Harborside Hotel

traffic study

prepared for:
The Singh Company

Traf Tech
ENGINEERING, INC.

February 2012

Traf Tech
ENGINEERING, INC.

February 22, 2012

Ms. Elizabeth Newland
The Singh Company
P.O Box 2039
Key West, Florida 33045

Re: Harborside Hotel – Traffic Study

Dear Ms. Newland:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study undertaken for the proposed Harborside Hotel planned to be located on the north side of Caroline Street between Elizabeth Street and William Street in the City of Key West, Florida. The study addresses the traffic impacts created by the proposed lodging facility to the surrounding street system and access.

It has been a pleasure working with you on this project.

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

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INTRODUCTION

Harborside Hotel is a proposed lodging facility planned to be located on the north side of Caroline Street between Elizabeth Street and William Street in the City of Key West, Florida. Figure 1 on the following page shows the location of the project site as well as the transportation network located in the immediate vicinity of the project site.

Traf Tech Engineering, Inc. was retained by The Singh Company to conduct a traffic study in connection with the subject hotel project. The study addresses trip generation, access to the site, and 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
Harborside Hotel
Key West, Florida

Existing Land Use

The site originally was a campground with a mix of 101 residential and transient units consisting of mobile homes, apartments, guest house units, RV trailer sites and campsites. The site was cleared and one duplex townhouse was built.

Proposed Land Use and Access

Proposed for the site is a 96-room hotel. The duplex townhouse will be removed from the site prior to construction of the new hotel project. Access to the project will be provided from William Street. Sixty-nine (69) underground parking spaces will be provided on site plus three parking stalls at the lobby entrance adjacent to the traffic roundabout located at the north end of William Street.

For purposes of this traffic study, the project is anticipated to be built and occupied by the year 2014. Appendix A contains a copy of the proposed site plan for the Harborside Hotel. The survey of the site is also contained in Appendix A.

EXISTING CONDITIONS

This section addresses the roadway system surrounding the project site and intersections.

Roadway System

The transportation network located in the vicinity of the project site includes three local roadways. These roadways include Caroline Street, Elizabeth Street, and William Street. All three local roadways provide two lanes (one in each direction). Caroline Street is the major street (both Elizabeth Street and William Street have stop signs as they approach Caroline Street).

Intersections

For purposes of this study, the intersections of Caroline Street/Elizabeth Street and Caroline Street/William Street were selected for analysis purposes (the subject hotel will significantly impact these intersection). The existing lane geometry of both intersections is similar and is described below:

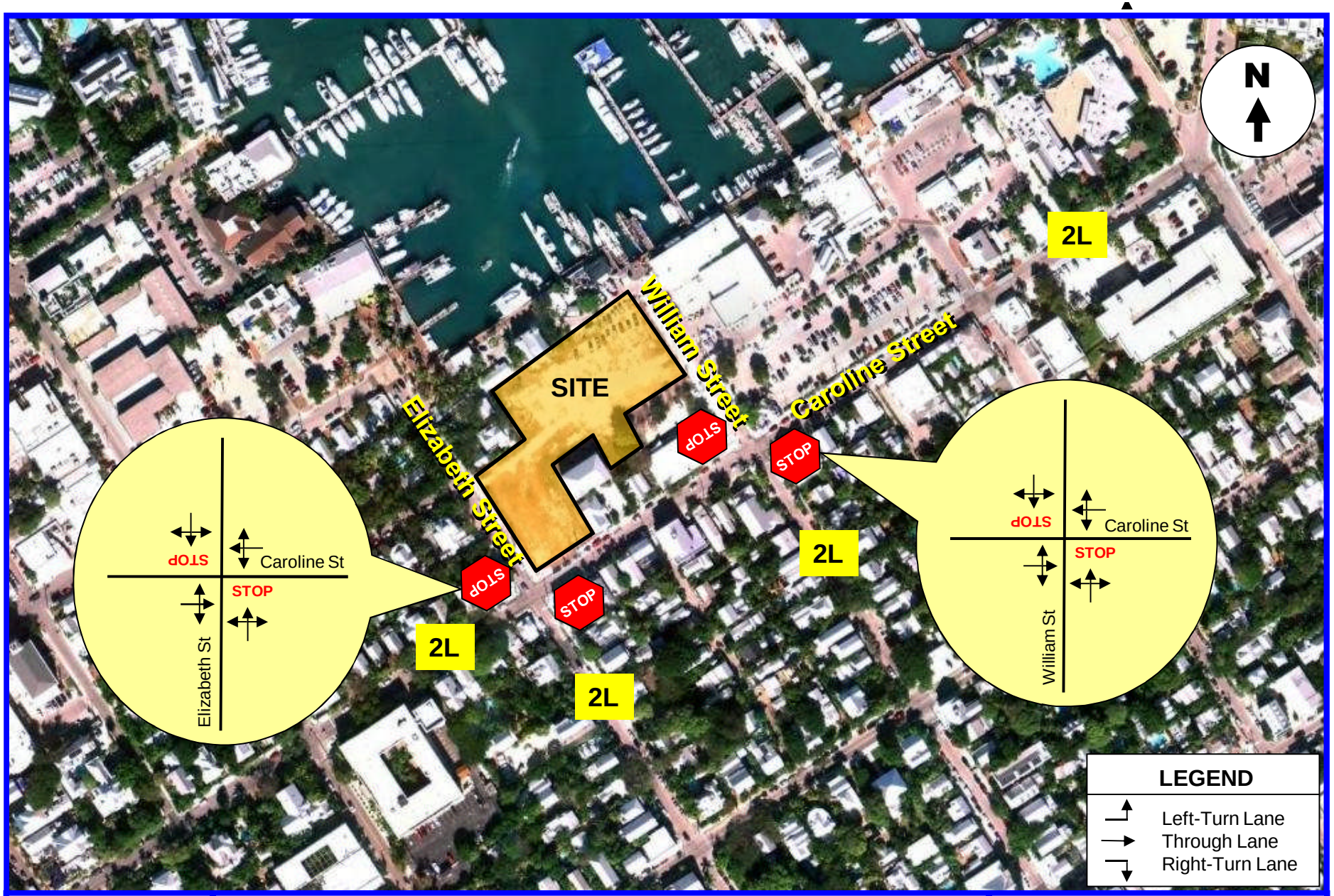
Northbound Approach (Elizabeth Street and William Street)
- One approach lane (stop control)

Southbound Approach (Elizabeth Street and William Street)
- One approach lane (stop control)

Eastbound Approach (Caroline Street)
- One approach lane (free flowing)

Westbound Approach (Caroline Street)
- One approach lane (free flowing)

Figure 2 depicts the number of lanes on the roadways located within the study area of the proposed project. The turning lanes provided at the intersections selected for analysis purposes are also illustrated in the figure.



