Final
Design Traffic
Technical Memorandum

Design Traffic
For Gandy Connector Project Development and Environment (PD&E) Study
From the Gandy Bridge to the western terminus of the Selmon Expressway in Hillsborough County

Submitted to:
Tampa Hillsborough Expressway Authority

Date Submitted:
May 2010

HNTB

FINAL DESIGN TRAFFIC TECHNICAL MEMORANDUM

For Gandy Connector Project Development and Environment (PD&E) Study

From the Gandy Bridge to the western terminus of the Selmon Expressway Hillsborough County, Florida

Prepared by
HNTB Corporation

and

Kittelson and Associates

May 2010

For
TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

TAMPA, FLORIDA

EXECUTIVE SUMMARY

This document was prepared as part of the PD&E study for Gandy Boulevard (SR 600) from west of Westshore Boulevard to east of Dale Mabry Highway in Hillsborough County. Traffic data was collected and existing conditions evaluated including capacity, levels of service (AM and PM peak hours) and safety. Existing intersection and highway segment levels of service were typically LOS F along the Gandy Boulevard corridor.

The Gandy Boulevard corridor is primarily an east/west facility, which in its entirety, extends from a western terminus at Gulf Boulevard in Pinellas County to an eastern terminus at Bayshore Boulevard in Hillsborough County. The Gandy Boulevard corridor is functionally classified as an Urban Other Principal Arterial highway and is part of the Florida Intrastate Highway System (FIHS), which is comprised of interconnected limited and controlled access roadways including interstate highways. As an SIS/FIHS facility and part of the regional roadway network, the Gandy Boulevard corridor is included in the Hillsborough County Metropolitan Planning Organization's (MPO) Long Range Transportation Plan (LRTP) that was adopted on November 10, 2004.

This PD&E study will evaluate Gandy Boulevard improvements as a means of providing additional capacity and reducing congestion along the corridor. This improved corridor could serve as an effective alternative to I-275 between 4th Street and Dale Mabry Highway and as an improved emergency evacuation route.

At the time of this report was being prepared, Gandy Boulevard from east of the Gandy Bridge to east of Dale Mabry Highway was under construction by the Florida Department of Transportation (FDOT). Construction began in January 2008 and is expected to be complete in the fall of 2009. This reconstruction project (WPI Segment No. 255822-2, "Aesthetic Enhancements and Operational Improvements") involves converting the existing highway from a 5-lane highway with a center turn lane to a four-lane divided highway with a 30-foot wide median. Manhattan Avenue intersection improvements include pavement to accommodate dual left turns in all directions and dedicated right turn lanes from Northbound Manhattan Avenue to Eastbound Gandy Boulevard, Eastbound Gandy

Figure ES-1 Project Location Map

Boulevard to Southbound Manhattan Avenue, and Westbound Gandy Boulevard to Northbound Manhattan Avenue.

The development of traffic projections for the Gandy Connector required the examination of historical growth, proposed development levels within the corridor vicinity, and a basic understanding of local traffic circulation patterns and travel characteristics of the corridor. The Tampa Bay Regional Planning Model (TBRPM25A) was validated to match 2006 traffic volumes in the study area. Design year (2035) AADT were developed utilizing the TBRPM (25A) with 2035 socio-economic data with an appropriate traffic growth factor. The design year peak hour turning movement volumes were developed using the approved K_{30} and D_{30} factors for Hillsborough County.

Future year traffic volumes were developed for Year 2035 through the application of the 2025 TBRPM adopted model and newly developed 2035 land use data, which incorporated the updates from the base 2006 model calibration. The study compares the new traffic projections with the original traffic projections provided for the *Gandy Boulevard PD&E Study* by HW Lochner Associates and provides recommendations to produce acceptable revised Traffic Projections for the new 20-year horizon.

Design hour traffic operational analysis was performed for the No-Build and Build alternatives along the Gandy Boulevard corridor. Overall highway LOS for the No-Build was found to be F (east and westbound). For the Build alternatives, these were not changed significantly. Analysis of the signalized intersections on Gandy Boulevard resulted in LOS of F at the major intersections, however as can be seen in **Table ES-1**, overall delays at these intersections was greatly reduced under the Build alternative. It was found that through traffic is better served with the addition of the Gandy Connector allowing through traffic to bypass the at-grade operations along Gandy Boulevard. The addition of this improvement allows for arterial traffic gains with the intersections demonstrating improvement in operations. Results of this traffic analysis will enable the THEA to

make a well-informed decision on a preferred alternative to improve the Gandy corridor to meet the future traffic demand.

Table ES-1. No Build vs. Build Intersection (LOS) Comparison

Intersection	No Build				Build			
	AM		PM		AM		PM	
	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS
	2015				2015			
Gandy and Westshore Blvd	267.9	F	231.4	F	140.7	F	124.2	F
Gandy and Manhattan Ave	137.4	F	140.3	F	70.9	E	53.8	E
Gandy and Lois Ave	78.1	F	99.6	F	29.5	C	25.9	C
Gandy and Dale Mabry Highway	260.2	F	176.2	F	196.3	F	113.4	F
	2025							
Gandy and Westshore Blvd	322.8	F	273.5	F	162.2	F	149.2	F
Gandy and Manhattan Ave	159.0	F	159.1	F	97.0	F	63.2	E
Gandy and Lois Ave	123.2	F	124.9	F	31.4	C	29.7	C
Gandy and Dale Mabry Highway	294.9	F	204.9	F	231.4	F	132.4	F
	2035							
Gandy and Westshore Blvd	383.5	F	324.2	F	182.8	F	170.5	F
Gandy and Manhattan Ave	190.0	F	181.4	F	122.2	F	71.2	E
Gandy and Lois Ave	147.8	F	138.1	F	32.6	C	30.8	C
Gandy and Dale Mabry Highway	331.2	F	235.6	F	251.4	F	150.8	F

TABLE OF CONTENTS

LIST OF FIGURES

Page

LIST OF TABLES

Page

APPENDICES

A. Existing Year Signal Timing Data
B. HCS Worksheets for Intersections – Existing Year
C. ARTPLAN Worksheets for Arterial Segments – Existing Year
D. Trend Analysis
E. HCS Worksheets for Intersections for Future Years
F. ARTPLAN Worksheets for Arterial Segments – Future Years
G. Air and Noise Traffic Data Forms
H. FDOT Documentation
I. SIDRA Analysis Output
J. Merge/Diverge Analysis

1. INTRODUCTION

1.1 Background

The Tampa Hillsborough Expressway Authority (THEA) is conducting a Project Development and Environment (PD&E) study to evaluate possible alternative improvements to the Gandy Boulevard (SR 600, US 92) corridor from the Gandy Bridge to the western terminus of the Selmon Expressway in Hillsborough County. The total project length is approximately 2.0 miles. This study will help the THEA reach a decision on the conceptual design for the project corridor that would separate regional through traffic from local traffic. In addition, full consideration will be given to a "No-Build" alternative. Results of the previous Final Traffic Technical Memorandum prepared as part of the Project Development & Environment (PD&E) Study (dated October 2002) for the Gandy Corridor will be utilized as the basis for this study. The current report reflects changes in ramp configurations being considered at the interchange of Gandy Boulevard and the Lee Roy Selmon (Selmon Expressway), optional intersection improvements along Gandy Boulevard and the construction of the Elevated Express Lanes between the Gandy Bridge and the Selmon Expressway. The current Gandy Connector (SR 600) PD&E Study extends from a point west of Westshore Boulevard to the existing terminus of the Selmon Expressway with Gandy Boulevard, approximately 2.0 miles in length. The Gandy Connector Project Location Map is shown in **Figure 1**.

1.2 Description of Project

The Gandy Boulevard corridor is primarily an east/west facility, which in its entirety, extends from a western terminus at Gulf Boulevard in Pinellas County to an eastern terminus at Bayshore Boulevard in Hillsborough County. The Gandy Boulevard corridor is functionally classified as an Urban Other Principal Arterial highway and is part of the Florida Intrastate Highway System (FIHS), which is comprised of interconnected limited and controlled access roadways including interstate highways, Florida's Turnpike, selected urban expressways and major arterial highways. The FIHS is the highway component of the Strategic Intermodal System (SIS), which is a statewide network of highways, railways, waterways and transportation hubs that handle the bulk of Florida's passenger and freight traffic. As an SIS/FIHS facility and part of the regional roadway network, the Gandy

Figure 1 Project Location Map

Boulevard corridor is included in the Hillsborough County Metropolitan Planning Organization's (MPO) Long Range Transportation Plan (LRTP) that was adopted on November 10, 2004.

This PD&E study will evaluate Gandy Boulevard improvements as a means of providing additional capacity and reducing congestion along the corridor. This improved corridor could serve as an effective alternative to I-275 between 4th Street and Dale Mabry Highway and as an improved emergency evacuation route.

An Environmental Assessment was submitted to the FHWA for this project in May 1993 and was approved in October 1993. The project has been evaluated in the Gandy Major Investment Study (MIS) that was initiated in 1996 and completed in March 2001. During the preparation of the Gandy MIS, transit alternatives were considered in the project corridor. Subsequently, two other Major Investments Studies (Pinellas Mobility MIS and the Tampa-Hillsborough-Lakeland-Polk Alternatives Mobility Enhancement MIS) determined that it was not feasible to accommodate major transit improvements within the Gandy corridor. Therefore, major transit alternatives were not considered within the corridor for this study.

This PD&E Study will evaluate roadway improvement alternatives along the project corridor. The expressway alternative will consider an elevated alignment centered on or proximate to the existing arterial and additional ramps at the interchange with the Selmon Expressway.

1.3 Objective

The objective of this Design Traffic Technical Memorandum is to document existing conditions, the methodology and procedures used in the development of the future traffic estimates, and traffic operations for different future alternatives along the Gandy Boulevard corridor. In addition, the traffic data necessary for noise and air studies for the base year (2007) and design year (2035) alternatives are documented. The traffic analysis for viable alternatives was based on a minimum acceptable Level of Service "D" in accordance with the LRTP policies in Hillsborough County and the FIHS urban criteria.

1.4 Methodology

Based on the objective of this Traffic Report, a specific methodology is utilized in the development of design traffic forecasts. This basic methodology is listed herein.

- The DEPARTMENT provided Existing Traffic Volumes for use in the identification of existing operational deficiencies and the evaluation of proposed roadway improvement alternatives that are to be identified in the Future Conditions section.

- Based on historic data and information for future development within the project area, estimate future travel characteristics for the corridor. This includes Design Hour Demand (K_{30}), Design Hour Directional Demand (D), and percentage of trucks for both the design hour and daily demand (T_{peak}, T_{daily}).

- Using historical traffic counts (Trends Analysis), historic growth rates, statistical (population and economic growth projections) and/or travel demand models (FSUTMS) for the area, develop estimates of future traffic volumes for comparison.

- Modify travel characteristics (K-demand) based on non-constrained or constrained conditions.

- Develop opening year, interim year and design year traffic projections for the project.

- The findings and analyses will be documented in this Design Traffic Technical Memorandum.

This methodology is based on *the FDOT's Topics Memorandums and Guidelines* for these procedures and has been modified to allow for the development of information which will provide a broader database in the preliminary and final design process.

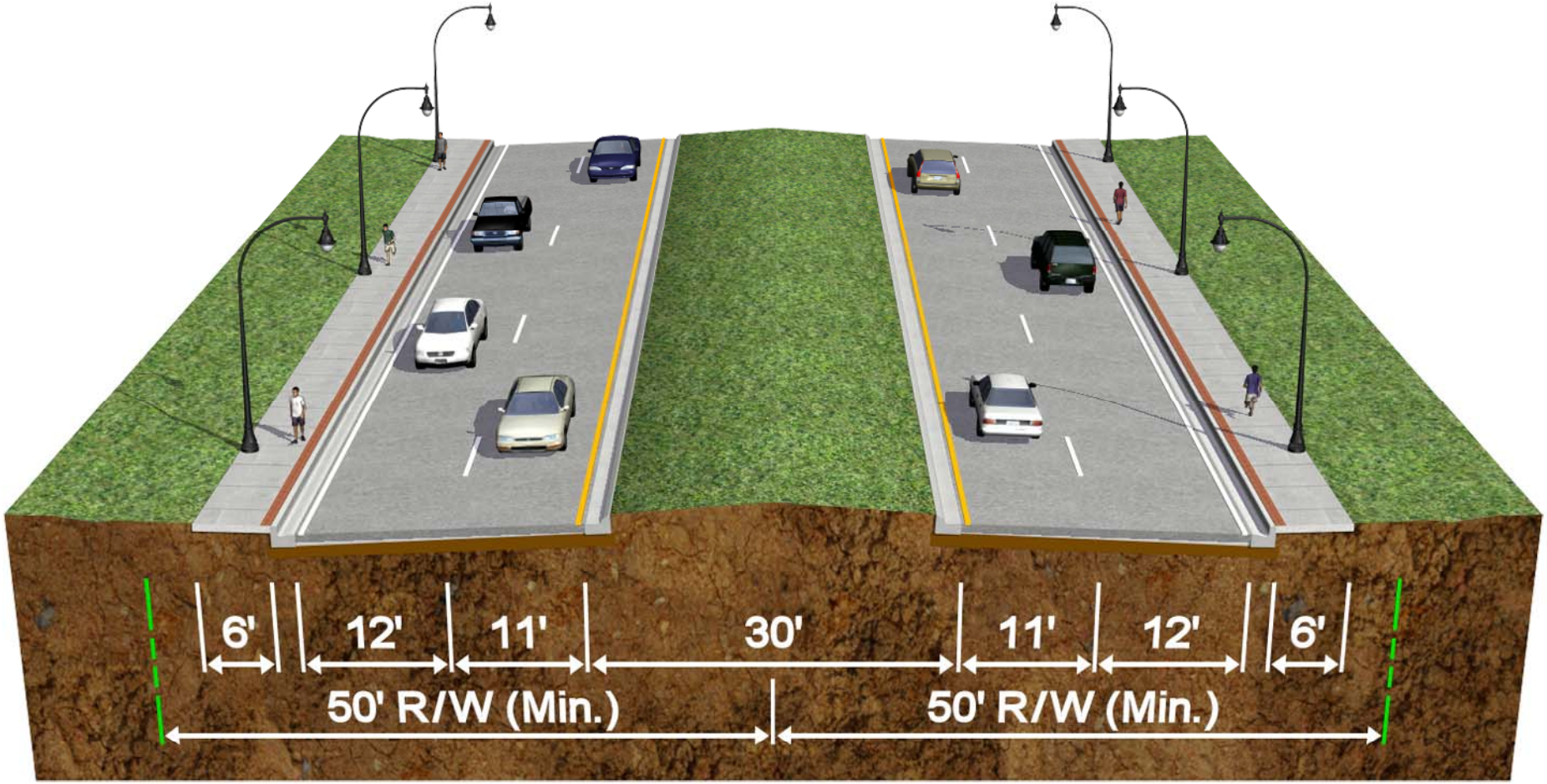
2. EXISTING CONDITIONS

The project area under this study is approximately 2.0 miles in length and extends along the existing Gandy Boulevard from west of Westshore Boulevard to Dale Mabry Highway in Hillsborough County. Gandy Boulevard is an east-west, four-lane urban principal arterial serving both local and regional traffic, as part of the Florida Intrastate Highway System (FIHS). It serves as a major connector for commuters, residents, and tourists between Pinellas and Hillsborough Counties and is a major hurricane evacuation route for the residents of St. Petersburg, Pinellas Park, and the Gateway areas. Currently, Gandy Boulevard serves as the beginning and ending point for the western part of the Selmon Expressway. The Level of Service (LOS) standards for FIHS facilities specifies a minimum rating of LOS D for an urbanized multi-lane corridor. This standard will be used to evaluate the various alternative improvements to Gandy Boulevard in the study area.

At the time of this report was being prepared, Gandy Boulevard from east of the Gandy Bridge to east of Dale Mabry Highway was under construction by the Florida Department of Transportation (FDOT). Construction began in January 2008 and is expected to be complete in the fall of 2009. This reconstruction project (WPI Segment No. 255822-2, "Aesthetic Enhancements and Operational Improvements") involves converting the existing highway from a 5-lane highway with a center turn lane to a four-lane divided highway with a 30-foot wide median. Manhattan Avenue intersection improvements include pavement to accommodate dual left turns in all directions and dedicated right turn lanes from Northbound Manhattan Avenue to Eastbound Gandy Boulevard, Eastbound Gandy Boulevard to Southbound Manhattan Avenue, and Westbound Gandy Boulevard to Northbound Manhattan Avenue.

2.1 Field Inventory

The existing facility is currently under construction and will ultimately result in a 4-lane divided facility between Westshore Boulevard and Church Street. The resulting typical section is shown in **Figure 2**. Eastbound and westbound left turn lanes exist at the signalized intersections at Westshore Boulevard, Manhattan Boulevard and Lois Avenue. Right turn lanes exist on eastbound Gandy Boulevard at Westshore Boulevard and westbound Gandy Boulevard at Manhattan Boulevard and at



Note: This figure represents the resulting typical section following the 2008 reconstruction of Gandy Boulevard.

Figure No:	Page No:	
2	6	***EXISTING TYPICAL SECTION*** ***Gandy Connector***

Westshore Boulevard. All turn lanes are 12 feet wide. The existing right-of-way width is typically 100 feet, centered on the centerline of the roadway. Existing right-of-way increases to accommodate the right turn lanes in some areas. This corridor is also designated as an emergency evacuation route.

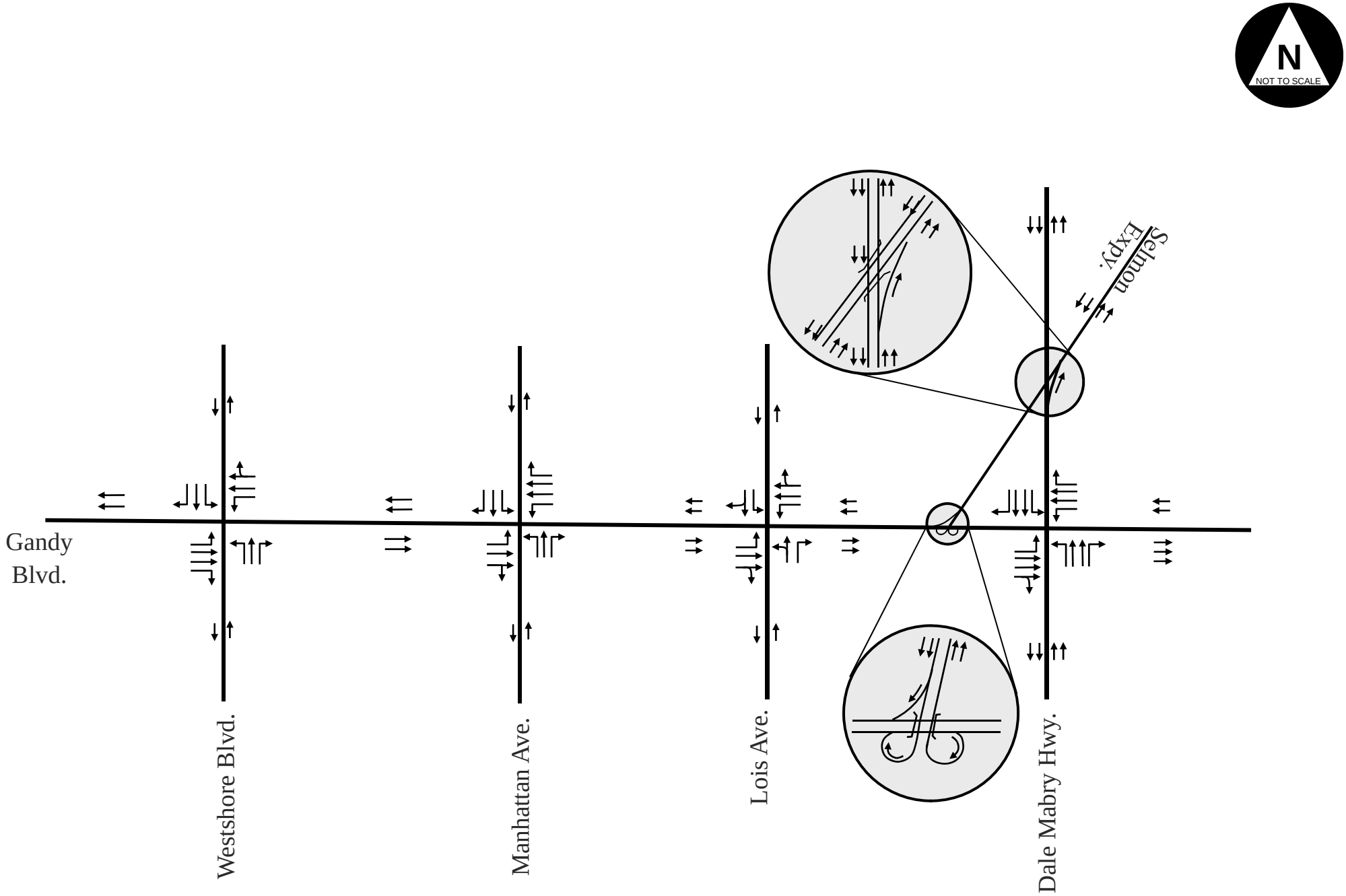
From west of the Selmon Expressway to Dale Mabry Highway, the existing facility is a five-lane roadway with three eastbound lanes and two westbound lanes. These two sections feature 12-foot lanes with curb, gutter and a closed drainage system.

A 45 miles per hour (mph) speed limit is posted on Gandy Boulevard from Bridge Street to Dale Mabry Highway. Westshore Boulevard and Manhattan Avenue, north and south of Gandy Boulevard, and Lois Avenue, south of Gandy Boulevard, each have a 35 mph posted speed limit. The study area from west of Westshore Boulevard to Dale Mabry Highway includes the following signalized and unsignalized intersections:

- Signalized intersections along Gandy Boulevard are at:
    1. Westshore Boulevard
    2. Manhattan Avenue
    3. Lois Avenue
    4. Dale Mabry Highway
- Unsignalized intersections along Gandy Boulevard are at:
    1. Bridge Street
    2. Renellie Street
    3. Trask Street
    4. Hesperides Street
    5. Clark Avenue
    6. Church Street

Side street approaches for all of the unsignalized intersections have stop control conditions, while Gandy Boulevard approaches have free-flow conditions. Existing traffic signal timings for the signalized intersections were obtained from the City of Tampa for the four signalized intersections

and are included in **Appendix A**. All four signalized intersections operate under actuated-coordinated mode with 160 second and 200 second cycle lengths in the AM and PM peak periods, respectively. The signal phases for Gandy Boulevard approaches at the four intersections are coordinated. **Figure 3** illustrates the existing laneage at the signalized intersections and the Selmon Expressway ramp intersections.



Note: This figure depicts lane geometry prior to 2008 reconstruction of Gandy Boulevard.

Figure No:	Page No:	
3	9	***BASE YEAR (2007) GEOMETRY*** ***Gandy Connector***

2.2 Traffic Data

Due to the current construction along the Gandy Boulevard corridor, traffic count information was collected from a variety of sources including:

- Final Traffic Memorandum SR 600 (Gandy Connector) prepared by HW Lochner, October 2002
- Gandy Area Transportation Study by Tindale-Oliver & Associates, January 2007
- City of Tampa Traffic Count Program
- FDOT 2007 Florida Traffic Information CD

The traffic count information collected from these sources was adjusted and updated to reflect 2007 year conditions. These were considered as the base year for the analysis performed as part of this report. For the purpose of this traffic analysis, seasonal factors (obtained from the 2007 Florida Traffic Information CD-ROM) were applied to the traffic count information collected at the four signalized intersections located along the corridor. This brought the traffic counts to the same level for comparing traffic operations along the corridor. The results of the adjusted existing AM and PM peak hour turning movement counts are shown in **Figure 4**.

2.3 Transit Service

Pinellas Suncoast Transit Authority (PSTA) provides an express bus route (No. 100X) that runs east-west from the Gateway Mall in Pinellas County to the North Terminal (in downtown Tampa) in Hillsborough County. This bus uses Gandy Boulevard for a portion of the route but makes no stops in the study area. With typical 30-minute headways during morning and afternoon peak periods, it provides direct access to residents between the two counties.

Hillsborough Area Regional Transit Authority (HART) has several bus routes that cross Gandy Boulevard in the study corridor. However, there is no regular local transit route that runs along Gandy Boulevard in the study corridor. Route 36 runs north-south along Dale Mabry Highway and Route 19 runs north-south along Westshore Boulevard and Manhattan Avenue. Route 36 provides local service from MacDill Air Force Base to downtown Tampa and north to Carrollwood. Route 19 provides local service from downtown Tampa to the Port of Tampa.

Legend:

182 / 227

AM Peak / PM Peak

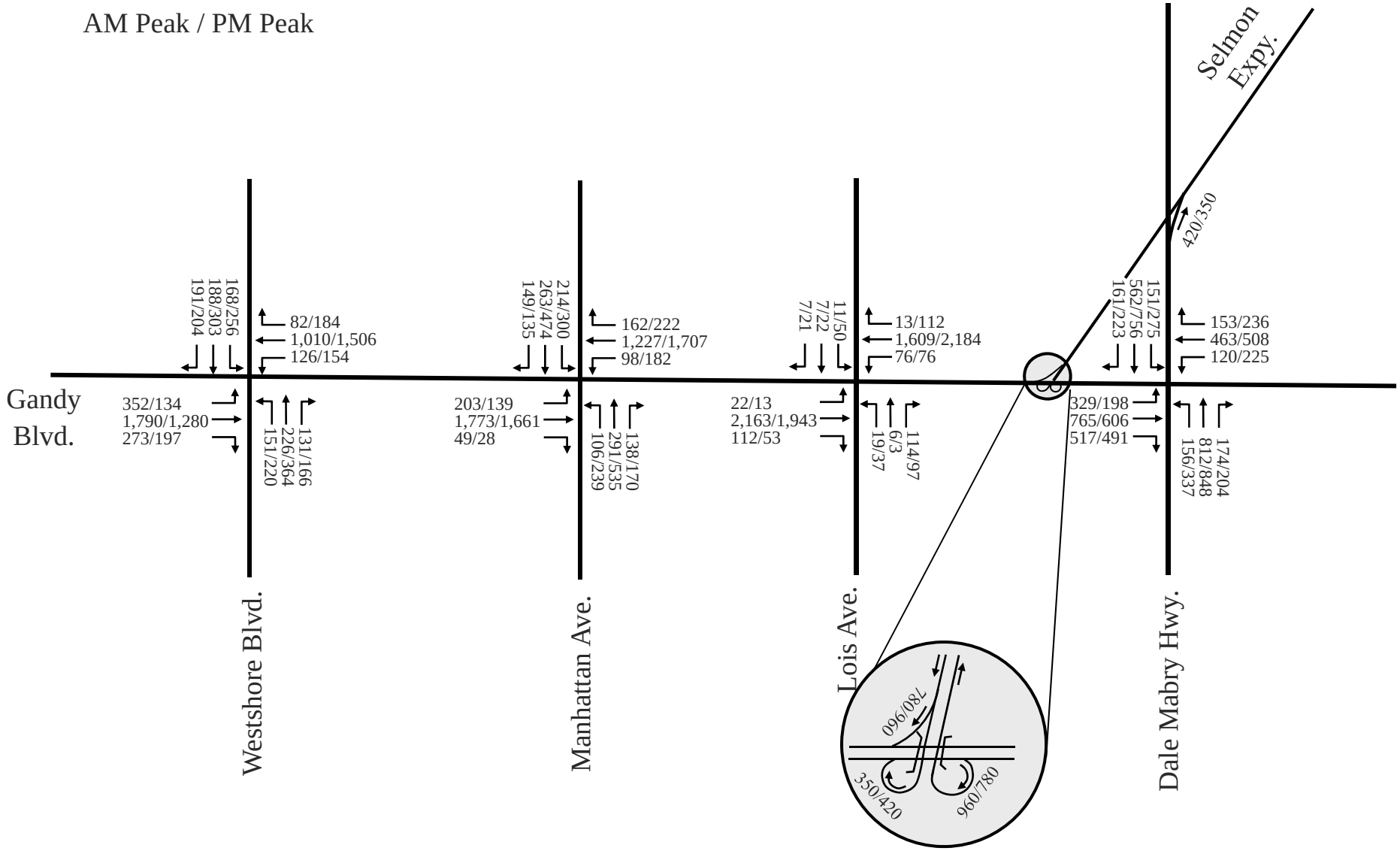


Figure No:	Page No:
4	11

BASE YEAR (2007) PEAK HOUR TURNING MOVEMENT VOLUMES

Gandy Connector

2.4 Capacity Analysis

Intersection analyses were conducted utilizing the Highway Capacity Software (HCS) 2000 for the existing year conditions. The arterial level of service for Gandy Boulevard was determined using the FDOT ARTPLAN software package. These analyses were based on the adjusted AM and PM peak hour turning movement counts, as previously discussed in Section 2.2.

2.4.1 Intersection Capacity Analysis

Level of Service (LOS) analyses were conducted for the four signalized intersections, for the AM and PM peak hours utilizing the HCS 2000 signalized intersection analysis.

According to Exhibit 16-2 (page 16-2) of *Highway Capacity Manual (HCM 2000)*, an average control delay per vehicle from 55 seconds up to 80 seconds is considered LOS E condition and beyond 80 seconds is considered LOS F condition at a signalized intersection. A summary of the HCS LOS analysis for the four intersections is included in **Table 1**. The capacity analysis worksheets for the existing conditions are included in **Appendix B**.

Table 1. Base Year (2007) Intersection Peak Hour Levels of Service (LOS)

Intersection	Year 2007			
	AM		PM	
	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS
Gandy and Westshore Blvd	145.4	F	120.2	F
Gandy and Manhattan Ave	113.4	F	171.6	F
Gandy and Lois Ave	53.3	D	58.6	E
Gandy and Dale Mabry Highway	103.0	F	90.6	F

The overall intersection level of service data indicate that the Gandy Boulevard at Lois Avenue intersection operates at LOS D and LOS E during the AM and PM peak hours respectively. Although the low traffic volume on Lois Avenue approaches have more controlled delay, the relatively high traffic volume on Gandy Boulevard approaches with less controlled delay results in a

less overall average controlled delay for all vehicles passing through this intersection. The other three signalized intersections operate at an overall level of service of LOS F during both the AM and PM peak hours.

2.4.2 Arterial Capacity Analysis

Arterial segment LOS analyses along Gandy Boulevard were conducted using ARTPLAN, a software program that performs level of service analyses for motorized and non-motorized modes of traffic on arterial streets. It was developed for the Florida Department of Transportation (FDOT) by the Transportation Research Center at the University of Florida, in conjunction with Polytechnic University (New York). The underlying analysis methodologies are based on HCM 2000 procedures, as well as other research conducted by various contractors on behalf of FDOT.

The arterial segment LOS analysis was conducted along Gandy Boulevard between Westshore Boulevard and Dale Mabry Highway. For the arterial LOS analysis, the arterial segment boundaries were selected from one signalized intersection to the next. Therefore, Gandy Boulevard was divided into three arterial segments. The ARTPLAN worksheets for the highway segment LOS analysis are included in **Appendix C** and the results are summarized in **Table 2**.

Table 2. Base Year (2007) Peak Hour Highway Levels of Service (LOS)

Gandy Boulevard Arterial Segment Between	AM Peak Hour LOS		PM Peak Hour LOS	
	EB	WB	EB	WB
Westshore Blvd. and Manhattan Ave.	F	F	F	F
Manhattan Ave. and Lois Ave.	F	F	E	F
Lois Ave. and Dale Mabry Hwy.	F	C	F	D
Overall Arterial Segment	**F**	**F**	**F**	**F**

The arterial LOS analysis indicates that, under the existing conditions, the entire Gandy Boulevard arterial segment, from Westshore Boulevard to Dale Mabry Highway, operates at an overall average LOS F during the AM and PM peak hours in both directions. For the individual segments, westbound Gandy Boulevard, between Manhattan Avenue and Lois Avenue, operates at LOS F

during both the AM and PM peak hours. The closeness of the two traffic signals and the higher traffic volume with relatively higher green time for Gandy Boulevard traffic at Lois Avenue are the main contributing factors for traffic backups under existing conditions within this segment, as observed in the field. The segment from Westshore Boulevard to Manhattan Avenue operates at LOS F in both directions during the AM and PM peak hours.

3. DEVELOPMENT OF FUTURE TRAFFIC

The development of traffic projections for the Gandy Connector requires the examination of historical growth, proposed development levels within the corridor vicinity, and a basic understanding of local traffic circulation patterns and travel characteristics of the corridor.

The traffic model applied for this study was based on the latest Tampa Bay Regional Planning Model Version 6.1 (TBRPM V6.1) released in March 2008. The TBRPM V6.1 is the tool that the Regional Transportation Analysis uses in forecasting future travel demand. This model represents the latest adopted Long Range Transportation Plan projects lists in the Tampa Bay / FDOT 7 study area, which includes Hillsborough County, Pinellas County, Pasco County, Hernando County and Citrus County. The TBRPM V 6.1 boundary is also expanded southward into Manatee County to include the Port Manatee area and I-75 / I-275 loop and interchange. The TBRPM was developed by FDOT District 7 in cooperation with the Hillsborough County, Pinellas County, Pasco County and Hernando County MPOs and is designed to be sensitive to changes in land use and transportation characteristics.

A base year 2000 model was validated for the Gandy study area. Traffic counts from the FDOT, Hillsborough County and Pinellas County were utilized for the validation of the travel demand model. As part of the base year model validation, a series of Traffic Analysis Zones (TAZ) were recommended to be broken down into multiple small zones to more discretely assign trips based on the geographic characteristics of approved developments. The above improvements were also reflected in the highway network. Refinement to the year 2000 highway network and land use datasets used the *Gandy Area Transportation Study* by Tindale-Oliver & Associates. During the validation, adjustments to the TBRPM model were required in order to replicate travel patterns within the study area.

Future year traffic volumes were developed for Year 2035 through the application of the 2025 TBRPM adopted model and the newly developed 2035 land use data, which incorporated the updates from the base 2006 model calibration. The study compares the new traffic projections with the original traffic projections provided for the *Gandy Boulevard PD&E Study* by HW Lochner

Associates and provides recommendations to produce acceptable revised Traffic Projections for the new 20-year horizon.

3.1 Land Use Data Development

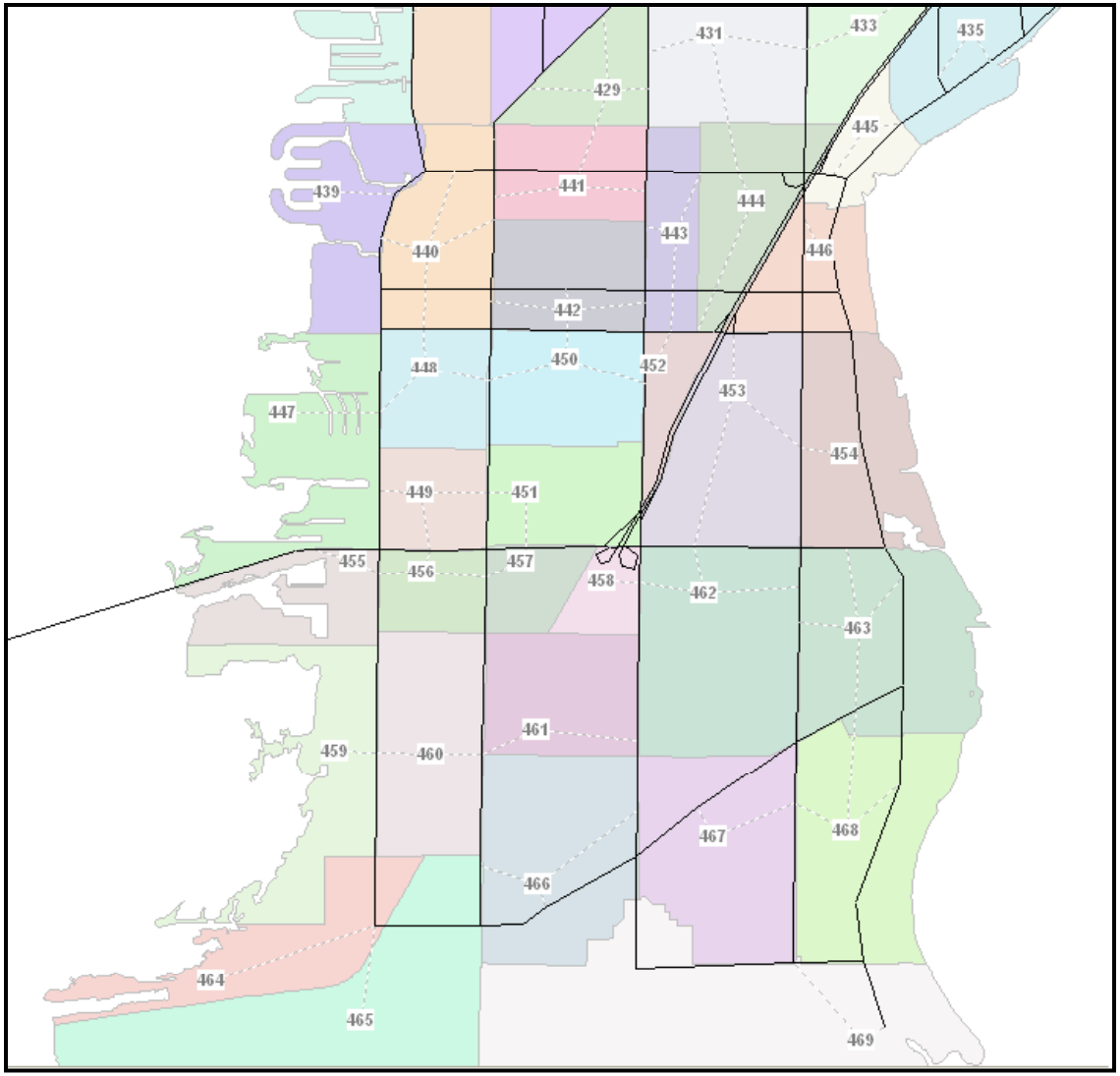
Land use data developed in preparation for the 2035 TBRPM to be used for the preparation of Long Range Transportation Plans for the individual MPOs in the Tampa Bay area was used as the base for the future model runs for the Gandy Connector traffic projections. In order to ensure that the latest land use information was used in the development of the traffic volumes to be used in the analysis of the Gandy Connector the land use datasets developed for the *Gandy Area Transportation Study* were reviewed to help refine the TAZ Structure.

To estimate the impacts of future trips on the functionally classified roadway network, modifications were made to the year 2000 TBRPM land use data as well as to the TAZ structure in the Gandy Boulevard Study Area. In order to more discretely assign trips based on the geographic characteristics of 'approved' developments, several large traffic analysis zones were broken down into multiple smaller zones. **Figures 5 and 6** show the TAZ structure before and after the resulting split.

Dwelling units and employment were allocated to the "new" TAZs based on the 2005 property appraiser GIS parcel map, review of aerial imagery, and review of property appraiser website's building square footage data. **Table 3** shows the "Base Year" and "Approved Development" ZDATA inputs initially used to model the traffic impacts of 'approved' developments in the Gandy Study Area.

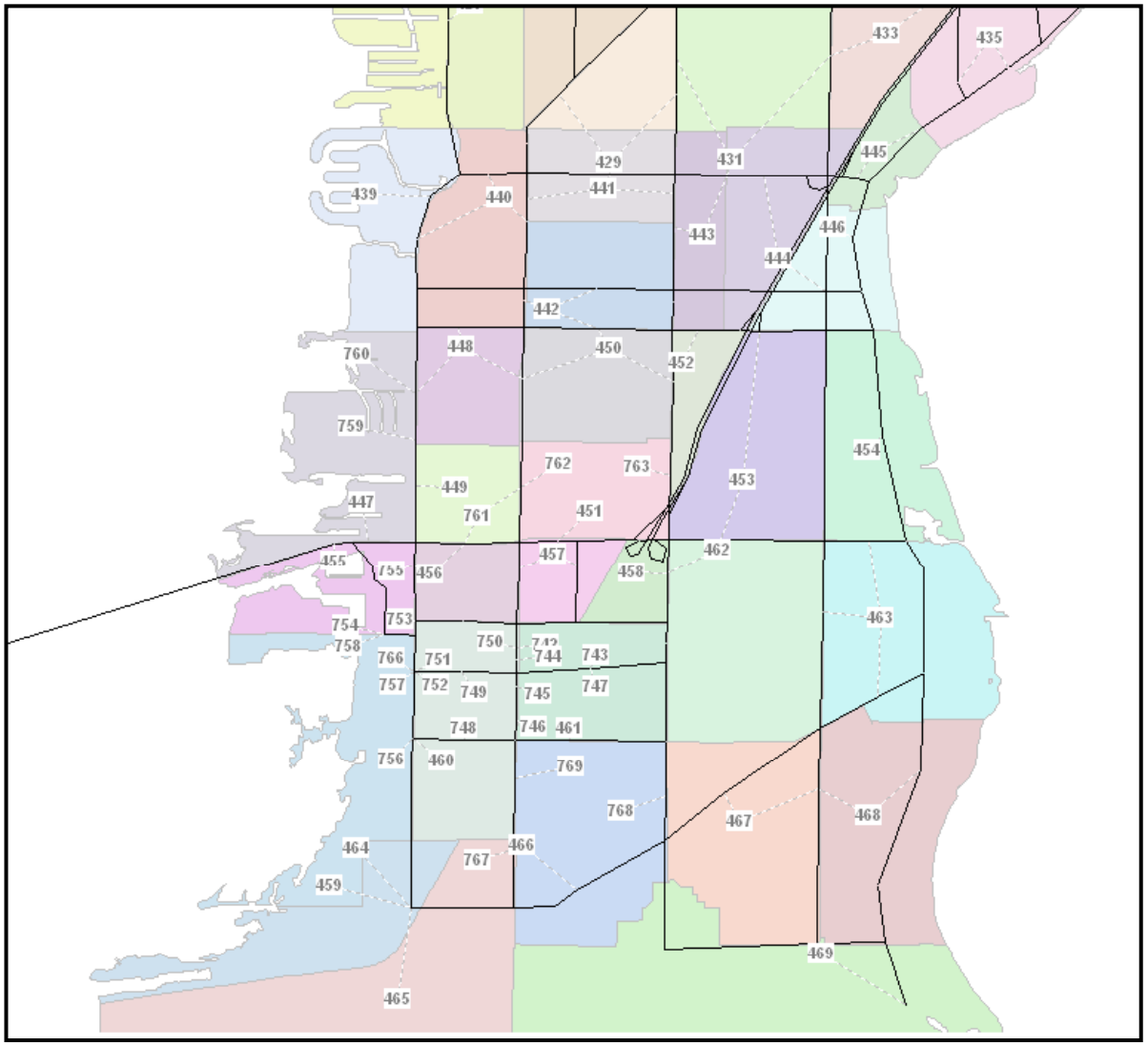
3.2 Planned Improvements

The cost feasible long range transportation plan, as developed by the Hillsborough County MPO and approved by FDOT, was used as the future year base transportation network. This network included the various highway and transit improvements that could be implemented by the various jurisdictions and agencies over the next twenty years. These improvements are documented in the Long Range



Source: 2025 TBRPM

Figure No:	Page No:	
5	17	***2025 TBRPM TAZ STRUCTURE*** ***Gandy Connector***



Source: Gandy Area Transportation Study

Figure No:	Page No:	
6	18	***REVISED TAZ STRUCTURE*** ***Gandy Connector***

Table 3 – 2006 and 2035 Revised SEDATA for Gandy Area

Zone	DU	Ind	Com Loc	Com Reg	Svc Loc	Svc Reg	School	DU	Ind	Com Loc	Com Reg	Svc Loc	Svc Reg	School
	2006							2035						
447	2114	31	25	44	166	78	0	2500	32	118	107	207	136	0
449	800	39	19	99	457	205	0	934	40	109	192	570	309	0
451	666	505	26	220	600	1324	605	832	512	159	402	888	1805	686
455	271	360	21	13	212	95	0	503	365	111	60	544	160	0
459	1130	369	26	17	280	0	0	1300	374	38	66	349	30	0
460	1160	65	2	3	251	156	1259	1666	66	3	44	313	242	1477
461	945	57	9	25	107	5	0	1505	58	135	104	555	56	0
464	396	53	1	4	22	51	0	629	54	1	46	27	99	0
465	1120	735	7	5	179	63	367	1684	883	50	74	645	136	422
466	1830	350	3	77	222	159	1218	2113	355	4	158	277	247	1318
	10432	2564	139	507	2496	2136	3449	13666	2739	728	1253	4375	3220	3903

Source: FDOT District 7

Transportation Plans for Hillsborough County. The network was modified to include network coding which was specifically reflective of the future year No-Build corridor conditions. In addition to these improvements, the following roadway capacity projects are scheduled for the Gandy Study Area:

- Manhattan Avenue 4-Lane Widening Project from Gandy Boulevard to Euclid Avenue
- Reconstruction of Gandy Boulevard from the Gandy Bridge through the Dale Mabry intersection including the following key enhancements:
    - 4-Lane Divided typical section with 30 foot raised median
    - Addition of westbound to northbound right turn lane at Westshore Boulevard
    - Addition of dual eastbound, northbound, and southbound left turn lanes at Manhattan Avenue
    - Addition of dual left turn lanes at all approaches at Dale Mabry Highway
- Bridge Street Connection as 2-Lane Collector Roadway – No traffic signal or northbound to westbound left turn at Gandy intersection.
- Connecting Tyson Avenue from Westshore Boulevard to Manhattan Avenue
- Four-lane Westshore Boulevard from Tyson Avenue to Fair Oaks Avenue
- Adding a southbound lane to Manhattan Avenue from Gandy Boulevard to Tyson Avenue

3.3 Model Validation

To ensure the validity of future traffic projections along the Gandy Boulevard corridor it was necessary to validate the TBRPM model to review the model performance in the study area. As part of this project, the model's performance in Hillsborough County was also reviewed to determine if the travel model reproduced traffic demand for selected individual roadways in the project area. For this process, 2006 model traffic results were adjusted from peak season (January-April) traffic to annual average daily traffic (AADT) using a Model Output Conversion Factor (MOCF) for Hillsborough County of 0.96 and compared with observed 2006 traffic counts at FDOT count stations. A comparison of the 2006 model results with the observed 2006 AADT counts is presented in **Table 4**.

