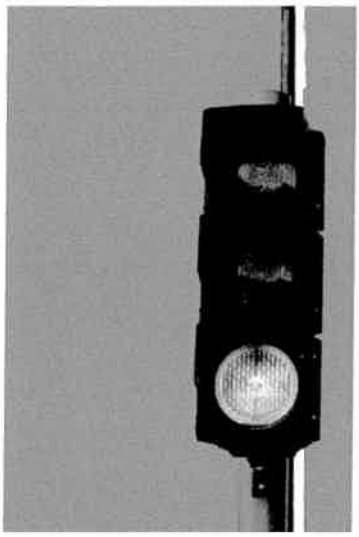
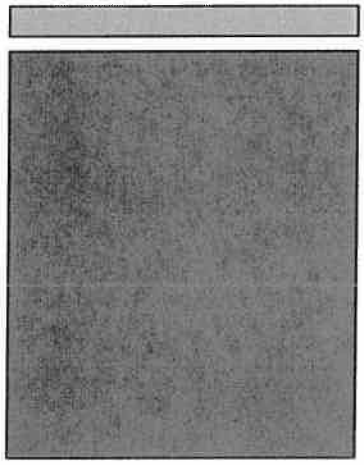
Traffic Study

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS



traffic study



prepared for:
McCree Architects & Engineers, Inc.

Traf Tech
ENGINEERING, INC.

February 2010

Traf Tech
ENGINEERING, INC.

February 26, 2010

Mr. Rich Gaines, Vice President
McCree Architects & Engineers, Inc.
500 E. Princeton Street
Orlando, Florida 32803

Re: **Traffic Study – The Church of Jesus Christ of Latter-Day Saints**
Key West, Florida

Dear Mr. Gaines:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study undertaken for the proposed expansion of the existing Church of Jesus Christ of Latter-Day Saints located in Key West, Florida. The study addresses the project's trip generation and the anticipated traffic impacts on the surrounding street network.

Sincerely,

TRAF TECH ENGINEERING, INC.

Joaquin E. Vargas, P.E.
Senior Transportation Engineer

8400 North University Drive, Suite 309, Tamarac, Florida 33321
Tel: (954) 582-0988 Fax: (954) 582-0989 E-mail: joaquin@traftech.biz

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INTRODUCTION

The Church of Jesus Christ of Latter-Day Saints is an existing worship center located on the south side of Northside Drive just east of Trinity Drive in the City of Key West, Florida. Figure 1 on the following page illustrates the location of the church site. The subject worship center is in the process of redeveloping the church site by including a bigger building on the same site, additional parking spaces, and improved circulation within the church property.

Traf Tech Engineering, Inc. was retained by McCree Architects & Engineers, Inc. to conduct a traffic study in connection with the proposed church expansion project. The study addresses the traffic impacts on the nearby transportation network.

This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Analysis
7. Conclusions

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PROJECT LOCATION MAP

FIGURE 1
The Church of Jesus Christ of LDS
Key West, Florida

INVENTORY

Existing Land Use and Access

The project site is currently developed with a one-story building located near Northside Drive and a small parking lot on the east side of the church building. The existing parking lot includes 28 regular parking spaces and two handicap parking stalls for a total of 30 parking spaces. The existing parking lot consists of one dead-end parking aisle with 90-degree parking stalls on both sides of the drive aisle.

Access to the parking lot is provided via one full-access driveway off of Northside Drive. The site plan located in Appendix A shows the layout of the existing church facility.

Proposed Land Use and Access

Proposed for the site is a complete redevelopment of the existing church site. The existing building will be replaced with a 5,630 square-foot worship facility. The new building will be located near the center of the site and a surface parking lot will surround the building on three sides (south, east, and west). Two full-access driveways will be provided on Northside Drive.

A total of 70 parking spaces will be provided. The site plan located in Appendix A also shows the proposed redeveloped church property.

EXISTING CONDITIONS

This section addresses the roadway system surrounding the project site, including nearby intersections.

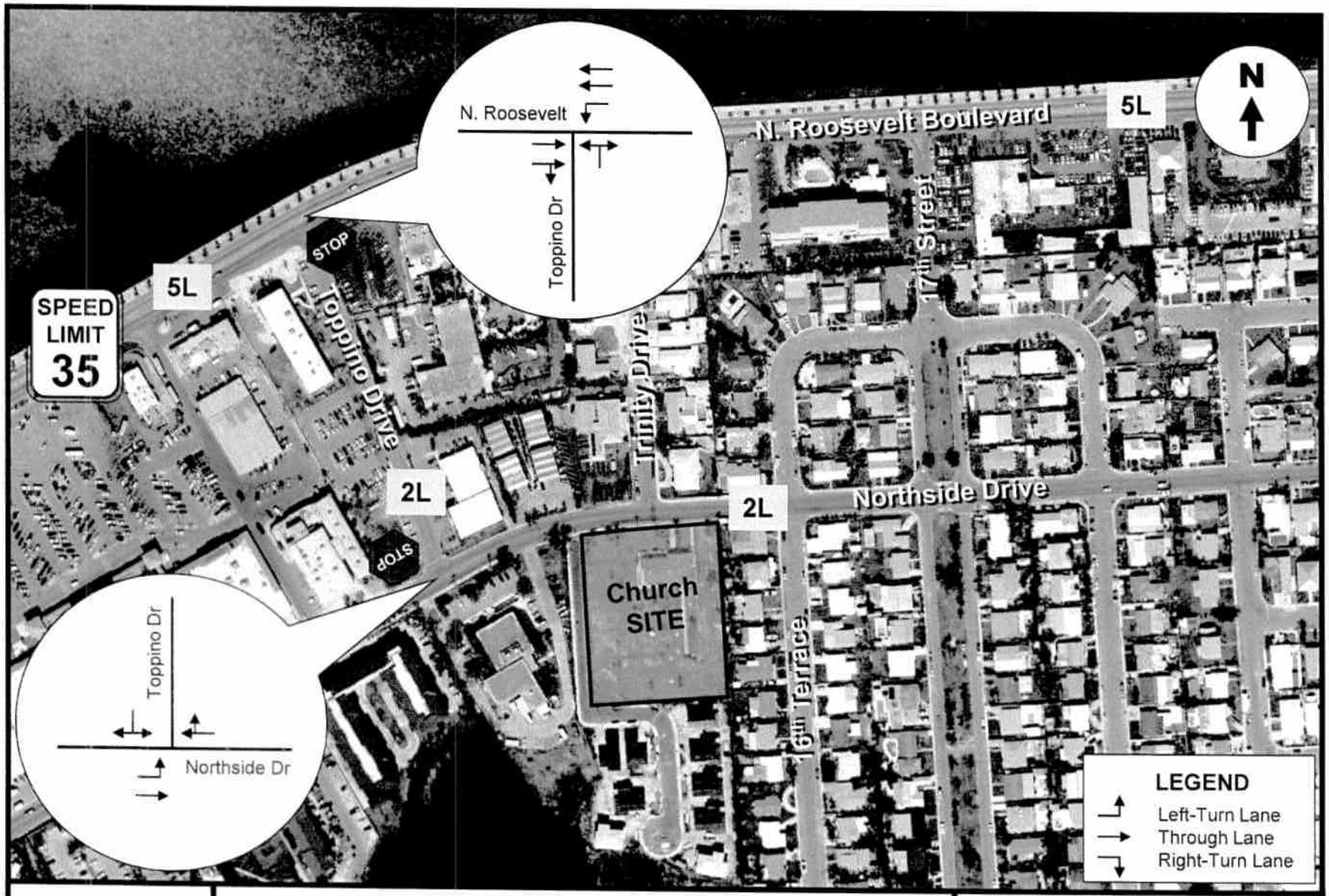
Roadway System

The roadway system located in the vicinity of the project site includes one major east-west arterial roadway and one local collector street. The major arterial roadway includes North Roosevelt Boulevard, a five-lane facility with a posted speed limit of 35 miles per hour near the project site. Northside Drive is also an east-west roadway extending from Flagler Avenue[1] on the southeast to Kennedy Drive on the west. Northside Drive provides one through lane in each direction (two lane roadway) and provides on-street parking on both sides of the roadway. Two on-street parking spaces are provided in front of the church site.

Intersections

Due to the location of this project, the two most-impacted intersections are anticipated to be North Roosevelt Boulevard/Toppino Drive and Northside Drive/Toppino Drive. For this reason, these two intersections were selected for analysis purposes. Figure 2 depicts the number of lanes on the roadways located in the vicinity of the project site. The turning lanes at the two study intersections are also illustrated in the figure.

[1] Northside Drive becomes 20th Street, a north-south facility, east of the church site.



Traf Tech ENGINEERING, INC.