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EXISTING LANE GEOMETRY

FIGURE 2
Harborside Hotel
Key West, Florida

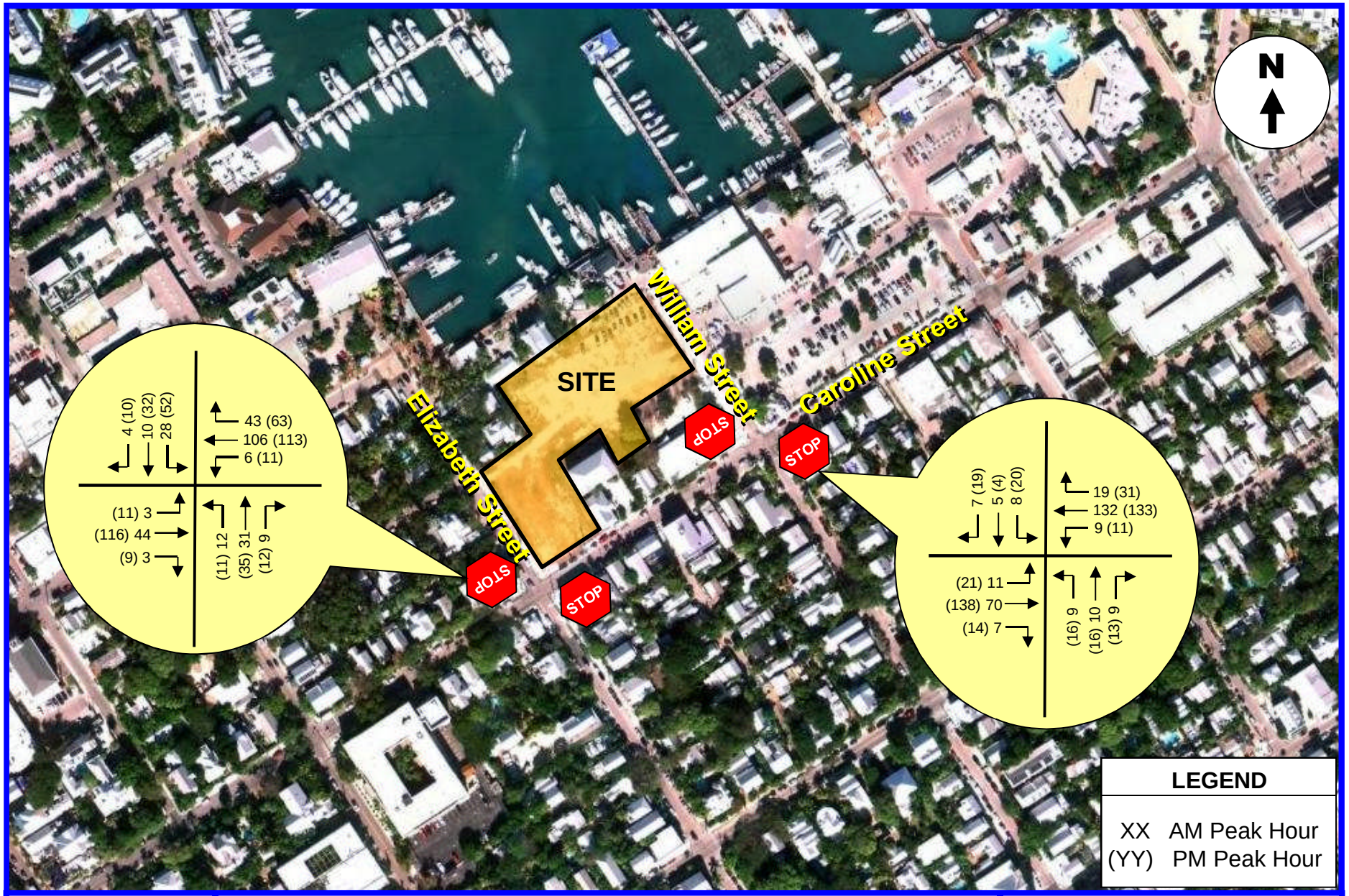
TRAFFIC COUNTS

Traf Tech Engineering, Inc., in association with Crossroads Engineering Data, Inc., collected intersection turning movement counts at the following two (2) intersections located within the study area:

1. Caroline Street and Elizabeth Street (stop-control intersection)
2. Caroline Street and William Street (stop-control intersection)

The intersection turning movement counts were collected on Tuesday, January 31, 2012 during the morning (7:00 AM to 9:00 AM) and afternoon (4:00 PM to 6:00 PM) peak periods.

Figure 3 summarizes the results of the intersection turning movement counts. Appendix B contains the traffic counts, as collected in the field.



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EXISTING TRAFFIC COUNTS
(January 31, 2012)

FIGURE 3
Harborside Hotel
Key West, Florida

TRIP GENERATION

The trip generation for the proposed hotel development was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation* manual (8th Edition). According to the subject ITE manual, the most appropriate "land use" category for the subject project is ITE's Land Use 310 – Hotel.

Table 1 documents the trips generated associated with the Harborside Hotel project.

TABLE 1
Harborside Hotel
Trip Generation Summary

PROPOSED DEVELOPMENT (96 Hotel Rooms)			
Land Use	**Daily Trips**	**AM Peak Trips**	**PM Peak Trips**
Hotel (96 rooms)	856	64	67
External Trips =	**856**	**64**	**67**

SOURCE: ITE Trip Generation Manual (8th Edition)

As indicated in Table 1, the new hotel trips consist of approximately 856 daily trips, approximately 64 AM peak hour trips (37 inbound and 27 outbound), and approximately 67 PM peak hour trips (33 inbound and 34 outbound). Therefore, the traffic associated with the Harborside Hotel is considered minimal from a traffic engineering standpoint (approximately one car every one-minute period).

The trip generation rates for the proposed hotel development program, given by ITE, are:

HOTEL LAND USE (Land Use 310)

Daily Trips

T = 8.92 (X)
Where T = average daily vehicle trip ends
X = number of occupied hotel rooms

AM Peak Hour of Adjacent Street (Typical Morning Rush Hour)

T = 0.67 (X) (58% inbound and 42% outbound)
Where T = average AM peak hour vehicle trip ends
X = number of occupied hotel rooms

PM Peak Hour of Adjacent Street (Typical Afternoon Rush Hour)

T = 0.70 (X) (49% inbound and 51% outbound)
Where T = average PM peak hour vehicle trip ends
X = number of occupied hotel rooms

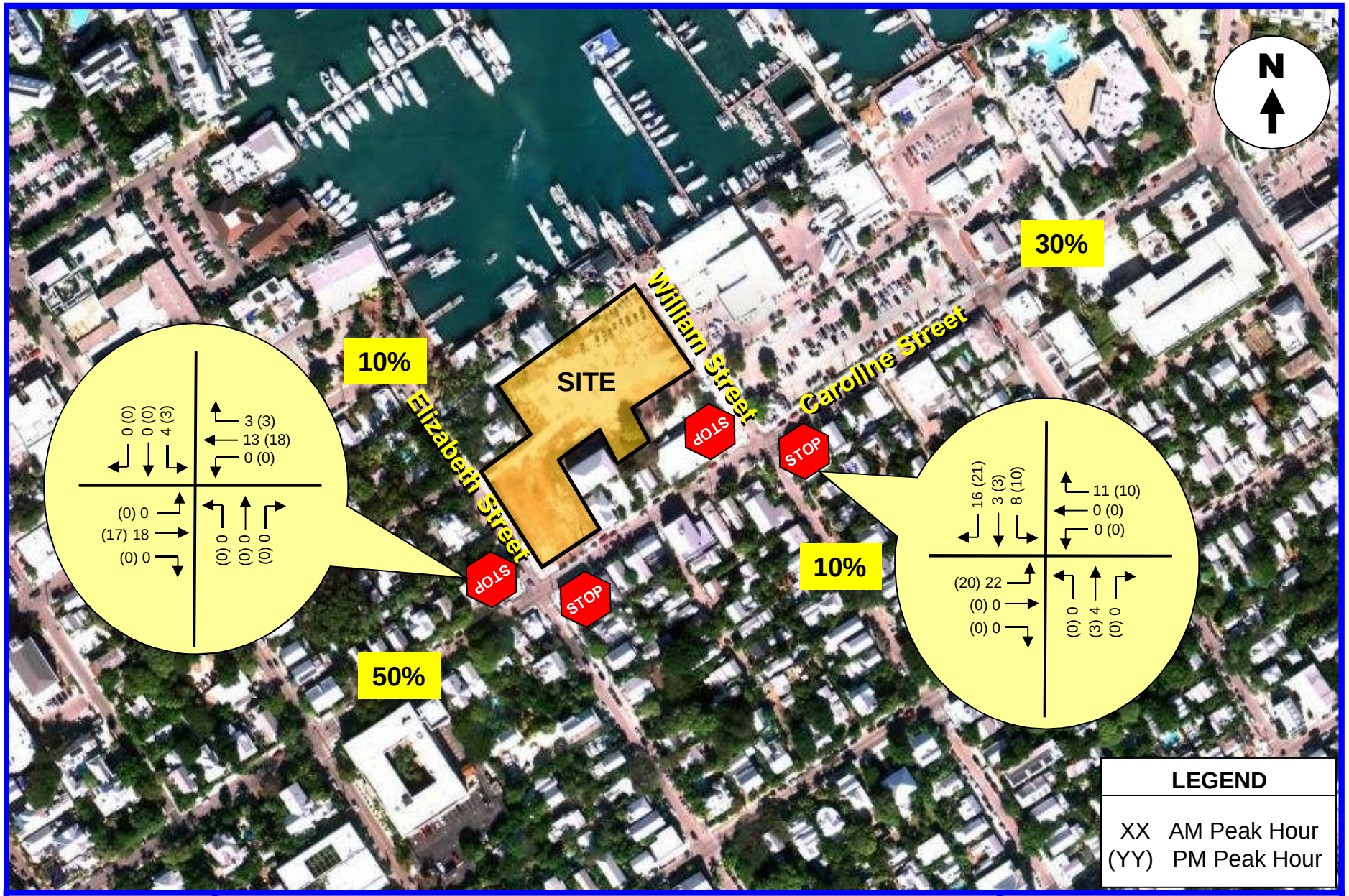
In order to assess impacts with a conservative approach, no deductions were made for walking trips, which is a common trip-mode for hotels located near Downtown Key West.

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 Harborside Hotel project is summarized below:

- 30% to and from the east via Caroline Street
- 50% to and from the west via Caroline Street
- 10% to and from the north via Elizabeth Street
- 10% to and from the south via William Street

The new AM and PM peak hour traffic generated by the 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
(New Hotel Trips)

FIGURE 4
Harborside Hotel
Key West, Florida

This section of the study is divided into three 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 final section addresses the projected operating conditions of the nearby street system (Caroline Street, Elizabeth Street and William Street).

Future Conditions Traffic Volumes

Two sets of future traffic volumes were developed. The first set includes project buildout conditions (assumed to be 2014) without the proposed project and the second set adds the project anticipated to be generated by the Harborside Hotel development.