Table 4. AADT Comparison of TBRPM 2006 Forecast Volumes with 2006 Observed Traffic Counts at FDOT Count Stations

Roadway	Segment	2006(1) Volume	2006(2) Count	V/C
Dale Mabry Hwy	Interbay Blvd to Gandy Blvd	34,647	40,000	0.87
Dale Mabry Hwy	Gandy Blvd to El Prado Blvd	36,041	37,000	0.97
Euclid Ave	Westshore Blvd to Manhattan Ave	5,233	5,500	0.95
Euclid Ave	Manhattan Ave to Dale Mabry Hwy	8,663	10,000	0.87
Gandy Blvd	Bridge to Westshore Blvd	51,033	34,500	1.48
Gandy Blvd	Westshore Blvd to Manhattan Ave	40,048	41,000	0.98
Gandy Blvd	Manhattan Ave to Dale Mabry Hwy	46,761	47,000	0.99
Gandy Blvd	Dale Mabry Hwy(Himes Ave) to MacDill Ave	27,327	26,500	1.03
Interbay Blvd	Westshore Blvd to Manhattan Ave	5,894	6,500	0.91
Interbay Blvd	Manhattan Ave to Dale Mabry Hwy	6,186	6,500	0.95
Manhattan Ave	Bay Ave to Gandy Blvd	7,514	7,000	1.07
Manhattan Ave	Gandy Blvd to Euclid Ave	9,274	8,600	1.08
Westshore Blvd	Bay Ave to Gandy Blvd	15,606	19,500	0.80
Westshore Blvd	Gandy Blvd to El Prado	19,922	18,000	1.11
	Total	**314,148**	**307,600**	**1.02**

(1) TBRPM 2006 Forecast Traffic Volume
(2) 2006 FDOT Traffic County

Since the study focus is on Gandy Boulevard and the Selmon Expressway, manual adjustments were necessary to better reflect existing 2006 counts at a few locations. These manual adjustments included:

1. Readjust the splits between the various Selmon Expressway on- and off-ramps with Gandy Boulevard and Dale Mabry Highway to better reflect existing year traffic volumes.
2. Adjust the traffic volumes along the Selmon Expressway to match existing 2006 AADT counts.

3.4 Future Year 2035 Model Review

The model review process for corridor analysis is not complete without a review of the historical traffic growth along the corridor and a review of the baseline future year model forecasts to ensure that the model will act properly with revised socio-economic activity levels.

3.4.1 Historical Traffic Growth along the Corridor

Based on the historic count information provided by the FDOT, trends analyses were performed for the previously listed FDOT count stations. These count stations, provided historic counts ranging from 1993 to 2007. Based on this historical data, future growth trends were established by a least square linear regression of the historic counts. These trend analysis sheets are shown in **Appendix D** and the growth rates based upon this analysis are shown in **Table 5**. The trend generated growth rates ranged from 0.12 percent at the FDOT count station 105158 to 2.64 percent at station 105243. The overall average of the historic trends simple annual growth rates for the study area was 1.92 percent simple growth per year.

Table 5. Historical Traffic Growth at FDOT Count Stations

LOCATION	2007 FDOT AADT	2035 TREND FORECAST	GROWTH[(1)] RATE
Dale Mabry Highway – South of Gandy Boulevard (Station 105048)	38,500	57,800	1.79%
Dale Mabry Highway – South of Euclid Avenue (Station 101050)	36,500	65,900	2.88%

LOCATION	2007 FDOT AADT	2035 TREND FORECAST	GROWTH[(1)] RATE
Gandy Boulevard – East of Westshore Boulevard (Station 105158)	41,000	42,400	0.12%
Gandy Boulevard – West of Dale Mabry Highway (Station 105159)	47,000	77,800	2.34%
SR 618 Crosstown Expressway – East of Gandy Boulevard (Station 105243)	24,100	41,900	2.64%
SR 618 Crosstown Expressway – West of Euclid Avenue (Station 105244)	26,300	45,300	2.58%
Gandy Boulevard – East of Clark Street (Station 105251)	47,300	61,600	1.08%
Average			**1.92%**

(1) 2007 to 2035 simple annual growth

The low average growth rate for the area reflects the already developed land use conditions in the study area as well as the reduced LOS on the primary roadways in the study area.

3.4.2 Future Year 2035 Volumes

Due to the specific conditions associated with any roadway, it is necessary to utilize the various methods in projecting future traffic forecasts (such as trends analysis and FSUTMS Travel Demand Models) as a database for comparison. In addition, actual road conditions such as access, existing and anticipated operational conditions, proposed future roadway network improvements, specific developments, traffic patterns/mix, and driver perception must also be assessed and analyzed in developing future traffic forecasts.

Most of the above considerations are based on engineering judgment, field observations, and knowledge of the operations of the existing facility. This information is then applied to the overall database to develop future forecasts of travel demand which would be representative of traffic volume increases expected in the future (Design Traffic Forecasts).

Estimates of the future 2035 traffic volumes were developed using the 2035 socio-economic data and the adopted 2025 cost-feasible, long range transportation network. The only additional

adjustments to these data files included revisions to the socio-economic data for the TAZs along Gandy Boulevard between the Gandy Bridge and Dale Mabry Highway as developed for the *Gandy Area Transportation Study*. These adjustments were made to be consistent with the socio-economic data agreed upon by FDOT and the City of Tampa for use in the *Gandy Area Transportation Study*. Using these data sets and the validated TBRPM (25A) model, 2035 traffic assignments were made to the area highway network. Traffic projections were made for two scenarios that assume an elevated Gandy Connector (Elevated Express Lanes) to a point on Gandy Boulevard located west of Westshore Boulevard and east of the Gandy Bridge. Scenario 1 assumes that the Gandy Connector would bypass the Gandy Boulevard area and connect directly to the Selmon Expressway. The second scenario would provide ramps form Gandy Boulevard to the Gandy Connector in the vicinity of Dale Mabry Highway. Additionally each scenario was modeled for the following toll structures; No toll, 25 cent toll and a 50 cent toll. The results of the 2035 AADT projections are presented in **Table 6**.

3.5 Traffic Parameters

Once the future AADT's are developed for the study area roadways, K_{30} and D_{30} (K and D) factors are used to estimate the design hour volumes. Design Traffic Parameters that were applied to the 20-year Design Corridor System Traffic consisted of K_{30}, D_{30} & T Factors produced for the original Gandy Boulevard PD&E Study *Final Traffic Technical Memorandum* dated October 2002. The design year K_{30}, D_{30}, and T factors used in the previous report were estimated based on the procedure outlined in the FDOT's *Design Traffic Handbook*, dated March 1997. These estimated factors were approved by the FDOT District office and the documentation of this approval process is included in **Appendix H**. Following are the approved K, D, and T factors for the design year conditions.

- K = 10%
- D = 54.6%
- T = 5.9% for non-controlled access roadways
- T = 9.1% for controlled access roadways

Table 6. 2035 AADT

			2035 AADT								
Street	**Segment**	**2007**	**Base Model**	**Alt. 1(Without Toll)**	**Alt. 2(Without Toll)**		**Alt. 1 -- 25 Cents**	**Alt. 1 -- 50 Cents**	**Alt. 2 -- 25 Cents**		**Alt. 2 -- 50 Cents**	
Gandy Blvd	Bridge to Westshore Blvd	34,500	60,700	41,100	36,500		44,800	51,700	43,300		51,200	
Gandy Blvd	Westshore Blvd to Manhattan Ave	41,000	55,000	38,800	35,900		41,950	46,600	40,300		46,250	
Gandy Blvd	Manhattan Ave to Lois Ave	47,000	54,200	38,800	38,400		41,600	46,500	40,800		46,100	
Gandy Blvd	Lois Ave to Dale Mabry Hwy	47,000	55,900	41,300	37,300		44,700	49,900	43,800		49,400	
Gandy Blvd	Dale Mabry Hwy to MacDill Ave	26,500	34,000	36,200	36,400		36,500	36,100	36,500		35,000	
Gandy Connector	Bridge to Dale Mabry Hwy	n/a	n/a	28,900	32,000		22,600	14,800	23,500		14,100	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	To Gandy	To Selmon	[redacted]	[redacted]	To Gandy	To Selmon	To Gandy	To Selmon
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	4,900	27,100	[redacted]	[redacted]	2,400	21,100	1,100	13,000
Selmon Expressway	Dale Mabry Hwy to Euclid Ave	28,000	38,800	54,600	50,500		48,300	46,100	46,900		45,100	
Westshore Blvd	Bay Ave to Gandy Blvd	19,500	20,300	20,800	20,400		20,600	21,400	20,500		21,200	
Westshore Blvd	Gandy Blvd to Euclid Ave	18,000	23,800	21,000	21,000		21,200	22,600	21,100		22,500	
Manhattan Ave	Bay Ave to Gandy Blvd	7,000	12,800	13,000	12,500		13,400	13,100	13,600		13,200	
Manhattan Ave	Gandy Blvd to Euclid Ave	8,600	28,300	27,100	26,800		27,900	27,500	27,500		27,300	
Dale Mabry Hwy	Bay Ave to Gandy Blvd	40,000	42,500	41,300	41,600		41,600	42,800	41,700		42,400	
Dale Mabry Hwy	Gandy Blvd to Expressway	37,000	54,300	53,700	51,600		53,400	54,100	53,300		53,400	
Dale Mabry Hwy	Expressway to Euclid Ave	38,000	40,800	40,700	41,700		40,200	40,100	40,800		40,200	

Alternative 1 - No Access to Gandy Boulevard

Alternative 2 - Access to Gandy Boulevard near Dale Mabry

4. FUTURE CONDITIONS

Before accepting the model results as appropriate for use in the design traffic report, the results of the TBRPM transportation model for this area were reviewed closely to determine the accuracy of the traffic forecasts. This information was then applied to the overall database to develop future forecasts of travel demand which would be representative of traffic volume increases expected in the future i.e., design traffic forecasts. Due to the characteristics of the study area, diversity of land uses located along the Gandy Boulevard corridor and the projected development expected to occur, future traffic volumes for the Gandy Connector were developed from the forecasts obtained from the TBRPM model.

The future year traffic conditions were developed and analyzed for the study area along Gandy Boulevard from west of Westshore Boulevard to Dale Mabry Highway. Using the validated travel demand model described in the previous section as well as future year socio-economic data and transportation system, the operational conditions for each build alternative as well as the no-build alternative were analyzed. A summary of this information and analyses is presented below.

4.1 No-Build Projected AADT Volumes and Capacity Analysis

The year 2035 was selected as the design year for future year traffic analysis. The current TBRPM traffic model provides peak season traffic volumes that are converted to annual average daily traffic (AADT) volumes, using the Hillsborough countywide MOCF of 0.96.

Using the current TBRPM traffic model with the modified 2035 socio-economic data and the base transportation network, the 2035 No-Build Alternative AADT volumes were developed by applying the above adjustment factors as well as the manual adjustments outlined for the corridor validation. The 2025 AADT volumes for the No-Build Alternative are shown in **Figure 7**.

The No Build Laneage (number of lanes) as presented in **Figure 8** has been updated to include new intersection configurations on Gandy from the reconstruction project to be completed in 2009 and the completion of other projects within the study area that will affect the operations of the Gandy

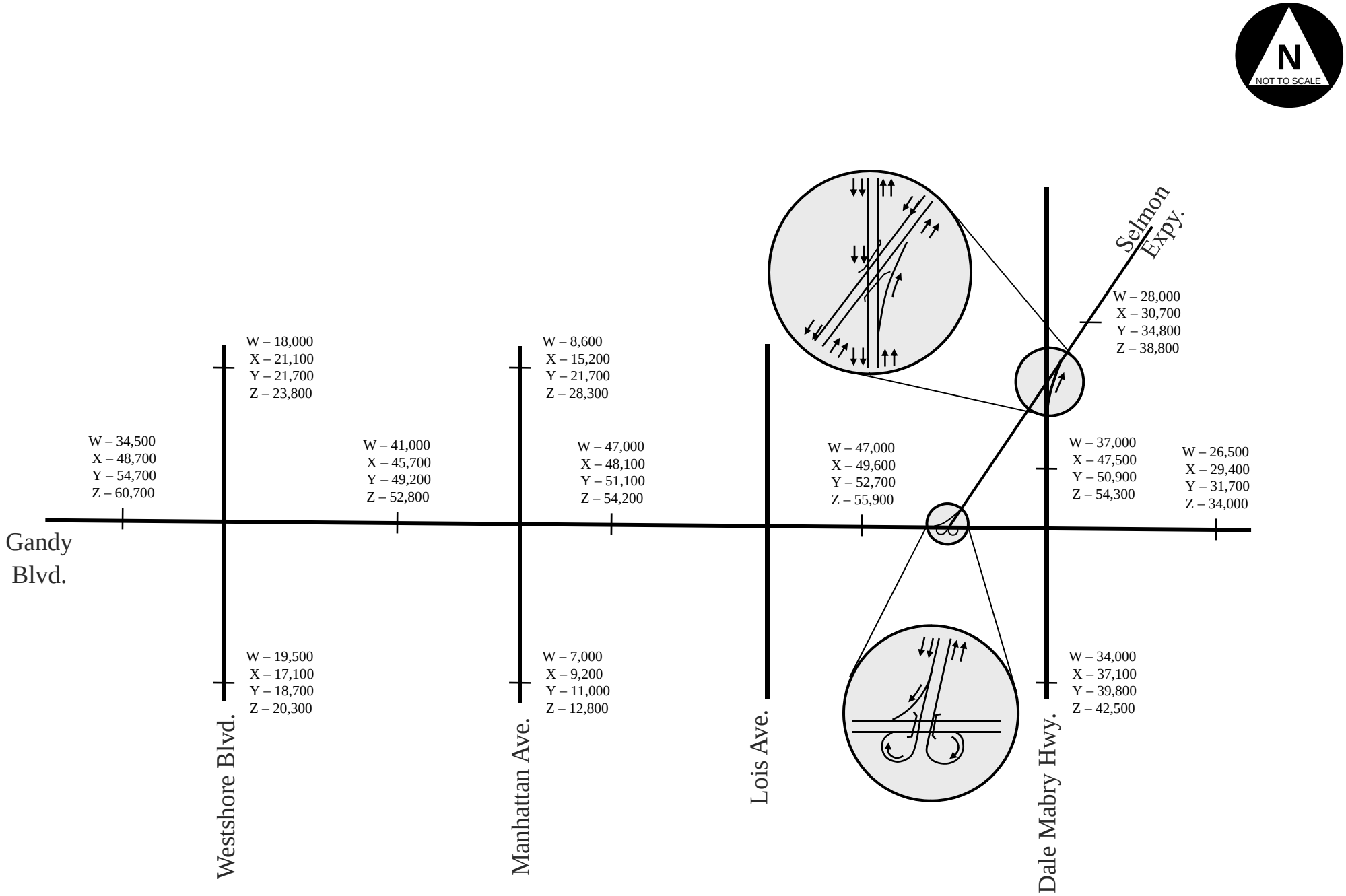


Figure No:	Page No:	
7	27	W - 2007No Build AADT (Estimated) X - 2015 No Build AADT (Estimated) Y - 2025 No Build AADT (Estimated) Z - 2035 No Build AADT (Estimated)

NO BUILD AADT

Gandy Connector

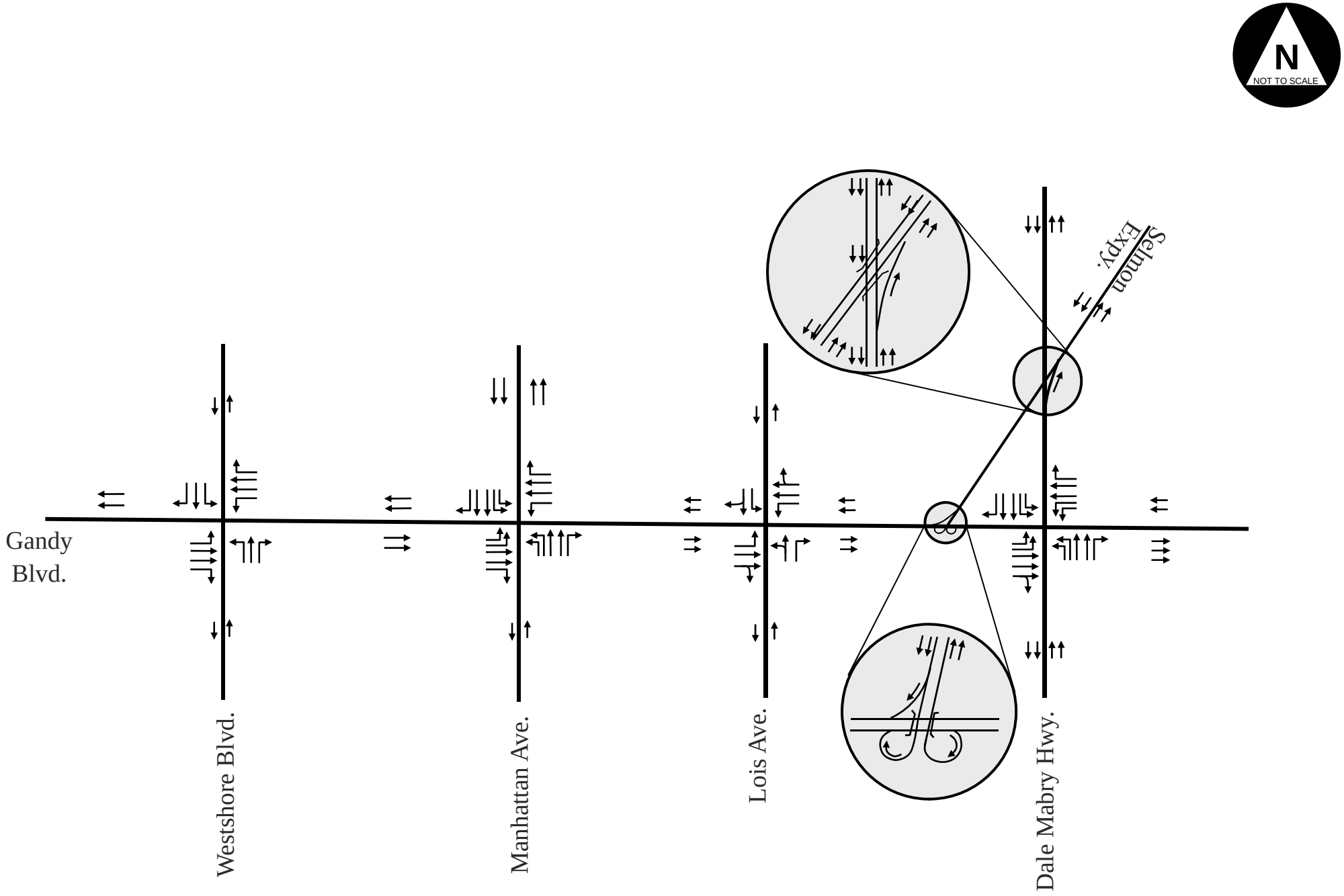


Figure No:	Page No:	
8	28	***NO BUILD GEOMETRY*** ***Gandy Connector***

Boulevard corridor between Westshore Boulevard and Dale Mabry Highway. Based on this laneage and geometry, roadway operational characteristics i.e., levels of service were tested using the projected AADT. The level of service ratings for these volumes were developed by comparing the two-way 2035 AADT volumes with the threshold volumes from *Table 4-1 of the FDOT 2002 Quality/Level of Service Handbook*. The results of these analyses are shown on **Table 7**.

Table 7. No Build Link Level of Service Analysis

	2015		2025		2035	
Segment	AADT	LOS	AADT	LOS	AADT	LOS
Gandy Boulevard						
Bridge to Westshore Blvd	48,700	F	54,700	F	60,700	F
Westshore Blvd to Manhattan Ave	45,700	F	49,200	F	52,800	F
Manhattan Ave to Lois Ave	48,100	F	51,100	F	54,200	F
Lois Ave to Dale Mabry Hwy	49,600	F	52,700	F	55,900	F
Dale Mabry Hwy to MacDill Ave	29,400	C	31,700	C	34,000	F
Selmon Expressway						
Dale Mabry Hwy to Euclid Ave	30,700	B	34,800	B	38,800	B
Westshore Boulevard						
Bay Ave to Gandy Blvd	17,100	F	18,700	F	20,300	F
Gandy Blvd to Euclid Ave	21,100	F	22,500	F	23,800	F
Manhattan Avenue						
Bay Ave to Gandy Blvd	9,200	C	11,000	C	12,800	C
Gandy Blvd to Euclid Ave	15,200	B	21,700	B	28,300	B
Dale Mabry Highway						
Bay Ave to Gandy Blvd	37,100	F	39,800	F	42,500	F
Gandy Blvd to Expressway	47,500	F	50,900	F	54,300	F
Expressway to Euclid Ave	37,500	F	39,200	F	40,800	F

4.1.1 Development of Design Hour (AM and PM) Volumes

Design hour volumes were estimated from the 2035 AADT volumes using the K_{30} and D_{30} factors developed previously for the original Gandy Boulevard PD&E Study Traffic Technical Memorandum dated October 2002 and approved by FDOT. These design hour volumes were then used to estimate the future design hour (AM and PM) intersection turning movements as shown in **Figures 9, 10 and 11** for the No-Build alternatives.

4.1.2 Future No-Build Peak Hour Operational Analysis

Intersection and arterial operational LOS analyses were conducted utilizing the Highway Capacity Manual software (HCS 2000) for the future design hour (AM and PM) conditions. Design hour turning volumes for the No-Build alternative developed in the previous section were used in the analysis. The results of the LOS analyses of intersections are summarized in **Table 8**. The HCS analysis worksheets are attached in **Appendix E**.

4.1.3 Future No Build Arterial Capacity Analysis

Arterial segment LOS analyses along Gandy Boulevard for the No Build Alternative were conducted using ARTPLAN, a software program that performs level of service analyses for motorized and non-motorized modes of traffic on arterial streets. It was developed for FDOT by the Transportation Research Center at the University of Florida, in conjunction with Polytechnic University (New York). The underlying analysis methodologies are based on HCM 2000 procedures, as well as other research conducted by various contractors on behalf of the FDOT.

The arterial segment LOS analysis was conducted along Gandy Boulevard between Westshore Boulevard and Dale Mabry Highway. For the arterial LOS analysis, the arterial segment boundaries were selected from one signalized intersection to the next. Therefore, Gandy Boulevard was divided into three arterial segments. The ARTPLAN worksheets for the highway segment LOS analysis are included in **Appendix F** and the results are summarized in **Table 9**.

Legend:

182 / 227

AM Peak / PM Peak

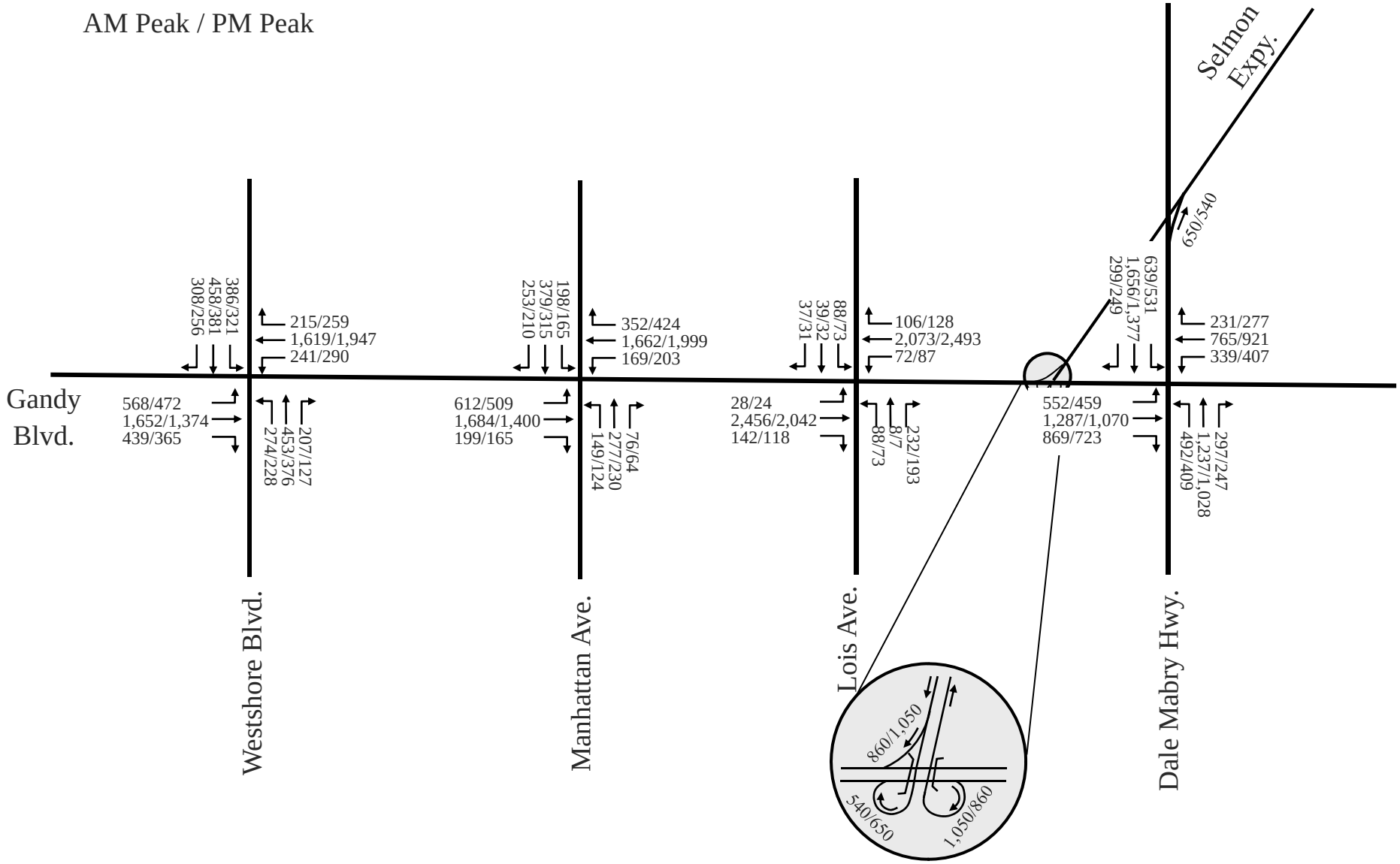


Figure No:	Page No:	
9	31	***OPENING(2015) NO BUILD PEAK HOUR TURNING MOVEMENT VOLUMES*** ***Gandy Connector***

Legend:

182 / 227

AM Peak / PM Peak

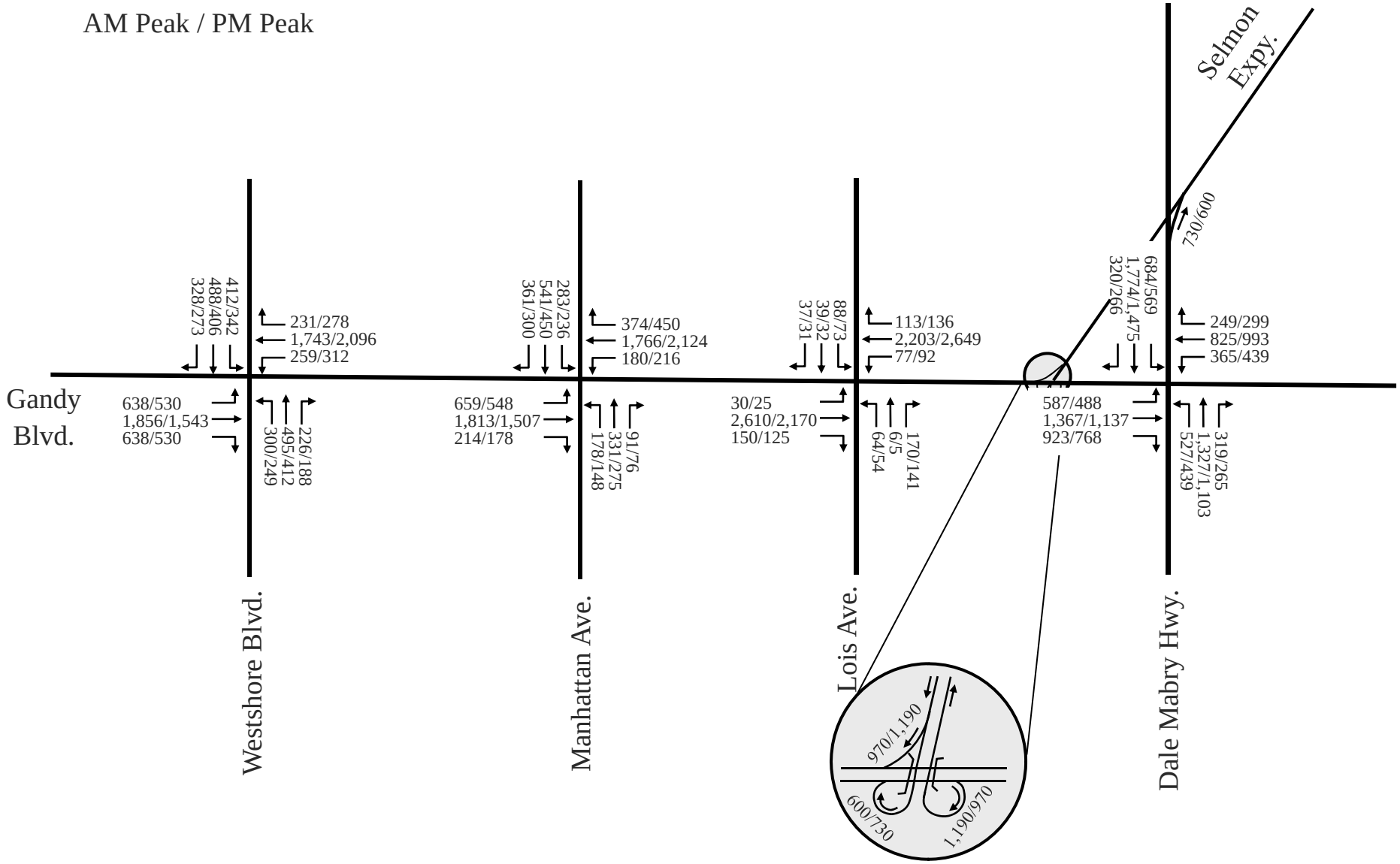


Figure No:	Page No:	
10	32	***MID YEAR (2025) NO BUILD PEAK HOUR TURNING MOVEMENT VOLUMES*** ***Gandy Connector***

Legend:

182 / 227

AM Peak / PM Peak

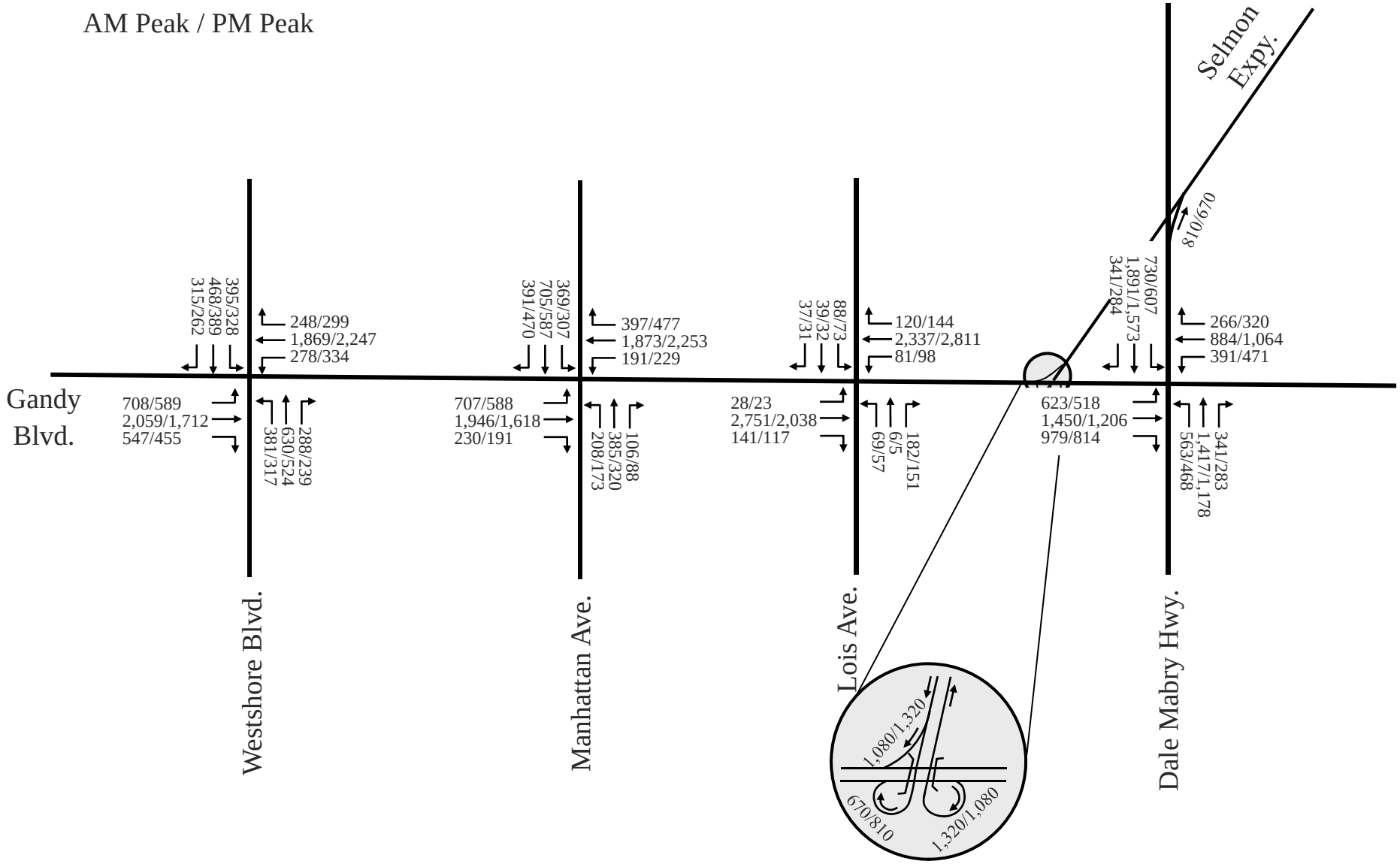


Figure No:	Page No:
11	33

DESIGN YEAR (2035) NO BUILD
PEAK HOUR TURNING MOVEMENT VOLUMES
Gandy Connector

Table 8. No Build Intersection Peak Hour Levels of Service (LOS)

Intersection	2015			
	AM		PM	
	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS
Gandy and Westshore Blvd	267.9	F	231.4	F
Gandy and Manhattan Ave	137.4	F	140.3	F
Gandy and Lois Ave	78.1	F	99.6	F
Gandy and Dale Mabry Highway	260.2	F	176.2	F
	2025			
Gandy and Westshore Blvd	322.8	F	273.5	F
Gandy and Manhattan Ave	159.0	F	159.1	F
Gandy and Lois Ave	123.2	F	124.9	F
Gandy and Dale Mabry Highway	294.9	F	204.9	F
	2035			
Gandy and Westshore Blvd	383.5	F	324.2	F
Gandy and Manhattan Ave	190.0	F	181.4	F
Gandy and Lois Ave	147.8	F	138.1	F
Gandy and Dale Mabry Highway	331.2	F	235.6	F

Table 9. Future No Build Peak Hour Highway Levels of Service (LOS)

Gandy Blvd. Arterial Segment Between	AM Peak Hour LOS		PM Peak Hour LOS	
	EB	WB	EB	WB
	2015			
Westshore Blvd. and Manhattan Ave.	F	E	F	F
Manhattan Ave. and Lois Ave.	F	F	F	F
Lois Ave. and Dale Mabry Hwy.	F	C	F	F
Overall Arterial Segment	**F**	**F**	**F**	**F**
	2025			
Westshore Blvd. and Manhattan Ave.	F	F	F	F
Manhattan Ave. and Lois Ave.	F	F	F	F
Lois Ave. and Dale Mabry Hwy.	F	D	F	F
Overall Arterial Segment	**F**	**F**	**F**	**F**
	2035			
Westshore Blvd. and Manhattan Ave.	F	F	F	F
Manhattan Ave. and Lois Ave.	F	F	F	F
Lois Ave. and Dale Mabry Hwy.	F	F	F	F
Overall Arterial Segment	**F**	**F**	**F**	**F**

The arterial LOS analysis indicates that, under the future conditions, the entire Gandy Boulevard arterial segment from Westshore Boulevard to Dale Mabry Highway will operate at an overall average LOS F during the AM and PM peak hour in both directions. For the individual segments of Gandy Boulevard, westbound Gandy Boulevard between Manhattan Avenue and Lois Avenue operates at LOS F during both the AM and PM peak hour. The closeness of the two traffic signals and the higher traffic volume with relatively higher green time for Gandy Boulevard traffic at Lois Avenue are the main contributing factors for traffic backups under future conditions within this segment. The segment of Gandy Boulevard from Westshore Boulevard to Manhattan Avenue operates at LOS F in both directions during the AM and PM peak hours.

4.2 Projected Build AADT Volumes and Capacity Analysis

One preliminary design alternative was identified for further development in this Gandy Connector Project. The "Build" alternative being evaluated is an elevated two-lane expressway that extends the 4-lane Selmon Expressway from its existing terminus with Gandy Boulevard on a new elevated structure along Gandy Boulevard to a point on Gandy Boulevard located west of Westshore Boulevard and east of the Gandy Bridge. Additional ramps would be constructed along Gandy Boulevard and Dale Mabry Highway to provide access to the elevated Gandy Connector. The lane arrangement and the intersection layouts for this Build alternative are illustrated in **Figure 12**.

Using the current TBRPM (25A) traffic model with the modified 2035 socio-economic data, the base transportation network and alternative improvements, the 2035 AADT volumes for the preliminary design or Build alternatives were developed by applying the adjustment described for the No-Build Alternative. The 2035 AADT volumes for the design alternatives are shown on **Figure 13**. The level of service ratings for these volumes were developed by comparing the two-way 2035 AADT volumes with the threshold volumes from *Table 4-1 of the FDOT 2002 Quality/Level of Service Handbook*. The results of these analyses are shown on **Table 10**.

The preliminary design year 2035 level of service analyses based on annual average daily traffic for the various roadway segments in each alternative, as summarized in **Table 10**, indicate that the roadway segments along Gandy Boulevard will generally operate at LOS F. In addition, the levels of service along the analyzed segments of Dale Mabry Highway, and Westshore Boulevard are also rated at LOS F.

4.2.1 Development of Design Hour (AM and PM) Volumes

Design hour volumes for the Build Alternative were estimated from the 2035 AADT volumes using the K_{30} and D_{30} factors developed previously for the original Gandy Boulevard PD&E Study *Traffic Technical Memorandum* dated October 2002 and approved by FDOT. These design hour volumes were then used to estimate the future design hour (AM and PM) intersection turning movement shown in **Figures 14, 15 and 16** for the Build alternative.

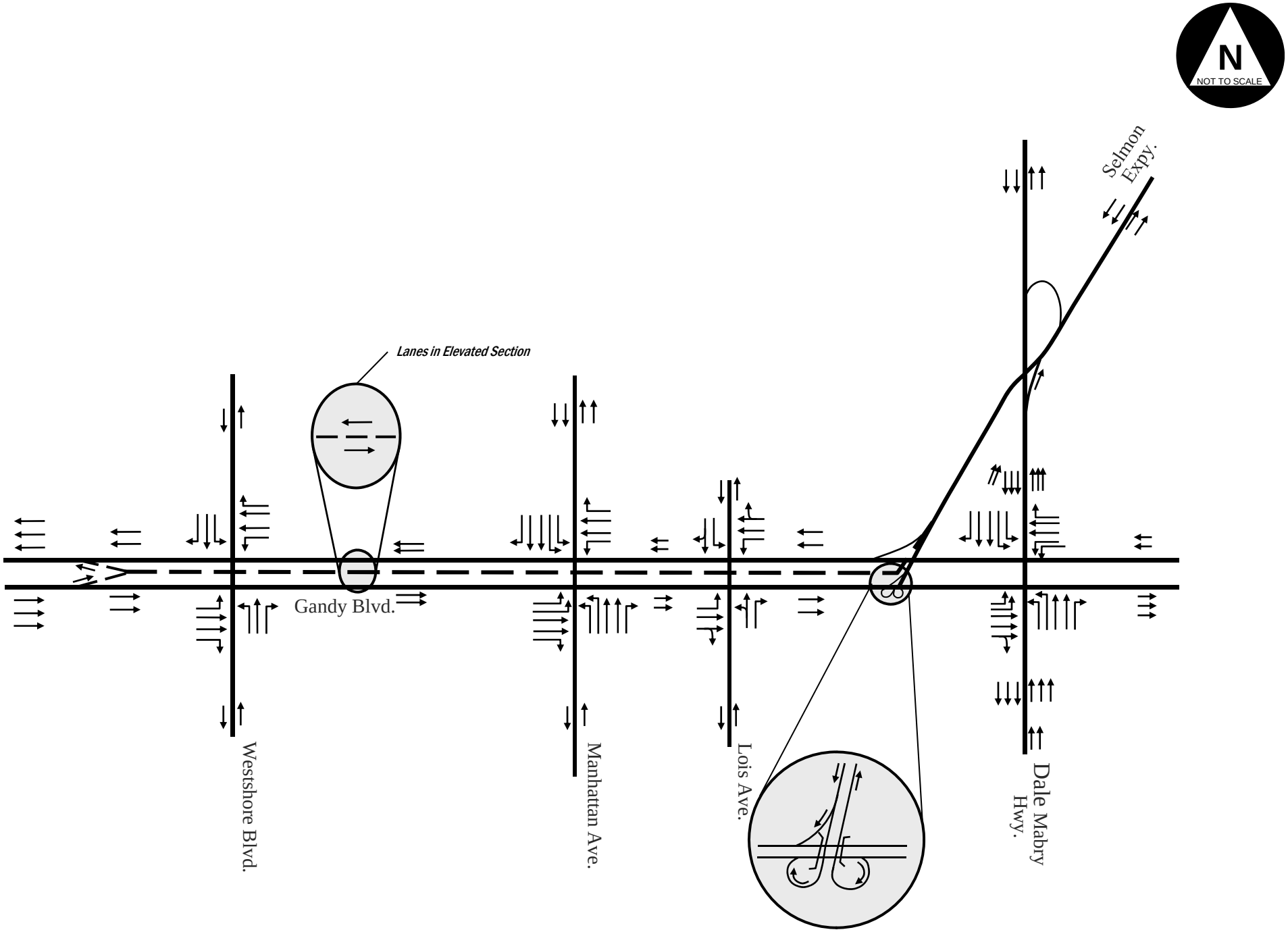


Figure No:	Page No:	
12	37	***BUILD GEOMETRY*** ***ELEVATED GANDY CONNECTOR*** ***Gandy Connector***

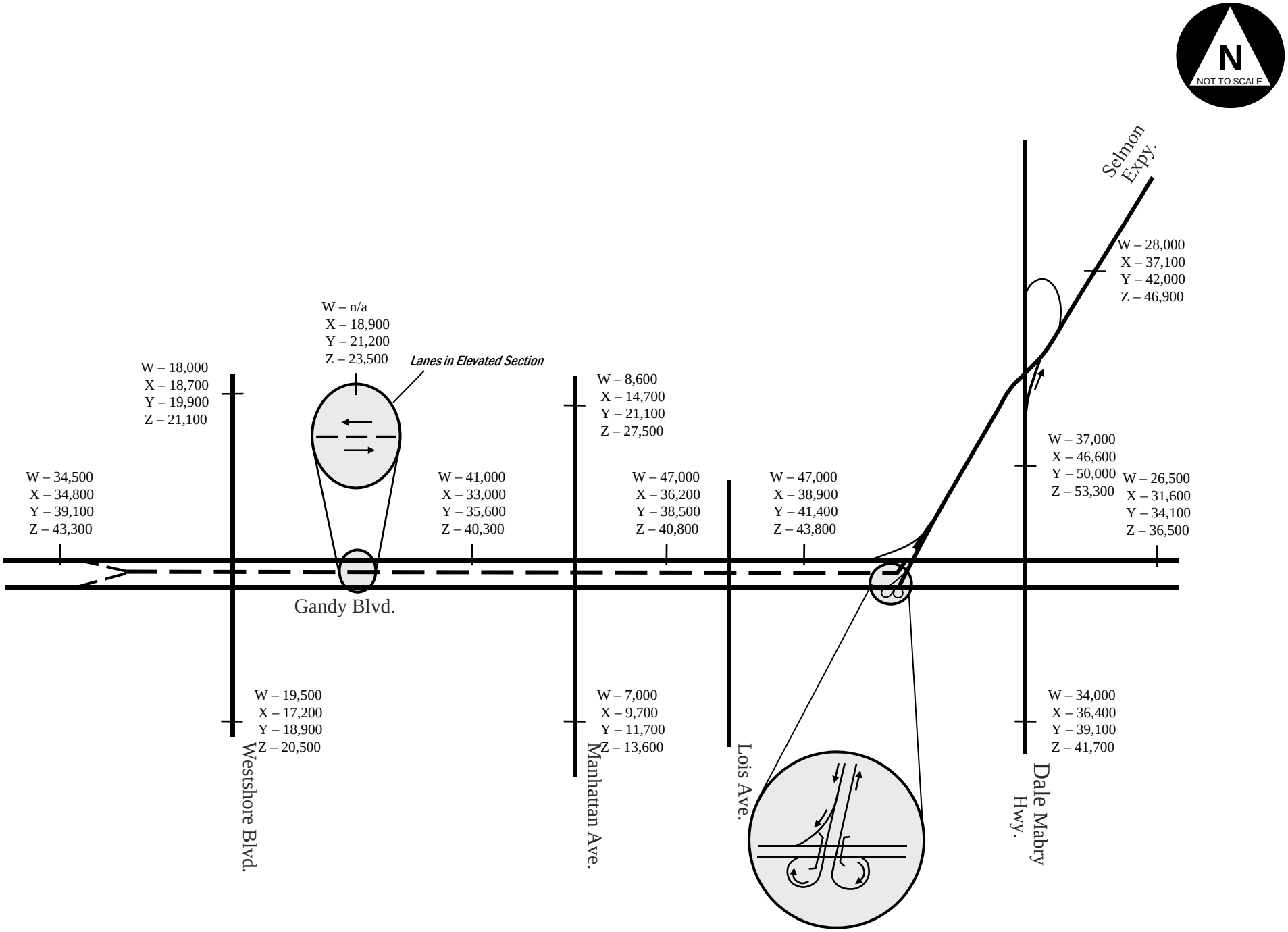


Figure No:	Page No:	
13	38	W – 2007 Build AADT (Estimated) X – 2015 Build AADT (Estimated) Y – 2025 Build AADT (Estimated) Z – 2035 Build AADT (Estimated)