EXISTING LANE GEOMETRY

FIGURE 2
The Church of Jesus Christ of LDS
Key West, Florida

TRAFFIC COUNTS

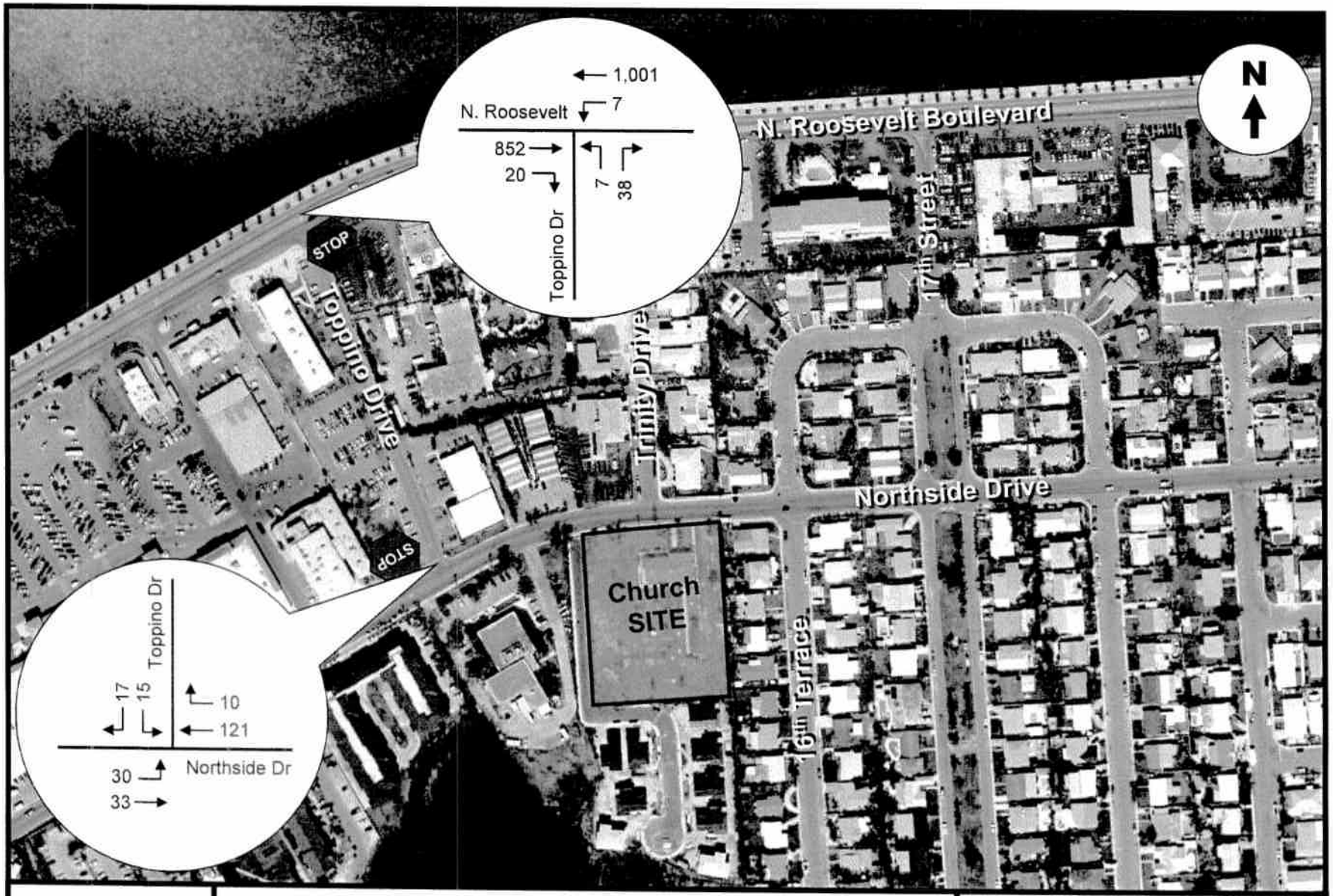
Traf Tech Engineering, Inc., in association with Genesis Transportation Engineering, Inc., collected intersection turning movement counts at the following two locations:

1. N. Roosevelt Boulevard and Toppino Drive (stop-control)
2. Northside Drive and Toppino Drive (stop-control)

The intersection turning movement counts were collected on Sunday, February 21, 2010 during the church's morning peak period (8:00 AM to 12:00 PM). Figure 3 summarizes the results of the intersection turning movement counts.

Additionally, 4-day machine traffic counts (Thursday to Sunday) were collected on North Roosevelt Boulevard and on Northside Drive. The 4-day machine counts show similar traffic patterns on North Roosevelt Boulevard and Northside Drive. That is, the highest traffic volumes occurred on Friday. On Sunday (the church's peak day), traffic volumes decreased substantially.

Appendix B contains the intersection turning movement counts and the 4-day traffic counts, as collected in the field.



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EXISTING TRAFFIC COUNTS – Sunday Peak Hour
(February 2010)

FIGURE 3
The Church of Jesus Christ of LDS
Key West, Florida

TRIP GENERATION

A trip generation analysis was conducted for the proposed church expansion project. The analysis was performed using the trip generation rates published in the Institute of Transportation Engineer's ITE *Trip Generation Manual* (8th Edition). The trip generation analysis was undertaken for daily and peak hour of the generator during the church's peak day (Sunday).

According to ITE's *Trip Generation Manual* (8th Edition), the most appropriate "land use" category for the proposed land use is:

CHURCH (Land Use 560)

Sunday Trips

T = 36.63 (X)

Where T = Sunday daily vehicle trip ends

X = 1,000 square feet of gross floor area

Sunday Peak Hour of Generator

T = 11.76 (X) (50% inbound and 50% outbound)

Where T = Sunday peak hour vehicle trip ends

X = 1,000 square feet of gross floor area

Using the above-listed trip-generation rates from the ITE document, a trip generation analysis was undertaken for the proposed church expansion project. The results of this effort are documented in Table 1.

TABLE 1 Trip Generation Summary The Church of Jesus Christ of Latter-Day Saints					
			Sunday Peak Hour		
Land Use	**Size**	**Daily Trips**	**In**	**Out**	**Total**
Church	5,630 sq.ft.	206	33	33	66

Source: Institute of Transportation Engineers Trip Generation (8th Edition)

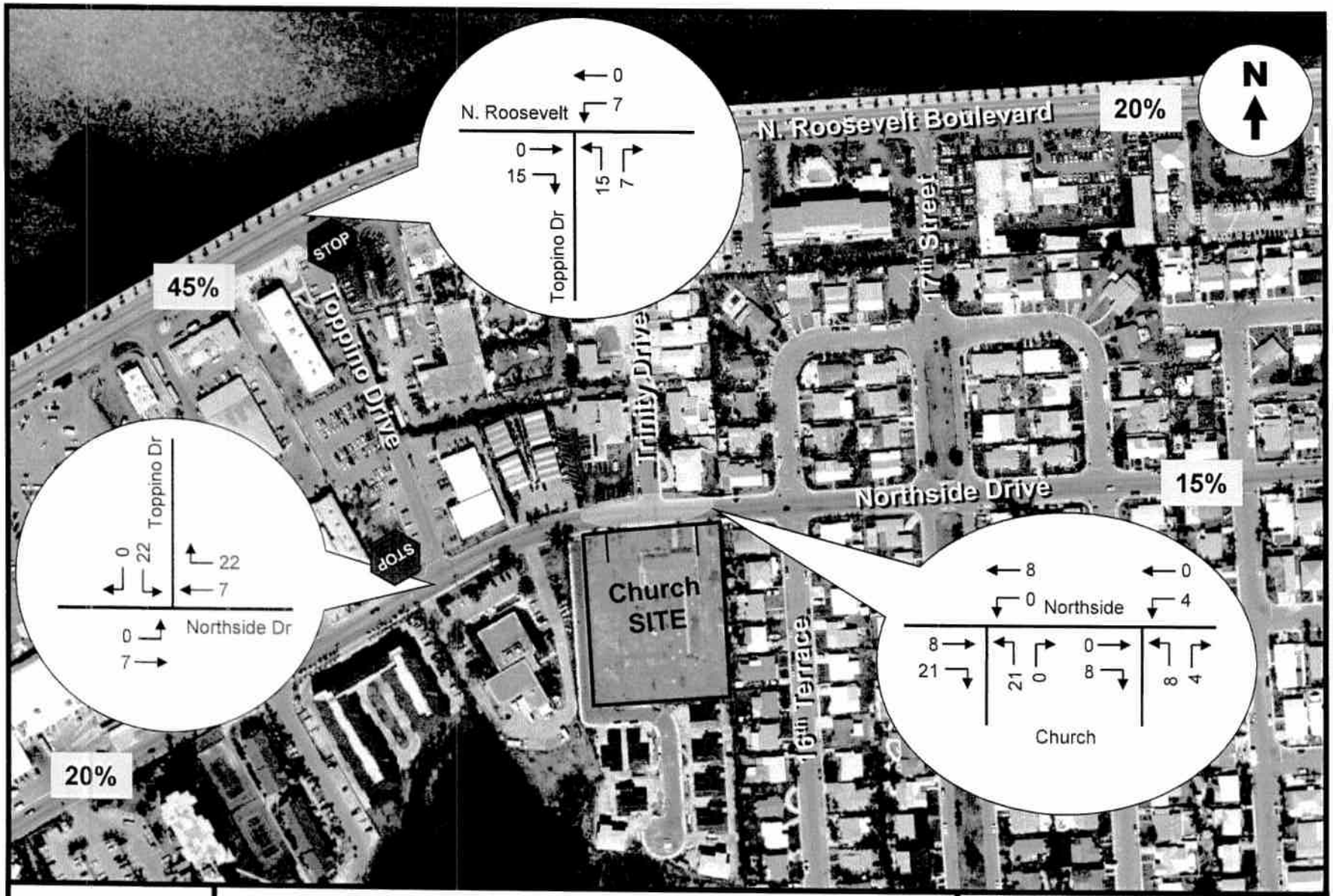
As indicated in Table 1, the proposed church expansion project is anticipated to generate approximately 206 Sunday daily trips and approximately 66 trips (33 inbound and 33 outbound) during the church's peak hour on Sunday.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the proposed project was based on knowledge of the study area, examination of the surrounding roadway network characteristics, review of current traffic volumes, and existing land use patterns. The trip distribution assumed for the church redevelopment project is summarized below:

- 20% to and from the east via N. Roosevelt Boulevard
- 45% to and from the west via N. Roosevelt Boulevard
- 15% to and from the east via Northside Drive
- 20% to and from the west via Northside Drive

The Sunday peak hour traffic generated by the proposed redevelopment project was assigned to the nearby transportation network using the trip distribution documented above. The subject traffic assignment is summarized in Figure 4.



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PROJECT TRAFFIC ASSIGNMENT – Sunday Peak Hour

FIGURE 4
The Church of Jesus Christ of LDS
Key West, Florida

TRAFFIC ANALYSIS

This section of the study is divided in four parts. The first part consists of developing the future conditions traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions. The third section focuses on the project driveways. The fourth part addresses nearby roadway links.

Future Conditions Traffic Volumes

Two sets of future traffic volumes were developed. The first set includes project buildout conditions (assumed to be 2011) without the proposed project and the second set adds the project anticipated to be generated by the church expansion project.