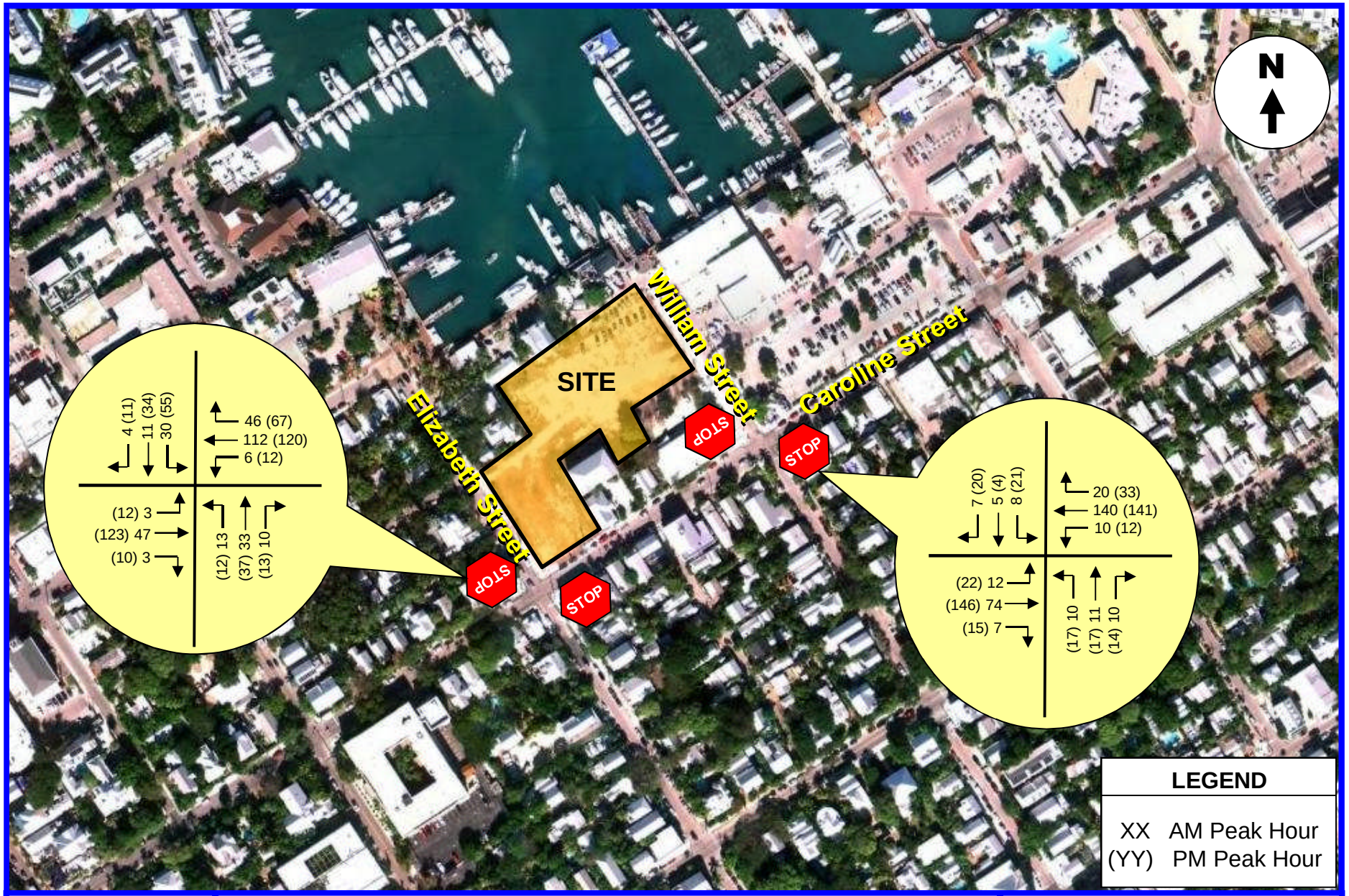
In order to develop future-year traffic volumes, without the proposed project, two separate analyses were undertaken. The first analysis converts the existing AM peak hour traffic counts collected in the field during the month of January to average peak season conditions. Based on FDOT's Peak Season Factor Category report, an adjustment factor of 1.04 is required to convert traffic counts collected in the last week of January to average peak season conditions (refer to Appendix C). The second analysis includes a growth factor to project 2012 peak season traffic volumes to the year 2014. For purposes of this traffic study, a 1.0% growth rate was applied to the 2012 traffic counts in order to develop 2014 background traffic conditions. The 1.0% traffic growth rate is considered conservative since three nearby traffic count stations have reflected negligible traffic growth along nearby roadways (refer to Appendix C).

The future traffic calculations (peak season adjustments, traffic growth, and the trips associated with the hotel development) for the study intersections 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 Figure 6 includes the additional traffic anticipated to be generated by the Harborside Hotel development.

Level of Service Analyses

Intersection capacity analyses were performed for the study intersections of Caroline/Elizabeth and Caroline/William. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual. The results of the intersection analyses are summarized in Table 2. Appendix E contains the computer printouts of the intersection capacity analyses.



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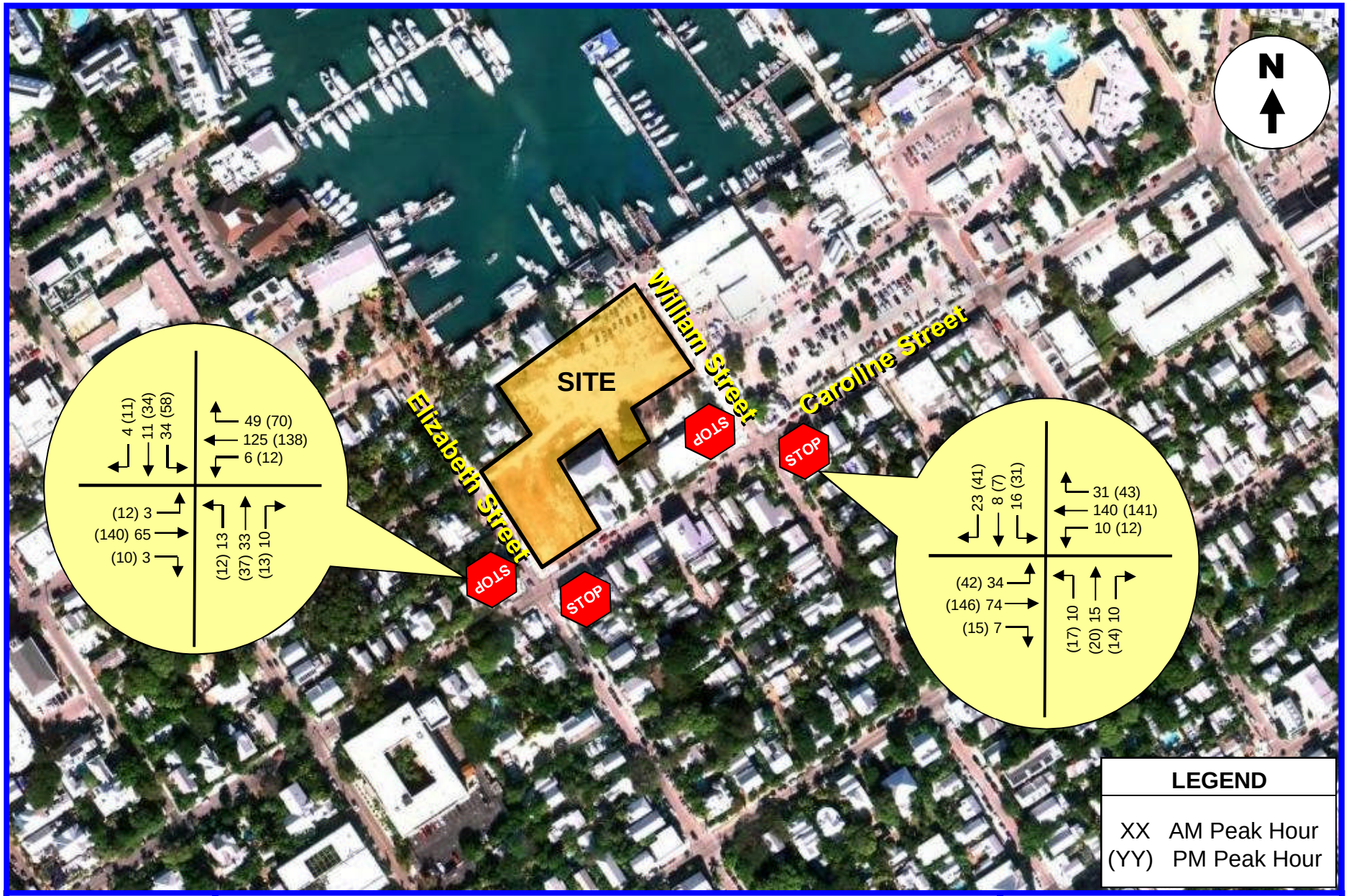
BACKGROUND TRAFFIC – Year 2014

FIGURE 5
Harborside Hotel
Key West, Florida



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TOTAL TRAFFIC – Year 2014

FIGURE 6
Harborside Hotel
Key West, Florida

As indicated in Table 2, the two study intersections are currently operating at a very good level of service and will continue to operate adequately with the Harborside Hotel project in place.