BUILD AADT

Gandy Connector

Table 10. Build Link Level of Service Analysis

Segment	2015		2025		2035	
	AADT	LOS	AADT	LOS	AADT	LOS
Gandy Boulevard						
Bridge to Westshore Blvd	34,800	D	39,100	F	43,300	F
Westshore Blvd to Manhattan Ave	33,000	D	35,600	D	38,100	F
Manhattan Ave to Lois Ave	36,200	F	38,500	F	40,800	F
Lois Ave to Dale Mabry Hwy	38,900	F	41,400	F	43,800	F
Dale Mabry Hwy to MacDill Ave	31,600	C	34,100	C	36,500	F
Gandy Connector						
Gandy Bridge to Dale Mabry Hwy	18,900	B	21,200	B	23,500	B
Selmon Expressway						
Dale Mabry Hwy to Euclid Ave	37,100	B	42,000	C	46,900	C
Westshore Boulevard						
Bay Ave to Gandy Blvd	17,200	F	18,900	F	20,500	F
Gandy Blvd to Euclid Ave	18,700	F	19,900	F	21,100	F
Manhattan Avenue						
Bay Ave to Gandy Blvd	9,700	D	11,700	D	13,600	D
Gandy Blvd to Euclid Ave	14,700	C	21,100	D	27,500	D
Dale Mabry Highway						
Bay Ave to Gandy Blvd	36,400	F	39,100	F	41,700	F
Gandy Blvd to Expressway	46,600	F	50,000	F	53,300	F
Expressway to Euclid Ave	37,500	F	39,200	F	40,800	F

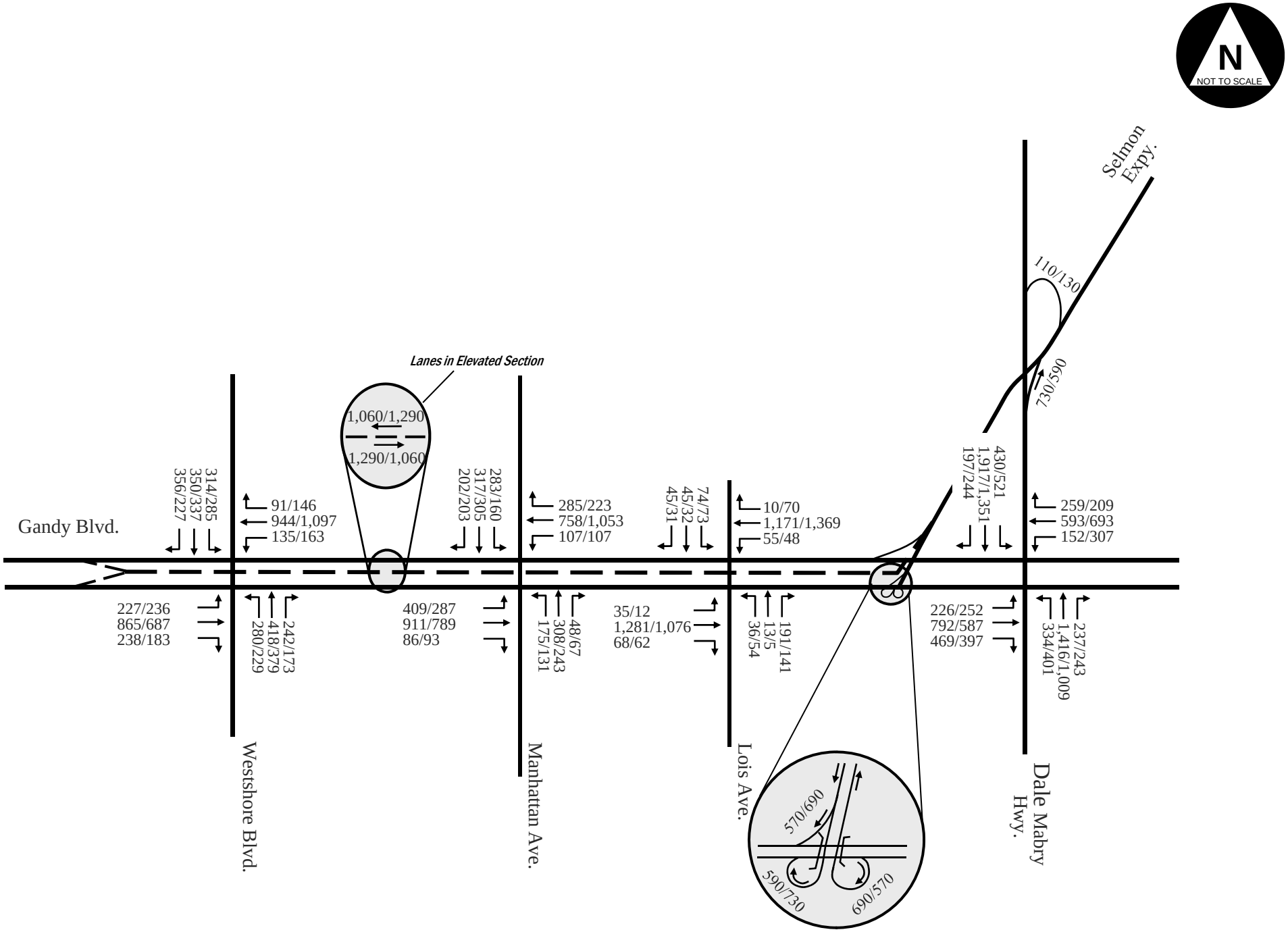


Figure No:	Page No:	
14	40	***OPENING YEAR (2015) BUILD PEAK HOUR TURNING MOVEMENT VOLUMES***

Gandy Connector

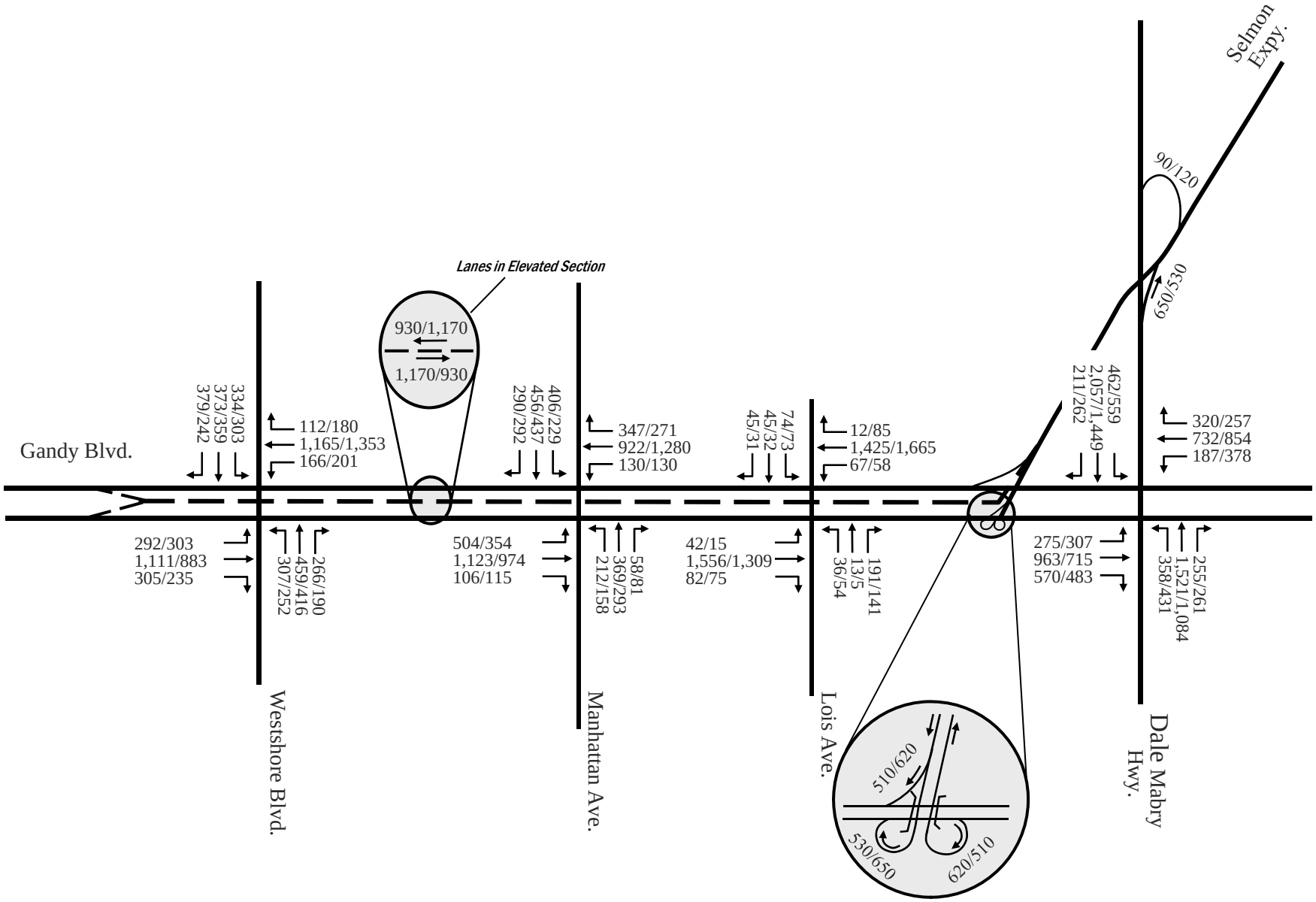


Figure No:	Page No:	
15	41	***MID YEAR (2025) BUILD*** ***PEAK HOUR TURNING MOVEMENT VOLUMES*** ***Gandy Connector***

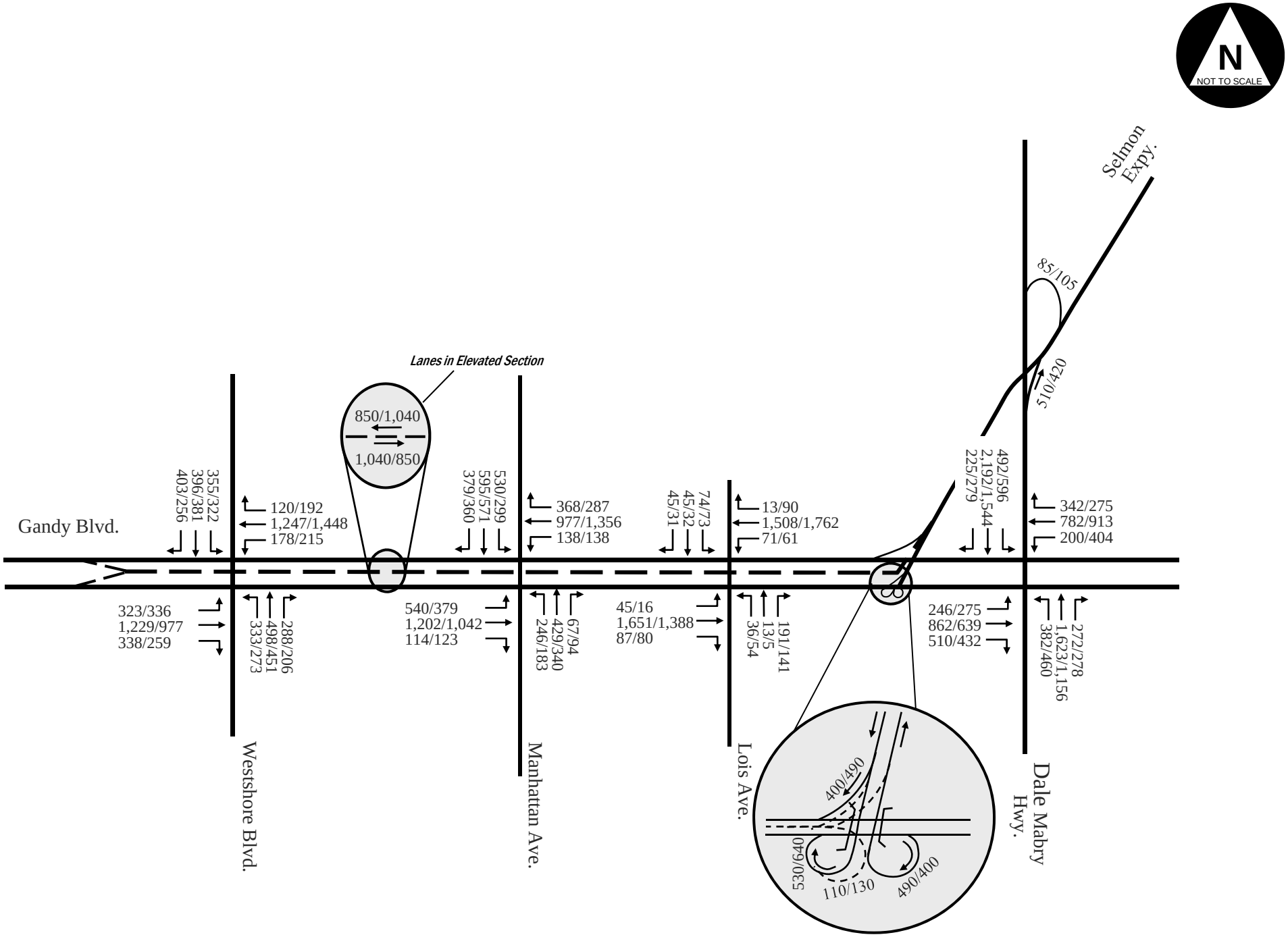


Figure No:	Page No:	
16	42	***DESIGN YEAR (2035) BUILD PEAK HOUR TURNING MOVEMENT VOLUMES*** ***Gandy Connector***

4.2.2 Future Peak Hour Operational Analysis

Intersection and arterial operational level of service (LOS) analyses were conducted utilizing the Highway Capacity Manual software (HCS 2000) for the future design hour (AM and PM) conditions. Design hour turning volumes for the Build alternative developed in the previous section were used in the analysis. Coordinated corridor intersection signal timing was used in the LOS analyses of intersections and arterial. The results of the LOS analyses of intersections are summarized in **Table 11**. The HCS analysis worksheets are attached in **Appendix E**.

Table 11. Build Peak Hour Intersection Levels of Service (LOS)

Intersection	AM		PM	
	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS
	2015			
Gandy and Westshore Blvd	140.7	F	124.2	F
Gandy and Manhattan Ave	70.9	E	53.8	E
Gandy and Lois Ave	29.5	C	25.9	C
Gandy and Dale Mabry Highway	196.3	F	113.4	F
	2025			
Gandy and Westshore Blvd	162.2	F	149.2	F
Gandy and Manhattan Ave	97.0	F	63.2	E
Gandy and Lois Ave	31.4	C	29.7	C
Gandy and Dale Mabry Highway	231.4	F	132.4	F
	2035			
Gandy and Westshore Blvd	182.8	F	170.5	F
Gandy and Manhattan Ave	122.2	F	71.2	E
Gandy and Lois Ave	32.6	C	30.8	C
Gandy and Dale Mabry Highway	251.4	F	150.8	F

4.2.3 Future Build Arterial Capacity Analysis

Arterial segment LOS analyses along Gandy Boulevard for the Build Alternative were conducted using ARTPLAN, a software program that performs level of service analyses for motorized and non-motorized modes of traffic on arterial streets. It was developed for FDOT by the Transportation Research Center at the University of Florida, in conjunction with Polytechnic University (New York). The underlying analysis methodologies are based on HCM 2000 procedures, as well as other research conducted by various contractors on behalf of the Florida Department of Transportation.

The arterial segment LOS analysis was conducted along Gandy Boulevard between Westshore Boulevard and Dale Mabry Highway. For the arterial LOS analysis, the arterial segment boundaries were selected from one signalized intersection to the next. Therefore, Gandy Boulevard was divided into three arterial segments. The ARTPLAN worksheets for the highway segment LOS analysis are included in **Appendix F** and the results are summarized in **Table 12**.

The arterial LOS analysis indicates that, under the future conditions, the entire Gandy Boulevard arterial segment from Westshore Boulevard to Dale Mabry Highway will operate at an overall average LOS D in the WB direction and LOS F in the EB direction during the AM peak for all years. For the PM peak period Gandy Boulevard will operate at LOS D in the WB direction and LOS F in the EB direction in 2015, and will LOS F in both directions for the other two analysis years. The individual segments of Gandy Boulevard, westbound between Lois Avenue and Manhattan Avenue will operate at LOS F during both the AM and PM peak hours, and eastbound between Lois Avenue and Dale Mabry Highway will operate at LOS F during both the AM and PM peak hours.

For the elevated express lanes, their capacity is expected to be constrained by the “ramp” merge and diverge conditions at each end of the elevated structure. The merge and diverge movements at the west end of the project do not occur on the elevated structure but on an *arterial facility* (Gandy Boulevard), which is not typically analyzed using this methodology. The analysis was performed for the year 2035 Design Year. The results of this analyses, show all of the potentially conflicting locations operating at LOS “C” or better. The HCS worksheets for the ramp LOS analysis are included in **Appendix J.**

Table 12. Future Build Peak Hour Highway Levels of Service (LOS)

2015				
Gandy Blvd. Arterial Segment Between	**AM Peak Hour LOS**		**PM Peak Hour LOS**	
	EB	**WB**	**EB**	**WB**
Westshore Blvd. and Manhattan Ave.	D	D	D	F
Manhattan Ave. and Lois Ave.	E	F	E	F
Lois Ave. and Dale Mabry Hwy.	F	C	F	C
Overall Arterial Segment	**F**	**D**	**F**	**D**
2025				
Westshore Blvd. and Manhattan Ave.	D	D	D	F
Manhattan Ave. and Lois Ave.	E	F	E	F
Lois Ave. and Dale Mabry Hwy.	F	C	F	C
Overall Arterial Segment	**F**	**D**	**F**	**F**
2035				
Westshore Blvd. and Manhattan Ave.	D	D	D	F
Manhattan Ave. and Lois Ave.	E	F	E	F
Lois Ave. and Dale Mabry Hwy.	F	C	F	C
Overall Arterial Segment	**F**	**D**	**F**	**F**

5. ROUNDABOUT OPERATIONS ANALYSIS

An operational analysis for the two study intersections (Gandy Boulevard at Westshore Boulevard and at Manhattan Avenue) under each of the design volume scenarios was performed to verify the geometric and operational requirements for the intersections. The operating performance of the intersections has been assessed using the SIDRA intersection software package.

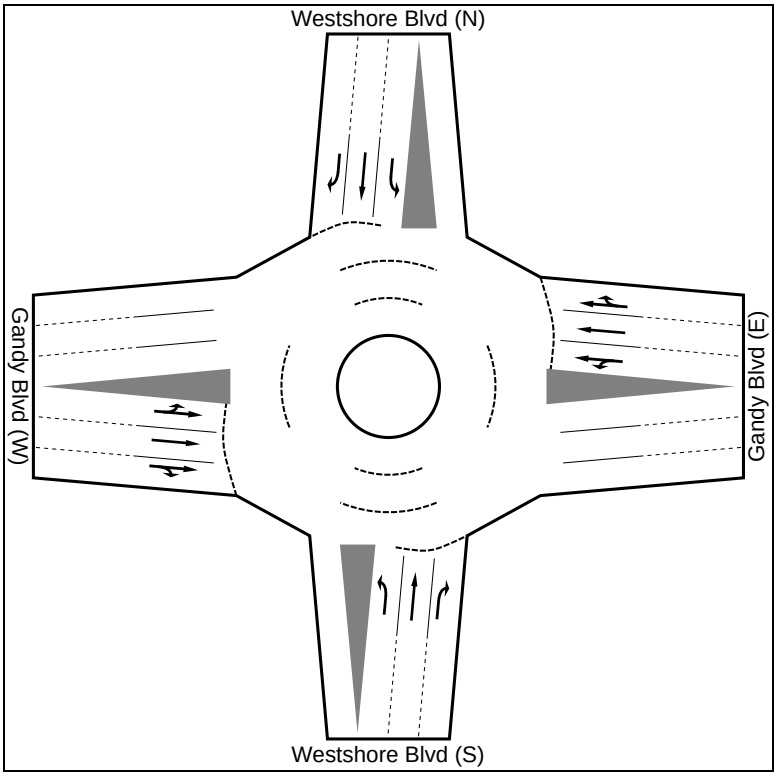
For design purposes, a maximum volume-to-capacity (v/c) ratio of 0.85 for the critical approach has been targeted under the forecast year conditions. While there is no absolute standards for v/c ratio, international and domestic experience suggests that v/c ratios in the range of 0.85 to 0.90 represent an approximate threshold for satisfactory operations. As the v/c ratio exceeds this range, the roundabout operations may become more unstable which could lead to increased queuing and delays.

A wide range of lane configurations were tested for roundabouts at each study intersection. Based upon the magnitude of the forecast year volumes, it was identified that three-lane approaches would be required for all approaches to both intersections. Based upon consultation with the project team, three-lane entries were assumed to be the practical maximum that would be appropriate given the intersection context and number of lanes on the approach/departure to the intersections. Therefore, only one geometric scenario is presented in this report for each study intersection. Although the total number of entry lanes is the same for both intersections, the lane configurations and number of exit lanes is slightly different. The lane configurations assumed for each intersection is identified later in the report under the section corresponding to each individual study intersection.

5.1 Gandy Boulevard at Westshore Boulevard Intersection

The following information pertains to the intersection of Gandy Boulevard at Westshore Boulevard. As previously described, a variety of combinations of lane numbers and arrangements were tested. However, ultimately, the analysis indicated that three approach lanes would be required for each leg of the roundabout. This was considered to be a practical maximum for this location. The intersection layout used in the assessment is illustrated in **Figure 17** below.

Figure 17 – Gandy Boulevard at Westshore Boulevard Intersection Layout



Tables 13 – 19 present the findings of the roundabout analyses of the Gandy Boulevard and Westshore Boulevard intersection for the previously introduced scenarios. More detailed output from the SIDRA Intersection software is provided in **Appendix I**.

For comparison purposes, 2007 traffic volumes were analyzed with roundabout operations. The results are presented in **Table 19** and indicate that the proposed geometric layout would provide acceptable operations and ample spare capacity during the AM peak hour. However, during the PM peak hour the roundabout would operate near-capacity. The northbound movement would actually operate over-capacity, with the remainder of the approaches operating acceptably.

Table 13 Alternative 1 - No Toll Scenario (Westshore Blvd)

Performance Measure	Alternative 1 No Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.08**	0.69	**0.97**	0.71
Average Control Delay (sec/veh)	53	13	29	11
Overall Intersection Delay (sec/veh)	24			
95th Percentile Queue (ft)	741	200	361	194
Performance Measure	**Alternative 1 No Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	0.80	0.78	**0.91**	0.58
Average Control Delay (sec/veh)	17	15	27	10
Overall Intersection Delay (sec/veh)	16			
95th Percentile Queue (ft)	225	262	264	139

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 14 Alternative 2 - No Toll Scenario (Westshore Blvd)

Performance Measure	Alternative 2 No Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	0.89	0.60	0.84	0.58
Average Control Delay (sec/veh)	23	11	19	9
Overall Intersection Delay (sec/veh)	15			
95th Percentile Queue (ft)	319	152	222	136
Performance Measure	**Alternative 2 No Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	0.69	0.65	0.76	0.48
Average Control Delay (sec/veh)	14	11	17	9
Overall Intersection Delay (sec/veh)	12			
95th Percentile Queue (ft)	165	176	170	101

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 15 Alternative 1 – 25-Cent Toll Scenario (Westshore Blvd)

Performance Measure	Alternative 1 25-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.36**	0.74	**1.10**	0.85
Average Control Delay (sec/veh)	155	13	51	15
Overall Intersection Delay (sec/veh)	48			
95th Percentile Queue (ft)	1486	237	645	308
Performance Measure	**Alternative 1 25-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**0.92**	**1.08**	**1.04**	0.77
Average Control Delay (sec/veh)	25	65	44	13
Overall Intersection Delay (sec/veh)	39			
95th Percentile Queue (ft)	331	951	451	212

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 16 Alternative 2 – 25-Cent Toll Scenario (Westshore Blvd)

Performance Measure	Alternative 2 25-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.29**	0.73	**1.06**	0.82
Average Control Delay (sec/veh)	123	13	44	13
Overall Intersection Delay (sec/veh)	41			
95th Percentile Queue (ft)	1298	226	557	276
Performance Measure	**Alternative 2 25-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	0.88	**0.92**	**1.12**	0.67
Average Control Delay (sec/veh)	21	25	63	11
Overall Intersection Delay (sec/veh)	27			
95th Percentile Queue (ft)	284	461	611	182

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 17 Alternative 1 – 50-Cent Toll Scenario (Westshore Blvd)

Performance Measure	Alternative 1 50-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.94**	0.80	**1.35**	**1.02**
Average Control Delay (sec/veh)	390	15	123	38
Overall Intersection Delay (sec/veh)	108			
95th Percentile Queue (ft)	2541	302	1222	830
Performance Measure	**Alternative 1 50-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.27**	**1.16**	**1.28**	0.86
Average Control Delay (sec/veh)	102	99	109	16
Overall Intersection Delay (sec/veh)	74			
95th Percentile Queue (ft)	1180	1594	934	339

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 18 Alternative 2 – 50-Cent Toll Scenario (Westshore Blvd)

Performance Measure	Alternative 2 50-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.95**	0.82	**1.40**	**1.00**
Average Control Delay (sec/veh)	395	16	139	32
Overall Intersection Delay (sec/veh)	108			
95th Percentile Queue (ft)	2540	325	1313	720
Performance Measure	**Alternative 2 50-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.24**	**1.20**	**1.28**	0.85
Average Control Delay (sec/veh)	93	112	107	15
Overall Intersection Delay (sec/veh)	77			
95th Percentile Queue (ft)	1101	1778	923	327

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 19 Roundabout Operations under Year 2007 Traffic Conditions (Westshore Blvd)

Performance Measure	AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	0.36	0.39	0.30	0.50
Average Control Delay (sec/veh)	11	6	10	7
Overall Intersection Delay (sec/veh)	8			
95th Percentile Queue (ft)	58	68	42	98
Performance Measure	**PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 1	3 / 3	3 / 1	3 / 3
Assumed Entry Configuration	L | TH | R	L-TH | TH | TH-R	L | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.32**	0.76	0.77	**0.90**
Average Control Delay (sec/veh)	129	13	19	16
Overall Intersection Delay (sec/veh)	30			
95th Percentile Queue (ft)	1089	260	160	408

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

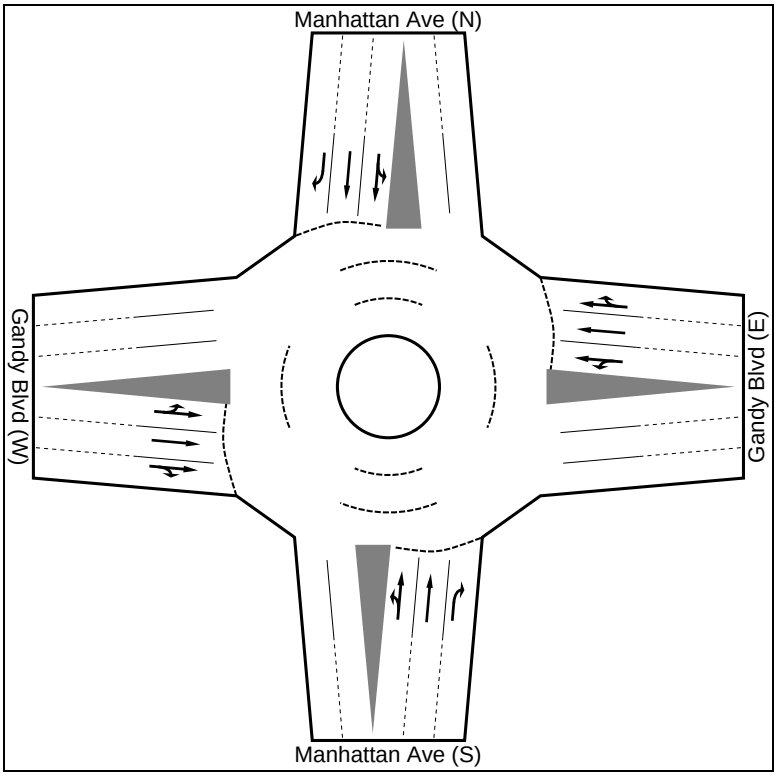
5.2 Discussion of Analysis Findings for the Gandy Blvd. at Westshore Blvd. Intersection

Based upon the various volume scenarios evaluated for the study intersection, only Alternative 2 with no-toll (see **Table 14**) allows for acceptable operations for both the AM and the PM peak hours for the assumed geometry. Under the 25-cent toll scenarios, both minor street approaches are expected to have over-capacity operations during the peak hours; however, the Gandy Boulevard approaches are expected to continue to operate acceptably under Alternative 2 (see **Table 16**). Each of the 50-cent toll scenarios results in unacceptable operations as shown in **Tables 17 and 18**.

5.3 Gandy Boulevard and Manhattan Avenue Intersection

The following information pertains to the intersection of Gandy Boulevard at Manhattan Boulevard. However, the analysis indicated that three approach lanes would be required for each leg of the roundabout. This was considered to be a practical maximum for this location. The intersection layout used in the assessment is illustrated in **Figure 18** below.

Figure 18 – Gandy Boulevard at Manhattan Avenue Intersection Layout



The following tables present the output of the SIDRA Intersection analyses of the Gandy Boulevard and Manhattan Avenue intersection for the same scenarios. More detailed output from the SIDRA Intersection software is provided in **Appendix I**.

Table 20 Alternative 1 - No Toll Scenario (Manhattan Ave)

Performance Measure	**Alternative 1 No Toll - AM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.13**	0.63	**0.94**	**0.90**
Average Control Delay (sec/veh)	102	13	22	21
Overall Intersection Delay (sec/veh)	30			
95th Percentile Queue (ft)	743	177	362	349
Performance Measure	**Alternative 1 No Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.51	0.61	0.82	0.62
Average Control Delay (sec/veh)	13	10	18	11
Overall Intersection Delay (sec/veh)	13			
95th Percentile Queue (ft)	99	159	223	150

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 21 Alternative 2 - No Toll Scenario (Manhattan Ave)

Performance Measure	Alternative 2 No Toll - AM Peak Hour			
	NB	WB	SB	EB
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	**0.90**	0.59	**0.90**	0.78
Average Control Delay (sec/veh)	40	12	19	15
Overall Intersection Delay (sec/veh)	19			
95th Percentile Queue (ft)	316	156	302	230
Performance Measure	**Alternative 2 No Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.43	0.56	0.75	0.53
Average Control Delay (sec/veh)	12	9	15	10
Overall Intersection Delay (sec/veh)	11			
95th Percentile Queue (ft)	79	130	183	118

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 22 Alternative 1 – 25-Cent Toll Scenario (Manhattan Ave)

Performance Measure	Alternative 1 25-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.31**	0.74	**1.13**	**1.04**
Average Control Delay (sec/veh)	169	16	58	49
Overall Intersection Delay (sec/veh)	58			
95th Percentile Queue (ft)	1121	258	891	789
Performance Measure	**Alternative 1 25-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.62	**0.85**	**1.07**	0.81
Average Control Delay (sec/veh)	16	16	64	14
Overall Intersection Delay (sec/veh)	27			
95th Percentile Queue (ft)	131	307	641	237

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 23 Alternative 2 – 25-Cent Toll Scenario (Manhattan Ave)

Performance Measure	Alternative 2 25-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.32**	0.72	**1.09**	**1.02**
Average Control Delay (sec/veh)	173	15	47	42
Overall Intersection Delay (sec/veh)	54			
95th Percentile Queue (ft)	1154	242	758	683
Performance Measure	**Alternative 2 25-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.61	0.75	**1.03**	0.72
Average Control Delay (sec/veh)	15	13	52	12
Overall Intersection Delay (sec/veh)	23			
95th Percentile Queue (ft)	131	250	537	204

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 24 Alternative 1 – 50-Cent Toll Scenario (Manhattan Ave)

Performance Measure	Alternative 1 50-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.39**	**1.00**	**1.44**	**1.07**
Average Control Delay (sec/veh)	201	47	155	56
Overall Intersection Delay (sec/veh)	93			
95th Percentile Queue (ft)	1245	773	1678	1011
Performance Measure	**Alternative 1 50-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.67	**1.01**	**1.47**	0.76
Average Control Delay (sec/veh)	18	41	225	12
Overall Intersection Delay (sec/veh)	68			
95th Percentile Queue (ft)	145	806	1594	237

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 25 Alternative 2 – 50-Cent Toll Scenario (Manhattan Ave)

Performance Measure	Alternative 2 50-Cent Toll - AM Peak Hour			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	**1.40**	**0.99**	**1.42**	**1.09**
Average Control Delay (sec/veh)	205	45	150	64
Overall Intersection Delay (sec/veh)	94			
95th Percentile Queue (ft)	1266	733	1639	1143
Performance Measure	**Alternative 2 50-Cent Toll - PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.70	**1.01**	**1.43**	0.78
Average Control Delay (sec/veh)	19	42	207	12
Overall Intersection Delay (sec/veh)	64			
95th Percentile Queue (ft)	155	820	1497	252

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

Table 26 Roundabout Operations under Year 2007 Traffic Conditions (Manhattan Ave)

Performance Measure	AM Peak Hour			
	NB	WB	SB	EB
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.46	0.49	0.40	0.61
Average Control Delay (sec/veh)	14	7	11	7
Overall Intersection Delay (sec/veh)	8			
95th Percentile Queue (ft)	84	99	64	144
Performance Measure	**PM Peak Hour**			
	NB	**WB**	**SB**	**EB**
Number of Lanes (Entry/Exit)	3 / 2	3 / 3	3 / 2	3 / 3
Assumed Entry Configuration	L-TH | TH | R	L-TH | TH |TH-R	L-TH | TH | R	L-TH | TH |TH-R
V/C Ratio	0.41	0.85	**1.22**	0.21
Average Control Delay (sec/veh)	8	14	119	10
Overall Intersection Delay (sec/veh)	34			
95th Percentile Queue (ft)	62	308	1035	38

Notes: **Bold** indicates v/c ratios exceeding recommended thresholds
L: Left-turn lane
R: Right-turn lane
TH: Through lane
L-TH: Shared left and a through lane
R-TH: Share right and a through lane

For comparison purposes, 2007 traffic volumes were analyzed with roundabout operations. The results are presented in **Table 26** and indicate that the proposed geometric layout would provide acceptable operations and ample spare capacity during the AM peak hour. However, during the PM peak hour the roundabout would operate near-capacity. The southbound movement would actually operate over-capacity, with the remainder of the approaches operating acceptably.

5.4 Discussion of Analysis Findings for the Gandy Blvd. at Manhattan Avenue Intersection

Based upon the various volume scenarios evaluated for the study intersection, only Alternative 2 with no-toll (see **Table 21**) allows for acceptable operations for both the AM and the PM peak hours for the assumed geometry. Under the 25-cent toll scenarios, both minor street approaches are expected to have over-capacity operations during the peak hours and the eastbound movement during the AM peak hour is also expected to be slightly over-capacity. Each of the 50-cent toll scenarios results in unacceptable operations as shown in **Tables 24 and 25**.

5.5 Summary and Recommendations

For both study intersections, the analysis identified that three-lanes would need to be provided on all approaches to the study intersections to accommodate the forecast traffic volumes. This was assumed to represent a maximum reasonable geometric condition. Based upon this assumed geometry, both study intersections were generally identified to provide acceptable operations for only one scenario: Alternative 2 with no-toll. At the 25-cent toll scenarios, both intersections began to show over-capacity operations on the minor street approaches. At the 50-cent toll scenarios, both locations showed generally unacceptable operations.

Although the results of the SIDRA analysis generally reflects at- or over-capacity operations for the no-toll and 25 cent toll scenarios, it may still be appropriate to conduct more detailed evaluations for these scenarios using a microscopic simulation model. This additional analysis would allow for interactions with adjacent intersections to be better accounted for, particularly the closely spaced signals (a proposed new signal at Bridge Street west of Westshore Boulevard and at Lois Avenue east of Manhattan Avenue). These adjacent signals may result in the metering of traffic approaching

the roundabout and could also affect the density of platoons arriving at the roundabout – both of which could impact the overall roundabout operations.

Additional comparisons to the existing signalized intersection control should also be undertaken to identify which form of control will provide the best overall operations. Given that the Gandy Boulevard corridor is likely to remain at a four-lane cross section, it is possible that one or both roundabouts may operationally outperform the comparable signal under some scenarios – even if the roundabout is operating above recommended volume-to-capacity thresholds during the peak periods. Queuing, delay, and overall corridor travel times should be considered in the overall selection of the appropriate control device.

6. TRAFFIC DATA FOR AIR AND NOISE STUDIES

Opening year and design year traffic data were developed for the air and noise quality studies. The assumptions and results are discussed below.

6.1 Traffic Data for Air Quality Study

Traffic data were developed for the required air quality screening test. The data was based on the forecasted traffic for the future years. The methodology for the development of the traffic forecasts is documented in Section 3, Development of Future Traffic.

Forecasted traffic demand for No-Build and Build alternatives were considered in developing traffic data for the air quality screening test. The most congested intersection in the study corridor under all scenarios is the intersection of Gandy Boulevard and Dale Mabry Highway as demonstrated in the Future Conditions section of this report. Therefore, the Gandy Boulevard and Dale Mabry Highway intersection was chosen to conduct the air quality as the worst case scenario.

The average cruise speed is assumed to be 35 mph, which is lower than the existing posted speed, for the No-Build and all Build conditions. For all alternatives, the average cruise speed is assumed to be lower than the posted speed limit due to the anticipated increase in congestion at the intersection of Gandy Boulevard and Dale Mabry Highway. The completed Traffic Data for Air Study Screening Test forms are included in **Appendix G**.

6.2 Traffic Data for Noise Study

Traffic data were developed for the required noise analyses. The following segments were selected for possible analysis.

- Gandy Boulevard – West of Westshore Boulevard
- Gandy Boulevard – Westshore Boulevard to Manhattan Avenue
- Gandy Boulevard – Manhattan Avenue to Dale Mabry Highway
- Gandy Boulevard – East of Dale Mabry Highway
- Dale Mabry Highway – South of Gandy Boulevard
- Dale Mabry Highway – North of Gandy Boulevard

- Westshore Boulevard – South of Gandy Boulevard
- Westshore Boulevard – North of Gandy Boulevard
- Manhattan Avenue – South of Gandy Boulevard
- Manhattan Avenue – North of Gandy Boulevard

The maximum traffic volumes under LOS "C" for each individual segment were obtained from the FDOT 2002 Quality / Level of Service Manual. Base Year 2007 AADT traffic volumes and traffic characteristics (K, D and T factors) were obtained from the FDOT traffic count stations or estimated from the field traffic data collected. The posted speed limits were obtained from field observations.

The future design year 2035 traffic volumes are based on the forecasted traffic. The methodology for the development of the traffic forecasts is documented in section 3 of this report. The future traffic characteristics (K, D and T factors) for the study area were developed based on the procedure outlined in the *FDOT's Design Traffic Handbook G*. The completed Traffic Data for Noise Study forms are included in **Appendix G** to this report.

7. SUMMARY

This document was prepared as part of the PD&E study for Gandy Boulevard (SR 600) from west of Westshore Boulevard to east of Dale Mabry Highway in Hillsborough County. Traffic data was collected and existing conditions evaluated including capacity, levels of service (AM and PM peak hours) and safety. Existing intersection and highway segment levels of service were typically LOS F along the Gandy Boulevard corridor.

The TBRPM (25A) was validated to match 2006 traffic volumes in the study area. Design year (2035) AADT were developed utilizing the TBRPM (25A) with 2035 socio-economic data with an appropriate traffic growth factor. The design year peak hour turning movement volumes were developed using the approved K_{30} and D_{30} factors for Hillsborough County.

Design hour traffic operational analysis was performed for the No-Build and Build alternatives along the Gandy Boulevard corridor. Overall highway LOS for the No-Build were found to be F (east and westbound). For the Build alternatives, these were not changed significantly. Analysis of the signalized intersections on Gandy Boulevard resulted in LOS of F at the major intersections, however as can be seen in **Table 27**, overall delays at these intersections was greatly reduced under the Build alternative. It was found that through traffic is better served with the addition of the Gandy Connector allowing through traffic to bypass the at-grade operations along Gandy Boulevard. The addition of this improvement allows for arterial traffic gains with the intersections demonstrating improvement in operations. Results of this traffic analysis will enable the THEA to make a well-informed decision on a preferred alternative to improve the Gandy corridor to meet the future traffic demand.

Preliminary traffic data for future air and noise analyses were developed and the required data input forms completed and are included in this document.

Table 27. No Build vs. Build Intersection (LOS) Comparison

Intersection	No Build				Build			
	AM		PM		AM		PM	
	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS	Intersection Delay (Sec/veh)	LOS
	2015				2015			
Gandy and Westshore Blvd	267.9	F	231.4	F	140.7	F	124.2	F
Gandy and Manhattan Ave	137.4	F	140.3	F	70.9	E	53.8	E
Gandy and Lois Ave	78.1	F	99.6	F	29.5	C	25.9	C
Gandy and Dale Mabry Highway	260.2	F	176.2	F	196.3	F	113.4	F
	2025							
Gandy and Westshore Blvd	322.8	F	273.5	F	162.2	F	149.2	F
Gandy and Manhattan Ave	159.0	F	159.1	F	97.0	F	63.2	E
Gandy and Lois Ave	123.2	F	124.9	F	31.4	C	29.7	C
Gandy and Dale Mabry Highway	294.9	F	204.9	F	231.4	F	132.4	F
	2035							
Gandy and Westshore Blvd	383.5	F	324.2	F	182.8	F	170.5	F
Gandy and Manhattan Ave	190.0	F	181.4	F	122.2	F	71.2	E
Gandy and Lois Ave	147.8	F	138.1	F	32.6	C	30.8	C
Gandy and Dale Mabry Highway	331.2	F	235.6	F	251.4	F	150.8	F

APPENDICES

A. Existing Year Signal Timing Data

B. HCS Worksheets for Intersections – Existing Year

C. ARTPLAN Worksheets for Arterial Segments – Existing Year

D. Trend Analysis

E. HCS Worksheets for Intersections for Future Years

F. ARTPLAN Worksheets for Arterial Segments – Future Years

G. Air and Noise Traffic Data Forms

H. FDOT Documentation

I. SIDRA Analysis Output

J. Merge/Diverge Analysis

APPENDIX A

CITY OF TAMPA

SIGNAL TIMING SHEET

SECTION ID: 1901 COMPUTER: M CCU: 47 DROP: 2 MYLAR: 300 SHOP ID: 14

TIMING DATE: 04/27/1999 PHASE DATE: 03/03/1994 CONTROLLER: LMD8000

INTERSECTION: GANDY & WESTSHORE

PHASE NUMBERS DIRECTION	1 EB LT	2 WB	3 SB LT	4 NB	5 WB LT	6 EB	7 NB LT	8 SB
MINIMUM GREEN	5.0	15.0	5.0	15.0	5.0	15.0	5.0	10.0
VEHICLE EXT.	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
YELLOW CLEARANCE	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
ALL RED CLEARANCE	3.4	1.0	3.5	1.1	3.4	1.0	3.5	1.1
MAXIMUM GREEN I	20.0	95.0	20.0	45.0	20.0	95.0	20.0	45.0
MAXIMUM GREEN II	12.0	35.0	12.0	22.0	12.0	35.0	12.0	22.0
PHASE RECALL	---	MAX	---	---	---	MAX	---	---
DETECTOR MEMORY	---	---	---	---	---	---	---	---
WALK	---	4.0	---	4.0	---	4.0	---	4.0
FLASHING DON'T WALK	---	14.0	---	21.0	---	14.0	---	21.0
PED RECALL	---	ON	---	---	---	ON	---	---
FLASH OPERATION	---	YEL	---	RED	---	YEL	---	RED

COORDINATION DATA:

DIAL 1	ALL OTHER TIMES 130 SEC. CYCLE, OS. SEC. 20							
DIAL 1 GREEN	12.3	51.7	7.2	32.6	12.3	51.7	7.2	32.6
DIAL 2	6:30 - 9:00 AM 160 SEC. CYCLE, OS. SEC. 18							
DIAL 2 GREEN	12.3	64.7	12.2	44.6	12.3	64.7	12.2	44.6
DIAL 3	3:30 - 6:30 PM 200 SEC. CYCLE, OS. SEC. 65							
DIAL 3 GREEN	17.3	99.7	12.2	44.6	17.3	99.7	12.2	44.6
DIAL 4								
DIAL 4 GREEN								

original

PLEASE IMPLEMENT WITHIN: [X] 1 WEEK [ ] 1 MONTH

COMMENTS: ------UPDATED TIME SHEET WITH T.B.C.------
S.F. - 1 PERMANENT VEH. CALL NB, NBLT.

