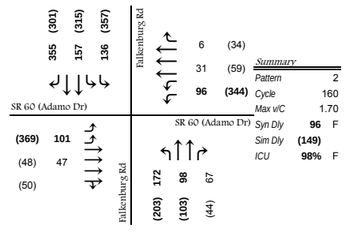


Implemented Operations

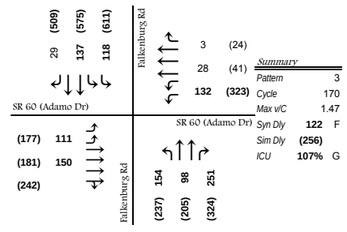
AM Peak ~ 7:15 am - 8:15 am



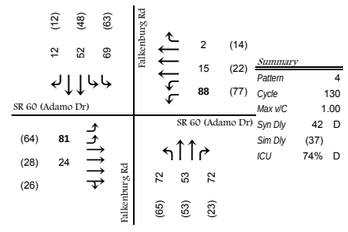
MD Peak ~ 12:15 pm - 1:15 pm



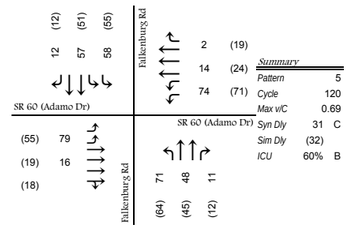
PM Peak ~ 5:00 pm - 6:00 pm



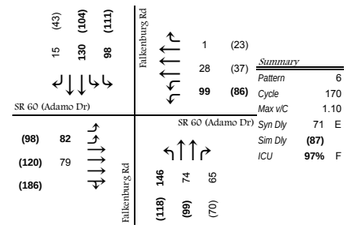
PM Offpeak ~ 7:30 pm - 8:30 pm



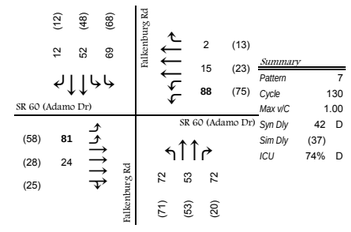
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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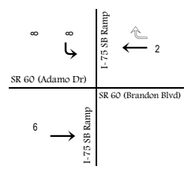
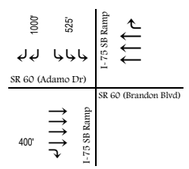
Figure 18

SR 60 (Adamo Dr) & Falkenburg Rd

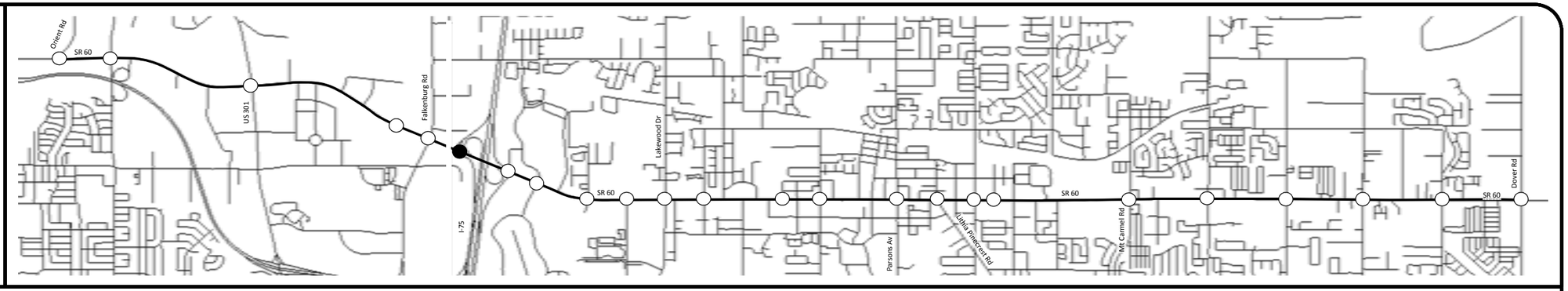
Traffic Operations Analysis



Phasing Diagram

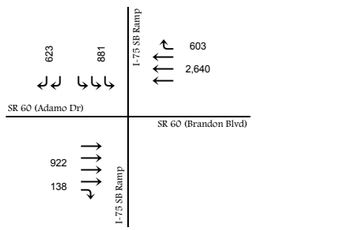


Intersection Geometry

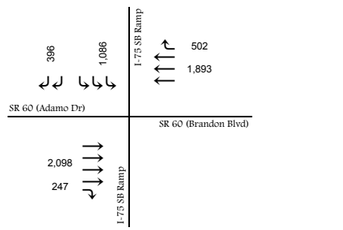


Hourly Volumes

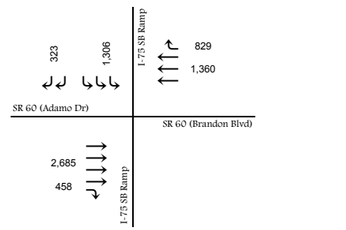
AM Peak ~ 7:15 am - 8:15 am



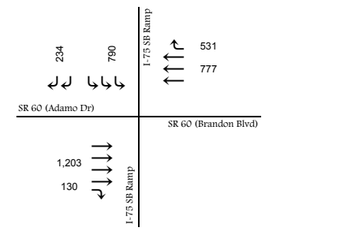
MD Peak ~ 12:15 pm - 1:15 pm



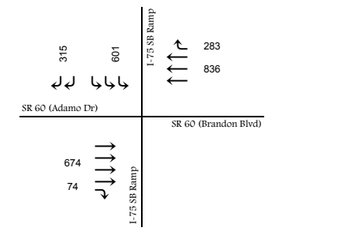
PM Peak ~ 5:00 pm - 6:00 pm



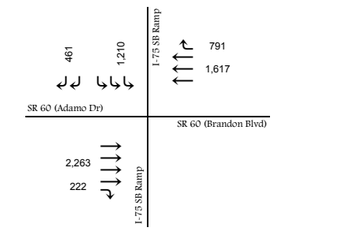
PM Offpeak ~ 7:30 pm - 8:30 pm



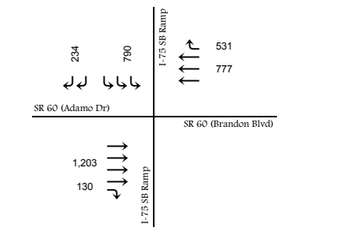
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

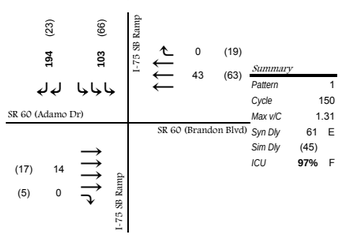


Weekend PM Peak ~ 7:30 pm - 8:30 pm



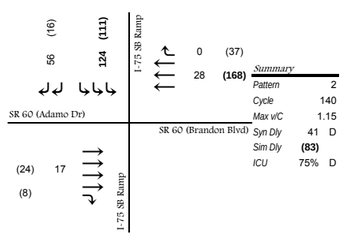
Existing Operations

AM Peak ~ 7:15 am - 8:15 am



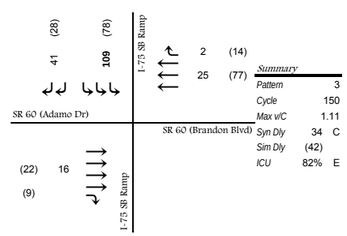
Summary	
Pattern	1
Cycle	150
Max v/C	1.31
Syn Dly	61 E
Sim Dly	(45)
ICU	**97%** F

MD Peak ~ 12:15 pm - 1:15 pm



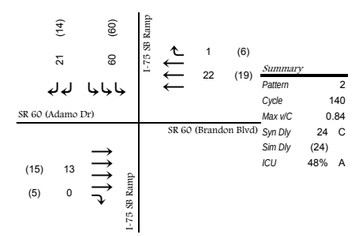
Summary	
Pattern	2
Cycle	140
Max v/C	1.15
Syn Dly	41 D
Sim Dly	**(83)**
ICU	75% D

PM Peak ~ 5:00 pm - 6:00 pm



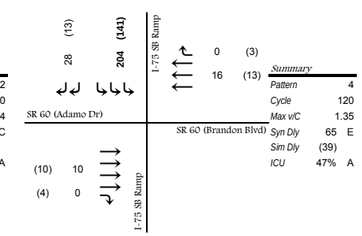
Summary	
Pattern	3
Cycle	150
Max v/C	1.11
Syn Dly	34 C
Sim Dly	(42)
ICU	82% E

PM Offpeak ~ 7:30 pm - 8:30 pm



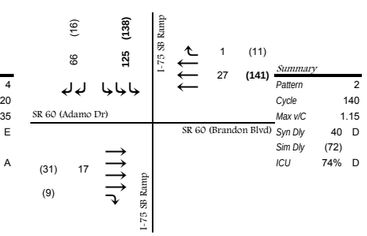
Summary	
Pattern	2
Cycle	140
Max v/C	0.84
Syn Dly	24 C
Sim Dly	(24)
ICU	48% A

Weekend AM Peak ~ 8:00 am - 9:00 am



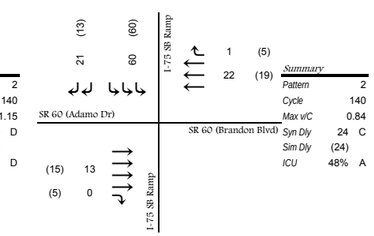
Summary	
Pattern	4
Cycle	120
Max v/C	1.35
Syn Dly	65 E
Sim Dly	(39)
ICU	47% A

Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary	
Pattern	2
Cycle	140
Max v/C	1.15
Syn Dly	40 D
Sim Dly	(72)
ICU	74% D

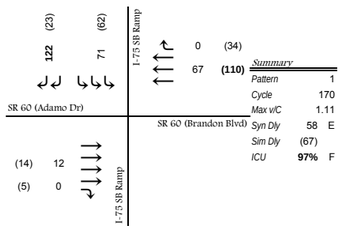
Weekend PM Peak ~ 7:30 pm - 8:30 pm



Summary	
Pattern	2
Cycle	140
Max v/C	0.84
Syn Dly	24 C
Sim Dly	(24)
ICU	48% A

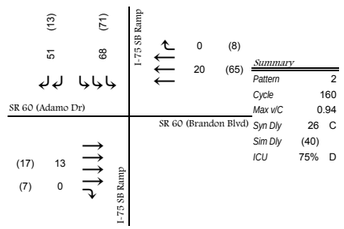
Implemented Operations

AM Peak ~ 7:15 am - 8:15 am



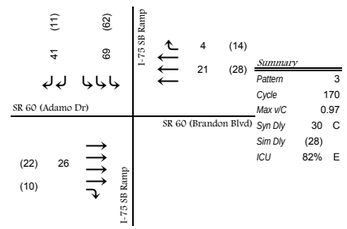
Summary	
Pattern	1
Cycle	170
Max v/C	1.11
Syn Dly	58 E
Sim Dly	(67)
ICU	**97%** F

MD Peak ~ 12:15 pm - 1:15 pm



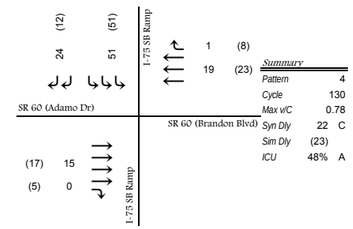
Summary	
Pattern	2
Cycle	160
Max v/C	0.94
Syn Dly	26 C
Sim Dly	(40)
ICU	75% D

PM Peak ~ 5:00 pm - 6:00 pm



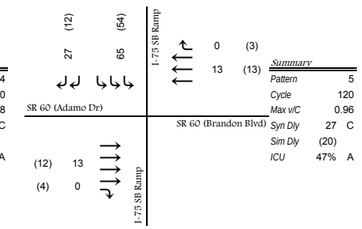
Summary	
Pattern	3
Cycle	170
Max v/C	0.97
Syn Dly	30 C
Sim Dly	(28)
ICU	82% E

PM Offpeak ~ 7:30 pm - 8:30 pm



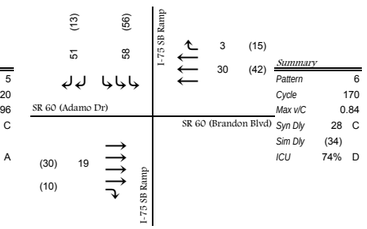
Summary	
Pattern	4
Cycle	130
Max v/C	0.78
Syn Dly	22 C
Sim Dly	(23)
ICU	48% A

Weekend AM Peak ~ 8:00 am - 9:00 am



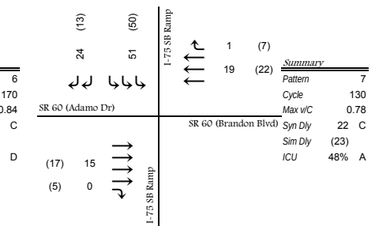
Summary	
Pattern	5
Cycle	120
Max v/C	0.96
Syn Dly	27 C
Sim Dly	(20)
ICU	47% A

Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary	
Pattern	6
Cycle	170
Max v/C	0.84
Syn Dly	28 C
Sim Dly	(34)
ICU	74% D

Weekend PM Peak ~ 7:30 pm - 8:30 pm



Summary	
Pattern	7
Cycle	130
Max v/C	0.78
Syn Dly	22 C
Sim Dly	(23)
ICU	48% A

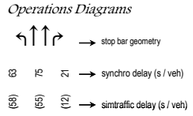
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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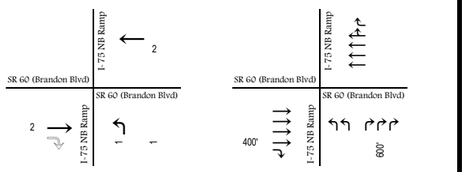
Figure 19

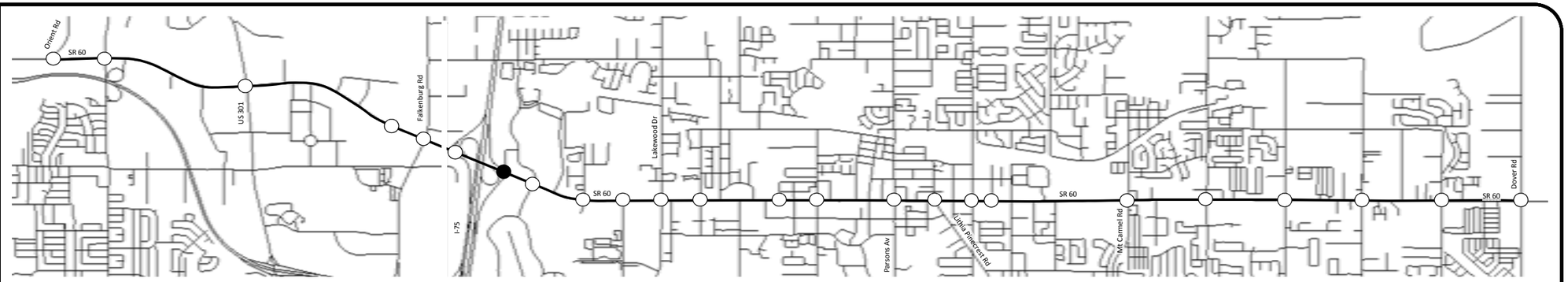
SR 60 (Adamo Dr) & I-75 SB Ramp

Traffic Operations Analysis



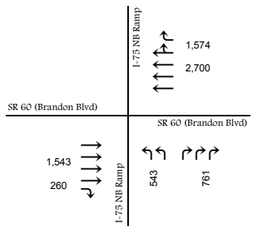
Phasing Diagram

Intersection Geometry

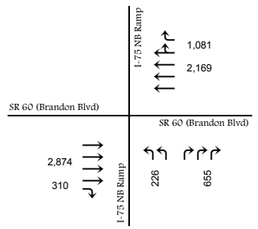


Hourly Volumes

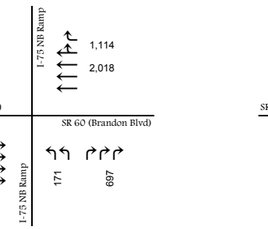
AM Peak ~ 7:15 am - 8:15 am



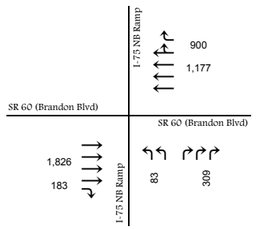
MD Peak ~ 12:15 pm - 1:15 pm



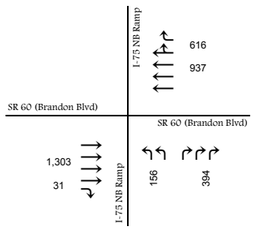
PM Peak ~ 5:00 pm - 6:00 pm



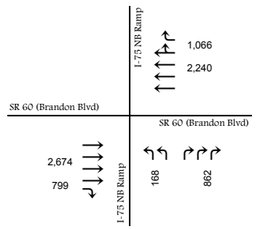
PM Offpeak ~ 7:30 pm - 8:30 pm



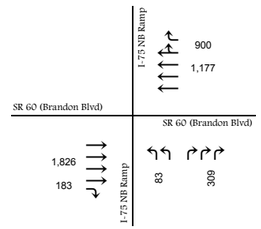
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

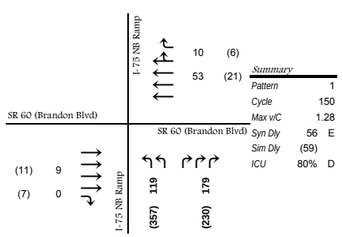


Weekend PM Peak ~ 7:30 pm - 8:30 pm

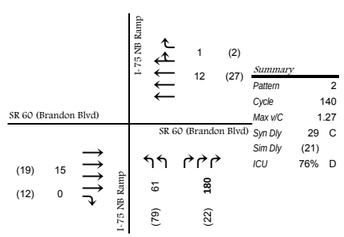


Existing Operations

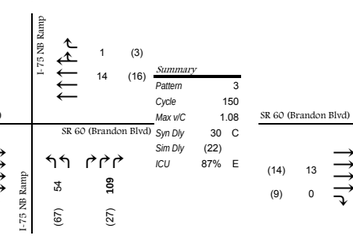
AM Peak ~ 7:15 am - 8:15 am



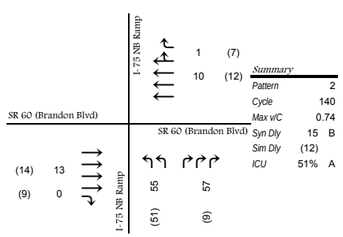
MD Peak ~ 12:15 pm - 1:15 pm



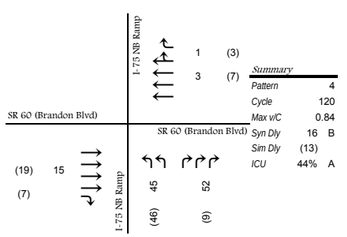
PM Peak ~ 5:00 pm - 6:00 pm



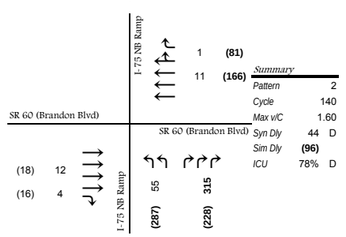
PM Offpeak ~ 7:30 pm - 8:30 pm



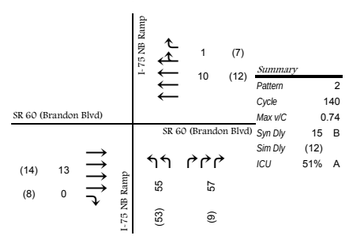
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

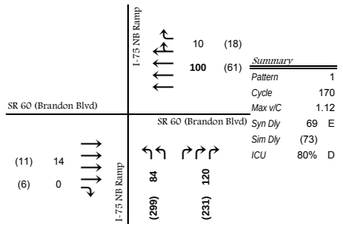


Weekend PM Peak ~ 7:30 pm - 8:30 pm

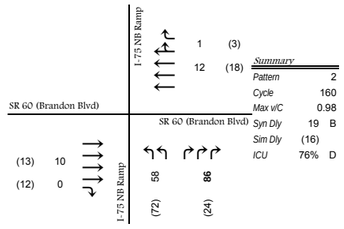


Implemented Operations

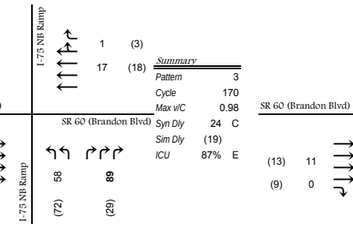
AM Peak ~ 7:15 am - 8:15 am



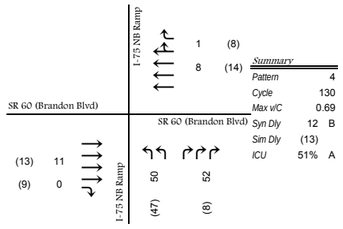
MD Peak ~ 12:15 pm - 1:15 pm



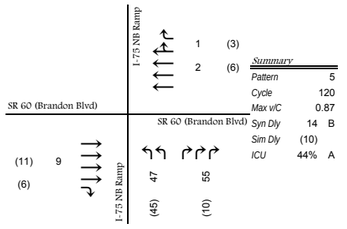
PM Peak ~ 5:00 pm - 6:00 pm



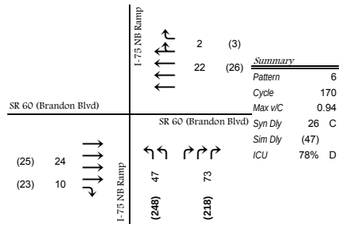
PM Offpeak ~ 7:30 pm - 8:30 pm



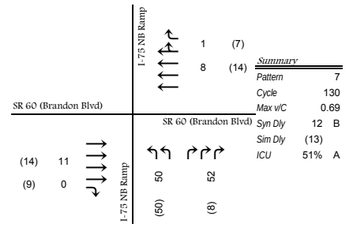
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (65) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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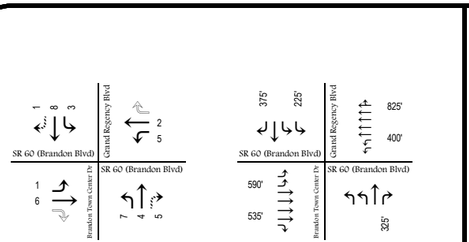
Figure 20

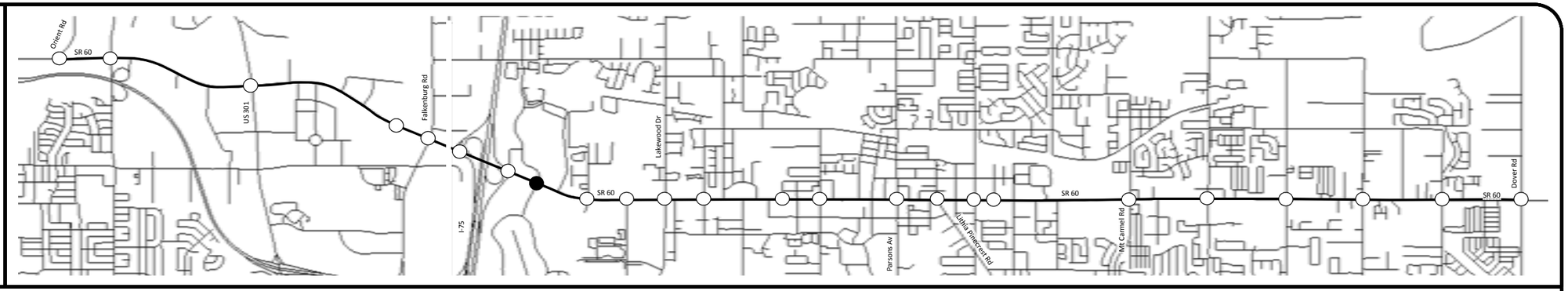
SR 60 (Brandon Blvd) & I-75 NB Ramp

Traffic Operations Analysis

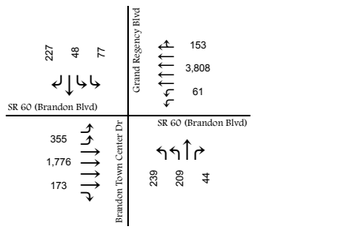


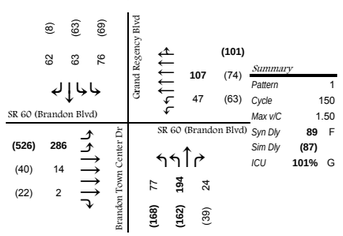
Phasing Diagram

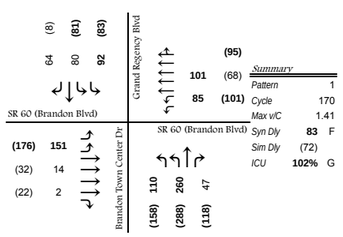
Intersection Geometry

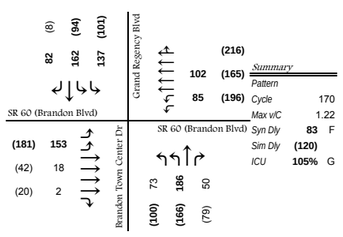


AM Peak ~ 7:15 am - 8:15 am

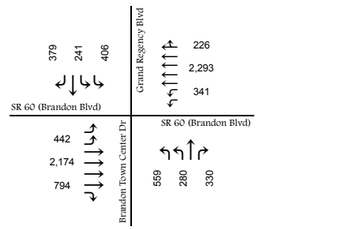


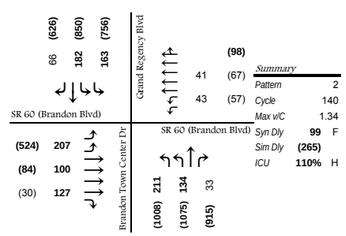


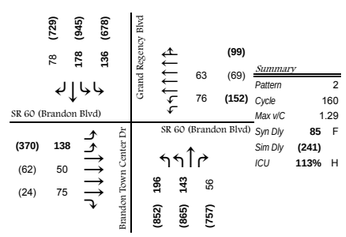


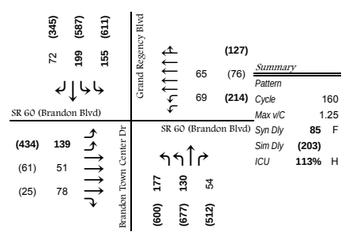


MD Peak ~ 12:15 pm - 1:15 pm

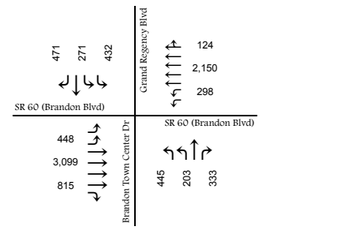


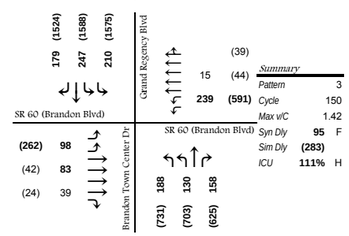


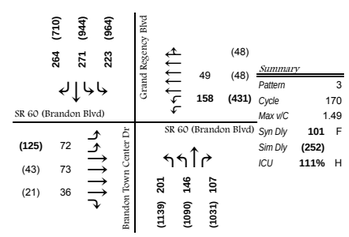


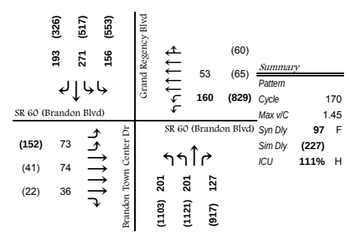


PM Peak ~ 5:00 pm - 6:00 pm

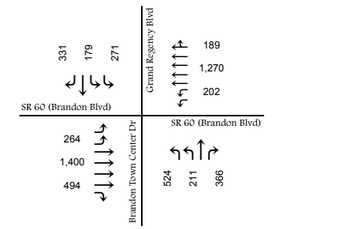


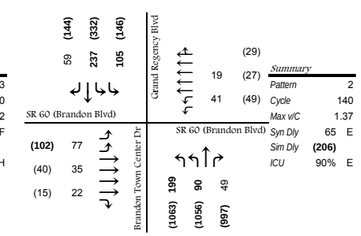


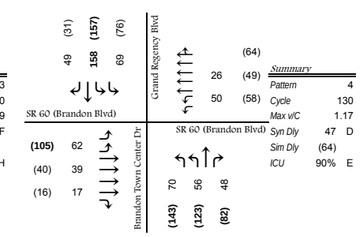


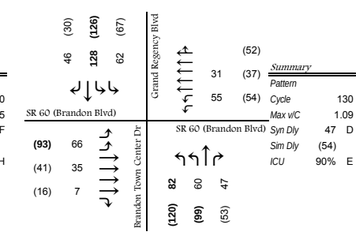


PM Offpeak ~ 7:30 pm - 8:30 pm

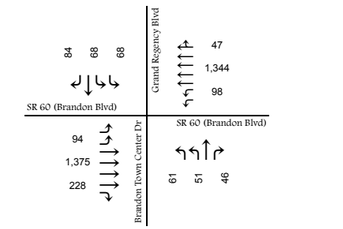


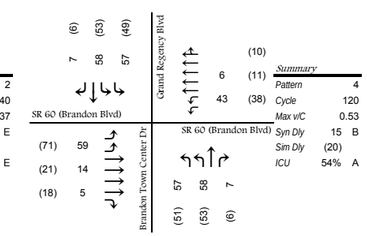


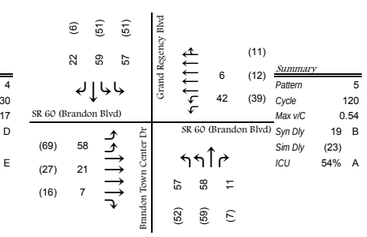


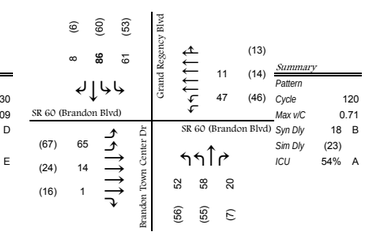


Weekend AM Peak ~ 8:00 am - 9:00 am

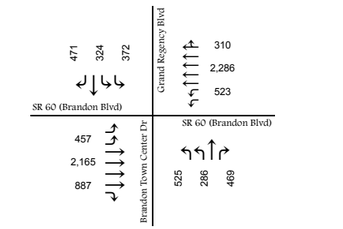


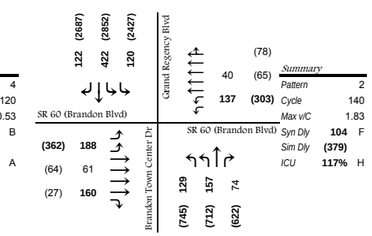


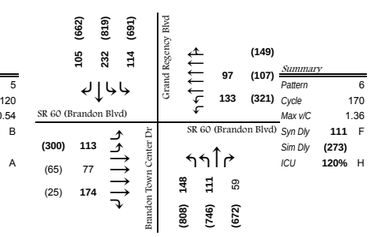


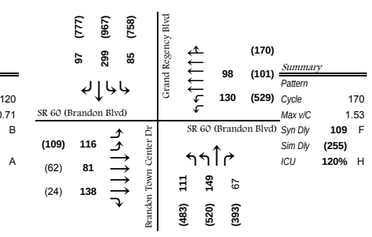


Weekend MD Peak ~ 12:00 pm - 1:00 pm

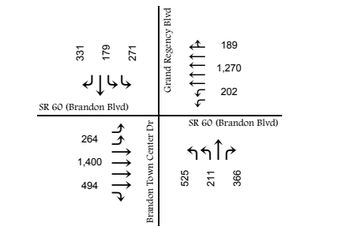


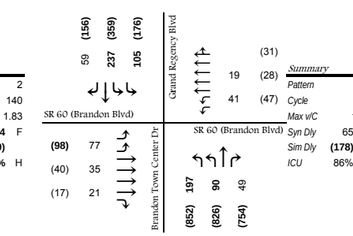


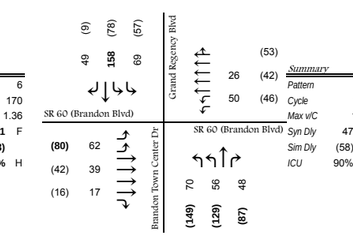


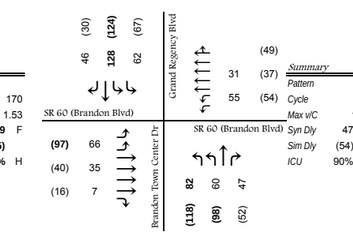


Weekend PM Peak ~ 7:30 pm - 8:30 pm









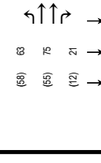
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

* Split phase operation on the northbound and southbound approaches.