TABLE 2
Intersection Level of Service
Harborside Hotel

Intersection/Movements	Existing	Future Traffic Conditions	
		Without Project	With Project
Caroline St./Elizabeth St.			
- NB Approach	B (B)	B (B)	B (B)
- SB Approach	B (B)	B (B)	B (B)
- EB Lefts	A (A)	A (A)	A (A)
- WB Lefts	A (A)	A (A)	A (A)
Caroline St./William St.			
- NB Approach	B (B)	B (B)	B (B)
- SB Approach	B (B)	B (B)	B (B)
- EB Lefts	A (A)	A (A)	A (A)
- WB Lefts	A (A)	A (A)	A (A)

Source: Highway Capacity Manual. LEGEND: AM Peak Hour (PM Peak Hour)

Roadway Segments Analysis

According to FDOT's 2009 Quality/Level of Service Handbook, 2-lane local roadways such as Caroline Street, Elizabeth Street, and William Street have a level of service "D" capacity of approximately 960 vehicles per hour. With the proposed Harborside Hotel project in place, the projected peak hour volumes on these roadways are as follows:

Caroline Street: 402 vehicles per hour, or approximately 42% of the roadway's capacity

Elizabeth Street: 222 vehicles per hour, or approximately 23% of the roadway's capacity

William Street: 184 vehicles per hour, or approximately 20% of the roadway's capacity

Based on the above analysis, ample roadway capacity will be available on Caroline Street, Elizabeth Street, and William Street to absorb the additional traffic impacts created by the Harborside Hotel development

CONCLUSIONS

Harborside Hotel is a proposed lodging facility planned to be located on the north side of Caroline Street between Elizabeth Street and William Street in the City of Key West, Florida.

Traf Tech Engineering, Inc. was retained by The Singh Company to conduct a traffic study in connection with the subject hotel project. The study addresses trip generation, access to the site, and the traffic impacts on the nearby transportation network.

The site originally was a campground with a mix of 101 residential and transient units consisting of mobile homes, apartments, guest house units, RV trailer sites and campsites. The site was cleared and one duplex townhouse was built.

Proposed for the site is a 96-room hotel. The duplex townhouse will be removed from the site prior to construction of the new hotel project. Access to the project will be provided from William Street. Sixty-nine (69) underground parking spaces will be provided on site plus three parking stalls at the lobby entrance adjacent to the traffic roundabout located at the north end of William Street.

The conclusions of the traffic study are presented below:

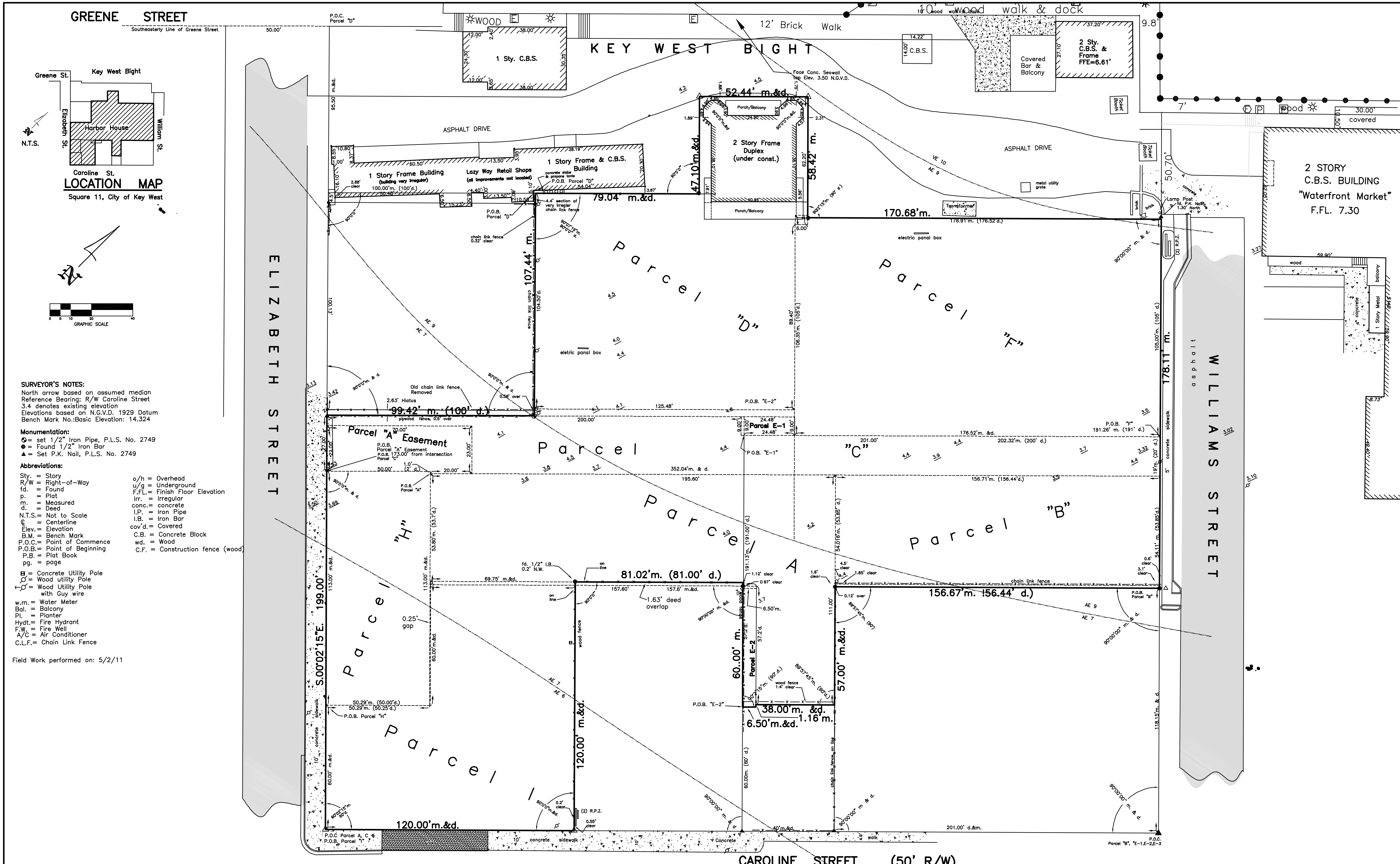
- The new hotel trips consist of approximately 856 daily trips, approximately 64 AM peak hour trips (37 inbound and 27 outbound), and approximately 67 PM peak hour trips (33 inbound and 34 outbound). Therefore, the traffic associated with the Harborside Hotel is considered minimal from a traffic engineering standpoint (approximately one car every one-minute period).

- The two study intersections are currently operating at a very good level of service and will continue to operate adequately with the Harborside Hotel project in place.

- Ample roadway capacity will be available on Caroline Street, Elizabeth Street, and William Street to absorb the additional traffic impacts created by the Harborside Hotel development

APPENDIX A

Survey and Site Plan – Harborside Hotel



SURVEYOR'S NOTES:
North arrow based on assumed median
Reference Bearing: R/W Caroline Street
3.4 denotes existing elevation
Elevations based on N.G.V.D. 1929 Datum
Bench Mark No.:Basic Elevation: 14.324

Monumentation:
- set 1/2" Iron Pipe, P.L.S. No. 2749
- Found 1/2" Iron Bar
- ▲ = Set P.K. Nail, P.L.S. No. 2749

Abbreviations:

Sty. = Story	o/h = Overhead
R/W = Right-of-Way	u/g = Underground
fd. = Found	F.FL.= Finish Floor Elevation
p. = Plat	Irr. = Irregular
m. = Measured	conc.= concrete
d. = Deed	I.P. = Iron Pipe
N.T.S.= Not to Scale	I.B. = Iron Bar
℄ = Centerline	cov'd.= Covered
Elev. = Elevation	C.B. = Concrete Block
B.M. = Bench Mark	wd. = Wood
P.O.C.= Point of Commence	C.F. = Construction fence (wood)
P.O.B.= Point of Beginning	
P.B. = Plat Book	
pg. = page	

- = Concrete Utility Pole
- = Wood utility Pole
- = Wood Utility Pole with Guy wire
- w.m. = Water Meter
- Bal. = Balcony
- Pl. = Planter
- Hydt.= Fire Hydrant
- F.W. = Fire Well
- A/C = Air Conditioner
- C.L.F.= Chain Link Fence

Field Work performed on: 5/2/11

REVISIONS:		
No.	Date	Remarks

Sheet Description:

BOUNDARY SURVEY

Project:

Harborside, LLC
223 Elizabeth Street
Key West, FL 33040

ISLAND SURVEYING INC.
ENGINEERS PLANNERS SURVEYORS
3152 Northside Drive
Suite 201
Key West, Fl. 33040
(305) 293-0466
Fax. (305) 293-0237
fhildeb1@bellsouth.net
L.B. No. 7700

Date: 5/12/11
Designed: FHH
Drawn: FHH
Checked: FHH
Job. No. 11-193
Sheet No. 1 of 2

LAZY WAY

RESTROOM

JTH

POOL

POOL

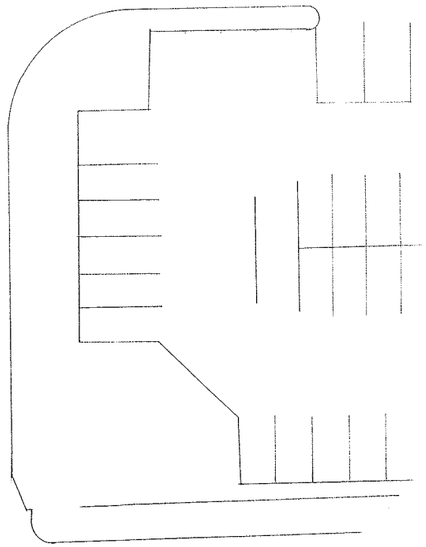
HOTEL

POOL

ELIZABETH STREET

WILLIAM STREET

CAROLINE STREET



HARBORSIDE SITE PLAN

HARBORSIDE ASSOCIATES, LLC

SCALE: 1" = 20'-0" 12-14-11

APPENDIX B

Intersection Turning Movement Counts

Crosroads Engineering Data, Inc.