SUBMITTED BY: [signature] REVIEWED BY: RD APPROVED BY: MS

DATE: 5-4-99 DATE: 5-5-99 DATE: 5/6/99

SIGNAL TIMING IMPLEMENTED: [X] AS SENT [ ] WITH FOLLOWING REVISIONS

DATE: 5/6/99 BY: J.S. Landau

[ ] SIGNAL TIMING NOT IMPLEMENTED

REASON: _____

DATE: _____ BY: _____

CITY OF TAMPA

SIGNAL TIMING SHEET

Check 5/6/99

SECTION ID: 1902 COMPUTER: M CCU: 47 DROP: 3 MYLAR: 83 SHOP ID: 1812

TIMING DATE: 04/27/1999 PHASE DATE: 03/07/1995 CONTROLLER: LMD8000

INTERSECTION: GANDY & MANHATTAN

PHASE NUMBERS / DIRECTION	1 EB LT	2 WB	3 SB LT	4 NB	5 WB LT	6 EB	7 NB LT	8 SB
MINIMUM GREEN	5.0	15.0	5.0	10.0	5.0	15.0	5.0	10.0
VEHICLE EXT.	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
YELLOW CLEARANCE	4.3	4.3	3.6	3.6	4.3	4.3	3.6	3.6
ALL RED CLEARANCE	3.8	1.0	2.7	1.4	3.8	1.0	2.7	1.4
MAXIMUM GREEN I	20.0	90.0	20.0	40.0	20.0	90.0	20.0	40.0
MAXIMUM GREEN II	12.0	35.0	12.0	20.0	12.0	35.0	12.0	20.0
PHASE RECALL	---	MAX	---	---	---	MAX	---	---
DETECTOR MEMORY	---	---	---	---	---	---	---	---
WALK	---	4.0	---	4.0	---	4.0	---	4.0
FLASHING DON'T WALK	---	10.0	---	14.0	---	10.0	---	14.0
PED RECALL	---	ON	---	---	---	ON	---	---
FLASH OPERATION	---	YEL	---	RED	---	YEL	---	RED

COORDINATION DATA:

DIAL 1	ALL OTHER TIMES 130 SEC. CYCLE, OS. SEC. 71							
DIAL 1 GREEN	13.9	47.7	13.7	23.0	13.9	47.7	13.7	23.0
DIAL 2	6:30 - 9:00 AM 160 SEC. CYCLE, OS. SEC. 42							
DIAL 2 GREEN	11.9	71.74	14.7	37.0	11.9	71.7	14.7	37.0
DIAL 3	3:30 - 6:30 PM 200 SEC. CYCLE, OS. SEC. 32							
DIAL 3 GREEN	11.9	97.7	15.7	50.0	11.9	97.7	15.7	50.0
DIAL 4								
DIAL 4 GREEN								

original return to eng.

PLEASE IMPLEMENT WITHIN: [X] 1 WEEK [ ] 1 MONTH

COMMENTS: ----UPDATED TIMING SHEET WITH T.B.C.----
S.F. 1 - PERMENENT VEH. CALL NB, NBLT.

SUBMITTED BY: [signature] DATE: 5-4-99

REVIEWED BY: RD DATE: 5-4-99

APPROVED BY: MRS DATE: 5/4/99

SIGNAL TIMING IMPLEMENTED: [X] AS SENT [ ] WITH FOLLOWING REVISION

DATE: 5/6/99 BY: J.S. Randall

[ ] SIGNAL TIMING NOT IMPLEMENTED

REASON: _____

DATE: _____ BY: _____

CITY OF TAMPA

SIGNAL TIMING SHEET

SECTION ID: 1903 COMPUTER: M CCU: 47 DROP: 0 MYLAR: 566 SHOP ID: 1396

TIMING DATE: 07/06/1999 PHASE DATE: 07/05/1995 CONTROLLER: LC8000

INTERSECTION: GANDY & LOIS

PHASE NUMBERS DIRECTION	1 EBLT	2 WB	4 NB	5 WBLT	6 EB	8 SB
MINIMUM GREEN	5.0	15.0	10.0	5.0	15.0	10.0
VEHICLE EXT.	2.0	3.0	3.0	2.0	3.0	3.0
YELLOW CLEARANCE	4.5	4.5	4.0	4.5	4.5	4.0
ALL RED CLEARANCE	2.5	1.5	2.5	2.5	1.5	2.5
MAXIMUM GREEN I	15.0	127.0	30.0	15.0	127.0	30.0
MAXIMUM GREEN II	12.0	35.0	20.0	12.0	35.0	20.0
PHASE RECALL	---	MAX	---	---	MAX	---
DETECTOR MEMORY	---	---	---	---	---	---
WALK	---	4.0	4.0	---	4.0	4.0
FLASHING DON'T WALK	---	17.0	14.0	---	17.0	14.0
PED RECALL	---	ON	---	---	ON	---
FLASH OPERATION	---	YEL	RED	---	YEL	RED

COORDINATION DATA:

DIAL 1	ALL OTHER TIMES 130 SEC. CYCLE, OS. SEC. 82.					
DIAL 1 GREEN	13.0	74.0	23.5	13.0	74.0	23.5
DIAL 2	6:30 - 9:00 AM 160 SEC. CYCLE, OS. SEC. 31.					
DIAL 2 GREEN	13.0	104.0	23.5	13.0	104.0	23.5
DIAL 3	3:30 - 6:30 PM 200 SEC. CYCLE, OS. SEC. 12.					
DIAL 3 GREEN	8.0	145.0	27.5	8.0	145.0	27.5
DIAL 4						
DIAL 4 GREEN						

Original

PLEASE IMPLEMENT WITHIN: [X] 1 WEEK [ ] 1 MONTH

COMMENTS:
NEW TIMING FOR T.B.C..

[redacted]

SUBMITTED BY: [signature] REVIEWED BY: RD APPROVED BY: MR

DATE: 7-26-99 DATE: 7/29/99 DATE: 8/3/99

SIGNAL TIMING IMPLEMENTED: [✓] AS SENT [ ] WITH FOLLOWING REVISIONS

DATE: 9/3/99 BY: Dowdy

[ ] SIGNAL TIMING NOT IMPLEMENTED

REASON: _____

DATE: _____ BY: _____

City of Tampa Signal Timing Sheet

Section ID 1904 Computer M CCU: 47 DROP: 4 MYLAR: 498 SHOP ID 1442

Timing Date 12/20/199 Phase Date: 09/02/19 98 Controller: LMD8000

Intersection **GANDY** and **DALE MABRY**

Phase Numbers	1	2	3	4	5	6	7	8
Direction	EB LT	EB	SB LT	NB	WB LT	WB	NB LT	SB
Minimum Green	5.0	15.0	5.0	15.0	5.0	15.0	5.0	15.0
Vehicle Extension	4.0	3.0	2.0	3.0	4.0	3.0	2.0	3.0
Yellow Clearance	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
All Red Clearance	2.9	1.4	2.8	1.1	2.9	1.4	2.8	1.1
Max. Green I	25.0	60.0	35.0	60.0	25.0	60.0	35.0	60.0
Max. Green II	12.0	35.0	12.0	25.0	12.0	35.0	12.0	25.0
Phase Recall	---	MAX	---	---	---	MAX	---	---
Detector Memory	---	---	---	---	---	---	---	---
Walk	---	4.0	---	4.0	---	4.0	---	4.0
Flash Don't Walk	---	28.0	---	23.0	---	28.0	---	23.0
Ped. Recall	---	ON	---	ON	---	ON	---	ON
Flash Operation	---	YEL	---	RED	---	YEL	---	RED

25.4

Coordination Data:

Dial 1	23.0	40.0	27.0	40.0	23.0	40.0	27.0	40.0
Dial 1	ALL OTHER TIMES 130 SEC. CYCLE , OS. SEC. 29.							
Dial 2	20.0	65.0	25.0	50.0	20.0	65.0	25.0	50.0
Dial 2	06:30 - 09:00 160 SEC. CYCLE , OS. SEC. 150.							
Dial 3	28.0	64.0	41.0	67.0	28.0	64.0	41.0	67.0
Dial 3	15:30 - 18:30 200 SEC. CYCLE , OS. SEC. 0.							
Dial 4								
Dial 4								

KEEP COPY
RETURN ORIGINAL

Please Implement Within: [X] 1 Week [ ] 1 Month

Comments:

-------NOTE: UPDATED TIMING SHEET----------
CNA 2+6 - GANDY BLVD.
S.F. - 1 PERMANENT VEH. CALL NBLT.
S.F. - 2 PERMANENT VEH. CALL N/S.

Submitted By: JK Date: 12-20-99
Reviewed By: JS Date: 1-6-2000
Approved By: RD Date: 1/7/00

Signal Timing Implemented: [ ] As Sent [✓] With Following Revisions
CNA 1 ON FOR ϕS 2+6

Date: 1-27-00 [illegible]

[ ] Signal Timing Not Implemented Reason:

Date: _____ By: _____

APPENDIX B

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2007--PM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
Lane Group	L	T	R	L	TR		L	T	R	L	T	R
Volume (vph)	134	1280	197	154	1506	184	220	364	166	256	303	204
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3		3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	141	1347	207	162	1779		232	383	175	269	319	215
Lane Group Capacity	165	1572	889	165	1547		165	391	520	165	391	520
v/c Ratio	0.85	0.86	0.23	0.98	1.15		1.41	0.98	0.34	1.63	0.82	0.41
Green Ratio	0.10	0.46	0.58	0.10	0.46		0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	91.7	49.5	20.7	92.9	55.6		93.1	80.1	50.5	93.1	76.7	52.1
Delay Factor k	0.39	0.39	0.11	0.49	0.50		0.50	0.48	0.11	0.50	0.36	0.11
Incremental Delay d_2	33.0	4.9	0.1	64.5	75.5		214.9	40.0	0.4	309.5	12.6	0.5
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	124.6	54.5	20.8	157.4	131.1		308.0	120.1	50.9	402.6	89.3	52.6
Lane Group LOS	F	D	C	F	F		F	F	D	F	F	D
Approach Delay	56.2			133.3			159.9			184.4		
Approach LOS	E			F			F			F		
Intersection Delay	120.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:15 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2007-AM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	0	1	1	1	1	1	1
Lane Group	L	T	R	L	TR		L	T	R	L	T	R
Volume (vph)	352	1790	273	126	1010	82	151	226	131	168	188	191
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3		3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0		0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	371	1884	287	133	1149		159	238	138	177	198	201
Lane Group Capacity	165	1572	889	165	1555		165	391	520	165	391	520
v/c Ratio	2.25	1.20	0.32	0.81	0.74		0.96	0.61	0.27	1.07	0.51	0.39
Green Ratio	0.10	0.46	0.58	0.10	0.46		0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	55.6	22.0	91.2	45.5		92.7	72.7	49.2	93.1	70.8	51.5
Delay Factor k	0.50	0.50	0.11	0.35	0.30		0.47	0.19	0.11	0.50	0.11	0.11
Incremental Delay d_2	580.8	95.8	0.2	24.7	1.9		59.1	2.7	0.3	90.8	1.1	0.5
PF Factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	673.9	151.4	22.3	115.9	47.4		151.9	75.4	49.4	183.9	71.9	52.0
Lane Group LOS	F	F	C	F	D		F	E	D	F	E	D
Approach Delay	213.1			54.5			91.4			99.4		
Approach LOS	F			D			F			F		
Intersection Delay	145.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:14 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2007--PM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	139	1661	28	182	1707	222	239	535	170	300	474	135
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	146	1777		192	1797	234	252	563	179	316	499	142
Lane Group Capacity	175	1573		175	1578	903	175	368	509	175	368	509
v/c Ratio	0.83	1.13		1.10	1.14	0.26	1.44	1.53	0.35	1.81	1.36	0.28
Green Ratio	0.10	0.46		0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	85.7	52.3		87.3	52.3	19.1	87.3	77.3	48.9	87.3	77.3	47.6
Delay Factor k	0.37	0.50		0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	27.9	67.0		96.4	70.7	0.2	227.3	251.8	0.4	384.3	177.0	0.3
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	113.7	119.4		183.7	123.1	19.3	314.7	329.2	49.4	471.7	254.4	47.9
Lane Group LOS	F	F		F	F	B	F	F	D	F	F	D
Approach Delay	119.0			117.4			275.1			295.5		
Approach LOS	F			F			F			F		
Intersection Delay	171.6			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:53 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2007--AM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	1	1	1	1	1	1	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	203	1773	49	98	1227	162	106	291	138	214	263	149
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	214	1918		103	1292	171	112	306	145	225	277	157
Lane Group Capacity	175	1571		175	1578	903	175	368	509	175	368	509
v/c Ratio	1.22	1.22		0.59	0.82	0.19	0.64	0.83	0.28	1.29	0.75	0.31
Green Ratio	0.10	0.46		0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	52.3		83.4	45.3	18.2	83.9	74.1	47.7	87.3	72.7	48.2
Delay Factor k	0.50	0.50		0.18	0.36	0.11	0.22	0.37	0.11	0.50	0.31	0.11
Incremental Delay d_2	140.6	105.4		5.1	3.5	0.1	7.7	14.9	0.3	164.7	8.5	0.3
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	227.9	157.7		88.5	48.8	18.3	91.5	89.0	48.0	252.1	81.2	48.5
Lane Group LOS	F	F		F	D	B	F	F	D	F	F	D
Approach Delay	164.8			48.1			79.0			131.7		
Approach LOS	F			D			E			F		
Intersection Delay	113.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:46 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2007--PM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	13	1943	53	76	2184	112	37	3	97	50	22	21
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	14	2101		80	2417			42	102	53	45	
Lane Group Capacity	133	2254		133	2247			200	239	205	260	
v/c Ratio	0.11	0.93		0.60	1.08			0.21	0.43	0.26	0.17	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.0	28.4		85.4	32.3			70.4	73.0	71.0	70.0	
Delay Factor k	0.11	0.45		0.19	0.50			0.11	0.11	0.11	0.11	
Incremental Delay d_2	0.3	7.8		7.4	43.1			0.5	1.2	0.7	0.3	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	82.4	36.3		92.8	75.3			70.9	74.2	71.6	70.3	
Lane Group LOS	F	D		F	E			E	E	E	E	
Approach Delay	36.6			75.9			73.3			71.0		
Approach LOS	D			E			E			E		
Intersection Delay	58.6			Intersection LOS						E		

HCS+™ Version 5.2 Generated: 4/2/2010 3:13 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2007--AM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	22	2163	112	76	1609	13	19	6	114	11	7	7
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	23	2395		80	1708			26	120	12	14	
Lane Group Capacity	133	2247		133	2261			227	239	208	260	
v/c Ratio	0.17	1.07		0.60	0.76			0.11	0.50	0.06	0.05	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.5	32.3		85.4	21.8			69.3	73.9	68.7	68.7	
Delay Factor k	0.11	0.50		0.19	0.31			0.11	0.11	0.11	0.11	
Incremental Delay d_2	0.6	39.4		7.4	1.5			0.2	1.7	0.1	0.1	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.1	71.6		92.8	23.3			69.6	75.6	68.8	68.8	
Lane Group LOS	F	E		F	C			E	E	E	E	
Approach Delay	71.8			26.4			74.5			68.8		
Approach LOS	E			C			E			E		
Intersection Delay	53.3			Intersection LOS						D		

HCS+™ Version 5.2 Generated: 4/2/2010 3:11 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2007--PM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	3	0	1	2	1	1	2	1	1	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	198	606	491	225	508	236	337	848	204	275	756	223
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	208	1155		237	535	248	355	893	215	289	796	235
Lane Group Capacity	207	1331		207	997	747	290	997	671	290	997	671
v/c Ratio	1.00	0.87		1.14	0.54	0.33	1.22	0.90	0.32	1.00	0.80	0.35
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	68.9		90.2	61.0	31.9	85.2	69.7	37.5	85.1	67.1	38.1
Delay Factor k	0.50	0.40		0.50	0.14	0.11	0.50	0.42	0.11	0.50	0.34	0.11
Incremental Delay d_2	63.8	6.4		107.1	0.6	0.3	127.6	10.6	0.3	51.8	4.7	0.3
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	154.0	75.3		197.3	61.6	32.1	212.8	80.3	37.8	137.0	71.8	38.4
Lane Group LOS	F	E		F	E	C	F	F	D	F	E	D
Approach Delay	87.3			86.0			106.2			80.1		
Approach LOS	F			F			F			F		
Intersection Delay	90.6			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:18 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2007--AM*	Area Type	*All other areas*
Date Performed	*11/23/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	3	0	1	2	1	1	2	1	1	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	329	765	517	120	463	153	156	812	174	151	562	161
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	346	1379		126	487	161	164	855	183	159	592	169
Lane Group Capacity	207	1337		207	997	747	290	997	671	290	997	671
v/c Ratio	1.67	1.03		0.61	0.49	0.22	0.57	0.86	0.27	0.55	0.59	0.25
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		85.6	60.0	29.8	78.2	68.7	36.6	78.0	62.3	36.2
Delay Factor k	0.50	0.50		0.19	0.11	0.11	0.16	0.39	0.11	0.15	0.18	0.11
Incremental Delay d_2	322.5	33.0		5.1	0.4	0.1	2.6	7.6	0.2	2.2	1.0	0.2
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	412.7	105.7		90.7	60.4	30.0	80.8	76.2	36.8	80.2	63.2	36.4
Lane Group LOS	F	F		F	E	C	F	E	D	F	E	D
Approach Delay	167.3			59.0			70.8			61.2		
Approach LOS	F			E			E			E		
Intersection Delay	103.0			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 12:04 PM

APPENDIX C

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_200~3.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2007 PM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	41000	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	4
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	41000	2255	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	11	2	0.1818	47000	2585	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	No	8	10	2	0.5568	47000	2585	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	41000	1845	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	47000	2115	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	No	10	2	2	0.5568	47000	2115	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	2302	1752	1	37.34	D	No	21.8	D
2 (to Manhattan Avenue)	2177	1758	1.35	208.8	F	Yes#	2.9	F
3 (to Westshore Boulevard)	2503	1746	1.56	307.1	F	Yes#	5.6	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	1554	1720	1.56	324.76	F	Yes#	5.0	F
2 (to Lois Avenue)	2204	1752	0.95	31.25	C	No	13.2	E
1 (to Manhattan Avenue)	2004	1756	1.24	161.38	F	Yes#	9.4	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	430	800	860
2	**	**	950	1690	1750
3	**	**	1460	2570	2630
4	**	**	1980	3460	3520
*	**	**	950	1690	1750
Lanes	**Hourly Volume In Both Directions**				
2	**	**	780	1450	1560

4	**	**	1730	3070	3170
6	**	**	2650	4670	4790
8	**	**	3600	6290	6400
*	**	**	1730	3070	3170
Lanes	**Annual Average Daily Traffic**				
2	**	**	7800	14500	15600
4	**	**	17300	30700	31700
6	**	**	26500	46700	47900
8	**	**	36000	62900	64000
*	**	**	17300	30700	31700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.56	F	E			4.76	E	0.00	F
2 (to Manhattan Avenue)	6.46	F	E			5.06	E	0.00	F
3 (to Westshore Boulevard)	6.64	F	E			5.16	E	0.00	F
	Bicycle LOS	6.58	F	Pedestrian LOS		4.99	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.47	F	D			4.29	D	0.00	F
2 (to Lois Avenue)	6.36	F	D			4.50	D	0.00	F

1 (to Manhattan Avenue)	6.53	F	E		4.61	E		0.00	F
	Bicycle LOS	**6.48**	**F**	**Pedestrian LOS**	**4.46**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_200~1.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2007 AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	41000	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	4
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	No	8	2	2	0.5152	41000	2255	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	1	2	0.1818	47000	2585	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	15	38	2	0.5568	47000	2585	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	No	7	10	2	0.5152	41000	1845	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	11	7	2	0.1818	47000	2115	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	4	2	0.5568	47000	2115	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	2184	1756	1.35	211.38	F	Yes#	7.2	F
2 (to Lois Avenue)	2694	1757	1.16	105.85	F	No	5.3	F
3 (to Dale Mabry Highway)	2313	1713	2.33	670.68	F	Yes#	2.8	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1806	1746	1.12	112.46	F	No	11.6	F
2 (to Manhattan Avenue)	1826	1758	1.13	112.6	F	Yes#	5.0	F
1 (to Lois Avenue)	2204	1753	0.95	32.66	C	No	23.9	C

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	130	500	570
2	**	**	300	1080	1170
3	**	**	470	1670	1760
4	**	**	650	2270	2360
*	**	**	300	1080	1170
Lanes	**Hourly Volume In Both Directions**				
2	**	**	240	910	1040

4	**	**	550	1960	2120
6	**	**	850	3040	3200
8	**	**	1180	4130	4280
*	**	**	550	1960	2120
Lanes	**Annual Average Daily Traffic**				
2	**	**	2400	9100	10400
4	**	**	5500	19600	21200
6	**	**	8500	30400	32000
8	**	**	11800	41300	42800
*	**	**	5500	19600	21200

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.56	F	E			4.76	E	0.00	F
2 (to Lois Avenue)	6.46	F	E			5.06	E	0.00	F
3 (to Dale Mabry Highway)	6.64	F	E			5.16	E	0.00	F
	Bicycle LOS	6.58	F	Pedestrian LOS		4.99	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.47	F	D			4.29	D	0.00	F
2 (to Manhattan Avenue)	6.36	F	D			4.50	D	0.00	F

1 (to Lois Avenue)	6.53	F	E		4.61	E		0.00	F
	Bicycle LOS	**6.48**	**F**	**Pedestrian LOS**	**4.46**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	**	100	180
2	**	**	**	200	350
3	**	**	130	300	530
4	**	**	180	390	700
*	**	**	**	200	350
Lanes	**Hourly Volume In Both Directions**				
2	**	**	**	180	320
4	**	**	**	360	640
6	**	**	240	540	960
8	**	**	320	710	1280
*	**	**	**	360	640
Lanes	**Annual Average Daily Traffic**				
2	**	**	**	1800	3200
4	**	**	**	3600	6400
6	**	**	2400	5400	9600
8	**	**	3200	7100	12800
*	**	**	**	3600	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

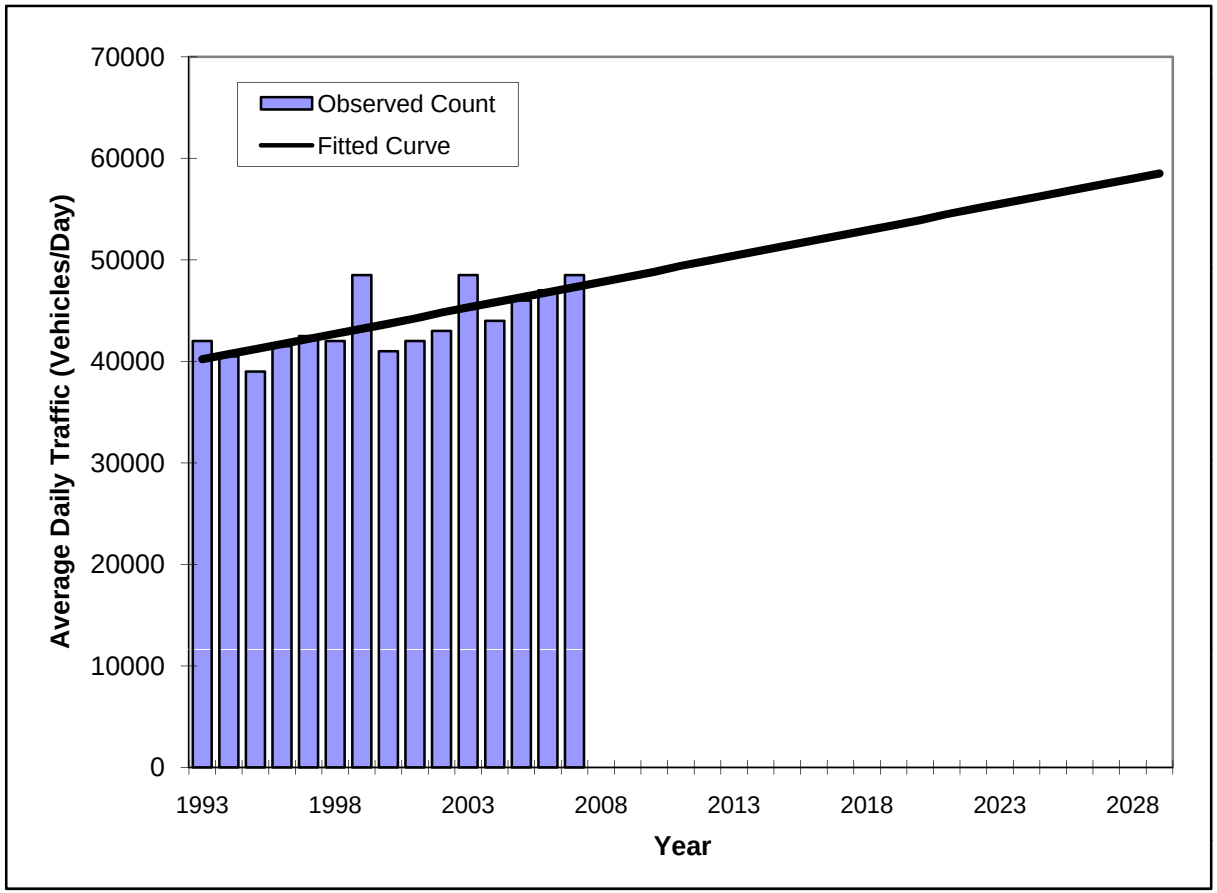
*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

APPENDIX D

TRAFFIC TRENDS

Gandy Blvd -- E of Clark St

County:	Hillsborough
Station #:	105251
Highway:	Gandy Blvd



Year	Traffic (ADT/AADT) Count*	Trend**
1993	42000	40200
1994	40500	40700
1995	39000	41200
1996	41500	41700
1997	42500	42200
1998	42000	42700
1999	48500	43200
2000	41000	43700
2001	42000	44200
2002	43000	44800
2003	48500	45300
2004	44000	45800
2005	46000	46300
2006	47000	46800
2007	48500	47300
2015 Opening Year Trend		
2015	N/A	51400
2025 Mid-Year Trend		
2025	N/A	56500
2035 Design Year Trend		
2035	N/A	61600
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

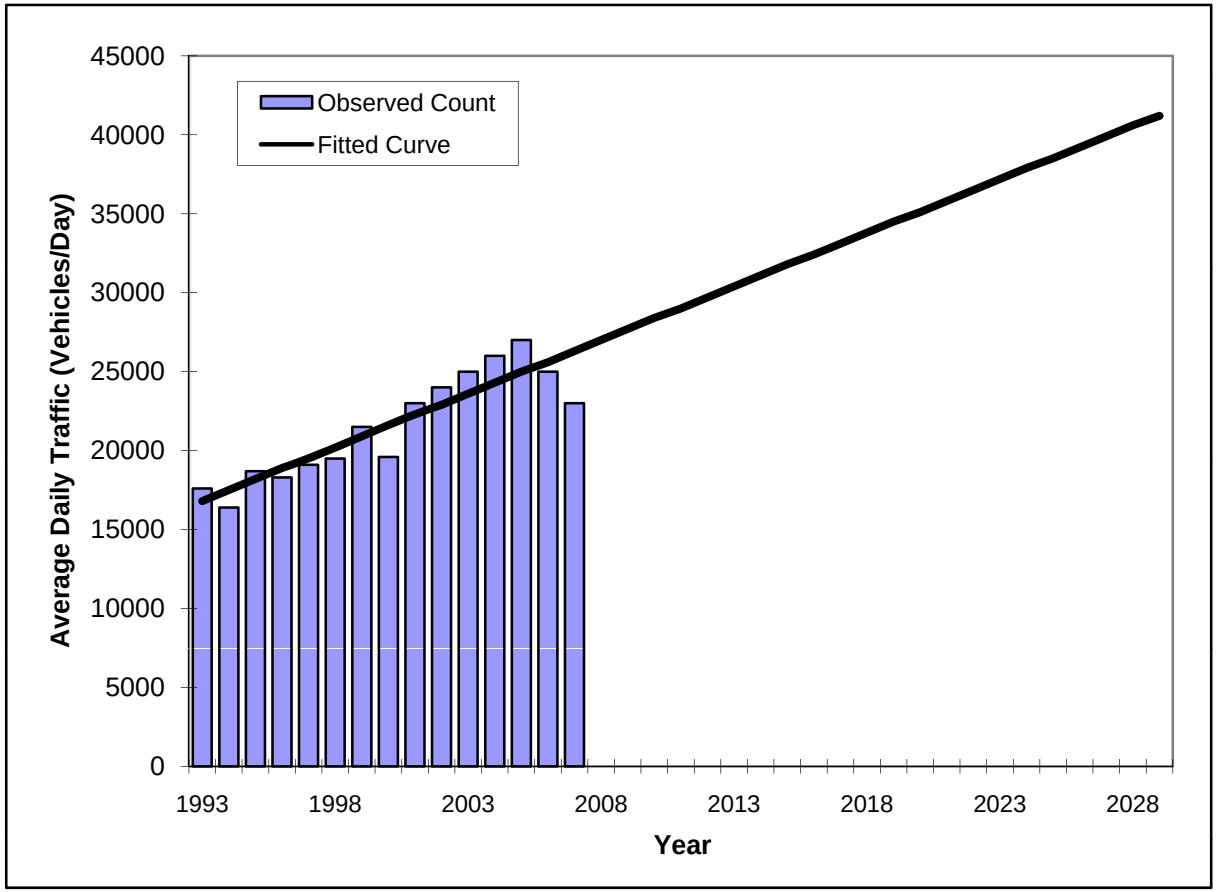
** Annual Trend Increase:	511
Trend R-squared:	52.0%
Trend Annual Historic Growth Rate:	1.26%
Trend Growth Rate (2007 to Design Year):	1.08%
Printed:	28-Jun-09

Straight Line Growth Option

TRAFFIC TRENDS

SR 618/X-Town -- W of Euclid Ave

County:	Hillsboorough
Station #:	105244
Highway:	SR 618/X-Town



Year	Traffic (ADT/AADT) Count*	Trend**
1993	17600	16800
1994	16400	17500
1995	18700	18200
1996	18300	18900
1997	19100	19500
1998	19500	20200
1999	21500	20900
2000	19600	21600
2001	23000	22300
2002	24000	22900
2003	25000	23600
2004	26000	24300
2005	27000	25000
2006	25000	25600
2007	23000	26300
2015 Opening Year Trend		
2015	N/A	31800
2025 Mid-Year Trend		
2025	N/A	38500
2035 Design Year Trend		
2035	N/A	45300
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

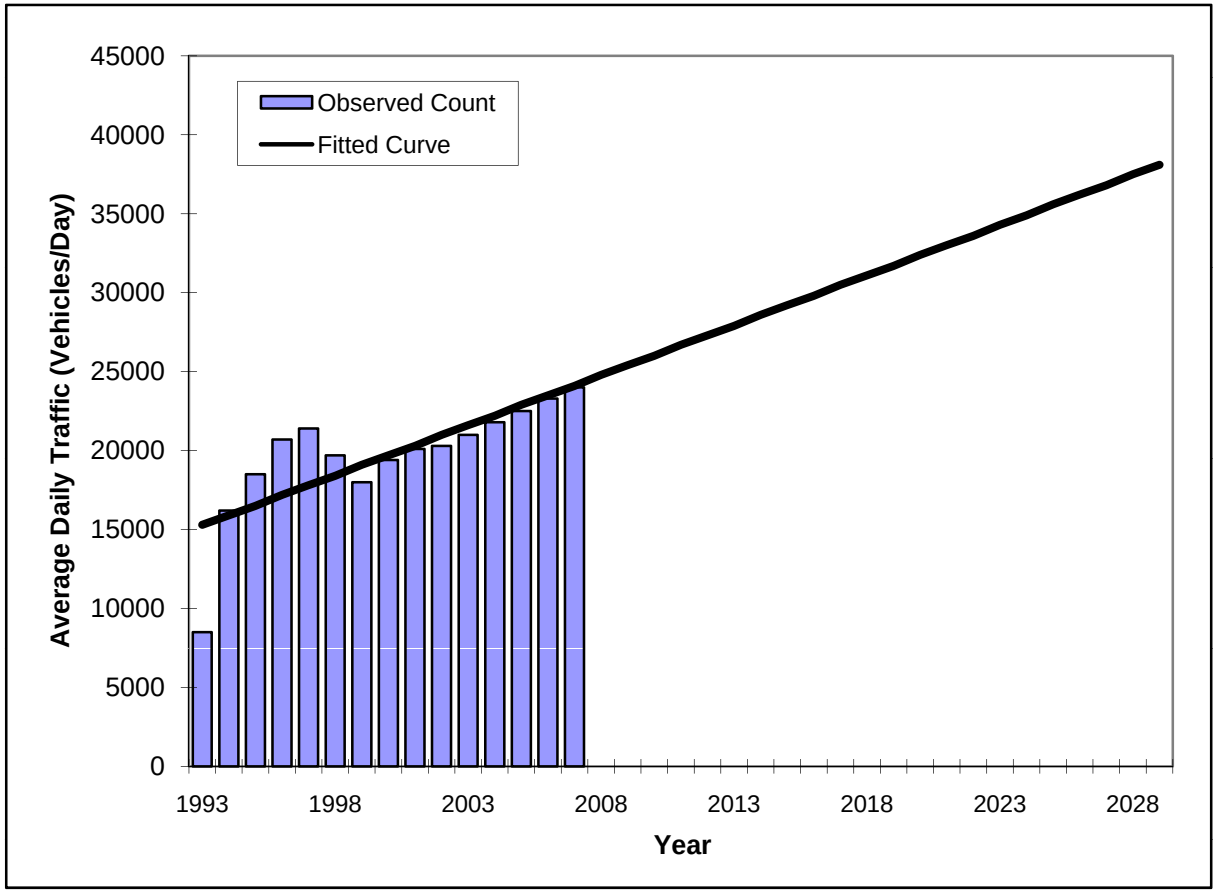
** Annual Trend Increase:	678
Trend R-squared:	81.3%
Trend Annual Historic Growth Rate:	4.04%
Trend Growth Rate (2007 to Design Year):	2.58%
Printed:	28-Jun-09

Straight Line Growth Option

TRAFFIC TRENDS

SR 618/X-Town -- E of US 92/SR 600/Gandy

County:	Hillsborough
Station #:	105243
Highway:	SR 618/X-Town



Year	Traffic (ADT/AADT) Count*	Trend**
1993	8500	15300
1994	16200	15900
1995	18500	16500
1996	20700	17200
1997	21400	17800
1998	19700	18400
1999	18000	19100
2000	19400	19700
2001	20100	20300
2002	20300	21000
2003	21000	21600
2004	21800	22200
2005	22500	22900
2006	23300	23500
2007	24000	24100
2015 Opening Year Trend		
2015	N/A	29200
2025 Mid-Year Trend		
2025	N/A	35600
2035 Design Year Trend		
2035	N/A	41900
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

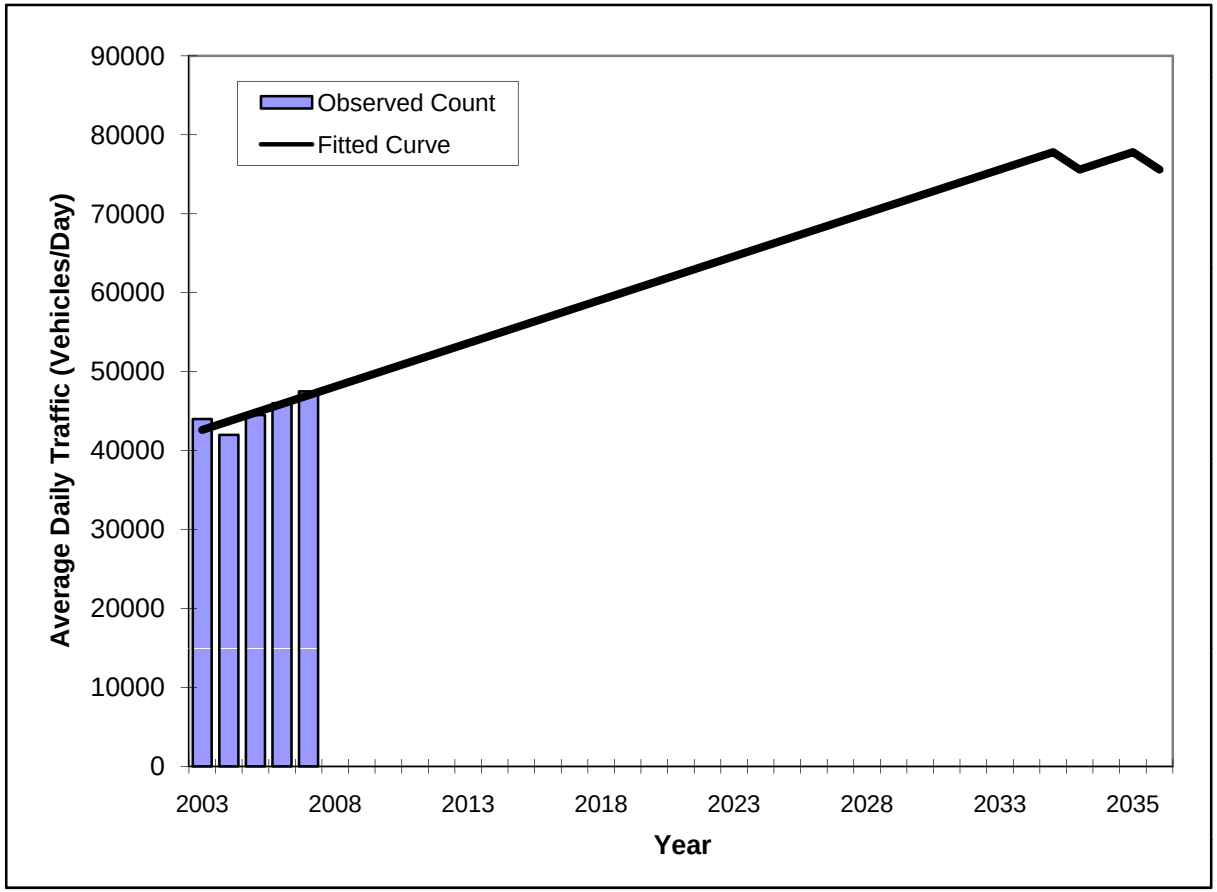
** Annual Trend Increase:	634
Trend R-squared:	58.7%
Trend Annual Historic Growth Rate:	4.11%
Trend Growth Rate (2007 to Design Year):	2.64%
Printed:	28-Jun-09

Straight Line Growth Option

TRAFFIC TRENDS

Gandy Blvd -- West of Dale Mabry

County:	Hillsborough
Station #:	105159
Highway:	Gandy Blvd



Year	Traffic (ADT/AADT) Count*	Trend**
2003	44000	42600
2004	42000	43700
2005	44500	44800
2006	46000	45900
2007	47500	47000
2015 Opening Year Trend		
2015	N/A	55800
2025 Mid-Year Trend		
2025	N/A	66800
2035 Design Year Trend		
2035	N/A	77800
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

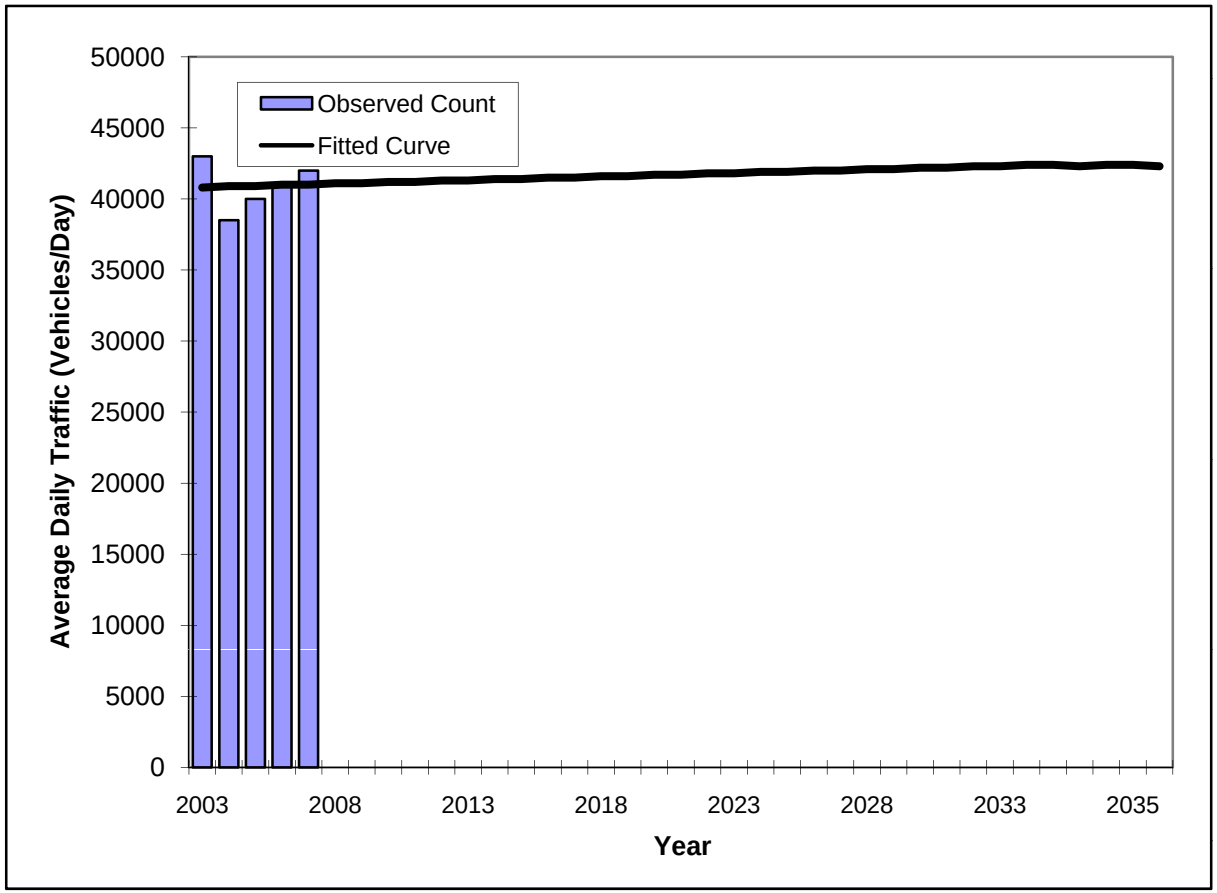
** Annual Trend Increase:	1,100
Trend R-squared:	69.9%
Trend Annual Historic Growth Rate:	2.58%
Trend Growth Rate (2007 to Design Year):	2.34%
Printed:	28-Jun-09

Straight Line Growth Option

TRAFFIC TRENDS

Gandy Blvd -- East of Westshore

County:	Hillsborough
Station #:	105158
Highway:	Gandy Blvd



Year	Traffic (ADT/AADT) Count*	Trend**
2003	43000	40800
2004	38500	40900
2005	40000	40900
2006	41000	41000
2007	42000	41000
2015 Opening Year Trend		
2015	N/A	41400
2025 Mid-Year Trend		
2025	N/A	41900
2035 Design Year Trend		
2035	N/A	42400
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

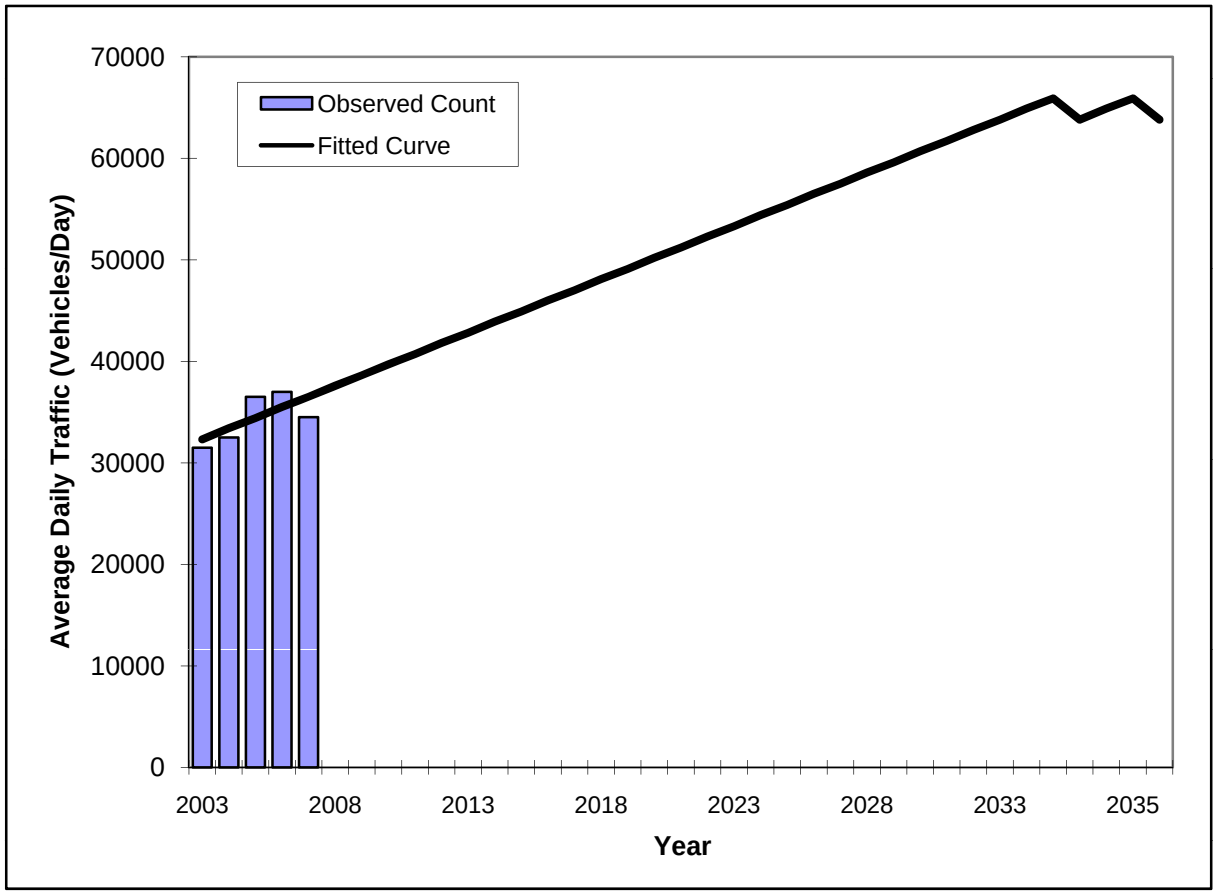
** Annual Trend Increase:	50
Trend R-squared:	0.2%
Trend Annual Historic Growth Rate:	0.12%
Trend Growth Rate (2007 to Design Year):	0.12%
Printed:	28-Jun-09

Straight Line Growth Option

TRAFFIC TRENDS

Dale Mabry Hwy -- South of Euclid

County:	Hillsborough
Station #:	105050
Highway:	Dale Mabry Hwy



Year	Traffic (ADT/AADT) Count*	Trend**
2003	31500	32300
2004	32500	33400
2005	36500	34400
2006	37000	35500
2007	34500	36500
2015 Opening Year Trend		
2015	N/A	44900
2025 Mid-Year Trend		
2025	N/A	55400
2035 Design Year Trend		
2035	N/A	65900
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