In order to develop future-year traffic volumes, without the proposed project, two separate analyses were undertaken. The first analysis converts the existing Sunday peak hour traffic counts collected in the field during the month of February to average peak season conditions. Based on FDOT's Peak Season Factor Category report, a factor of 0.97 is required to convert traffic counts collected in the third week of February to average peak season conditions (refer to Appendix C). However, in order to assess impacts with a conservative approach, no deductions were made to the existing traffic counts to account for average peak season conditions. The second analysis includes a growth factor to project 2010 peak season traffic volumes to future conditions (year 2011). For purposes of this traffic study, a 2% growth rate was applied to the 2010 traffic counts in order to develop 2011 background traffic conditions. The 2% growth rate is considered conservative since historical traffic counts at two nearby traffic count stations (refer to Appendix C) have reflected negligible growth during the past five years.

The future traffic calculations (peak season adjustments, traffic growth, and the traffic associated with the proposed church project) for the study area are contained in Appendix D in tabular format.

Figures 5 and 6 present the future traffic volumes for the study area. Figure 5 includes background traffic only (without the proposed project) and Figures 6 includes the traffic anticipated to be generated by the proposed church project. It is important to note that the trips generated by the existing church were not subtracted from the future church traffic volumes in order to assess impacts with a conservative approach.

Level of Service Analyses

Intersection capacity analyses were performed for the two stop-control intersections located on Toppino Drive. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual (HCS+ Version 5.2). The results of the intersection analyses are summarized in Tables 2 and 3. Appendix E contains the computer printouts of the intersection capacity analyses.

TABLE 2
Intersection Level of Service (Stop-Control Intersection – Sunday Peak Hour)
The Church of Jesus Christ of Latter-Day Saints

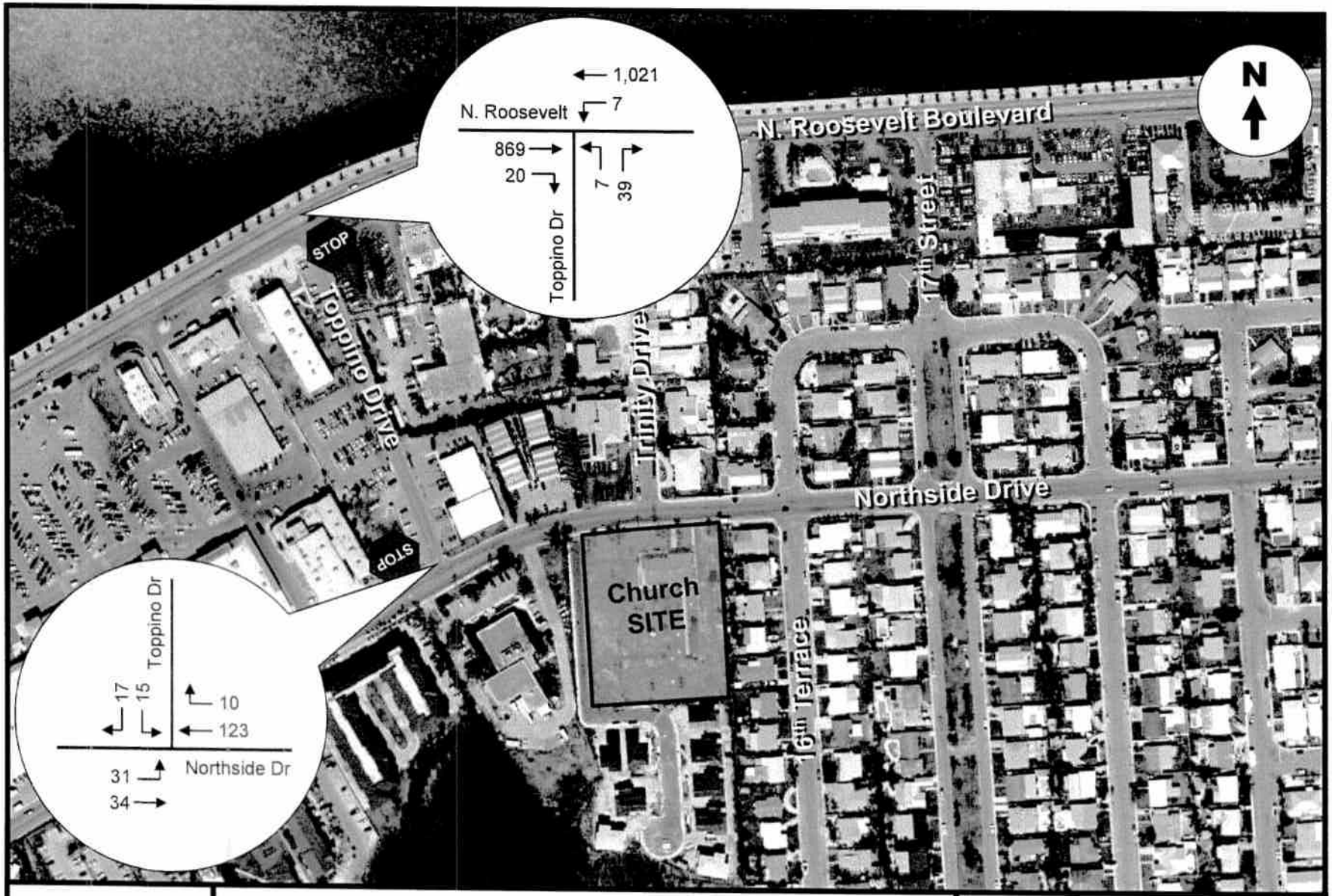
Turning Movement at: N. Roosevelt/Toppino	Existing	Future Traffic Conditions	
		Without Project	With Project
Westbound Left	A	B	B
Northbound Approach	B	B	C

Source: Highway Capacity Manual

TABLE 3
Intersection Level of Service (Stop-Control Intersection – Sunday Peak Hour)
The Church of Jesus Christ of Latter-Day Saints

Turning Movement at: Northside/Toppino	Existing	Future Traffic Conditions	
		Without Project	With Project
Eastbound Left	A	A	A
Southbound Approach	A	A	B

Source: Highway Capacity Manual



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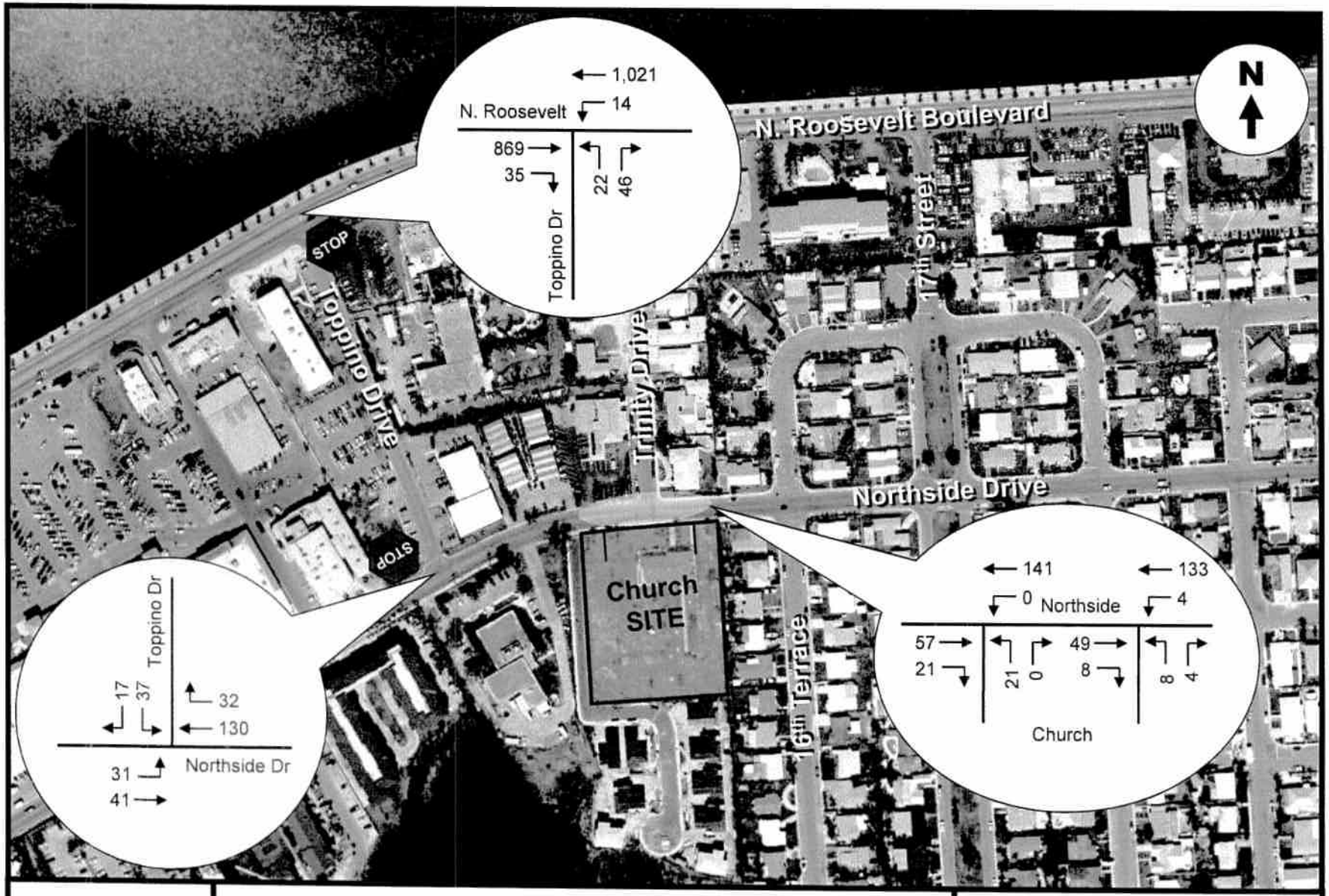
BACKGROUND TRAFFIC – YEAR 2011
(Sunday Peak Hour)

FIGURE 5
The Church of Jesus Christ of LDS
Key West, Florida



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TOTAL TRAFFIC – YEAR 2011
(Sunday Peak Hour)

FIGURE 6
The Church of Jesus Christ of LDS
Key West, Florida

As indicated in Tables 2 and 3, the two study intersections are currently operating at an acceptable level of service and will continue to operate adequately with the proposed church project in place.