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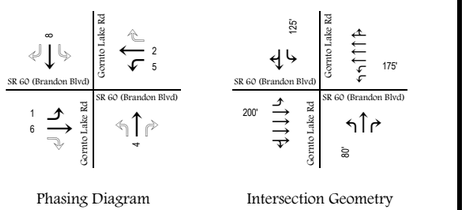
Figure 21

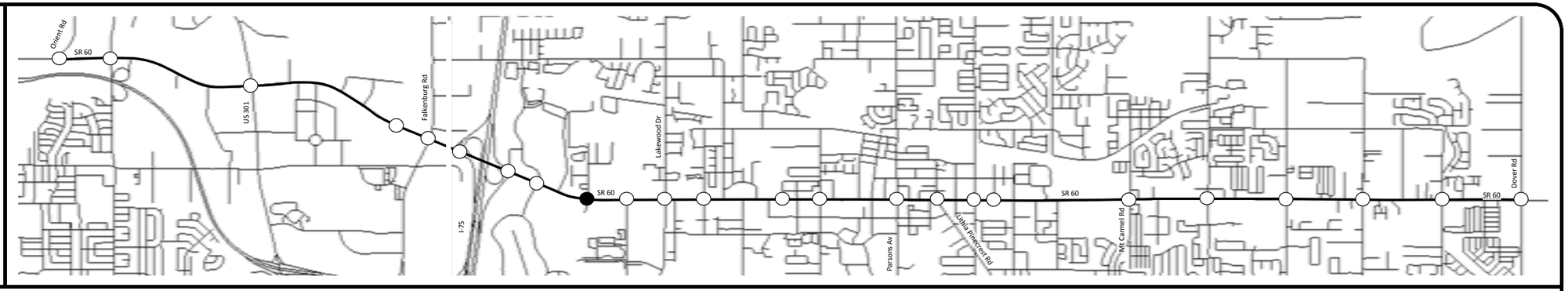
SR 60 (Brandon Blvd) & Grand Regency Blvd

Traffic Operations Analysis

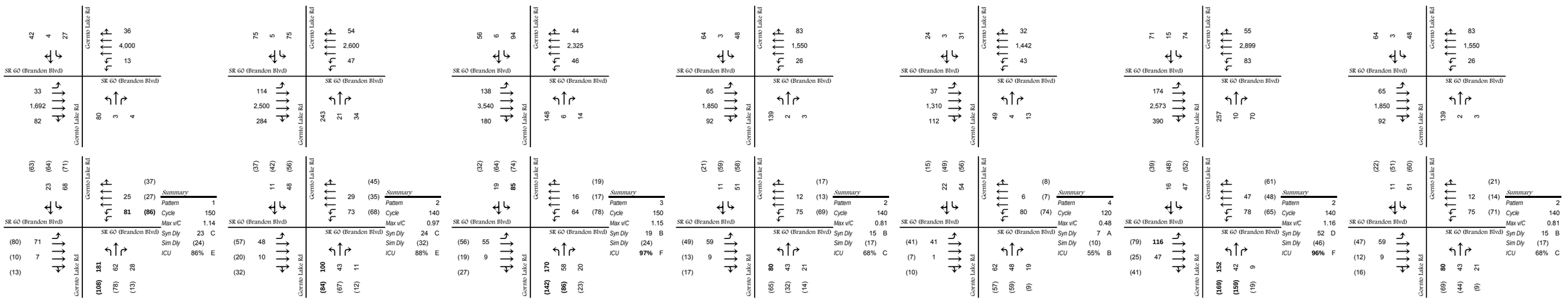


Phasing Diagram

Intersection Geometry

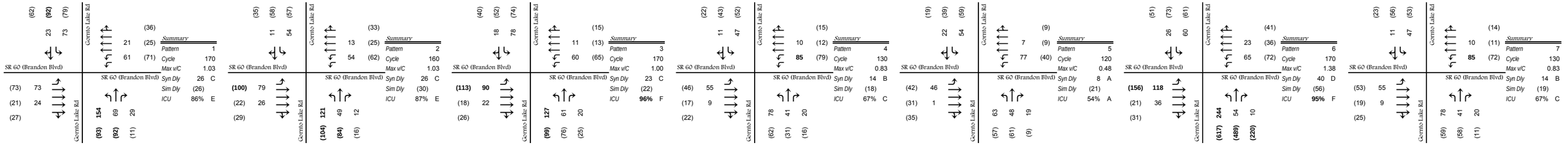


Hourly Volumes



Existing Operations

Implemented Operations



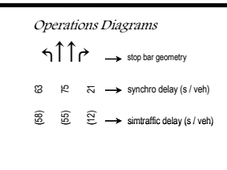
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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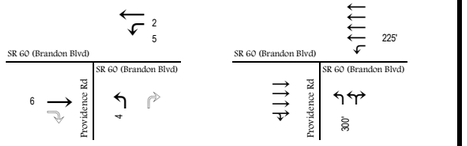
Figure 22

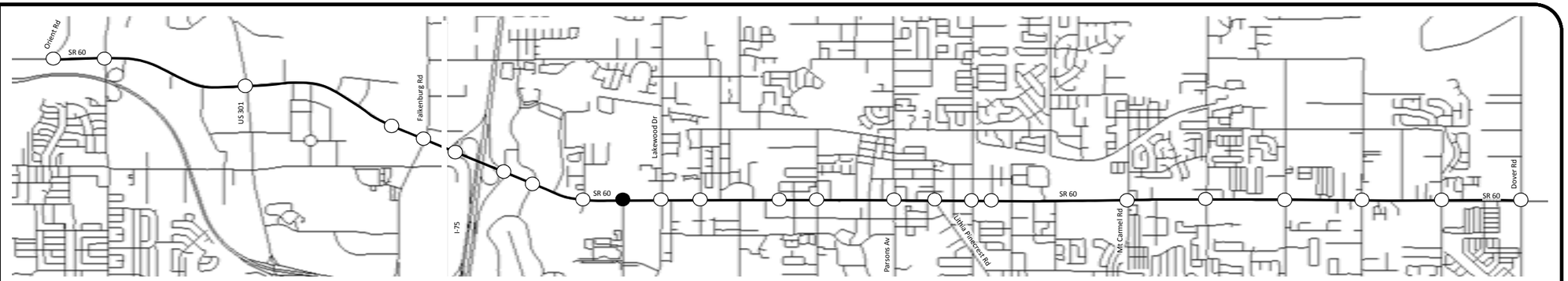
SR 60 (Brandon Blvd) & Gornto Lake Rd

Traffic Operations Analysis



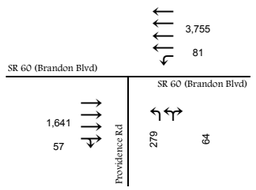
Phasing Diagram

Intersection Geometry

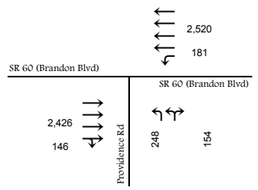


Hourly Volumes

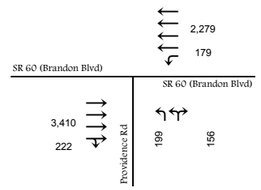
AM Peak ~ 7:15 am - 8:15 am



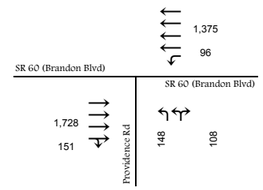
MD Peak ~ 12:15 pm - 1:15 pm



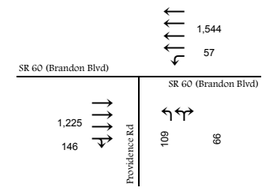
PM Peak ~ 5:00 pm - 6:00 pm



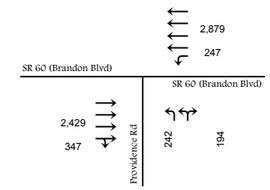
PM Offpeak ~ 7:30 pm - 8:30 pm



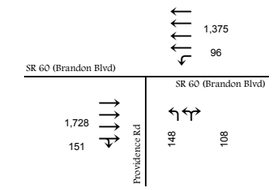
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

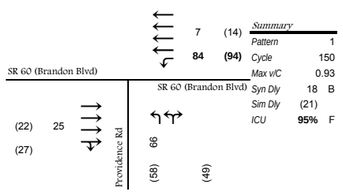


Weekend PM Peak ~ 7:30 pm - 8:30 pm

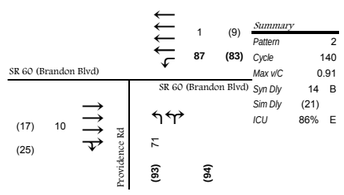


Existing Operations

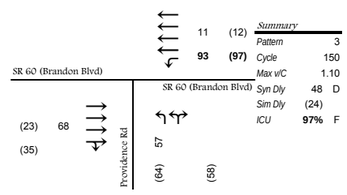
AM Peak ~ 7:15 am - 8:15 am



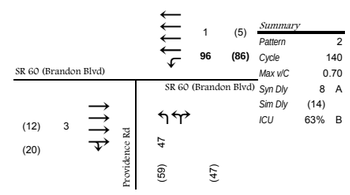
MD Peak ~ 12:15 pm - 1:15 pm



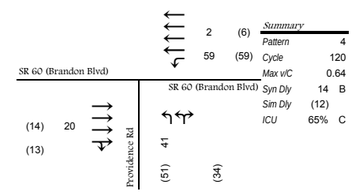
PM Peak ~ 5:00 pm - 6:00 pm



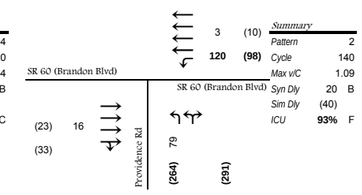
PM Offpeak ~ 7:30 pm - 8:30 pm



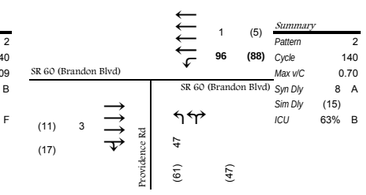
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

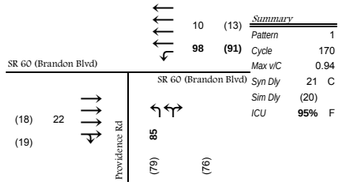


Weekend PM Peak ~ 7:30 pm - 8:30 pm

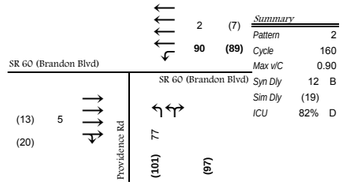


Implemented Operations

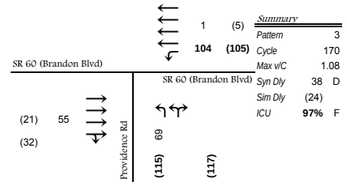
AM Peak ~ 7:15 am - 8:15 am



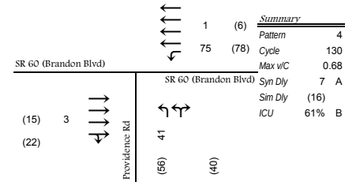
MD Peak ~ 12:15 pm - 1:15 pm



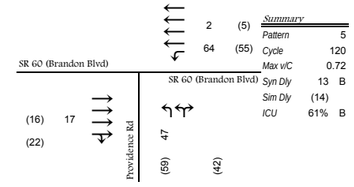
PM Peak ~ 5:00 pm - 6:00 pm



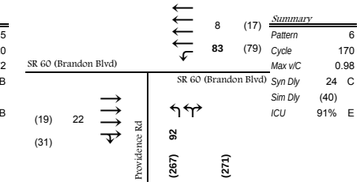
PM Offpeak ~ 7:30 pm - 8:30 pm



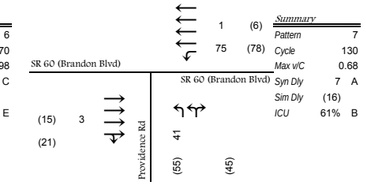
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



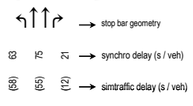
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



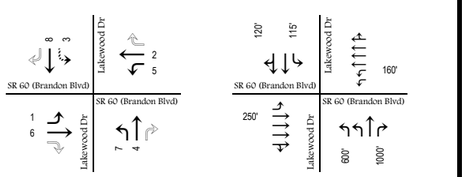
Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc.
TRANSPORTATION ENGINEERS

Figure 23

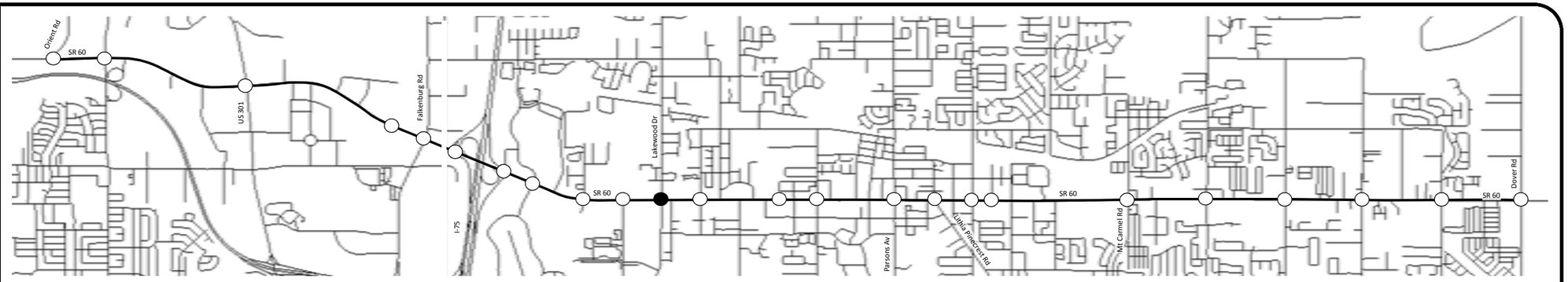
SR 60 (Brandon Blvd) & Providence Rd

Traffic Operations Analysis



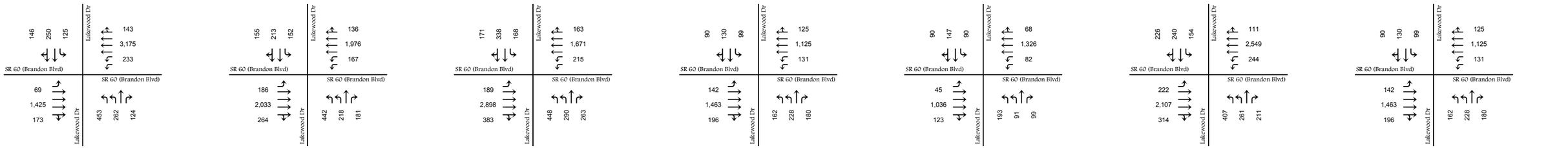
Phasing Diagram

Intersection Geometry

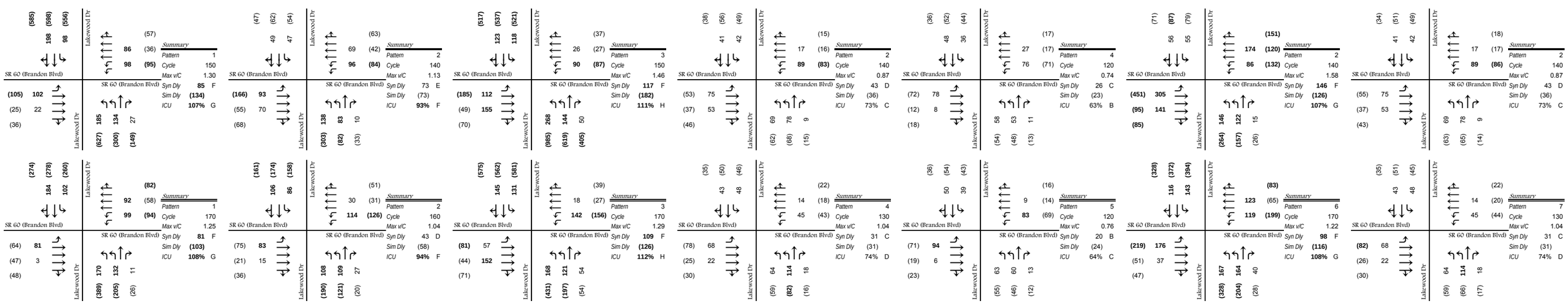


Existing Operations

Hourly Volumes



Operations



Implemented Operations

HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

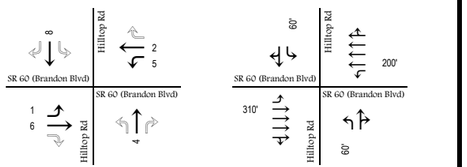
Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc. TRANSPORTATION ENGINEERS

Figure 24

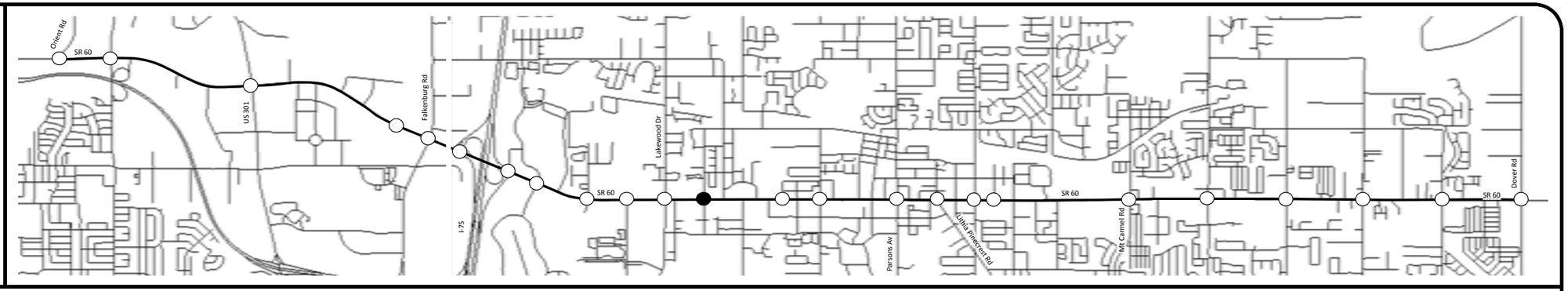
SR 60 (Brandon Blvd) & Lakewood Dr

Traffic Operations Analysis



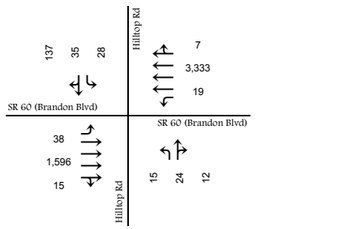
Phasing Diagram

Intersection Geometry

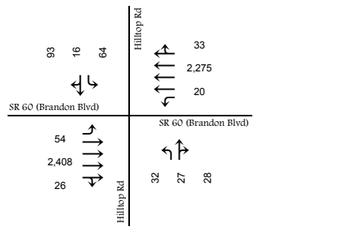


Hourly Volumes

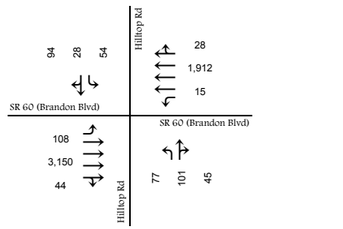
AM Peak ~ 7:15 am - 8:15 am



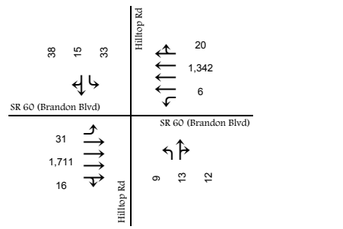
MD Peak ~ 12:15 pm - 1:15 pm



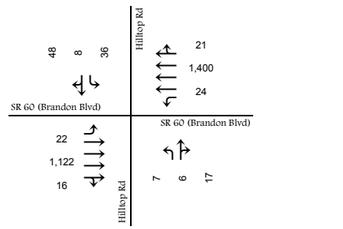
PM Peak ~ 5:00 pm - 6:00 pm



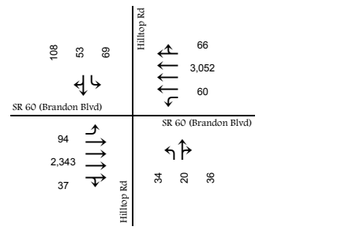
PM Offpeak ~ 7:30 pm - 8:30 pm



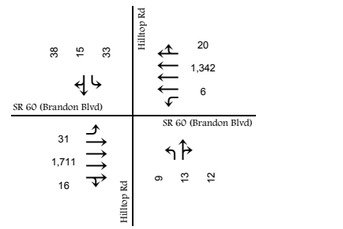
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

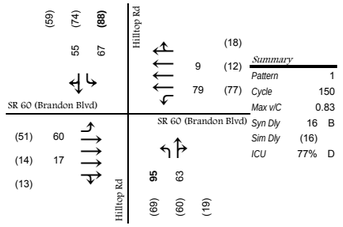


Weekend PM Peak ~ 7:30 pm - 8:30 pm

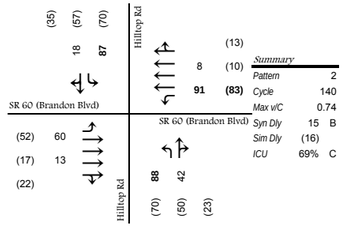


Existing Operations

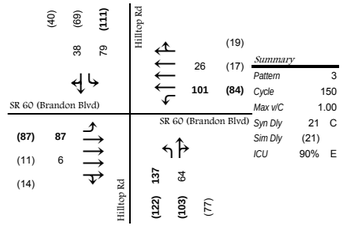
AM Peak ~ 7:15 am - 8:15 am



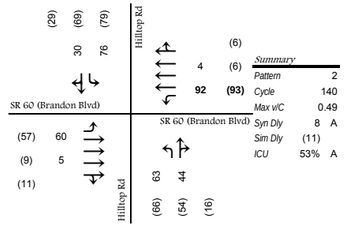
MD Peak ~ 12:15 pm - 1:15 pm



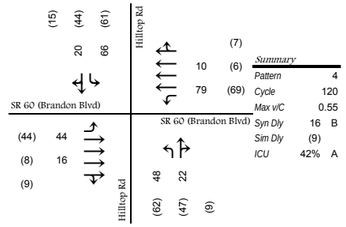
PM Peak ~ 5:00 pm - 6:00 pm



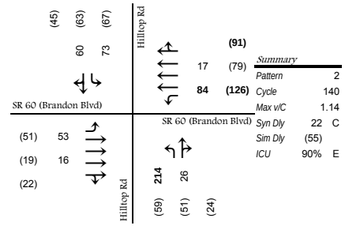
PM Offpeak ~ 7:30 pm - 8:30 pm



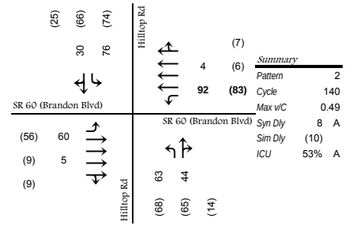
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

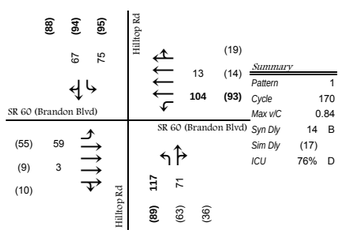


Weekend PM Peak ~ 7:30 pm - 8:30 pm

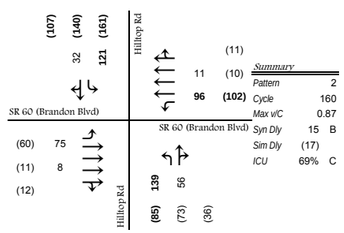


Implemented Operations

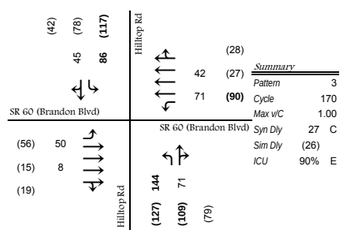
AM Peak ~ 7:15 am - 8:15 am



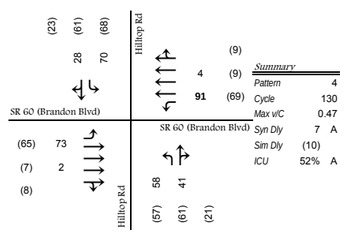
MD Peak ~ 12:15 pm - 1:15 pm



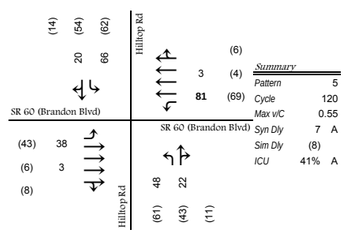
PM Peak ~ 5:00 pm - 6:00 pm



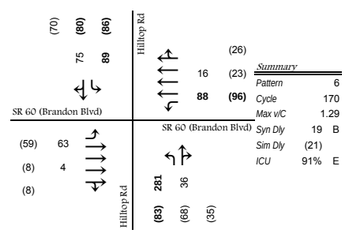
PM Offpeak ~ 7:30 pm - 8:30 pm



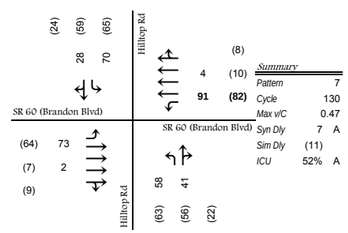
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



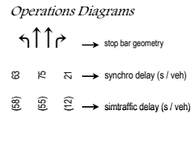
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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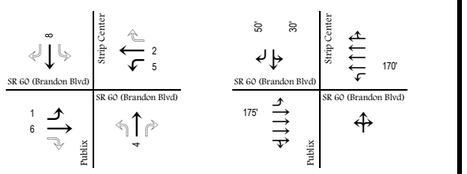
Figure 25

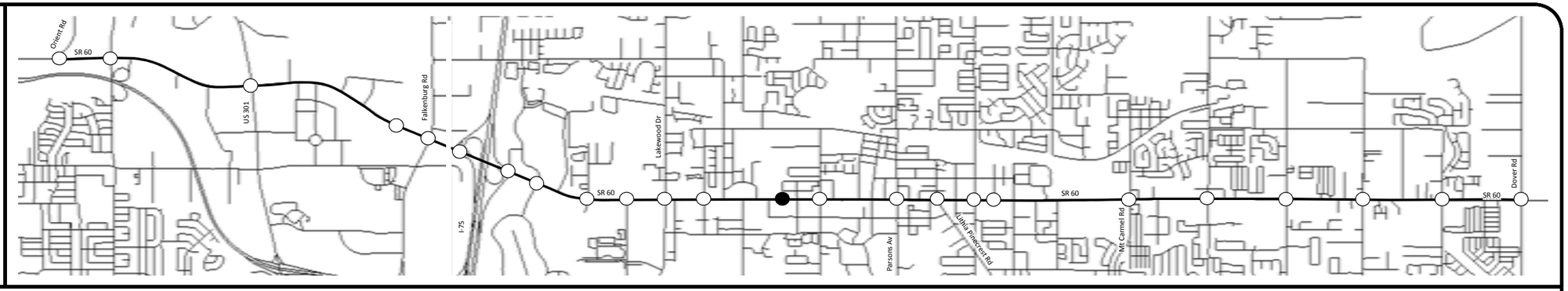
SR 60 (Brandon Blvd) & Hilltop Rd

Traffic Operations Analysis



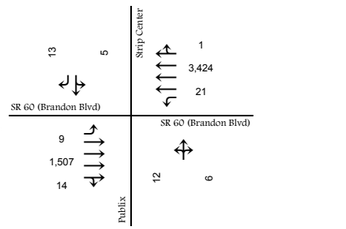
Phasing Diagram

Intersection Geometry

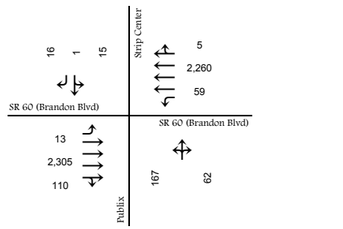


Hourly Volumes

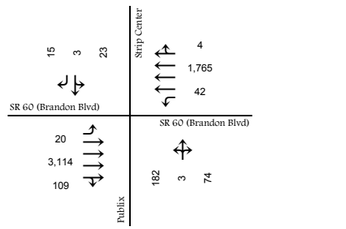
AM Peak ~ 7:15 am - 8:15 am



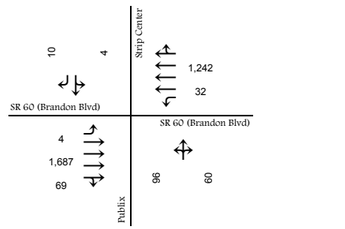
MD Peak ~ 12:15 pm - 1:15 pm



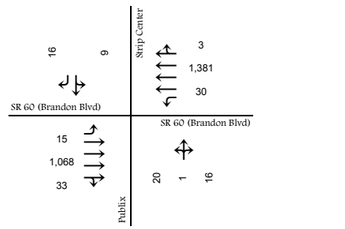
PM Peak ~ 5:00 pm - 6:00 pm



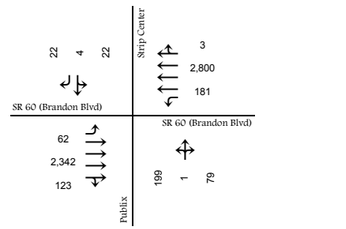
PM Offpeak ~ 7:30 pm - 8:30 pm



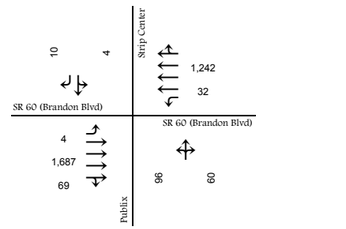
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

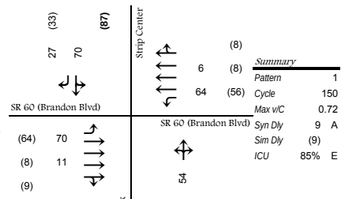


Weekend PM Peak ~ 7:30 pm - 8:30 pm

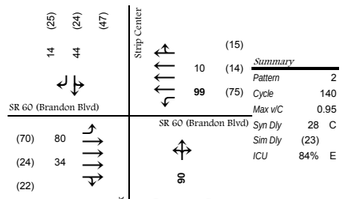


Existing Operations

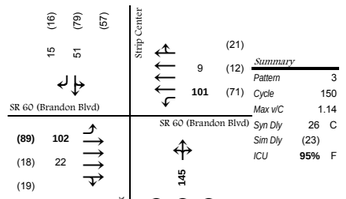
AM Peak ~ 7:15 am - 8:15 am



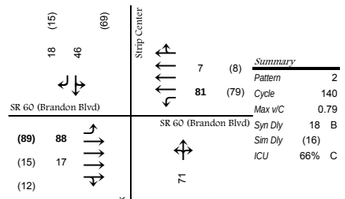
MD Peak ~ 12:15 pm - 1:15 pm



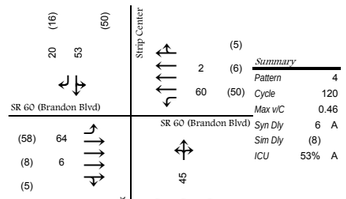
PM Peak ~ 5:00 pm - 6:00 pm



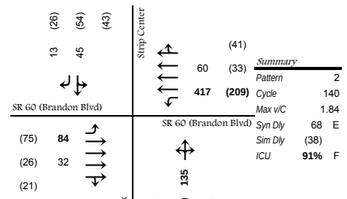
PM Offpeak ~ 7:30 pm - 8:30 pm



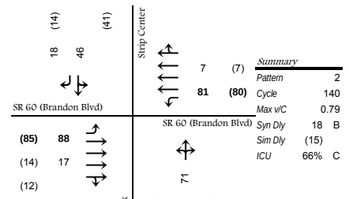
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

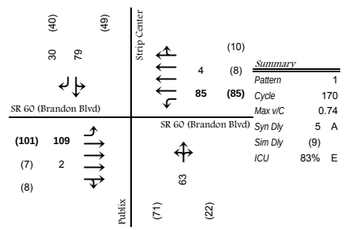


Weekend PM Peak ~ 7:30 pm - 8:30 pm

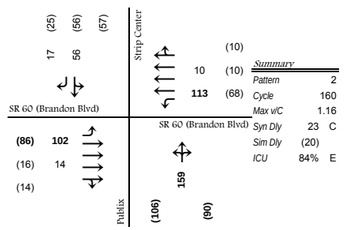


Implemented Operations

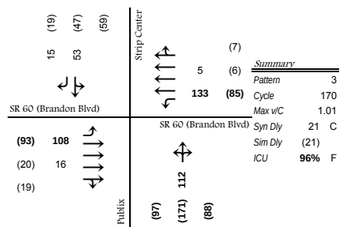
AM Peak ~ 7:15 am - 8:15 am



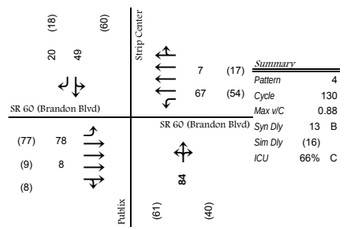
MD Peak ~ 12:15 pm - 1:15 pm



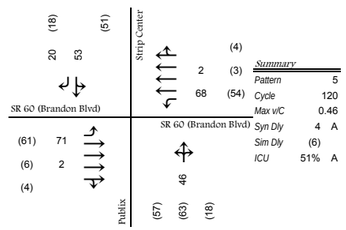
PM Peak ~ 5:00 pm - 6:00 pm



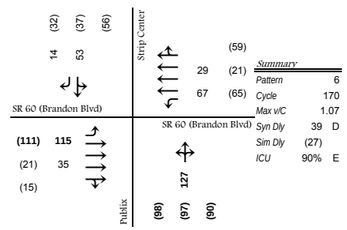
PM Offpeak ~ 7:30 pm - 8:30 pm



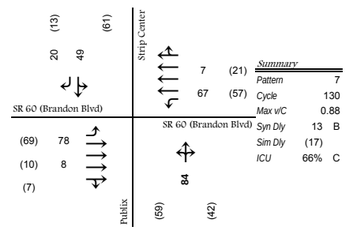
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

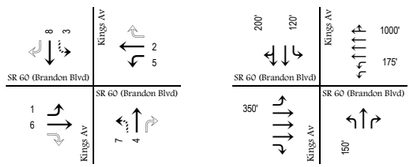
(58) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Figure 26

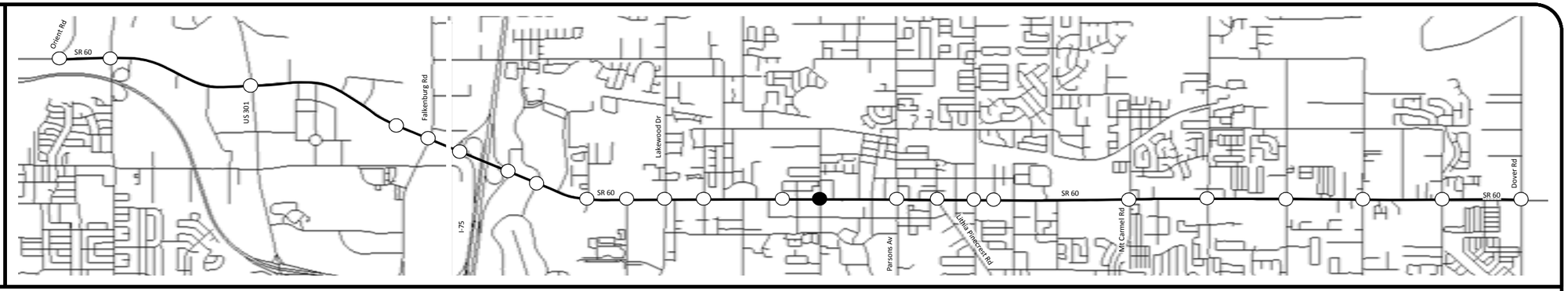
SR 60 (Brandon Blvd) & Strip Center

Traffic Operations Analysis

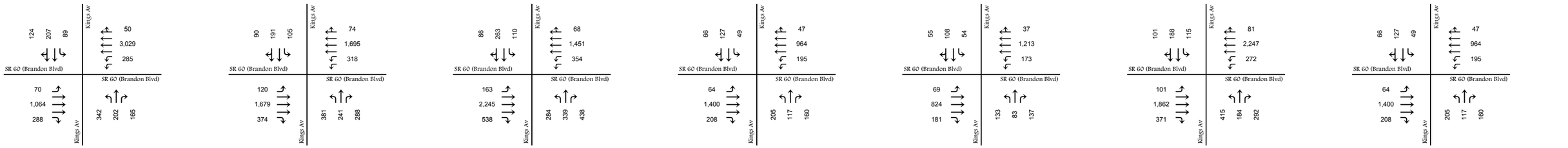


Phasing Diagram

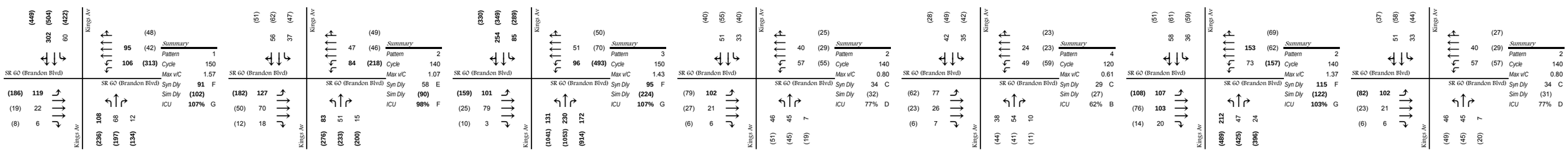
Intersection Geometry



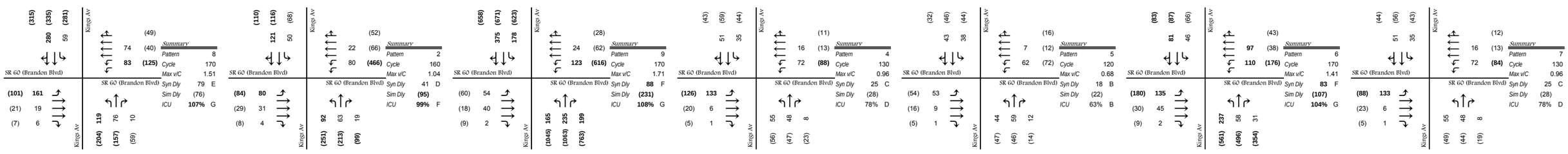
Hourly Volumes



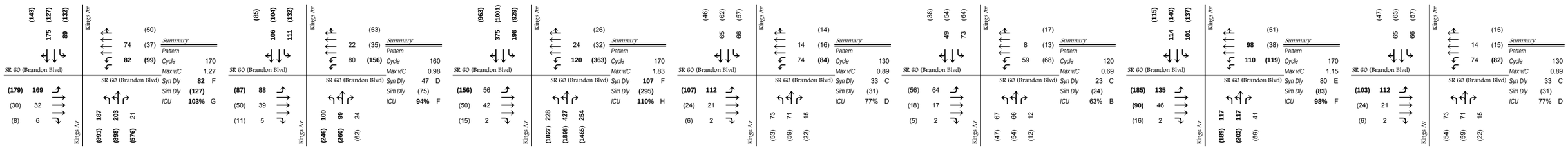
Existing Operations



Implemented Operations



Other Potential Improvements*



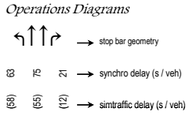
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

* Split phase operation on the northbound and southbound approaches.
* Convert the existing northbound through lane to a shared left-through lane.