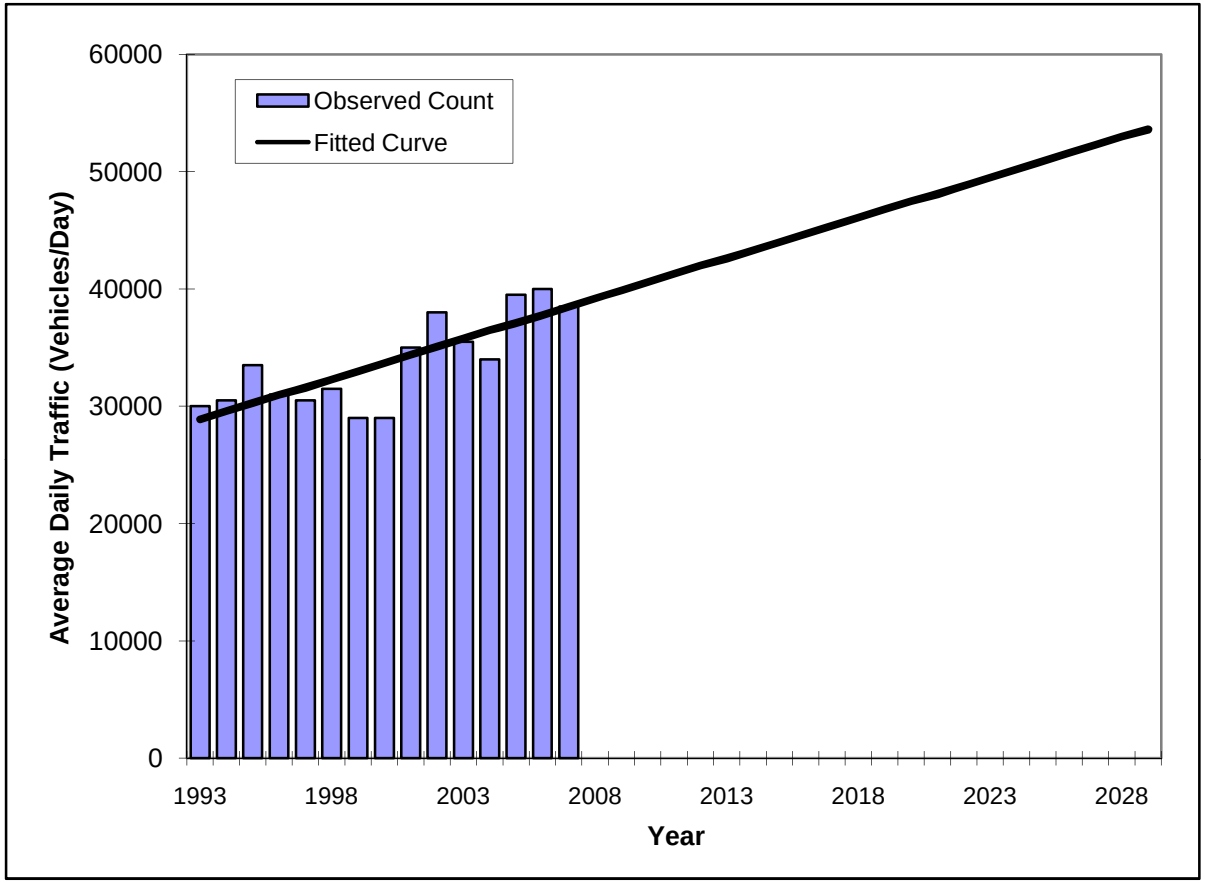
** Annual Trend Increase:	1,050
Trend R-squared:	47.5%
Trend Annual Historic Growth Rate:	3.25%
Trend Growth Rate (2007 to Design Year):	2.88%
Printed:	28-Jun-09

Straight Line Growth Option

TRAFFIC TRENDS

Dale Mabry Hwy -- South of Gandy

County:	Hillsborough
Station #:	105050
Highway:	Dale Mabry Hwy



Year	Traffic (ADT/AADT) Count*	Trend**
1993	30000	28900
1994	30500	29600
1995	33500	30300
1996	31000	31000
1997	30500	31600
1998	31500	32300
1999	29000	33000
2000	29000	33700
2001	35000	34400
2002	38000	35100
2003	35500	35800
2004	34000	36500
2005	39500	37100
2006	40000	37800
2007	38500	38500
2015 Opening Year Trend		
2015	N/A	44000
2025 Mid-Year Trend		
2025	N/A	50900
2035 Design Year Trend		
2035	N/A	57800
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	688
Trend R-squared:	62.9%
Trend Annual Historic Growth Rate:	2.37%
Trend Growth Rate (2007 to Design Year):	1.79%
Printed:	28-Jun-09

Straight Line Growth Option

APPENDIX E

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*NoBuild--2035--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	708	2059	547	278	1869	248	381	630	288	395	468	315
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	745	2167	576	293	1967	261	401	663	303	416	493	332
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	4.52	1.38	0.65	1.78	1.25	0.29	2.43	1.70	0.58	2.52	1.26	0.64
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	55.6	28.8	93.1	55.6	21.6	93.1	80.6	55.8	93.1	80.6	57.2
Delay Factor k	0.50	0.50	0.23	0.50	0.50	0.11	0.50	0.50	0.17	0.50	0.50	0.22
Incremental Delay d_2	1596	174.4	1.7	372.5	118.5	0.2	661.7	323.9	1.7	702.2	136.5	2.6
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	1689	230.0	30.4	465.6	174.1	21.8	754.8	404.5	57.5	795.3	217.1	59.8
Lane Group LOS	F	F	C	F	F	C	F	F	E	F	F	E
Approach Delay	508.6			192.2			430.3			368.8		
Approach LOS	F			F			F			F		
Intersection Delay	383.5			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:20 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2035--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	336	977	259	216	1448	192	273	451	206	322	381	256
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	354	1028	273	227	1524	202	287	475	217	339	401	269
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	2.15	0.65	0.31	1.38	0.97	0.23	1.74	1.21	0.42	2.05	1.03	0.52
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	42.9	21.8	93.1	54.2	20.6	93.1	80.6	52.1	93.1	80.6	54.3
Delay Factor k	0.50	0.23	0.11	0.50	0.48	0.11	0.50	0.50	0.11	0.50	0.50	0.12
Incremental Delay d_2	535.1	1.0	0.2	202.5	16.0	0.1	356.7	118.0	0.5	494.9	52.2	0.9
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	628.2	43.9	22.0	295.6	70.2	20.8	449.8	198.6	52.7	588.0	132.8	55.2
Lane Group LOS	F	D	C	F	E	C	F	F	D	F	F	E
Approach Delay	165.3			91.3			239.9			265.1		
Approach LOS	F			F			F			F		
Intersection Delay	170.5			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:29 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2035--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	323	1229	338	178	1247	120	333	498	288	355	396	403
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	340	1294	356	187	1313	126	351	524	303	374	417	424
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	2.06	0.82	0.40	1.13	0.84	0.14	2.13	1.34	0.58	2.27	1.07	0.82
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	48.3	23.3	93.1	48.7	19.5	93.1	80.6	55.8	93.1	80.6	62.0
Delay Factor k	0.50	0.36	0.11	0.50	0.37	0.11	0.50	0.50	0.17	0.50	0.50	0.36
Incremental Delay d_2	497.6	3.7	0.3	110.4	4.1	0.1	527.1	169.5	1.7	588.9	64.3	9.7
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	590.7	52.0	23.6	203.5	52.8	19.6	620.2	250.1	57.5	682.0	144.9	71.7
Lane Group LOS	F	D	C	F	D	B	F	F	E	F	F	E
Approach Delay	139.0			67.6			310.8			284.7		
Approach LOS	F			E			F			F		
Intersection Delay	182.8			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:27 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2025--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	530	1543	410	312	2096	278	249	412	188	342	406	273
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	558	1624	432	328	2206	293	262	434	198	360	427	287
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	3.38	1.03	0.49	1.99	1.40	0.33	1.59	1.11	0.38	2.18	1.09	0.55
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	55.6	25.0	93.1	55.6	22.2	93.1	80.6	51.4	93.1	80.6	55.1
Delay Factor k	0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.15
Incremental Delay d_2	1087	31.7	0.4	465.5	185.4	0.2	291.3	78.7	0.5	551.2	72.6	1.3
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	1180	87.3	25.4	558.6	241.0	22.4	384.4	159.3	51.9	644.3	153.2	56.4
Lane Group LOS	F	F	C	F	F	C	F	F	D	F	F	E
Approach Delay	310.4			255.2			201.5			292.0		
Approach LOS	F			F			F			F		
Intersection Delay	273.5			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:19 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*NoBuild--2025--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	638	1856	493	259	1743	231	300	495	226	412	488	328
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	672	1954	519	273	1835	243	316	521	238	434	514	345
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	4.07	1.24	0.58	1.65	1.17	0.27	1.92	1.33	0.46	2.63	1.31	0.66
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	55.6	27.1	93.1	55.6	21.3	93.1	80.6	53.0	93.1	80.6	57.8
Delay Factor k	0.50	0.50	0.18	0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.24
Incremental Delay d_2	1397	114.9	1.0	319.9	82.6	0.2	433.5	166.2	0.6	750.8	158.7	3.2
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	1490	170.5	28.1	413.0	138.2	21.5	526.6	246.8	53.6	843.9	239.3	61.0
Lane Group LOS	F	F	C	F	F	C	F	F	D	F	F	E
Approach Delay	429.0			158.0			286.3			394.7		
Approach LOS	F			F			F			F		
Intersection Delay	322.8			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:18 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2025--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	303	883	235	201	1353	180	252	416	190	303	359	242
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	319	929	247	212	1424	189	265	438	200	319	378	255
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	1.93	0.59	0.28	1.28	0.91	0.21	1.61	1.12	0.38	1.93	0.97	0.49
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	41.2	21.4	93.1	51.5	20.4	93.1	80.6	51.5	93.1	79.9	53.7
Delay Factor k	0.50	0.18	0.11	0.50	0.43	0.11	0.50	0.50	0.11	0.50	0.47	0.11
Incremental Delay d_2	441.5	0.6	0.2	166.1	7.9	0.1	299.1	82.3	0.5	441.5	36.7	0.7
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	534.6	41.8	21.5	259.2	59.4	20.5	392.2	162.9	52.0	534.6	116.6	54.4
Lane Group LOS	F	D	C	F	E	C	F	F	D	F	F	D
Approach Delay	143.6			78.6			205.6			240.0		
Approach LOS	F			E			F			F		
Intersection Delay	149.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:26 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2025--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	292	1111	305	166	1165	112	307	459	266	334	373	379
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	307	1169	321	175	1226	118	323	483	280	352	393	399
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	1.86	0.74	0.36	1.06	0.78	0.13	1.96	1.24	0.54	2.13	1.01	0.77
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	45.6	22.7	93.1	46.8	19.4	93.1	80.6	54.8	93.1	80.6	60.6
Delay Factor k	0.50	0.30	0.11	0.50	0.33	0.11	0.50	0.50	0.14	0.50	0.50	0.32
Incremental Delay d_2	409.6	2.0	0.3	87.1	2.6	0.1	452.2	126.2	1.1	529.8	46.8	6.8
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	502.7	47.6	22.9	180.2	49.4	19.5	545.3	206.8	55.9	622.9	127.4	67.4
Lane Group LOS	F	D	C	F	D	B	F	F	E	F	F	E
Approach Delay	120.9			62.1			268.5			258.9		
Approach LOS	F			E			F			F		
Intersection Delay	162.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:25 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2015--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	472	1374	365	290	1947	259	228	376	172	321	381	256
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	497	1446	384	305	2049	273	240	396	181	338	401	269
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	3.01	0.92	0.43	1.85	1.30	0.31	1.45	1.01	0.35	2.05	1.03	0.52
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	52.0	23.9	93.1	55.6	21.8	93.1	80.6	50.7	93.1	80.6	54.3
Delay Factor k	0.50	0.44	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.12
Incremental Delay d_2	921.5	9.2	0.3	404.3	141.3	0.2	234.9	48.8	0.4	492.2	52.2	0.9
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	1015	61.2	24.3	497.4	196.9	22.0	328.0	129.4	51.2	585.3	132.8	55.2
Lane Group LOS	F	E	C	F	F	C	F	F	D	F	F	E
Approach Delay	258.7			213.6			170.4			263.8		
Approach LOS	F			F			F			F		
Intersection Delay	231.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:18 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*NoBuild--2015--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	568	1652	439	241	1619	215	274	453	207	386	458	308
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	598	1739	462	254	1704	226	288	477	218	406	482	324
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	3.62	1.11	0.52	1.54	1.08	0.25	1.75	1.22	0.42	2.46	1.23	0.62
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	55.6	25.7	93.1	55.6	21.0	93.1	80.6	52.2	93.1	80.6	56.8
Delay Factor k	0.50	0.50	0.13	0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.21
Incremental Delay d_2	1196	57.7	0.5	270.6	49.2	0.2	359.3	120.0	0.5	675.2	125.1	2.3
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	1289	113.3	26.2	363.7	104.8	21.2	452.4	200.6	52.7	768.3	205.7	59.1
Lane Group LOS	F	F	C	F	F	C	F	F	D	F	F	E
Approach Delay	350.1			126.2			241.6			355.0		
Approach LOS	F			F			F			F		
Intersection Delay	267.9			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:17 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2015--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	236	687	183	163	1097	146	229	379	173	285	337	227
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	248	723	193	172	1155	154	241	399	182	300	355	239
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	1.50	0.46	0.22	1.04	0.73	0.17	1.46	1.02	0.35	1.82	0.91	0.46
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	38.0	20.5	93.1	45.3	19.9	93.1	80.6	50.8	93.1	78.6	53.0
Delay Factor k	0.50	0.11	0.11	0.50	0.29	0.11	0.50	0.50	0.11	0.50	0.43	0.11
Incremental Delay d_2	255.3	0.2	0.1	81.7	1.8	0.1	237.5	50.8	0.4	391.0	24.4	0.6
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	348.4	38.3	20.6	174.8	47.2	20.0	330.6	131.4	51.2	484.1	103.0	53.7
Lane Group LOS	F	D	C	F	D	B	F	F	D	F	F	D
Approach Delay	101.4			59.2			172.0			217.7		
Approach LOS	F			E			F			F		
Intersection Delay	124.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:24 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2015--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	227	865	238	135	944	91	280	418	242	314	350	356
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	239	911	251	142	994	96	295	440	255	331	368	375
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	1.45	0.58	0.28	0.86	0.63	0.11	1.79	1.13	0.49	2.01	0.94	0.72
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	40.9	21.4	91.7	42.3	19.1	93.1	80.6	53.7	93.1	79.3	59.3
Delay Factor k	0.50	0.17	0.11	0.39	0.21	0.11	0.50	0.50	0.11	0.50	0.45	0.28
Incremental Delay d_2	232.4	0.5	0.2	34.1	0.8	0.1	377.8	84.1	0.7	473.5	30.9	4.9
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	325.5	41.4	21.6	125.9	43.1	19.1	470.9	164.7	54.4	566.6	110.2	64.2
Lane Group LOS	F	D	C	F	D	B	F	F	D	F	F	E
Approach Delay	86.4			50.8			227.5			234.8		
Approach LOS	F			D			F			F		
Intersection Delay	140.7			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:22 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2035--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	588	1618	191	229	2253	477	173	320	88	307	587	391
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	619	1703	201	241	2372	502	182	337	93	323	618	412
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.82	1.08	0.22	1.38	1.50	0.56	0.54	0.48	0.18	0.95	0.88	0.81
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	52.3	18.6	87.3	52.3	24.1	82.9	68.2	46.0	86.9	75.1	59.2
Delay Factor k	0.50	0.50	0.11	0.50	0.50	0.15	0.14	0.11	0.11	0.46	0.41	0.35
Incremental Delay d_2	380.7	47.3	0.1	201.4	229.8	0.8	1.7	0.5	0.2	35.8	12.6	9.5
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	468.0	99.7	18.8	288.7	282.1	24.9	84.6	68.7	46.2	122.6	87.7	68.7
Lane Group LOS	F	F	B	F	F	C	F	E	D	F	F	E
Approach Delay	183.6			241.2			70.0			90.2		
Approach LOS	F			F			E			F		
Intersection Delay	181.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:01 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2035--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*06/10/09*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	707	1946	230	191	1873	397	208	385	106	369	705	470
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	744	2048	242	201	1972	418	219	405	112	388	742	495
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	2.19	1.30	0.27	1.15	1.25	0.46	0.64	0.58	0.22	1.14	1.06	0.97
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	52.3	19.2	87.3	52.3	22.3	83.9	69.7	46.6	87.3	77.3	64.0
Delay Factor k	0.50	0.50	0.11	0.50	0.50	0.11	0.22	0.17	0.11	0.50	0.50	0.48
Incremental Delay d_2	544.3	138.8	0.2	113.6	117.8	0.4	4.2	1.2	0.2	92.8	50.5	32.8
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	631.6	191.2	19.4	201.0	170.2	22.7	88.1	70.9	46.8	180.2	127.9	96.8
Lane Group LOS	F	F	B	F	F	C	F	E	D	F	F	F
Approach Delay	285.5			148.8			72.4			130.9		
Approach LOS	F			F			E			F		
Intersection Delay	190.0			Intersection LOS						F		

 HCS+™ Version 5.2 Generated: 4/2/2010 3:59 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2035--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	379	1042	123	138	1356	287	183	340	94	299	571	380
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	399	1097	129	145	1427	302	193	358	99	315	601	400
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.17	0.70	0.14	0.83	0.90	0.33	0.57	0.51	0.19	0.93	0.86	0.79
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	41.5	17.7	85.7	48.4	20.2	83.2	68.7	46.2	86.6	74.6	58.6
Delay Factor k	0.50	0.26	0.11	0.37	0.43	0.11	0.16	0.12	0.11	0.44	0.39	0.33
Incremental Delay d_2	104.8	1.4	0.1	27.0	7.8	0.2	2.2	0.6	0.2	30.7	10.3	8.0
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	192.1	42.8	17.8	112.7	56.1	20.4	85.5	69.3	46.4	117.3	84.9	66.5
Lane Group LOS	F	D	B	F	E	C	F	E	D	F	F	E
Approach Delay	77.5			54.8			70.6			87.1		
Approach LOS	E			D			E			F		
Intersection Delay	71.2			Intersection LOS						E		

HCS+™ Version 5.2 Generated: 4/2/2010 4:08 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2035--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	540	1202	114	138	977	368	246	429	67	530	595	379
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	568	1265	120	145	1028	387	259	452	71	558	626	399
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.67	0.80	0.13	0.83	0.65	0.43	0.76	0.64	0.14	1.64	0.89	0.78
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	44.7	17.6	85.7	40.3	21.7	85.0	70.8	45.3	87.3	75.3	58.5
Delay Factor k	0.50	0.35	0.11	0.37	0.23	0.11	0.31	0.22	0.11	0.50	0.42	0.33
Incremental Delay d_2	314.4	3.1	0.1	27.0	1.0	0.3	9.8	2.1	0.1	301.5	13.9	7.9
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	401.8	47.8	17.6	112.7	41.2	22.0	94.8	72.9	45.4	388.8	89.1	66.4
Lane Group LOS	F	D	B	F	D	C	F	E	D	F	F	E
Approach Delay	148.9			43.1			77.7			189.0		
Approach LOS	F			D			E			F		
Intersection Delay	122.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:07 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2025--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	548	1507	178	216	2124	450	148	275	76	236	450	300
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	577	1586	187	227	2236	474	156	289	80	248	474	316
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.70	1.01	0.21	1.30	1.42	0.52	0.46	0.41	0.16	0.73	0.68	0.62
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	52.3	18.5	87.3	52.3	23.5	82.3	67.1	45.6	84.7	71.4	54.5
Delay Factor k	0.50	0.50	0.11	0.50	0.50	0.13	0.11	0.11	0.11	0.29	0.25	0.20
Incremental Delay d_2	326.1	23.9	0.1	169.2	191.4	0.6	1.0	0.4	0.1	7.8	2.6	2.3
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	413.4	76.2	18.6	256.5	243.8	24.1	83.2	67.5	45.7	92.5	74.0	56.8
Lane Group LOS	F	E	B	F	F	C	F	E	D	F	E	E
Approach Delay	154.4			209.3			68.9			73.2		
Approach LOS	F			F			E			E		
Intersection Delay	159.1			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:59 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2025--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	659	1813	214	180	1766	374	178	331	91	283	541	361
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	694	1908	225	189	1859	394	187	348	96	298	569	380
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	2.04	1.21	0.25	1.08	1.18	0.44	0.55	0.50	0.19	0.88	0.81	0.75
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	52.3	19.0	87.3	52.3	21.8	83.1	68.4	46.1	86.1	73.8	57.5
Delay Factor k	0.50	0.50	0.11	0.50	0.50	0.11	0.15	0.11	0.11	0.40	0.35	0.30
Incremental Delay d_2	478.7	100.3	0.1	91.0	87.1	0.3	1.9	0.6	0.2	21.8	7.2	6.0
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	566.0	152.6	19.1	178.3	139.4	22.2	85.0	69.0	46.3	107.9	81.0	63.5
Lane Group LOS	F	F	B	F	F	C	F	E	D	F	F	E
Approach Delay	243.5			123.5			70.3			82.1		
Approach LOS	F			F			E			F		
Intersection Delay	159.0			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:58 PM

SHORT REPORT

General Information		Site Information	
Analyst	HNTB Steven	Intersection	GandyBlvd & Manhattan Ave
Agency or Co.	2025--Alt2--25Cents--PM	Area Type	All other areas
Date Performed	04/20/2008	Jurisdiction	FDOT District 7
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	354	974	115	130	1280	271	158	293	81	229	437	292
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	373	1025	121	137	1347	285	166	308	85	241	460	307
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.10	0.65	0.13	0.78	0.85	0.32	0.49	0.44	0.17	0.71	0.66	0.60
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	40.2	17.6	85.2	46.5	19.9	82.5	67.6	45.8	84.5	71.0	54.1
Delay Factor k	0.50	0.23	0.11	0.33	0.39	0.11	0.11	0.11	0.11	0.27	0.23	0.19
Incremental Delay d_2	77.4	1.0	0.1	20.3	4.8	0.2	1.1	0.4	0.2	6.7	2.2	2.0
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	164.8	41.2	17.7	105.5	51.3	20.1	83.6	68.0	45.9	91.2	73.3	56.1
Lane Group LOS	F	D	B	F	D	C	F	E	D	F	E	E
Approach Delay	69.7			50.5			69.3			72.3		
Approach LOS	E			D			E			E		
Intersection Delay	63.2			Intersection LOS						E		

HCS+™ Version 5.2 Generated: 4/2/2010 4:05 PM

SHORT REPORT

General Information		Site Information	
Analyst	HNTB Steven	Intersection	GandyBlvd & Manhattan Ave
Agency or Co.	2025--Alt2--25Cents--AM	Area Type	All other areas
Date Performed	04/20/2008	Jurisdiction	FDOT District 7
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	504	1123	106	130	922	347	212	369	58	406	456	290
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	531	1182	112	137	971	365	223	388	61	427	480	305
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.56	0.75	0.12	0.78	0.62	0.40	0.66	0.55	0.12	1.26	0.68	0.60
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	43.1	17.5	85.2	39.3	21.3	84.0	69.3	45.0	87.3	71.5	54.0
Delay Factor k	0.50	0.30	0.11	0.33	0.20	0.11	0.23	0.15	0.11	0.50	0.25	0.19
Incremental Delay d_2	266.7	2.0	0.1	20.3	0.7	0.3	4.5	1.0	0.1	137.0	2.8	2.0
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	354.1	45.1	17.5	105.5	40.1	21.6	88.6	70.3	45.1	224.3	74.3	56.0
Lane Group LOS	F	D	B	F	D	C	F	E	D	F	E	E
Approach Delay	133.3			41.6			74.1			122.5		
Approach LOS	F			D			E			F		
Intersection Delay	97.0			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:04 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2015--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	509	1400	165	203	1999	424	124	230	64	165	315	210
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	536	1474	174	214	2104	446	131	242	67	174	332	221
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.58	0.93	0.19	1.22	1.33	0.49	0.39	0.35	0.13	0.51	0.47	0.43
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	49.5	18.3	87.3	52.3	22.9	81.6	66.2	45.2	82.7	68.1	50.5
Delay Factor k	0.50	0.45	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.12	0.11	0.11
Incremental Delay d_2	273.2	10.7	0.1	140.6	154.4	0.4	0.7	0.3	0.1	1.3	0.5	0.6
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	360.5	60.2	18.4	227.9	206.8	23.3	82.3	66.4	45.3	84.0	68.6	51.1
Lane Group LOS	F	E	B	F	F	C	F	E	D	F	E	D
Approach Delay	130.6			178.8			68.0			67.0		
Approach LOS	F			F			E			E		
Intersection Delay	140.3			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:57 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2015--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	612	1684	199	169	1662	352	149	277	76	165	315	210
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	644	1773	209	178	1749	371	157	292	80	174	332	221
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.89	1.12	0.23	1.02	1.11	0.41	0.46	0.42	0.16	0.51	0.47	0.43
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	52.3	18.8	87.3	52.3	21.4	82.3	67.2	45.6	82.7	68.1	50.5
Delay Factor k	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.12	0.11	0.11
Incremental Delay d_2	413.3	64.5	0.1	72.6	58.5	0.3	1.0	0.4	0.1	1.3	0.5	0.6
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	500.6	116.9	18.9	159.9	110.8	21.7	83.3	67.6	45.7	84.0	68.6	51.1
Lane Group LOS	F	F	B	F	F	C	F	E	D	F	E	D
Approach Delay	203.2			100.3			69.0			67.0		
Approach LOS	F			F			E			E		
Intersection Delay	137.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:56 PM

SHORT REPORT

General Information		Site Information	
Analyst	HNTB Steven	Intersection	GandyBlvd & Manhattan Ave
Agency or Co.	2015--Alt2--25Cents--PM	Area Type	All other areas
Date Performed	04/20/2008	Jurisdiction	FDOT District 7
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	287	789	93	107	1053	223	131	243	67	160	305	203
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	302	831	98	113	1108	235	138	256	71	168	321	214
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	0.89	0.53	0.11	0.65	0.70	0.26	0.41	0.37	0.14	0.49	0.46	0.42
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	86.2	37.2	17.3	83.9	41.7	19.1	81.8	66.4	45.3	82.6	67.8	50.3
Delay Factor k	0.41	0.13	0.11	0.22	0.27	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Incremental Delay d_2	23.6	0.3	0.1	8.0	1.4	0.2	0.8	0.3	0.1	1.1	0.5	0.6
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	109.9	37.5	17.4	91.9	43.1	19.3	82.6	66.8	45.4	83.7	68.3	50.8
Lane Group LOS	F	D	B	F	D	B	F	E	D	F	E	D
Approach Delay	53.7			43.1			68.2			66.7		
Approach LOS	D			D			E			E		
Intersection Delay	53.8			Intersection LOS						D		

HCS+™ Version 5.2 Generated: 4/2/2010 4:03 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Manhattan Ave*
Agency or Co.	*2015--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*04/20/2008*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	2	1	1	2	1	2	2	1	2	2	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	409	911	86	107	758	285	175	306	48	283	317	202
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 90.0	G =	G =	G = 20.0	G = 40.0	G =	G =
	Y = 8.1	Y = 5.3	Y =	Y =	Y = 6.3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 194.7		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	431	959	91	113	798	300	184	322	51	298	334	213
Lane Group Capacity	340	1578	903	175	1578	903	340	701	509	340	701	509
v/c Ratio	1.27	0.61	0.10	0.65	0.51	0.33	0.54	0.46	0.10	0.88	0.48	0.42
Green Ratio	0.10	0.46	0.59	0.10	0.46	0.59	0.10	0.21	0.33	0.10	0.21	0.33
Uniform Delay d_1	87.3	39.1	17.2	83.9	36.7	20.2	83.0	67.9	44.7	86.1	68.1	50.2
Delay Factor k	0.50	0.19	0.11	0.22	0.11	0.11	0.14	0.11	0.11	0.40	0.11	0.11
Incremental Delay d_2	141.7	0.7	0.0	8.0	0.3	0.2	1.8	0.5	0.1	21.8	0.5	0.6
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	229.1	39.8	17.3	91.9	37.0	20.4	84.8	68.3	44.8	107.9	68.6	50.8
Lane Group LOS	F	D	B	F	D	C	F	E	D	F	E	D
Approach Delay	93.5			38.0			71.6			78.0		
Approach LOS	F			D			E			E		
Intersection Delay	70.9			Intersection LOS						E		

HCS+™ Version 5.2 Generated: 4/2/2010 4:02 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2035--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	23	2038	117	98	2811	144	57	5	151	73	36	31
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	24	2268		103	3111			65	159	77	71	
Lane Group Capacity	133	2245		133	2247			193	239	201	261	
v/c Ratio	0.18	1.01		0.77	1.38			0.34	0.67	0.38	0.27	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.5	32.3		86.6	32.3			71.9	76.0	72.4	71.1	
Delay Factor k	0.11	0.50		0.32	0.50			0.11	0.24	0.11	0.11	
Incremental Delay d_2	0.7	21.5		24.3	175.9			1.0	6.8	1.2	0.6	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.2	53.8		110.9	208.1			72.9	82.9	73.7	71.7	
Lane Group LOS	F	D		F	F			E	F	E	E	
Approach Delay	54.1			205.0			80.0			72.7		
Approach LOS	D			F			E			E		
Intersection Delay	138.1			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:38 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2035--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	28	2751	141	81	2337	120	69	6	182	88	39	37
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	29	3044		85	2586			79	192	93	80	
Lane Group Capacity	133	2247		133	2247			186	239	192	260	
v/c Ratio	0.22	1.35		0.64	1.15			0.42	0.80	0.48	0.31	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.8	32.3		85.6	32.3			73.0	77.9	73.7	71.5	
Delay Factor k	0.11	0.50		0.22	0.50			0.11	0.35	0.11	0.11	
Incremental Delay d_2	0.8	162.6		9.9	73.5			1.6	17.8	1.9	0.7	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.6	194.9		95.5	105.8			74.5	95.7	75.6	72.2	
Lane Group LOS	F	F		F	F			E	F	E	E	
Approach Delay	193.8			105.5			89.5			74.0		
Approach LOS	F			F			F			E		
Intersection Delay	147.8			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:36 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Blvd*
Agency or Co.	*2035--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0		1	1	1	1	0
Lane Group	L	TR		L	TR			TR	R	L	TR	
Volume (vph)	16	1388	80	61	1762	90		5	141	73	32	31
% Heavy Vehicles	6	6	6	6	6	6		6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A		A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	17	1545		64	1950			5	148	77	67	
Lane Group Capacity	133	2245		133	2247			281	239	212	260	
v/c Ratio	0.13	0.69		0.48	0.87			0.02	0.62	0.36	0.26	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.2	20.0		84.5	25.6			68.3	75.4	72.2	71.0	
Delay Factor k	0.11	0.26		0.11	0.40			0.11	0.20	0.11	0.11	
Incremental Delay d_2	0.4	0.9		2.7	3.9			0.0	4.8	1.1	0.5	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	82.6	20.9		87.3	29.5			68.3	80.3	73.3	71.5	
Lane Group LOS	F	C		F	C			E	F	E	E	
Approach Delay	21.6			31.3			79.9			72.4		
Approach LOS	C			C			E			E		
Intersection Delay	30.8			Intersection LOS						C		

HCS+™ Version 5.2 Generated: 4/2/2010 3:43 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2035--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	45	1651	87	71	1508	13	36	13	191	74	45	45
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	47	1830		75	1601			52	201	78	94	
Lane Group Capacity	133	2246		133	2260			191	239	203	260	
v/c Ratio	0.35	0.81		0.56	0.71			0.27	0.84	0.38	0.36	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	83.7	23.6		85.1	20.5			71.1	78.4	72.5	72.2	
Delay Factor k	0.11	0.36		0.16	0.27			0.11	0.38	0.11	0.11	
Incremental Delay d_2	1.6	2.4		5.4	1.0			0.8	22.7	1.2	0.9	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	85.3	26.1		90.5	21.5			71.9	101.2	73.7	73.0	
Lane Group LOS	F	C		F	C			E	F	E	E	
Approach Delay	27.5			24.6			95.2			73.3		
Approach LOS	C			C			F			E		
Intersection Delay	32.6			Intersection LOS						C		

HCS+™ Version 5.2 Generated: 4/2/2010 3:42 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2025--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	25	2170	125	92	2649	136	54	5	141	73	32	31
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	26	2416		97	2931			62	148	77	67	
Lane Group Capacity	133	2245		133	2247			195	239	201	260	
v/c Ratio	0.20	1.08		0.73	1.30			0.32	0.62	0.38	0.26	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.6	32.3		86.3	32.3			71.7	75.4	72.4	71.0	
Delay Factor k	0.11	0.50		0.29	0.50			0.11	0.20	0.11	0.11	
Incremental Delay d_2	0.7	43.3		18.3	140.3			0.9	4.8	1.2	0.5	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.3	75.5		104.6	172.6			72.6	80.3	73.7	71.5	
Lane Group LOS	F	E		F	F			E	F	E	E	
Approach Delay	75.6			170.4			78.0			72.7		
Approach LOS	E			F			E			E		
Intersection Delay	124.9			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:25 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2025--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	30	2610	150	77	2203	113	64	6	170	88	39	37
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	32	2905		81	2438			73	179	93	80	
Lane Group Capacity	133	2245		133	2247			186	239	197	260	
v/c Ratio	0.24	1.29		0.61	1.09			0.39	0.75	0.47	0.31	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.9	32.3		85.4	32.3			72.6	77.2	73.5	71.5	
Delay Factor k	0.11	0.50		0.20	0.50			0.11	0.30	0.11	0.11	
Incremental Delay d_2	0.9	135.7		7.9	46.6			1.4	12.3	1.8	0.7	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.8	168.0		93.3	78.9			73.9	89.5	75.3	72.2	
Lane Group LOS	F	F		F	E			E	F	E	E	
Approach Delay	167.1			79.4			85.0			73.9		
Approach LOS	F			E			F			E		
Intersection Delay	123.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:18 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Blvd*
Agency or Co.	*2025--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	15	1309	75	58	1665	85	54	5	141	73	32	31
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	16	1457		61	1842			62	148	77	67	
Lane Group Capacity	133	2245		133	2247			195	239	201	260	
v/c Ratio	0.12	0.65		0.46	0.82			0.32	0.62	0.38	0.26	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.1	19.1		84.4	23.8			71.7	75.4	72.4	71.0	
Delay Factor k	0.11	0.23		0.11	0.36			0.11	0.20	0.11	0.11	
Incremental Delay d_2	0.4	0.7		2.5	2.5			0.9	4.8	1.2	0.5	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	82.5	19.7		86.9	26.3			72.6	80.3	73.7	71.5	
Lane Group LOS	F	B		F	C			E	F	E	E	
Approach Delay	20.4			28.3			78.0			72.7		
Approach LOS	C			C			E			E		
Intersection Delay	29.7			Intersection LOS						C		

HCS+™ Version 5.2 Generated: 4/2/2010 3:41 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2025--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	42	1556	82	67	1425	12	36	13	191	74	45	45
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	44	1724		71	1513			52	201	78	94	
Lane Group Capacity	133	2246		133	2260			191	239	203	260	
v/c Ratio	0.33	0.77		0.53	0.67			0.27	0.84	0.38	0.36	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	83.5	22.1		84.9	19.5			71.1	78.4	72.5	72.2	
Delay Factor k	0.11	0.32		0.14	0.24			0.11	0.38	0.11	0.11	
Incremental Delay d_2	1.5	1.7		4.1	0.8			0.8	22.7	1.2	0.9	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	85.0	23.8		89.0	20.3			71.9	101.2	73.7	73.0	
Lane Group LOS	F	C		F	C			E	F	E	E	
Approach Delay	25.3			23.4			95.2			73.3		
Approach LOS	C			C			F			E		
Intersection Delay	31.4			Intersection LOS						C		

HCS+™ Version 5.2 Generated: 4/2/2010 3:39 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2015--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	24	2042	118	87	2493	128	73	7	193	73	32	31
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	25	2273		92	2759			84	203	77	67	
Lane Group Capacity	133	2245		133	2247			195	239	188	260	
v/c Ratio	0.19	1.01		0.69	1.23			0.43	0.85	0.41	0.26	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.6	32.3		86.0	32.3			73.0	78.6	72.8	71.0	
Delay Factor k	0.11	0.50		0.26	0.50			0.11	0.38	0.11	0.11	
Incremental Delay d_2	0.7	22.1		14.3	106.7			1.5	24.0	1.5	0.5	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.2	54.4		100.3	138.9			74.6	102.5	74.2	71.5	
Lane Group LOS	F	D		F	F			E	F	E	E	
Approach Delay	54.7			137.7			94.4			73.0		
Approach LOS	D			F			F			E		
Intersection Delay	99.6			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 3:17 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Ave*
Agency or Co.	*2015--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2		1	2		0	1	1	1	1	0
Lane Group	L	T		L	T			LT	R	L	TR	
Volume (vph)	28	2456		72	2073		88	8	232	88	39	37
% Heavy Vehicles	6	6		6	6		6	6	6	6	6	6
PHF	0.95	0.95		0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A		A	A		A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0		0	0		0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	29	2585		76	2182			101	244	93	80	
Lane Group Capacity	133	2263		133	2263			186	239	174	260	
v/c Ratio	0.22	1.14		0.57	0.96			0.54	1.02	0.53	0.31	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	82.8	32.3		85.1	30.1			74.4	80.8	74.3	71.5	
Delay Factor k	0.11	0.50		0.17	0.47			0.14	0.50	0.14	0.11	
Incremental Delay d_2	0.8	69.9		5.8	11.7			3.2	63.7	3.2	0.7	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	83.6	102.1		91.0	41.8			77.7	144.5	77.5	72.2	
Lane Group LOS	F	F		F	D			E	F	E	E	
Approach Delay	101.9			43.5			124.9			75.1		
Approach LOS	F			D			F			E		
Intersection Delay	78.1			Intersection LOS						E		

HCS+™ Version 5.2 Generated: 4/2/2010 3:15 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Lois Blvd*
Agency or Co.	*2015--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	12	1076	62	48	1369	70	54	5	141	73	32	31
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	13	1198		51	1515			62	148	77	67	
Lane Group Capacity	141	2380		141	2381			207	253	213	276	
v/c Ratio	0.09	0.50		0.36	0.64			0.30	0.58	0.36	0.24	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	81.9	16.3		83.7	18.8			71.5	75.0	72.2	70.8	
Delay Factor k	0.11	0.11		0.11	0.22			0.11	0.18	0.11	0.11	
Incremental Delay d_2	0.3	0.2		1.6	0.6			0.8	3.5	1.0	0.5	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	82.2	16.5		85.3	19.4			72.3	78.4	73.2	71.3	
Lane Group LOS	F	B		F	B			E	E	E	E	
Approach Delay	17.2			21.5			76.6			72.3		
Approach LOS	B			C			E			E		
Intersection Delay	25.9			Intersection LOS						C		

HCS+™ Version 5.2 Generated: 4/2/2010 3:32 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2015--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Lane Group	L	TR		L	TR			LT	R	L	TR	
Volume (vph)	35	1281	68	55	1171	10	36	13	191	74	45	45
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0	2.0	2.0	2.0	
Arrival Type	3	3		3	3			3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08
Timing	G = 15.0	G = 127.0	G =	G =	G = 30.0	G =	G =	G =
	Y = 7	Y = 6	Y =	Y =	Y = 6.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 191.5		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	37	1420		58	1244			52	201	78	94	
Lane Group Capacity	133	2246		133	2260			191	239	203	260	
v/c Ratio	0.28	0.63		0.44	0.55			0.27	0.84	0.38	0.36	
Green Ratio	0.08	0.66		0.08	0.66			0.16	0.16	0.16	0.16	
Uniform Delay d_1	83.1	18.7		84.2	17.1			71.1	78.4	72.5	72.2	
Delay Factor k	0.11	0.21		0.11	0.15			0.11	0.38	0.11	0.11	
Incremental Delay d_2	1.1	0.6		2.3	0.3			0.8	22.7	1.2	0.9	
PF Factor	1.000	1.000		1.000	1.000			1.000	1.000	1.000	1.000	
Control Delay	84.3	19.3		86.5	17.4			71.9	101.2	73.7	73.0	
Lane Group LOS	F	B		F	B			E	F	E	E	
Approach Delay	20.9			20.5			95.2			73.3		
Approach LOS	C			C			F			E		
Intersection Delay	29.5			Intersection LOS						C		

HCS+™ Version 5.2 Generated: 4/2/2010 3:33 PM

SHORT REPORT

General Information		Site Information	
Analyst	HNTB Steven	Intersection	GandyBlvd & Dale Mabry Hwy
Agency or Co.	2035--NoBuild--PM	Area Type	All other areas
Date Performed	04/20/2009	Jurisdiction	FDOT District 7
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	518	1206	814	471	1064	320	468	1178	283	607	1573	284
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	545	2126		496	1120	337	493	1240	298	639	1656	299
Lane Group Capacity	403	1340		403	997	747	564	997	671	564	997	671
v/c Ratio	1.35	1.59		1.23	1.12	0.45	0.87	1.24	0.44	1.13	1.66	0.45
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		90.2	72.7	34.3	83.1	72.7	40.0	85.2	72.7	40.0
Delay Factor k	0.50	0.50		0.50	0.50	0.11	0.40	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	174.2	267.5		123.8	68.8	0.4	14.2	118.2	0.5	80.1	301.9	0.5
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	264.4	340.2		214.0	141.5	34.7	97.3	190.9	40.5	165.3	374.6	40.5
Lane Group LOS	F	F		F	F	C	F	F	D	F	F	D
Approach Delay	324.8			141.5			146.1			284.6		
Approach LOS	F			F			F			F		
Intersection Delay	235.6			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:51 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2035--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	623	1450	979	391	884	266	563	1417	341	730	1891	341
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	656	2557		412	931	280	593	1492	359	768	1991	359
Lane Group Capacity	403	1340		403	997	747	564	997	671	564	997	671
v/c Ratio	1.63	1.91		1.02	0.93	0.37	1.05	1.50	0.54	1.36	2.00	0.54
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		90.2	70.8	32.7	85.2	72.7	42.1	85.2	72.7	42.1
Delay Factor k	0.50	0.50		0.50	0.45	0.11	0.50	0.50	0.14	0.50	0.50	0.14
Incremental Delay d_2	293.6	411.5		50.6	15.1	0.3	52.1	228.7	0.8	174.0	452.2	0.8
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	383.8	484.2		140.8	85.9	33.0	137.3	301.4	43.0	259.2	524.9	43.0
Lane Group LOS	F	F		F	F	C	F	F	D	F	F	D
Approach Delay	463.7			90.7			223.6			404.0		
Approach LOS	F			F			F			F		
Intersection Delay	331.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:50 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2035--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	275	639	432	404	913	275	460	1156	278	596	1544	279
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 25.0	G = 70.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	289	1128		425	961	289	484	1217	293	627	1625	294
Lane Group Capacity	403	1340		403	997	673	403	1163	745	403	1163	745
v/c Ratio	0.72	0.84		1.05	0.96	0.43	1.20	1.05	0.39	1.56	1.40	0.39
Green Ratio	0.12	0.29		0.12	0.29	0.44	0.12	0.34	0.49	0.12	0.34	0.49
Uniform Delay d_1	86.8	68.2		90.2	71.6	39.5	90.2	67.7	33.2	90.2	67.7	33.3
Delay Factor k	0.28	0.38		0.50	0.47	0.11	0.50	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	6.0	5.0		59.9	20.2	0.4	112.0	39.4	0.3	262.1	184.0	0.3
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	92.8	73.3		150.1	91.9	40.0	202.2	107.1	33.6	352.3	251.7	33.6
Lane Group LOS	F	E		F	F	D	F	F	C	F	F	C
Approach Delay	77.3			97.7			119.4			251.3		
Approach LOS	E			F			F			F		
Intersection Delay	150.8			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 2:32 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2035--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	TR	R	L	T	R	L	T	R
Volume (vph)	246	862	510	200	782	342	382	1623	272	492	2192	225
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 25.0	G = 70.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	259	1444		211	823	360	402	1708	286	518	2307	237
Lane Group Capacity	403	1347		403	997	673	403	1163	745	403	1163	745
v/c Ratio	0.64	1.07		0.52	0.83	0.53	1.00	1.47	0.38	1.29	1.98	0.32
Green Ratio	0.12	0.29		0.12	0.29	0.44	0.12	0.34	0.49	0.12	0.34	0.49
Uniform Delay d_1	85.9	72.7		84.6	67.8	41.9	90.2	67.7	33.0	90.2	67.7	31.8
Delay Factor k	0.22	0.50		0.13	0.36	0.14	0.50	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	3.5	46.3		1.3	5.8	0.8	44.1	215.6	0.3	146.1	445.7	0.2
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	89.4	119.0		85.9	73.6	42.8	134.3	283.3	33.4	236.3	513.4	32.0
Lane Group LOS	F	F		F	E	D	F	F	C	F	F	C
Approach Delay	114.5			67.5			228.5			429.3		
Approach LOS	F			E			F			F		
Intersection Delay	251.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:58 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2025--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	488	1137	768	439	993	299	439	1103	265	569	1475	266
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	514	2005		462	1045	315	462	1161	279	599	1553	280
Lane Group Capacity	403	1340		403	997	747	564	997	671	564	997	671
v/c Ratio	1.28	1.50		1.15	1.05	0.42	0.82	1.16	0.42	1.06	1.56	0.42
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		90.2	72.7	33.6	82.1	72.7	39.4	85.2	72.7	39.4
Delay Factor k	0.50	0.50		0.50	0.50	0.11	0.36	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	142.0	227.3		91.2	42.0	0.4	9.3	85.1	0.4	55.4	255.9	0.4
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	232.2	300.0		181.4	114.7	34.0	91.5	157.8	39.8	140.6	328.6	39.9
Lane Group LOS	F	F		F	F	C	F	F	D	F	F	D
Approach Delay	286.2			117.6			124.4			249.1		
Approach LOS	F			F			F			F		
Intersection Delay	204.9			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:48 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2025--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	587	1367	923	365	825	249	527	1327	319	684	1774	320
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	618	2411		384	868	262	555	1397	336	720	1867	337
Lane Group Capacity	403	1340		403	997	747	564	997	671	564	997	671
v/c Ratio	1.53	1.80		0.95	0.87	0.35	0.98	1.40	0.50	1.28	1.87	0.50
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		89.6	69.0	32.2	84.9	72.7	41.3	85.2	72.7	41.3
Delay Factor k	0.50	0.50		0.46	0.40	0.11	0.49	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	252.3	362.7		32.8	8.5	0.3	33.7	186.6	0.6	137.8	396.5	0.6
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	342.5	435.4		122.4	77.5	32.5	118.6	259.3	41.9	223.0	469.2	41.9
Lane Group LOS	F	F		F	E	C	F	F	D	F	F	D
Approach Delay	416.4			81.1			193.3			359.3		
Approach LOS	F			F			F			F		
Intersection Delay	294.9			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:46 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry*
Agency or Co.	*2025--Alt2--25Cents--PM*	Area Type	*Hwy*
Date Performed	*04/20/2009*	Jurisdiction	*All other areas*
Time Period		Analysis Year	*FDOT District 7*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	307	715	483	378	854	257	431	1084	261	559	1449	262
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 25.0	G = 70.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	323	1261		398	899	271	454	1141	275	588	1525	276
Lane Group Capacity	403	1340		403	997	673	403	1163	745	403	1163	745
v/c Ratio	0.80	0.94		0.99	0.90	0.40	1.13	0.98	0.37	1.46	1.31	0.37
Green Ratio	0.12	0.29		0.12	0.29	0.44	0.12	0.34	0.49	0.12	0.34	0.49
Uniform Delay d_1	87.8	71.0		90.0	69.9	39.0	90.2	67.0	32.7	90.2	67.7	32.8
Delay Factor k	0.35	0.45		0.49	0.42	0.11	0.50	0.49	0.11	0.50	0.50	0.11
Incremental Delay d_2	11.1	13.1		41.4	11.2	0.4	83.9	21.8	0.3	219.9	146.3	0.3
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	98.9	84.0		131.5	81.1	39.3	174.1	88.9	33.1	310.1	214.0	33.1
Lane Group LOS	F	F		F	F	D	F	F	C	F	F	C
Approach Delay	87.0			86.6			101.4			216.8		
Approach LOS	F			F			F			F		
Intersection Delay	132.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:57 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2025--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	275	963	570	187	732	320	358	1521	255	462	2057	211
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 25.0	G = 70.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	289	1614		197	771	337	377	1601	268	486	2165	222
Lane Group Capacity	403	1347		403	997	673	403	1163	745	403	1163	745
v/c Ratio	0.72	1.20		0.49	0.77	0.50	0.94	1.38	0.36	1.21	1.86	0.30
Green Ratio	0.12	0.29		0.12	0.29	0.44	0.12	0.34	0.49	0.12	0.34	0.49
Uniform Delay d_1	86.8	72.7		84.2	66.5	41.1	89.4	67.7	32.6	90.2	67.7	31.4
Delay Factor k	0.28	0.50		0.11	0.32	0.11	0.45	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	6.0	96.7		0.9	3.8	0.6	29.1	175.0	0.3	114.0	391.0	0.2
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	92.8	169.4		85.2	70.3	41.7	118.5	242.7	32.9	204.2	458.7	31.6
Lane Group LOS	F	F		F	E	D	F	F	C	F	F	C
Approach Delay	157.7			65.2			196.8			382.7		
Approach LOS	F			E			F			F		
Intersection Delay	231.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:56 PM