Project Driveway

The two project enter-exit driveways on Northside Drive were also evaluated using the capacity/level of service procedures outlined in the Highway Capacity Manual (HCS+ Version 5.2). The results of this effort indicate that the project driveways are projected to operate at a very good level of service with the proposed project in place, without additional turn lanes. Hence, no turn lanes are warranted on Northside Drive. The results of the driveway analyses are also contained in Appendix E.

Roadway Link Analysis

Two roadway links located in the vicinity of the project were evaluated. The link analysis is presented in Table 4. As indicated in Table 4, both nearby roadways have ample capacity to absorb the additional traffic impacts generated by the proposed church expansion project.

TABLE 4
Roadway Link Analysis (Sunday Peak Hour)
The Church of Jesus Christ of Latter-Day Saints

Roadway Link	Existing (Feb 2010)	Peak Season (Year 2011)		Roadway Capacity[2]	Meets LOS
		w/o Project	w/ Project		
N. Roosevelt	1,880 vph	1,917 vph	1,947 vph	3,390 vph	Yes
Northside	179 vph	182 vph	240 vph	950 vph	Yes

Source: Florida DOT, Traf Tech Engineering, Inc., Genesis Transportation Engineering

[2] Level of Service "D" Threshold

CONCLUSIONS

The Church of Jesus Christ of Latter-Day Saints is an existing worship center located on the south side of Northside Drive just east of Trinity Drive in the City of Key West, Florida. The subject worship center is in the process of expanding the church site by including a larger building, additional parking spaces, and better circulation within the church property.

Traf Tech Engineering, Inc. was retained by McCree Architects & Engineers, Inc. to conduct a traffic study in connection with the proposed church project. The conclusions of the traffic study are presented below:

CONCLUSIONS

- The proposed church expansion project is anticipated to generate approximately 206 Sunday daily trips and approximately 66 trips (33 inbound and 33 outbound) during the church's peak hour on Sunday.

- The two study intersections are currently operating at acceptable levels of services and will continue to operate adequately with the proposed project in place.

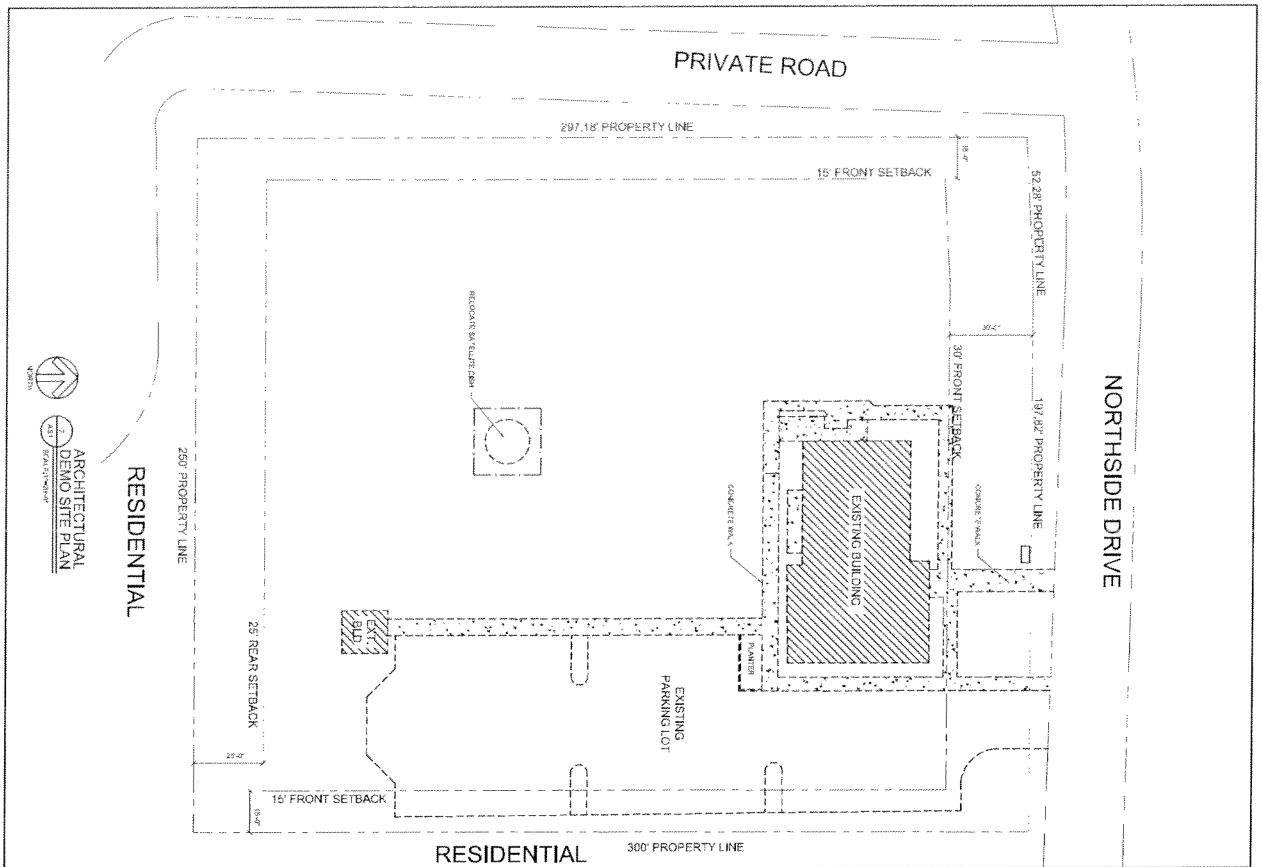
- The project driveways on Northside Drive are projected to operate at a very good level of service with the proposed project in place.

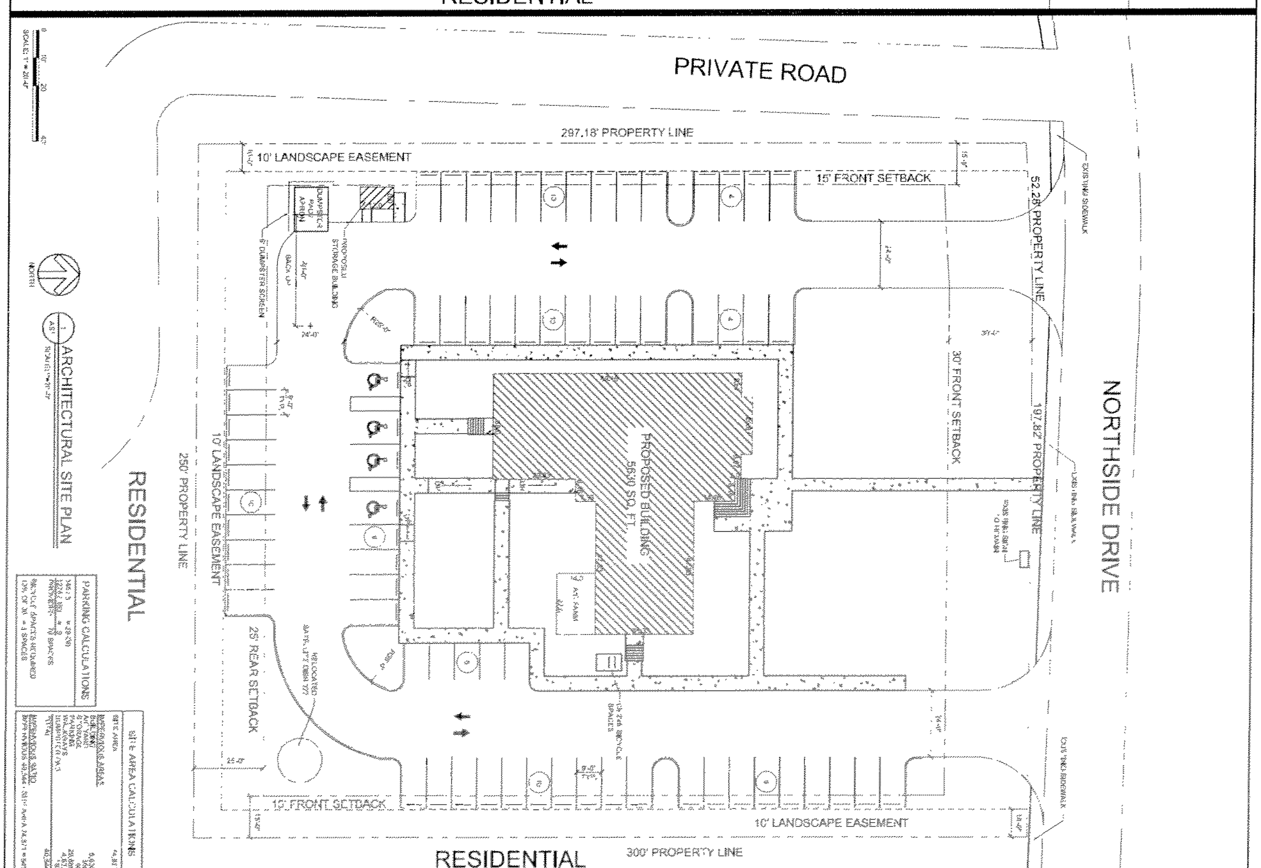
- No turn lanes are warranted on Northside Drive based on the results of the traffic study.

- Both N. Roosevelt Boulevard and Northside Drive have ample capacity to absorb the additional traffic impacts generated by the proposed church expansion project.

APPENDIX A

Site Plan for The Church of Jesus Christ Of Latter-Day Saints





AS1

ARCHITECTURAL SITE PLAN

Project for:

THE CHURCH OF
JESUS CHRIST
OF LATTER-DAY SAINTS

Description

LDS - KEY WEST

License #
AAC002100

McCree
ARCHITECTS & ENGINEERS, INC.