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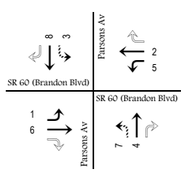
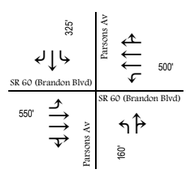
Figure 27

SR 60 (Brandon Blvd) & Kings Av

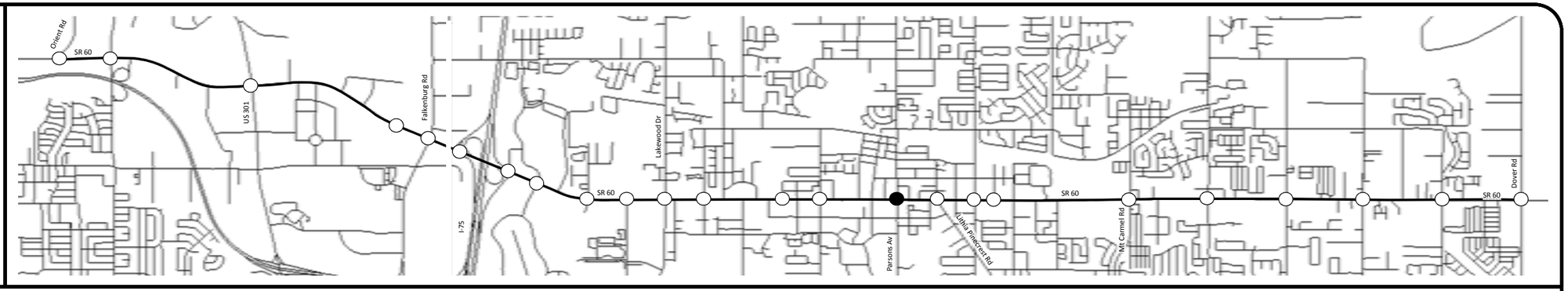
Traffic Operations Analysis



Phasing Diagram

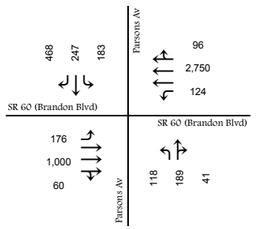


Intersection Geometry

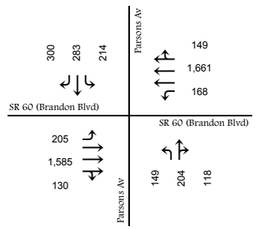


Hourly Volumes

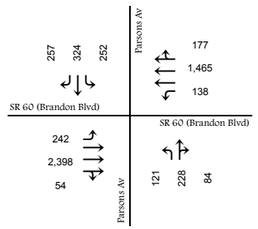
AM Peak ~ 7:15 am - 8:15 am



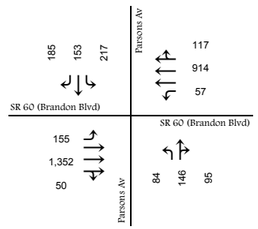
MD Peak ~ 12:15 pm - 1:15 pm



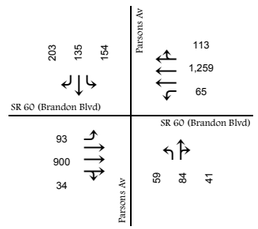
PM Peak ~ 5:00 pm - 6:00 pm



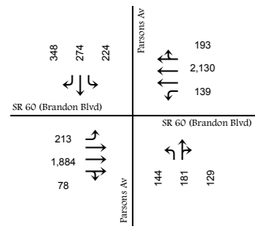
PM Offpeak ~ 7:30 pm - 8:30 pm



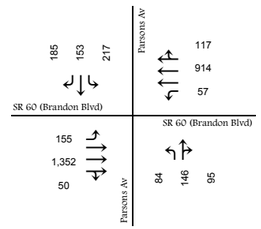
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

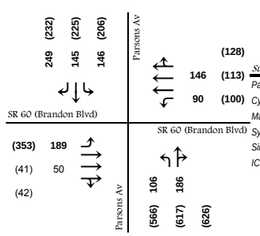


Weekend PM Peak ~ 7:30 pm - 8:30 pm



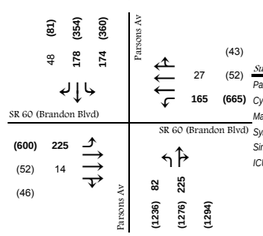
Existing Operations

AM Peak ~ 7:15 am - 8:15 am



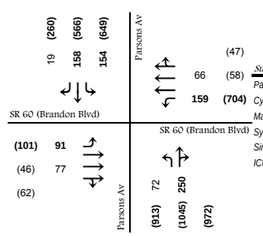
Summary	
Pattern	1
Cycle	150
Max v/C	1.46
Syn Dly	138 F
Sim Dly	(156)
ICU	116% H

MD Peak ~ 12:15 pm - 1:15 pm



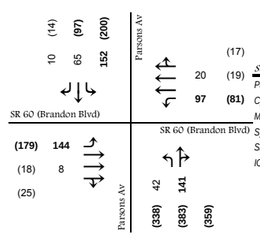
Summary	
Pattern	2
Cycle	150
Max v/C	1.36
Syn Dly	67 E
Sim Dly	(208)
ICU	104% G

PM Peak ~ 5:00 pm - 6:00 pm



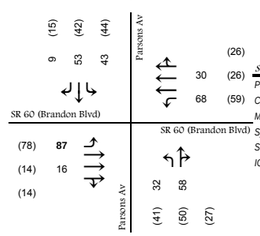
Summary	
Pattern	3
Cycle	150
Max v/C	1.42
Syn Dly	91 F
Sim Dly	(193)
ICU	115% H

PM Offpeak ~ 7:30 pm - 8:30 pm



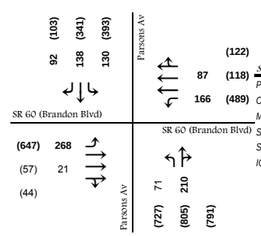
Summary	
Pattern	2
Cycle	140
Max v/C	1.18
Syn Dly	42 D
Sim Dly	(71)
ICU	84% E

Weekend AM Peak ~ 8:00 am - 9:00 am



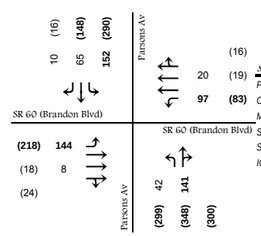
Summary	
Pattern	4
Cycle	120
Max v/C	0.85
Syn Dly	31 C
Sim Dly	(26)
ICU	73% C

Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary	
Pattern	2
Cycle	140
Max v/C	1.46
Syn Dly	86 F
Sim Dly	(191)
ICU	116% H

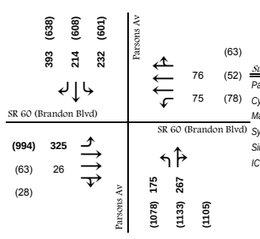
Weekend PM Peak ~ 7:30 pm - 8:30 pm



Summary	
Pattern	2
Cycle	140
Max v/C	1.18
Syn Dly	42 D
Sim Dly	(77)
ICU	84% E

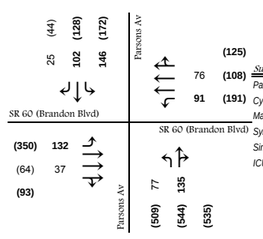
Implemented Operations

AM Peak ~ 7:15 am - 8:15 am



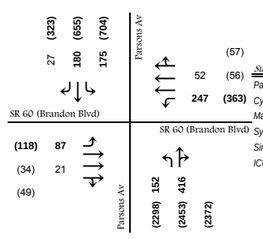
Summary	
Pattern	8
Cycle	170
Max v/C	1.78
Syn Dly	127 F
Sim Dly	(224)
ICU	117% H

MD Peak ~ 12:15 pm - 1:15 pm



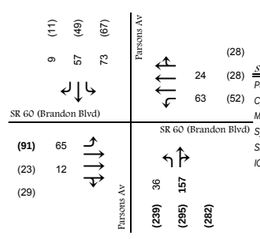
Summary	
Pattern	2
Cycle	160
Max v/C	1.15
Syn Dly	72 E
Sim Dly	(140)
ICU	105% G

PM Peak ~ 5:00 pm - 6:00 pm



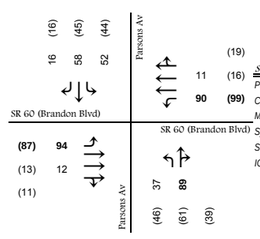
Summary	
Pattern	9
Cycle	170
Max v/C	1.80
Syn Dly	(244)
Sim Dly	80 E
ICU	115% H

PM Offpeak ~ 7:30 pm - 8:30 pm



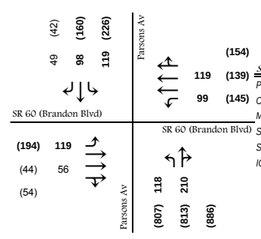
Summary	
Pattern	4
Cycle	130
Max v/C	1.18
Syn Dly	36 D
Sim Dly	(54)
ICU	84% E

Weekend AM Peak ~ 8:00 am - 9:00 am



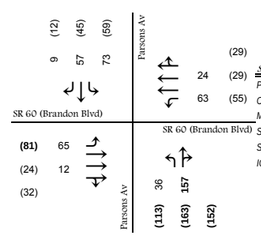
Summary	
Pattern	5
Cycle	120
Max v/C	0.91
Syn Dly	25 C
Sim Dly	(24)
ICU	73% D

Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary	
Pattern	6
Cycle	170
Max v/C	1.31
Syn Dly	98 F
Sim Dly	(155)
ICU	116% H

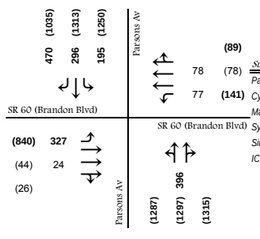
Weekend PM Peak ~ 7:30 pm - 8:30 pm



Summary	
Pattern	7
Cycle	130
Max v/C	1.18
Syn Dly	36 D
Sim Dly	(42)
ICU	84% E

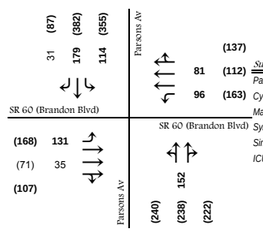
Other Potential Improvements*

AM Peak ~ 7:15 am - 8:15 am



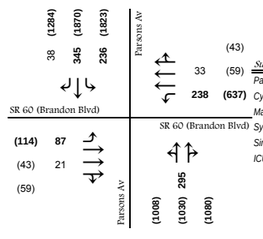
Summary	
Pattern	
Cycle	170
Max v/C	1.96
Syn Dly	148 F
Sim Dly	(303)
ICU	119% H

MD Peak ~ 12:15 pm - 1:15 pm



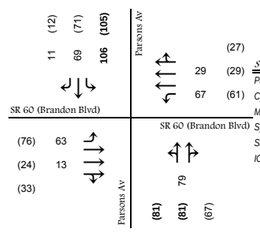
Summary	
Pattern	
Cycle	160
Max v/C	1.22
Syn Dly	80 E
Sim Dly	(134)
ICU	103% G

PM Peak ~ 5:00 pm - 6:00 pm



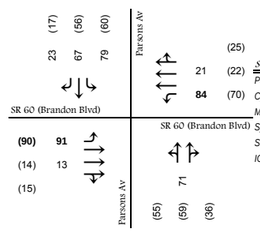
Summary	
Pattern	
Cycle	170
Max v/C	1.63
Syn Dly	84 F
Sim Dly	(290)
ICU	114% H

PM Offpeak ~ 7:30 pm - 8:30 pm



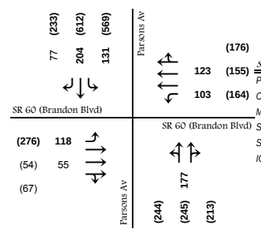
Summary	
Pattern	
Cycle	130
Max v/C	0.99
Syn Dly	36 D
Sim Dly	(40)
ICU	80% D

Weekend AM Peak ~ 8:00 am - 9:00 am



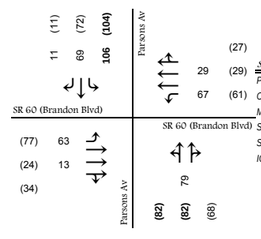
Summary	
Pattern	
Cycle	120
Max v/C	0.84
Syn Dly	31 C
Sim Dly	(27)
ICU	73% D

Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary	
Pattern	
Cycle	170
Max v/C	1.27
Syn Dly	106 F
Sim Dly	(170)
ICU	122% H

Weekend PM Peak ~ 7:30 pm - 8:30 pm



Summary	
Pattern	
Cycle	130
Max v/C	0.99
Syn Dly	36 D
Sim Dly	(40)
ICU	80% D

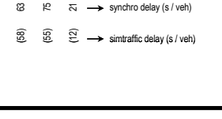
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

* Split phase operation on the northbound and southbound approaches.
* Convert the existing northbound left turn lane to a shared left-through lane.

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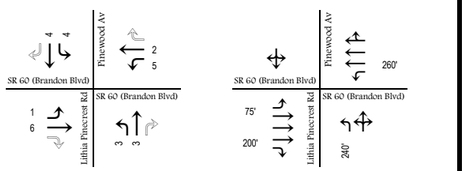
Figure 28

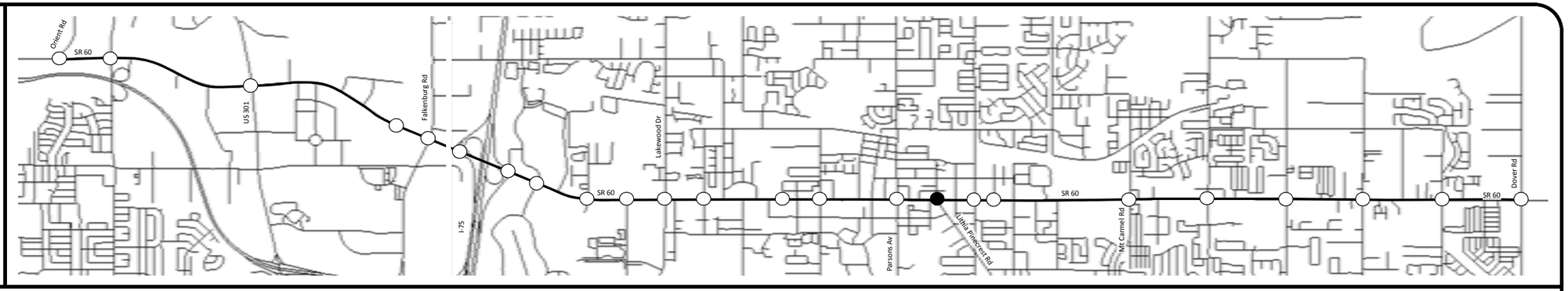
SR 60 (Brandon Blvd) & Parsons Av

Traffic Operations Analysis



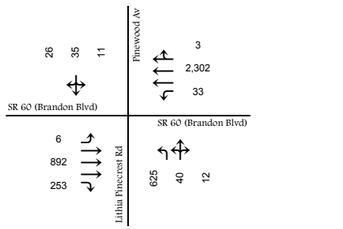
Phasing Diagram

Intersection Geometry

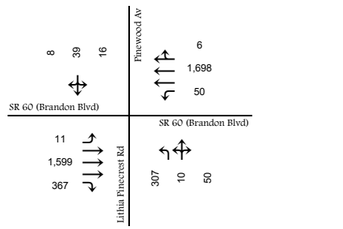


Hourly Volumes

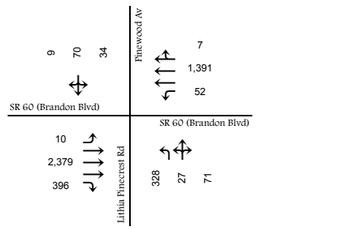
AM Peak ~ 7:15 am - 8:15 am



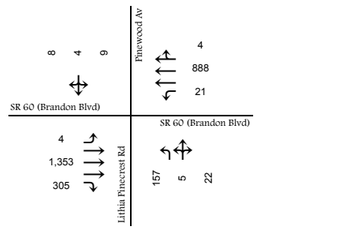
MD Peak ~ 12:15 pm - 1:15 pm



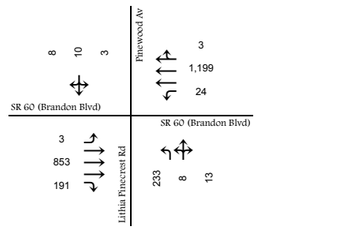
PM Peak ~ 5:00 pm - 6:00 pm



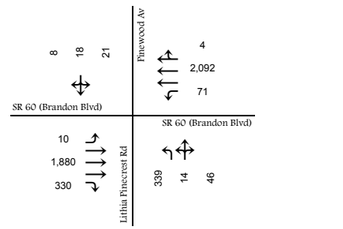
PM Offpeak ~ 7:30 pm - 8:30 pm



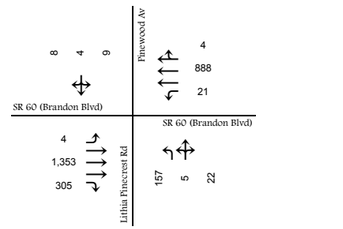
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

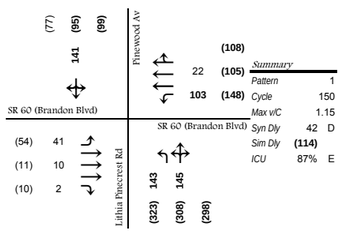


Weekend PM Peak ~ 7:30 pm - 8:30 pm

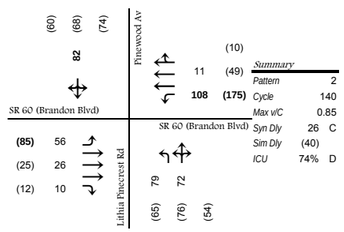


Existing Operations

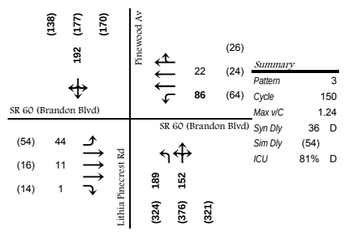
AM Peak ~ 7:15 am - 8:15 am



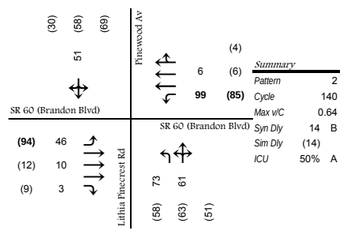
MD Peak ~ 12:15 pm - 1:15 pm



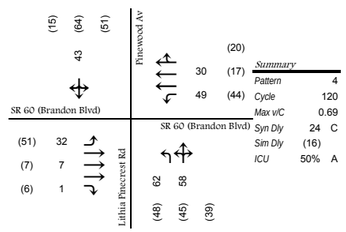
PM Peak ~ 5:00 pm - 6:00 pm



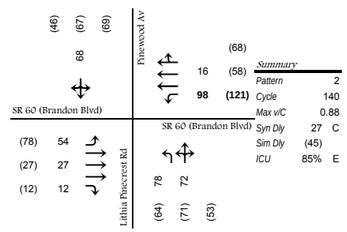
PM Offpeak ~ 7:30 pm - 8:30 pm



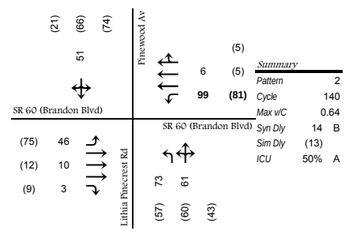
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

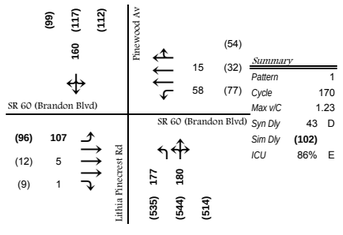


Weekend PM Peak ~ 7:30 pm - 8:30 pm

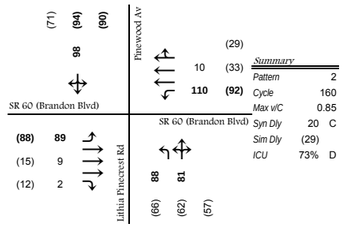


Implemented Operations

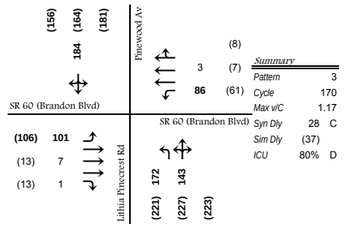
AM Peak ~ 7:15 am - 8:15 am



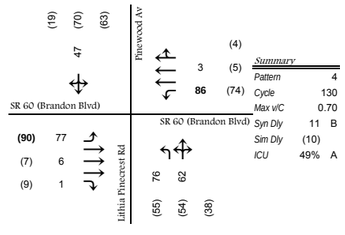
MD Peak ~ 12:15 pm - 1:15 pm



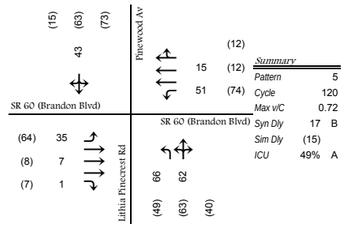
PM Peak ~ 5:00 pm - 6:00 pm



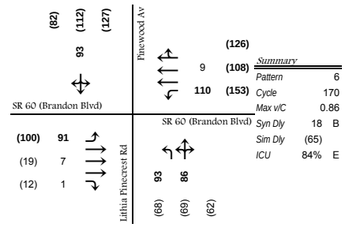
PM Offpeak ~ 7:30 pm - 8:30 pm



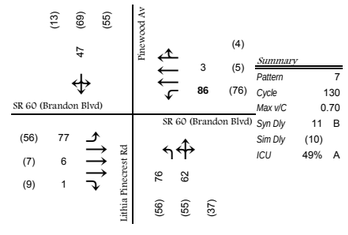
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



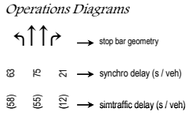
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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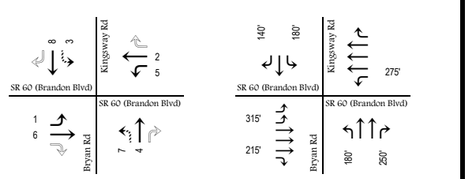
Figure 29

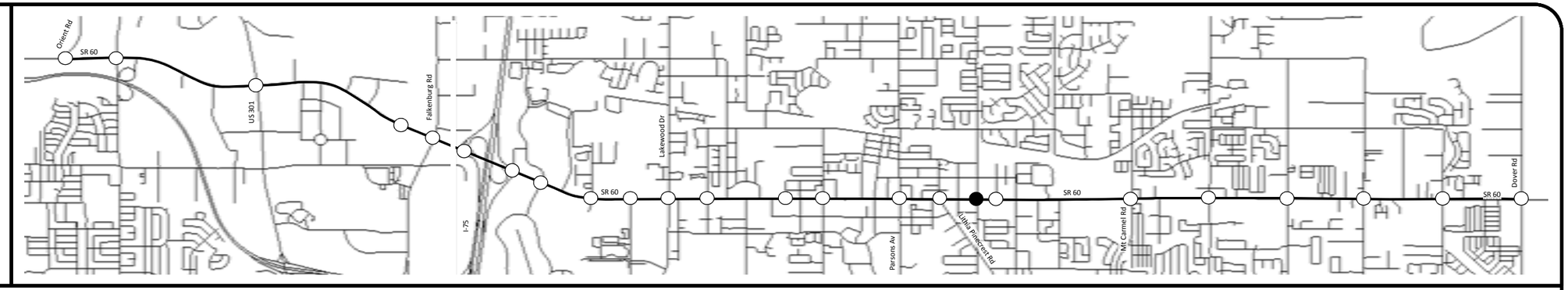
SR 60 (Brandon Blvd) & Pinewood Av

Traffic Operations Analysis



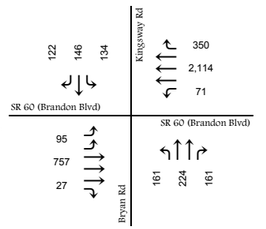
Phasing Diagram

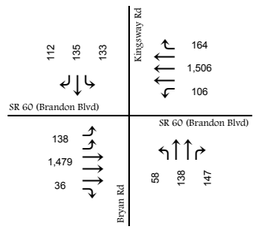
Intersection Geometry

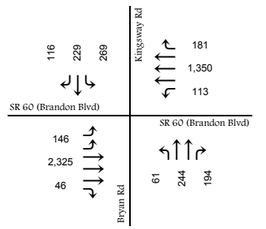


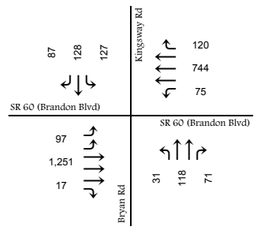
Existing Operations

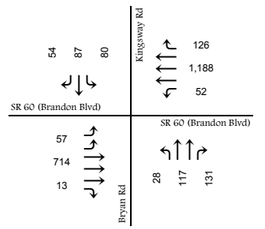
Hourly Volumes

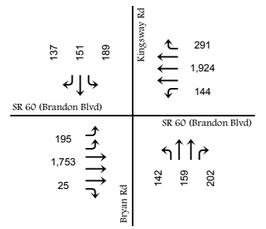


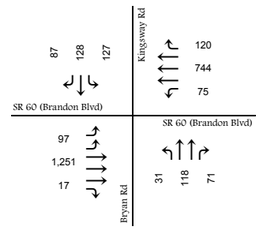




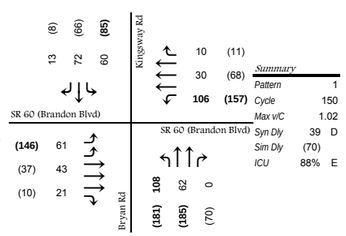


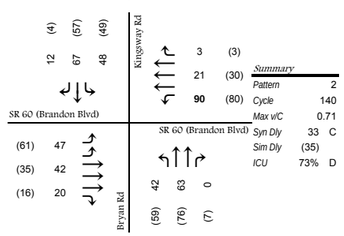


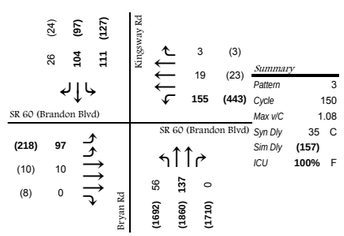


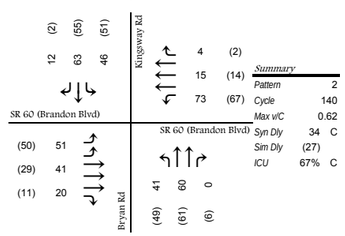


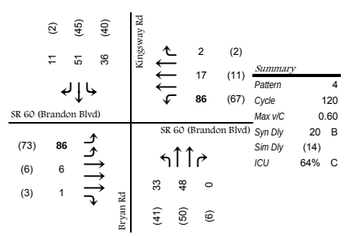
Operations

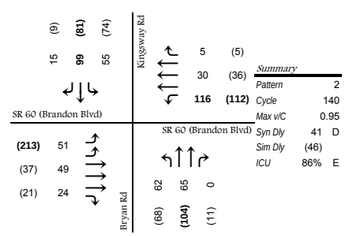


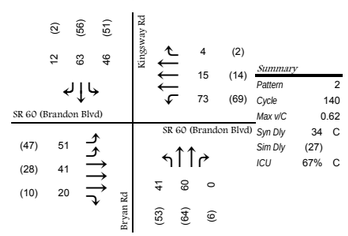




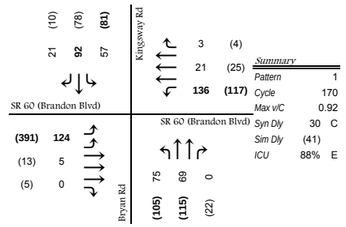


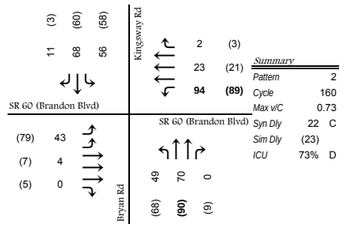


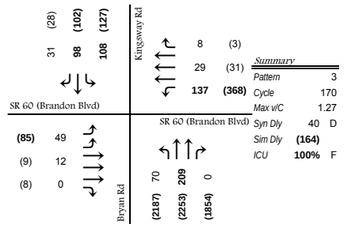


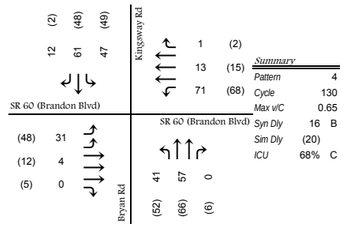


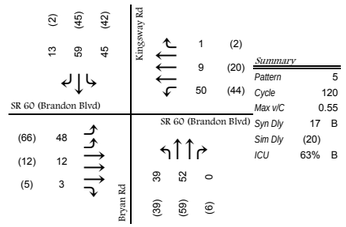
Implemented Operations

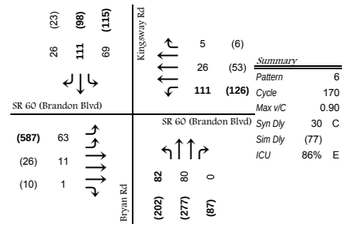


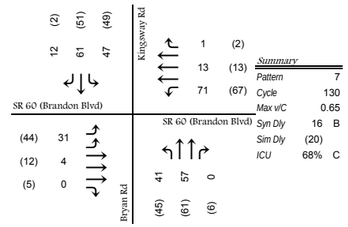












HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

↑↑↑ → stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 10% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc.
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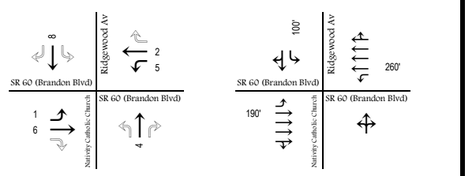
Figure 30

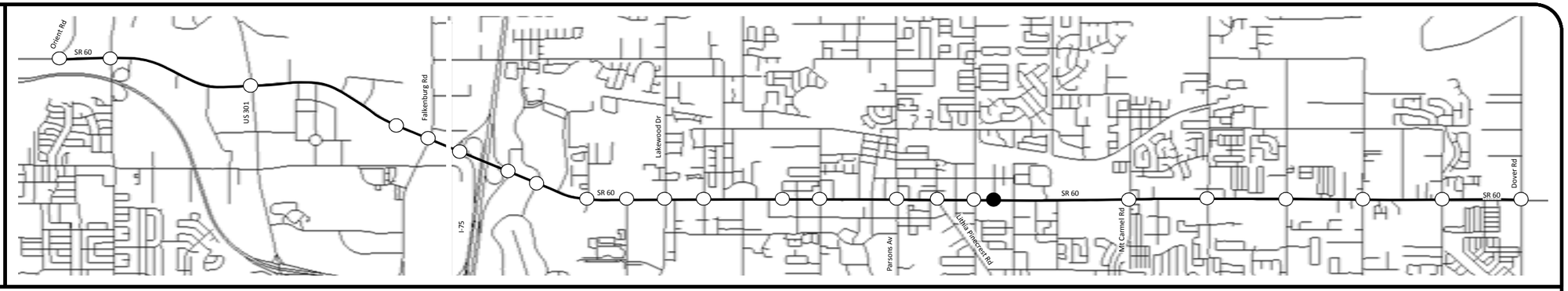
SR 60 (Brandon Blvd) & Kingsway Rd

Traffic Operations Analysis



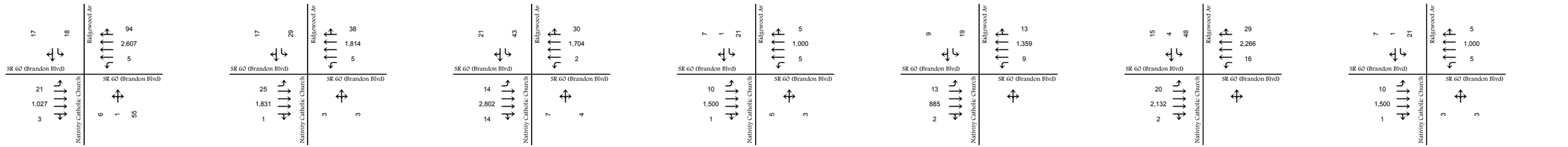
Phasing Diagram

Intersection Geometry

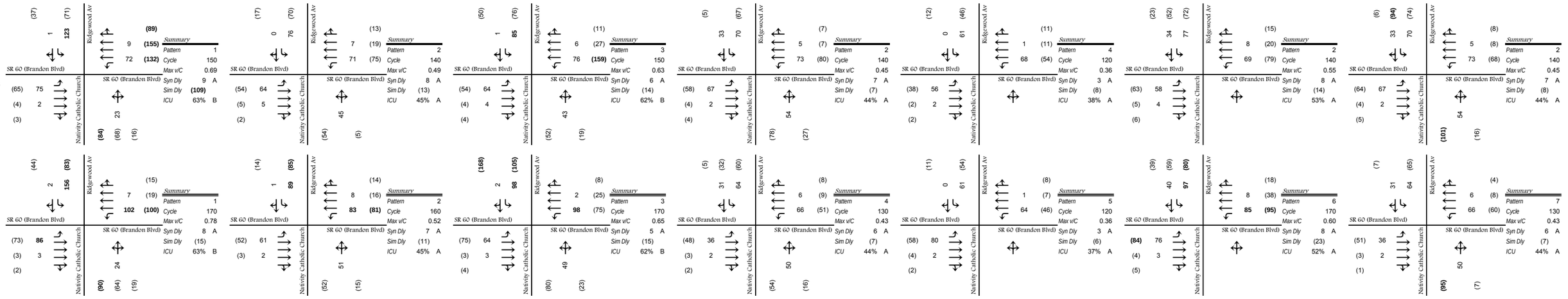


Existing Operations

Hourly Volumes



Operations



Implemented Operations

HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

(56) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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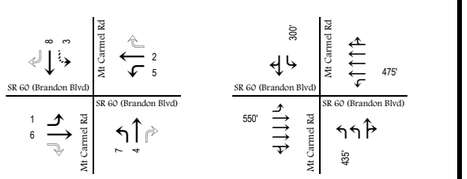
Figure 31

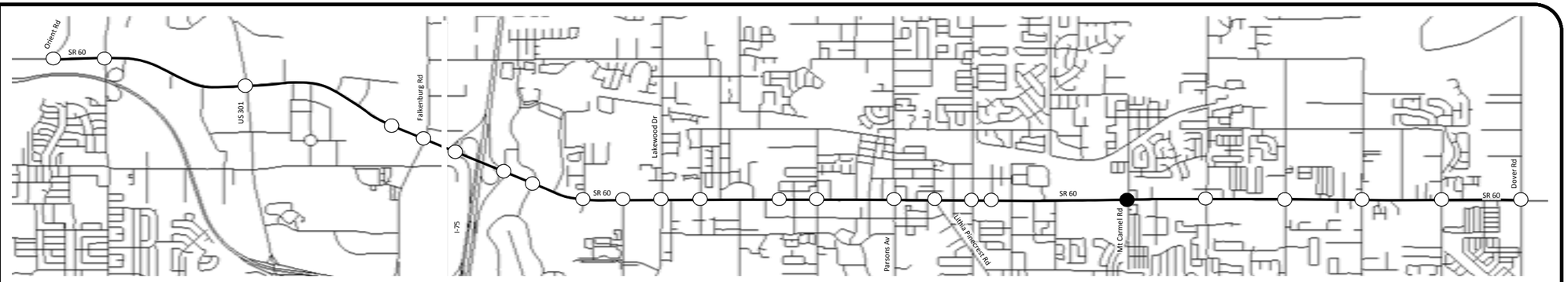
SR 60 (Brandon Blvd) & Ridgewood Av

Traffic Operations Analysis



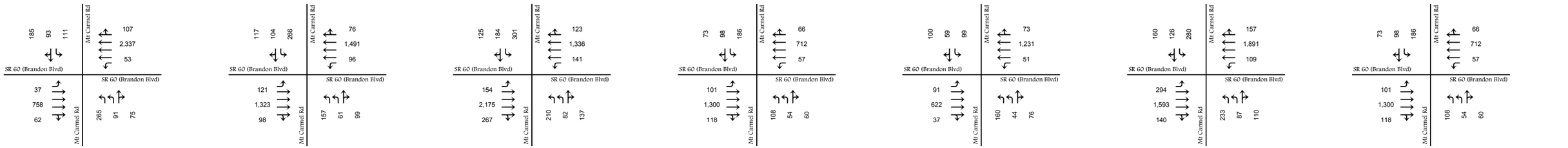
Phasing Diagram

Intersection Geometry

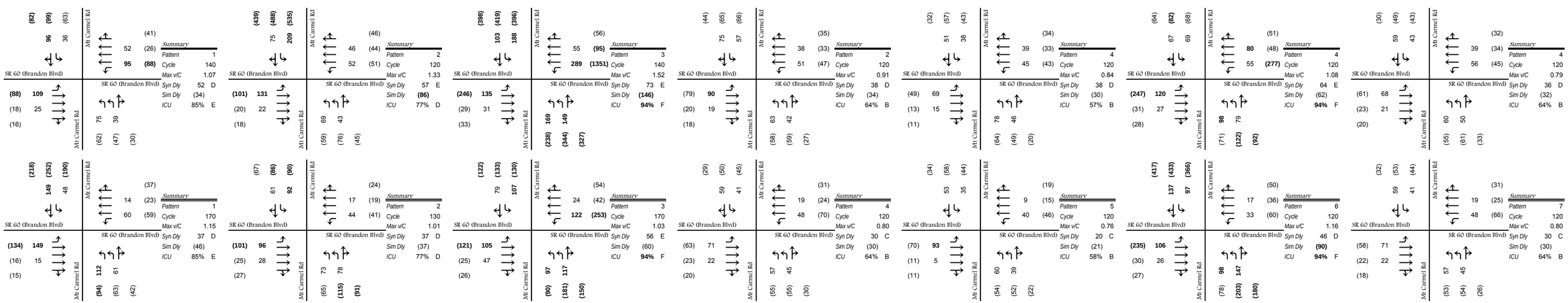


Existing Operations

Hourly Volumes



Operations



Implemented Operations

Operations

HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

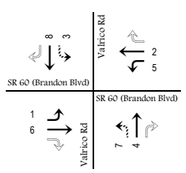
Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc.
TRANSPORTATION ENGINEERS

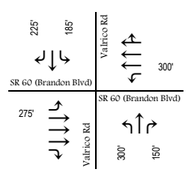
Figure 32

SR 60 (Brandon Blvd) & Mt Carmel Rd

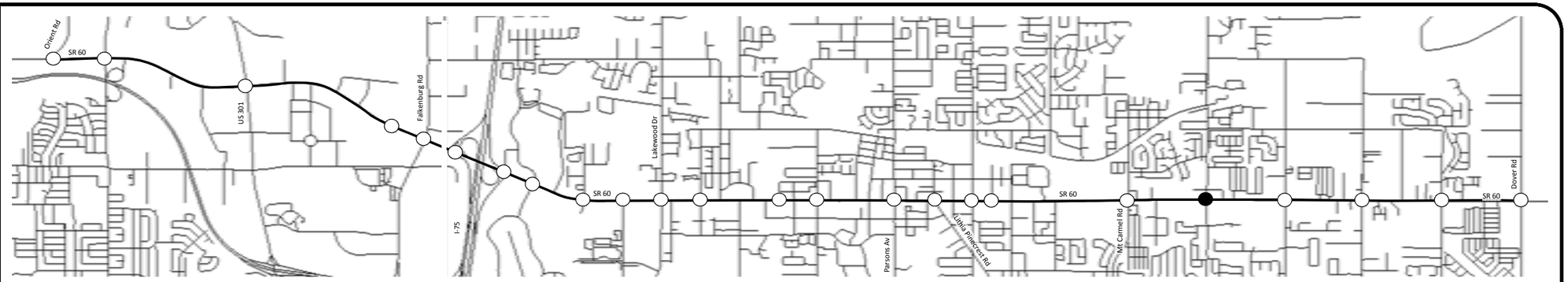
Traffic Operations Analysis



Phasing Diagram

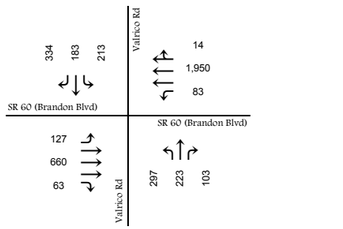


Intersection Geometry

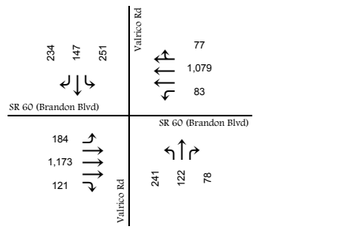


Hourly Volumes

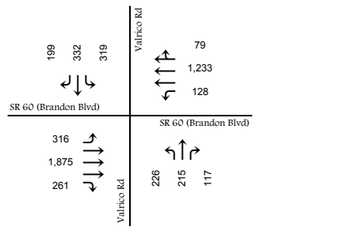
AM Peak ~ 7:15 am - 8:15 am



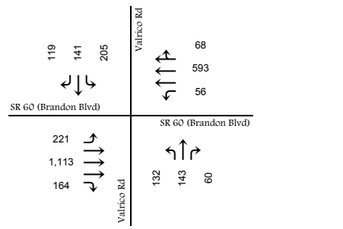
MD Peak ~ 12:15 pm - 1:15 pm



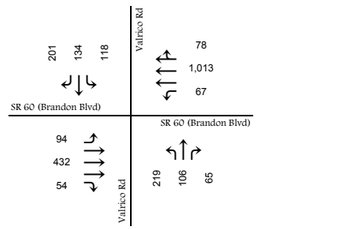
PM Peak ~ 5:00 pm - 6:00 pm



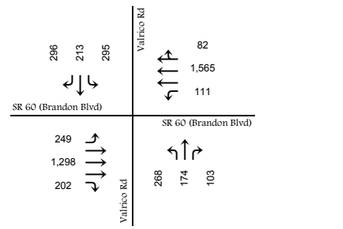
PM Offpeak ~ 7:30 pm - 8:30 pm



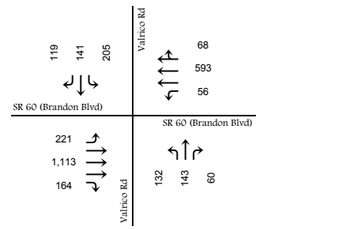
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