SHORT REPORT

General Information		Site Information	
Analyst	HNTB Steven	Intersection	GandyBlvd & Dale Mabry Hwy
Agency or Co.	2015--NoBuild--PM	Area Type	All other areas
Date Performed	04/20/2009	Jurisdiction	FDOT District 7
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	459	1070	723	407	921	277	409	1028	247	531	1377	249
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	483	1887		428	969	292	431	1082	260	559	1449	262
Lane Group Capacity	403	1340		403	997	747	564	997	671	564	997	671
v/c Ratio	1.20	1.41		1.06	0.97	0.39	0.76	1.09	0.39	0.99	1.45	0.39
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		90.2	71.9	33.0	81.3	72.7	38.8	85.0	72.7	38.9
Delay Factor k	0.50	0.50		0.50	0.48	0.11	0.32	0.50	0.11	0.49	0.50	0.11
Incremental Delay d_2	111.0	188.2		62.2	21.9	0.3	6.2	54.5	0.4	35.5	209.6	0.4
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	201.2	260.9		152.4	93.7	33.4	87.4	127.2	39.2	120.6	282.3	39.3
Lane Group LOS	F	F		F	F	C	F	F	D	F	F	D
Approach Delay	248.8			98.2			104.6			214.4		
Approach LOS	F			F			F			F		
Intersection Delay	176.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:43 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2015--NoBuild--AM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	552	1287	869	339	765	231	492	1237	297	639	1656	299
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 35.0	G = 60.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	581	2270		357	805	243	518	1302	313	673	1743	315
Lane Group Capacity	403	1340		403	997	747	564	997	671	564	997	671
v/c Ratio	1.44	1.69		0.89	0.81	0.33	0.92	1.31	0.47	1.19	1.75	0.47
Green Ratio	0.12	0.29		0.12	0.29	0.49	0.17	0.29	0.44	0.17	0.29	0.44
Uniform Delay d_1	90.2	72.7		88.8	67.3	31.7	83.8	72.7	40.5	85.2	72.7	40.6
Delay Factor k	0.50	0.50		0.41	0.35	0.11	0.44	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	212.4	315.6		20.4	5.0	0.3	20.2	145.0	0.5	103.5	340.9	0.5
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	302.6	388.3		109.2	72.4	32.0	104.0	217.7	41.0	188.7	413.6	41.1
Lane Group LOS	F	F		F	E	C	F	F	D	F	F	D
Approach Delay	370.8			74.7			164.2			315.2		
Approach LOS	F			E			F			F		
Intersection Delay	260.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:41 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2015--Alt2--25Cents--PM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	252	587	397	307	693	209	401	1009	243	521	1351	244
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 25.0	G = 70.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	265	1036		323	729	220	422	1062	256	548	1422	257
Lane Group Capacity	403	1340		403	997	673	403	1163	745	403	1163	745
v/c Ratio	0.66	0.77		0.80	0.73	0.33	1.05	0.91	0.34	1.36	1.22	0.34
Green Ratio	0.12	0.29		0.12	0.29	0.44	0.12	0.34	0.49	0.12	0.34	0.49
Uniform Delay d_1	86.1	66.5		87.8	65.4	37.4	90.2	64.8	32.3	90.2	67.7	32.3
Delay Factor k	0.23	0.32		0.35	0.29	0.11	0.50	0.43	0.11	0.50	0.50	0.11
Incremental Delay d_2	3.9	2.9		11.1	2.8	0.3	57.7	11.0	0.3	177.3	108.1	0.3
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	90.0	69.4		98.9	68.2	37.7	147.9	75.8	32.5	267.5	175.8	32.6
Lane Group LOS	F	E		F	E	D	F	E	C	F	F	C
Approach Delay	73.6			70.7			86.9			181.8		
Approach LOS	E			E			F			F		
Intersection Delay	113.4			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:55 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & Dale Mabry Hwy*
Agency or Co.	*2015--Alt2--25Cents--AM*	Area Type	*All other areas*
Date Performed	*04/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	3	0	2	2	1	2	2	1	2	2	1
Lane Group	L	TR		L	T	R	L	T	R	L	T	R
Volume (vph)	226	792	469	152	593	259	334	1416	237	430	1917	197
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3		3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 25.0	G = 60.0	G =	G =	G = 25.0	G = 70.0	G =	G =
	Y = 7.2	Y = 5.7	Y =	Y =	Y = 7.1	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 205.4		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	238	1328		160	624	273	352	1491	249	453	2018	207
Lane Group Capacity	403	1347		403	997	673	403	1163	745	403	1163	745
v/c Ratio	0.59	0.99		0.40	0.63	0.41	0.87	1.28	0.33	1.12	1.74	0.28
Green Ratio	0.12	0.29		0.12	0.29	0.44	0.12	0.34	0.49	0.12	0.34	0.49
Uniform Delay d_1	85.4	72.3		83.2	63.0	39.0	88.6	67.7	32.1	90.2	67.7	31.1
Delay Factor k	0.18	0.49		0.11	0.21	0.11	0.40	0.50	0.11	0.50	0.50	0.11
Incremental Delay d_2	2.3	21.1		0.6	1.2	0.4	18.6	133.6	0.3	83.0	334.4	0.2
PF Factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	87.7	93.4		83.9	64.2	39.4	107.3	201.3	32.3	173.2	402.1	31.3
Lane Group LOS	F	F		F	E	D	F	F	C	F	F	C
Approach Delay	92.5			60.8			165.4			334.8		
Approach LOS	F			E			F			F		
Intersection Delay	196.3			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 1:52 PM

SHORT REPORT

General Information		Site Information	
Analyst	*HNTB Steven*	Intersection	*GandyBlvd & WestShore Blvd*
Agency or Co.	*2035--NoBuild--PM*	Area Type	*All other areas*
Date Performed	*4/20/2009*	Jurisdiction	*FDOT District 7*
Time Period		Analysis Year	

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Lane Group	L	T	R	L	T	R	L	T	R	L	T	R
Volume (vph)	589	1712	455	334	2247	299	317	524	239	328	389	262
% Heavy Vehicles	6	6	6	6	6	6	6	6	6	6	6	6
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Extension	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Ped/Bike/RTOR Volume	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 20.0	G = 95.0	G =	G =	G = 20.0	G = 45.0	G =	G =
	Y = 7.7	Y = 5.3	Y =	Y =	Y = 7.8	Y = 5.4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 206.2		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	620	1802	479	352	2365	315	334	552	252	345	409	276
Lane Group Capacity	165	1572	889	165	1572	889	165	391	520	165	391	520
v/c Ratio	3.76	1.15	0.54	2.13	1.50	0.35	2.02	1.41	0.48	2.09	1.05	0.53
Green Ratio	0.10	0.46	0.58	0.10	0.46	0.58	0.10	0.22	0.34	0.10	0.22	0.34
Uniform Delay d_1	93.1	55.6	26.1	93.1	55.6	22.6	93.1	80.6	53.6	93.1	80.6	54.6
Delay Factor k	0.50	0.50	0.14	0.50	0.50	0.11	0.50	0.50	0.11	0.50	0.50	0.13
Incremental Delay d_2	1256	73.8	0.7	529.8	230.4	0.2	481.5	199.9	0.7	511.0	58.0	1.0
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Delay	1349	129.4	26.8	622.9	286.0	22.8	574.6	280.5	54.3	604.1	138.6	55.7
Lane Group LOS	F	F	C	F	F	C	F	F	D	F	F	E
Approach Delay	373.1			297.7			316.8			272.3		
Approach LOS	F			F			F			F		
Intersection Delay	324.2			Intersection LOS						F		

HCS+™ Version 5.2 Generated: 4/2/2010 4:21 PM

APPENDIX F

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_203~4.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2035 PM - No Build				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	45700	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	52800	2904	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	11	2	0.1818	54200	2981	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	8	10	2	0.5568	55900	3075	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	52800	2376	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	54200	2439	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	10	2	2	0.5568	55900	2515	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	2965	1752	1.28	159.9	F	No	8.9	F
2 (to Manhattan Avenue)	2510	1758	1.55	301.29	F	Yes#	2.0	F
3 (to Westshore Boulevard)	2654	1758	1.64	344.3	F	Yes#	5.1	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	2001	1720	2.01	525.71	F	Yes#	3.2	F
2 (to Lois Avenue)	2542	1752	1.1	78.03	E	No	6.8	F
1 (to Manhattan Avenue)	2330	1758	1.44	251.26	F	Yes#	6.6	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	460	880	970
2	**	**	990	1850	1970
3	**	**	1530	2830	2970
4	**	**	2070	3810	3970
*	**	**	990	1850	1970
Lanes	**Hourly Volume In Both Directions**				
2	**	**	840	1600	1770

4	**	**	1800	3360	3590
6	**	**	2780	5150	5410
8	**	**	3760	6930	7230
*	**	**	1800	3360	3590
Lanes	**Annual Average Daily Traffic**				
2	**	**	8400	16000	17700
4	**	**	18000	33600	35900
6	**	**	27800	51500	54100
8	**	**	37600	69300	72300
*	**	**	18000	33600	35900

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.69	F	F			5.54	F	0.00	F
2 (to Manhattan Avenue)	6.53	F	F			5.53	F	0.00	F
3 (to Westshore Boulevard)	6.72	F	F			5.75	F	0.00	F
	Bicycle LOS	6.68	F	Pedestrian LOS		5.64	F	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.59	F	E			4.91	E	0.00	F
2 (to Lois Avenue)	6.43	F	E			4.88	E	0.00	F

1 (to Manhattan Avenue)	6.62	F	E		5.08	E		0.00	F
	Bicycle LOS	**6.58**	**F**	**Pedestrian LOS**	**4.98**	**E**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>6.00	>=5.00	>=4.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>10.91	>=9.09	>=7.27	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_203~3.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2035 No Build AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	45700	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	25	8	2	0.5152	52800	2904	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	54200	2981	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5568	55900	3075	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	10	2	0.5152	52800	2376	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	8	16	2	0.1818	54200	2439	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5568	55900	2515	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	2048	1758	1.27	172.94	F	Yes#	8.4	F
2 (to Lois Avenue)	3107	1752	1.34	187.48	F	No	3.2	F
3 (to Dale Mabry Highway)	2589	1720	2.6	790.89	F	Yes#	2.4	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1951	1758	1.21	149.03	F	Yes#	9.4	F
2 (to Manhattan Avenue)	1951	1758	1.21	146.06	F	Yes#	4.0	F
1 (to Lois Avenue)	2568	1752	1.11	83.02	F	No	14.9	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	150	540	610
2	**	**	340	1170	1250
3	**	**	540	1810	1880
4	**	**	740	2440	2510
*	**	**	340	1170	1250
Lanes	**Hourly Volume In Both Directions**				
2	**	**	270	980	1120

4	**	**	620	2130	2270
6	**	**	980	3290	3420
8	**	**	1350	4440	4570
*	**	**	620	2130	2270
Lanes	**Annual Average Daily Traffic**				
2	**	**	2700	9800	11200
4	**	**	6200	21300	22700
6	**	**	9800	32900	34200
8	**	**	13500	44400	45700
*	**	**	6200	21300	22700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.69	F	F			5.54	F	0.00	F
2 (to Lois Avenue)	6.53	F	F			5.53	F	0.00	F
3 (to Dale Mabry Highway)	6.72	F	F			5.75	F	0.00	F
	Bicycle LOS	6.68	F	Pedestrian LOS		5.64	F	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.59	F	E			4.91	E	0.00	F
2 (to Manhattan Avenue)	6.43	F	E			4.88	E	0.00	F

1 (to Lois Avenue)	6.62	F	E		5.08	E		0.00	F
	Bicycle LOS	**6.58**	**F**	**Pedestrian LOS**		**4.98**	**E**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	**	100	180
2	**	**	**	200	350
3	**	**	130	300	530
4	**	**	180	390	700
*	**	**	**	200	350
Lanes	**Hourly Volume In Both Directions**				
2	**	**	**	180	320
4	**	**	**	360	640
6	**	**	240	540	960
8	**	**	320	710	1280
*	**	**	**	360	640
Lanes	**Annual Average Daily Traffic**				
2	**	**	**	1800	3200
4	**	**	**	3600	6400
6	**	**	2400	5400	9600
8	**	**	3200	7100	12800
*	**	**	**	3600	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>6.00	>=5.00	>=4.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>10.91	>=9.09	>=7.27	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_203~2.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2035 PM - Build				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	33000	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	38100	2096	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	8	16	2	0.1818	40800	2244	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	10	2	0.5568	43800	2409	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	38100	1714	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	40800	1836	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	No	25	8	2	0.5568	43800	1971	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	2140	1752	0.93	30.86	C	No	23.7	C
2 (to Manhattan Avenue)	1795	1758	1.11	104.85	F	Yes#	5.3	F
3 (to Westshore Boulevard)	1978	1758	1.22	156.51	F	Yes#	9.6	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	1443	1720	1.45	276.3	F	Yes#	5.7	F
2 (to Lois Avenue)	1913	1752	0.83	25.06	C	No	15.1	E
1 (to Manhattan Avenue)	1556	1749	0.97	55.49	E	Yes#	18.8	D

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	470	920	1020
2	**	**	1020	1940	2070
3	**	**	1580	2970	3130
4	**	**	2140	3990	4180
*	**	**	1020	1940	2070
Lanes	**Hourly Volume In Both Directions**				
2	**	**	850	1670	1860

4	**	**	1850	3530	3770
6	**	**	2870	5400	5680
8	**	**	3890	7250	7600
*	**	**	1850	3530	3770
Lanes	**Annual Average Daily Traffic**				
2	**	**	8500	16700	18600
4	**	**	18500	35300	37700
6	**	**	28700	54000	56800
8	**	**	38900	72500	76000
*	**	**	18500	35300	37700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.52	F	E			4.58	E	0.00	F
2 (to Manhattan Avenue)	6.39	F	E			4.65	E	0.00	F
3 (to Westshore Boulevard)	6.60	F	E			4.96	E	0.00	F
	Bicycle LOS	6.54	F	Pedestrian LOS		4.76	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.45	F	D			4.14	D	0.00	F
2 (to Lois Avenue)	6.32	F	D			4.18	D	0.00	F

1 (to Manhattan Avenue)	6.50	F	D		4.43	D		0.00	F
	Bicycle LOS	**6.45**	**F**	**Pedestrian LOS**	**4.28**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_203~1.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2035 Build AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	38100	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	4	Yes	Yes	29	6	2	0.5152	38100	2096	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	4	Yes	No	3	5	2	0.1818	40800	2244	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	4	Yes	No	17	27	2	0.5568	43800	2409	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	8	2	0.5152	38100	1714	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	25	2	0.1818	40800	1836	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	4	1	2	0.5568	43800	1971	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	1434	1758	0.89	42.36	D	Yes#	20.6	D
2 (to Lois Avenue)	2291	1752	0.99	22.01	C	No	16.2	E
3 (to Dale Mabry Highway)	2105	1726	2.1	568.92	F	Yes#	3.2	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1443	1758	0.89	55.32	E	Yes#	18.1	D
2 (to Manhattan Avenue)	1276	1758	0.79	46.24	D	Yes#	10.2	F
1 (to Lois Avenue)	1992	1757	0.86	27.43	C	No	25.5	C

Arterial Length	1.25	Weighted g/C	##	FFS Delay	144.9	Threshold Delay	0.0	Auto Speed	18.4	Auto LOS	D

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	290	570	590
2	**	**	660	1210	***
3	**	**	1040	1820	***
4	**	**	1430	2430	***
*	**	**	660	1210	***
Lanes	**Hourly Volume In Both Directions**				
2	**	**	530	1040	1080

4	**	**	1200	2190	***
6	**	**	1890	3310	***
8	**	**	2600	4420	***
*	**	**	1200	2190	***
Lanes	**Annual Average Daily Traffic**				
2	**	**	5300	10400	10800
4	**	**	12000	21900	***
6	**	**	18900	33100	***
8	**	**	26000	44200	***
*	**	**	12000	21900	***

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.52	F	E			4.58	E	0.00	F
2 (to Lois Avenue)	6.39	F	E			4.65	E	0.00	F
3 (to Dale Mabry Highway)	6.60	F	E			4.96	E	0.00	F
	Bicycle LOS	6.54	F	Pedestrian LOS		4.76	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.45	F	D			4.14	D	0.00	F
2 (to Manhattan Avenue)	6.32	F	D			4.18	D	0.00	F

1 (to Lois Avenue)	6.50	F	D		4.43	D		0.00	F
	Bicycle LOS	**6.45**	**F**	**Pedestrian LOS**	**4.28**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_202~4.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2025 PM - No Build				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	45700	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	4
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	49200	2706	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	11	2	0.1818	51100	2811	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	8	10	2	0.5568	52700	2899	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	49200	2214	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	51100	2299	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	10	2	2	0.5568	52700	2371	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	2763	1752	1.19	120.7	F	No	11.0	F
2 (to Manhattan Avenue)	2367	1758	1.46	261.54	F	Yes#	2.3	F
3 (to Westshore Boulevard)	2502	1758	1.55	302.04	F	Yes#	5.7	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	1864	1720	1.87	463.94	F	Yes#	3.6	F
2 (to Lois Avenue)	2396	1752	1.04	50.67	D	No	9.5	F
1 (to Manhattan Avenue)	2196	1758	1.36	214.02	F	Yes#	7.6	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay	Threshold Delay	Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	460	880	970
2	**	**	990	1850	1970
3	**	**	1530	2830	2970
4	**	**	2070	3810	3970
*	**	**	990	1850	1970
Lanes	**Hourly Volume In Both Directions**				
2	**	**	840	1600	1770

4	**	**	1800	3360	3590
6	**	**	2780	5150	5410
8	**	**	3760	6930	7230
*	**	**	1800	3360	3590
Lanes	**Annual Average Daily Traffic**				
2	**	**	8400	16000	17700
4	**	**	18000	33600	35900
6	**	**	27800	51500	54100
8	**	**	37600	69300	72300
*	**	**	18000	33600	35900

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.65	F	E			5.31	E	0.00	F
2 (to Manhattan Avenue)	6.50	F	E			5.33	E	0.00	F
3 (to Westshore Boulevard)	6.69	F	F			5.54	F	0.00	F
	Bicycle LOS	6.65	F	Pedestrian LOS		5.42	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.55	F	E			4.72	E	0.00	F
2 (to Lois Avenue)	6.40	F	E			4.71	E	0.00	F

1 (to Manhattan Avenue)	6.59	F	E		4.91	E		0.00	F
	Bicycle LOS	**6.55**	**F**	**Pedestrian LOS**	**4.81**	**E**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_202~3.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2025 No Build AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	45700	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	25	8	2	0.5152	49200	2706	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	51100	2811	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5568	52700	2899	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	10	2	0.5152	49200	2214	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	8	16	2	0.1818	51100	2299	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5568	52700	2371	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	1908	1758	1.18	134.17	F	Yes#	10.2	F
2 (to Lois Avenue)	2929	1752	1.27	152.9	F	No	3.8	F
3 (to Dale Mabry Highway)	2441	1720	2.45	724.14	F	Yes#	2.6	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1818	1758	1.12	112.34	F	Yes#	11.6	F
2 (to Manhattan Avenue)	1839	1758	1.14	115.14	F	Yes#	4.9	F
1 (to Lois Avenue)	2421	1752	1.05	55.19	E	No	18.8	D

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	150	540	610
2	**	**	340	1170	1250
3	**	**	540	1810	1880
4	**	**	740	2440	2510
*	**	**	340	1170	1250
Lanes	**Hourly Volume In Both Directions**				
2	**	**	270	980	1120

4	**	**	620	2130	2270
6	**	**	980	3290	3420
8	**	**	1350	4440	4570
*	**	**	620	2130	2270
Lanes	**Annual Average Daily Traffic**				
2	**	**	2700	9800	11200
4	**	**	6200	21300	22700
6	**	**	9800	32900	34200
8	**	**	13500	44400	45700
*	**	**	6200	21300	22700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.65	F	E			5.31	E	0.00	F
2 (to Lois Avenue)	6.50	F	E			5.33	E	0.00	F
3 (to Dale Mabry Highway)	6.69	F	F			5.54	F	0.00	F
	Bicycle LOS	6.65	F	Pedestrian LOS		5.42	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.55	F	E			4.72	E	0.00	F
2 (to Manhattan Avenue)	6.40	F	E			4.71	E	0.00	F

1 (to Lois Avenue)	6.59	F	E		4.91	E		0.00	F
	Bicycle LOS	**6.55**	**F**	**Pedestrian LOS**	**4.81**	**E**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_202~2.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2025 PM - Build				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	33000	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	35600	1958	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	8	16	2	0.1818	38500	2118	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	10	2	0.5568	41400	2277	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	35600	1602	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	38500	1732	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	25	8	2	0.5568	41400	1863	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	1999	1752	0.86	27.69	C	No	24.7	C
2 (to Manhattan Avenue)	1694	1758	1.05	81.07	F	Yes#	6.6	F
3 (to Westshore Boulevard)	1870	1758	1.16	126.65	F	Yes#	11.3	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	1349	1720	1.35	234.89	F	Yes#	6.6	F
2 (to Lois Avenue)	1805	1752	0.78	24.19	C	No	15.5	E
1 (to Manhattan Avenue)	1314	1758	0.81	47.64	D	Yes#	20.3	D

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	470	920	1020
2	**	**	1020	1940	2070
3	**	**	1580	2970	3130
4	**	**	2140	3990	4180
*	**	**	1020	1940	2070
Lanes	**Hourly Volume In Both Directions**				
2	**	**	850	1670	1860

4	**	**	1850	3530	3770
6	**	**	2870	5400	5680
8	**	**	3890	7250	7600
*	**	**	1850	3530	3770
Lanes	**Annual Average Daily Traffic**				
2	**	**	8500	16700	18600
4	**	**	18500	35300	37700
6	**	**	28700	54000	56800
8	**	**	38900	72500	76000
*	**	**	18500	35300	37700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.49	F	D			4.41	D	0.00	F
2 (to Manhattan Avenue)	6.36	F	D			4.50	D	0.00	F
3 (to Westshore Boulevard)	6.57	F	E			4.80	E	0.00	F
	Bicycle LOS	**6.51**	**F**	**Pedestrian LOS**		**4.60**	**E**	**Bus LOS**	**.00**	**F**

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.42	F	D			4.01	D	0.00	F
2 (to Lois Avenue)	6.31	F	D			4.07	D	0.00	F

1 (to Manhattan Avenue)	6.48	F	D		4.31	D		0.00	F
	Bicycle LOS	**6.43**	**F**	**Pedestrian LOS**	**4.16**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_202~1.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2025 Build AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	35600	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	29	6	2	0.5152	35600	1958	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.1818	38500	2118	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	17	27	2	0.5568	41400	2277	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	8	2	0.5152	35600	1602	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	25	2	0.1818	38500	1732	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	4	1	2	0.5568	41400	1863	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	1340	1758	0.83	48.29	D	Yes#	19.4	D
2 (to Lois Avenue)	2163	1752	0.94	33.4	C	No	12.6	E
3 (to Dale Mabry Highway)	1989	1726	1.99	517.72	F	Yes#	3.5	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1349	1758	0.83	51.89	D	Yes#	18.8	D
2 (to Manhattan Avenue)	1203	1758	0.74	44.75	D	Yes#	10.4	F
1 (to Lois Avenue)	1883	1757	0.81	25.49	C	No	26.2	C

Arterial Length	1.25	Weighted g/C	##	FFS Delay	137.3	Threshold Delay	0.0	Auto Speed	19.0	Auto LOS	D

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	150	530	590
2	**	**	340	1140	1210
3	**	**	530	1760	1820
4	**	**	730	2370	2430
*	**	**	340	1140	1210
Lanes	**Hourly Volume In Both Directions**				
2	**	**	270	960	1080

4	**	**	620	2070	2190
6	**	**	960	3200	3310
8	**	**	1330	4310	4420
*	**	**	620	2070	2190
Lanes	**Annual Average Daily Traffic**				
2	**	**	2700	9600	10800
4	**	**	6200	20700	21900
6	**	**	9600	32000	33100
8	**	**	13300	43100	44200
*	**	**	6200	20700	21900

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.49	F	D			4.41	D	0.00	F
2 (to Lois Avenue)	6.36	F	D			4.50	D	0.00	F
3 (to Dale Mabry Highway)	6.57	F	E			4.80	E	0.00	F
	Bicycle LOS	**6.51**	**F**	**Pedestrian LOS**		**4.60**	**E**	**Bus LOS**	**.00**	**F**

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.42	F	D			4.01	D	0.00	F
2 (to Manhattan Avenue)	6.31	F	D			4.07	D	0.00	F

1 (to Lois Avenue)	6.48	F	D		4.31	D		0.00	F
	Bicycle LOS	**6.43**	**F**	**Pedestrian LOS**	**4.16**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_201~4.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2015 PM - No Build				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	45700	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	45700	2514	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	11	2	0.1818	48100	2646	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	8	10	2	0.5568	49600	2728	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	45700	2056	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	48100	2164	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	10	2	2	0.5568	49600	2232	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	2567	1752	1.11	82.83	F	No	14.2	F
2 (to Manhattan Avenue)	2228	1758	1.38	222.91	F	Yes#	2.7	F
3 (to Westshore Boulevard)	2355	1758	1.46	261.17	F	Yes#	6.4	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	1731	1720	1.74	404.23	F	Yes#	4.1	F
2 (to Lois Avenue)	2255	1752	0.98	33.41	C	No	12.6	F
1 (to Manhattan Avenue)	2068	1758	1.28	178.49	F	Yes#	8.7	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	460	880	970
2	**	**	990	1850	1970
3	**	**	1530	2830	2970
4	**	**	2070	3810	3970
*	**	**	990	1850	1970
Lanes	**Hourly Volume In Both Directions**				
2	**	**	840	1600	1770

4	**	**	1800	3360	3590
6	**	**	2780	5150	5410
8	**	**	3760	6930	7230
*	**	**	1800	3360	3590
Lanes	**Annual Average Daily Traffic**				
2	**	**	8400	16000	17700
4	**	**	18000	33600	35900
6	**	**	27800	51500	54100
8	**	**	37600	69300	72300
*	**	**	18000	33600	35900

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.62	F	E			5.08	E	0.00	F
2 (to Manhattan Avenue)	6.47	F	E			5.13	E	0.00	F
3 (to Westshore Boulevard)	6.66	F	E			5.34	E	0.00	F
	Bicycle LOS	6.62	F	Pedestrian LOS		5.20	E	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.51	F	E			4.53	E	0.00	F
2 (to Lois Avenue)	6.37	F	E			4.55	E	0.00	F

1 (to Manhattan Avenue)	6.56	F	E		4.74	E		0.00	F
	Bicycle LOS	**6.51**	**F**	**Pedestrian LOS**	**4.63**	**E**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_201~3.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2015 No Build AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	45700	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	25	8	2	0.5152	45700	2514	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	48100	2646	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5568	49600	2728	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	10	2	0.5152	45700	2056	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	8	16	2	0.1818	48100	2164	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5568	49600	2232	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	1773	1758	1.1	97.07	F	Yes#	12.8	F
2 (to Lois Avenue)	2757	1752	1.19	119.54	F	No	4.7	F
3 (to Dale Mabry Highway)	2297	1720	2.3	659.2	F	Yes#	2.8	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1688	1758	1.04	77.43	E	Yes#	14.8	E
2 (to Manhattan Avenue)	1731	1758	1.07	86.26	F	Yes#	6.3	F
1 (to Lois Avenue)	2279	1752	0.99	35.81	D	No	23.0	C

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	150	540	610
2	**	**	340	1170	1250
3	**	**	540	1810	1880
4	**	**	740	2440	2510
*	**	**	340	1170	1250
Lanes	**Hourly Volume In Both Directions**				
2	**	**	270	980	1120

4	**	**	620	2130	2270
6	**	**	980	3290	3420
8	**	**	1350	4440	4570
*	**	**	620	2130	2270
Lanes	**Annual Average Daily Traffic**				
2	**	**	2700	9800	11200
4	**	**	6200	21300	22700
6	**	**	9800	32900	34200
8	**	**	13500	44400	45700
*	**	**	6200	21300	22700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.62	F	E			5.08	E	0.00	F
2 (to Lois Avenue)	6.47	F	E			5.13	E	0.00	F
3 (to Dale Mabry Highway)	6.66	F	E			5.34	E	0.00	F
	Bicycle LOS	**6.62**	**F**	**Pedestrian LOS**		**5.20**	**E**	**Bus LOS**	**.00**	**F**

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.51	F	E			4.53	E	0.00	F
2 (to Manhattan Avenue)	6.37	F	E			4.55	E	0.00	F

1 (to Lois Avenue)	6.56	F	E		4.74	E		0.00	F
	Bicycle LOS	**6.51**	**F**	**Pedestrian LOS**	**4.63**	**E**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_201~2.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Dale Mabry Highway	**End Intersection**	Westshore Boulevard
Study Period	K100	**Peak Direction**	Westbound		
User Notes	2015 PM - Build				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	33000	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.5152	33000	1815	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	8	16	2	0.1818	36200	1991	2	45	Restrictive
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	10	2	0.5568	38900	2140	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	20	32	2	0.5152	33000	1485	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	1	5	2	0.1818	36200	1629	2	45	Restrictive
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	No	25	8	2	0.5568	38900	1750	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Lois Avenue)	1853	1752	0.8	25.09	C	No	25.7	C
2 (to Manhattan Avenue)	1593	1758	0.98	64.62	E	Yes#	7.9	F
3 (to Westshore Boulevard)	1757	1758	1.09	96.17	F	Yes#	13.6	F

Arterial Length	1.25	Weighted g/C	##	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Dale Mabry Highway)	1251	1720	1.25	192.21	F	Yes#	7.8	F
2 (to Lois Avenue)	1698	1752	0.73	22.37	C	No	16.3	E
1 (to Manhattan Avenue)	1382	1749	0.86	49.58	D	Yes#	20.0	D

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	470	920	1020
2	**	**	1020	1940	2070
3	**	**	1580	2970	3130
4	**	**	2140	3990	4180
*	**	**	1020	1940	2070
Lanes	**Hourly Volume In Both Directions**				
2	**	**	850	1670	1860

4	**	**	1850	3530	3770
6	**	**	2870	5400	5680
8	**	**	3890	7250	7600
*	**	**	1850	3530	3770
Lanes	**Annual Average Daily Traffic**				
2	**	**	8500	16700	18600
4	**	**	18500	35300	37700
6	**	**	28700	54000	56800
8	**	**	38900	72500	76000
*	**	**	18500	35300	37700

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Lois Avenue)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
3 (to Westshore Boulevard)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Dale Mabry Highway)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
1 (to Manhattan Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Lois Avenue)	6.47	F	D			4.25	D	0.00	F
2 (to Manhattan Avenue)	6.33	F	D			4.35	D	0.00	F
3 (to Westshore Boulevard)	6.54	F	E			4.63	E	0.00	F
	Bicycle LOS	6.48	F	Pedestrian LOS		4.44	D	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Dale Mabry Highway)	6.40	F	D			3.88	D	0.00	F
2 (to Lois Avenue)	6.30	F	D			3.96	D	0.00	F

1 (to Manhattan Avenue)	6.46	F	D		4.18	D		0.00	F
	Bicycle LOS	**6.41**	**F**	**Pedestrian LOS**	**4.03**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

ARTPLAN 2007 Conceptual Planning Analysis

Description/File Information

File Name	C:\DOCUME~1\ldiaz\Desktop\GANDY_~1\ARTPLAN\AP_201~1.XML	**Date Prepared**	5/15/2009		
Program	ARTPLAN 2007	**Version Date**	3/18/08		
Analyst	LED	**Agency**	HNTB	**District**	
Arterial Name	Gandy Boulevard	**Begin Intersection**	Westshore Boulevard	**End Intersection**	Dale Mabry Highway
Study Period	K100	**Peak Direction**	Eastbound		
User Notes	2015 Build AM				

Facility Data (Auto)

Roadway Variables		Traffic Variables		Control Variables	
Area Type	Large Urbanized	**AADT**	33000	**# of Signals**	3
Class	2	**K**	0.1	**Control Type**	Semiactuated
Posted Speed	45	**D**	0.55	**Cycle Length**	200
# Thru Lanes	4	**PHF**	0.95	**Through g/C**	0.45
Median Type	Restrictive	**% Heavy Vehicles (Peak)**	9	**Left g/C**	0.1
Left Turn Lanes	Yes	**% Heavy Vehicles (Off-Peak)**	9	**Arrival Type (Peak)**	3
LT Lane(s) Storage Length	235	**% Left Turns (Peak)**	12	**Arrival Type (Off-Peak)**	3
Right Turn Lanes	No	**% Right Turns (Peak)**	12		
		% Left Turns (Off-Peak)	12		
		% Right Turns (Off-Peak)	12		
		Adj. Sat. Flow Rate (Peak)	1799		
		Adj. Sat. Flow Rate (Off-Peak)	1799		

Facility Data (Multimodal)

Peak		Off Peak	
Paved Shoulder/Bike Lane	No	**Paved Shoulder/Bike Lane**	No
Outside Lane Width	Typical	**Outside Lane Width**	Typical
Pavement Condition	Typical	**Pavement Condition**	Typical
Sidewalk	Yes	**Sidewalk**	Yes
Sidewalk/Roadway Separation	Typical	**Sidewalk/Roadway Separation**	Typical
Sidewalk/Roadway Protective Barrier	No	**Sidewalk/Roadway Protective Barrier**	No
Obstacle to Bus Stop	No	**Obstacle to Bus Stop**	No
Bus Freq	0	**Bus Freq**	2
Bus Span Of Service	0	**Bus Span Of Service**	16

Automobile Intersection and Segment Data (Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
1 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	29	6	2	0.5152	33000	1815	2	45	Restrictive
2 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	3	5	2	0.1818	36200	1991	2	45	Restrictive
3 (to Dale Mabry Highway)	205	0.29	0.12	3	Yes	No	17	27	2	0.5568	38900	2140	2	45	Restrictive

Automobile Intersection and Segment Data (Off-Peak)

Segment #	Cycle Length	Thru g/C	Left g/C	Arr. Type	Left Turn Lanes	Right Turn Lanes	% Left Turn	% Right Turn	INT # Dir. Lanes	Length	AADT	Hourly Vol.	SEG # Dir. Lanes	FFS	Median Type
3 (to Westshore Boulevard)	206	0.46	0.1	3	Yes	Yes	12	8	2	0.5152	33000	1485	2	45	Restrictive
2 (to Manhattan Avenue)	195	0.46	0.1	3	Yes	Yes	9	25	2	0.1818	36200	1629	2	45	Restrictive
1 (to Lois Avenue)	192	0.66	0.08	3	Yes	No	4	1	2	0.5568	38900	1750	2	45	Restrictive

Automobile LOS (Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
1 (to Manhattan Avenue)	1242	1758	0.77	45.95	D	Yes#	19.9	D
2 (to Lois Avenue)	2033	1752	0.88	29.4	C	No	13.7	E
3 (to Dale Mabry Highway)	1870	1726	1.87	464.74	F	Yes#	3.9	F

Arterial Length	1.25	Weighted g/C	0.43	FFS Delay		Threshold Delay		Auto Speed	###	Auto LOS	F

Automobile LOS (Off-Peak)

Segment #	Thru Mvmt Flow Rate	Adj. Sat. Flow Rate	v/c	Control Delay	Int. Approach LOS	LT Spill	Speed (mph)	Segment LOS
3 (to Westshore Boulevard)	1251	1758	0.77	49.04	D	Yes#	19.5	D
2 (to Manhattan Avenue)	1132	1758	0.7	43.37	D	Yes#	10.7	F
1 (to Lois Avenue)	1768	1757	0.76	23.71	C	No	27.0	C

Arterial Length	1.25	Weighted g/C	##	FFS Delay	130.4	Threshold Delay	0.0	Auto Speed	19.6	Auto LOS	D

Automobile Service Volumes

Note: The maximum normally acceptable directional service volume for LOS E in Florida for this facility type and area type is 1000 vphpl.

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	**	150	530	590
2	**	**	340	1140	1210
3	**	**	530	1760	1820
4	**	**	730	2370	2430
*	**	**	340	1140	1210
Lanes	**Hourly Volume In Both Directions**				
2	**	**	270	960	1080

4	**	**	620	2070	2190
6	**	**	960	3200	3310
8	**	**	1330	4310	4420
*	**	**	620	2070	2190
Lanes	**Annual Average Daily Traffic**				
2	**	**	2700	9600	10800
4	**	**	6200	20700	21900
6	**	**	9600	32000	33100
8	**	**	13300	43100	44200
*	**	**	6200	20700	21900

Multimodal Segment Data (Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
1 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
3 (to Dale Mabry Highway)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Multimodal Segment Data (Off-Peak)

Segment #	Pave Shldr /Bike Lane	Outside Lane Width	Pave Cond	Side walk	Sidewalk Roadway Separation	Sidewalk Roadway Protective Barrier	Obstacle To Bus Stop	Bus Freq	Bus Span Service
3 (to Westshore Boulevard)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
2 (to Manhattan Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A
1 (to Lois Avenue)	No	Typical	Typical	Yes	Typical	No	No	0	N/A

Pedestrian SubSegment Data (Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
1 (to Manhattan Avenue)	100			Yes			Typical			No		
2 (to Lois Avenue)	100			Yes			Typical			No		
3 (to Dale Mabry Highway)	100			Yes			Typical			No		

Pedestrian SubSegment Data (Off-Peak)

	% of Segment			Sidewalk			Separation			Barrier		
Segment #	1	2	3	1	2	3	1	2	3	1	2	3
3 (to Westshore Boulevard)	100			Yes			Typical			No		
2 (to Manhattan Avenue)	100			Yes			Typical			No		
1 (to Lois Avenue)	100			Yes			Typical			No		

Multimodal LOS (Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
1 (to Manhattan Avenue)	6.47	F	D			4.25	D	0.00	F
2 (to Lois Avenue)	6.33	F	D			4.35	D	0.00	F
3 (to Dale Mabry Highway)	6.54	F	E			4.63	E	0.00	F
	Bicycle LOS	6.48	F	Pedestrian LOS		4.44	D	Bus LOS	.00	F

Multimodal LOS (Off-Peak)

	Bicycle LOS		Pedestrian LOS					Bus LOS	
Segment #	Score	Segment	1	2	3	Score	Segment	Adj. Buses	Segment
3 (to Westshore Boulevard)	6.40	F	D			3.88	D	0.00	F
2 (to Manhattan Avenue)	6.30	F	D			3.96	D	0.00	F

1 (to Lois Avenue)	6.46	F	D		4.18	D		0.00	F
	Bicycle LOS	**6.41**	**F**	**Pedestrian LOS**	**4.03**	**D**	**Bus LOS**	**.00**	**F**

MultiModal Service Volume Tables

Bicycle

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	****	****	****	****	****
2	****	****	****	****	350
3	****	****	****	300	530
4	****	****	****	390	700
*	****	****	****	****	350
Lanes	**Hourly Volume In Both Directions**				
2	****	****	****	****	****
4	****	****	****	****	640
6	****	****	****	540	960
8	****	****	****	710	1280
*	****	****	****	****	640
Lanes	**Annual Average Daily Traffic**				
2	****	****	****	****	****
4	****	****	****	****	6400
6	****	****	****	5400	9600
8	****	****	****	7100	12800
*	****	****	****	****	6400

Pedestrian

	A	B	C	D	E
Lanes	**Hourly Volume In Peak Direction**				
1	**	100	580	> 580	***
2	**	210	1160	> 1160	***
3	**	310	1750	> 1750	***
4	**	410	2330	> 2330	***
*	**	210	1160	> 1160	***
Lanes	**Hourly Volume In Both Directions**				
2	**	190	1060	> 1060	***
4	**	380	2120	> 2120	***
6	**	560	3180	> 3180	***
8	**	750	4230	> 4230	***
*	**	380	2120	> 2120	***
Lanes	**Annual Average Daily Traffic**				
2	**	1900	10600	> 10600	***
4	**	3800	21200	> 21200	***
6	**	5600	31800	> 31800	***
8	**	7500	42300	> 42300	***
*	**	3800	21200	> 21200	***

Bus

A	B	C	D	E
Buses Per Hour In Peak Direction				
>7.00	>5.00	>=4.00	>=3.00	>=2.00
Buses in Study Hour in Peak Direction (Daily)				
>12.73	>9.09	>=7.27	>=5.45	>=3.64

*** Service Volumes for the specific facility being analyzed, based on # of lanes from the intersection and segment data screens.**
**** Cannot be achieved based on input data provided.**
***** Not applicable for that level of service letter grade. See generalized tables notes for more details.**
 # Under the given conditions, left turn lane storage is highly likely to overflow. The number of directional thru lanes should be reduced accordingly.
Facility weighted g/C exceeds normally acceptable upper range (0.5); verify that g/C inputs are correct.
Intersection capacity (ies) are exceeded for the full hour; an operational level analysis tool is more appropriate for this situation.