13284 SW 120th Street
Miami, Florida, 33186
Tel: 305-233-3997 Fax: 305-233-7720

CLIENT : TRAFTECH
JOB NO : 2012-010
PROJECT: Harborside Hotel
COUNTY : Monroe

File Name : Caroline St @ Elizabeth St
Site Code : 00000000
Start Date : 1/31/2012
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Elizabeth St From North				Caroline St From East				Elizabeth St From South				Caroline St From West				
Start Time	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Int. Total
07:00 AM	0	2	1	6	7	7	1	3	2	1	0	9	1	15	0	1	56
07:15 AM	0	0	3	5	7	7	1	4	1	9	1	6	2	4	1	7	58
07:30 AM	0	1	1	8	6	16	2	5	0	6	0	6	0	6	1	5	63
07:45 AM	0	3	4	12	5	26	4	10	2	4	0	5	0	10	1	3	89
Total	0	6	9	31	25	56	8	22	5	20	1	26	3	35	3	16	266
08:00 AM	0	3	7	9	9	23	1	4	0	10	5	11	1	11	0	4	98
08:15 AM	1	0	8	9	13	27	2	10	1	7	2	5	1	11	0	9	106
08:30 AM	2	3	5	9	12	29	0	9	3	7	1	8	1	8	2	2	101
08:45 AM	1	4	8	28	9	27	3	11	5	7	4	4	0	14	1	0	126
Total	4	10	28	55	43	106	6	34	9	31	12	28	3	44	3	15	431
*** BREAK ***																	
04:00 PM	0	7	6	34	7	17	2	16	2	4	2	14	2	29	3	9	154
04:15 PM	1	9	14	34	12	35	3	13	3	12	1	17	1	24	6	25	210
04:30 PM	3	9	18	30	15	26	1	11	6	6	3	20	5	33	1	9	196
04:45 PM	2	6	6	15	23	25	4	20	2	9	3	20	1	24	1	11	172
Total	6	31	44	113	57	103	10	60	13	31	9	71	9	110	11	54	732
05:00 PM	4	8	14	7	13	27	3	6	1	8	4	25	2	35	3	11	171
05:15 PM	5	6	7	9	14	26	2	12	2	4	0	38	1	17	0	22	165
05:30 PM	1	3	9	27	11	27	3	13	3	8	2	27	3	27	0	5	169
05:45 PM	1	7	13	35	10	19	2	13	1	10	3	22	2	24	3	2	167
Total	11	24	43	78	48	99	10	44	7	30	9	112	8	103	6	40	672
Grand Total	21	71	124	277	173	364	34	160	34	112	31	237	23	292	23	125	2101
Apprch %	4.3	14.4	25.2	56.2	23.7	49.8	4.7	21.9	8.2	27.1	7.5	57.2	5	63.1	5	27	
Total %	1	3.4	5.9	13.2	8.2	17.3	1.6	7.6	1.6	5.3	1.5	11.3	1.1	13.9	1.1	5.9	
Autos	19	71	123	276	171	339	34	160	34	112	31	237	23	279	23	125	2057
% Autos	90.5	100	99.2	99.6	98.8	93.1	100	100	100	100	100	100	100	95.5	100	100	97.9
Heavy Vehicles	2	0	1	1	2	25	0	0	0	0	0	0	0	13	0	0	44
% Heavy Vehicles	9.5	0	0.8	0.4	1.2	6.9	0	0	0	0	0	0	0	4.5	0	0	2.1

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	Elizabeth St From North					Caroline St From East					Elizabeth St From South					Caroline St From West					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	3	7	9	19	9	23	1	4	37	0	10	5	11	26	1	11	0	4	16	98
08:15 AM	1	0	8	9	18	13	27	2	10	52	1	7	2	5	15	1	11	0	9	21	106
08:30 AM	2	3	5	9	19	12	29	0	9	50	3	7	1	8	19	1	8	2	2	13	101
08:45 AM	1	4	8	28	41	9	27	3	11	50	5	7	4	4	20	0	14	1	0	15	126
Total Volume	4	10	28	55	97	43	106	6	34	189	9	31	12	28	80	3	44	3	15	65	431
% App. Total	4.1	10.3	28.9	56.7		22.8	56.1	3.2	18		11.2	38.8	15	35		4.6	67.7	4.6	23.1		
PHF	.500	.625	.875	.491	.591	.827	.914	.500	.773	.909	.450	.775	.600	.636	.769	.750	.786	.375	.417	.774	.855

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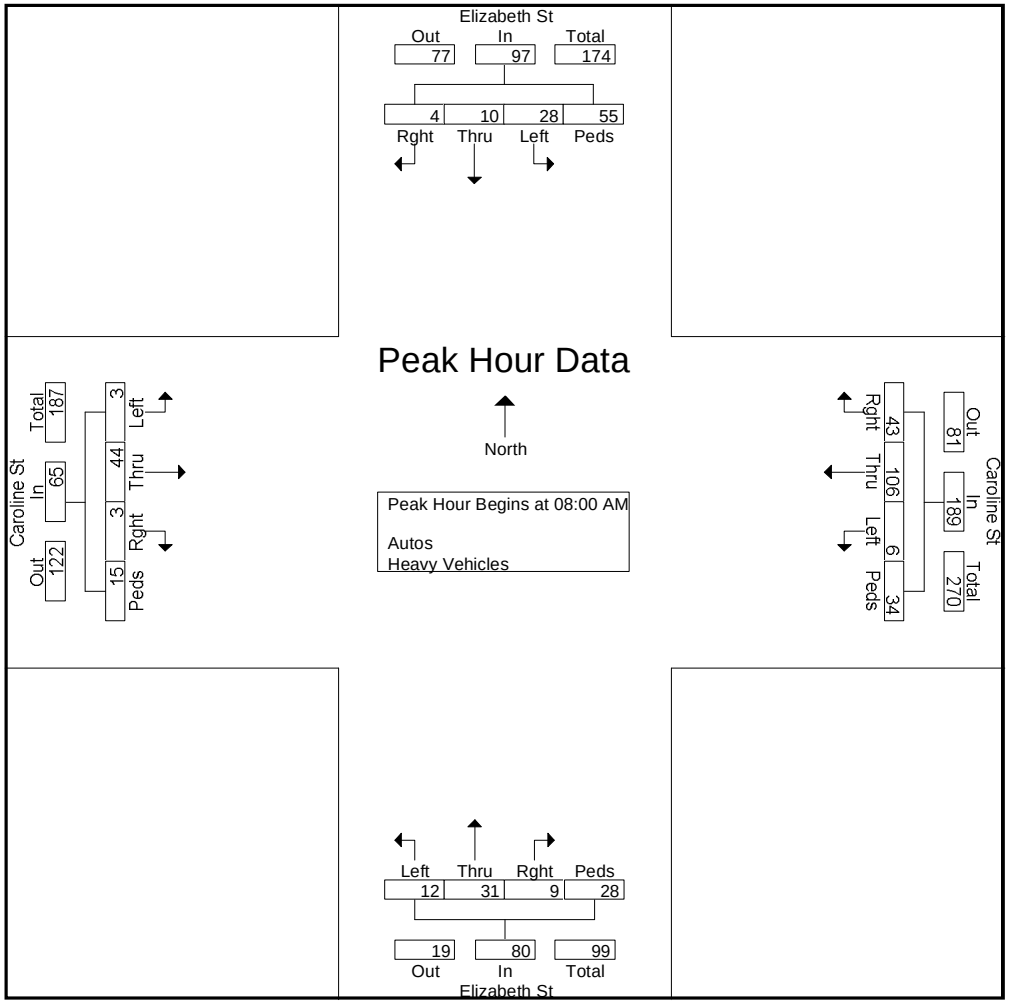