APPENDIX B

Intersection Turning Movement Counts and 4-Day Machine Counts

Genesis Transportation Engineering, Inc
14221 SW 120 Street, Suite 113
Miami, Florida 33186
786-517-4834 Office
786-517-4835 Fax

TMC
N. Roosevelt Blvd
at Toppino Drive

File Name : TOPPINO at Roosevelt
Site Code : 00001111
Start Date : 2/21/2010
Page No : 1

Groups Printed- combined

	Southbound				Westbound				Northbound				Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
08:00 AM	0	0	0	0	0	100	0	0	5	0	2	0	2	81	0	0	190
08:15 AM	0	0	0	0	0	115	0	0	4	0	2	0	2	95	0	0	218
08:30 AM	0	0	0	0	0	178	1	0	5	0	3	0	1	155	0	0	343
08:45 AM	0	0	0	0	0	114	1	0	6	0	2	2	4	98	0	0	227
Total	0	0	0	0	0	507	2	0	20	0	9	2	9	429	0	0	978
09:00 AM	0	0	0	0	0	177	4	0	6	0	1	0	2	140	0	0	330
09:15 AM	0	0	0	0	0	144	5	0	6	0	5	0	2	120	0	0	282
09:30 AM	0	0	0	2	0	198	3	0	6	0	0	3	5	168	0	0	385
09:45 AM	1	0	0	0	0	240	3	0	6	0	4	0	2	197	0	0	453
Total	1	0	0	2	0	759	15	0	24	0	10	3	11	625	0	0	1450
10:00 AM	0	0	0	0	0	234	1	0	5	0	2	0	4	200	0	0	446
10:15 AM	0	0	0	0	0	255	3	0	7	0	1	5	2	210	0	0	483
10:30 AM	0	0	0	0	0	198	2	0	7	0	0	0	5	188	0	0	400
10:45 AM	0	0	0	0	0	260	3	0	8	0	1	0	4	225	0	0	501
Total	0	0	0	0	0	947	9	0	27	0	4	5	15	823	0	0	1830
11:00 AM	0	0	0	0	0	241	1	0	11	0	4	0	2	206	0	0	465
11:15 AM	0	0	0	0	0	266	2	0	11	0	1	0	9	226	0	0	515
11:30 AM	0	0	0	0	0	234	1	0	8	0	1	0	5	195	0	0	444
11:45 AM	0	0	0	5	0	225	1	0	7	0	3	0	7	188	0	0	436
Total	0	0	0	5	0	966	5	0	37	0	9	0	23	815	0	0	1860
Grand Total	1	0	0	7	0	3179	31	0	108	0	32	10	58	2692	0	0	6118
Apprch %	12.5	0	0	87.5	0	99	1	0	72	0	21.3	6.7	2.1	97.9	0	0	
Total %	0	0	0	0.1	0	52	0.5	0	1.8	0	0.5	0.2	0.9	44	0	0	

Genesis Transportation Engineering, Inc
14221 SW 120 Street, Suite 113
Miami, Florida 33186
786-517-4834 Office
786-517-4835 Fax

TMC
N. Roosevelt Blvd
at Toppino Drive

File Name : TOPPINO at Roosevelt
Site Code : 00001111
Start Date : 2/21/2010
Page No : 2

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 10:45 AM																					
10:45 AM	0	0	0	0	0	0	260	**3**	0	263	8	0	1	0	9	4	225	0	0	229	501
11:00 AM	0	0	0	0	0	0	241	1	0	242	**11**	0	**4**	0	**15**	2	206	0	0	208	465
11:15 AM	0	0	0	0	0	0	**266**	2	0	**268**	11	0	1	0	12	**9**	**226**	0	0	**235**	**515**
11:30 AM	0	0	0	0	0	0	234	1	0	235	8	0	1	0	9	5	195	0	0	200	444
Total Volume	0	0	0	0	0	0	1001	7	0	1008	38	0	7	0	45	20	852	0	0	872	1925
% App. Total	0	0	0	0		0	99.3	0.7	0		84.4	0	15.6	0		2.3	97.7	0	0		
PHF	.000	.000	.000	.000	.000	.000	.941	.583	.000	.940	.864	.000	.438	.000	.750	.556	.942	.000	.000	.928	.934

Genesis Transportation Engineering, Inc
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TMC
Northside
at Toppino Drive

File Name : TOPPINO at Northside
Site Code : 00000000
Start Date : 2/21/2010
Page No : 1

Groups Printed- combined

	Southbound				Westbound				Northbound				Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
08:00 AM	3	0	1	0	0	11	0	0	0	0	0	0	0	8	0	0	23
08:15 AM	3	0	0	0	4	19	0	0	0	0	0	0	0	9	4	0	39
08:30 AM	2	0	1	0	2	22	0	0	0	0	0	0	0	9	5	0	41
08:45 AM	1	0	1	0	3	21	0	0	0	0	0	2	0	7	6	0	41
Total	9	0	3	0	9	73	0	0	0	0	0	2	0	33	15	0	144
09:00 AM	5	0	4	1	3	17	0	0	0	0	0	1	0	8	6	0	45
09:15 AM	8	0	2	0	6	24	0	0	0	0	0	0	0	7	7	0	54
09:30 AM	2	0	1	0	1	16	0	0	0	0	0	0	0	11	5	1	37
09:45 AM	2	0	4	0	3	30	0	0	0	0	0	1	0	6	4	0	50
Total	17	0	11	1	13	87	0	0	0	0	0	2	0	32	22	1	186
10:00 AM	3	0	4	0	2	25	0	0	0	0	0	0	0	8	5	0	47
10:15 AM	3	0	1	0	2	31	0	0	0	0	0	0	0	5	7	0	49
10:30 AM	4	0	2	0	0	29	0	0	0	0	0	0	0	8	8	0	51
10:45 AM	4	0	3	0	2	19	0	0	0	0	0	0	0	14	1	0	43
Total	14	0	10	0	6	104	0	0	0	0	0	0	0	35	21	0	190
11:00 AM	5	0	3	0	5	38	0	0	0	0	0	2	0	9	7	0	69
11:15 AM	4	0	7	0	3	35	0	0	0	0	0	0	0	2	14	0	65
11:30 AM	1	0	3	0	0	22	0	0	0	0	0	0	0	4	4	0	34
11:45 AM	1	0	1	0	1	35	0	0	0	0	0	2	0	2	8	0	50
Total	11	0	14	0	9	130	0	0	0	0	0	4	0	17	33	0	218
Grand Total	51	0	38	1	37	394	0	0	0	0	0	8	0	117	91	1	738
Apprch %	56.7	0	42.2	1.1	8.6	91.4	0	0	0	0	0	100	0	56	43.5	0.5	
Total %	6.9	0	5.1	0.1	5	53.4	0	0	0	0	0	1.1	0	15.9	12.3	0.1	

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TMC
Northside
at Toppino Drive

File Name : TOPPINO at Northside
Site Code : 00000000
Start Date : 2/21/2010
Page No : 2

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 11:30 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 10:30 AM																					
10:30 AM	4	0	2	0	6	0	29	0	0	29	0	0	0	0	0	0	8	8	0	**16**	51
10:45 AM	4	0	3	0	7	2	19	0	0	21	0	0	0	0	0	0	**14**	1	0	15	43
11:00 AM	**5**	0	3	0	8	**5**	**38**	0	0	**43**	0	0	0	**2**	**2**	0	9	7	0	16	**69**
11:15 AM	4	0	**7**	0	**11**	3	35	0	0	38	0	0	0	0	0	0	2	**14**	0	16	65
Total Volume	17	0	15	0	32	10	121	0	0	131	0	0	0	2	2	0	33	30	0	63	228
% App. Total	53.1	0	46.9	0		7.6	92.4	0	0		0	0	0	100		0	52.4	47.6	0		
PHF	.850	.000	.536	.000	.727	.500	.796	.000	.000	.762	.000	.000	.000	.250	.250	.000	.589	.536	.000	.984	.826

Genesis Transportation Engineering, Inc

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Miami, Florida 33186
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Site Code:
Station ID:
Westbound

Latitude: 0' 0.000 Undefined

Start	15-Feb-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	39	**354**	29	**363**	50	234	64	**305**	46	314
12:15	*	*	*	*	*	*	27	**359**	38	**354**	60	234	47	**320**	43	317
12:30	*	*	*	*	*	*	18	**334**	32	**354**	44	212	42	**298**	34	300
12:45	*	*	*	*	*	*	15	**337**	11	**354**	27	253	33	**270**	22	304
01:00	*	*	*	*	*	*	17	340	25	344	38	227	39	295	30	302
01:15	*	*	*	*	*	*	14	360	12	336	27	220	39	276	23	298
01:30	*	*	*	*	*	*	10	327	10	328	30	255	30	250	20	290
01:45	*	*	*	*	*	*	11	334	15	340	24	274	21	266	18	304
02:00	*	*	*	*	*	*	11	306	14	310	26	318	24	284	19	304
02:15	*	*	*	*	*	*	12	313	13	347	15	296	19	284	15	**310**
02:30	*	*	*	*	*	*	8	344	12	326	12	329	22	256	14	**314**
02:45	*	*	*	*	*	*	5	320	9	321	14	309	22	252	12	**300**
03:00	*	*	*	*	*	*	14	324	16	312	18	349	11	296	15	**320**
03:15	*	*	*	*	*	*	8	318	9	334	9	292	10	259	9	301
03:30	*	*	*	*	*	*	11	308	11	300	18	297	23	270	16	294
03:45	*	*	*	*	*	*	8	352	18	338	13	287	11	302	12	320
04:00	*	*	*	*	*	*	13	302	16	368	19	**330**	10	256	14	314
04:15	*	*	*	*	*	*	14	316	14	319	16	**332**	9	282	13	312
04:30	*	*	*	*	*	*	12	292	22	314	23	**323**	13	255	18	296
04:45	*	*	*	*	*	*	26	334	20	315	22	**314**	18	242	22	301
05:00	*	*	*	*	*	*	26	282	32	324	29	272	33	246	30	281
05:15	*	*	*	*	*	*	29	244	34	318	30	270	15	244	27	269
05:30	*	*	*	*	*	*	36	260	44	310	38	296	31	236	37	276
05:45	*	*	*	*	*	*	64	267	75	298	34	238	30	206	51	252
06:00	*	*	*	*	*	*	88	232	76	260	38	286	42	210	61	247
06:15	*	*	*	*	*	*	92	216	92	240	43	234	49	177	69	217
06:30	*	*	*	*	*	*	144	212	150	241	88	215	54	178	109	212
06:45	*	*	*	*	*	*	210	194	212	216	80	225	80	164	146	200
07:00	*	*	*	*	*	*	219	186	178	254	73	216	107	218	144	218
07:15	*	*	*	*	*	*	250	200	248	248	94	198	103	156	174	200
07:30	*	*	*	*	*	*	**302**	145	303	216	149	206	120	146	218	178
07:45	*	*	*	*	*	*	**364**	142	358	206	178	166	122	143	256	164
08:00	*	*	*	*	*	*	**334**	140	291	175	149	164	114	116	222	149
08:15	*	*	*	*	*	*	**324**	115	305	144	181	142	123	108	233	127
08:30	*	*	*	*	*	*	269	127	310	140	190	148	168	106	234	130
08:45	*	*	*	*	*	*	308	88	304	148	258	139	179	92	262	117
09:00	*	*	*	*	*	*	243	87	262	122	198	108	148	68	213	96
09:15	*	*	*	*	*	*	240	115	244	124	216	96	164	66	216	100
09:30	*	*	*	*	*	*	264	172	284	118	230	122	212	71	248	121
09:45	*	*	*	*	*	*	283	168	288	92	288	106	227	67	272	108
10:00	*	*	*	*	*	*	276	166	301	94	254	128	240	78	268	116
10:15	*	*	*	*	*	*	298	146	295	102	298	86	242	81	283	104
10:30	*	*	*	*	*	*	301	128	290	90	**290**	88	251	73	283	95
10:45	*	*	*	*	*	*	302	76	345	64	**270**	86	253	55	**292**	70
11:00	*	*	*	*	*	*	334	71	**318**	84	**290**	87	**258**	59	**300**	75
11:15	*	*	*	*	*	*	324	48	**320**	72	**312**	80	**272**	63	**307**	66
11:30	*	*	*	*	*	*	328	48	**327**	58	224	74	**262**	61	**285**	60
11:45	*	*	*	*	*	*	322	32	**358**	52	217	68	**261**	68	290	55
Total	0	0	0	0	0	0	6867	10881	6990	11487	5244	10229	4667	9074	5945	10418
Day Total	0		0		0		17748		18477		15473		13741		16363	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.7%	61.3%	37.8%	62.2%	33.9%	66.1%	34.0%	66.0%	36.3%	63.7%
Peak							07:30	12:00	11:00	12:00	10:30	04:00	11:00	12:00	10:45	02:15
Vol.							1324	1384	1323	1425	1162	1299	1053	1193	1184	1244
P.H.F.							0.909	0.964	0.924	0.981	0.931	0.931	0.968	0.932	0.964	0.972