APPENDIX G

TRAFFIC DATA FOR NOISE STUDIES

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: West of Westshore Boulevard
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	**No-Build (design year)**	**Build (design year)**	
		Gandy Boulevard	**Gandy Connector**
Year : 2006	Year : 2035	Year : 2035	Year : 2035
ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 35,800
Demand 34,500	Demand 60,700	Demand 43,300	Demand 23,500
Posted Speed: 55 mph 89 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 55 mph 89 kmh
K= 10 %	K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %	D= 75.0 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

TRAFFIC DATA FOR NOISE STUDIES

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: From Westshore Boulevard to Manhattan Avenue
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	**No-Build (design year)**	**Build (design year)**	
		Gandy Boulevard	**Gandy Connector**
Year : 2006	Year : 2035	Year : 2035	Year : 2035
ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 35,800
Demand 41,000	Demand 52,800	Demand 38,100	Demand 23,500
Posted Speed: 55 mph 89 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 55 mph 89 kmh
K= 10 %	K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %	D= 75.0 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

TRAFFIC DATA FOR NOISE STUDIES

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: From Manhattan Avenue to Dale Mabry Highway
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	**No-Build (design year)**	**Build (design year)**	
		Gandy Boulevard	**Gandy Connector**
Year : 2006	Year : 2035	Year : 2035	Year : 2035
ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 35,800
Demand 47,000	Demand 54,200	Demand 40,800	Demand 23,500
Posted Speed: 55 mph 89 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 55 mph 89 kmh
K= 10 %	K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %	D= 75.0 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

TRAFFIC DATA FOR NOISE STUDIES

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: East of Dale Mabry Highway
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 26,000	ADT : LOS(C) 26,000	ADT : LOS(C) 26,000
Demand 26,500	Demand 34,000	Demand 36,500
Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Westshore Blvd., North of Gandy Boulevard
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,100	ADT : LOS(C) 9,100	ADT : LOS(C) 9,100
Demand 18,000	Demand 23,800	Demand 21,100
Posted Speed: 35 mph 56 kmh	Posted Speed: 35 mph 56 kmh	Posted Speed: 35 mph 56 kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Westshore Blvd., South of Gandy Boulevard
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,100	ADT : LOS(C) 9,100	ADT : LOS(C) 9,100
Demand 19,500	Demand 20,300	Demand 20,500
Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Manhattan Ave., North of Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,100	ADT : LOS(C) 21,400	ADT : LOS(C) 21,400
Demand 8,600	Demand 28,300	Demand 27,500
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Manhattan Ave., South of Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,100	ADT : LOS(C) 9,100	ADT : LOS(C) 9,100
Demand 7,000	Demand 12,800	Demand 13,600
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Dale Mabry Hwy., North of Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 34,700	ADT : LOS(C) 34,700	ADT : LOS(C) 34,700
Demand 37,000	Demand 54,300	Demand 53,300
Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 04/23/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Dale Mabry Hwy., South of Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 34,700	ADT : LOS(C) 34,700	ADT : LOS(C) 34,700
Demand 40,000	Demand 42,500	Demand 41,700
Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh	Posted Speed: 45 mph 72 kmh
K= 10 %	K= 10 %	K= 10 %
D= 54.6 %	D= 54.6 %	D= 54.6 %
T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.	T= 5.9 % for 24 hrs.
T= 3.0 % Design hr.	T= 3.0 % Design hr.	T= 3.0 % Design hr.
1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV	1.6 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 05/06/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Selmon Expressway., North of Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 55,200	ADT : LOS(C) 55,200	ADT : LOS(C) 55,200
Demand 28,000	Demand 38,800	Demand 46,900
Posted Speed: 55 mph 89 kmh	Posted Speed: 55 mph 89 kmh	Posted Speed: 55 mph 89 kmh
K= 10 %	K= 10 %	K= 10 %
D= 55.3 %	D= 55.3 %	D= 55.3 %
T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 4.7 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 05/06/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Ramp – Selmon Expy SB Off Ramp to EB Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,000	ADT : LOS(C) 9,000	ADT : LOS(C) 9,000
Demand 8,700	Demand 12,000	Demand 6,300
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= 10 %	K= 10 %	K= 10 %
D= 55.3 %	D= 55.3 %	D= 55.3 %
T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 4.7 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 05/06/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Ramp – Selmon Expy SB Off Ramp to WB Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,000	ADT : LOS(C) 9,000	ADT : LOS(C) 9,000
Demand 5,000	Demand 7,000	Demand 6,800
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= 10 %	K= 10 %	K= 10 %
D= 55.3 %	D= 55.3 %	D= 55.3 %
T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 4.7 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 05/06/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Selmon Expy NB On Ramp from WB Gandy Blvd
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,000	ADT : LOS(C) 9,000	ADT : LOS(C) 9,000
Demand 8,700	Demand 12,000	Demand 6,300
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= 10 %	K= 10 %	K= 10 %
D= 55.3 %	D= 55.3 %	D= 55.3 %
T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 4.7 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 05/06/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Selmon Expy NB On Ramp from NB Dale Mabry Highway
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	No-Build (design year)	Build (design year)
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) 9,000	ADT : LOS(C) 9,000	ADT : LOS(C) 9,000
Demand 5,600	Demand 7,800	Demand 6,400
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= 10 %	K= 10 %	K= 10 %
D= 55.3 %	D= 55.3 %	D= 55.3 %
T= 5.9 % for 24 hrs.	T= 9.1 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= 3.0 % Design hr.	T= 4.7 % Design hr.	T= 4.7 % Design hr.
1.6 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

DATE: 05/18/09
PREPARED BY: Luis Diaz, PE, HNTB Corporation
Work Program Item Segment No(s):
Federal Aid Number(s):
Project Description: Gandy Connector PD&E Study
Segment Description: Gandy Connector Ramps (Build Scenario)
(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume referenced in the FDOT LOS tables or Demand, whichever is less.

Existing Facility	EB Off Ramp	WB On Ramp
Year : 2007	Year : 2035	Year : 2035
ADT : LOS(C) N/A	ADT : LOS(C) 9,000	ADT : LOS(C) 9,000
Demand N/A	Demand 1,200	Demand 1,200
Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh	Posted Speed: ____mph ____kmh
K= N/A %	K= 10 %	K= 10 %
D= N/A %	D= 55.3 %	D= 55.3 %
T= N/A % for 24 hrs.	T= 9.1 % for 24 hrs.	T= 9.1 % for 24 hrs.
T= N/A % Design hr.	T= 4.7 % Design hr.	T= 4.7 % Design hr.
N/A % Heavy Trucks DHV	3.4 % Heavy Trucks DHV	3.4 % Heavy Trucks DHV
N/A % Medium Trucks DHV	1.3 % Medium Trucks DHV	1.3 % Medium Trucks DHV
____% Buses DHV	____% Buses DHV	____% Buses DHV
____% Motorcycles DHV	____% Motorcycles DHV	____% Motorcycles DHV

Traffic Data Source: _____

CO Florida 2004 Air Quality Traffic Datasheet
PREPARED BY: Corey Carter, American Consulting Engineers of Florida
Source: Design Traffic Technical Memorandum prepared by HNTB Corporation
Work Program Item Segment No(s): N/A
Federal Aid Number(s): N/A
Project Description: Gandy Connector PD&E Study
Intersection Analyzed: Gandy Boulevard @ Dale Mabry Highway
Peak Traffic Period Analyzed: AM Peak
Northbound/Southbound Movement: Dale Mabry Highway
Eastbound/Westbound Movement: Gandy Boulevard

Model Input Variables

Year	Southbound		Northbound		Eastbound		Westbound	
	Approach Traffic	Approach Speed	Approach Traffic	Approach Speed	Approach Traffic	Approach Speed	Approach Traffic	Approach Speed
Existing (2007)	874	45	1142	45	1295	45	819	45
No-Build (2035)	2962	45	2321	45	3052	45	1541	45
Build (2035)	2909	45	2277	45	1618	45	1324	45

04-27-2010

CO Florida 2004

Project: Gandy Connector PD&E
Facility: Gandy Boulevard @ Dale Mabry Highway - Existing
Analyst: Corey Carter

Environmental Data:

Temperature:	50 F
Reid Vapor Pressure:	11.5 psi
Land Use:	Urban
Stability Class:	D
Surface Roughness:	175
Background Concentration:	1-hr = 5.0 ppm 8-hr = 3.0 ppm

Project Data:

Region:	4: Hillsborough / Pinellas
Year:	2007
Intersection Type:	4 x 4 Intersection
Max Approach Traffic Volume:	1295 veh/hour
Speed:	45

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	10	150	6
Default Rec 2	10	50	6
Default Rec 3	50	10	6
Default Rec 4	150	10	6
Default Rec 5	50	50	6
Default Rec 6	10	-150	6
Default Rec 7	10	-50	6
Default Rec 8	50	-10	6
Default Rec 9	150	-10	6
Default Rec 10	50	-50	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	9.3	5.6
Default Rec 2	9.7	5.8
Default Rec 3	10.2	6.1
Default Rec 4	10.1	6.1
Default Rec 5	8.9	5.3
Default Rec 6	10.1	6.1
Default Rec 7	10.2	6.1
Default Rec 8	9.7	5.8
Default Rec 9	9.3	5.6
Default Rec 10	8.9	5.3

****
PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED
****

04-27-2010

CO Florida 2004

Project: Gandy Connector PD&E
Facility: Gandy Boulevard @ Dale Mabry Highway - No Build
Analyst: Corey Carter

Environmental Data:

Temperature:	50 F
Reid Vapor Pressure:	11.5 psi
Land Use:	Urban
Stability Class:	D
Surface Roughness:	175
Background Concentration:	1-hr = 5.0 ppm 8-hr = 3.0 ppm

Project Data:

Region:	4: Hillsborough / Pinellas
Year:	2035
Intersection Type:	4 x 4 Intersection
Max Approach Traffic Volume:	3052 veh/hour
Speed:	45

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	10	150	6
Default Rec 2	10	50	6
Default Rec 3	50	10	6
Default Rec 4	150	10	6
Default Rec 5	50	50	6
Default Rec 6	10	-150	6
Default Rec 7	10	-50	6
Default Rec 8	50	-10	6
Default Rec 9	150	-10	6
Default Rec 10	50	-50	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	9.9	5.9
Default Rec 2	10.5	6.3
Default Rec 3	10.5	6.3
Default Rec 4	10.2	6.1
Default Rec 5	9.3	5.6
Default Rec 6	10.2	6.1
Default Rec 7	10.5	6.3
Default Rec 8	10.5	6.3
Default Rec 9	9.9	5.9
Default Rec 10	9.3	5.6

****
PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED
****

04-27-2010

CO Florida 2004

Project: Gandy Connector PD&E
Facility: Gandy Boulevard @ Dale Mabry Highway - Build
Analyst: Corey Carter

Environmental Data:

Temperature:	50 F
Reid Vapor Pressure:	11.5 psi
Land Use:	Urban
Stability Class:	D
Surface Roughness:	175
Background Concentration:	1-hr = 5.0 ppm 8-hr = 3.0 ppm

Project Data:

Region:	4: Hillsborough / Pinellas
Year:	2035
Intersection Type:	4 x 4 Intersection
Max Approach Traffic Volume:	2909 veh/hour
Speed:	45

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	10	150	6
Default Rec 2	10	50	6
Default Rec 3	50	10	6
Default Rec 4	150	10	6
Default Rec 5	50	50	6
Default Rec 6	10	-150	6
Default Rec 7	10	-50	6
Default Rec 8	50	-10	6
Default Rec 9	150	-10	6
Default Rec 10	50	-50	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	9.8	5.9
Default Rec 2	10.4	6.2
Default Rec 3	10.4	6.2
Default Rec 4	10.1	6.1
Default Rec 5	9.0	5.4
Default Rec 6	10.1	6.1
Default Rec 7	10.4	6.2
Default Rec 8	10.4	6.2
Default Rec 9	9.8	5.9
Default Rec 10	9.0	5.4

****
PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED
****

APPENDIX H

LOCHNER

H. W. LOCHNER, INC., 13577 FEATHER SOUND, SUITE 600, CLEARWATER, FL 33762

(727) 572-7111
FAX (727) 571-3371

MEMORANDUM

To: **Daniel Lamb, Systems Planning Administrator**
FDOT District 7

From: **Sujeeva (Anu) Weerasuriya, H. W. Lochner**

Cc: **Gabor Farkasfalvy, FDOT Project Manager**
Jeff Novotny, American Consulting Engineers
Herschel C. Conner, H. W. Lochner Project Manager
Bob Munchinski, H. W. Lochner

Date: **June 6, 2001**

Subject: **K, D, and T Factors**
Gandy Boulevard from Dale Mabry Highway to
San Martin Boulevard
FPN's 255822-1-22-01, 409861-1-22-01

The K_{30} and D_{30} (K and D) factors for the 2025 (design year) are proposed according to the procedures outlined in the FDOT's Design Traffic Handbook dated March 1997.

Following is a summary of the K, D, and T factors along the Gandy Boulevard corridor and along Crosstown Expressway during the past three years.

Count Station	Location	Factor	Year 1998	1999	2000
5251	Gandy E. of Clark	K	9.89	10.37	9.65
		D	54.37	54.55	54.96
		T	7.34	5.67	14.41
0028	Gandy E. of Gandy Bridge	K	9.89	10.37	9.65
		D	54.37	54.55	54.96
		T	7.39	4.82	5.91
0086*	Gandy 1mile E. of San Martin	K	8.94	11.95	9.09
		D	53.94	53.74	53.99
		T	4.05	3.78	3.98

(cont.)

Count Station	Location	Factor	Year 1998	1999	2000
5244	Crosstown W. of Euclid	K	9.89	10.37	9.65
		D	54.37	54.55	54.96
		T	8.45	8.51	9.13

* - This count station is in Pinellas County. All the other stations are in Hillsborough County.

The truck factor (T) along Gandy Boulevard was lower during 1998 compared to 1998 and 2000. The Station No. 5251 on Gandy Boulevard reported unusually high T value during 2000. Looking at the past three year period, a **T** value of **5.9** for normal roadway segments and a **T** value of **9.1** for controlled access toll roadway segments are proposed for future years in the study area.

Gandy Boulevard and Crosstown Expressway have the same K and D factors for each year. The minimum and maximum K and D factors based on the past three years, Florida State wide data, and national data published in Highway Capacity Manual (HCM) 1984 are tabulated bellow.

	K Gandy & Crosstown	K Florida Data	K National Data
Observed Minimum	9.98	9.20	9.0
Observed Maximum	10.37	11.5	10.0

	D Gandy & Crosstown	D Florida Data	D National Data
Observed Minimum	54.37	50.8	50.0
Observed Maximum	54.96	67.1	55.0

Looking at the observed K and D values and comparing with the state and national values for similar roadways, **K=10.0** and **D=54.6** are recommended for future years for all roadways segments in the study area.

In summary, **K=10.0** and **D=54.6** are proposed to be used in the study for opening year and design year. For normal roadways **T=5.9** and for controlled access toll roads **T=9.1** are proposed in the study for opening year and design year. Concurrence from the district office is expected on these proposed factors.

Anu Weerasuriya

From: Daniel Lamb <Daniel.Lamb@dot.state.fl.us>
To: SWEERASURIYA <SWEERASURIYA@hwlochner.com>
Cc: Gabor Farkasfalvy <Gabor.Farkasfalvy@dot.state.fl.us>
Sent: Friday, June 08, 2001 11:18 AM
Attach: MEMO 060801 111330.txt
Subject: Re: K, D, and T factors for Gandy Boulevard Project

Anu,

I have reviewed your recommended K, D and T factors for the Gandy Boulevard project. I concur that your recommended factors are reasonable for use in this study based on both our available traffic statisitcs and our experience in working with this corridor in the previous MIS.

Please let me know if you need any futher infomation or have any questions.

Danny Lamb

APPENDIX I

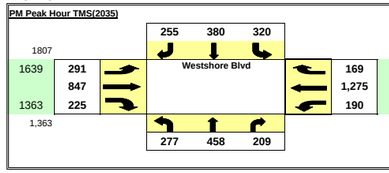
ATTACHMENT A

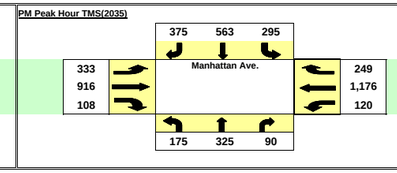
2035 Turning Movement Volumes - Alternative One (No access to Gandy)

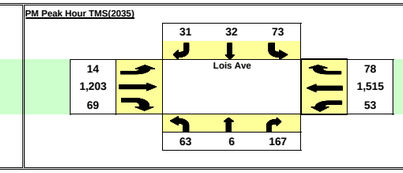
WESTSHORE BOULEVARD | MANHATTAN AVENUE | LOIS AVENUE | DALE MABRY HIGHWAY

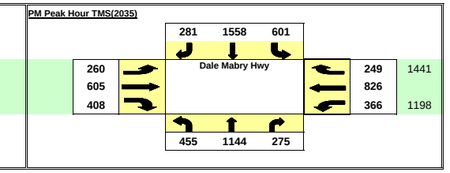
NO TOLL

PM Peak Hour TMS(2035)

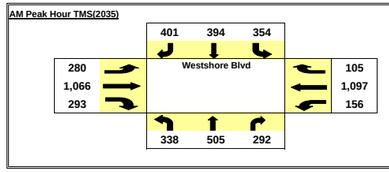


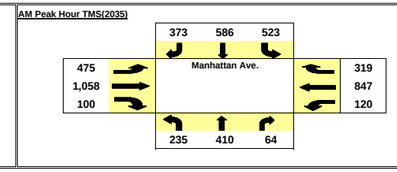


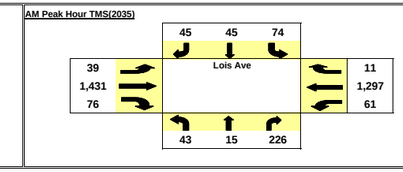


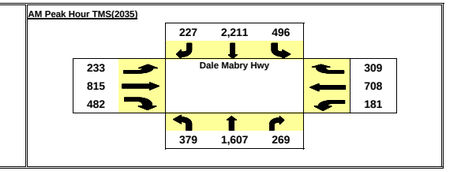


AM Peak Hour TMS(2035)



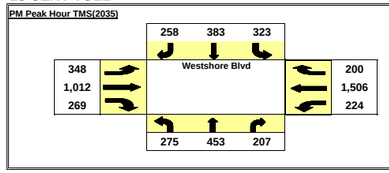


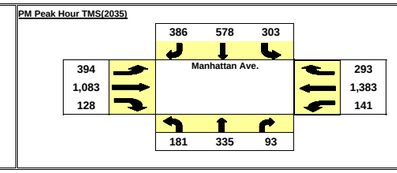


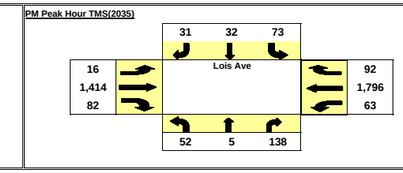


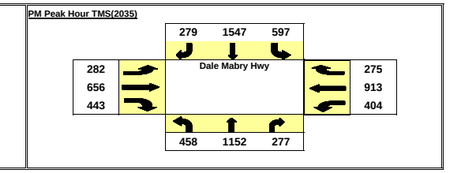
25 CENT TOLL

PM Peak Hour TMS(2035)

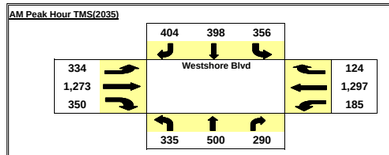


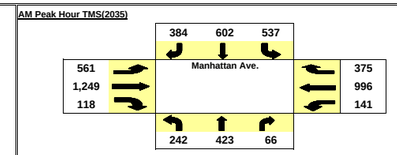


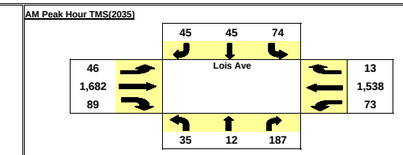


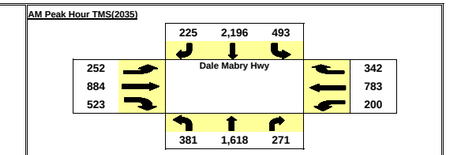


AM Peak Hour TMS(2035)



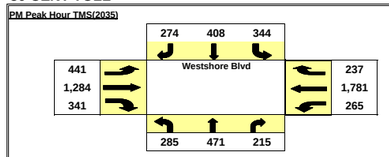


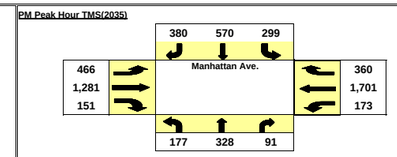


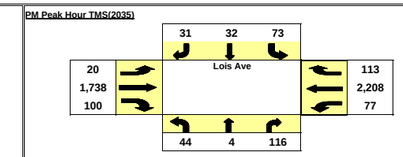


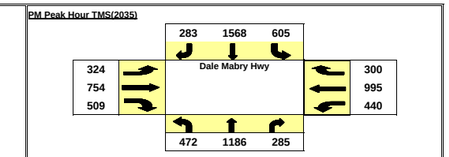
50 CENT TOLL

PM Peak Hour TMS(2035)

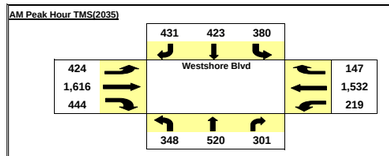


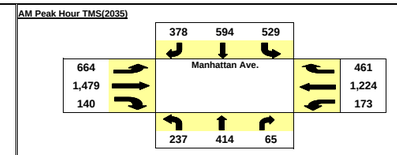


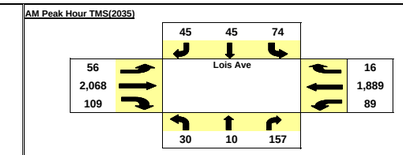


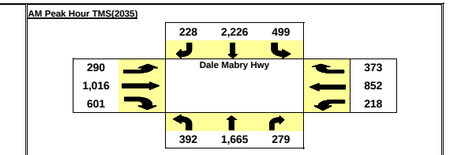


AM Peak Hour TMS(2035)



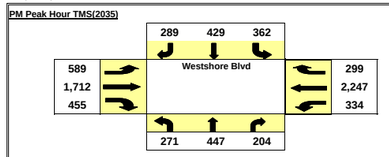


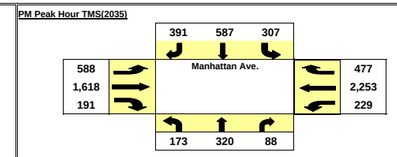


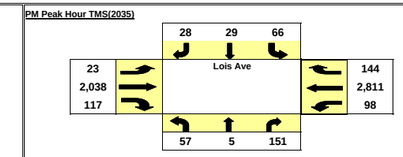


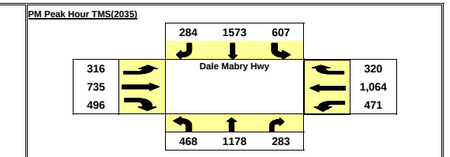
NO BUILD

PM Peak Hour TMS(2035)

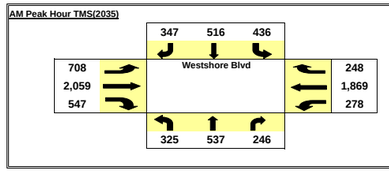


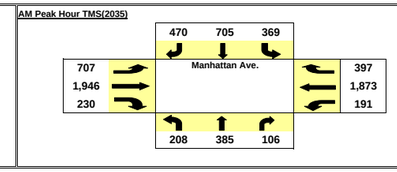


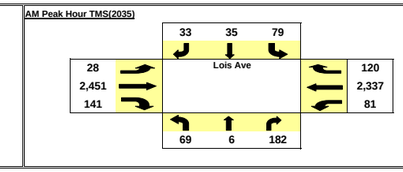


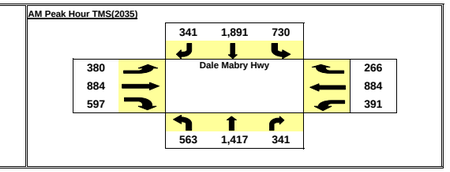


AM Peak Hour TMS(2035)







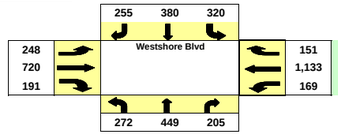


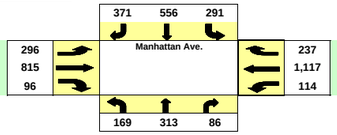
2035 Turning Movement Volumes - Alternative 2 (Access to Gandy near Dale Mabry)

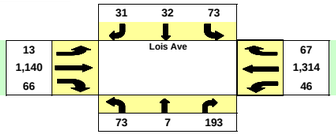
WESTSHORE BOULEVARD | MANHATTAN AVENUE | LOIS AVENUE | DALE MABRY HIGHWAY

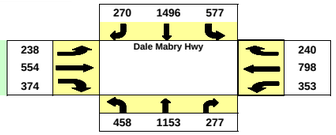
NO TOLL

PM Peak Hour TMS(2035)

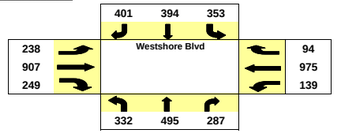


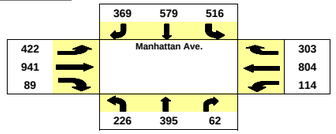


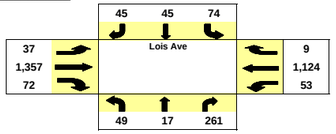


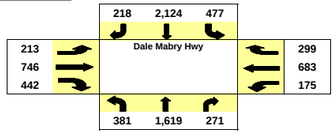


AM Peak Hour TMS(2035)



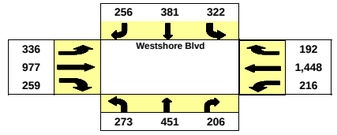


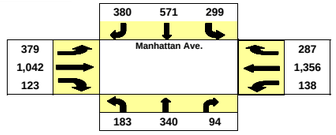


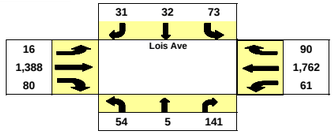


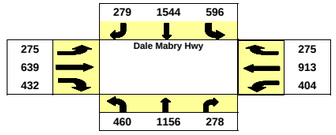
25 CENT TOLL

PM Peak Hour TMS(2035)

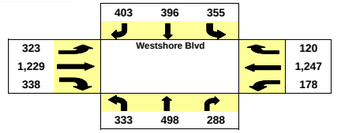


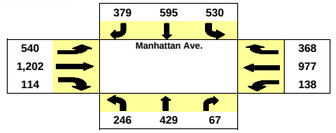


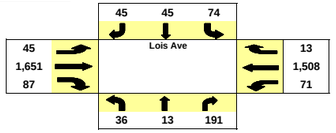


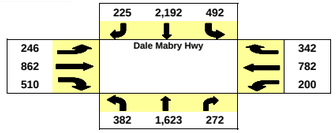


AM Peak Hour TMS(2035)



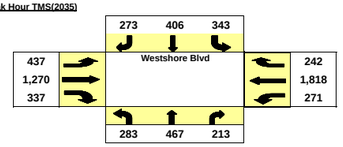


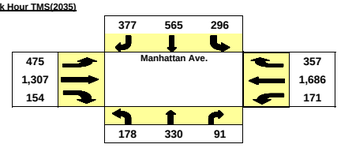


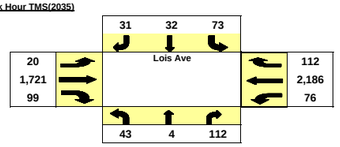


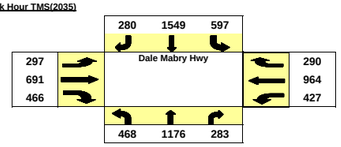
50 CENT TOLL

PM Peak Hour TMS(2035)

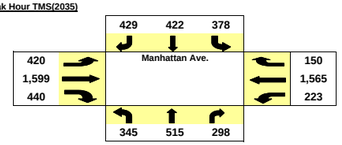


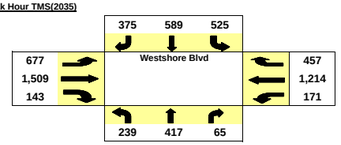


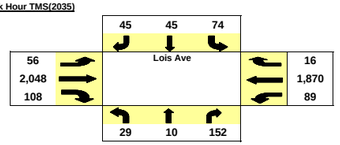


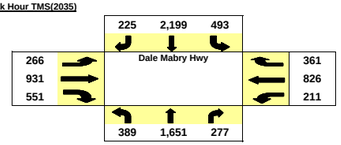


AM Peak Hour TMS(2035)



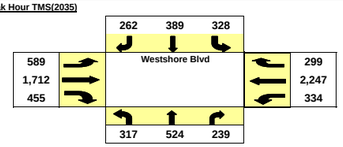


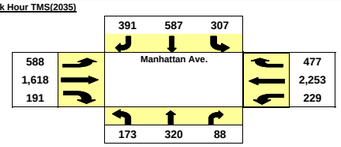


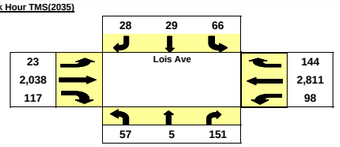


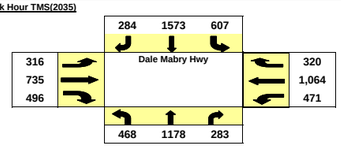
NO BUILD

PM Peak Hour TMS(2035)

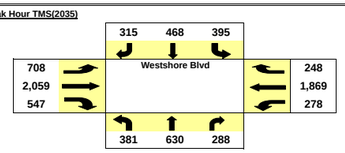


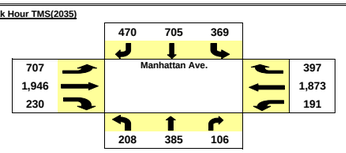


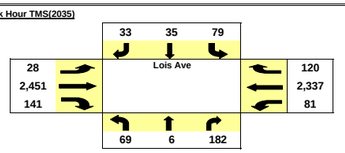


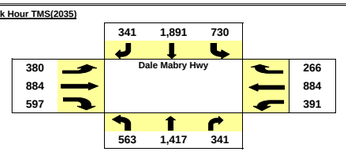


AM Peak Hour TMS(2035)





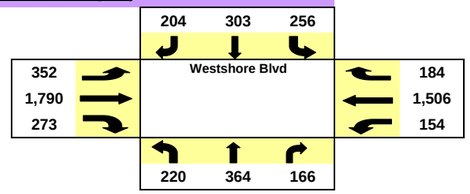




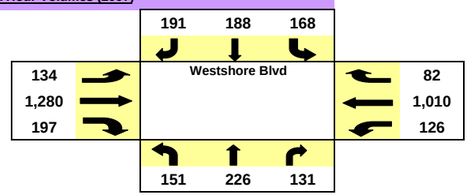
2007 Estimated Turning Movement Volumes

WESTSHORE BOULEVARD

PM Peak Hour Volumes (2007)

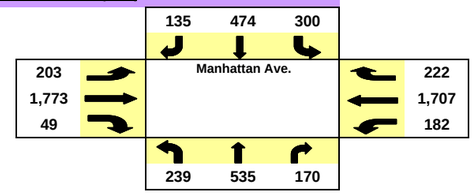


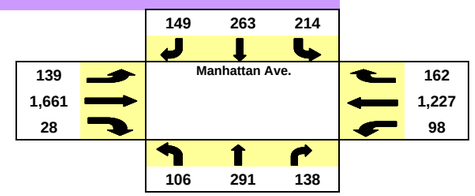
AM Peak Hour Volumes (2007)



MANHATTAN AVENUE

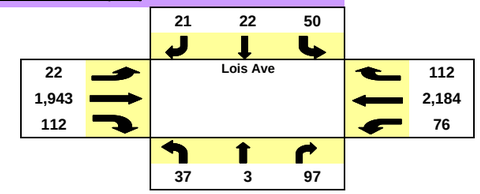
PM Peak Hour Volumes (2007)

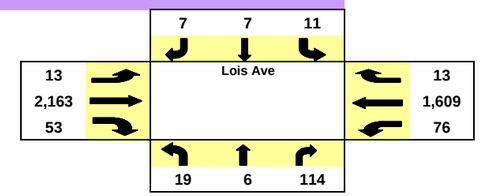




LOIS AVENUE

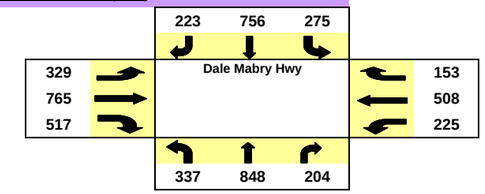
PM Peak Hour Volumes (2007)

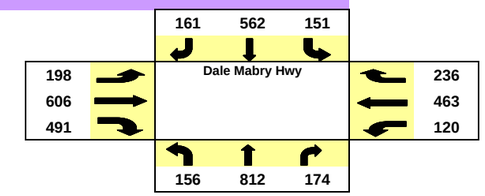




DALE MABRY HIGHWAY

PM Peak Hour Volumes (2007)





ATTACHMENT B

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 1 (No access to Gandy) AM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	356	5.9	0.957	49.3	LOS D	333	0.99	1.48	17.5
8T	T	532	5.8	1.086	72.0	LOS E	741	1.00	2.11	13.0
8R	R	307	5.9	0.839	28.1	LOS C	212	0.95	1.23	22.0
Approach		**1194**	**5.9**	**1.085**	**53.9**	**LOS D**	**741**	**0.98**	**1.69**	**15.9**
Gandy Blvd (E)										
1L	L	164	6.1	0.696	20.6	LOS C	176	0.90	1.09	26.0
6T	T	1155	5.9	0.696	11.8	LOS B	200	0.92	1.07	29.9
6R	R	111	6.3	0.694	14.3	LOS B	177	0.90	1.07	28.3
Approach		**1431**	**5.9**	**0.696**	**13.0**	**LOS B**	**200**	**0.91**	**1.07**	**29.2**
Westshore Blvd (N)										
7L	L	373	5.9	0.884	33.3	LOS C	247	0.96	1.28	21.4
4T	T	415	5.8	0.970	37.2	LOS D	361	0.99	1.50	19.3
4R	R	422	5.9	0.795	18.8	LOS B	209	0.95	1.17	25.9
Approach		**1209**	**5.9**	**0.970**	**29.6**	**LOS C**	**361**	**0.96**	**1.32**	**21.9**
Gandy Blvd (W)										
5L	L	295	5.8	0.712	18.2	LOS B	176	0.86	1.06	27.1
2T	T	1122	5.9	0.711	9.4	LOS A	194	0.87	0.92	30.7
2R	R	308	5.8	0.711	11.9	LOS B	176	0.86	1.03	29.8
Approach		**1724**	**5.9**	**0.711**	**11.4**	**LOS B**	**194**	**0.87**	**0.96**	**29.8**
All Vehicles		**5558**	**5.9**	**1.086**	**24.9**	**LOS C**	**741**	**0.92**	**1.22**	**23.4**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 1 (No access to Gandy) PM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	292	5.8	0.630	21.8	LOS C	124	0.86	1.06	25.5
8T	T	482	5.8	0.806	16.6	LOS B	225	0.94	1.17	27.1
8R	R	220	5.9	0.502	13.7	LOS B	87	0.82	0.97	28.7
Approach		**993**	**5.8**	**0.806**	**17.5**	**LOS B**	**225**	**0.89**	**1.09**	**26.9**
Gandy Blvd (E)										
1L	L	200	6.0	0.781	22.7	LOS C	232	0.93	1.16	25.1
6T	T	1342	5.9	0.781	13.8	LOS B	262	0.94	1.15	28.7
6R	R	178	5.6	0.780	16.3	LOS B	232	0.93	1.15	27.2
Approach		**1719**	**5.9**	**0.780**	**15.1**	**LOS B**	**262**	**0.94**	**1.15**	**28.0**
Westshore Blvd (N)										
7L	L	337	5.9	0.918	39.5	LOS D	264	0.98	1.34	19.7
4T	T	400	6.0	0.840	21.1	LOS C	231	0.96	1.22	24.9
4R	R	268	5.9	0.749	20.5	LOS C	156	0.93	1.11	25.1
Approach		**1006**	**6.0**	**0.918**	**27.1**	**LOS C**	**264**	**0.96**	**1.23**	**22.8**
Gandy Blvd (W)										
5L	L	306	5.9	0.586	16.9	LOS B	127	0.80	1.00	27.8
2T	T	892	5.9	0.586	8.2	LOS A	139	0.81	0.77	31.0
2R	R	237	5.9	0.587	10.6	LOS B	127	0.80	0.92	30.4
Approach		**1435**	**5.9**	**0.587**	**10.5**	**LOS B**	**139**	**0.81**	**0.85**	**30.1**
All Vehicles		**5153**	**5.9**	**0.918**	**16.6**	**LOS B**	**264**	**0.90**	**1.07**	**27.1**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 2 (Access to Gandy near Dale Mabry) AM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	349	6.0	0.773	26.7	LOS C	183	0.91	1.16	23.6
8T	T	521	6.0	0.897	24.3	LOS C	319	0.97	1.36	23.5
8R	R	302	6.0	0.680	17.4	LOS B	142	0.88	1.07	26.6
Approach		**1173**	**6.0**	**0.897**	**23.3**	**LOS C**	**319**	**0.93**	**1.22**	**24.2**
Gandy Blvd (E)										
1L	L	146	6.1	0.600	18.6	LOS B	135	0.86	1.04	26.9
6T	T	1026	5.9	0.601	9.9	LOS A	152	0.87	0.94	30.7
6R	R	99	6.1	0.600	12.3	LOS B	135	0.86	1.01	29.5
Approach		**1273**	**6.0**	**0.601**	**11.1**	**LOS B**	**152**	**0.86**	**0.95**	**30.1**
Westshore Blvd (N)										
7L	L	372	5.9	0.765	24.1	LOS C	177	0.90	1.13	24.6
4T	T	415	5.8	0.840	19.3	LOS B	222	0.93	1.19	25.7
4R	R	422	5.9	0.707	14.5	LOS B	167	0.90	1.08	28.2
Approach		**1208**	**5.9**	**0.840**	**19.1**	**LOS B**	**222**	**0.91**	**1.13**	**26.1**
Gandy Blvd (W)										
5L	L	251	6.0	0.588	16.6	LOS B	125	0.79	1.00	27.9
2T	T	955	5.9	0.589	8.0	LOS A	136	0.79	0.75	31.1
2R	R	262	5.7	0.589	10.3	LOS B	125	0.79	0.90	30.4
Approach		**1467**	**5.9**	**0.588**	**9.9**	**LOS A**	**136**	**0.79**	**0.82**	**30.3**
All Vehicles		**5121**	**5.9**	**0.897**	**15.4**	**LOS B**	**319**	**0.87**	**1.02**	**27.6**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 2 (Access to Gandy near Dale Mabry) PM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	286	5.9	0.534	19.1	LOS B	97	0.80	1.00	26.8
8T	T	473	5.9	0.694	11.9	LOS B	165	0.87	1.04	29.8
8R	R	216	6.0	0.429	11.8	LOS B	70	0.77	0.92	29.8
Approach		**975**	**5.9**	**0.694**	**14.0**	**LOS B**	**165**	**0.83**	**1.00**	**28.8**
Gandy Blvd (E)										
1L	L	178	5.6	0.651	18.9	LOS B	158	0.85	1.05	26.8
6T	T	1193	5.9	0.652	10.3	LOS B	176	0.86	0.97	30.6
6R	R	159	5.7	0.652	12.6	LOS B	158	0.85	1.02	29.3
Approach		**1528**	**5.8**	**0.652**	**11.5**	**LOS B**	**176**	**0.86**	**0.99**	**30.0**
Westshore Blvd (N)										
7L	L	337	5.9	0.766	25.0	LOS C	170	0.91	1.13	24.2
4T	T	400	6.0	0.721	13.8	LOS B	169	0.91	1.08	28.7
4R	R	268	5.9	0.629	15.2	LOS B	119	0.87	1.03	27.8
Approach		**1006**	**6.0**	**0.766**	**17.9**	**LOS B**	**170**	**0.90**	**1.08**	**26.7**
Gandy Blvd (W)										
5L	L	261	5.7	0.484	15.9	LOS B	93	0.75	0.93	28.0
2T	T	758	5.9	0.484	7.3	LOS A	101	0.75	0.67	31.3
2R	R	201	6.0	0.484	9.6	LOS A	93	0.75	0.82	30.6
Approach		**1220**	**5.9**	**0.484**	**9.5**	**LOS A**	**101**	**0.75**	**0.75**	**30.4**
All Vehicles		**4729**	**5.9**	**0.766**	**12.9**	**LOS B**	**176**	**0.83**	**0.95**	**29.1**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 1 (No access to Gandy) AM Peak - 25 Cent Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	353	5.9	1.252	155.9	LOS F	874	1.00	2.33	7.9
8T	T	526	5.9	1.370	193.1	LOS F	1486	1.00	3.06	6.1
8R	R	305	5.9	1.089	89.5	LOS F	525	1.00	1.81	11.1
Approach		**1184**	**5.9**	**1.369**	**155.3**	**LOS F**	**1486**	**1.00**	**2.52**	**7.5**
Gandy Blvd (E)										
1L	L	195	5.7	0.746	21.1	LOS C	211	0.91	1.12	25.8
6T	T	1365	5.9	0.745	12.4	LOS B	237	0.92	1.10	29.5
6R	R	131	6.1	0.744	14.8	LOS B	211	0.91	1.11	28.0
Approach		**1691**	**5.9**	**0.745**	**13.6**	**LOS B**	**237**	**0.92**	**1.10**	**28.9**
Westshore Blvd (N)										
7L	L	375	5.9	0.997	52.9	LOS D	379	1.00	1.56	16.8
4T	T	419	6.0	1.106	78.3	LOS E	645	1.00	2.02	12.3
4R	R	425	5.9	0.873	24.2	LOS C	254	0.97	1.26	23.5
Approach		**1219**	**5.9**	**1.106**	**51.6**	**LOS D**	**645**	**0.99**	**1.61**	**16.3**
Gandy Blvd (W)										
5L	L	352	6.0	0.854	22.1	LOS C	279	0.95	1.20	25.4
2T	T	1340	5.9	0.854	13.0	LOS B	308	0.95	1.18	29.2
2R	R	368	6.0	0.854	15.8	LOS B	279	0.95	1.18	27.5
Approach		**2061**	**5.9**	**0.853**	**15.0**	**LOS B**	**308**	**0.95**	**1.18**	**28.1**
All Vehicles		**6155**	**5.9**	**1.370**	**48.9**	**LOS D**	**1486**	**0.96**	**1.50**	**16.8**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 1 (No access to Gandy) PM Peak - 25 Cent Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	289	5.9	0.745	26.5	LOS C	158	0.92	1.13	23.7
8T	T	477	5.9	0.926	28.6	LOS C	331	0.98	1.41	22.0
8R	R	218	6.0	0.586	16.2	LOS B	106	0.88	1.02	27.2
Approach		**984**	**5.9**	**0.926**	**25.2**	**LOS C**	**331**	**0.94**	**1.24**	**23.5**
Gandy Blvd (E)										
1L	L	236	5.9	1.088	72.9	LOS E	848	1.00	2.18	13.8
6T	T	1585	5.9	1.086	64.2	LOS E	951	1.00	2.22	14.1
6R	R	211	5.7	1.082	66.4	LOS E	848	1.00	2.18	13.6
Approach		**2032**	**5.9**	**1.085**	**65.4**	**LOS E**	**951**	**1.00**	**2.21**	**14.0**
Westshore Blvd (N)										
7L	L	340	5.9	1.049	70.8	LOS E	451	1.00	1.69	14.1
4T	T	403	6.0	0.937	33.3	LOS C	315	0.99	1.40	20.5
4R	R	272	5.9	0.853	28.5	LOS C	197	0.96	1.21	21.9
Approach		**1015**	**5.9**	**1.048**	**44.5**	**LOS D**	**451**	**0.99**	**1.44**	**17.9**
Gandy Blvd (W)										
5L	L	366	6.0	0.773	19.3	LOS B	201	0.88	1.09	26.6
2T	T	1065	5.9	0.772	10.9	LOS B	212	0.88	1.05	30.5
2R	R	283	6.0	0.771	12.8	LOS B	201	0.88	1.07	29.2
Approach		**1715**	**5.9**	**0.772**	**13.1**	**LOS B**	**212**	**0.88**	**1.06**	**29.3**
All Vehicles		**5746**	**5.9**	**1.088**	**39.2**	**LOS D**	**951**	**0.95**	**1.57**	**19.0**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 2 (Access to Gandy near Dale Mabry) AM Peak - 25 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	351	6.0	1.170	121.5	LOS F	722	1.00	2.12	9.6
8T	T	524	5.9	1.291	158.6	LOS F	1298	1.00	2.86	7.2
8R	R	303	5.9	1.020	65.7	LOS E	405	1.00	1.62	13.7
Approach		**1178**	**5.9**	**1.291**	**123.7**	**LOS F**	**1298**	**1.00**	**2.32**	**8.9**
Gandy Blvd (E)										
1L	L	187	5.9	0.730	21.0	LOS C	201	0.91	1.12	25.9
6T	T	1313	5.9	0.732	12.2	LOS B	226	0.92	1.09	29.6
6R	R	126	5.6	0.733	14.6	LOS B	201	0.91	1.10	28.1
Approach		**1625**	**5.8**	**0.732**	**13.4**	**LOS B**	**226**	**0.92**	**1.09**	**29.0**
Westshore Blvd (N)										
7L	L	374	5.9	0.966	45.7	LOS D	330	0.99	1.46	18.2
4T	T	417	6.0	1.069	64.8	LOS E	557	1.00	1.86	13.9
4R	R	424	5.9	0.851	22.3	LOS C	240	0.96	1.23	24.3
Approach		**1215**	**5.9**	**1.069**	**44.1**	**LOS D**	**557**	**0.98**	**1.52**	**17.9**
Gandy Blvd (W)										
5L	L	340	5.9	0.823	20.9	LOS C	250	0.93	1.16	25.9
2T	T	1294	5.9	0.824	11.9	LOS B	276	0.93	1.13	29.8
2R	R	356	5.9	0.824	14.6	LOS B	250	0.93	1.14	28.1
Approach		**1989**	**5.9**	**0.824**	**13.9**	**LOS B**	**276**	**0.93**	**1.14**	**28.7**
All Vehicles		**6007**	**5.9**	**1.291**	**41.4**	**LOS D**	**1298**	**0.95**	**1.44**	**18.4**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 2 (Access to Gandy near Dale Mabry) PM Peak - 25 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	287	5.9	0.703	24.6	LOS C	145	0.90	1.10	24.4
8T	T	475	5.9	0.885	23.1	LOS C	284	0.97	1.31	24.0
8R	R	217	6.0	0.558	15.3	LOS B	99	0.86	1.00	27.7
Approach		**979**	**5.9**	**0.885**	**21.8**	**LOS C**	**284**	**0.93**	**1.18**	**24.9**
Gandy Blvd (E)										
1L	L	227	5.7	0.923	33.1	LOS C	397	1.00	1.43	21.5
6T	T	1524	5.9	0.922	23.7	LOS C	461	1.00	1.44	23.8
6R	R	202	5.9	0.922	26.8	LOS C	397	1.00	1.43	22.5
Approach		**1953**	**5.9**	**0.922**	**25.1**	**LOS C**	**461**	**1.00**	**1.44**	**23.3**
Westshore Blvd (N)										
7L	L	339	5.9	1.130	101.5	LOS F	611	1.00	1.95	10.9
4T	T	401	6.0	0.995	48.2	LOS D	418	1.00	1.59	16.7
4R	R	269	5.9	0.912	38.2	LOS D	240	0.98	1.30	18.9
Approach		**1010**	**5.9**	**1.129**	**63.4**	**LOS E**	**611**	**0.99**	**1.63**	**14.4**
Gandy Blvd (W)										
5L	L	354	5.9	0.677	18.0	LOS B	166	0.85	1.05	27.2
2T	T	1028	5.9	0.677	9.3	LOS A	182	0.85	0.89	30.8
2R	R	273	5.9	0.677	11.7	LOS B	166	0.85	1.02	29.9
Approach		**1656**	**5.9**	**0.677**	**11.5**	**LOS B**	**182**	**0.85**	**0.95**	**29.8**
All Vehicles		**5598**	**5.9**	**1.130**	**27.4**	**LOS C**	**611**	**0.94**	**1.28**	**22.5**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 1 (No access to Gandy) AM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	366	6.0	1.782	392.9	LOS F	1621	1.00	2.93	3.5
8T	T	547	5.9	1.940	452.8	LOS F	2541	1.00	3.61	2.8
8R	R	317	6.0	1.539	280.2	LOS F	1196	1.00	2.58	4.3
Approach		**1231**	**5.9**	**1.942**	**390.5**	**LOS F**	**2541**	**1.00**	**3.14**	**3.3**
Gandy Blvd (E)										
1L	L	231	6.1	0.805	22.8	LOS C	271	0.93	1.19	25.1
6T	T	1613	5.9	0.804	14.0	LOS B	302	0.94	1.17	28.6
6R	R	155	5.8	0.803	16.4	LOS B	271	0.93	1.17	27.1
Approach		**1998**	**5.9**	**0.804**	**15.2**	**LOS B**	**302**	**0.94**	**1.17**	**28.0**
Westshore Blvd (N)										
7L	L	400	6.0	1.227	136.3	LOS F	882	1.00	2.40	8.8
4T	T	445	5.8	1.357	182.3	LOS F	1222	1.00	2.87	6.4
4R	R	454	5.9	1.034	55.3	LOS E	509	1.00	1.75	15.3
Approach		**1299**	**5.9**	**1.356**	**123.7**	**LOS F**	**1222**	**1.00**	**2.33**	**8.9**
Gandy Blvd (W)										
5L	L	446	5.8	1.028	45.9	LOS D	725	1.00	1.85	18.2
2T	T	1701	5.9	1.028	36.3	LOS D	830	1.00	1.88	19.6
2R	R	467	6.0	1.029	39.6	LOS D	725	1.00	1.85	18.6
Approach		**2615**	**5.9**	**1.028**	**38.5**	**LOS D**	**830**	**1.00**	**1.87**	**19.1**
All Vehicles		**7143**	**5.9**	**1.940**	**108.1**	**LOS F**	**2541**	**0.98**	**1.98**	**9.8**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 1 (No access to Gandy) PM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	300	6.0	1.060	81.8	LOS F	454	1.00	1.70	12.7
8T	T	496	5.8	1.269	148.3	LOS F	1180	1.00	2.72	7.6
8R	R	226	5.8	0.813	30.5	LOS C	177	0.96	1.18	21.2
Approach		**1022**	**5.9**	**1.270**	**102.7**	**LOS F**	**1180**	**0.99**	**2.08**	**10.3**
Gandy Blvd (E)										
1L	L	279	5.8	1.168	107.1	LOS F	1284	1.00	2.76	10.5
6T	T	1875	5.9	1.168	97.9	LOS F	1594	1.00	2.89	10.5
6R	R	249	6.0	1.168	100.8	LOS F	1283	1.00	2.75	10.1
Approach		**2403**	**5.9**	**1.168**	**99.2**	**LOS F**	**1594**	**1.00**	**2.86**	**10.4**
Westshore Blvd (N)										
7L	L	362	5.8	1.284	165.7	LOS F	934	1.00	2.42	7.5
4T	T	429	5.8	1.120	89.4	LOS F	720	1.00	2.08	11.2
4R	R	288	5.9	1.036	67.0	LOS E	397	1.00	1.60	13.5
Approach		**1079**	**5.8**	**1.285**	**109.0**	**LOS F**	**934**	**1.00**	**2.06**	**9.9**
Gandy Blvd (W)										
5L	L	464	5.8	0.867	22.9	LOS C	308	0.96	1.23	25.0
2T	T	1352	5.9	0.868	13.8	LOS B	339	0.96	1.21	28.7
2R	R	359	5.8	0.867	16.6	LOS B	308	0.96	1.22	27.0
Approach		**2175**	**5.9**	**0.868**	**16.2**	**LOS B**	**339**	**0.96**	**1.22**	**27.5**
All Vehicles		**6679**	**5.9**	**1.284**	**74.3**	**LOS E**	**1594**	**0.99**	**2.08**	**12.9**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 2 (Access to Gandy near Dale Mabry) AM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	363	5.8	1.788	394.8	LOS F	1607	1.00	2.91	3.5
8T	T	542	5.9	1.957	459.7	LOS F	2540	1.00	3.59	2.8
8R	R	314	6.1	1.547	284.9	LOS F	1198	1.00	2.58	4.3
Approach		**1219**	**5.9**	**1.957**	**395.3**	**LOS F**	**2540**	**1.00**	**3.12**	**3.3**
Gandy Blvd (E)										
1L	L	235	6.0	0.825	23.7	LOS C	292	0.95	1.22	24.7
6T	T	1647	5.9	0.824	14.9	LOS B	325	0.95	1.20	28.0
6R	R	158	5.7	0.823	17.4	LOS B	292	0.95	1.21	26.6
Approach		**2040**	**5.9**	**0.824**	**16.1**	**LOS B**	**325**	**0.95**	**1.20**	**27.5**
Westshore Blvd (N)										
7L	L	398	5.8	1.260	151.1	LOS F	943	1.00	2.48	8.1
4T	T	444	5.9	1.405	204.4	LOS F	1313	1.00	2.96	5.8
4R	R	452	6.0	1.064	64.8	LOS E	577	1.00	1.87	13.8
Approach		**1293**	**5.9**	**1.405**	**139.2**	**LOS F**	**1313**	**1.00**	**2.43**	**8.1**
Gandy Blvd (W)										
5L	L	442	5.9	1.005	39.6	LOS D	637	1.00	1.70	19.7
2T	T	1683	5.9	1.005	29.9	LOS C	720	1.00	1.72	21.5
2R	R	463	5.8	1.004	33.2	LOS C	637	1.00	1.70	20.3
Approach		**2588**	**5.9**	**1.005**	**32.1**	**LOS C**	**720**	**1.00**	**1.71**	**20.9**
All Vehicles		**7140**	**5.9**	**1.957**	**108.9**	**LOS F**	**2540**	**0.99**	**1.94**	**9.8**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2035 Built Alternative 2 (Access to Gandy near Dale Mabry) PM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	298	6.0	1.035	73.6	LOS E	410	1.00	1.63	13.7
8T	T	492	5.9	1.239	135.5	LOS F	1101	1.00	2.62	8.1
8R	R	224	5.8	0.792	28.6	LOS C	169	0.96	1.16	21.8
Approach		**1014**	**5.9**	**1.240**	**93.7**	**LOS F**	**1101**	**0.99**	**2.01**	**11.0**
Gandy Blvd (E)										
1L	L	285	6.0	1.197	120.0	LOS F	1424	1.00	2.94	9.6
6T	T	1914	5.9	1.199	110.8	LOS F	1778	1.00	3.10	9.5
6R	R	255	5.9	1.197	113.7	LOS F	1424	1.00	2.94	9.2
Approach		**2454**	**5.9**	**1.200**	**112.2**	**LOS F**	**1778**	**1.00**	**3.07**	**9.5**
Westshore Blvd (N)										
7L	L	361	5.8	1.280	163.5	LOS F	923	1.00	2.40	7.6
4T	T	427	5.9	1.115	87.0	LOS F	703	1.00	2.05	11.4
4R	R	287	5.9	1.029	65.6	LOS E	389	1.00	1.59	13.7
Approach		**1075**	**5.9**	**1.280**	**107.0**	**LOS F**	**923**	**1.00**	**2.05**	**10.0**
Gandy Blvd (W)										
5L	L	460	5.9	0.858	22.5	LOS C	297	0.95	1.21	25.2
2T	T	1337	5.9	0.859	13.3	LOS B	327	0.95	1.19	28.9
2R	R	355	5.9	0.860	16.1	LOS B	297	0.95	1.20	27.3
Approach		**2152**	**5.9**	**0.859**	**15.8**	**LOS B**	**327**	**0.95**	**1.20**	**27.7**
All Vehicles		**6695**	**5.9**	**1.280**	**77.5**	**LOS E**	**1778**	**0.98**	**2.14**	**12.5**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2007 AM Peak