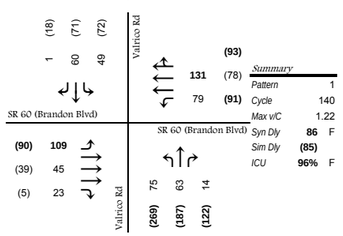


Weekend PM Peak ~ 7:30 pm - 8:30 pm

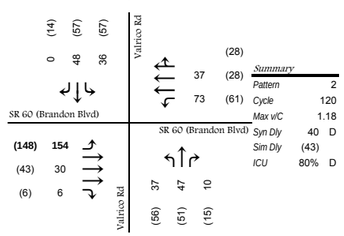


Existing Operations

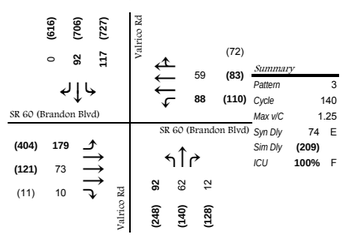
AM Peak ~ 7:15 am - 8:15 am



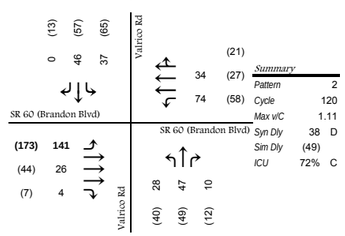
MD Peak ~ 12:15 pm - 1:15 pm



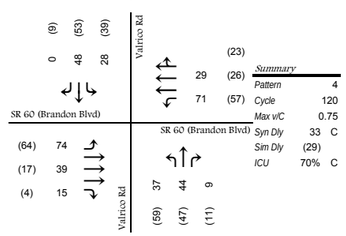
PM Peak ~ 5:00 pm - 6:00 pm



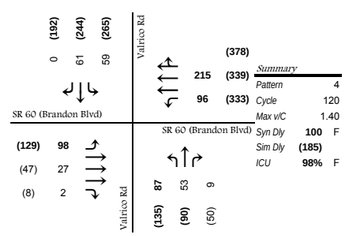
PM Offpeak ~ 7:30 pm - 8:30 pm



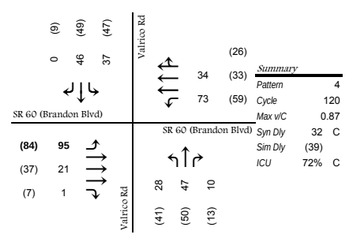
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

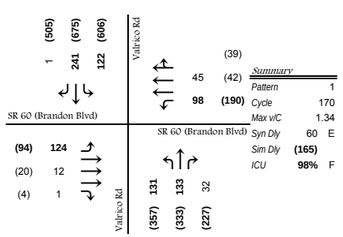


Weekend PM Peak ~ 7:30 pm - 8:30 pm

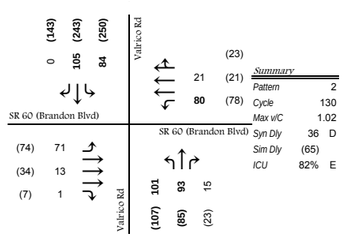


Implemented Operations

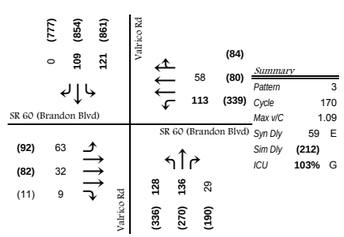
AM Peak ~ 7:15 am - 8:15 am



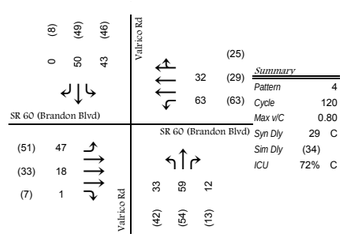
MD Peak ~ 12:15 pm - 1:15 pm



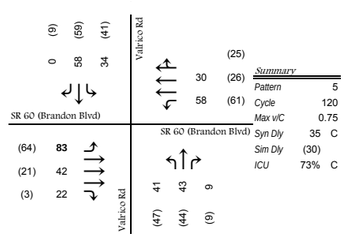
PM Peak ~ 5:00 pm - 6:00 pm



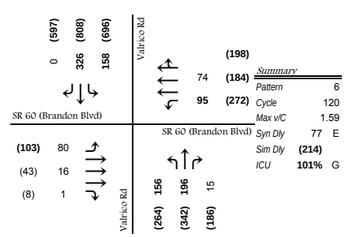
PM Offpeak ~ 7:30 pm - 8:30 pm



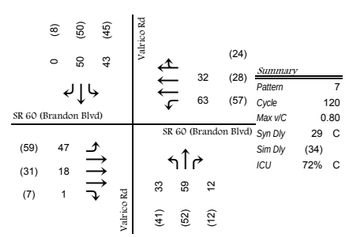
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
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C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

↰↑↑↱ → stop bar geometry

63 75 21 → synchro delay (s / veh)

(58) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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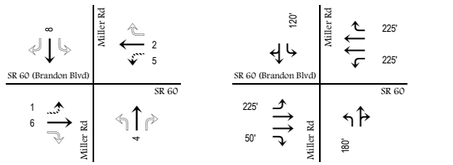
TRANSPORTATION ENGINEERS

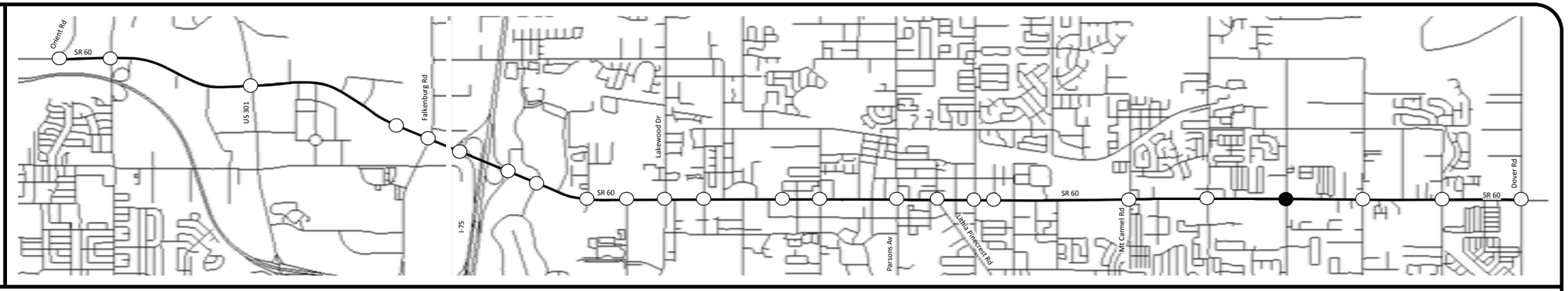
Figure 33

SR 60 (Brandon Blvd) & Valrico Rd

Traffic Operations Analysis

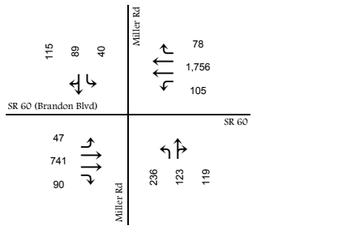


Phasing Diagram | Intersection Geometry

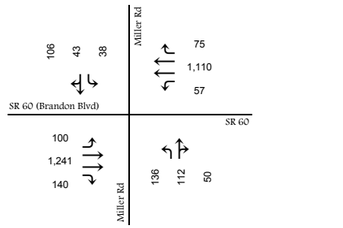


Hourly Volumes

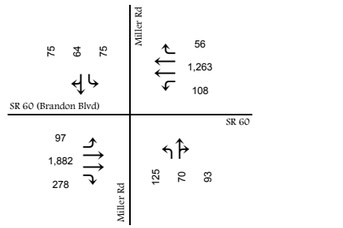
AM Peak ~ 7:15 am - 8:15 am



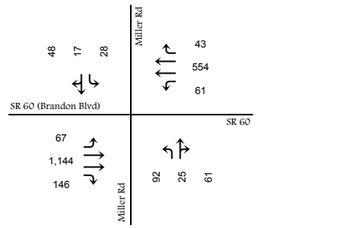
MD Peak ~ 12:15 pm - 1:15 pm



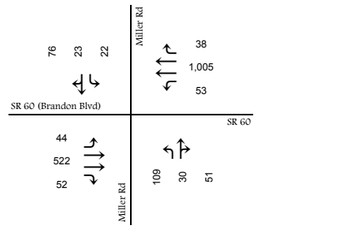
PM Peak ~ 5:00 pm - 6:00 pm



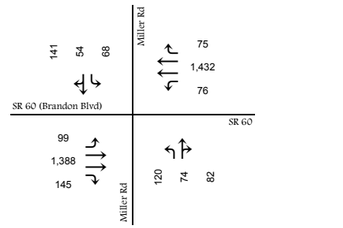
PM Offpeak ~ 7:30 pm - 8:30 pm



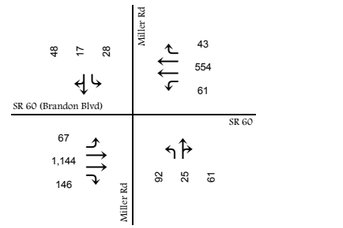
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

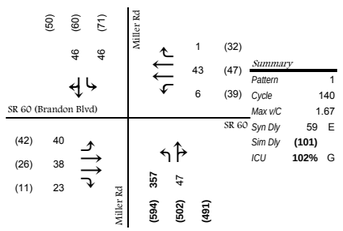


Weekend PM Peak ~ 7:30 pm - 8:30 pm

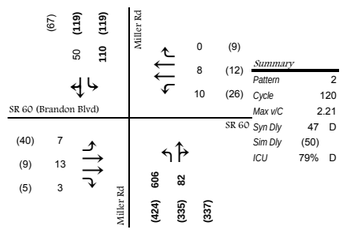


Existing Operations

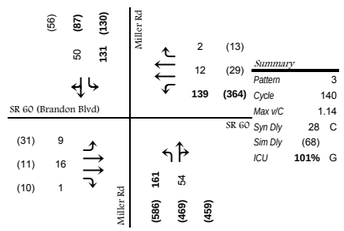
AM Peak ~ 7:15 am - 8:15 am



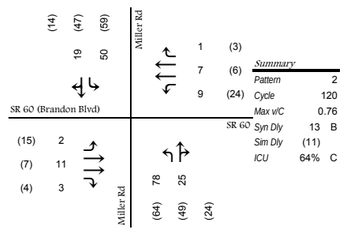
MD Peak ~ 12:15 pm - 1:15 pm



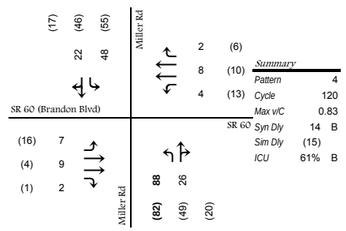
PM Peak ~ 5:00 pm - 6:00 pm



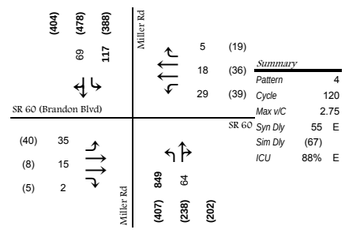
PM Offpeak ~ 7:30 pm - 8:30 pm



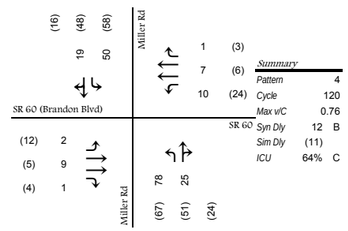
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

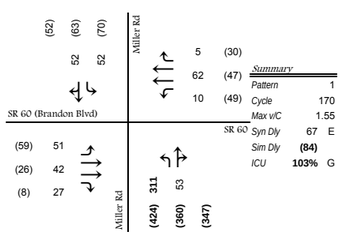


Weekend PM Peak ~ 7:30 pm - 8:30 pm

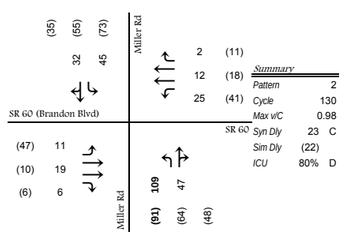


Implemented Operations

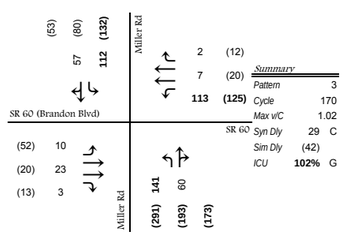
AM Peak ~ 7:15 am - 8:15 am



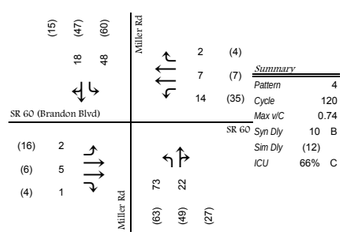
MD Peak ~ 12:15 pm - 1:15 pm



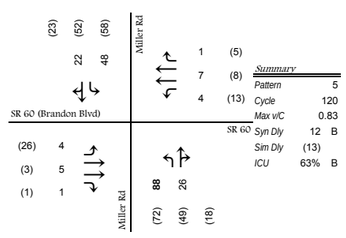
PM Peak ~ 5:00 pm - 6:00 pm



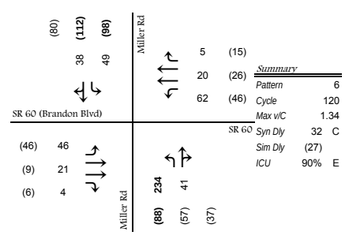
PM Offpeak ~ 7:30 pm - 8:30 pm



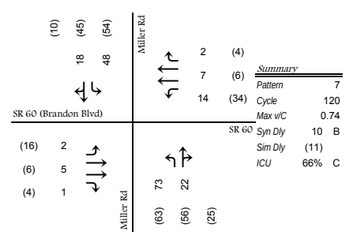
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



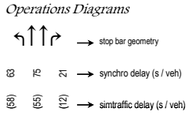
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
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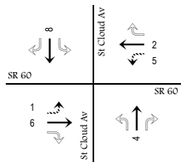
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Albeck Gerken, Inc. TRANSPORTATION ENGINEERS

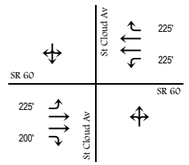
Figure 34

SR 60 (Brandon Blvd) & Miller Rd

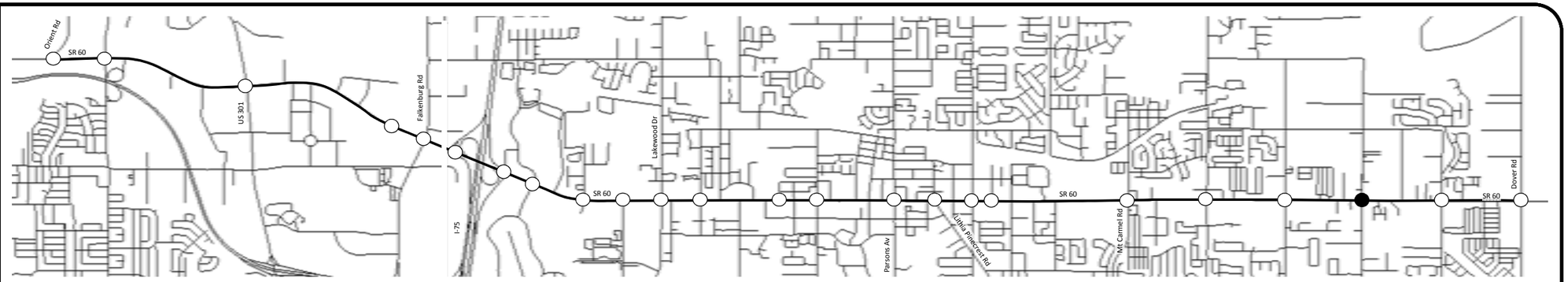
Traffic Operations Analysis



Phasing Diagram

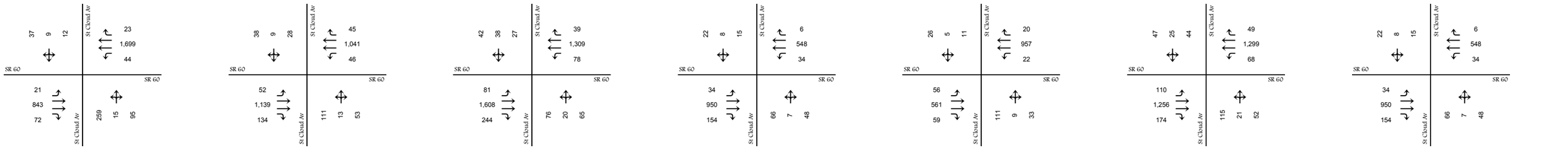


Intersection Geometry

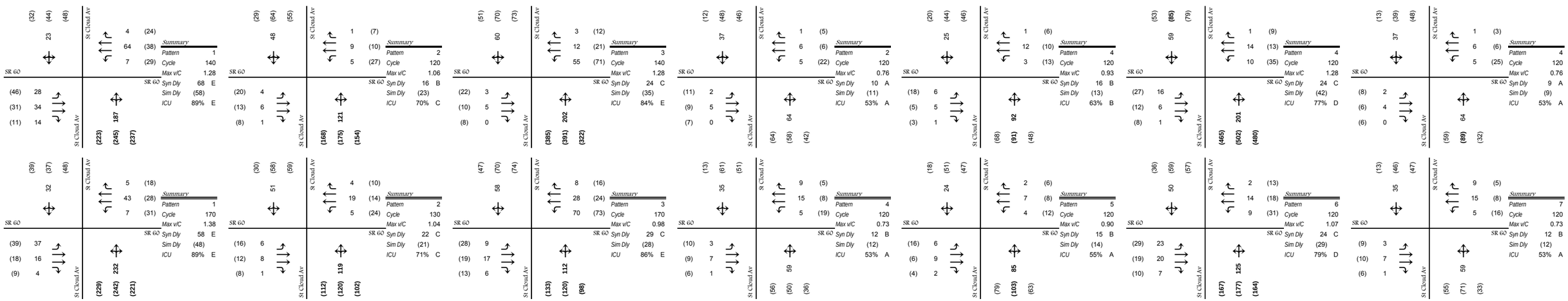


Existing Operations

Hourly Volumes



Operations



Implemented Operations

Operations

HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
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C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams

↰↑↑↱ → stop bar geometry

63 75 21 → synchro delay (s / veh)

(56) (55) (12) → simtraffic delay (s / veh)

Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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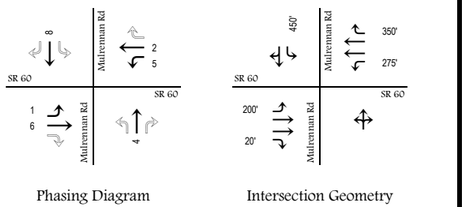
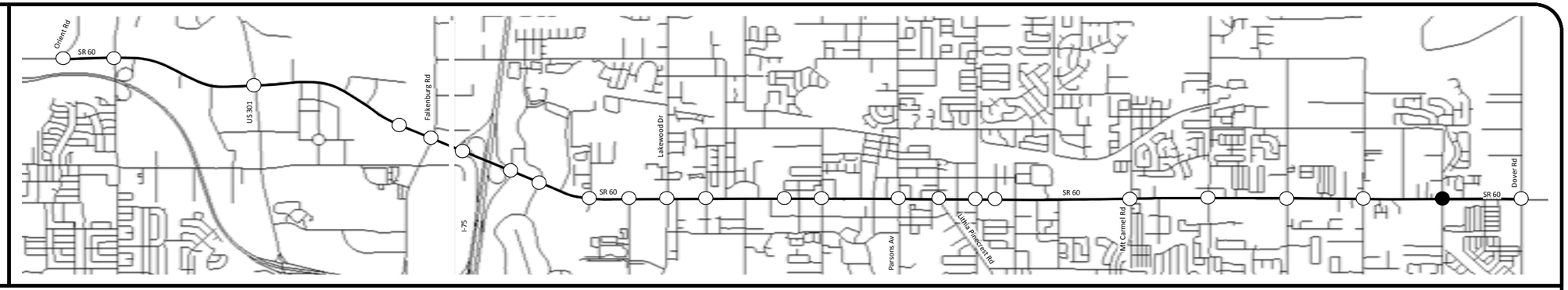
TRANSPORTATION ENGINEERS

Figure 35

SR 60 & St Cloud Av

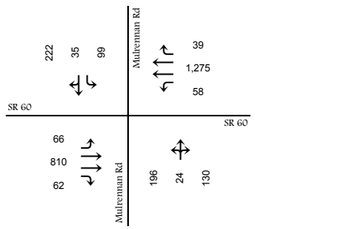
Traffic Operations Analysis



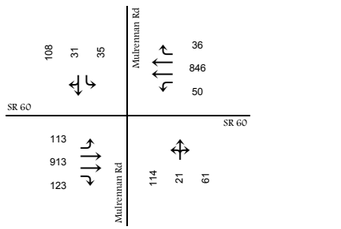


Hourly Volumes

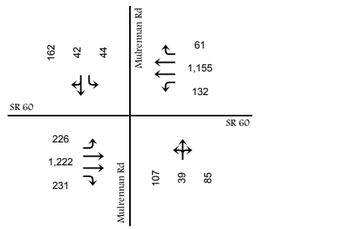
AM Peak ~ 7:15 am - 8:15 am



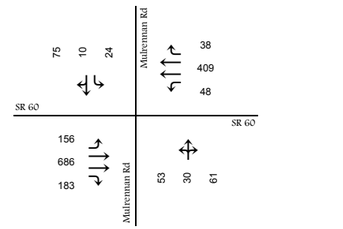
MD Peak ~ 12:15 pm - 1:15 pm



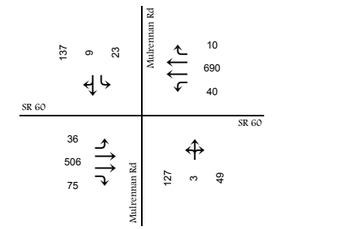
PM Peak ~ 5:00 pm - 6:00 pm



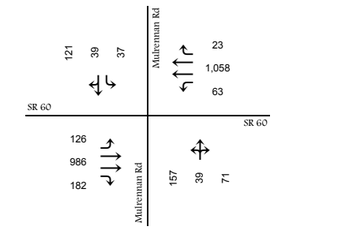
PM Offpeak ~ 7:30 pm - 8:30 pm



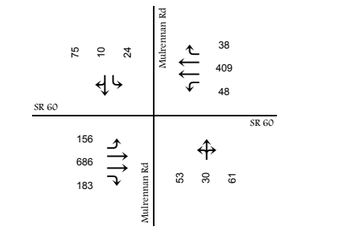
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

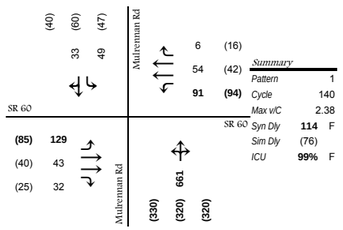


Weekend PM Peak ~ 7:30 pm - 8:30 pm



Existing Operations

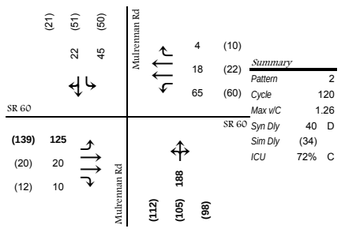
AM Peak ~ 7:15 am - 8:15 am



Summary

Pattern	1
Cycle	140
Max v/C	2.38
Syn Dly	**114** F
Sim Dly	(76)
ICU	**99%** F

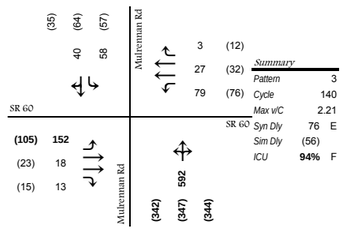
MD Peak ~ 12:15 pm - 1:15 pm



Summary

Pattern	2
Cycle	120
Max v/C	1.26
Syn Dly	40 D
Sim Dly	(34)
ICU	72% C

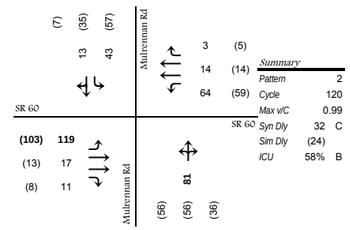
PM Peak ~ 5:00 pm - 6:00 pm



Summary

Pattern	3
Cycle	140
Max v/C	2.21
Syn Dly	76 E
Sim Dly	(56)
ICU	**94%** F

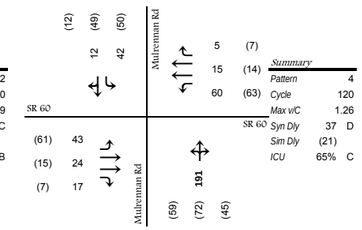
PM Offpeak ~ 7:30 pm - 8:30 pm



Summary

Pattern	2
Cycle	120
Max v/C	0.99
Syn Dly	32 C
Sim Dly	(24)
ICU	58% B

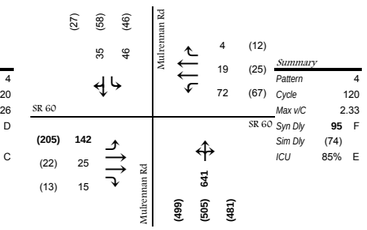
Weekend AM Peak ~ 8:00 am - 9:00 am



Summary

Pattern	4
Cycle	120
Max v/C	1.26
Syn Dly	37 D
Sim Dly	(21)
ICU	65% C

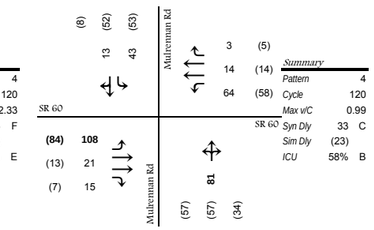
Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary

Pattern	4
Cycle	120
Max v/C	2.33
Syn Dly	**95** F
Sim Dly	(74)
ICU	85% E

Weekend PM Peak ~ 7:30 pm - 8:30 pm

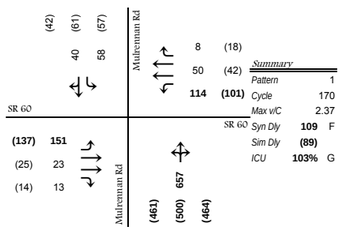


Summary

Pattern	4
Cycle	120
Max v/C	0.99
Syn Dly	33 C
Sim Dly	(23)
ICU	58% B

Implemented Operations

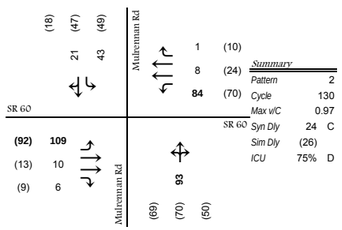
AM Peak ~ 7:15 am - 8:15 am



Summary

Pattern	1
Cycle	170
Max v/C	2.37
Syn Dly	**109** F
Sim Dly	**(89)**
ICU	**103%** G

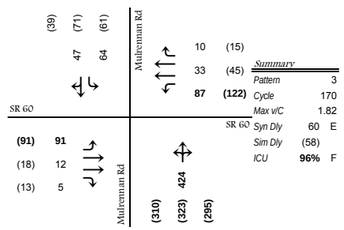
MD Peak ~ 12:15 pm - 1:15 pm



Summary

Pattern	2
Cycle	130
Max v/C	0.97
Syn Dly	24 C
Sim Dly	(26)
ICU	75% D

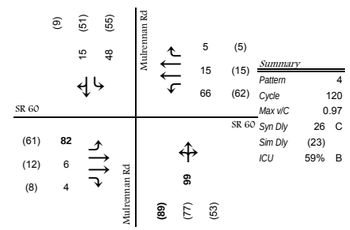
PM Peak ~ 5:00 pm - 6:00 pm



Summary

Pattern	3
Cycle	170
Max v/C	1.82
Syn Dly	60 E
Sim Dly	(58)
ICU	**96%** F

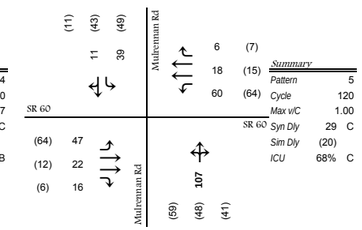
PM Offpeak ~ 7:30 pm - 8:30 pm



Summary

Pattern	4
Cycle	120
Max v/C	0.97
Syn Dly	26 C
Sim Dly	(23)
ICU	59% B

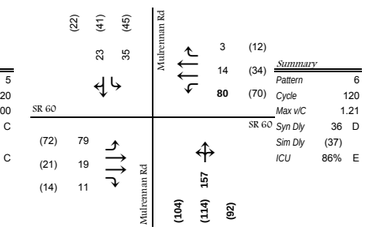
Weekend AM Peak ~ 8:00 am - 9:00 am



Summary

Pattern	5
Cycle	120
Max v/C	1.00
Syn Dly	29 C
Sim Dly	(20)
ICU	68% C

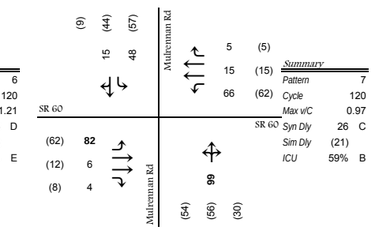
Weekend MD Peak ~ 12:00 pm - 1:00 pm



Summary

Pattern	6
Cycle	120
Max v/C	1.21
Syn Dly	36 D
Sim Dly	(37)
ICU	86% E

Weekend PM Peak ~ 7:30 pm - 8:30 pm



Summary

Pattern	7
Cycle	120
Max v/C	0.97
Syn Dly	26 C
Sim Dly	(21)
ICU	59% B

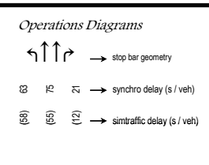
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

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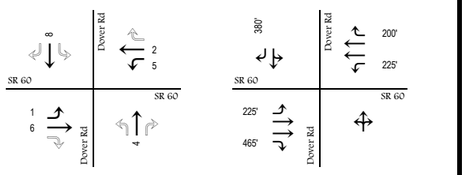
Figure 36

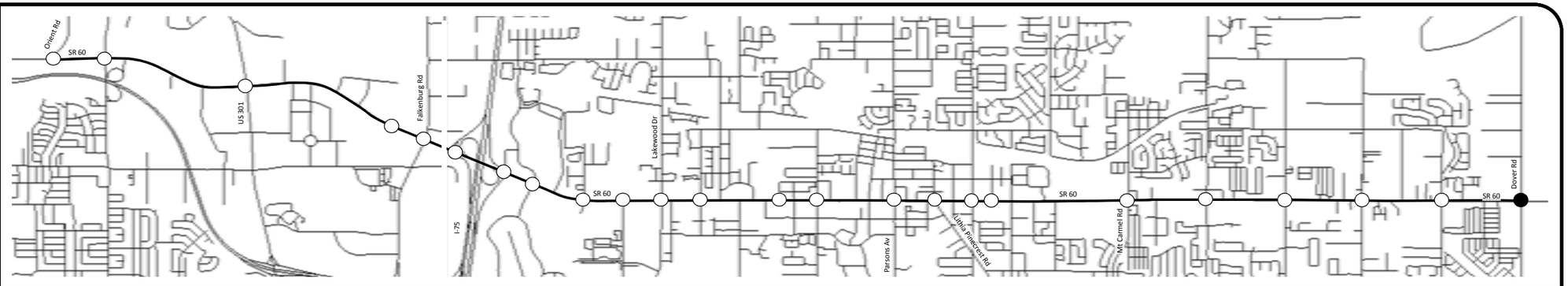
SR 60 & Mulrennan Rd

Traffic Operations Analysis



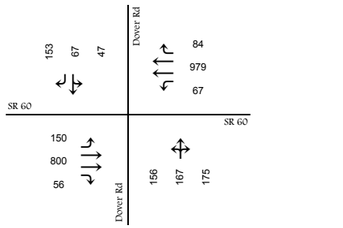
Phasing Diagram

Intersection Geometry

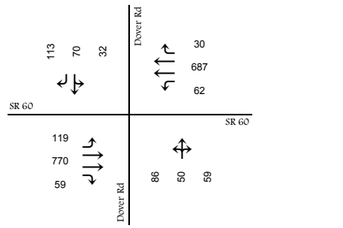


Hourly Volumes

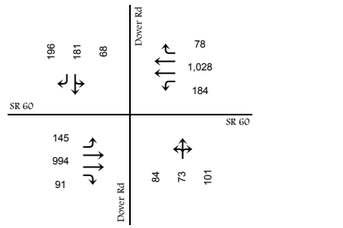
AM Peak ~ 7:15 am - 8:15 am



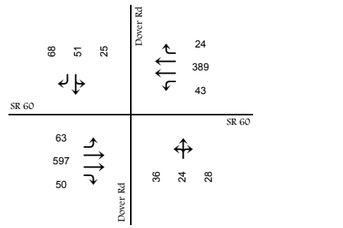
MD Peak ~ 12:15 pm - 1:15 pm



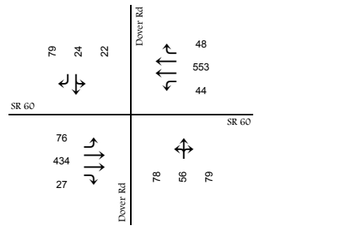
PM Peak ~ 5:00 pm - 6:00 pm



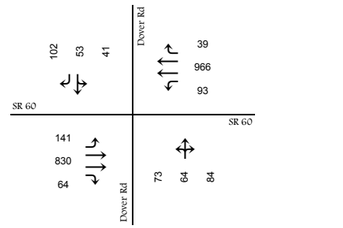
PM Offpeak ~ 7:30 pm - 8:30 pm



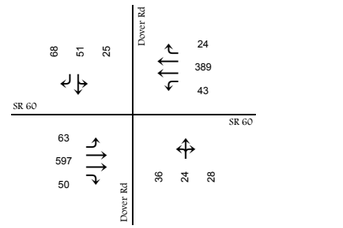
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

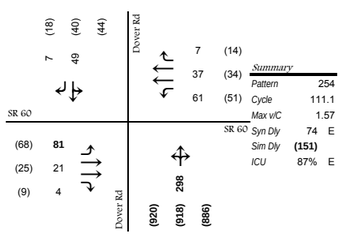


Weekend PM Peak ~ 7:30 pm - 8:30 pm

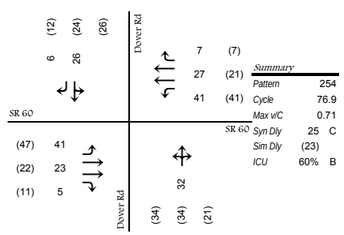


Existing Operations

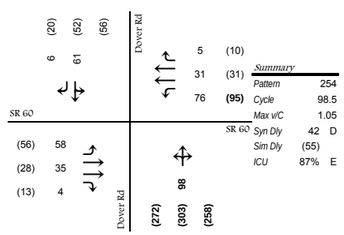
AM Peak ~ 7:15 am - 8:15 am



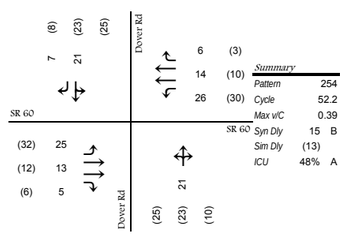
MD Peak ~ 12:15 pm - 1:15 pm



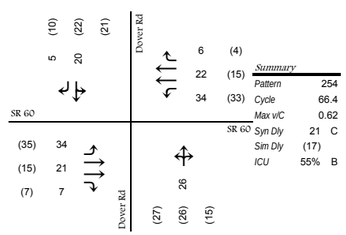
PM Peak ~ 5:00 pm - 6:00 pm



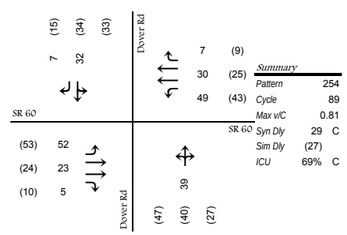
PM Offpeak ~ 7:30 pm - 8:30 pm



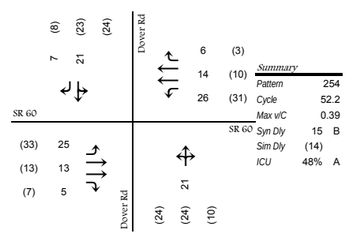
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm

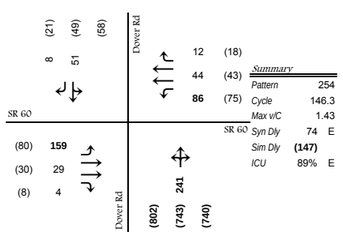


Weekend PM Peak ~ 7:30 pm - 8:30 pm

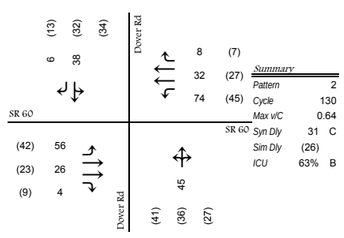


Implemented Operations

AM Peak ~ 7:15 am - 8:15 am

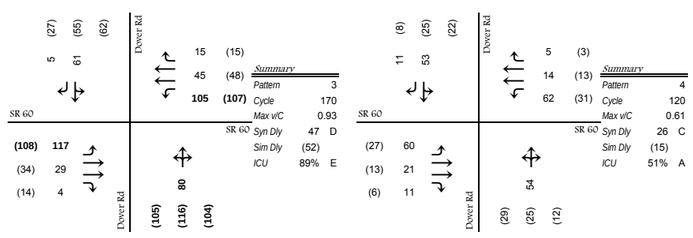


MD Peak ~ 12:15 pm - 1:15 pm

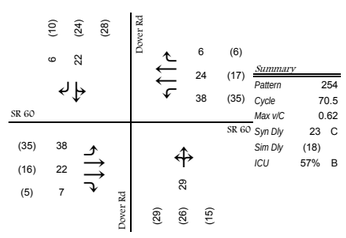


PM Peak ~ 5:00 pm - 6:00 pm

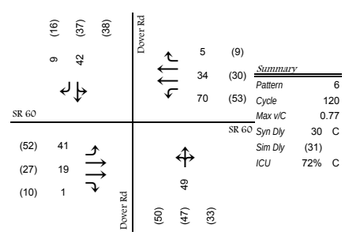
PM Offpeak ~ 7:30 pm - 8:30 pm



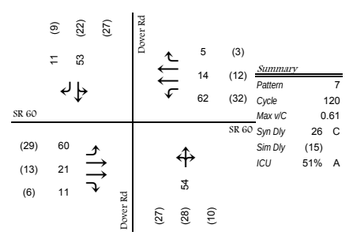
Weekend AM Peak ~ 8:00 am - 9:00 am



Weekend MD Peak ~ 12:00 pm - 1:00 pm



Weekend PM Peak ~ 7:30 pm - 8:30 pm



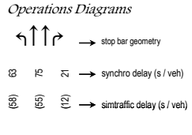
HCM Levels of Service

LOS	Delay/Veh (s)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

ICU Levels of Service

LOS	Utilization (%)
A	≤55%
B	>55% and ≤64%
C	>64% and ≤73%
D	>73% and ≤82%
E	>82% and ≤91%
F	>91% and ≤100%
G	>100% and ≤109%
H	>109%

Operations Diagrams



Note:
A growth factor of 5% was applied to all volumes shown to represent additional demand.
Some values of delay, particularly SimTraffic, may be higher than what is experienced in the field, especially for intersections that are over capacity.