ADT ADT 16,360 AADT 16,360

Genesis Transportation Engineering, Inc
14221 SW 120 Street, Suite 113
Miami, Florida 33186
786-517-4834 Office
786-517-4835 Fax

Site Code:
Station ID:

Latitude: 0' 0.000 Undefined

Start Time	18-Feb-10 Thu	Westbound	Eastbound	Total
12:00 AM		3	6	9
12:15		5	8	13
12:30		2	3	5
12:45		2	1	3
01:00		4	3	7
01:15		1	1	2
01:30		3	5	8
01:45		2	4	6
02:00		2	0	2
02:15		0	2	2
02:30		1	3	4
02:45		1	2	3
03:00		1	2	3
03:15		1	3	4
03:30		2	2	4
03:45		2	0	2
04:00		2	1	3
04:15		1	3	4
04:30		2	3	5
04:45		1	1	2
05:00		3	5	8
05:15		3	1	4
05:30		10	4	14
05:45		5	6	11
06:00		6	4	10
06:15		10	4	14
06:30		14	8	22
06:45		20	14	34
07:00		15	10	25
07:15		22	16	38
07:30		43	22	65
07:45		**59**	38	**97**
08:00		**50**	36	**86**
08:15		**43**	26	**69**
08:30		**48**	24	**72**
08:45		36	29	65
09:00		42	26	68
09:15		32	14	46
09:30		42	28	70
09:45		40	26	66
10:00		34	18	52
10:15		44	25	69
10:30		29	40	69
10:45		35	20	55
11:00		46	**28**	74
11:15		32	**30**	62
11:30		30	**35**	65
11:45		42	**46**	88
Total		873	636	1509
Percent		57.9%	42.1%	
Peak		07:45	11:00	07:45
Vol.		200	139	324
P.H.F.		0.847	0.755	0.835

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Start Time	18-Feb-10 Thu	Westbound	Eastbound	Total
12:00 PM		55	41	96
12:15		54	49	103
12:30		41	42	83
12:45		58	34	92
01:00		42	38	80
01:15		44	42	86
01:30		40	33	73
01:45		54	38	92
02:00		50	41	91
02:15		44	39	83
02:30		44	72	116
02:45		50	60	110
03:00		56	53	109
03:15		41	56	97
03:30		52	38	90
03:45		42	46	88
04:00		47	63	110
04:15		**58**	70	128
04:30		**46**	**56**	102
04:45		**56**	**82**	**138**
05:00		**64**	**78**	**142**
05:15		52	**92**	**144**
05:30		52	53	**105**
05:45		42	60	102
06:00		58	62	120
06:15		45	58	103
06:30		40	48	88
06:45		38	42	80
07:00		44	56	100
07:15		40	46	86
07:30		31	34	65
07:45		26	36	62
08:00		23	30	53
08:15		18	40	58
08:30		20	34	54
08:45		17	29	46
09:00		17	25	42
09:15		20	36	56
09:30		21	26	47
09:45		9	15	24
10:00		14	23	37
10:15		16	23	39
10:30		19	14	33
10:45		10	25	35
11:00		16	19	35
11:15		8	9	17
11:30		10	12	22
11:45		6	9	15
Total		1750	2027	3777
Percent		46.3%	53.7%	
Peak		16:15	16:30	16:45
Vol.		224	308	529
P.H.F.		0.875	0.837	0.918

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Start Time	19-Feb-10 Fri	Westbound	Eastbound	Total
12:00 AM		7	5	12
12:15		5	6	11
12:30		2	9	11
12:45		6	4	10
01:00		6	8	14
01:15		0	1	1
01:30		3	2	5
01:45		2	4	6
02:00		2	6	8
02:15		1	3	4
02:30		0	3	3
02:45		0	2	2
03:00		5	2	7
03:15		2	1	3
03:30		3	2	5
03:45		2	3	5
04:00		1	4	5
04:15		3	3	6
04:30		3	3	6
04:45		1	4	5
05:00		5	2	7
05:15		2	4	6
05:30		4	0	4
05:45		10	7	17
06:00		4	6	10
06:15		6	6	12
06:30		14	5	19
06:45		22	12	34
07:00		18	17	35
07:15		26	16	42
07:30		40	21	61
07:45		55	29	84
08:00		**60**	33	93
08:15		**46**	31	77
08:30		**49**	30	79
08:45		**57**	23	80
09:00		45	24	69
09:15		41	23	64
09:30		43	41	84
09:45		46	32	78
10:00		34	29	63
10:15		38	28	66
10:30		30	31	61
10:45		42	**44**	**86**
11:00		38	**42**	**80**
11:15		46	**34**	**80**
11:30		52	**46**	**98**
11:45		40	36	76
Total		967	727	1694
Percent		57.1%	42.9%	
Peak		08:00	10:45	10:45
Vol.		212	166	344
P.H.F.		0.883	0.902	0.878

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Start Time	19-Feb-10 Fri	Westbound	Eastbound	Total
12:00 PM		56	52	108
12:15		64	44	108
12:30		42	44	86
12:45		53	50	103
01:00		45	44	89
01:15		49	44	93
01:30		46	55	101
01:45		48	52	100
02:00		48	44	92
02:15		56	38	94
02:30		50	44	94
02:45		36	60	96
03:00		53	48	101
03:15		44	56	100
03:30		64	56	120
03:45		68	70	138
04:00		48	82	130
04:15		52	58	110
04:30		53	63	116
04:45		**58**	**72**	**130**
05:00		**62**	**80**	**142**
05:15		**78**	**72**	**150**
05:30		**68**	**68**	**136**
05:45		58	64	122
06:00		41	58	99
06:15		55	76	131
06:30		38	63	101
06:45		42	67	109
07:00		40	42	82
07:15		40	58	98
07:30		36	45	81
07:45		46	48	94
08:00		27	51	78
08:15		32	30	62
08:30		26	34	60
08:45		21	31	52
09:00		17	28	45
09:15		20	18	38
09:30		21	34	55
09:45		24	30	54
10:00		20	34	54
10:15		15	42	57
10:30		20	28	48
10:45		11	34	45
11:00		17	22	39
11:15		14	16	30
11:30		8	10	18
11:45		12	12	24
Total		1942	2271	4213
Percent		46.1%	53.9%	
Peak		16:45	16:45	16:45
Vol.		266	292	558
P.H.F.		0.853	0.913	0.930

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Start Time	20-Feb-10 Sat	Westbound	Eastbound	Total
12:00 AM		14	20	34
12:15		8	15	23
12:30		7	12	19
12:45		8	8	16
01:00		6	6	12
01:15		5	8	13
01:30		2	2	4
01:45		4	8	12
02:00		1	3	4
02:15		2	3	5
02:30		1	4	5
02:45		2	2	4
03:00		1	2	3
03:15		5	8	13
03:30		2	0	2
03:45		3	4	7
04:00		1	4	5
04:15		3	6	9
04:30		1	3	4
04:45		3	6	9
05:00		1	0	1
05:15		5	2	7
05:30		6	4	10
05:45		8	5	13
06:00		2	7	9
06:15		0	2	2
06:30		9	2	11
06:45		12	15	27
07:00		12	6	18
07:15		20	14	34
07:30		20	15	35
07:45		22	12	34
08:00		20	21	41
08:15		20	8	28
08:30		43	19	62
08:45		50	33	83
09:00		46	28	74
09:15		35	16	51
09:30		38	20	58
09:45		45	32	77
10:00		47	28	75
10:15		46	28	74
10:30		44	30	74
10:45		42	**46**	88
11:00		**55**	**38**	**93**
11:15		**48**	**34**	**82**
11:30		**38**	**40**	**78**
11:45		**52**	37	**89**
Total		865	666	1531
Percent		56.5%	43.5%	
Peak		11:00	10:45	11:00
Vol.		193	158	342
P.H.F.		0.877	0.859	0.919