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04:45 PM	2	6	6	15	29	23	25	4	20	72	2	9	3	20	34	1	24	1	11	37	172
05:00 PM	4	8	14	7	33	13	27	3	6	49	1	8	4	25	38	2	35	3	11	51	171
Total Volume	10	32	52	86	180	63	113	11	50	237	12	35	11	82	140	9	116	11	56	192	749
% App. Total	5.6	17.8	28.9	47.8		26.6	47.7	4.6	21.1		8.6	25	7.9	58.6		4.7	60.4	5.7	29.2		
PHF	.625	.889	.722	.632	.750	.685	.807	.688	.625	.823	.500	.729	.688	.820	.921	.450	.829	.458	.560	.857	.892

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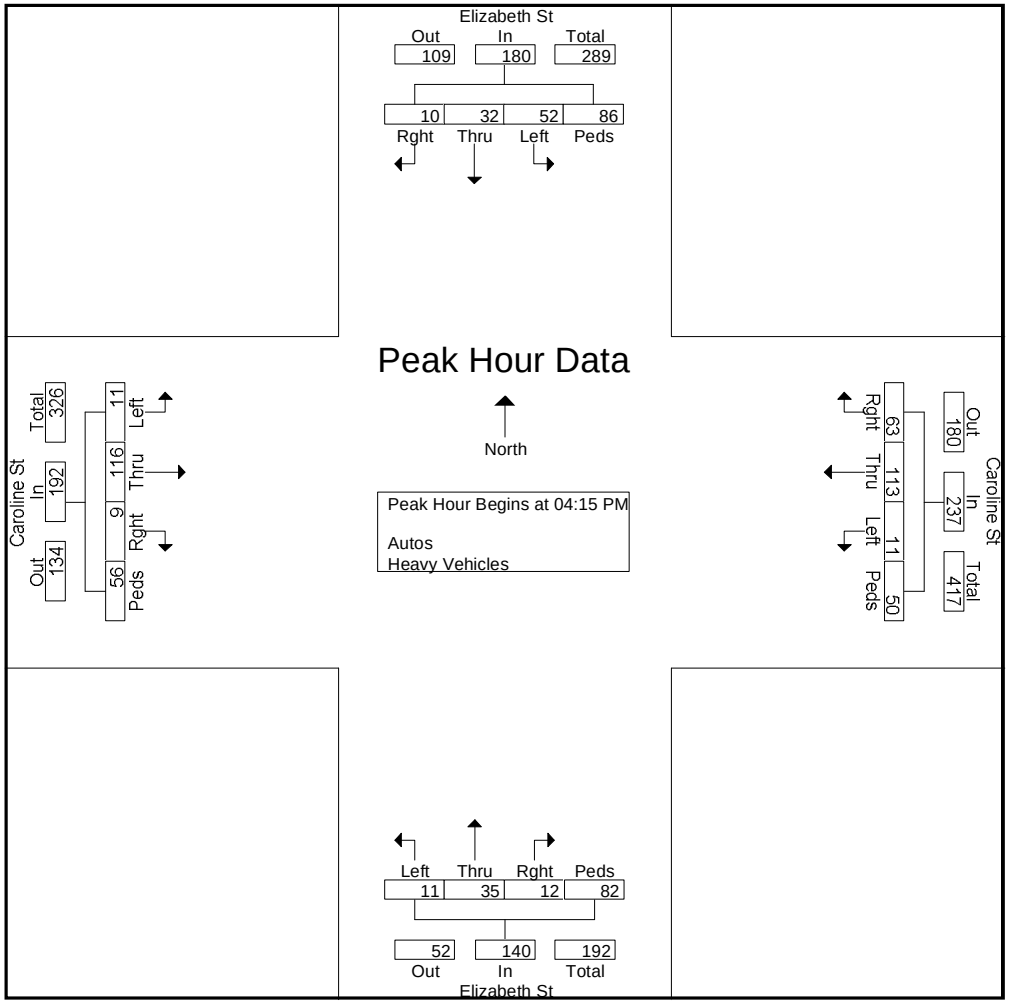

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Page No : 1

Groups Printed- Heavy Vehicles

	Elizabeth St From North				Caroline St From East				Elizabeth St From South				Caroline St From West				
Start Time	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
07:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	8
08:00 AM	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	5
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	0	0	1	0	2	7	0	0	0	0	0	0	0	2	0	0	12
*** BREAK ***																	
04:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
04:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
04:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	3
04:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	6	0	0	0	0	0	0	0	4	0	0	11
05:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
05:15 PM	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	4
05:30 PM	0	0	0	1	0	2	0	0	0	0	0	0	0	2	0	0	5
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	7	0	0	0	0	0	0	0	4	0	0	13
Grand Total	2	0	1	1	2	25	0	0	0	0	0	0	0	13	0	0	44
Apprch %	50	0	25	25	7.4	92.6	0	0	0	0	0	0	0	100	0	0	
Total %	4.5	0	2.3	2.3	4.5	56.8	0	0	0	0	0	0	0	29.5	0	0	

Crosroads Engineering Data, Inc.

13284 SW 120th Street
Miami, Florida, 33186
Tel: 305-233-3997 Fax: 305-233-7720

CLIENT : TRAFTECH
JOB NO : 2012-010
PROJECT: Harborside Hotel
COUNTY : Monroe

File Name : Caroline St @ William St
Site Code : 00000000
Start Date : 1/31/2012
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	William St From North				Caroline St From East				Elizabeth St From South				William St From West				
Start Time	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Int. Total
07:00 AM	0	0	1	9	3	15	1	3	1	2	1	9	1	16	1	0	63
07:15 AM	1	1	0	12	3	13	0	4	0	1	0	10	0	11	0	5	61
07:30 AM	2	1	1	8	1	21	0	5	1	2	2	4	0	7	1	3	59
07:45 AM	1	0	1	11	2	35	0	5	1	0	1	8	1	11	2	2	81
Total	4	2	3	40	9	84	1	17	3	5	4	31	2	45	4	10	264
08:00 AM	1	0	1	16	2	32	4	2	2	2	1	8	0	17	4	1	93
08:15 AM	4	3	2	16	8	37	3	7	3	1	2	13	3	16	2	4	124
08:30 AM	2	1	2	12	3	33	1	11	4	3	2	14	2	16	1	5	112
08:45 AM	0	1	3	12	6	30	1	8	0	4	4	7	2	21	4	3	106
Total	7	5	8	56	19	132	9	28	9	10	9	42	7	70	11	13	435
*** BREAK ***																	
04:00 PM	6	3	5	40	12	26	0	19	1	4	1	32	0	33	5	15	202
04:15 PM	3	1	3	26	3	39	4	14	6	4	7	21	3	38	8	7	187
04:30 PM	5	0	4	28	7	32	3	5	3	3	3	20	9	40	5	9	176
04:45 PM	5	0	8	15	9	36	4	10	3	5	5	33	2	27	3	8	173
Total	19	4	20	109	31	133	11	48	13	16	16	106	14	138	21	39	738
05:00 PM	1	1	7	13	4	42	2	7	3	5	4	25	6	47	4	4	175
05:15 PM	4	1	1	23	3	39	1	8	4	1	4	31	3	26	3	10	162
05:30 PM	2	6	0	23	4	33	0	7	3	1	4	23	1	33	2	4	146
05:45 PM	5	1	4	21	2	27	3	9	5	6	2	21	2	29	4	3	144
Total	12	9	12	80	13	141	6	31	15	13	14	100	12	135	13	21	627
Grand Total	42	20	43	285	72	490	27	124	40	44	43	279	35	388	49	83	2064
Apprch %	10.8	5.1	11	73.1	10.1	68.7	3.8	17.4	9.9	10.8	10.6	68.7	6.3	69.9	8.8	15	
Total %	2	1	2.1	13.8	3.5	23.7	1.3	6	1.9	2.1	2.1	13.5	1.7	18.8	2.4	4	
Autos	34	19	43	285	68	470	27	124	40	44	43	279	35	375	48	83	2017
% Autos	81	95	100	100	94.4	95.9	100	100	100	100	100	100	100	96.6	98	100	97.7
Heavy Vehicles	8	1	0	0	4	20	0	0	0	0	0	0	0	13	1	0	47
% Heavy Vehicles	19	5	0	0	5.6	4.1	0	0	0	0	0	0	0	3.4	2	0	2.3

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Site Code : 00000000
Start Date : 1/31/2012
Page No : 2

	William St From North					Caroline St From East					Elizabeth St From South					William St From West					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	0	1	16	18	2	32	4	2	40	2	2	1	8	13	0	17	4	1	22	93
08:15 AM	4	3	2	16	25	8	37	3	7	55	3	1	2	13	19	3	16	2	4	25	124
08:30 AM	2	1	2	12	17	3	33	1	11	48	4	3	2	14	23	2	16	1	5	24	112
08:45 AM	0	1	3	12	16	6	30	1	8	45	0	4	4	7	15	2	21	4	3	30	106
Total Volume	7	5	8	56	76	19	132	9	28	188	9	10	9	42	70	7	70	11	13	101	435
% App. Total	9.2	6.6	10.5	73.7		10.1	70.2	4.8	14.9		12.9	14.3	12.9	60		6.9	69.3	10.9	12.9		
PHF	.438	.417	.667	.875	.760	.594	.892	.563	.636	.855	.563	.625	.563	.750	.761	.583	.833	.688	.650	.842	.877