Figure 37

SR 60 & Dover Rd

Traffic Operations Analysis

7.2 Network Performance Measures

While the figures in Section 7.1 summarize performance of individual intersections by delay, LOS, and ICU, the tables in this section combine and summarize four performance measures for all intersections in the network: total delay, total stops, total travel time, and total fuel consumption. The tables also summarize the percent reduction of each measure, which illustrates the overall improvement to the network with the implemented signal timings. The performance measures were calculated (not field-measured) by two separate models, Synchro and SimTraffic. The models summarize data for all vehicles in the network. Network performance measures developed by Synchro and SimTraffic can be found in Table 4 and Table 5 below.

Table 4 – Synchro Network Performance Measures

	AM Peak			MD Peak			PM Peak			PM Off-peak		
	Existing	Implemented		Existing	Implemented		Existing	Implemented		Existing	Implemented	
Total Delay (hr)	2,031	1,880	-7.4%	1,497	1,239	-17.2%	2,250	2,094	-6.9%	558	448	-19.7%
Total Stops	78,613	75,896	-3.5%	77,536	72,401	-6.6%	92,445	91,208	-1.3%	39,768	38,259	-3.8%
Total Travel Time (hr)	3,049	2,898	-5.0%	2,487	2,229	-10.4%	3,405	3,249	-4.6%	1,168	1,058	-9.4%
Fuel Consumed (gal)	4,216	4,069	-3.5%	3,734	3,468	-7.1%	4,780	4,658	-2.6%	1,915	1,812	-5.4%
	Weekend AM Off-peak			Weekend MD Peak			Weekend PM Off-peak					
	Existing	Implemented		Existing	Implemented		Existing	Implemented				
Total Delay (hr)	384	297	-22.7%	2,233	1,776	-20.5%	551	448	-18.7%			
Total Stops	33,254	27,469	-17.4%	86,292	86,838	0.6%	40,009	38,259	-4.4%			
Total Travel Time (hr)	899	811	-9.8%	3,286	2,829	-13.9%	1,161	1,058	-8.9%			
Fuel Consumed (gal)	1,563	1,420	-9.1%	4,495	4,172	-7.2%	1,914	1,812	-5.3%			

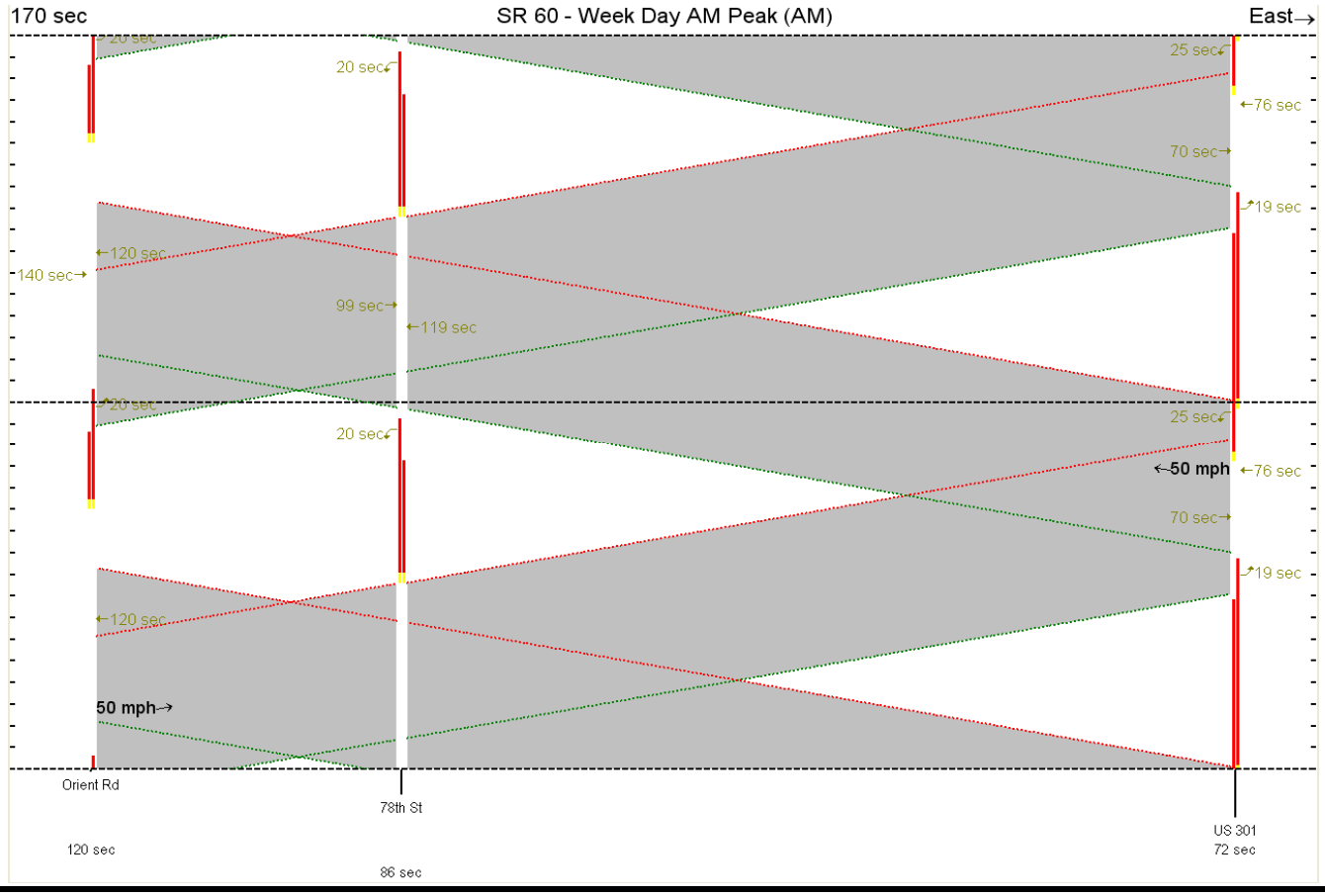
Table 5 – SimTraffic Network Performance Measures

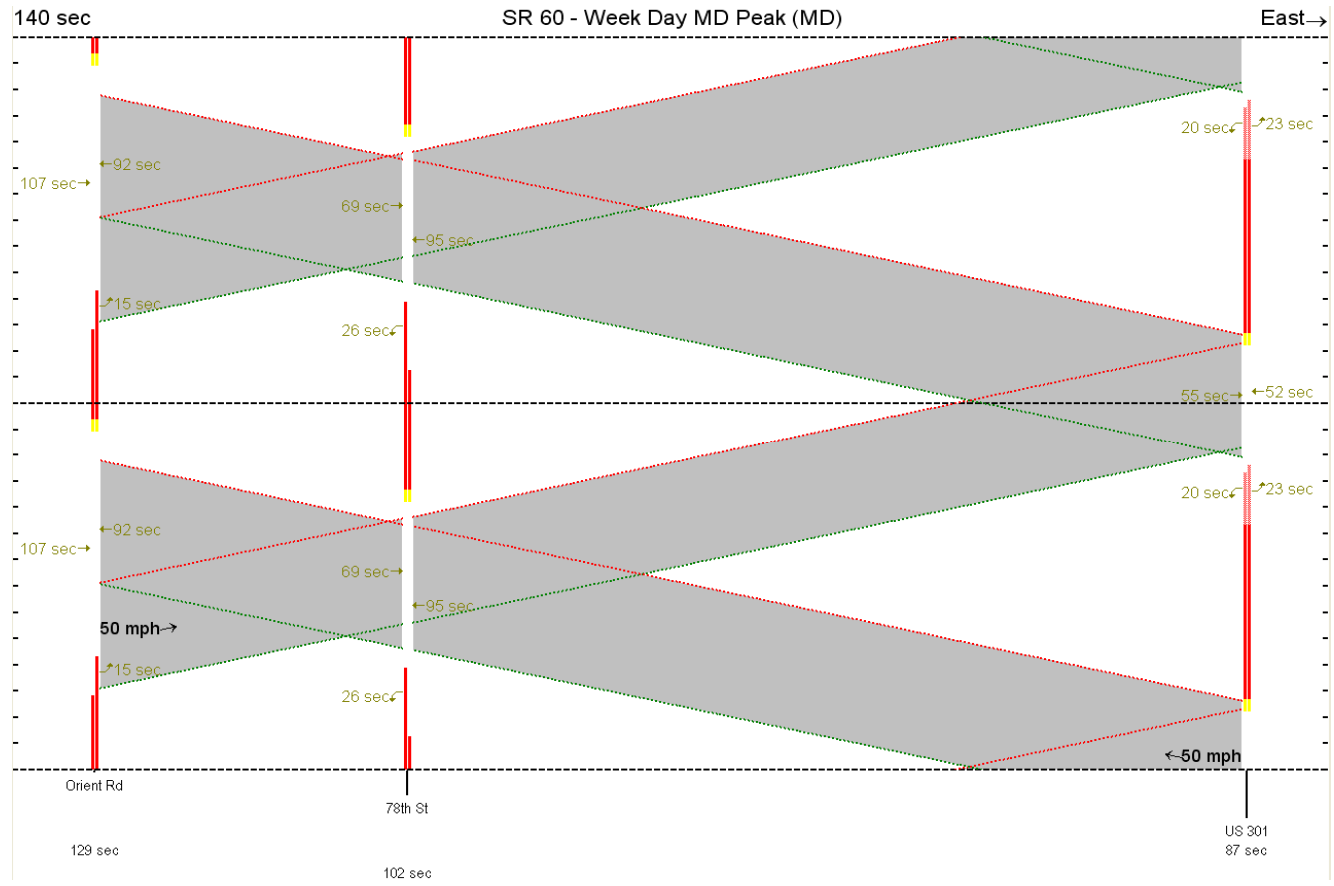
	AM Peak			MD Peak			PM Peak			PM Off-peak		
	Existing	Implemented		Existing	Implemented		Existing	Implemented		Existing	Implemented	
Total Delay (hr)	2,855	2,794	-2.2%	2,699	2,333	-13.6%	4,486	4,342	-3.2%	846	561	-33.6%
Total Stops	93,495	78,130	-16.4%	86,444	74,234	-14.1%	104,309	95,502	-8.4%	35,372	32,334	-8.6%
Total Travel Time (hr)	4,038	3,992	-1.1%	3,875	3,540	-8.6%	5,757	5,642	-2.0%	1,611	1,343	-16.6%
Fuel Consumed (gal)	23,561	23,583	0.1%	23,141	22,556	-2.5%	28,736	28,662	-0.3%	12,892	12,440	-3.5%
	Weekend AM Off-peak			Weekend MD Peak			Weekend PM Off-peak					
	Existing	Implemented		Existing	Implemented		Existing	Implemented				
Total Delay (hr)	365	343	-6.2%	3,921	3,624	-7.6%	793	535	-32.6%			
Total Stops	24,999	23,002	-8.0%	103,475	91,222	-11.8%	35,173	31,776	-9.7%			
Total Travel Time (hr)	1,019	1,000	-1.8%	5,083	4,807	-5.4%	1,562	1,316	-15.7%			
Fuel Consumed (gal)	10,251	10,176	-0.7%	25,651	25,176	-1.9%	12,821	12,386	-3.4%			

Overall, network performance measures improved during all periods. A major contributing factor to such significant improvements, especially during off-peak periods, was the utilization of lead-lag left turn phasing by time of day.

7.3 Time-Space Diagrams

As stated in Section 2.3, real-time time-space diagrams can be used as a tool for fine-tuning splits and offsets and maximizing corridor bandwidth and progression. Time-space diagrams for each of the implemented timing patterns are illustrated in Figure 38 - Figure 49 on pages 47 - 58.





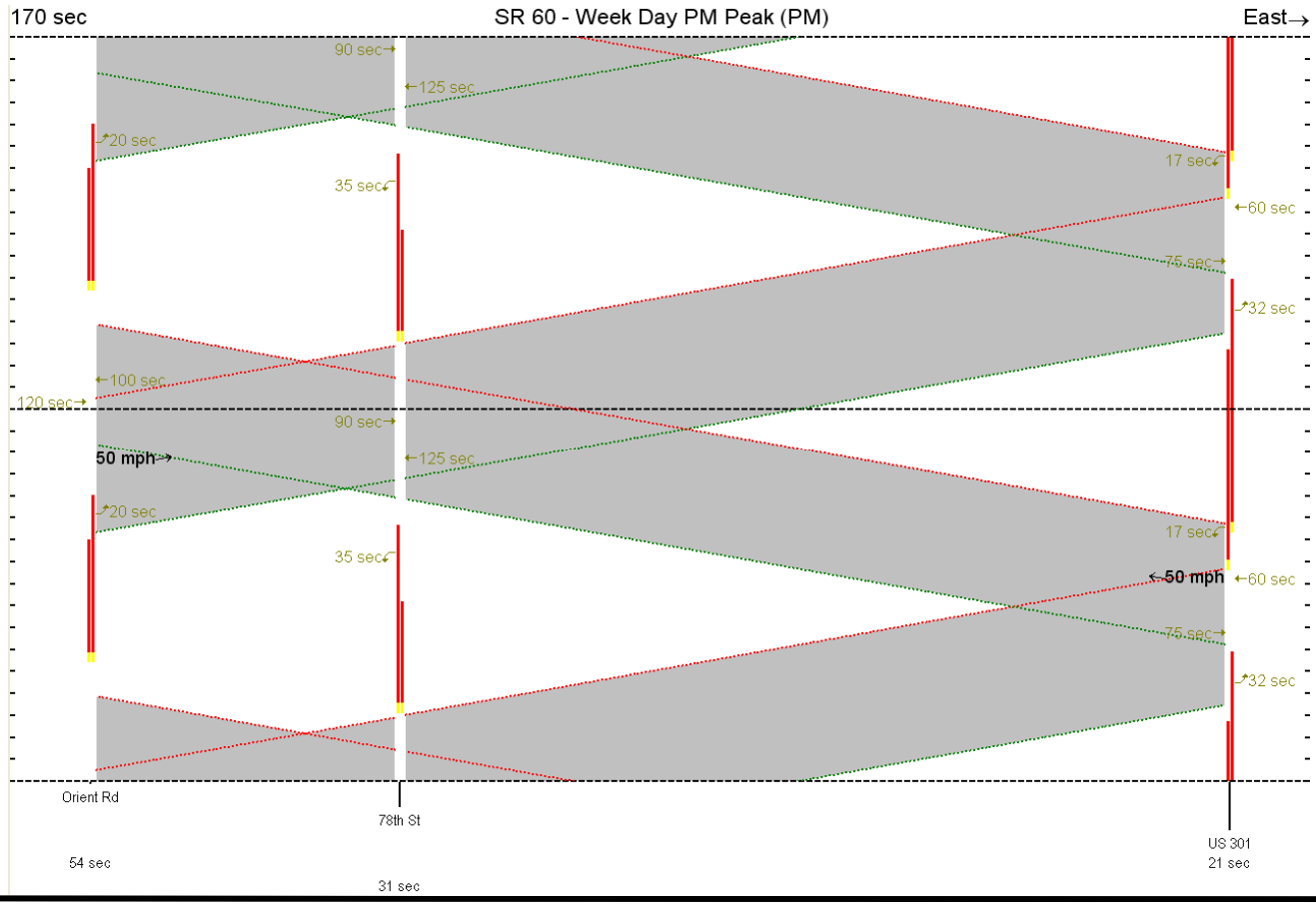
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

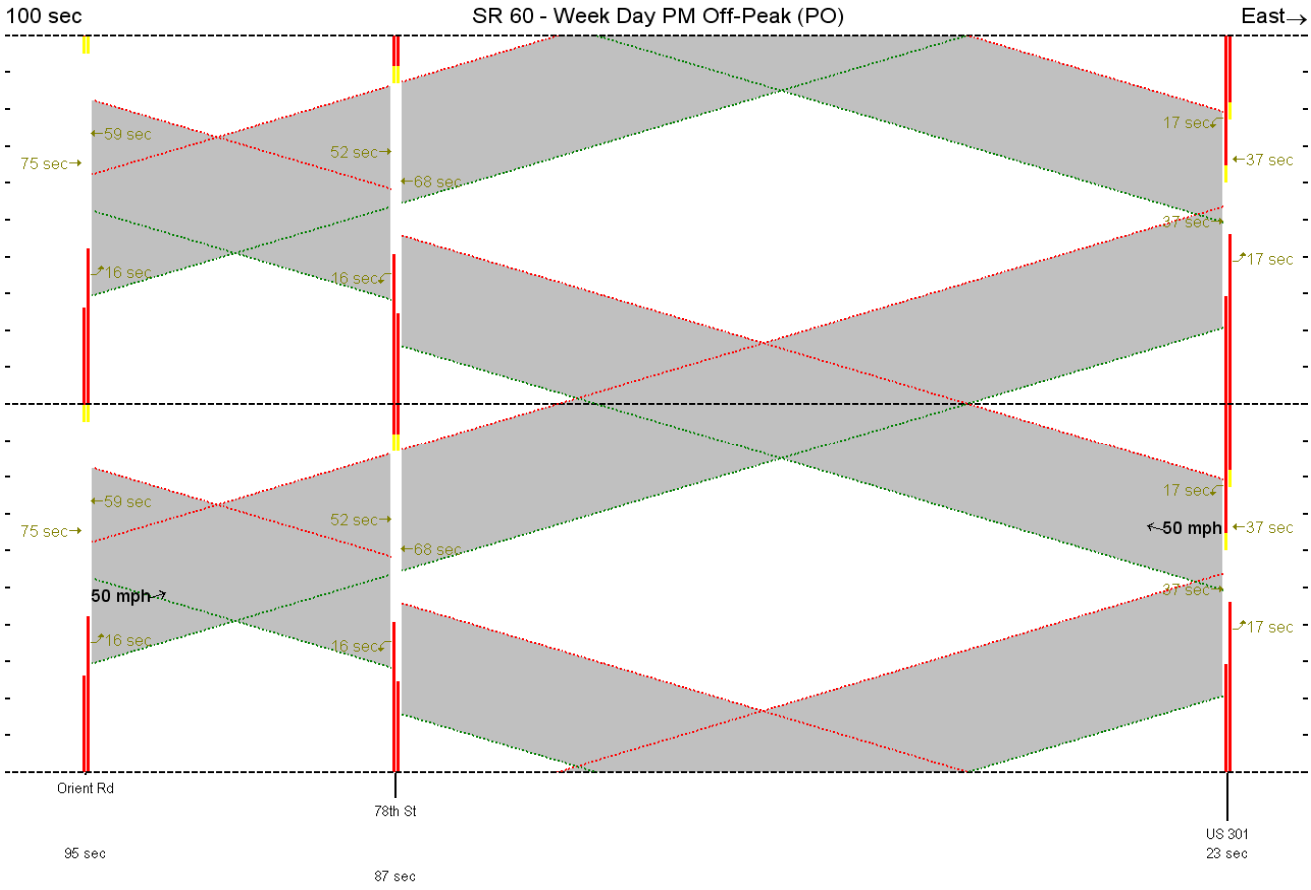
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 38

Time-Space Diagram - SR 60 West
AM Peak and MD Peak





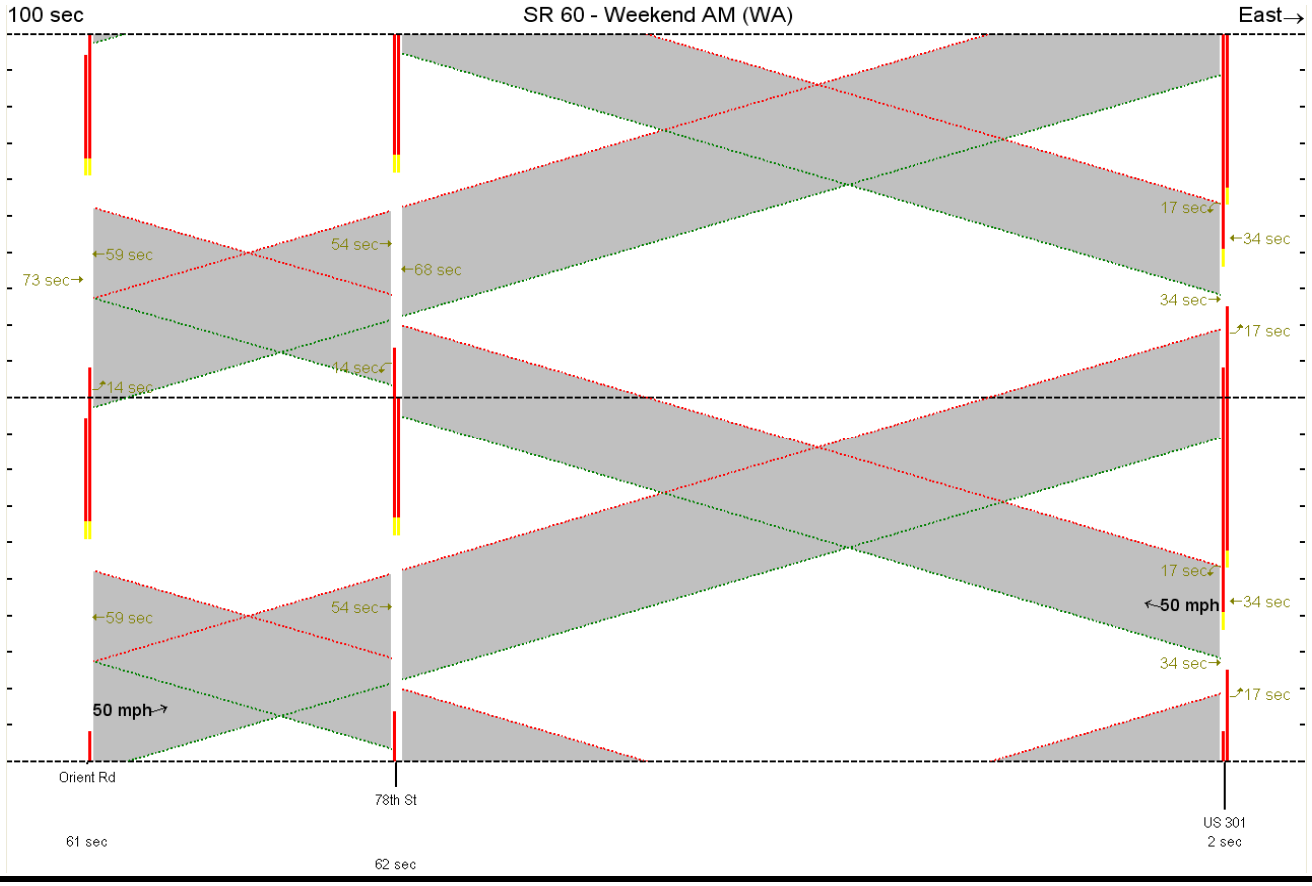
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

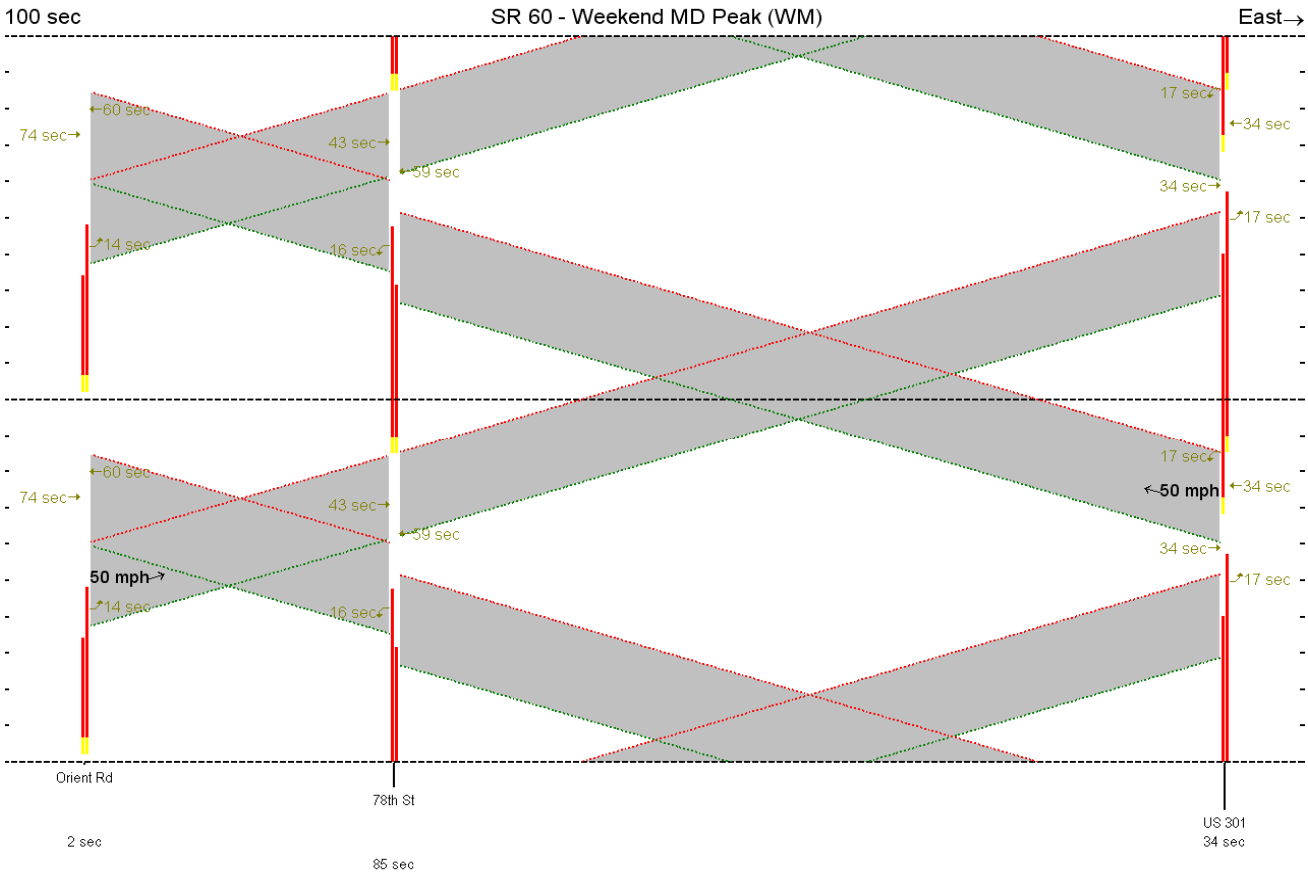
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

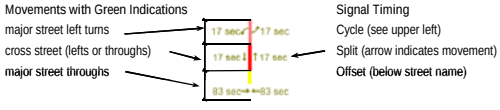
Bandwidth

Figure 39

Time-Space Diagram - SR 60 West
PM Peak and PM Off-peak







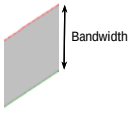
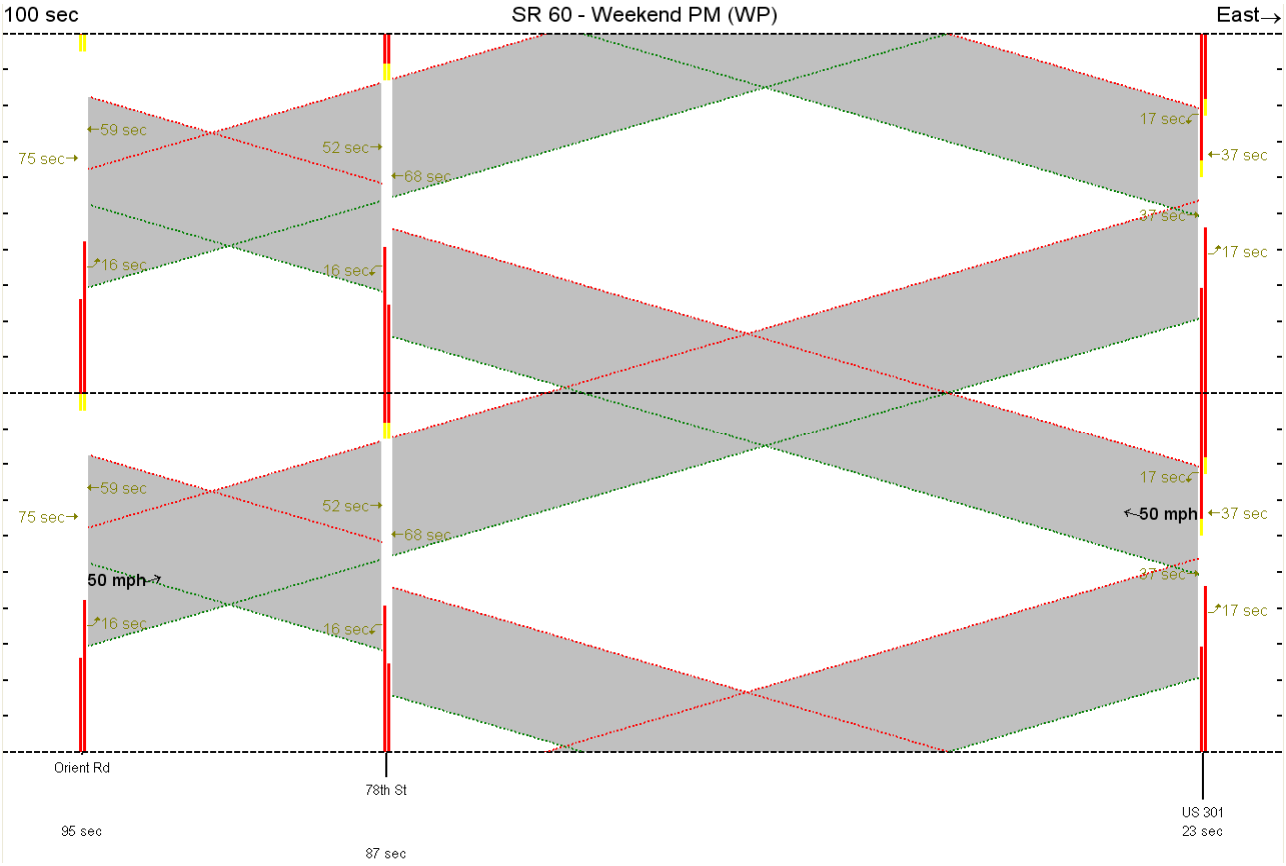


Figure 40

Time-Space Diagram - SR 60 West

Weekend AM Off-peak and Weekend MD Peak



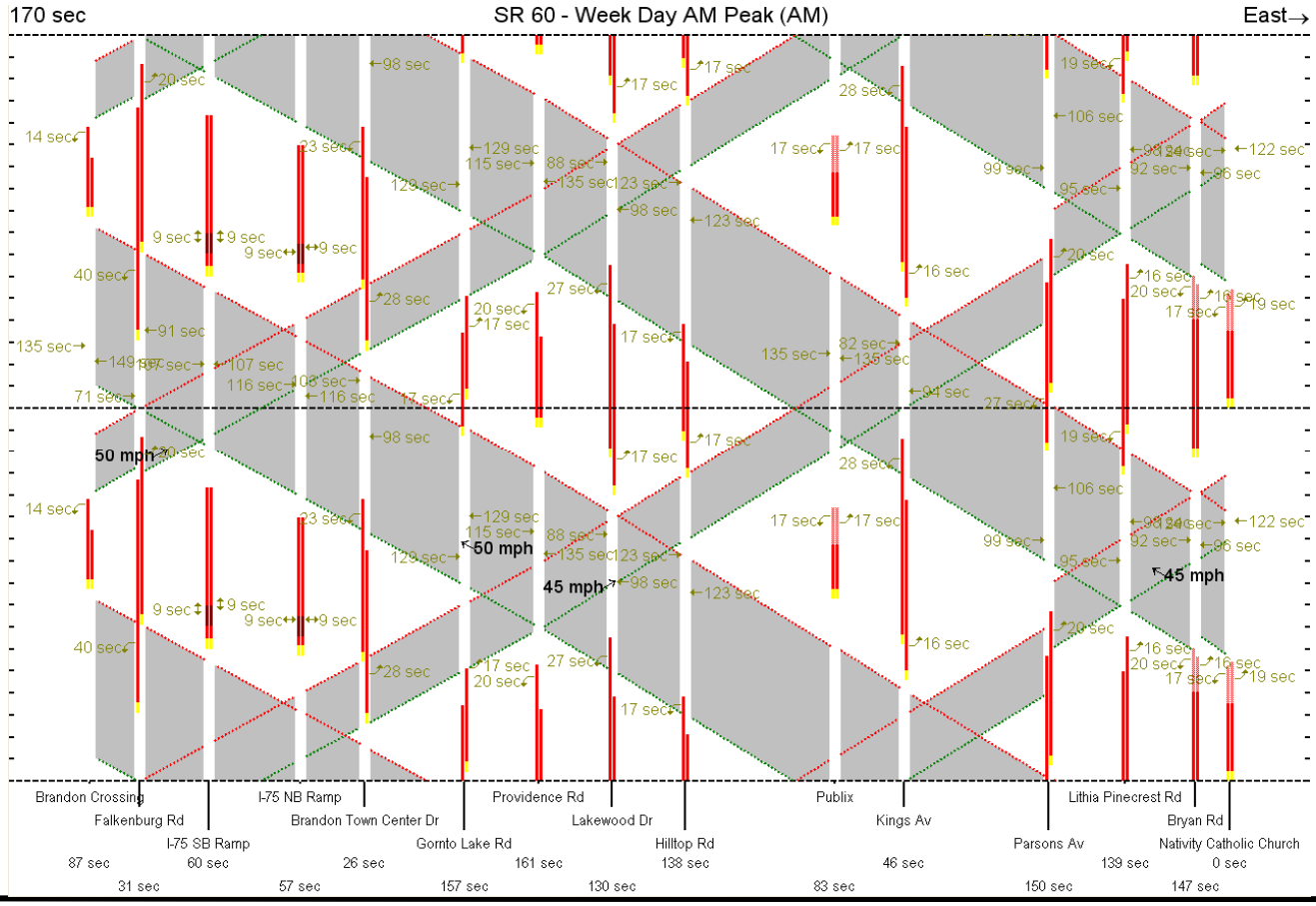
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