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Start Time	20-Feb-10 Sat	Westbound	Eastbound	Total
12:00 PM		49	45	94
12:15		**44**	54	98
12:30		**52**	46	98
12:45		**48**	46	94
01:00		**52**	35	87
01:15		28	46	74
01:30		32	45	77
01:45		37	40	77
02:00		38	34	72
02:15		33	47	80
02:30		43	50	**93**
02:45		49	**64**	**113**
03:00		52	**52**	**104**
03:15		38	**48**	**86**
03:30		34	**54**	88
03:45		26	40	66
04:00		36	50	86
04:15		48	46	94
04:30		51	46	97
04:45		50	55	105
05:00		39	58	97
05:15		48	42	90
05:30		48	48	96
05:45		38	34	72
06:00		30	37	67
06:15		49	48	97
06:30		27	62	89
06:45		38	26	64
07:00		32	50	82
07:15		34	32	66
07:30		36	22	58
07:45		27	36	63
08:00		40	32	72
08:15		30	25	55
08:30		20	26	46
08:45		18	22	40
09:00		16	15	31
09:15		21	25	46
09:30		12	30	42
09:45		20	21	41
10:00		18	29	47
10:15		18	29	47
10:30		20	20	40
10:45		16	11	27
11:00		8	8	16
11:15		10	10	20
11:30		6	4	10
11:45		11	3	14
Total		1570	1748	3318
Percent		47.3%	52.7%	
Peak		12:15	14:45	14:30
Vol.		196	218	396
P.H.F.		0.942	0.852	0.876

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Start Time	21-Feb-10 Sun	Westbound	Eastbound	Total
12:00 AM		7	2	9
12:15		8	2	10
12:30		6	3	9
12:45		8	2	10
01:00		0	0	0
01:15		9	8	17
01:30		2	2	4
01:45		1	2	3
02:00		3	0	3
02:15		1	4	5
02:30		2	2	4
02:45		7	8	15
03:00		0	0	0
03:15		5	2	7
03:30		2	0	2
03:45		2	1	3
04:00		1	2	3
04:15		2	2	4
04:30		2	0	2
04:45		3	2	5
05:00		2	0	2
05:15		1	0	1
05:30		1	0	1
05:45		2	1	3
06:00		3	2	5
06:15		7	2	9
06:30		4	2	6
06:45		6	3	9
07:00		11	8	19
07:15		8	0	8
07:30		10	2	12
07:45		14	5	19
08:00		14	4	18
08:15		19	3	22
08:30		26	6	32
08:45		22	4	26
09:00		22	4	26
09:15		26	**5**	31
09:30		21	**9**	30
09:45		40	**13**	53
10:00		31	**5**	36
10:15		34	5	39
10:30		34	2	36
10:45		26	8	34
11:00		**44**	10	**54**
11:15		**42**	9	**51**
11:30		**26**	2	**28**
11:45		**40**	6	**46**
Total		607	164	771
Percent		78.7%	21.3%	
Peak		11:00	09:15	11:00
Vol.		152	32	179
P.H.F.		0.864	0.615	0.829

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Start Time	21-Feb-10 Sun	Westbound	Eastbound	Total
12:00 PM		**48**	8	**56**
12:15		**36**	4	**40**
12:30		**38**	4	**42**
12:45		**50**	6	**56**
01:00		32	10	42
01:15		39	5	44
01:30		37	7	44
01:45		44	8	52
02:00		33	4	37
02:15		33	6	39
02:30		42	6	48
02:45		34	4	38
03:00		40	4	44
03:15		38	4	42
03:30		27	4	31
03:45		38	4	42
04:00		30	4	34
04:15		38	2	40
04:30		31	4	35
04:45		46	6	52
05:00		42	6	48
05:15		36	2	38
05:30		32	4	36
05:45		28	2	30
06:00		26	6	32
06:15		34	6	40
06:30		26	**8**	34
06:45		22	**8**	30
07:00		30	**10**	40
07:15		26	**8**	34
07:30		23	4	27
07:45		24	7	31
08:00		15	4	19
08:15		16	10	26
08:30		10	1	11
08:45		10	4	14
09:00		17	8	25
09:15		20	2	22
09:30		10	8	18
09:45		13	6	19
10:00		11	4	15
10:15		9	13	22
10:30		8	7	15
10:45		9	8	17
11:00		13	1	14
11:15		15	8	23
11:30		11	5	16
11:45		8	6	14
Total		1298	270	1568
Percent		82.8%	17.2%	
Peak		12:00	18:30	12:00
Vol.		172	34	194
P.H.F.		0.860	0.850	0.866
Grand Total		9872	8509	18381
Percent		53.7%	46.3%	

ADT ADT 4,552 AADT 4,552

APPENDIX C

Peak Season Factor and Historical Traffic Data

2008 Peak Season Factor Category Report - Report Type: ALL
Category: 9000 MONROE COUNTYWIDE

MOCF: 0.89

Week	Dates	SF	PSCF
1	01/01/2008 - 01/05/2008	1.02	1.15
2	01/06/2008 - 01/12/2008	0.99	1.12
3	01/13/2008 - 01/19/2008	0.95	1.07
* 4	01/20/2008 - 01/26/2008	0.93	1.05
* 5	01/27/2008 - 02/02/2008	0.91	1.03
* 6	02/03/2008 - 02/09/2008	0.89	1.01
* 7	02/10/2008 - 02/16/2008	0.87	0.98
* 8	02/17/2008 - 02/23/2008	0.86	0.97
* 9	02/24/2008 - 03/01/2008	0.86	0.97
*10	03/02/2008 - 03/08/2008	0.85	0.96
*11	03/09/2008 - 03/15/2008	0.85	0.96
*12	03/16/2008 - 03/22/2008	0.87	0.98
*13	03/23/2008 - 03/29/2008	0.88	0.99
*14	03/30/2008 - 04/05/2008	0.90	1.02
*15	04/06/2008 - 04/12/2008	0.91	1.03
*16	04/13/2008 - 04/19/2008	0.93	1.05
17	04/20/2008 - 04/26/2008	0.94	1.06
18	04/27/2008 - 05/03/2008	0.95	1.07
19	05/04/2008 - 05/10/2008	0.96	1.08
20	05/11/2008 - 05/17/2008	0.98	1.11
21	05/18/2008 - 05/24/2008	0.98	1.11
22	05/25/2008 - 05/31/2008	0.99	1.12
23	06/01/2008 - 06/07/2008	1.00	1.13
24	06/08/2008 - 06/14/2008	1.00	1.13
25	06/15/2008 - 06/21/2008	1.01	1.14
26	06/22/2008 - 06/28/2008	1.01	1.14
27	06/29/2008 - 07/05/2008	1.00	1.13
28	07/06/2008 - 07/12/2008	1.00	1.13
29	07/13/2008 - 07/19/2008	0.99	1.12
30	07/20/2008 - 07/26/2008	1.01	1.14
31	07/27/2008 - 08/02/2008	1.03	1.16
32	08/03/2008 - 08/09/2008	1.05	1.19
33	08/10/2008 - 08/16/2008	1.07	1.21
34	08/17/2008 - 08/23/2008	1.12	1.26
35	08/24/2008 - 08/30/2008	1.16	1.31
36	08/31/2008 - 09/06/2008	1.20	1.36
37	09/07/2008 - 09/13/2008	1.24	1.40
38	09/14/2008 - 09/20/2008	1.28	1.45
39	09/21/2008 - 09/27/2008	1.24	1.40
40	09/28/2008 - 10/04/2008	1.20	1.36
41	10/05/2008 - 10/11/2008	1.16	1.31
42	10/12/2008 - 10/18/2008	1.12	1.26
43	10/19/2008 - 10/25/2008	1.11	1.25
44	10/26/2008 - 11/01/2008	1.10	1.24
45	11/02/2008 - 11/08/2008	1.09	1.23
46	11/09/2008 - 11/15/2008	1.08	1.22
47	11/16/2008 - 11/22/2008	1.07	1.21
48	11/23/2008 - 11/29/2008	1.06	1.20
49	11/30/2008 - 12/06/2008	1.05	1.19
50	12/07/2008 - 12/13/2008	1.04	1.17
51	12/14/2008 - 12/20/2008	1.02	1.15
52	12/21/2008 - 12/27/2008	0.99	1.12
53	12/28/2008 - 12/31/2008	0.95	1.07

* Peak Season

Florida Department of Transportation
Transportation Statistics Office
2008 Historical AADT Report

County: 90 - MONROE

Site: 5034 - SR 5/US-1/N ROOSEVELT BLVD, 200' W BYRD RD

Year	AADT	Direction 1	Direction 2	K Factor	D Factor	T Factor
2008	30000 C	N 15000	S 15000	10.45	54.98	8.60
2007	34500 C	N 17000	S 17500	10.00	55.10	9.80
2006	33000 C	N 17000	S 16000	10.08	55.69	12.30
2005	34000 C	N 15000	S 19000	10.40	55.70	5.50
2004	37500 C	N 18500	S 19000	10.00	56.00	3.10
2003	37500 C	N	S	10.10	56.30	4.40
2002	37000 C	N 18000	S 19000	10.00	54.20	5.60
2001	32500 C	N	S	10.00	55.90	6.80
2000	34500 C	N 18000	S 16500	9.90	54.80	6.60
1999	42500 C	N 21500	S 21000	9.50	56.70	4.80
1998	42500 C	N 20000	S 22500	9.50	56.60	2.80
1997	36500 C	N	S	9.60	55.90	3.70
1996	30000 C	N	S	10.00	55.60	5.50
1995	31500 C	N	S	9.90	54.40	5.20
1994	31500 C	N	S	10.00	54.80	3.00
1993	30000 C	N	S	0.00	0.00	0.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown

Florida Department of Transportation
Transportation Statistics Office
2008 Historical AADT Report