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	159	5.7	0.313	17.3	LOS B	45	0.74	0.94	27.6
8T	T	238	5.9	0.361	8.5	LOS A	58	0.76	0.75	31.3
8R	R	138	5.8	0.278	10.7	LOS B	38	0.74	0.87	30.6
Approach		**535**	**5.8**	**0.361**	**11.7**	**LOS B**	**58**	**0.75**	**0.84**	**29.8**
Gandy Blvd (E)										
1L	L	133	6.0	0.396	14.2	LOS B	65	0.57	0.80	28.5
6T	T	1063	5.9	0.396	6.0	LOS A	68	0.56	0.51	32.3
6R	R	86	5.8	0.396	7.8	LOS A	65	0.57	0.64	31.4
Approach		**1282**	**5.9**	**0.396**	**6.9**	**LOS A**	**68**	**0.56**	**0.55**	**31.8**
Westshore Blvd (N)										
7L	L	177	5.7	0.274	15.6	LOS B	36	0.67	0.88	28.3
4T	T	198	6.1	0.305	7.7	LOS A	42	0.68	0.67	31.7
4R	R	201	6.0	0.261	8.5	LOS A	37	0.66	0.70	31.0
Approach		**575**	**5.9**	**0.305**	**10.4**	**LOS B**	**42**	**0.67**	**0.74**	**30.3**
Gandy Blvd (W)										
5L	L	141	5.7	0.509	14.5	LOS B	96	0.59	0.84	28.5
2T	T	1347	5.9	0.508	6.3	LOS A	98	0.58	0.55	32.2
2R	R	207	5.8	0.509	8.2	LOS A	96	0.59	0.69	31.3
Approach		**1695**	**5.8**	**0.508**	**7.2**	**LOS A**	**98**	**0.59**	**0.59**	**31.7**
All Vehicles		**4087**	**5.9**	**0.509**	**8.1**	**LOS A**	**98**	**0.61**	**0.63**	**31.2**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Westshore Blvd

2007 PM Peak

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Westshore Blvd (S)										
3L	L	232	6.0	1.089	105.4	LOS F	440	1.00	1.68	10.6
8T	T	383	6.0	1.324	183.9	LOS F	1089	1.00	2.52	6.3
8R	R	175	5.7	0.806	39.8	LOS D	168	0.97	1.19	18.5
Approach		**790**	**5.9**	**1.326**	**129.1**	**LOS F**	**1089**	**0.99**	**1.98**	**8.6**
Gandy Blvd (E)										
1L	L	162	6.1	0.765	20.8	LOS C	236	0.90	1.13	26.0
6T	T	1585	5.9	0.764	12.1	LOS B	260	0.91	1.10	29.7
6R	R	194	5.7	0.763	14.4	LOS B	236	0.90	1.11	28.2
Approach		**1942**	**5.9**	**0.764**	**13.0**	**LOS B**	**260**	**0.90**	**1.10**	**29.2**
Westshore Blvd (N)										
7L	L	269	5.9	0.774	27.9	LOS C	160	0.94	1.14	23.2
4T	T	319	6.0	0.688	14.9	LOS B	150	0.92	1.07	28.0
4R	R	215	6.0	0.627	17.1	LOS B	113	0.91	1.04	26.8
Approach		**804**	**6.0**	**0.773**	**19.9**	**LOS B**	**160**	**0.92**	**1.08**	**25.8**
Gandy Blvd (W)										
5L	L	371	5.9	0.909	23.5	LOS C	380	0.98	1.28	24.8
2T	T	1884	5.9	0.909	14.5	LOS B	408	0.97	1.26	28.3
2R	R	287	5.9	0.908	17.2	LOS B	380	0.98	1.28	26.7
Approach		**2542**	**5.9**	**0.909**	**16.1**	**LOS B**	**408**	**0.97**	**1.27**	**27.5**
All Vehicles		**6078**	**5.9**	**1.324**	**30.3**	**LOS C**	**1089**	**0.95**	**1.28**	**21.5**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

ATTACHMENT C

W. Gandy Blvd Manhattan Ave

2035 Alternative 1 (No access to Gandy) AM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	247	6.0	1.127	118.2	LOS F	584	1.00	1.90	9.8
8T	T	432	5.8	1.128	106.2	LOS F	743	1.00	2.08	9.8
8R	R	67	6.0	0.283	18.3	LOS B	45	0.88	0.95	26.1
Approach		**746**	**5.9**	**1.130**	**102.3**	**LOS F**	**743**	**0.99**	**1.92**	**10.4**
Gandy Blvd (E)										
1L	L	126	5.6	0.630	20.5	LOS C	157	0.88	1.07	26.1
6T	T	892	5.9	0.630	11.6	LOS B	177	0.89	1.04	30.0
6R	R	336	6.0	0.630	14.2	LOS B	157	0.88	1.05	28.4
Approach		**1354**	**5.9**	**0.630**	**13.1**	**LOS B**	**177**	**0.88**	**1.04**	**29.2**
Manhattan Ave (N)										
7L	L	551	5.8	0.947	32.7	LOS C	362	0.98	1.41	21.6
4T	T	617	5.8	0.902	18.2	LOS B	318	0.97	1.29	26.3
4R	R	393	5.9	0.714	14.0	LOS B	157	0.87	1.05	28.5
Approach		**1558**	**5.8**	**0.947**	**22.3**	**LOS C**	**362**	**0.95**	**1.27**	**24.7**
Gandy Blvd (W)										
5L	L	500	5.8	0.909	28.5	LOS C	301	0.98	1.30	22.9
2T	T	1114	5.9	0.909	19.0	LOS B	349	0.99	1.31	25.9
2R	R	105	5.7	0.905	22.2	LOS C	301	0.98	1.29	24.3
Approach		**1719**	**5.9**	**0.908**	**21.9**	**LOS C**	**349**	**0.99**	**1.30**	**24.8**
All Vehicles		**5377**	**5.9**	**1.128**	**30.9**	**LOS C**	**743**	**0.95**	**1.32**	**21.4**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 1 (No access to Gandy) PM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	184	6.0	0.511	19.7	LOS B	90	0.83	1.01	26.5
8T	T	342	5.8	0.511	10.5	LOS B	99	0.85	0.95	30.7
8R	R	95	6.3	0.247	11.6	LOS B	35	0.77	0.88	30.0
Approach		**621**	**6.0**	**0.511**	**13.4**	**LOS B**	**99**	**0.83**	**0.96**	**29.1**
Gandy Blvd (E)										
1L	L	126	5.6	0.618	17.7	LOS B	146	0.80	1.02	27.4
6T	T	1238	5.9	0.617	9.2	LOS A	159	0.80	0.87	31.1
6R	R	262	5.7	0.618	11.4	LOS B	146	0.80	0.98	30.1
Approach		**1626**	**5.8**	**0.618**	**10.2**	**LOS B**	**159**	**0.80**	**0.90**	**30.6**
Manhattan Ave(N)										
7L	L	311	5.8	0.827	25.4	LOS C	200	0.92	1.18	24.1
4T	T	593	5.9	0.827	15.7	LOS B	223	0.93	1.16	27.6
4R	R	395	5.8	0.814	18.3	LOS B	192	0.92	1.14	26.1
Approach		**1297**	**5.9**	**0.827**	**18.8**	**LOS B**	**223**	**0.93**	**1.16**	**26.2**
Gandy Blvd (W)										
5L	L	351	6.0	0.620	17.4	LOS B	136	0.83	1.02	27.5
2T	T	964	5.9	0.620	8.7	LOS A	150	0.84	0.82	30.9
2R	R	114	6.1	0.620	11.1	LOS B	136	0.83	0.98	30.2
Approach		**1429**	**5.9**	**0.620**	**11.0**	**LOS B**	**150**	**0.84**	**0.88**	**29.9**
All Vehicles		**4973**	**5.9**	**0.827**	**13.1**	**LOS B**	**223**	**0.85**	**0.97**	**28.9**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 2 (Access to Gandy near Dale Mabry) AM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	238	5.9	0.902	49.9	LOS D	264	0.98	1.37	17.4
8T	T	416	6.0	0.900	38.3	LOS D	316	1.00	1.42	19.0
8R	R	65	6.2	0.239	15.9	LOS B	36	0.85	0.92	27.4
Approach		**719**	**6.0**	**0.900**	**40.1**	**LOS D**	**316**	**0.98**	**1.36**	**18.9**
Gandy Blvd (E)										
1L	L	120	5.8	0.594	19.4	LOS B	139	0.86	1.05	26.6
6T	T	846	5.9	0.595	10.6	LOS B	156	0.87	0.98	30.5
6R	R	319	6.0	0.594	13.1	LOS B	139	0.86	1.02	29.0
Approach		**1285**	**5.9**	**0.594**	**12.0**	**LOS B**	**156**	**0.86**	**0.99**	**29.7**
Manhattan Ave (N)										
7L	L	543	5.9	0.903	27.8	LOS C	302	0.95	1.30	23.2
4T	T	609	5.9	0.868	15.8	LOS B	281	0.95	1.22	27.5
4R	R	388	5.9	0.686	13.4	LOS B	147	0.85	1.03	28.9
Approach		**1542**	**5.9**	**0.904**	**19.4**	**LOS B**	**302**	**0.93**	**1.20**	**26.0**
Gandy Blvd (W)										
5L	L	444	5.9	0.787	21.6	LOS C	201	0.93	1.13	25.6
2T	T	991	5.9	0.788	12.6	LOS B	230	0.94	1.12	29.4
2R	R	94	6.4	0.790	15.3	LOS B	201	0.93	1.11	27.7
Approach		**1528**	**5.9**	**0.788**	**15.4**	**LOS B**	**230**	**0.94**	**1.12**	**28.0**
All Vehicles		**5074**	**5.9**	**0.903**	**19.2**	**LOS B**	**316**	**0.92**	**1.15**	**26.0**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 2 (Access to Gandy near Dale Mabry) PM Peak - No Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	178	5.6	0.436	17.9	LOS B	73	0.79	0.97	27.3
8T	T	329	5.8	0.436	9.0	LOS A	79	0.80	0.82	31.1
8R	R	91	5.6	0.209	10.8	LOS B	28	0.73	0.86	30.5
Approach		**596**	**5.7**	**0.436**	**12.0**	**LOS B**	**79**	**0.78**	**0.87**	**29.7**
Gandy Blvd (E)										
1L	L	120	5.8	0.561	16.7	LOS B	121	0.75	0.98	27.9
6T	T	1176	5.9	0.560	8.2	LOS A	130	0.74	0.76	31.3
6R	R	249	6.0	0.561	10.3	LOS B	121	0.75	0.90	30.6
Approach		**1545**	**5.9**	**0.560**	**9.2**	**LOS A**	**130**	**0.74**	**0.80**	**30.9**
Manhattan Ave (N)										
7L	L	306	5.9	0.757	22.0	LOS C	166	0.88	1.11	25.4
4T	T	585	6.0	0.757	12.7	LOS B	183	0.89	1.08	29.3
4R	R	391	5.9	0.741	15.2	LOS B	160	0.88	1.07	27.8
Approach		**1282**	**5.9**	**0.758**	**15.7**	**LOS B**	**183**	**0.89**	**1.08**	**27.8**
Gandy Blvd (W)										
5L	L	312	5.8	0.536	16.5	LOS B	107	0.79	0.98	27.9
2T	T	858	5.9	0.537	7.9	LOS A	118	0.79	0.73	31.1
2R	R	101	5.9	0.537	10.2	LOS B	107	0.79	0.88	30.4
Approach		**1270**	**5.9**	**0.537**	**10.2**	**LOS B**	**118**	**0.79**	**0.80**	**30.1**
All Vehicles		**4693**	**5.9**	**0.757**	**11.6**	**LOS B**	**183**	**0.80**	**0.89**	**29.6**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 1 (No access to Gandy) AM Peak - 25 Cent Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	255	5.9	1.314	191.3	LOS F	865	1.00	2.26	6.7
8T	T	445	5.8	1.313	180.2	LOS F	1121	1.00	2.53	6.4
8R	R	69	5.8	0.311	19.7	LOS B	51	0.90	0.97	25.5
Approach		**769**	**5.9**	**1.311**	**169.5**	**LOS F**	**1121**	**0.99**	**2.30**	**7.0**
Gandy Blvd (E)										
1L	L	148	6.0	0.745	24.0	LOS C	226	0.93	1.17	24.6
6T	T	1048	5.9	0.746	15.0	LOS B	258	0.95	1.16	28.0
6R	R	395	5.8	0.746	17.7	LOS B	226	0.93	1.16	26.4
Approach		**1592**	**5.9**	**0.746**	**16.5**	**LOS B**	**258**	**0.94**	**1.16**	**27.2**
Manhattan Ave (N)										
7L	L	565	5.8	1.137	91.3	LOS F	891	1.00	2.35	11.8
4T	T	634	5.8	1.060	52.4	LOS D	706	1.00	1.99	15.9
4R	R	404	5.9	0.856	20.5	LOS C	226	0.94	1.19	25.1
Approach		**1602**	**5.9**	**1.137**	**58.1**	**LOS E**	**891**	**0.98**	**1.91**	**15.3**
Gandy Blvd (W)										
5L	L	591	5.9	1.048	55.9	LOS E	650	1.00	1.88	16.2
2T	T	1315	5.9	1.047	46.1	LOS D	789	1.00	1.95	17.2
2R	R	124	5.6	1.051	49.6	LOS D	650	1.00	1.88	16.3
Approach		**2030**	**5.9**	**1.047**	**49.1**	**LOS D**	**789**	**1.00**	**1.93**	**16.8**
All Vehicles		**5993**	**5.9**	**1.314**	**58.3**	**LOS E**	**1121**	**0.98**	**1.77**	**15.1**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 1 (No access to Gandy) PM Peak - 25 Cent Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	191	5.8	0.627	22.8	LOS C	116	0.89	1.06	25.1
8T	T	353	5.9	0.626	13.2	LOS B	131	0.90	1.03	29.1
8R	R	98	6.1	0.296	12.6	LOS B	43	0.83	0.92	29.3
Approach		**641**	**5.9**	**0.626**	**16.0**	**LOS B**	**131**	**0.89**	**1.02**	**27.7**
Gandy Blvd (E)										
1L	L	148	6.0	0.851	24.2	LOS C	288	0.93	1.23	24.6
6T	T	1456	5.9	0.850	15.7	LOS B	307	0.94	1.21	27.6
6R	R	308	5.8	0.851	17.6	LOS B	288	0.93	1.21	26.5
Approach		**1913**	**5.9**	**0.850**	**16.7**	**LOS B**	**307**	**0.93**	**1.21**	**27.1**
Manhattan Ave (N)										
7L	L	319	6.0	1.067	71.0	LOS E	531	1.00	1.82	14.0
4T	T	608	5.9	1.068	60.2	LOS E	641	1.00	1.93	14.7
4R	R	406	5.9	1.074	66.8	LOS E	550	1.00	1.85	13.6
Approach		**1334**	**5.9**	**1.075**	**64.8**	**LOS E**	**641**	**1.00**	**1.88**	**14.2**
Gandy Blvd (W)										
5L	L	415	5.8	0.817	20.8	LOS C	223	0.91	1.13	26.0
2T	T	1140	5.9	0.817	12.4	LOS B	237	0.92	1.11	29.6
2R	R	135	5.9	0.818	14.3	LOS B	223	0.91	1.12	28.3
Approach		**1689**	**5.9**	**0.817**	**14.6**	**LOS B**	**237**	**0.92**	**1.12**	**28.4**
All Vehicles		**5577**	**5.9**	**1.074**	**27.5**	**LOS C**	**641**	**0.94**	**1.32**	**22.6**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 2 (Access to Gandy near Dale Mabry) AM Peak - 25 Cent Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	259	5.8	1.321	195.5	LOS F	890	1.00	2.29	6.5
8T	T	452	6.0	1.322	184.4	LOS F	1154	1.00	2.57	6.3
8R	R	71	5.7	0.315	19.8	LOS B	52	0.90	0.97	25.4
Approach		**781**	**5.9**	**1.321**	**173.3**	**LOS F**	**1154**	**0.99**	**2.33**	**6.8**
Gandy Blvd (E)										
1L	L	145	6.2	0.726	23.2	LOS C	212	0.92	1.15	24.9
6T	T	1028	5.9	0.727	14.2	LOS B	242	0.93	1.13	28.4
6R	R	387	5.9	0.727	16.9	LOS B	212	0.92	1.13	26.8
Approach		**1563**	**6.0**	**0.727**	**15.7**	**LOS B**	**242**	**0.93**	**1.14**	**27.6**
Manhattan Ave (N)										
7L	L	558	5.9	1.096	75.3	LOS E	758	1.00	2.13	13.5
4T	T	626	5.9	1.026	41.6	LOS D	592	1.00	1.79	18.2
4R	R	399	6.0	0.828	18.6	LOS B	207	0.92	1.15	26.0
Approach		**1583**	**5.9**	**1.097**	**47.7**	**LOS D**	**758**	**0.98**	**1.75**	**17.2**
Gandy Blvd (W)										
5L	L	568	6.0	1.025	49.5	LOS D	567	1.00	1.74	17.4
2T	T	1265	5.9	1.025	39.6	LOS D	683	1.00	1.80	18.7
2R	R	120	5.8	1.026	43.2	LOS D	567	1.00	1.74	17.7
Approach		**1955**	**5.9**	**1.025**	**42.7**	**LOS D**	**683**	**1.00**	**1.78**	**18.2**
All Vehicles		**5882**	**5.9**	**1.322**	**54.2**	**LOS D**	**1154**	**0.97**	**1.67**	**15.8**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 2 (Access to Gandy near Dale Mabry) PM Peak - 25 Cent Toll

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	193	5.7	0.619	22.7	LOS C	116	0.89	1.06	25.1
8T	T	358	5.9	0.618	13.1	LOS B	131	0.90	1.03	29.1
8R	R	99	6.1	0.293	12.7	LOS B	43	0.82	0.92	29.3
Approach		**649**	**5.9**	**0.619**	**15.9**	**LOS B**	**131**	**0.88**	**1.02**	**27.7**
Gandy Blvd (E)										
1L	L	145	6.2	0.756	21.1	LOS C	226	0.90	1.13	25.8
6T	T	1427	5.9	0.758	12.3	LOS B	250	0.90	1.10	29.6
6R	R	302	6.0	0.759	14.8	LOS B	226	0.90	1.11	28.0
Approach		**1875**	**5.9**	**0.758**	**13.4**	**LOS B**	**250**	**0.90**	**1.10**	**29.0**
Manhattan Ave (N)										
7L	L	315	6.0	1.029	59.5	LOS E	451	1.00	1.68	15.7
4T	T	601	5.8	1.031	48.6	LOS D	537	1.00	1.76	16.7
4R	R	400	6.0	1.034	54.0	LOS D	459	1.00	1.69	15.5
Approach		**1316**	**5.9**	**1.034**	**52.8**	**LOS D**	**537**	**1.00**	**1.72**	**16.1**
Gandy Blvd (W)										
5L	L	399	6.0	0.727	19.1	LOS B	183	0.89	1.08	26.7
2T	T	1097	5.9	0.727	10.3	LOS B	204	0.90	0.99	30.5
2R	R	129	6.2	0.726	12.8	LOS B	183	0.89	1.06	29.2
Approach		**1626**	**6.0**	**0.727**	**12.6**	**LOS B**	**204**	**0.90**	**1.02**	**29.3**
All Vehicles		**5466**	**5.9**	**1.034**	**23.0**	**LOS C**	**537**	**0.92**	**1.22**	**24.2**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 1 (No access to Gandy) AM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	249	6.0	1.397	226.5	LOS F	952	1.00	2.35	5.8
8T	T	436	6.0	1.397	216.3	LOS F	1245	1.00	2.64	5.5
8R	R	68	5.9	0.313	19.2	LOS B	51	0.91	0.97	25.7
Approach		**754**	**6.0**	**1.397**	**201.9**	**LOS F**	**1245**	**0.99**	**2.39**	**6.0**
Gandy Blvd (E)										
1L	L	182	6.0	1.006	55.8	LOS E	642	1.00	1.81	16.2
6T	T	1288	5.9	1.007	46.1	LOS D	773	1.00	1.87	17.2
6R	R	485	6.0	1.006	49.5	LOS D	642	1.00	1.81	16.4
Approach		**1956**	**5.9**	**1.007**	**47.8**	**LOS D**	**773**	**1.00**	**1.84**	**16.9**
Manhattan Ave (N)										
7L	L	557	5.9	1.439	224.4	LOS F	1678	1.00	3.36	5.8
4T	T	625	5.9	1.294	150.7	LOS F	1472	1.00	3.10	7.5
4R	R	398	5.8	1.067	65.8	LOS E	540	1.00	1.80	13.7
Approach		**1579**	**5.9**	**1.440**	**155.4**	**LOS F**	**1678**	**1.00**	**2.87**	**7.5**
Gandy Blvd (W)										
5L	L	699	5.9	1.074	62.9	LOS E	846	1.00	2.13	15.1
2T	T	1557	5.9	1.075	53.2	LOS D	1011	1.00	2.22	15.8
2R	R	147	6.1	1.072	56.6	LOS E	845	1.00	2.13	15.1
Approach		**2404**	**5.9**	**1.074**	**56.2**	**LOS E**	**1011**	**1.00**	**2.19**	**15.5**
All Vehicles		**6693**	**5.9**	**1.439**	**93.6**	**LOS F**	**1678**	**1.00**	**2.27**	**11.0**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 1 (No access to Gandy) PM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	186	5.9	0.676	25.6	LOS C	126	0.92	1.09	24.0
8T	T	345	5.8	0.676	15.4	LOS B	145	0.92	1.07	27.7
8R	R	96	6.2	0.313	13.5	LOS B	47	0.85	0.94	28.8
Approach		**627**	**5.9**	**0.676**	**18.1**	**LOS B**	**145**	**0.91**	**1.05**	**26.6**
Gandy Blvd (E)										
1L	L	182	6.0	1.011	49.3	LOS D	687	1.00	1.84	17.5
6T	T	1791	5.9	1.010	39.8	LOS D	806	1.00	1.88	18.6
6R	R	379	5.8	1.011	43.0	LOS D	687	1.00	1.84	17.7
Approach		**2352**	**5.9**	**1.010**	**41.0**	**LOS D**	**806**	**1.00**	**1.87**	**18.4**
Manhattan Ave (N)										
7L	L	315	6.0	1.425	225.6	LOS F	1214	1.00	2.75	5.8
4T	T	600	5.8	1.425	214.8	LOS F	1594	1.00	3.13	5.5
4R	R	400	6.0	1.476	239.8	LOS F	1325	1.00	2.87	5.0
Approach		**1315**	**5.9**	**1.474**	**225.0**	**LOS F**	**1594**	**1.00**	**2.96**	**5.4**
Gandy Blvd (W)										
5L	L	491	5.9	0.764	18.8	LOS B	219	0.88	1.09	26.8
2T	T	1348	5.9	0.764	10.1	LOS B	237	0.88	1.00	30.6
2R	R	159	5.7	0.764	12.5	LOS B	219	0.88	1.07	29.4
Approach		**1999**	**5.9**	**0.764**	**12.4**	**LOS B**	**237**	**0.88**	**1.03**	**29.4**
All Vehicles		**6293**	**5.9**	**1.476**	**68.1**	**LOS E**	**1594**	**0.95**	**1.75**	**13.6**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 2 (Access to Gandy near Dale Mabry) AM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	252	6.0	1.408	230.2	LOS F	968	1.00	2.37	5.7
8T	T	439	5.9	1.407	220.0	LOS F	1266	1.00	2.66	5.4
8R	R	68	5.9	0.313	19.2	LOS B	51	0.91	0.97	25.7
Approach		**759**	**5.9**	**1.405**	**205.4**	**LOS F**	**1266**	**0.99**	**2.41**	**5.9**
Gandy Blvd (E)										
1L	L	180	6.1	0.994	53.2	LOS D	610	1.00	1.76	16.7
6T	T	1278	5.9	0.996	43.4	LOS D	733	1.00	1.81	17.8
6R	R	481	5.8	0.996	46.8	LOS D	611	1.00	1.76	16.9
Approach		**1939**	**5.9**	**0.996**	**45.2**	**LOS D**	**733**	**1.00**	**1.79**	**17.4**
Manhattan Ave (N)										
7L	L	553	6.0	1.425	218.6	LOS F	1639	1.00	3.32	6.0
4T	T	620	6.0	1.281	145.4	LOS F	1426	1.00	3.05	7.7
4R	R	395	5.8	1.056	62.0	LOS E	512	1.00	1.76	14.2
Approach		**1567**	**5.9**	**1.427**	**150.2**	**LOS F**	**1639**	**1.00**	**2.82**	**7.7**
Gandy Blvd (W)										
5L	L	713	5.9	1.097	71.1	LOS E	948	1.00	2.29	14.0
2T	T	1588	5.9	1.097	61.5	LOS E	1143	1.00	2.40	14.4
2R	R	151	6.0	1.094	64.8	LOS E	948	1.00	2.29	13.8
Approach		**2453**	**5.9**	**1.096**	**64.5**	**LOS E**	**1143**	**1.00**	**2.36**	**14.2**
All Vehicles		**6718**	**5.9**	**1.425**	**94.8**	**LOS F**	**1639**	**1.00**	**2.31**	**10.9**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2035 Alternative 2 (Access to Gandy near Dale Mabry) PM Peak - 50 Cent

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	187	5.9	0.703	27.1	LOS C	134	0.93	1.10	23.4
8T	T	347	5.8	0.704	16.8	LOS B	155	0.93	1.09	27.0
8R	R	96	6.2	0.323	14.0	LOS B	49	0.86	0.95	28.5
Approach		**630**	**5.9**	**0.704**	**19.4**	**LOS B**	**155**	**0.92**	**1.07**	**25.9**
Gandy Blvd (E)										
1L	L	180	6.1	1.011	50.7	LOS D	696	1.00	1.86	17.2
6T	T	1775	5.9	1.013	41.2	LOS D	820	1.00	1.90	18.3
6R	R	376	5.9	1.013	44.3	LOS D	696	1.00	1.86	17.4
Approach		**2331**	**5.9**	**1.013**	**42.4**	**LOS D**	**820**	**1.00**	**1.89**	**18.1**
Manhattan Ave (N)										
7L	L	312	5.8	1.388	208.7	LOS F	1145	1.00	2.68	6.2
4T	T	595	5.9	1.387	197.9	LOS F	1497	1.00	3.04	6.0
4R	R	397	5.8	1.430	221.1	LOS F	1248	1.00	2.80	5.4
Approach		**1302**	**5.8**	**1.432**	**207.6**	**LOS F**	**1497**	**1.00**	**2.88**	**5.8**
Gandy Blvd (W)										
5L	L	500	5.8	0.785	19.3	LOS B	232	0.90	1.11	26.6
2T	T	1376	5.9	0.784	10.5	LOS B	252	0.90	1.03	30.4
2R	R	162	6.1	0.784	13.0	LOS B	232	0.90	1.09	29.1
Approach		**2039**	**5.9**	**0.784**	**12.9**	**LOS B**	**252**	**0.90**	**1.06**	**29.2**
All Vehicles		**6302**	**5.9**	**1.430**	**64.7**	**LOS E**	**1497**	**0.96**	**1.74**	**14.1**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2007 AM Peak

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	112	6.2	0.461	21.1	LOS C	74	0.86	1.01	25.8
8T	T	306	5.9	0.462	11.5	LOS B	84	0.85	0.96	30.1
8R	R	145	6.2	0.387	13.8	LOS B	59	0.84	0.96	28.6
Approach		**564**	**6.0**	**0.462**	**14.0**	**LOS B**	**84**	**0.85**	**0.97**	**28.7**
Gandy Blvd (E)										
1L	L	103	5.8	0.495	14.7	LOS B	95	0.63	0.85	28.4
6T	T	1292	5.9	0.495	6.4	LOS A	99	0.63	0.57	31.9
6R	R	171	5.9	0.494	8.4	LOS A	95	0.63	0.70	31.1
Approach		**1564**	**5.9**	**0.495**	**7.2**	**LOS A**	**99**	**0.63**	**0.60**	**31.6**
Manhattan Ave (N)										
7L	L	225	5.8	0.400	16.9	LOS B	60	0.74	0.95	27.8
4T	T	277	5.8	0.397	7.9	LOS A	64	0.75	0.71	31.3
4R	R	157	5.7	0.295	9.9	LOS A	40	0.71	0.82	30.8
Approach		**659**	**5.8**	**0.401**	**11.5**	**LOS B**	**64**	**0.74**	**0.82**	**29.8**
Gandy Blvd (W)										
5L	L	146	6.1	0.615	15.6	LOS B	138	0.70	0.93	28.2
2T	T	1748	5.9	0.616	7.3	LOS A	144	0.70	0.68	31.6
2R	R	29	6.7	0.612	9.3	LOS A	138	0.70	0.81	30.8
Approach		**1925**	**5.9**	**0.616**	**7.9**	**LOS A**	**144**	**0.70**	**0.70**	**31.3**
All Vehicles		**4712**	**5.9**	**0.616**	**8.9**	**LOS A**	**144**	**0.70**	**0.72**	**30.8**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

W. Gandy Blvd Manhattan Ave

2007 PM Peak

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
Manhattan Ave (S)										
3L	L	252	6.0	0.411	14.5	LOS B	61	0.55	0.82	28.6
8T	T	563	5.9	0.411	6.3	LOS A	62	0.54	0.55	32.4
8R	R	179	6.1	0.230	8.0	LOS A	28	0.49	0.65	31.8
Approach		**994**	**5.9**	**0.411**	**8.7**	**LOS A**	**62**	**0.54**	**0.63**	**31.2**
Gandy Blvd (E)										
1L	L	192	5.8	0.853	22.7	LOS C	279	0.91	1.21	25.1
6T	T	1797	5.9	0.851	13.7	LOS B	308	0.90	1.18	28.7
6R	R	234	6.0	0.851	16.4	LOS B	279	0.91	1.19	27.1
Approach		**2222**	**5.9**	**0.851**	**14.8**	**LOS B**	**308**	**0.91**	**1.18**	**28.2**
Manhattan Ave (N)										
7L	L	316	6.0	1.230	143.6	LOS F	801	1.00	2.26	8.4
4T	T	499	5.8	1.229	132.2	LOS F	1035	1.00	2.54	8.3
4R	R	142	5.6	0.522	19.2	LOS B	89	0.91	1.02	25.7
Approach		**957**	**5.9**	**1.228**	**119.2**	**LOS F**	**1035**	**0.99**	**2.22**	**9.2**
Gandy Blvd (W)										
5L	L	214	6.1	0.219	14.2	LOS B	38	0.65	0.80	28.3
2T	T	182	6.0	0.155	6.7	LOS A	24	0.63	0.57	31.9
2R	R	52	5.8	0.155	8.4	LOS A	24	0.63	0.68	31.1
Approach		**448**	**6.0**	**0.219**	**10.5**	**LOS B**	**38**	**0.64**	**0.69**	**29.9**
All Vehicles		**4621**	**5.9**	**1.230**	**34.7**	**LOS C**	**1035**	**0.82**	**1.23**	**20.1**

Symbols which may appear in this table:

Following Degree of Saturation
x = 1.00 for Short Lane with resulting Excess Flow
* x = 1.00 due to minimum capacity

Following LOS
- Based on density for continuous movements

Following Queue
- Density for continuous movement

APPENDIX J

HNTB Corporation
Engineers Architects Planners

300 Primera Boulevard
Suite 220
Lake Mary, Florida

Telephone (407) 805-0355
Facsimile (407) 805-0227
www.hntb.com

HNTB

October 10, 2009

To: David Bredahl, AICP

From: Luis Diaz, P.E.

Re: Gandy Connector Merge/Diverge Analysis

As requested in the SEIR comments provided by FDOT, I have performed a merge/diverge analysis at both ends of the Gandy Connector. Please note, that they merge and diverge movements at the west end of the project do not occur on the Connector itself but on the arterial facility (Gandy Boulevard Bridge), which is not typically analyzed using this methodology. The analysis was performed for the year 2035 as this represents the Design Year Build conditions. The results of this analysis presented in the table below, shows all of the potentially conflicting locations operating at LOS "C" or better. I have attached the LOS worksheets to this document.

	AM (LOS) (pc/mi/ln)	PM (LOS) (pc/mi/ln)
West End – Gandy Connector WB Off Ramp to Gandy Blvd Bridge	C $D_R = 26.3$	C $D_R = 27.7$
West End – Gandy Connector EB On Ramp from Gandy Blvd Bridge	B $D_R = 17.7$	B $D_R = 14.4$
East End – Lee Roy Selmon/Gandy Connector WB Off Ramp to Gandy Blvd	B $D_R = 19.1$	B $D_R = 15.6$
East End – Lee Roy Selmon/Gandy Connector EB On Ramp from Gandy Blvd	B $D_R = 15.2$	B $D_R = 12.8$

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	AM	Analysis Year	2035

Project Description Lee Roy Selmon/Gandy Connector EB On-Ramp from Gandy Blvd

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1040	0.95	Level	9	0	0.957	1.00	1144
Ramp	490	0.95	Level	6	0	0.971	1.00	531
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$$V_{12} = V_F (P_{FM})$$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 using Equation (Exhibit 25-5)

V_{12} = 1144 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	1675	See Exhibit 25-7	No
V_{R12}	1675	4600:All	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$$

D_R = 15.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.307 (Exibit 25-19)

S_R= 51.0 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 51.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$$V_{12} = V_R + (V_F - V_R)P_{FD}$$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

HCS+™ Version 5.2 Generated: 10/7/2009 11:45 AM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	PM	Analysis Year	2035

Project Description Lee Roy Selmon/Gandy Connector EB On-Ramp from Gandy Blvd

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	850	0.95	Level	9	0	0.957	1.00	935
Ramp	400	0.95	Level	6	0	0.971	1.00	434
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 using Equation (Exhibit 25-5)

V_{12} = 935 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	1369	See Exhibit 25-7	No
V_{R12}	1369	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 12.8 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.301 (Exibit 25-19)

S_R= 51.1 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 51.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	AM	Analysis Year	2035

Project Description Gandy Connector EB On-Ramp from Gandy Bridge

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1898	0.95	Level	9	0	0.957	1.00	2088
Ramp	1040	0.95	Level	6	0	0.971	1.00	1128
UpStream								
DownStream								

Merge Areas | Diverge Areas

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation (Exhibit 25-11)

V_{12} = 2088 pc/h

Capacity Checks (Merge Areas)

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Capacity Checks (Diverge Areas)

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	2088	4500	No
V_{12}	2088	4400:All	No
$V_{FO} = V_F - V_R$	960	4500	No
V_R	1128	2000	No

Level of Service Determination (if not F) (Merge Areas)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Level of Service Determination (if not F) (Diverge Areas)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 17.7 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation (Merge Areas)

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Speed Estimation (Diverge Areas)

D_s = 0.530 (Exhibit 25-19)

S_R= 48.1 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 48.1 mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	PM	Analysis Year	2035

Project Description Gandy Connector EB On-Ramp from Gandy Bridge

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1552	0.95	Level	9	0	0.957	1.00	1707
Ramp	850	0.95	Level	6	0	0.971	1.00	922
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation (Exhibit 25-11)

V_{12} = 1707 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	1707	4500	No
V_{12}	1707	4400:All	No
$V_{FO} = V_F - V_R$	785	4500	No
V_R	922	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 14.4 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.511 (Exhibit 25-19)

S_R= 48.4 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 48.4 mph (Exhibit 25-15)

HCS+™ Version 5.2 Generated: 10/7/2009 11:52 AM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	AM	Analysis Year	2035

Project Description Lee Roy Selmon/Gandy Connector WB Off-Ramp to Gandy Blvd

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1670	0.95	Level	9	0	0.957	1.00	1837
Ramp	400	0.95	Level	6	0	0.971	1.00	434
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation (Exhibit 25-11)

V_{12} = 1837 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	1837	4500	No
V_{12}	1837	4400:All	No
$V_{FO} = V_F - V_R$	1403	4500	No
V_R	434	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 15.6 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

D_s = 0.467 (Exhibit 25-19)

S_R= 48.9 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 48.9 mph (Exhibit 25-15)

 HCS+™ Version 5.2 Generated: 10/7/2009 11:54 AM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	PM	Analysis Year	2035

Project Description Lee Roy Selmon/Gandy Connector WB Off-Ramp to Gandy Blvd

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2040	0.95	Level	9	0	0.957	1.00	2244
Ramp	490	0.95	Level	6	0	0.971	1.00	531
UpStream								
DownStream								

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation (Exhibit 25-11)

V_{12} = 2244 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	2244	4500	No
V_{12}	2244	4400:All	No
$V_{FO} = V_F - V_R$	1713	4500	No
V_R	531	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 19.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Speed Estimation

D_s = 0.476 (Exhibit 25-19)

S_R= 48.8 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 48.8 mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	PM	Analysis Year	2035

Project Description Gandy Connector WB Off-Ramp to Gandy Boulevard Bridge

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	1991	0.95	Level	9	0	0.957	1.00	2190
Ramp	1040	0.95	Level	6	0	0.971	1.00	1128
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 using Equation (Exhibit 25-5)

V_{12} = 2190 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	3318	See Exhibit 25-7	No
V_{R12}	3580	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 27.7 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.426 (Exibit 25-19)

S_R= 49.5 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 49.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

HCS+™ Version 5.2 Generated: 10/7/2009 11:08 AM

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	LED	Freeway/Dir of Travel	East/West
Agency or Company	HNTB	Junction	Gandy Boulevard
Date Performed	10/7/2009	Jurisdiction	THEA
Analysis Time Period	AM	Analysis Year	2035

Project Description Gandy Connector WB Off-Ramp to Gandy Boulevard Bridge

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 55.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2003	0.95	Level	9	0	0.957	1.00	2203
Ramp	850	0.95	Level	6	0	0.971	1.00	922
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$$V_{12} = V_F (P_{FM})$$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 using Equation (Exhibit 25-5)

V_{12} = 2203 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	3125	See Exhibit 25-7	No
V_{R12}	3389	4600:All	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$$

D_R = 26.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.402 (Exibit 25-19)

S_R= 49.8 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 49.8 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$$V_{12} = V_R + (V_F - V_R)P_{FD}$$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

HCS+™ Version 5.2 Generated: 10/7/2009 10:55 AM