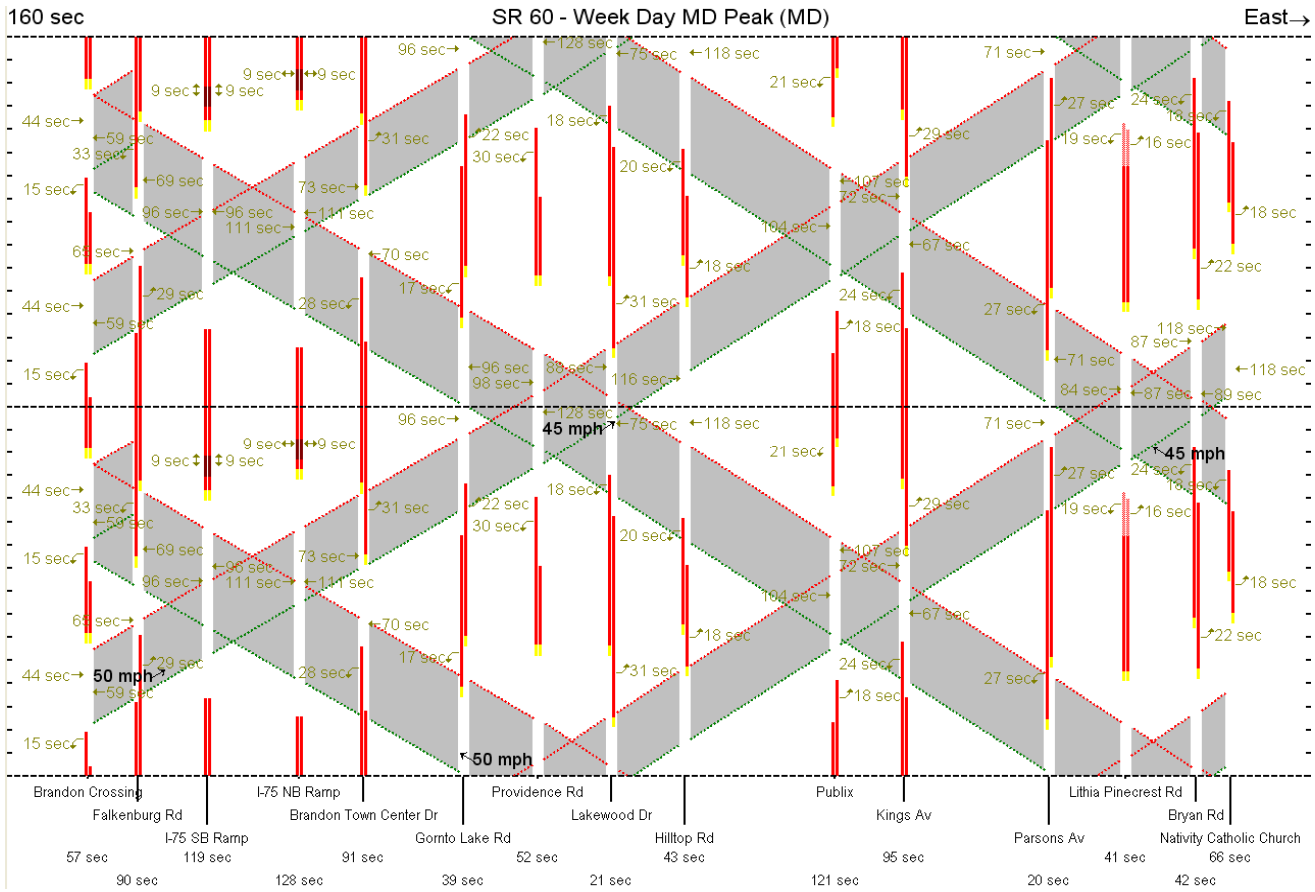
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

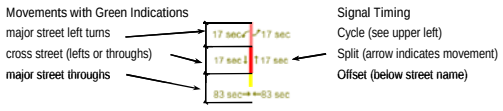
Bandwidth

Figure 41

Time-Space Diagram - SR 60 West
Weekend PM Off-peak







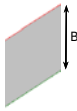
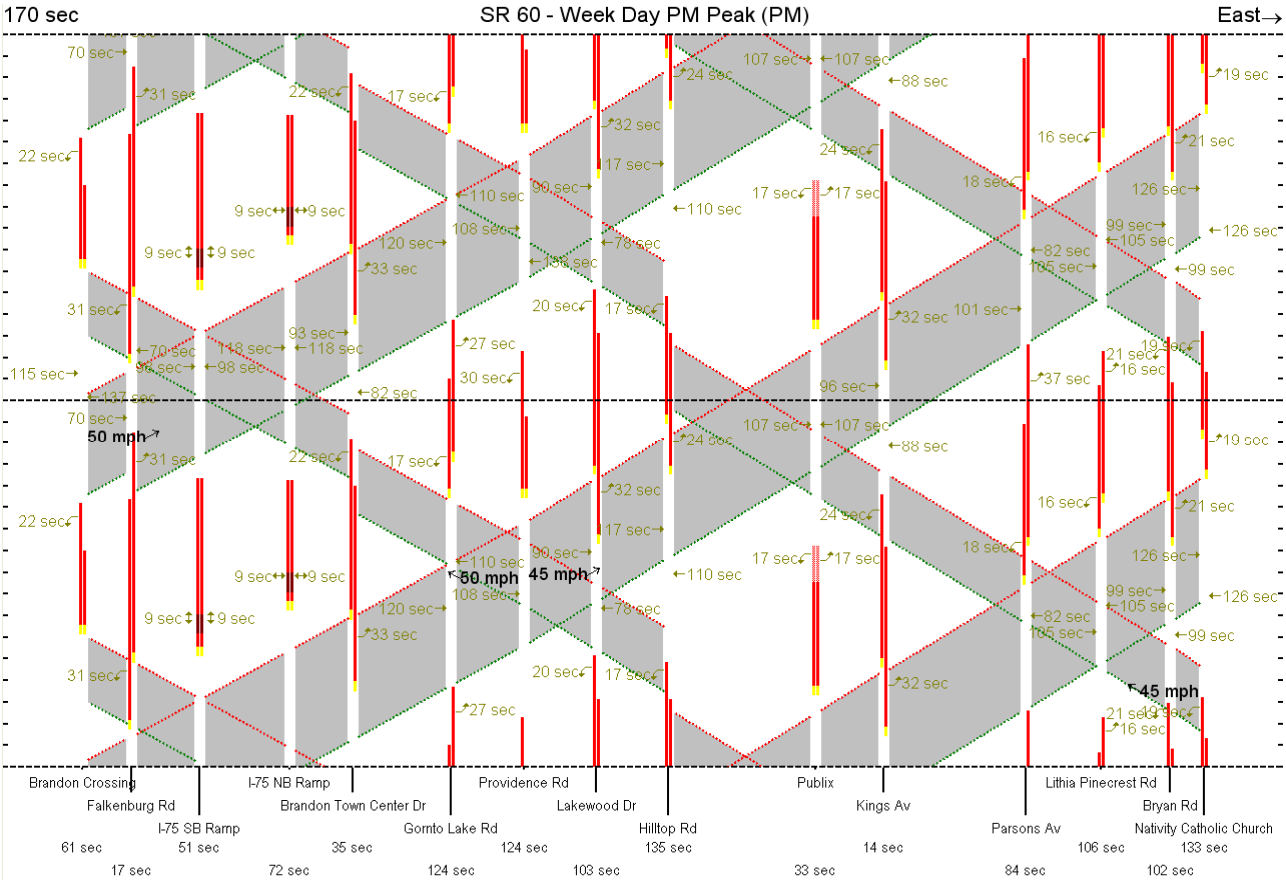
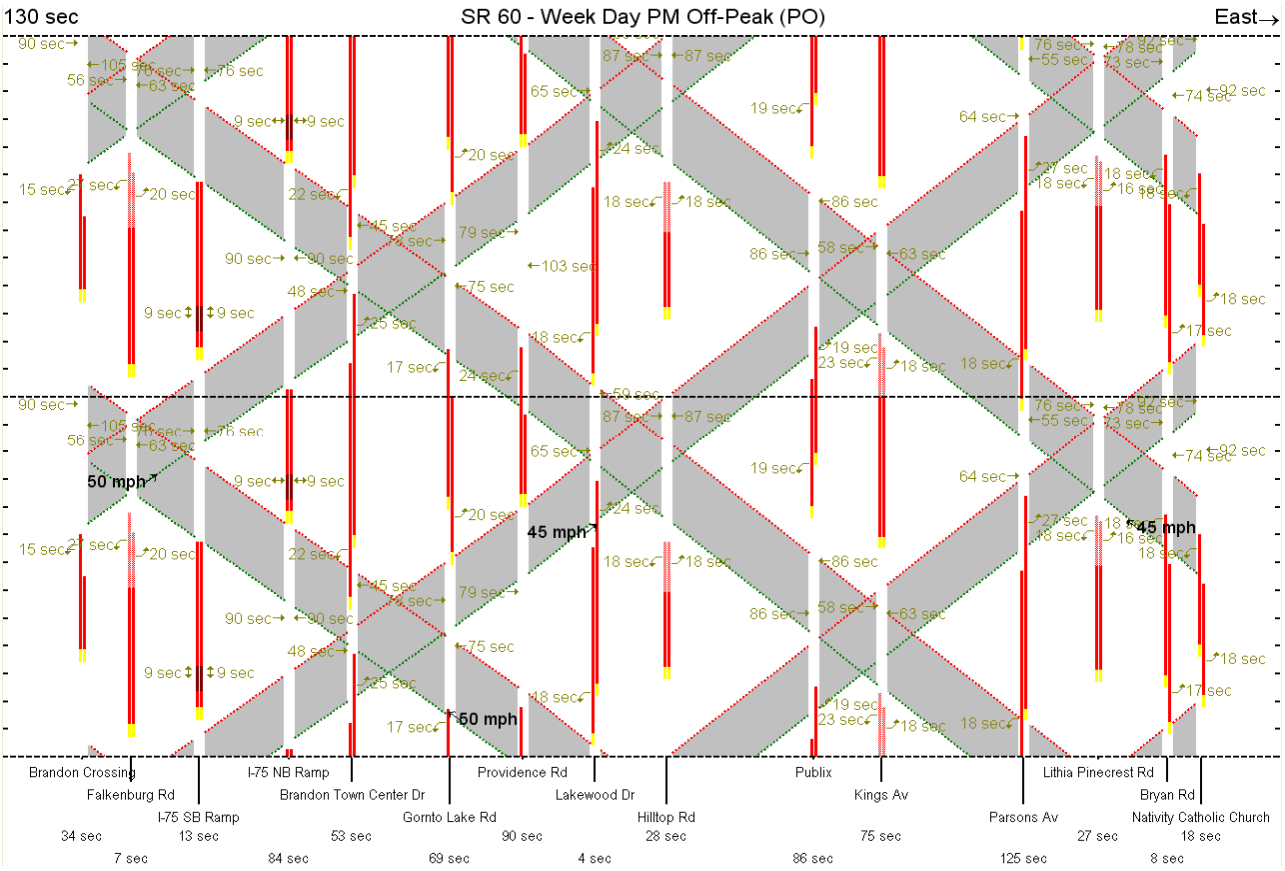


Figure 42

Time-Space Diagram - SR 60 Central
AM Peak and MD Peak





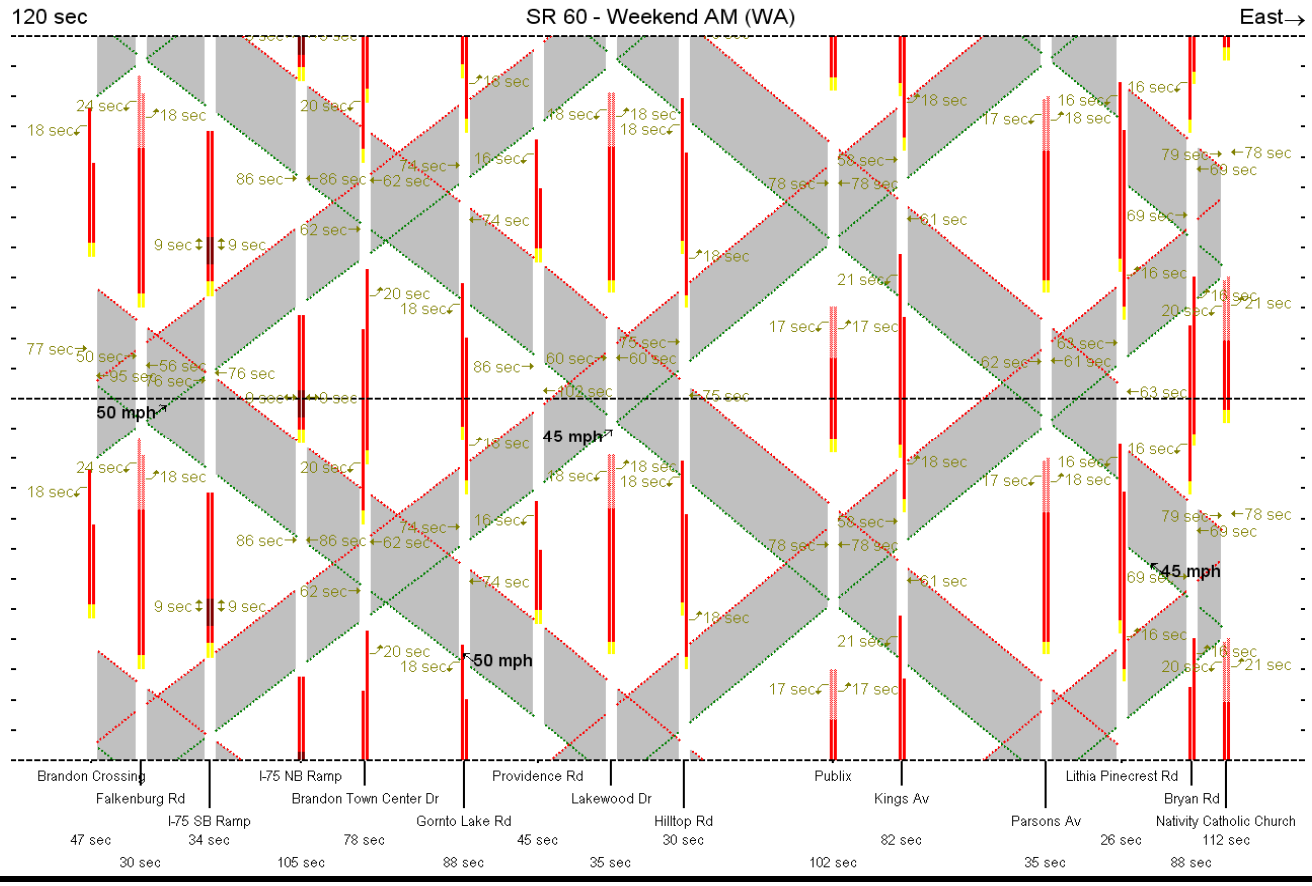
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

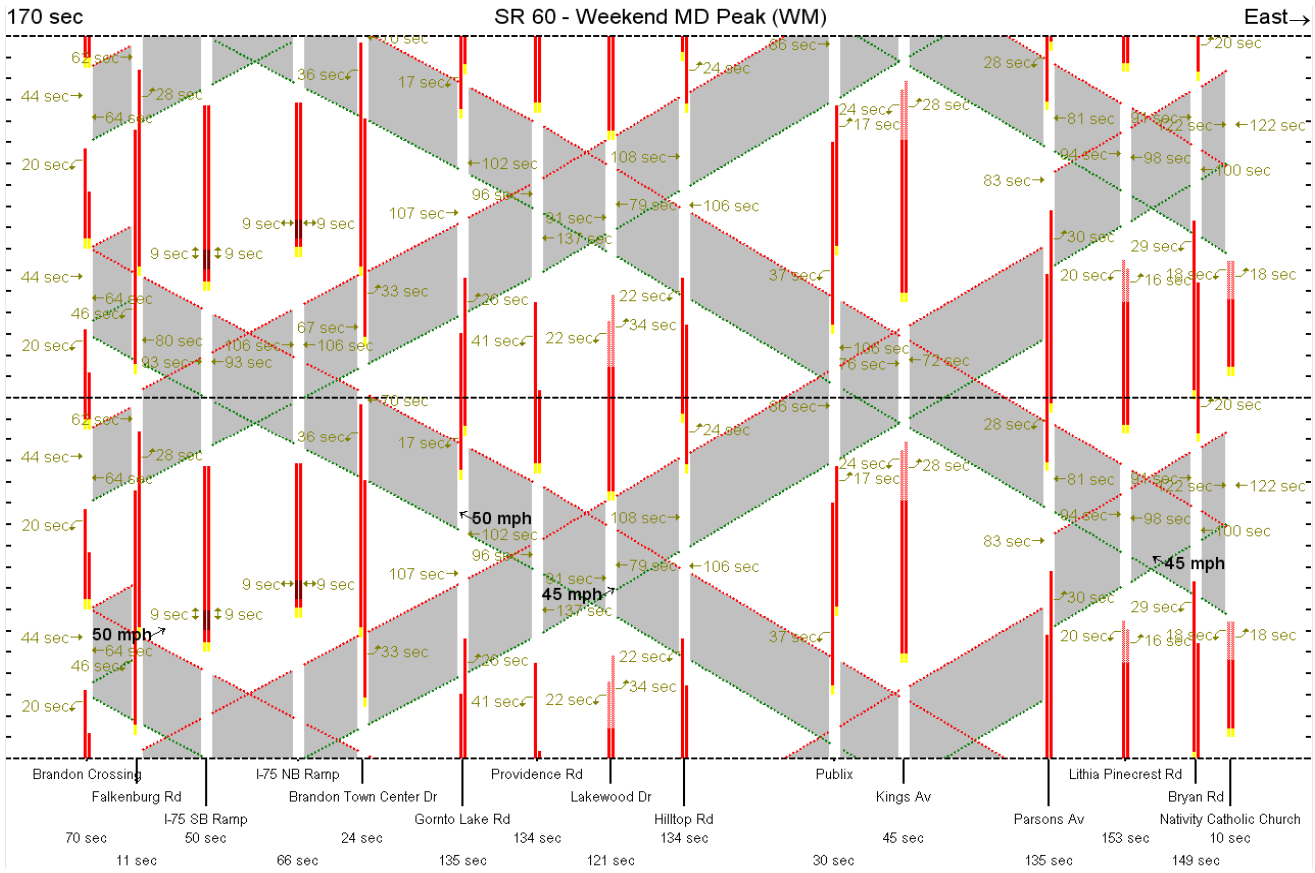
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 43

Time-Space Diagram - SR 60 Central
PM Peak and PM Off-peak





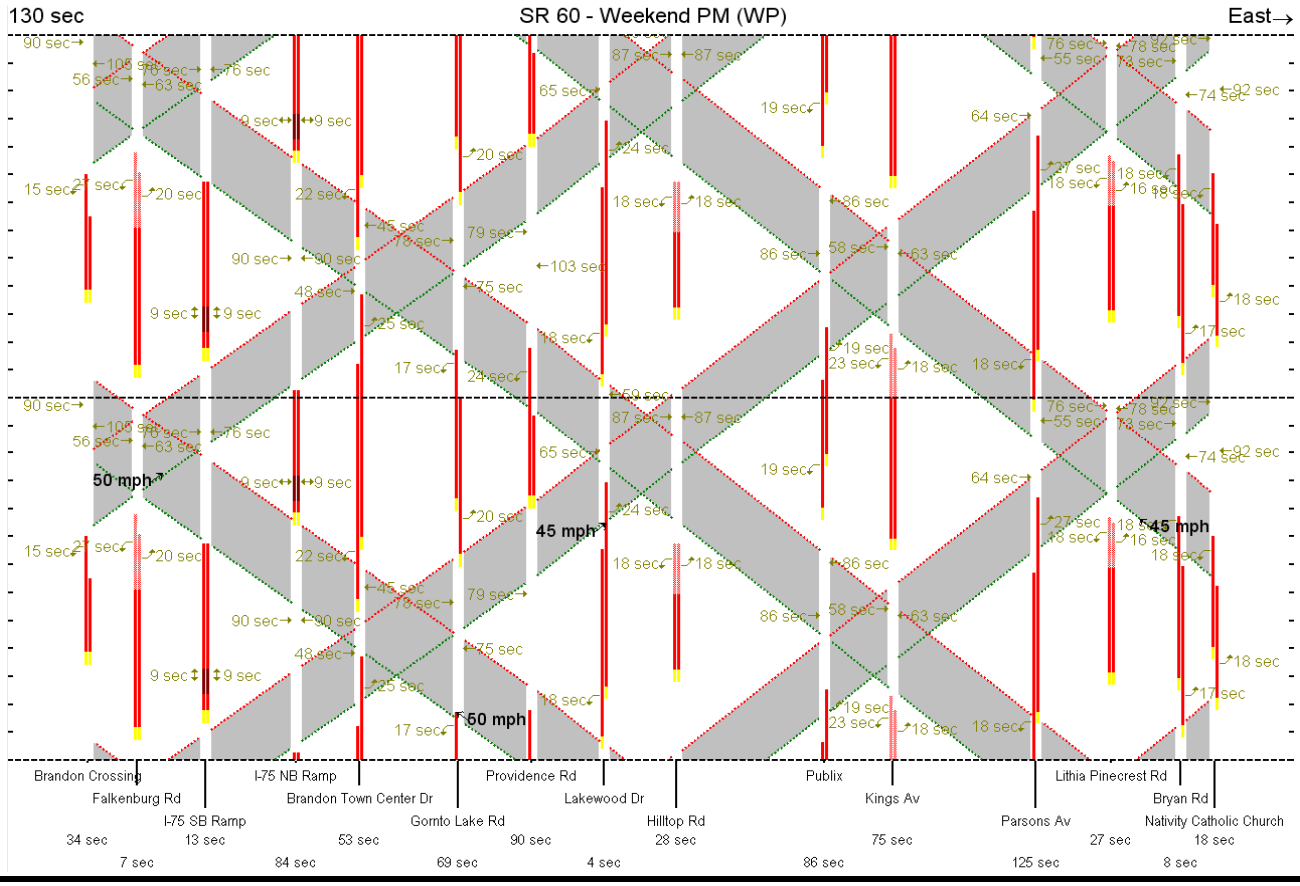
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 44

Time-Space Diagram - SR 60 Central
Weekend AM Off-peak and Weekend MD Peak



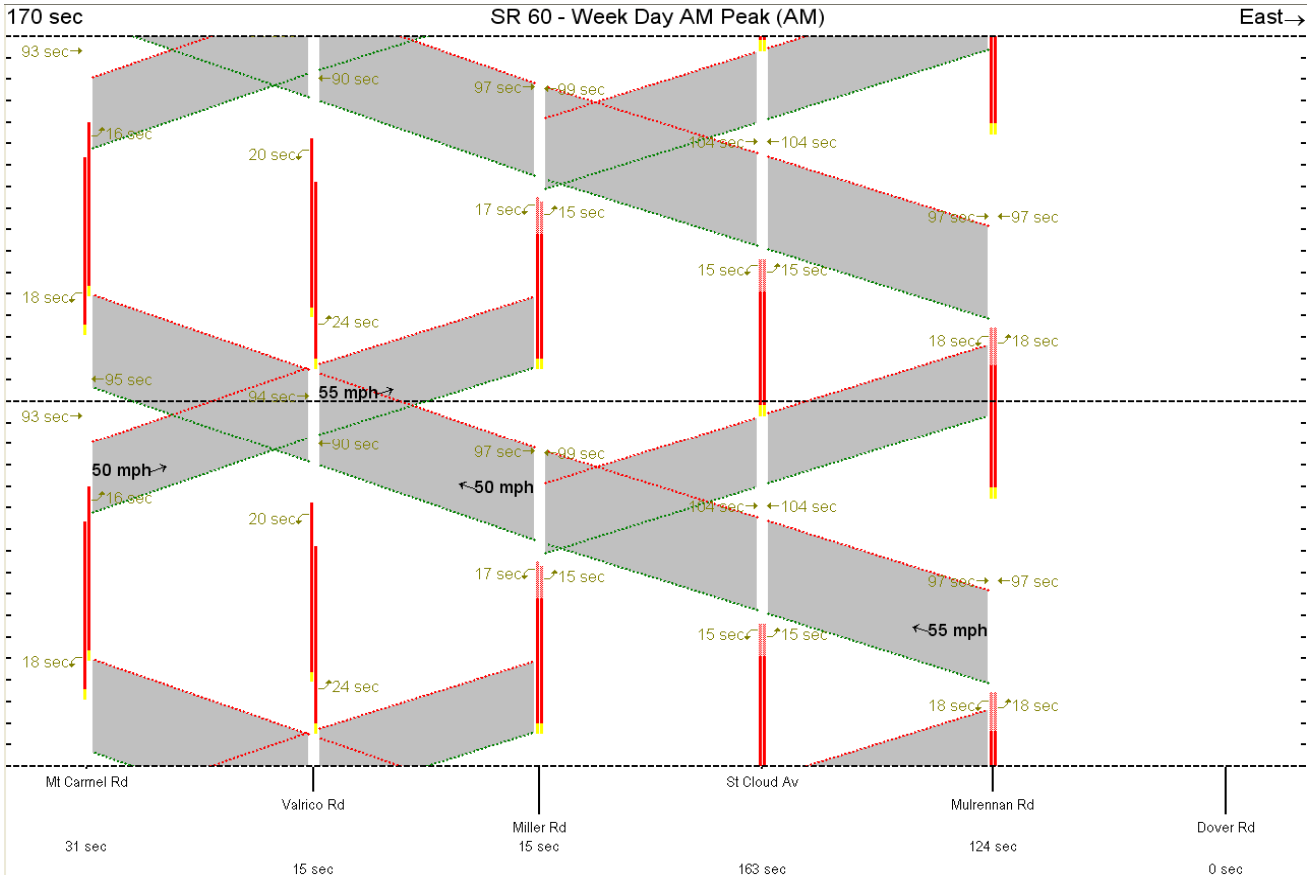
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

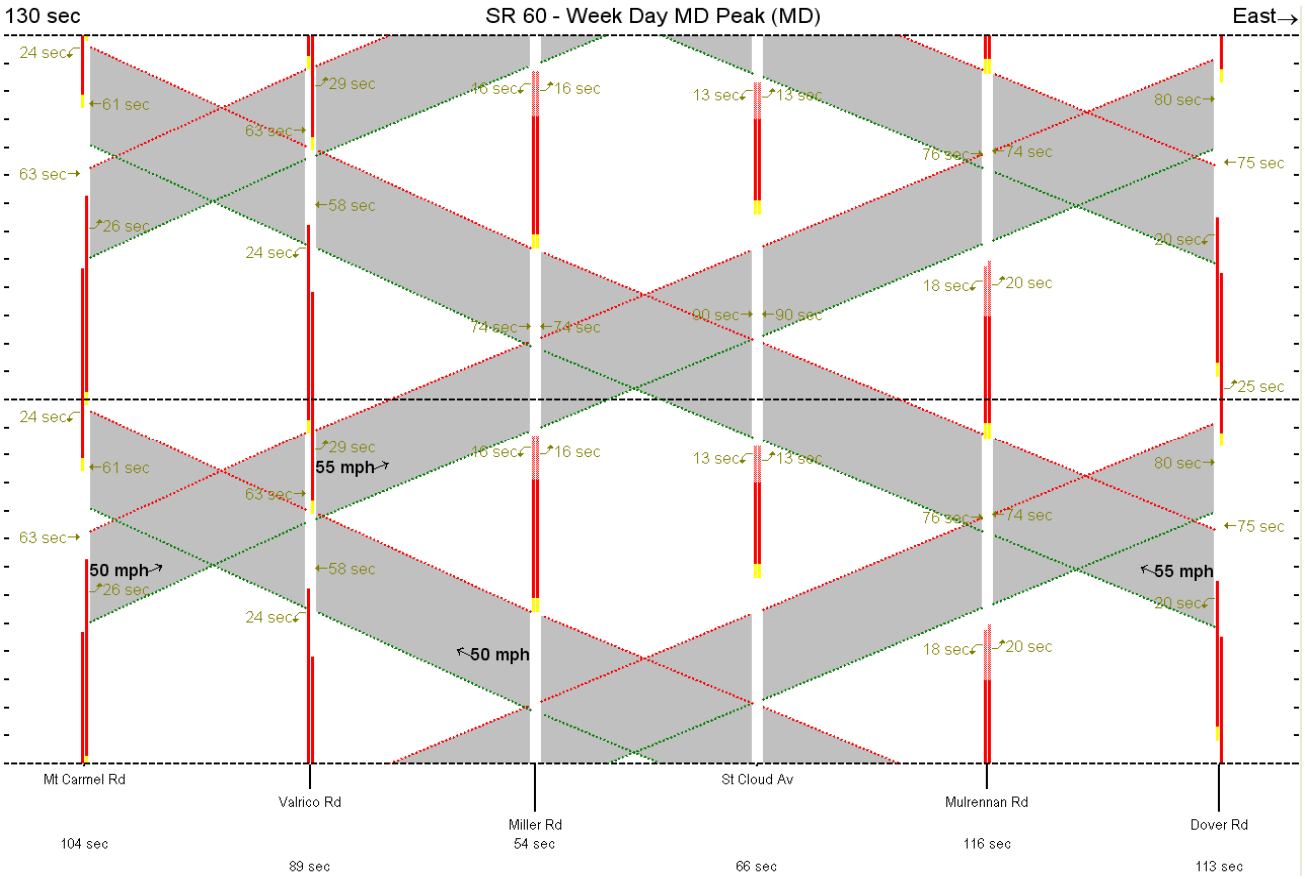
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 45

Time-Space Diagram - SR 60 Central
Weekend PM Off-peak





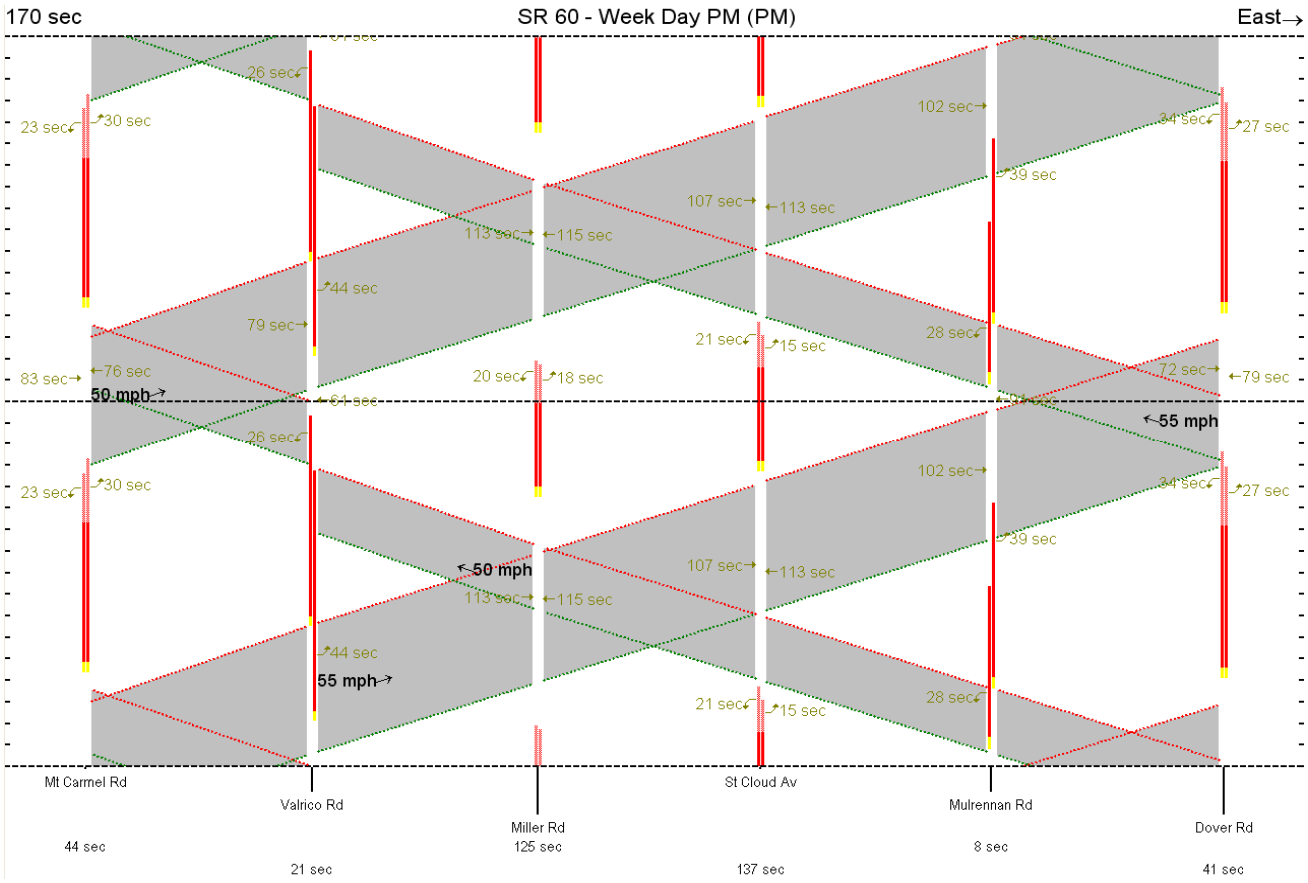
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

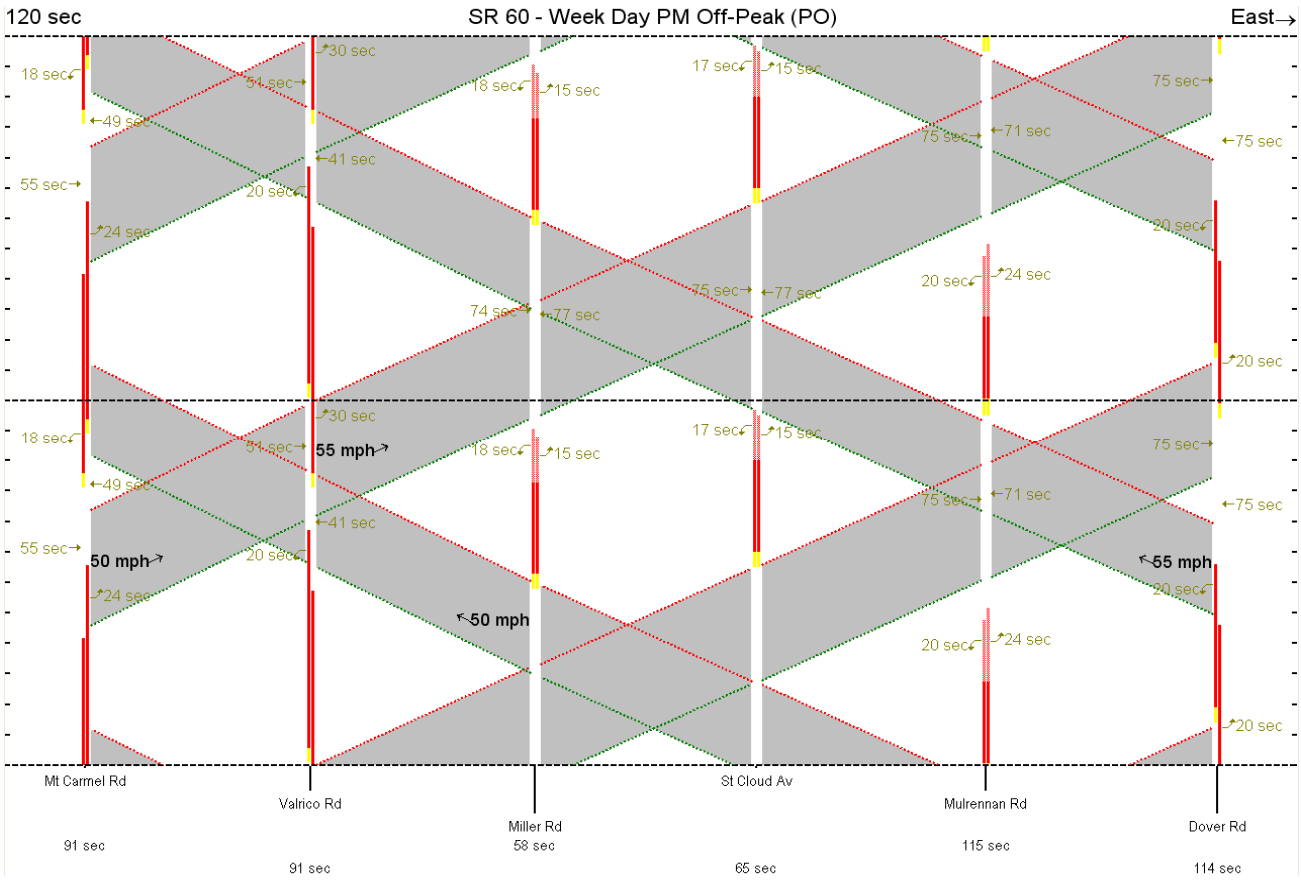
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 46