County: 90 - MONROE

Site: 0105 - SR 5/US-1, 400' W SR A1A

Year	AADT	Direction 1	Direction 2	K Factor	D Factor	T Factor
2008	29000 C	N 14000	S 15000	10.45	54.98	8.60
2007	32000 C	N 16000	S 16000	10.00	55.10	9.80
2006	32500 C	N 17000	S 15500	10.08	55.69	12.30
2005	31000 C	N 15500	S 15500	10.40	55.70	5.50
2004	34500 C	N 17000	S 17500	10.00	56.00	3.10
2003	36500 C	N	S	10.10	56.30	4.40
2002	34500 C	N 17500	S 17000	10.00	54.20	5.60
2001	34500 C	N	S	10.00	55.90	6.80
2000	31500 C	N 16000	S 15500	9.90	54.80	6.60
1999	34500 C	N 17500	S 17000	9.50	56.70	4.80
1998	40500 C	N 20000	S 20500	9.50	56.60	2.80
1997	30500 C	N	S	9.60	55.90	3.70
1996	28000 C	N	S	10.00	55.60	5.50
1995	29500 C	N	S	9.90	54.40	5.20
1994	32500 C	N	S	10.00	54.80	3.00
1993	17500 C	N	S	0.00	0.00	0.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown

APPENDIX D

Future Traffic Volume Calculations

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

N. Roosevelt Boulevard and Toppino Drive
Sunday Peak Hour

Description	Toppino Drive Northbound			Southbound			N. Roosevelt Blvd Eastbound			N. Rooseverlt Blvd Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (2/21/10)	7	0	38	0	0	0	0	852	20	7	1,001	0
Season Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2010 Peak Season Traffic	7	0	38	0	0	0	0	852	20	7	1,001	0
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2011 Background Traffic	7	0	39	0	0	0	0	869	20	7	1,021	0
New Church Trips	15		7						15	7		
2011 Total Traffic	**22**	**0**	**46**	**0**	**0**	**0**	**0**	**869**	**35**	**14**	**1,021**	**0**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Northside Drive and Toppino Drive
Sunday Peak Hour

Description	Northbound			Toppino Drive Southbound			Northside Drive Eastbound			Northside Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (2/21/10)	0	0	0	15	0	17	30	33	0	0	121	10
Season Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2010 Peak Season Traffic	0	0	0	15	0	17	30	33	0	0	121	10
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2011 Background Traffic	0	0	0	15	0	17	31	34	0	0	123	10
New Church Trips				22				7			7	22
2011 Total Traffic	**0**	**0**	**0**	**37**	**0**	**17**	**31**	**41**	**0**	**0**	**130**	**32**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Northside Drive and West Driveway
Sunday Peak Hour

Description	Driveway Northbound			Southbound			Northside Drive Eastbound			Northside Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (2/21/10)	0	0	0	0	0	0	0	48	0	0	131	0
Season Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2010 Peak Season Traffic	0	0	0	0	0	0	0	48	0	0	131	0
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2011 Background Traffic	0	0	0	0	0	0	0	49	0	0	134	0
New Church Trips	21		0					8	21	0	8	
2011 Total Traffic	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**21**	**0**	**142**	**0**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Northside Drive and East Driveway
Sunday Peak Hour

Description	Driveway Northbound			Southbound			Northside Drive Eastbound			Northside Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (2/21/10)	0	0	0	0	0	0	0	48	0	0	131	0
Season Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2010 Peak Season Traffic	0	0	0	0	0	0	0	48	0	0	131	0
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2011 Background Traffic	0	0	0	0	0	0	0	49	0	0	134	0
New Church Trips	8		4					0	8	4	0	
2011 Total Traffic	**8**	**0**	**4**	**0**	**0**	**0**	**0**	**49**	**8**	**4**	**134**	**0**

Traf Tech
ENGINEERING, INC.

APPENDIX E

Intersection Capacity Analyses

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*N. Roosevelt/Toppino*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2010 Existing*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *N. Roosevelt* | North/South Street: *Toppino Drive*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*852*	*20*	*7*	*1001*	
Peak-Hour Factor, PHF	*1.00*	*0.93*	*0.93*	*0.94*	*0.94*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*916*	*21*	*7*	*1064*	*0*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*7*		*38*			
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*9*	*0*	*50*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LR*				
v (veh/h)		*7*		*59*				
C (m) (veh/h)		*727*		*456*				
v/c		*0.01*		*0.13*				
95% queue length		*0.03*		*0.44*				
Control Delay (s/veh)		*10.0*		*14.1*				
LOS		*A*		*B*				
Approach Delay (s/veh)	--	--		*14.1*				
Approach LOS	--	--		*B*				

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*N. Roosevelt/Toppino*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2011 Background*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *N. Roosevelt* | North/South Street: *Toppino Drive*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*869*	*20*	*7*	*1021*	
Peak-Hour Factor, PHF	*1.00*	*0.93*	*0.93*	*0.94*	*0.94*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*934*	*21*	*7*	*1086*	*0*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*7*		*39*			
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*9*	*0*	*52*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LR*				
v (veh/h)		*7*		*61*				
C (m) (veh/h)		*715*		*451*				
v/c		*0.01*		*0.14*				
95% queue length		*0.03*		*0.46*				
Control Delay (s/veh)		*10.1*		*14.2*				
LOS		*B*		*B*				
Approach Delay (s/veh)	--	--		*14.2*				
Approach LOS	--	--		*B*				

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*N. Roosevelt/Toppino*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2011 Total w/Project*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *N. Roosevelt*	North/South Street: *Toppino Drive*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*869*	*35*	*14*	*1021*	
Peak-Hour Factor, PHF	*1.00*	*0.93*	*0.93*	*0.94*	*0.94*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*934*	*37*	*14*	*1086*	*0*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*22*		*46*			
Peak-Hour Factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*29*	*0*	*61*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LR*				
v (veh/h)		*14*		*90*				
C (m) (veh/h)		*706*		*374*				
v/c		*0.02*		*0.24*				
95% queue length		*0.06*		*0.93*				
Control Delay (s/veh)		*10.2*		*17.6*				
LOS		*B*		*C*				
Approach Delay (s/veh)	--	--	*17.6*					
Approach LOS	--	--	*C*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*Northside/Toppino*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2010 Existing*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *Northside Drive* | North/South Street: *Toppino Drive*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*30*	*33*			*121*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.76*	*0.76*
Hourly Flow Rate, HFR (veh/h)	*31*	*34*	*0*	*0*	*159*	*13*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*15*		*17*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.73*	*1.00*	*0.73*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*20*	*0*	*23*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*31*						*43*	
C (m) (veh/h)	*1405*						*792*	
v/c	*0.02*						*0.05*	
95% queue length	*0.07*						*0.17*	
Control Delay (s/veh)	*7.6*						*9.8*	
LOS	*A*						*A*	
Approach Delay (s/veh)	--	--				*9.8*		
Approach LOS	--	--				*A*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*Northside/Toppino*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2011 Background*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *Northside Drive* | North/South Street: *Toppino Drive*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*31*	*34*			*123*	*10*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.76*	*0.76*
Hourly Flow Rate, HFR (veh/h)	*32*	*35*	*0*	*0*	*161*	*13*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*15*		*17*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.73*	*1.00*	*0.73*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*20*	*0*	*23*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*32*						*43*	
C (m) (veh/h)	*1403*						*788*	
v/c	*0.02*						*0.05*	
95% queue length	*0.07*						*0.17*	
Control Delay (s/veh)	*7.6*						*9.8*	
LOS	*A*						*A*	
Approach Delay (s/veh)	--	--				*9.8*		
Approach LOS	--	--				*A*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*Northside/Toppino*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2011 Total w/Project*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *Northside Drive* | North/South Street: *Toppino Drive*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*31*	*41*			*130*	*32*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*1.00*	*1.00*	*0.76*	*0.76*
Hourly Flow Rate, HFR (veh/h)	*32*	*43*	*0*	*0*	*171*	*42*
Percent Heavy Vehicles	*2*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*37*		*17*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.73*	*1.00*	*0.73*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*50*	*0*	*23*
Percent Heavy Vehicles	*0*	*0*	*0*	*2*	*0*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*32*						*73*	
C (m) (veh/h)	*1357*						*723*	
v/c	*0.02*						*0.10*	
95% queue length	*0.07*						*0.34*	
Control Delay (s/veh)	*7.7*						*10.5*	
LOS	*A*						*B*	
Approach Delay (s/veh)	--	--					*10.5*	
Approach LOS	--	--					*B*	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*Northside/West Driveway*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2011 Tota w/Project*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *Northside Drive* | North/South Street: *West Driveway*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*57*	*21*	*0*	*141*	
Peak-Hour Factor, PHF	*1.00*	*0.95*	*0.50*	*1.00*	*0.76*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*60*	*42*	*0*	*185*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*21*		*0*			
Peak-Hour Factor, PHF	*0.50*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*42*	*0*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (veh/h)		*0*		*42*				
C (m) (veh/h)		*1503*		*727*				
v/c		*0.00*		*0.06*				
95% queue length		*0.00*		*0.18*				
Control Delay (s/veh)		*7.4*		*10.3*				
LOS		*A*		*B*				
Approach Delay (s/veh)	--	--		*10.3*				
Approach LOS	--	--		*B*				

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Vargas*	Intersection	*Northside/East Driveway*
Agency/Co.	*Traf Tech Engineering, Inc.*	Jurisdiction	*Key West*
Date Performed	*2/27/2010*	Analysis Year	*2011 Tota w/Project*
Analysis Time Period	*Sunday Peak*		

Project Description

East/West Street: *Northside Drive*	North/South Street: *East Driveway*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*49*	*8*	*4*	*133*	
Peak-Hour Factor, PHF	*1.00*	*0.95*	*0.50*	*0.50*	*0.76*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*51*	*16*	*8*	*175*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*		*4*			
Peak-Hour Factor, PHF	*0.50*	*1.00*	*0.50*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*16*	*0*	*8*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (veh/h)		*8*		*24*				
C (m) (veh/h)		*1547*		*812*				
v/c		*0.01*		*0.03*				
95% queue length		*0.02*		*0.09*				
Control Delay (s/veh)		*7.3*		*9.6*				
LOS		*A*		*A*				
Approach Delay (s/veh)	--	--	*9.6*					
Approach LOS	--	--	*A*					

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