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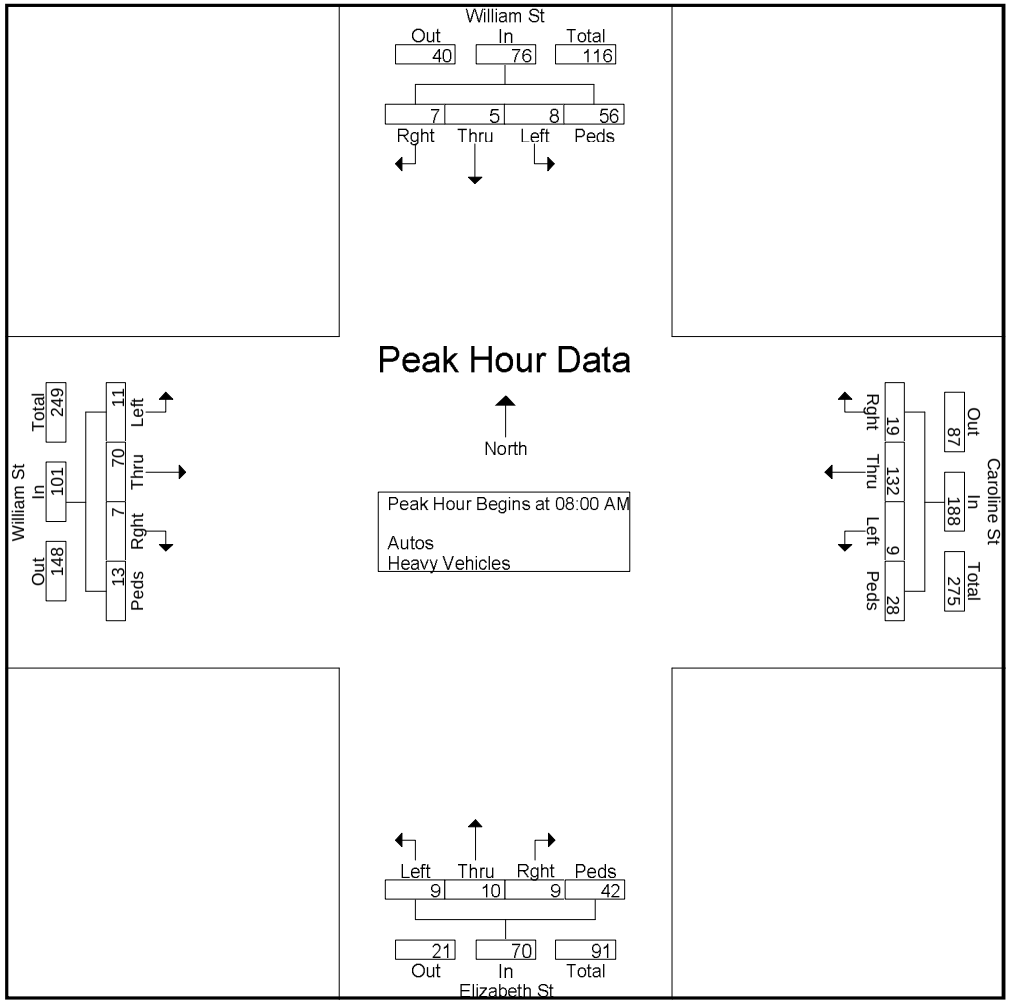
Start Date : 1/31/2012
Page No : 3



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COUNTY : Monroe

File Name : Caroline St @ William St
Site Code : 00000000
Start Date : 1/31/2012
Page No : 4

	William St From North					Caroline St From East					Elizabeth St From South					William St From West					
Start Time	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Rght	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	6	3	5	40	54	12	26	0	19	57	1	4	1	32	38	0	33	5	15	53	202
04:15 PM	3	1	3	26	33	3	39	4	14	60	6	4	7	21	38	3	38	8	7	56	187
04:30 PM	5	0	4	28	37	7	32	3	5	47	3	3	3	20	29	9	40	5	9	63	176
04:45 PM	5	0	8	15	28	9	36	4	10	59	3	5	5	33	46	2	27	3	8	40	173
Total Volume	19	4	20	109	152	31	133	11	48	223	13	16	16	106	151	14	138	21	39	212	738
% App. Total	12.5	2.6	13.2	71.7		13.9	59.6	4.9	21.5		8.6	10.6	10.6	70.2		6.6	65.1	9.9	18.4		
PHF	.792	.333	.625	.681	.704	.646	.853	.688	.632	.929	.542	.800	.571	.803	.821	.389	.863	.656	.650	.841	.913

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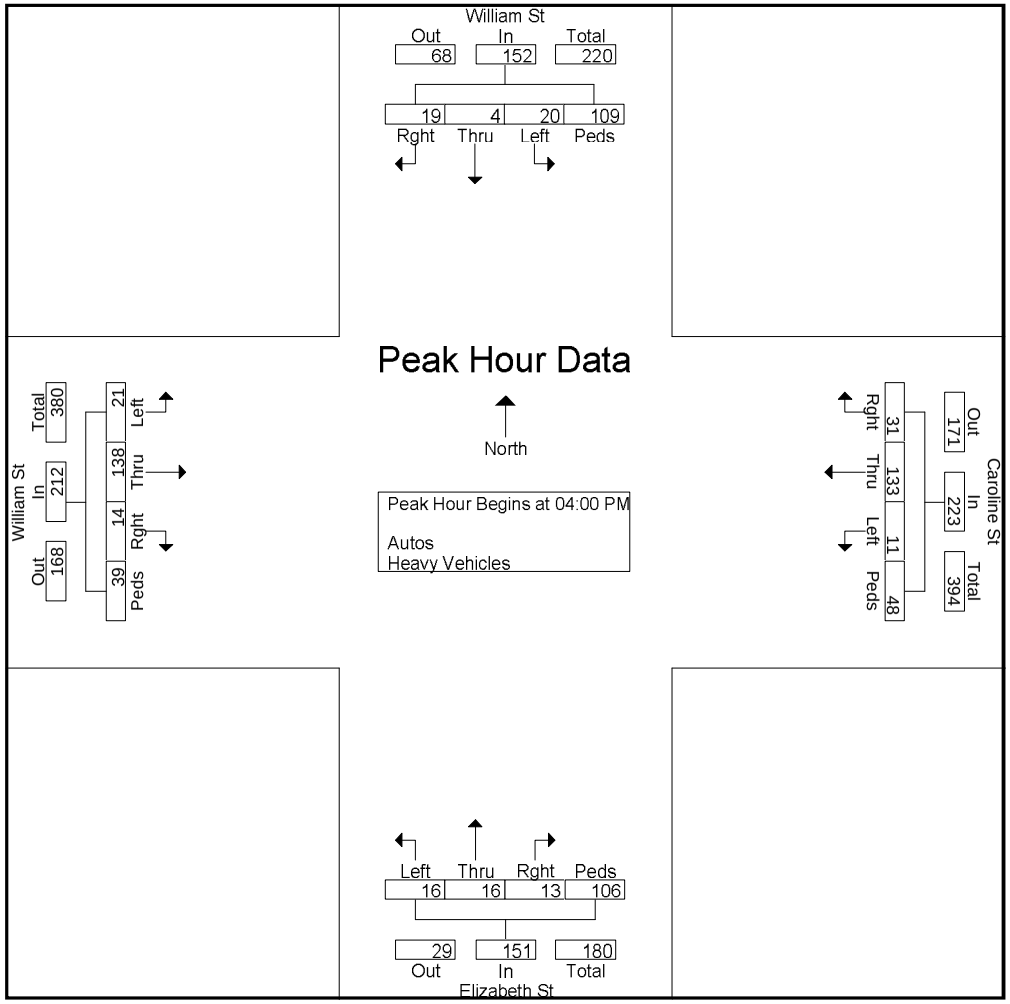
File Name : Caroline St @ William St
Site Code : 00000000
Start Date : 1/31/2012
Page No : 5



Crosroads Engineering Data, Inc.