Time-Space Diagram - SR 60 East
AM Peak and MD Peak





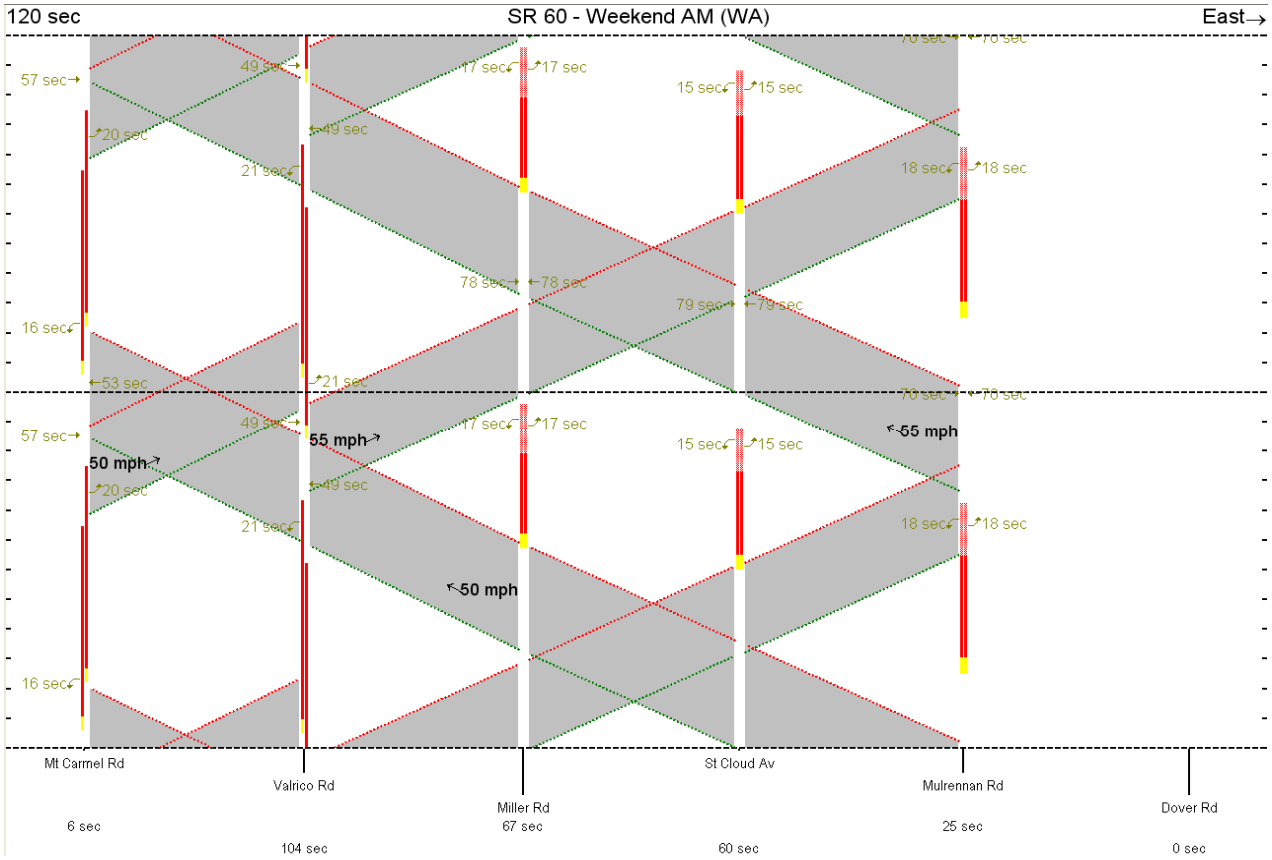
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

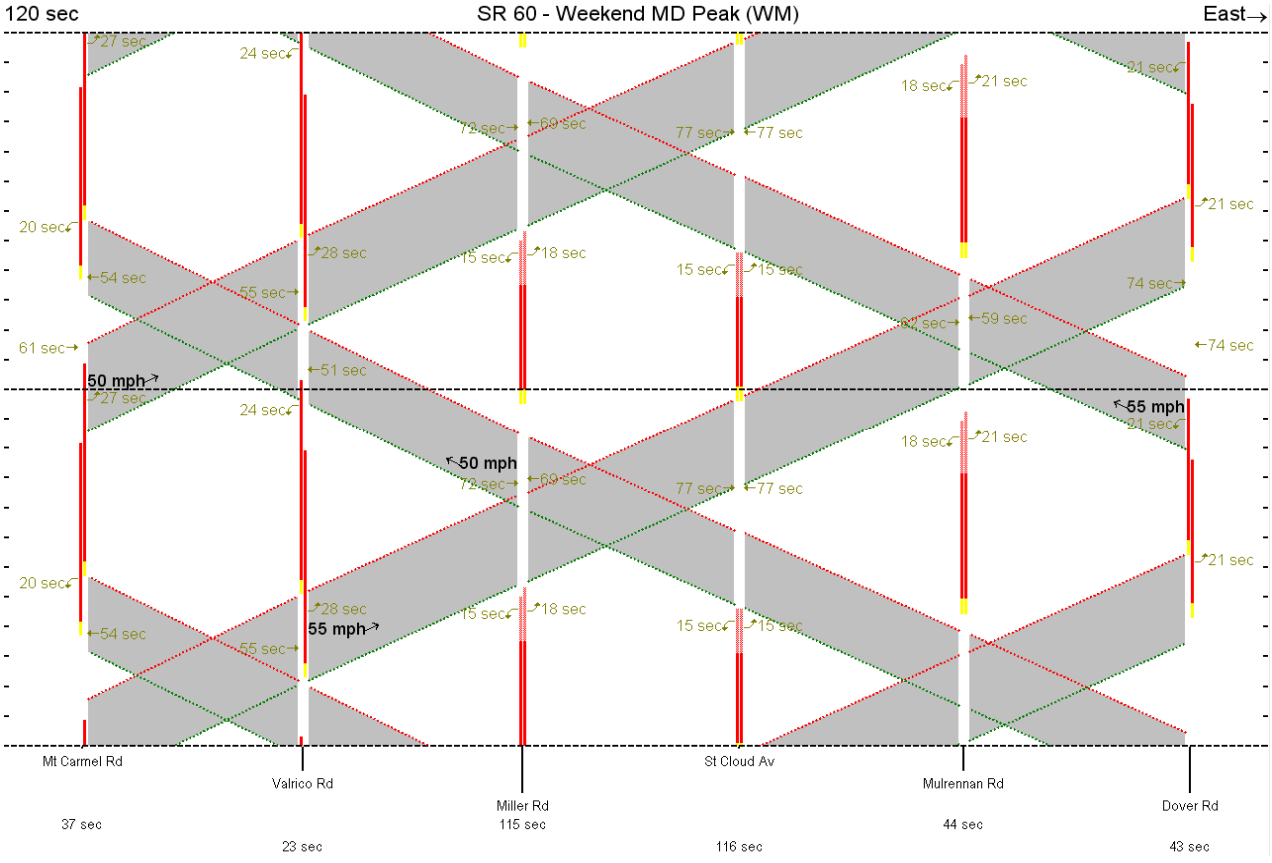
Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 47

Time-Space Diagram - SR 60 East
PM Peak and PM Off-peak





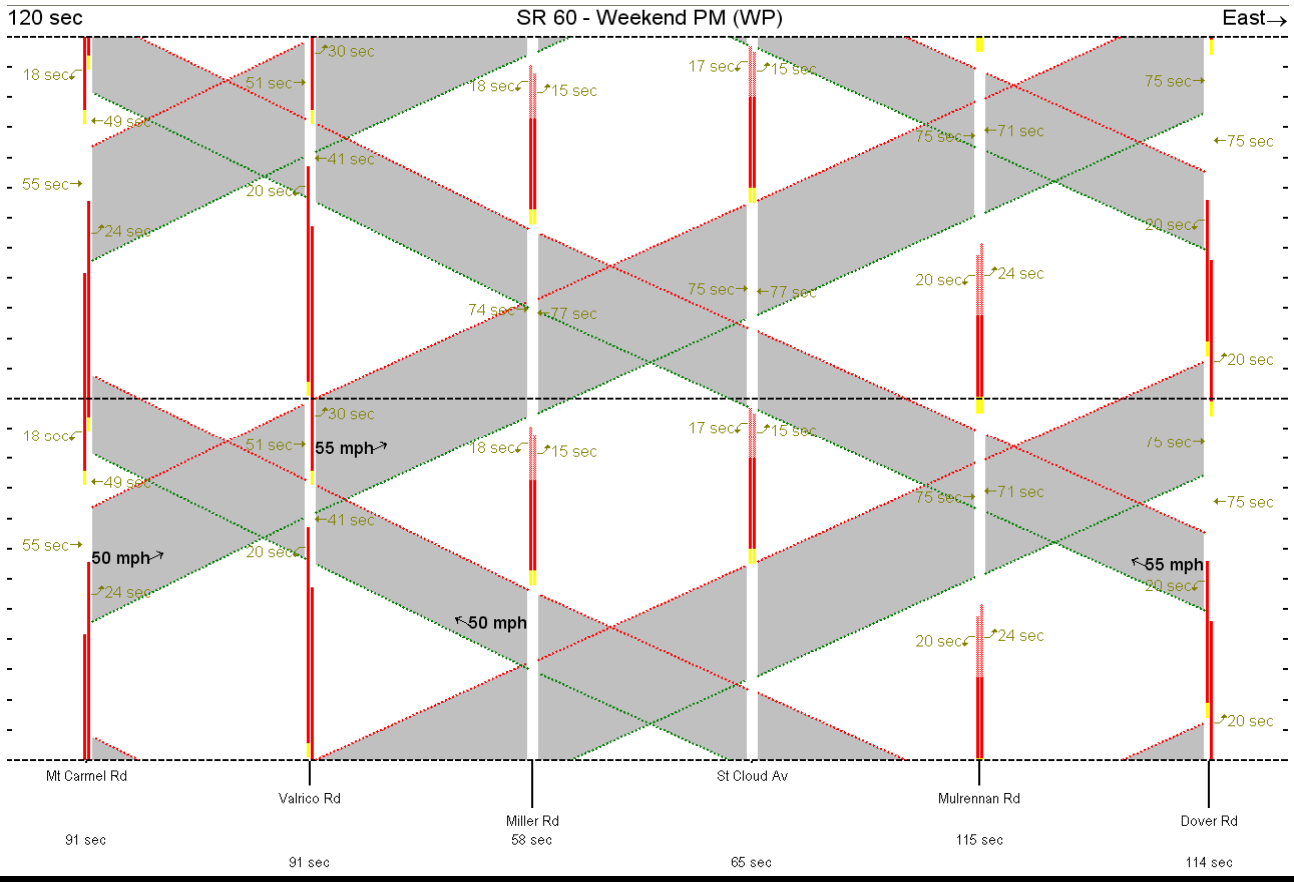
Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 48

Time-Space Diagram - SR 60 East
Weekend AM Off-peak and Weekend MD Peak



Movements with Green Indications
major street left turns
cross street (lefts or throughs)
major street throughs

Signal Timing
Cycle (see upper left)
Split (arrow indicates movement)
Offset (below street name)

Bandwidth

Figure 49

Time-Space Diagram - SR 60 East
Weekend PM Off-peak

7.4 Travel Time Runs

As stated in Section 2.3, travel time runs were conducted as a fine-tuning tool. In addition to fine-tuning, travel time runs also provide the analyst field-measured metrics such as delay and travel time reductions. While only travel time and delay are summarized here, information on other measures such as the number of stops, stopped delay, and average speed can be found in the Appendix.

Travel time runs for both directions on the corridor were conducted before and after the new signal timings were implemented. The average of the "existing" runs was compared to the average of the "implemented" runs to determine travel time savings on the corridor. "Corridor" refers to runs conducted between selected intersections located on opposite ends of the system. Travel time runs with implemented signal timings were conducted using TS/PP-Draft within two weeks of implementation. For the SR 60 corridor, travel time runs were conducted in three segments: 1) Orient Road to US 301, 2) Falkenburg Road to Kingsway Road / Bryan Road, and 3) Mt Carmel Road to Dover Road.

Table 6 - Table 8 summarize the average travel time and delay with existing and implemented signal timings. These performance data are field-measured, and apply only to vehicles on the main corridor. Figure 50 to Figure 52 on pages 61 to 63 graphically illustrate the average cumulative travel time on the corridor for each direction with existing and implemented signal timings.

Table 6 – Average Travel Time & Delay – SR 60 from Orient Rd to US 301

		AM Peak		MD Peak		PM Peak		PM Off-peak	
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)
Eastbound	Existing	155	63	165	73	199	107	121	29
	Implemented	101	9	112	20	122	30	98	6
	Difference	-54		-53		-77		-23	
	% Difference	-34.8%	-85.7%	-32.1%	-72.6%	-38.7%	-72.0%	-19.0%	-79.3%
Westbound	Existing	119	26	113	21	132	40	113	21
	Implemented	95	2	97	5	96	3	98	6
	Difference	-24		-16		-36		-15	
	% Difference	-20.2%	-92.3%	-14.2%	-76.2%	-27.3%	-90.0%	-13.3%	-71.4%
		Weekend AM Off-peak		Weekend MD Peak		Weekend PM Off-peak			
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)		
Eastbound	Existing	117	24	138	46	155	63		
	Implemented	102	10	118	26	114	21		
	Difference	-15		-20		-41			
	% Difference	-12.8%	-62.5%	-14.5%	-43.5%	-26.5%	-65.1%		
Westbound	Existing	108	16	114	21	113	20		
	Implemented	103	11	100	8	101	8		
	Difference	-5		-14		-12			
	% Difference	-4.6%	-31.3%	-12.3%	-66.7%	-10.6%	-60.0%		

Between Orient Road and US 301, travel time decreased significantly during all periods. In the eastbound direction, delay decreased between 44% - 86%. In the westbound direction, delay decreased between 31% - 92%.

Table 7 – Average Travel Time & Delay – SR 60 from Falkenburg Rd to Kingsway Rd

		AM Peak		MD Peak		PM Peak		PM Off-peak	
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)
Eastbound	Existing	496	215	564	283	679	398	465	185
	Implemented	356	75	390	110	419	138	318	38
	Difference	-140		-174		-260		-147	
	% Difference	-28.2%	-65.1%	-30.9%	-61.5%	-38.3%	-65.3%	-31.6%	-79.5%
Westbound	Existing	382	101	533	253	619	338	417	136
	Implemented	325	44	346	66	389	109	292	11
	Difference	-57		-187		-230		-125	
	% Difference	-14.9%	-56.4%	-35.1%	-73.9%	-37.2%	-68.0%	-30.0%	-91.9%
		Weekend AM Off-peak		Weekend MD Peak		Weekend PM Off-peak			
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)		
Eastbound	Existing	362	82	591	310	446	166		
	Implemented	283	2	381	101	374	93		
	Difference	-79		-210		-72			
	% Difference	-21.8%	-96.3%	-35.5%	-67.7%	-16.1%	-43.4%		
Westbound	Existing	404	124	617	336	453	143		
	Implemented	299	19	353	73	335	55		
	Difference	-105		-264		-118			
	% Difference	-26.0%	-84.7%	-42.8%	-78.6%	-26.0%	-82.5%		

Along this segment of SR 60, travel time decreased during every period as well. In the eastbound direction, delay decreased between 43% - 96%, reducing travel time by 1.2 – 4.3 minutes. In the westbound direction, delay decreased between 56% - 92%, saving drivers 1.0 – 4.4 minutes of travel time.

Table 8 – Average Travel Time & Delay – SR 60 from Mt Carmel Rd to Dover Rd

		AM Peak		MD Peak		PM Peak		PM Off-peak	
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)
Eastbound	Existing	243	107	296	126	346	175	228	58
	Implemented	219	82	189	19	209	38	186	16
	Difference	-24		-107		-137		-42	
	% Difference	-9.9%	-22.4%	-36.1%	-84.9%	-39.6%	-78.3%	-18.4%	-72.4%
Westbound	Existing	217	78	304	130	348	174	312	138
	Implemented	176	37	202	28	246	72	218	45
	Difference	-41		-102		-102		-94	
	% Difference	-18.9%	-52.6%	-33.6%	-78.5%	-29.3%	-58.6%	-30.1%	-68.1%
		Weekend AM Off-peak		Weekend MD Peak		Weekend PM Off-peak			
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)		
Eastbound	Existing	205	69	210	74	178	42		
	Implemented	167	31	188	52	152	16		
	Difference	-38		-22		-26			
	% Difference	-18.5%	-55.1%	-10.5%	-29.7%	-14.6%	-61.9%		
Westbound	Existing	185	45	324	188	214	74		
	Implemented	155	15	188	49	173	34		
	Difference	-30		-136		-41			
	% Difference	-16.2%	-66.7%	-42.0%	-72.3%	-19.2%	-55.4%		

Between Mount Carmel Road and Dover Road in the eastbound direction, delay decreased 22% - 85%, saving drivers up to 2.3 minutes of travel time. In the westbound direction, delay decreased between 52% - 79%, reducing travel time between 0.5 – 2.3 minutes of travel time.

Average Total Travel Time & Delay

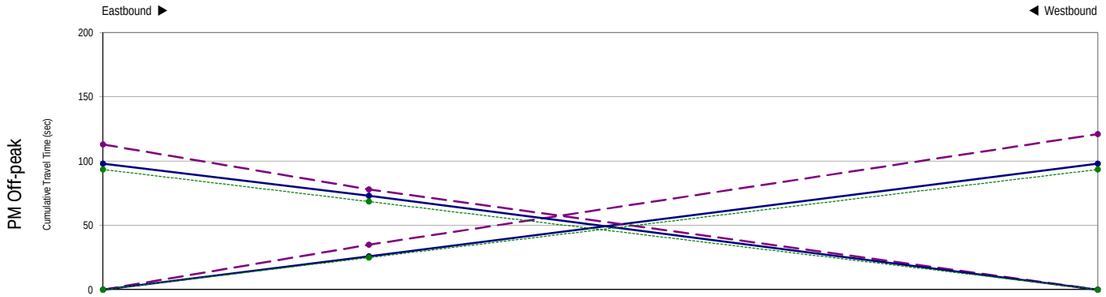
SR 60: 1.3 miles

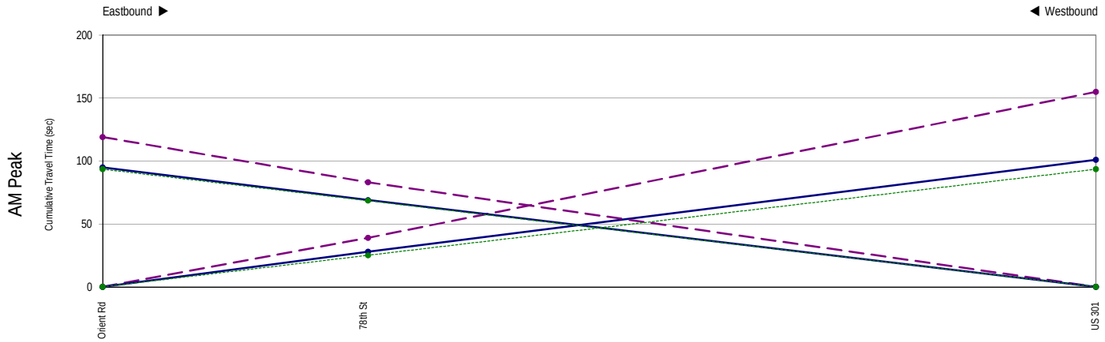
		AM Peak		MD Peak		PM Peak		PM Off-peak		Weekend AM Off-peak		Weekend MD Peak		Weekend PM Off-peak	
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)
Eastbound	Existing	155	63	165	73	199	107	121	29	117	24	138	46	155	63
	Implemented	101	9	112	20	122	30	98	6	102	10	118	26	114	21
	Difference	-54		-53		-77		-23		-15		-20		-41	
	% Difference	-34.8%	-85.7%	-32.1%	-72.6%	-38.7%	-72.0%	-19.0%	-79.3%	-12.8%	-62.5%	-14.5%	-43.5%	-26.5%	-65.1%
Westbound	Existing	119	26	113	21	132	40	113	21	108	16	114	21	113	20
	Implemented	95	2	97	5	96	3	98	6	103	11	100	8	101	8
	Difference	-24		-16		-36		-15		-5		-14		-12	
	% Difference	-20.2%	-92.3%	-14.2%	-76.2%	-27.3%	-90.0%	-13.3%	-71.4%	-4.6%	-31.3%	-12.3%	-66.7%	-10.6%	-60.0%

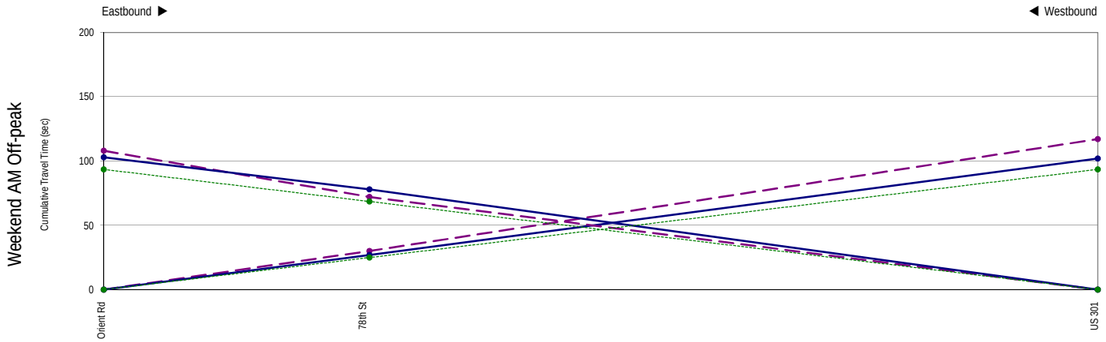
Eastbound: Orient Rd to US 301

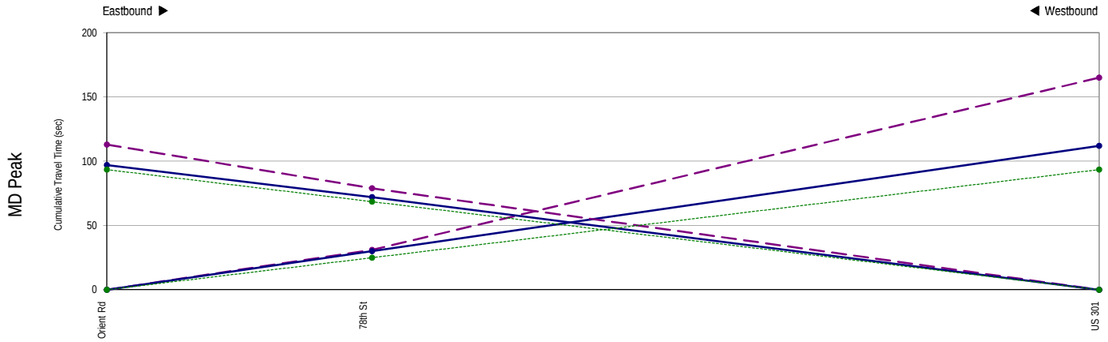
Westbound: US 301 to Orient Rd

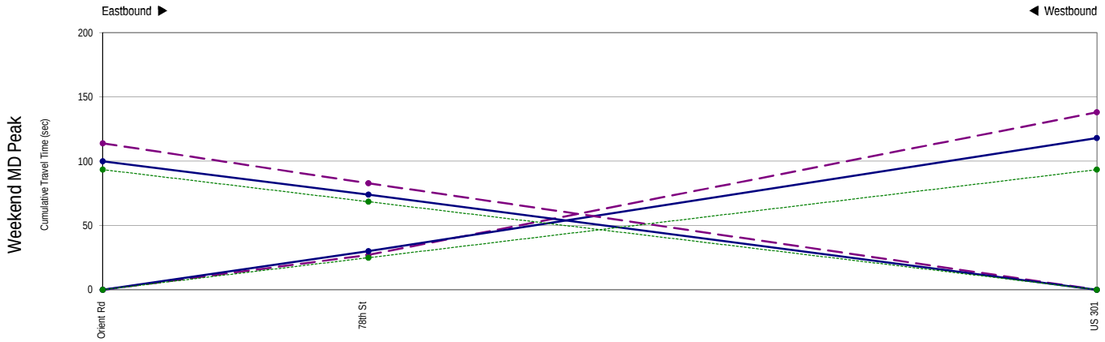
Free Flow Travel Time (s): 93

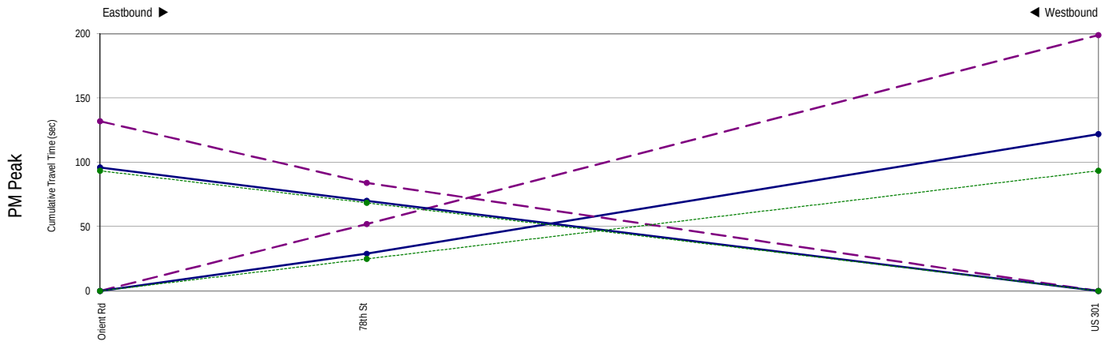


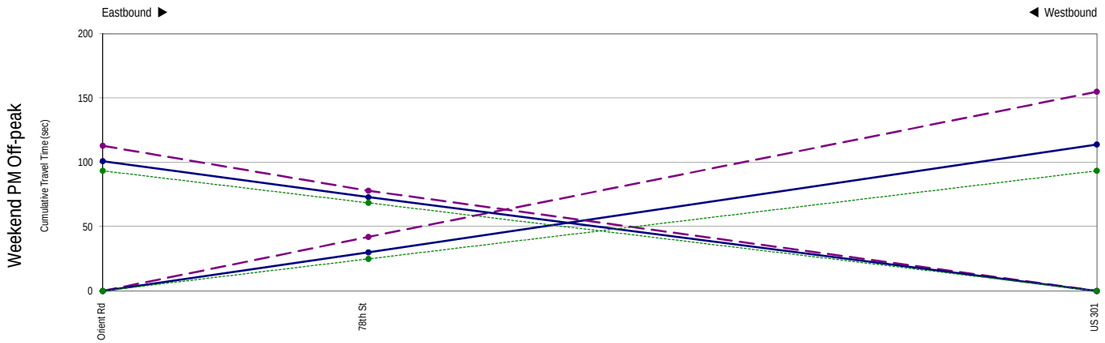












Existing
Implemented
Free Flow

Figure 50

Average Travel Time & Delay

SR 60 - Orient Rd to US 301

Average Total Travel Time & Delay

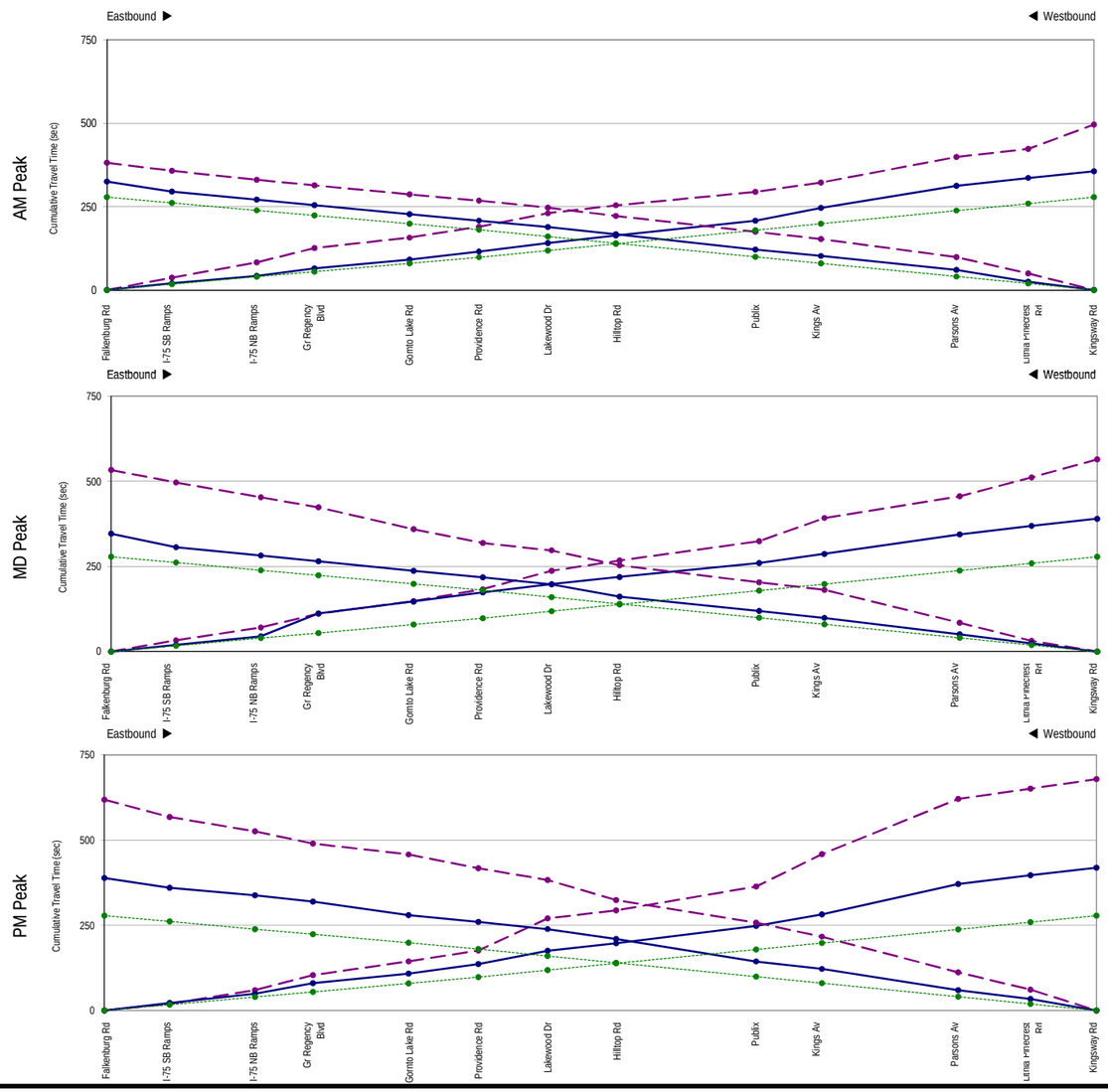
SR 60: 3.6 miles

		AM Peak		MD Peak		PM Peak		PM Off-peak		Weekend AM Off-peak		Weekend MD Peak		Weekend PM Off-peak	
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)
Eastbound	Existing	496	215	564	283	679	398	465	185	362	82	591	310	446	166
	Implemented	356	75	390	110	419	138	318	38	283	2	381	101	374	93
	Difference	-140		-174		-260		-147		-79		-210		-72	
	% Difference	-28.2%	-65.1%	-30.9%	-61.5%	-38.3%	-65.3%	-31.6%	-79.5%	-21.8%	-96.3%	-35.5%	-67.7%	-16.1%	-43.4%
Westbound	Existing	382	101	533	253	619	338	417	136	404	124	617	336	453	143
	Implemented	325	44	346	66	389	109	292	11	299	19	353	73	335	55
	Difference	-57		-187		-230		-125		-105		-264		-118	
	% Difference	-14.9%	-56.4%	-35.1%	-73.9%	-37.2%	-68.0%	-30.0%	-91.9%	-26.0%	-84.7%	-42.8%	-78.6%	-26.0%	-82.5%

Eastbound: Falkenburg Rd to Kingsway Rd

Westbound: Kingsway Rd to Falkenburg Rd

Free Flow Travel Time (s): 279



Existing
Implemented
Free Flow

Figure 51

Average Travel Time & Delay

SR 60 - Falkenburg Rd to Kingsway Rd / Bryan Rd

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Average Total Travel Time & Delay

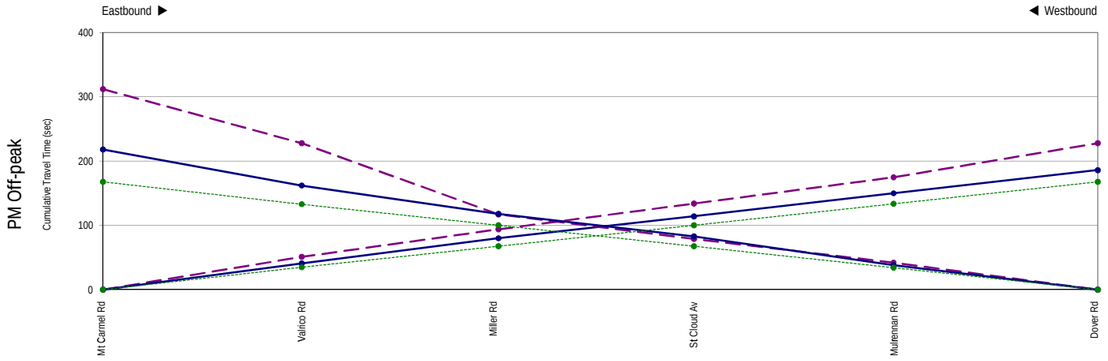
SR 60: 2.5 miles

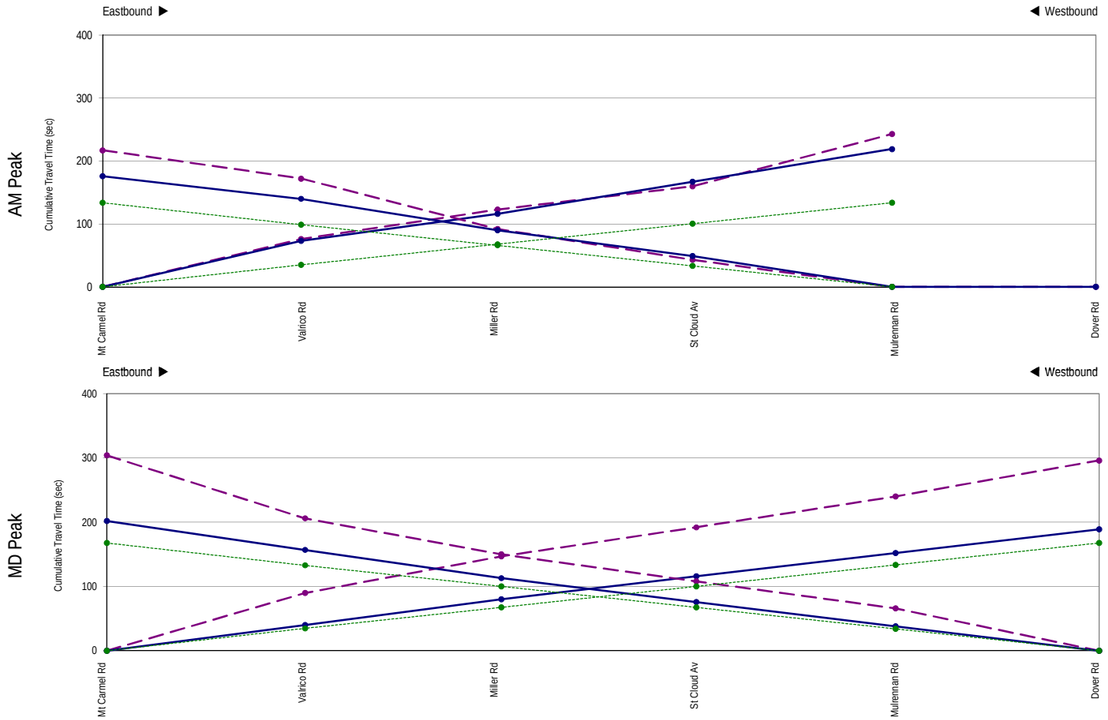
		AM Peak		MD Peak		PM Peak		PM Off-peak		Weekend AM Off-peak		Weekend MD Peak		Weekend PM Off-peak	
		Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)	Trv Time (s)	Delay (s)
Eastbound	Existing	243	107	296	126	346	175	228	58	205	69	210	74	178	42
	Implemented	219	82	189	19	209	38	186	16	167	31	188	52	152	16
	Difference	-24		-107		-137		-42		-38		-22		-26	
	% Difference	-9.9%	-22.4%	-36.1%	-84.9%	-39.6%	-78.3%	-18.4%	-72.4%	-18.5%	-55.1%	-10.5%	-29.7%	-14.6%	-61.9%
Westbound	Existing	217	78	304	130	348	174	312	138	185	45	324	188	214	74
	Implemented	176	37	202	28	246	72	218	45	155	15	188	49	173	34
	Difference	-41		-102		-102		-94		-30		-136		-41	
	% Difference	-18.9%	-52.6%	-33.6%	-78.5%	-29.3%	-58.6%	-30.1%	-68.1%	-16.2%	-66.7%	-42.0%	-72.3%	-19.2%	-55.4%

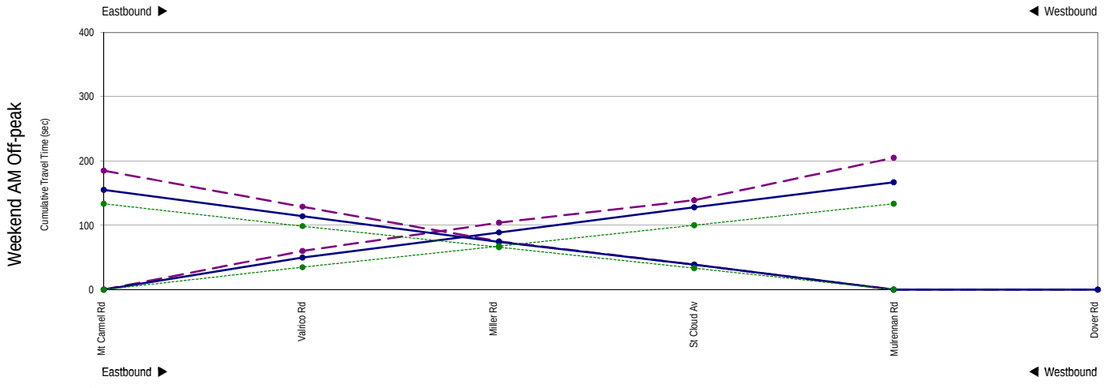
Eastbound: Mt Carmel Rd to Dover Rd

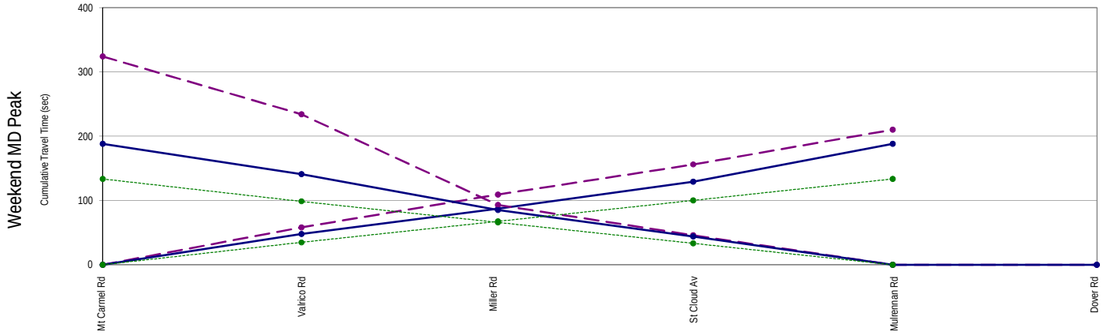
Westbound: Dover Rd to Mt Carmel Rd

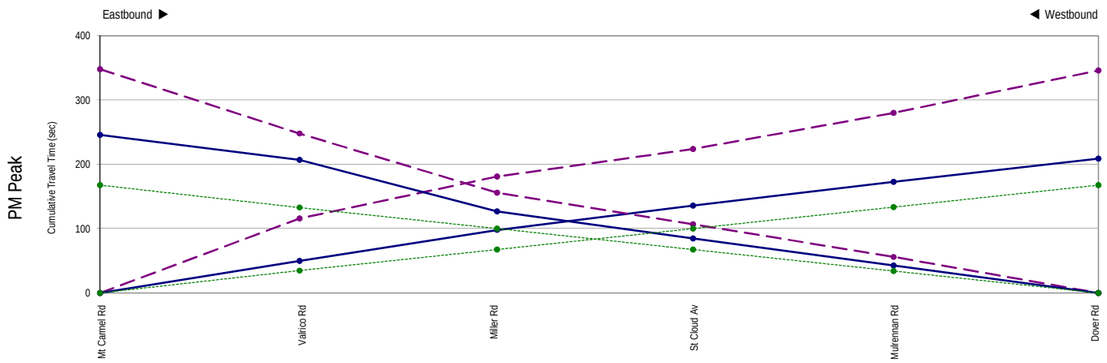
Free Flow Travel Time (s): 168

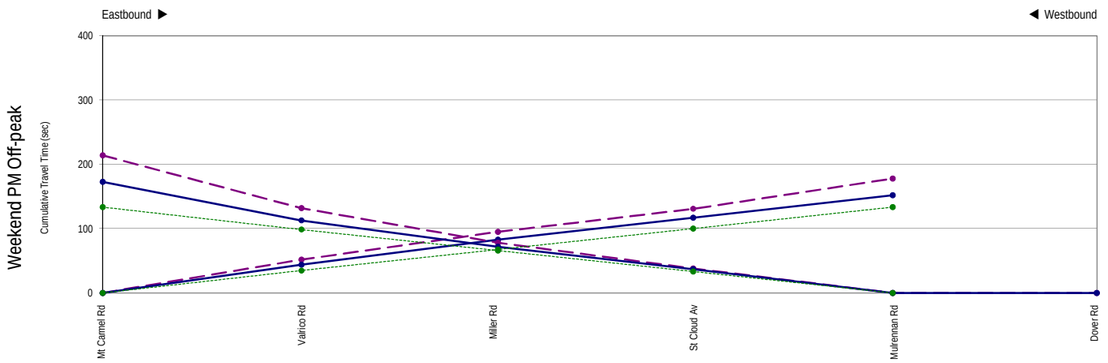












Existing
Implemented
Free Flow

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Figure 52

Average Travel Time & Delay

SR 60 - Mt Carmel Rd to Dover Rd

7.5 Benefit-Cost Analysis

The purpose of a benefit-cost analysis is to establish a project's merit by economically quantifying the benefits and costs associated with the project over its lifetime. According to ITE, "signal retiming is a beneficial method for maintaining efficient traffic signal operations" and "is the most cost-effective technique to reduce congestion, improve air quality, and potentially reduce accidents." The following discusses the methodology used to determine the benefits and costs of implementing new signal timings at the intersections within the scope of this project.

Benefits

There are basically two types of benefits as they relate to transportation improvements. User benefits, or direct benefits, are enjoyed directly by travelers and are determined by a reduction in three distinct travel costs: travel time costs, operating costs, and crash costs. The second type of benefit is non-user benefits, or indirect benefits. These benefits include environmental impacts, air quality, and reduced motorist frustration.

For the purposes of this analysis, only direct benefits, particularly travel time and operating costs, were calculated. While improved signal timing should reduce certain types of crashes, it is difficult to determine the actual reduction in crashes. Therefore, this analysis assumes the number of crashes will remain constant throughout the life of the project.

Travel time benefits were calculated by modeling delay with existing and implemented signal timings during each hour modeled. Benefits were also estimated for non-peak hours during which implemented timings are in operation. The total delay was multiplied by a value-of-time and auto occupancy to determine the total weekly benefit as a result of reduction in travel time as shown in Table 9.

Table 9 – Weekly Benefit for Change in Travel Time Costs

Delay (h)	AM	MD	PM	WA	WM	WP
Existing Timings	2,031	1,497	2,250	384	2,233	551
Implemented Timings	1,880	1,239	2,094	297	1,776	448
Change	-151	-258	-156	-87	-457	-103
Estimated Change during other hours			-400			-481
Total Daily Change			-965			-1,128
Total Weekly Change in Delay			-4,825			-2,256
					Auto	Truck
				Vehicle Type	98%	2%
				Value-of-Time[1,2]	$7.63	$80.53
				Auto Occupancy[1]	1.51	1.00
				Total	$79,898	$11,405
Weekly Benefit for Change in Travel Time Costs						$91,302

[1] *Provided by FDOT Office of Transportation Statistics*

[2] *Adjusted for trip type per AASHTO* User Benefit Analysis for Highways, *2003*

Benefits for the reduction in operating costs were calculated by modeling fuel consumption with existing and implemented signal timings during each peak hour and estimating fuel consumption during non-peak hours. The total change in fuel consumption was multiplied by the historical twelve-month average fuel cost.

The weekly benefit for change in operating costs is shown in Table 10.

Table 10 – Weekly Benefit for Change in Operating Costs

Fuel Consumption (gal)	AM	MD	PM	WA	WM	WP
Existing Timings	4,216	3,734	4,780	1,563	4,495	1,914
Implemented Timings	4,069	3,468	4,658	1,420	4,172	1,812
Change	-147	-266	-122	-143	-323	-102
Estimated Change during other hours			-379			-373
Total Daily Change			-914			-941
Total Weekly Change			-4,570			-1,882
Fuel Cost [3]						$2.48
Weekly Benefit for Change in Operating Costs						$16,002

[3]12-month average fuel cost, AAA Fuel Gauge Report for the State of Florida - www.fuelgaugereport.com, May 2009

Based on the previous tables, the total weekly benefit is $107,304.

In order to calculate the total lifetime benefit present value, it was assumed the life of this project will be 5 years. A discount rate of 3.4% was used. It was also assumed that 100% of the total daily benefit will be realized in year 1. However, as traffic volumes change, the daily benefit will likely decrease. Therefore, benefits in subsequent years are reduced by 20% each year. Table 11 summarizes the present values of annual benefits.

Table 11 – Present Value of Annual Benefits

Year	Annual Benefit Present Value
Year 1	$5,579,826
Year 2	$4,317,080
Year 3	$3,131,344
Year 4	$2,018,920
Year 5	$976,267
Total	$16,023,436

The present value of total lifetime benefits based on the table above is approximately $16,000,000.

Costs

The total cost to conduct all of the tasks for the intersections within the scope of this project was $140,777.

Benefit-Cost Ratio

Given the benefits and costs described above, the benefit-cost ratio for this project is 114:1.

8.0 RECOMMENDATIONS

8.1 Recommendations for Safety Improvements

Based on the field observations in Section 4.2, the following improvements are recommended to mitigate potentially hazardous conditions. Any geometric or capacity recommendations affecting operations will be discussed and further analyzed in Section 8.2.

Various Intersections

- Consider installing back plates on signal heads to increase visibility at the following locations:

Intersection	Signal Heads
SR 60 & US 301	Inside westbound left turn, outside eastbound left turn heads
SR 60 & Falkenburg Rd	Outside eastbound head
SR 60 & I-75 Southbound Ramps	Inside eastbound and westbound heads
SR 60 & Grand Regency Blvd	Second-from-left westbound, outside eastbound, and inside eastbound left turn heads
SR 60 & Lithia Pinecrest Rd	All eastbound and westbound heads
SR 60 & Dover Rd	All eastbound and westbound heads

SR 60 & US 301

- Currently, this intersection has pedestrian push buttons but no pedestrian signal heads or crosswalk pavement markings. Consider installing heads and crosswalks.
- Consider distinguishing the westbound right turn lane for US 301 from the westbound right turn lane that serves the car dealership on the northeast corner of this intersection. Drivers were repeatedly observed entering the lane for the car dealership and then swerving back into the lane for US 301.

8.2 Recommendations for Capacity and Operational Improvements

Beyond optimizing traffic signal timing, other improvements such as additional capacity can further improve the performance of an intersection and roadway network. These recommendations are based on primarily on field observation and engineering judgment. Consideration should be given to additional capacity improvements required by future traffic growth and costs of right-of-way, design, construction, etc. However, these considerations are not included in the scope of this project.

General

- Currently, SR 60 has an eight-lane cross section between I-75 and Valrico Road, except for a six-lane segment between Kings Avenue and Kingsway Road. Consider converting the six-lane section to an eight-lane section.
- The lane drop on eastbound SR 60 east of Valrico Road causes significant friction resulting in congestion and reduces speeds. Consider moving the lane drop downstream to provide a longer merge distance.
- On weekends, the queue at the unsignalized eastbound left turn lane (between Ridgewood Avenue and Mount Carmel Road) that serves the Walmart shopping center extends into the through lanes. Consider extending this lane.

Various Intersections

Long pedestrian crossing distances cause major offset errors at many intersections along the corridor. *Walk* intervals of 5 seconds and *flashing don't walk* intervals based on a walking speed of 4 feet/second were implemented for side-street pedestrian movements at Falkenburg Road, Grand Regency Boulevard, Kings Avenue, and Parsons Avenue. Consider installing median pedestrian refuges with pushbuttons at the aforementioned locations as well as Lakewood Drive, Hilltop Road, Mount Carmel Road, Valrico Road, and Saint Cloud Avenue. These refuges would allow the clearance interval to be reduced by half and reduce the frequency of signals operating out of coordination.

SR 60 & Kings Avenue

- Consider eliminating the southbound pedestrian crosswalk to minimize the potential for offset-seeking.
- Occasionally, vehicles departing this intersection were observed making a left turn into the shopping center just north of this intersection, which causes a queue to extend back into the intersection. Consider installing a *NO LEFT TURN* (R3-2) sign or a median barrier to prohibit this movement.

SR 60 & Lakewood Drive

Consider extending the southbound right turn lane. Vehicles were observed using the shoulder to bypass the queues for the southbound left and through movements.

SR 60 & Miller Road

Consider extending the eastbound right turn lane.

SR 60 & Mulrennan Road

Consider extending the eastbound right turn lane.

8.3 Other Potential Improvements

At FDOT's request, the intersections of Grand Regency Boulevard, Kings Avenue, and Parsons Avenue were evaluated to determine if split phase, or sequential, operation on the side streets would improve intersection performance. Changes to lane configuration on side street approaches were only considered if no heavy construction is required. The following lane configuration changes were determined to be operationally optimal for split phase operation:

- Grand Regency Boulevard: no changes required
- Kings Avenue: convert the northbound through lane to a shared left/through lane.
- Parsons Avenue: convert the northbound left turn lane to a shared left/through lane.

While the lane configuration change at Parsons Avenue would improve intersection performance, northbound drivers would be required to jog to the right as they drive through the intersection. If such a change is made, additional pavement markings should be installed to provide drivers guidance through the intersection.

Intersection performance with split phase operation and lane configuration changes can be found on Figure 21, Figure 27, and Figure 28 on pages 29, 35, and 36, respectively.

In conclusion, the modeling results do not support a recommendation to implement split phasing at these intersections during all times of day. However, based on extensive field time, implementing split phase operations and lane configuration changes at these intersections could provide benefit to intersection operations.

9.0 APPENDIX

Documents included on the CD:

- 7-day, 24-hour directional volume counts
- Turning movement counts
- Existing and implemented timing sheets
- Intersection approach photos
- Aerial photographs
- Field notes
- TS/PP-Draft reports
- Synchro models with existing and implemented signal timings
- Synchro & SimTraffic report files with existing and implemented signal timings

Hide/Show Search Criteria

Search for Highest Traffic Accident Intersections:

Month to Display: 08/2010

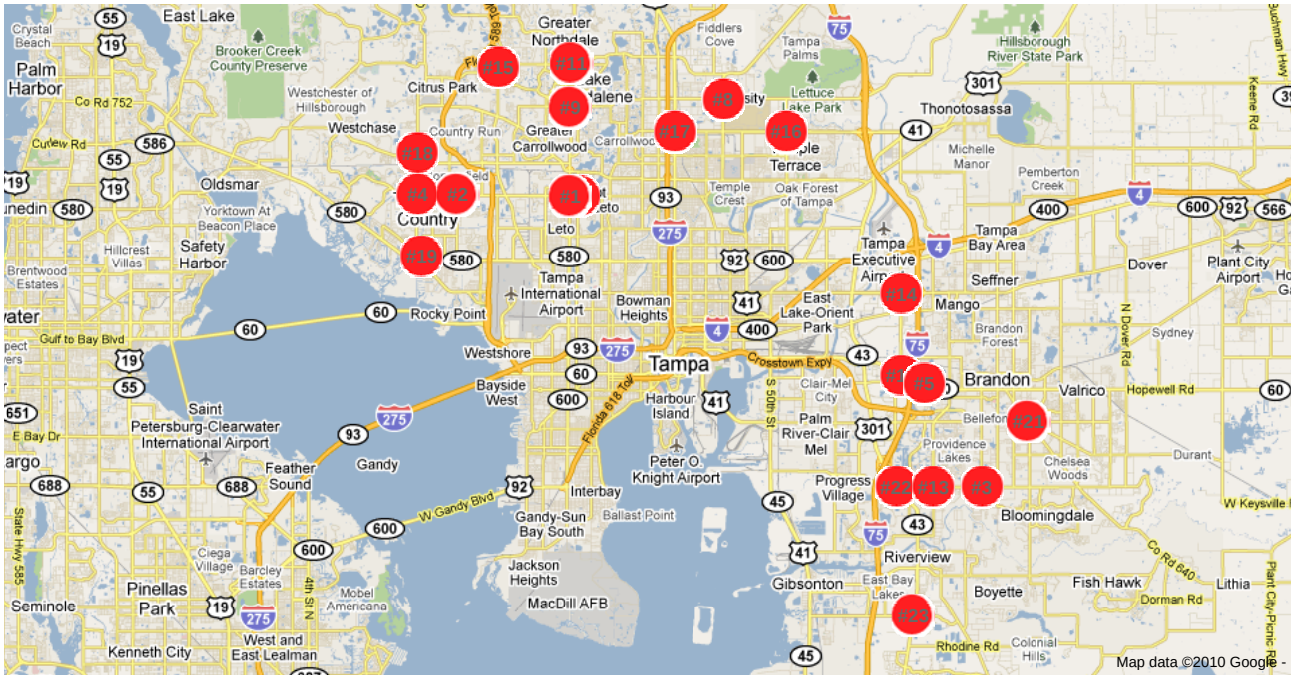
Number of Results:

- (•) Top 25
- ( ) Top 50
- ( ) Top 100
- ( ) Top 200

Inquire

Top Traffic Accident Locations for Aug 2010

Hide/Show Map



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Rank	Street 1	Street 2	Accidents
1	DALE MABRY HW N	WATERS AV W	30
2	HANLEY RD	WATERS AV W	21
3	KINGS AV S	BLOOMINGDALE AV W	18
4	WATERS AV W	SHELDON RD	17
5	GRAND REGENCY BL	BRANDON BL W	15
6	HIMES AV N	WATERS AV W	15
7	DALE MABRY HW N	VAN DYKE RD	14
8	FLETCHER AV E	BRUCE B DOWNS BL	14
9	FLETCHER AV W	DALE MABRY HW N	14
10	PASCO COUNTY		14
11	DALE MABRY HW N	BEARSS AV W	13
12	ADAMO DR E	FALKENBURG RD S	12
13	BLOOMINGDALE AV	PROVIDENCE RD	12
14	DR KING BL E	FALKENBURG RD N	12
15	EHRLICH RD	TURNER RD	12
16	FOWLER AV E	56TH ST N	12
17	FOWLER AV E	NEBRASKA AV N	12
18	LINEBAUGH AV W	SHELDON RD	12
19	MEMORIAL HW	HILLSBOROUGH AV W	12
20	BRANDON BL W	I75 NORTHBOUND	11
21	LUMSDEN RD E	LITHIA PINECREST RD	11
22	301 HW S	BLOOMINGDALE AV	10
23	301 HW S	SYMMES RD	10

Rank	Street 1	Street 2	Accidents
24	8TH AV E		10
25	ADAMO DR E	I75 SOUTHBOUND	10

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Information provided should not be relied upon for any type of legal action.

Appendix E

INRIX Traffic Data for Hillsborough County MPO

Traffic Data For Hillsborough County MPO

Disclosure or distribution to unauthorized persons is strictly prohibited.

This document contains information developed and accumulated by INRIX for Hillsborough County MPO. As such, it is a proprietary document, which, if disseminated to unauthorized persons, would provide others with restricted information, data or procedures not otherwise available exposing INRIX to potential harm.

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INRIX Overview

INRIX is the leading provider of accurate real-time, historical and predictive traffic information. INRIX delivers the broadest coverage, exceptional accuracy, innovative technologies and a unique approach to ensuring the success of our customers' navigation and traffic-enabled solutions.

INRIX is the exclusive beneficiary of intellectual property that included years of research and millions of dollars of development by Microsoft Research into the statistical inference of traffic patterns, predictive analysis and mobile-based visualizations of real-time systems. The company has developed a portfolio of patented, proprietary technologies to enable the delivery of next generation traffic information services.

The INRIX Smart Driver Network represents a traffic technology breakthrough that dramatically improves the accuracy, quality and coverage of traffic information and provides businesses, government agencies and consumers with the information they need to avoid gridlock and save time and money. It works by combining anonymous, real-time GPS probe data from more than 2.7 million commercial fleet, delivery and taxi vehicles, as well as consumer cellular GPS-based devices including the iPhone and Android smartphones and Ford SYNC, with traditional real-time traffic flow information and hundreds of market-specific criteria that affect traffic—such as construction and road closures, real-time incidents, sporting and entertainment events, weather forecasts and school schedules. Traffic flow data provided by INRIX is used today in over 40 states to monitor, manage and inform travelers to improve the efficiency and safety of their transportation system.

INRIX's proprietary Fusion Engine uses sophisticated Bayesian modeling and proprietary error correction technology to process over 400 sources of data aggregated by the INRIX Smart Driver Network and generates accurate traffic and other location-relevant content data.

INRIX has a broad range of real-time, predictive and historical traffic flow services, including the new INRIX Nationwide Traffic Alerts, providing alerts on over 200,000 miles of freeways and the entire Interstate highway system. Additionally the company has the most extensive traffic incident information available, via its partnership with Clear Channel Total Traffic Network.

INRIX also recently introduced INRIX Total Fusion, the first traffic data service that intelligently combines real-time, predictive and historical traffic information for almost 1 million miles of roadways across the U.S. and Canada, including 2,245 centerline miles in the Tampa metropolitan area. INRIX Total Fusion is the ideal solution for a rich connected navigation experience, providing speed information for busy city streets and congested arterials.

INRIX leads the market with over 100 customers and industry partners internationally including Ford, Garmin, TomTom, MapQuest, Microsoft, Clear Channel Radio's Total Traffic Network, TeleNav, I-95 Corridor Coalition, Tele Atlas, deCarta, ITIS Holdings, Mio, Navigon, TCS, Telmap, ANWB, ARC Transistance, TNO and the Departments of Transportation in Alabama, Florida, Idaho, Iowa, Massachusetts, Minnesota, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Texas and Wisconsin. INRIX's strategic partnerships extends the delivery of the highest quality data and broadest coverage available for personal navigation, mapping, telematics and other location-based service

applications in the car, online and on mobile devices. INRIX delivers highly accurate real-time and historical traffic information today for 20 countries across North America and Europe. To experience the traffic technology revolution behind the next generation of navigation and location-based service applications, visit www.inrix.com.

INRIX is a privately held corporation based in the Seattle area and was founded in 2004 by former Microsoft executives Bryan Mistele and Craig Chapman.

Tampa Metropolitan Area Coverage

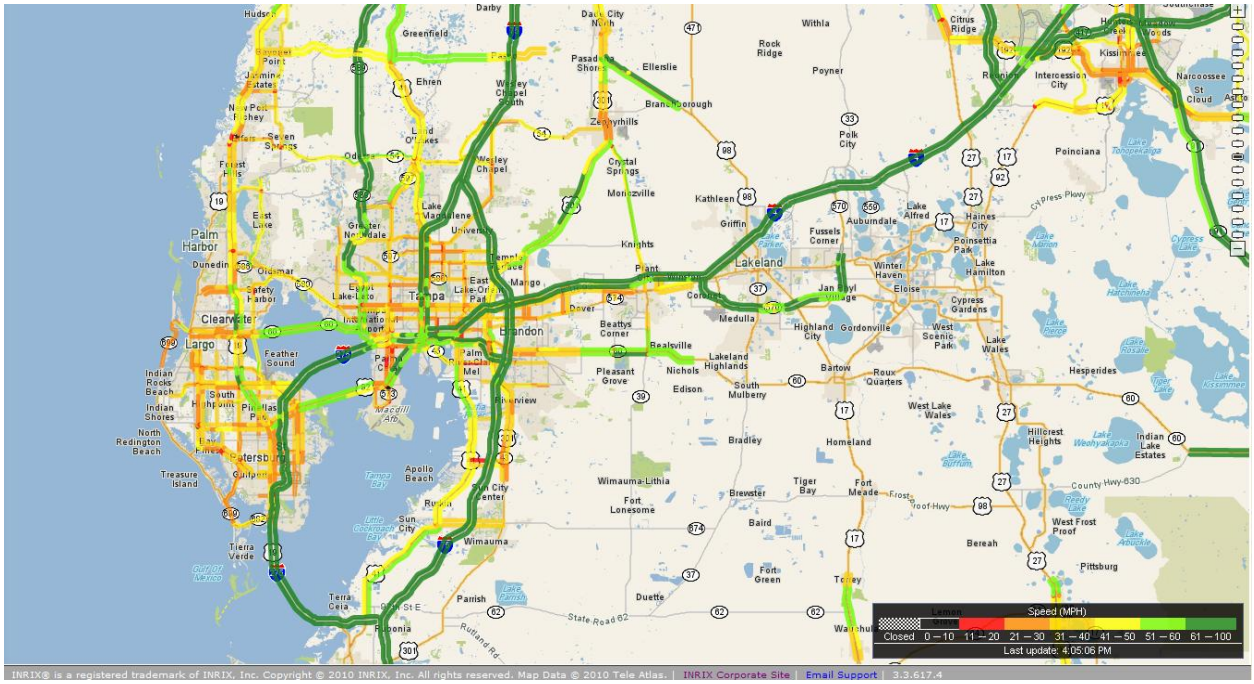

Figure 1 – Real-Time Guaranteed Tampa Coverage

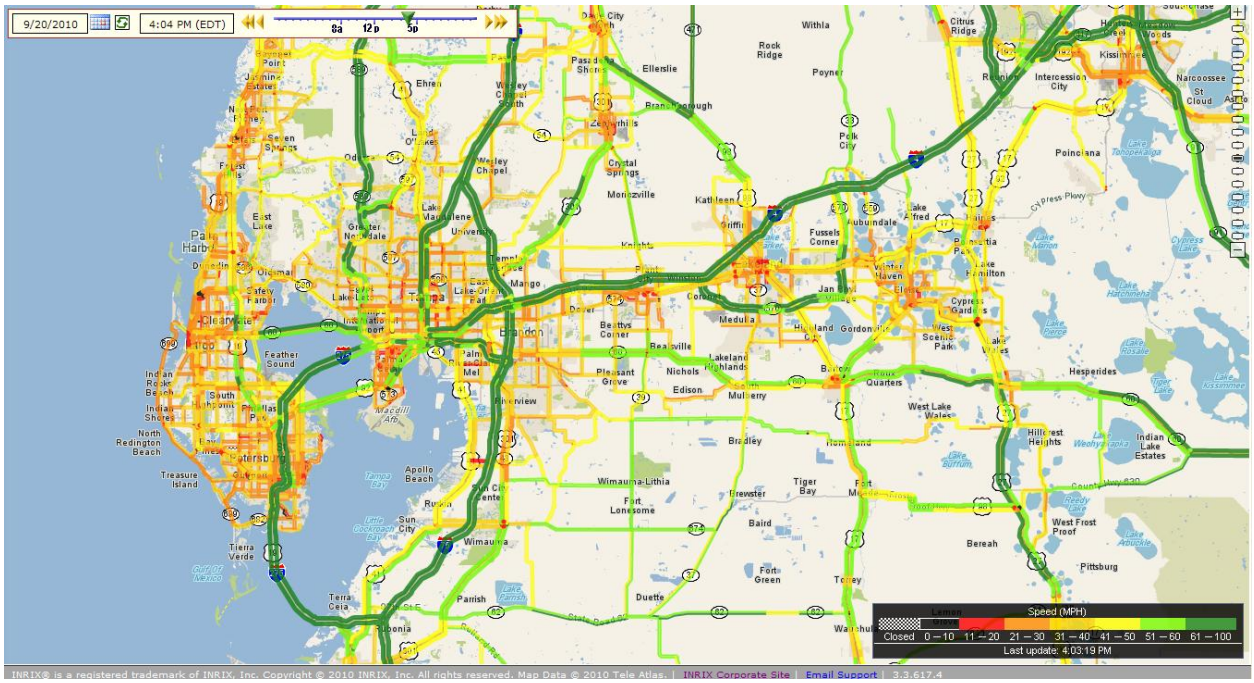

Figure 2 – Total Fusion Tampa Coverage

INRIX Real-Time Products

Public sector agencies are using INRIX traffic data in many applications including: travel times on DMS / 511; traffic tile overlays on webpages; operations / system monitoring; work zone monitoring; incident detection / queue monitoring; congestion alerts; routing; performance measures; detection siting; O / D studies; drive testing replacement; planning; modeling; etc.

Real-Time Flow is INRIX's full suite of traffic data which is available via an API call as often as once per minute. The data provided via XML includes: road segment code; roadway name and cross streets of roadway; time; current speed in MPH ("speed"); typical speed in MPH ("hist. average"); free flow speed in MPH ("free flow"); and travel time along segment in minutes ("travel time") as shown in Figure 3 below.

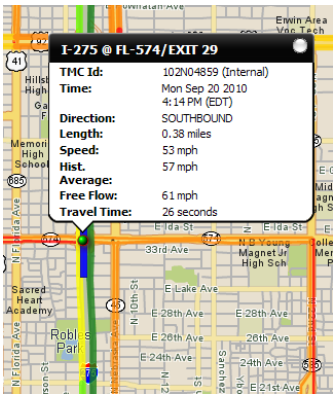

Figure 3 – INRIX Real-Time Flow Traffic Data

The cost of INRIX Real-time Flow Data is $150 setup per mile and $750 per mile per year (Annual Minimum Real-Time Flow Traffic Data Fee is $50,000).

INRIX is the only provider of accurate traffic data that is easily available for many uses by agencies. INRIX's real-time guaranteed coverage in the Tampa metropolitan area includes the 990 centerline miles of Interstate and other roadway coverage shown in Figure 1 – Hillsborough County MPO could select any / all of the covered roadways.

INRIX also recently introduced INRIX **Total Fusion**, the first traffic data service that intelligently combines real-time, predictive and historical traffic information for almost 1 million miles of roadways across the U.S. and Canada, including the 2,245 centerline miles in the Tampa metropolitan area as shown in Figure 2 – Hillsborough County MPO could select any / all of the covered roadways.

The cost of Total Fusion is TBD based on coverage selected from Figure 2

Dynamic Route Travel Times are designated by an agency from Point A to Point B and provide speeds and travel times as often as once per minute. This information may be used for: corridor management; planning and modeling purposes; reliability and performance measures; making operational decisions; and disseminating traveler information like travel times on dynamic message signs (DMS). INRIX Dynamic Route Travel Times provide the current travel time (based on real-time traffic conditions) along a precisely-specified route between any Origin (starting point) and Destination (ending point) in either direction – an example DMS message is shown in Figure 4 below. This can be queried on a real-time or archived basis to provide information for both instantaneous and data analytics purposes.

Figure 4 – INRIX Dynamic Route Travel Times DMS Example

The cost of Dynamic Route Travel Times is $100 setup per route (between each Point A and Point B) and 2.2 cents per travel time (as often as once per minute); if INRIX archive is desired, then the cost is 2.5 cents per travel time. For 1,000 to 1,999 routes setup is $75 per route; for 2,000 to 2,999 routes setup is $50 per route; for 3,000 or more routes setup is $25 per route.

There is a monthly minimum total travel time charge including all routes of $1,000.

INRIX Analysis Products

INRIX **Nationwide Average Speeds** use comprehensive data from the INRIX Smart Driver Network, including billions of historical data points, to provide true historical average speeds on individual road segments covering almost 1 million miles on major freeways, highways, urban and rural arterials and side streets throughout North America. This data is specific to every day of the week, every hour or quarter hour of the day, and is reported at the Traffic Message Channel (TMC) link level or at the smallest road segment for Tele Atlas and NAVTEQ map databases.

Using INRIX's proprietary technology, the data is analyzed and normalized to account for the impact of major events, seasonal traffic patterns, typical weather conditions and other variables that can impact traffic flow – ensuring the highest degree of accuracy. The data is updated regularly, incorporating both changes to map databases as well as additional historical data from the INRIX Smart Driver Network.

- Historical traffic data (by day / time – hourly or quarter hourly)
    - Current coverage 2,245 centerline miles (see Figure 2)
    - *$25,000 setup + $70,000 one-time or annual fee*
- Archive of Real-time Data
    - 5 minute real-time data archived and available from July 1, 2008
    - Current coverage 990 centerline miles (see Figure 1)
    - *$25,000 setup + $70,000 one-time or annual fee*

Appendix F

Integrated Corridor Management Systems Program Plan (FHWA)

Integrated Corridor Management Systems Program Plan

1. Background

Traffic congestion is a serious and growing problem, particularly in major metropolitan areas. Much of the current congestion is concentrated in critical metropolitan corridors that link activity centers and carry high volumes of people and goods. Improving movement through these critical metropolitan corridors could yield significant benefits in terms of reduced travel time and delays and increased reliability and predictability of travel. The Integrated Corridor Management Systems (ICM) initiative is the only one of the nine Tier I Initiatives, started by the U.S. Department of Transportation's (USDOT) Intelligent Transportation Systems (ITS) program that directly addresses congestion.

The current state-of-the-practice is highly disaggregated. Freeway and arterial networks are often subject to unrestrained demands significantly greater than available capacity. Capacity is often reduced at bottleneck locations such as major interchanges and bridges. However, the ability to shift travel demands between networks and modes during traffic incidents, roadway work zone activity, adverse weather, or simply unusually large traffic demands is severely hampered by lack of information about current conditions (particularly on the arterial networks), and lack of standardized technical means for sharing that information. There is also a lack of institutional collaboration and coordination, and lack of integrated operational strategies and procedures that focus on maximizing the effectiveness of the entire corridor.

The state-of-the-practice is far from the state-of-the-art. ITS methods that are available to address corridor management are not widely deployed. To achieve effective corridor management, much work needs to be done on advancing the state-of-the-practice in institutional, operational, and technical integration.

2. Concept

Integrated Corridor Management is the coordination of individual network operations between parallel facilities that creates an interconnected system capable of cross network travel management. For the purposes of this initiative, a corridor is defined as a combination of discrete parallel surface transportation networks (e.g., freeway, arterial, transit networks) that link the same major origins and destinations. It is defined operationally rather than geographically or organizationally. The collection of networks and the collective impact of their operations will be the significant factors in determining the geographic and organizational boundaries in a corridor and will be affected by changes in network composition and operations.

The key to managing corridors effectively is achieving integration among the operations of different networks in the corridor. To date, efforts to reduce congestion have mainly focused on the optimization of individual networks. Each network is

usually operated in isolation except for limited coordination at network junctions. This lack of coordinated operations between networks prevents effective use of a combination of these networks to address day-to-day congestion and congestion caused by work zones, incidents, weather, and special events. A coordinated effort between networks along a corridor can effectively manage the total capacity of a corridor in a way that will result in reduced congestion and increased trip reliability.

3. Program Vision

Metropolitan areas will realize significant improvements in the efficient movement of people and goods through aggressive and proactive integration and management of major transportation corridors. Integrated Corridor Management will result in a reduction in travel times, delays, fuel consumption, emissions, and incidents, and an increase in reliability and predictability of travel.

4. Program Goal

The goal of the Integrated Corridor Management Initiative is to provide the institutional guidance, operational capabilities, and ITS technology and technical methods needed for effective Integrated Corridor Management Systems.

5. Program PURPOSE

The initiative will demonstrate how operations strategies and ITS technologies can be used to efficiently and proactively manage the movement of people and goods in major transportation corridors through integration of the management of all the networks in a corridor. This initiative will develop a toolbox of operational policies, cross network operational strategies, integration requirements and methods, and analysis tools needed to implement effective Integrated Corridor Management Systems. A model deployment in a selected corridor will demonstrate how proven and emerging ITS technologies can be used to coordinate the operations between separate corridor networks to increase the effective use of the total capacity of the corridor.

6. Missing Integration

Deploying successful corridor management systems requires the understanding of institutional, operational and technical integration issues. It also requires the collaborative and coordinated efforts of multiple organizations in applying integrated operational strategies and technologies. Figure 1 shows the fundamental elements that need to be integrated for deploying corridor management systems.

EXAMPLES

Houston, Texas **--** In Houston, TX, corridor managers minimized traffic impacts from a jackknifed tractor trailer collision that occurred in mid-May 2007 by working together to shift travel patterns along the affected freeway using some of their emerging ICM strategies. Media outlets gave traveler conflicting diversion guidance with some encouraging travelers to divert to interior local roads. One outlet however specifically recommended a wide area diversion strategy called for in the Houston, TX, ICM concept. Soon, when their ICM strategies are firmly in place, these agencies will be able to disseminate consistent diversion guidance to travelers through the media and traveler information sources.

Maryland -- During the Martin Luther King Jr. Birthday/Inauguration weekend, the ITS system (vehicle probe) enabled the Maryland State Highway Administration (MDSHA) monitor speeds in real time on the freeway and major arterial network in the greater Baltimore/Washington corridor for the entire weekend. Using maps that showed real-time speed data, MDSHA determined the locations with congestion problems, provided real-time information to travelers, and deployed resources for proactively managing traffic in the metropolitan area.

North Carolina. The North Carolina DOT scanned the probe-based monitoring website for traffic flows in Virginia, South Carolina and Tennessee. As a result, North Carolina Traffic Management Center (TMC) staff was able to see traffic congestion building into Virginia on I-85 southbound due to a construction project. The staff checked that sufficient capacity existed on the parallel route of I-95 and then coordinated with Virginia to redirect traffic from I-85 to I-95. The detour back from I-95 included U.S. Route 64 and I-40 which ultimately reconnect with I-85.

New Jersey -- During a surprise snowstorm in October 2008, the New Jersey Department of Transportation (NJDOT) Traffic Operations Center was reviewing an accident on I-80 via a closed circuit television (CCTV) camera. The VPP (vehicle probe) monitoring site identified a second incident where CCTV coverage was not available that involved multiple jack-knifed tractor-trailers along I-80. The knowledge gained from the VPP about the second incident enabled responders to attend to the second incident by as much as an hour than what would be possible without the VPP. An NJDOT executive stated at the 2008 ITS World Congress and ITS America Annual Joint Meeting that the expedited response to the second incident translated into an estimated $100,000 savings in user delay costs.

New York -- Use vehicle probe data to assist police proactively manage potential traffic queue ups (New York). Significant delays have been observed along Interstate 87 (I-87) approaching Woodbury Commons Shopping Complex on Thanksgiving evening and the following day (Black Friday) as shoppers caused back-ups along I-87 between the Shopping Complex access and I-287. In 2009, the New York State (NYS) Police used the data provided by the I-95 Corridor Travel Time website, along with data from the New

York 511 website to assist in managing traffic congestion in the area. A NYS Police surgeon was aware of the VPP (vehicle probe) data through his involvement with the I-95 Corridor Coalition's Incident Management Program Track. With assistance from the NYSDOT transportation management center (TMC) operators and NYS Thruway Authority staff, the NYS police were able to look at the trouble areas and determine if/when to implement changes such as closure of full parking lots, ramp closures to prevent backups onto the freeway, and activation of advance variable message sign (VMS) messages to alert motorists of the changes ahead. Using this data, the police were able to reduce by half the traffic queues experienced in other years. In addition, the I-95 Corridor Travel Time and New York 511 websites helped to conserve State Police resources by identifying issues on the website before dispatching state troopers to the scene.