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COUNTY : Monroe

File Name : Caroline St @ William St
Site Code : 00000000
Start Date : 1/31/2012
Page No : 1

Groups Printed- Heavy Vehicles

	William St From North				Caroline St From East				Elizabeth St From South				William St From West				
Start Time	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Rght	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
07:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
Total	0	0	0	0	0	7	0	0	0	0	0	0	0	3	0	0	10
08:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:30 AM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	1	1	0	0	0	6	0	0	0	0	0	0	0	2	0	0	10
*** BREAK ***																	
04:00 PM	2	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	5
04:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
04:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	3
04:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Total	4	0	0	0	3	3	0	0	0	0	0	0	0	4	0	0	14
05:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
05:15 PM	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	4
05:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	4
05:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	3	0	0	0	1	4	0	0	0	0	0	0	0	4	1	0	13
Grand Total	8	1	0	0	4	20	0	0	0	0	0	0	0	13	1	0	47
Apprch %	88.9	11.1	0	0	16.7	83.3	0	0	0	0	0	0	0	92.9	7.1	0	
Total %	17	2.1	0	0	8.5	42.6	0	0	0	0	0	0	0	27.7	2.1	0	

APPENDIX C

Historical Traffic Counts and Peak Season Conversion Factors

2010 Peak Season Factor Category Report - Report Type: ALL
Category: 9000 MONROE COUNTYWIDE

MOCF: 0.93

Week	Dates	SF	PSCF
1	01/01/2010 - 01/02/2010	1.05	1.13
2	01/03/2010 - 01/09/2010	1.03	1.11
3	01/10/2010 - 01/16/2010	1.01	1.09
4	01/17/2010 - 01/23/2010	1.00	1.08
5	01/24/2010 - 01/30/2010	0.99	1.07
6	01/31/2010 - 02/06/2010	0.97	1.04
* 7	02/07/2010 - 02/13/2010	0.96	1.03
* 8	02/14/2010 - 02/20/2010	0.95	1.02
* 9	02/21/2010 - 02/27/2010	0.94	1.01
*10	02/28/2010 - 03/06/2010	0.92	0.99
*11	03/07/2010 - 03/13/2010	0.90	0.97
*12	03/14/2010 - 03/20/2010	0.89	0.96
*13	03/21/2010 - 03/27/2010	0.90	0.97
*14	03/28/2010 - 04/03/2010	0.91	0.98
*15	04/04/2010 - 04/10/2010	0.92	0.99
*16	04/11/2010 - 04/17/2010	0.93	1.00
*17	04/18/2010 - 04/24/2010	0.94	1.01
*18	04/25/2010 - 05/01/2010	0.95	1.02
*19	05/02/2010 - 05/08/2010	0.96	1.03
20	05/09/2010 - 05/15/2010	0.97	1.04
21	05/16/2010 - 05/22/2010	0.97	1.04
22	05/23/2010 - 05/29/2010	0.98	1.06
23	05/30/2010 - 06/05/2010	0.98	1.06
24	06/06/2010 - 06/12/2010	0.99	1.07
25	06/13/2010 - 06/19/2010	0.99	1.07
26	06/20/2010 - 06/26/2010	0.99	1.07
27	06/27/2010 - 07/03/2010	0.99	1.07
28	07/04/2010 - 07/10/2010	0.99	1.07
29	07/11/2010 - 07/17/2010	1.00	1.08
30	07/18/2010 - 07/24/2010	1.00	1.08
31	07/25/2010 - 07/31/2010	1.01	1.09
32	08/01/2010 - 08/07/2010	1.02	1.10
33	08/08/2010 - 08/14/2010	1.02	1.10
34	08/15/2010 - 08/21/2010	1.03	1.11
35	08/22/2010 - 08/28/2010	1.05	1.13
36	08/29/2010 - 09/04/2010	1.08	1.16
37	09/05/2010 - 09/11/2010	1.10	1.18
38	09/12/2010 - 09/18/2010	1.13	1.22
39	09/19/2010 - 09/25/2010	1.11	1.20
40	09/26/2010 - 10/02/2010	1.10	1.18
41	10/03/2010 - 10/09/2010	1.09	1.17
42	10/10/2010 - 10/16/2010	1.08	1.16
43	10/17/2010 - 10/23/2010	1.07	1.15
44	10/24/2010 - 10/30/2010	1.07	1.15
45	10/31/2010 - 11/06/2010	1.07	1.15
46	11/07/2010 - 11/13/2010	1.06	1.14
47	11/14/2010 - 11/20/2010	1.06	1.14
48	11/21/2010 - 11/27/2010	1.05	1.13
49	11/28/2010 - 12/04/2010	1.05	1.13
50	12/05/2010 - 12/11/2010	1.05	1.13
51	12/12/2010 - 12/18/2010	1.05	1.13
52	12/19/2010 - 12/25/2010	1.03	1.11
53	12/26/2010 - 12/31/2010	1.01	1.09

* Peak Season

Florida Department of Transportation
Transportation Statistics Office
2010 Historical AADT Report

County: 90 - MONROE

Site: 0020 - EATON ST, 200' W DUVAL ST

Year	AADT	Direction 1	Direction 2	K Factor	D Factor	T Factor
2010	4700 C	W 2300	E 2400	10.26	56.84	10.30
2009	4700 C	W 2400	E 2300	10.23	56.56	8.40
2008	5300 C	N 2700	S 2600	10.45	54.98	8.60
2007	4800 C	N 2200	S 2600	10.00	55.10	9.80
2006	3700 C	N 2100	S 1600	10.08	55.69	12.30
2005	5500 C	N 2200	S 3300	10.40	55.70	2.40
2004	4200 C	N 2100	S 2100	10.00	56.00	3.10
2003	4500 C	N	S	10.10	56.30	4.40
2002	3900 C	N 1800	S 2100	10.00	54.20	5.60
2001	5600 C	N	S	10.00	55.90	6.80
2000	6100 F	N	S	9.90	54.80	6.60
1999	5900 C	N	S	9.50	56.70	4.80
1998	6300 C	N	S	9.50	56.60	2.80
1997	6600 C	N	S	9.60	55.90	3.70
1996	5800 C	N	S	10.00	55.60	5.50
1995	5900 C	N	S	9.90	54.40	5.20

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
2010 Historical AADT Report

County: 90 - MONROE

Site: 7071 - EATON STREET 250 FT WEST OF GRINNEL STREET

Year	AADT	Direction 1	Direction 2	K Factor	D Factor	T Factor
2010	10400 C	E 5000	W 5400	10.26	56.84	10.30
2009	10700 C	E 5200	W 5500	10.23	56.56	8.40

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
2010 Historical AADT Report

County: 90 - MONROE

Site: 0023 - DUVAL ST, 200' N SR 5/US-1/TRUMAN AV

Year	AADT	Direction 1	Direction 2	K Factor	D Factor	T Factor
2010	6900 C	N 3500	S 3400	10.26	56.84	10.30
2009	7000 C	N 3400	S 3600	10.23	56.56	8.40
2008	6600 C	N 3300	S 3300	10.45	54.98	8.60
2007	6600 C	N 3200	S 3400	10.00	55.10	9.80
2006	7500 C	N 3900	S 3600	10.08	55.69	12.30
2005	8900 C	N 4200	S 4700	10.40	55.70	2.40
2004	9400 C	N 4800	S 4600	10.00	56.00	3.10
2003	10500 C	N	S	10.10	56.30	4.40
2002	8900 C	N 4600	S 4300	10.00	54.20	5.60
2001	10500 C	N	S	10.00	55.90	6.80
2000	8000 C	N 3100	S 4900	9.90	54.80	6.60
1999	5100 C	N	S	9.50	56.70	4.80
1998	10500 C	N	S	9.50	56.60	2.80
1997	11000 C	N	S	9.60	55.90	3.70
1996	7200 C	N	S	10.00	55.60	5.50
1995	11000 C	N	S	9.90	54.40	5.20

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

APPENDIX D

Projected Turning Movement Volumes

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Caroline Street and Elizabeth Street
AM Peak Hour

Description	Elizabeth Street Northbound			Elizabeth Street Southbound			Caroline Street Eastbound			Caroline Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/31/2012)	12	31	9	28	10	4	3	44	3	6	106	43
Season Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
2012 Peak Season Traffic	12	32	9	29	10	4	3	46	3	6	110	45
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
2014 Background Traffic	13	33	10	30	11	4	3	47	3	6	112	46
Project Trips				4				18			13	3
2014 Total Traffic	**13**	**33**	**10**	**34**	**11**	**4**	**3**	**65**	**3**	**6**	**125**	**49**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Caroline Street and Elizabeth Street
PM Peak Hour

Description	Elizabeth Street Northbound			Elizabeth Street Southbound			Caroline Street Eastbound			Caroline Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/31/2012)	11	35	12	52	32	10	11	116	9	11	113	63
Season Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
2012 Peak Season Traffic	11	36	12	54	33	10	11	121	9	11	118	66
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
2014 Background Traffic	12	37	13	55	34	11	12	123	10	12	120	67
Project Trips				3				17			18	3
2014 Total Traffic	**12**	**37**	**13**	**58**	**34**	**11**	**12**	**140**	**10**	**12**	**138**	**70**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Caroline Street and William Street
AM Peak Hour

Description	William Street Northbound			William Street Southbound			Caroline Street Eastbound			Caroline Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/31/2012)	9	10	9	8	5	7	11	70	7	9	132	19
Season Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
2012 Peak Season Traffic	9	10	9	8	5	7	11	73	7	9	137	20
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
2014 Background Traffic	10	11	10	8	5	7	12	74	7	10	140	20
Project Trips		4		8	3	16	22					11
2014 Total Traffic	**10**	**15**	**10**	**16**	**8**	**23**	**34**	**74**	**7**	**10**	**140**	**31**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Caroline Street and William Street
PM Peak Hour

Description	William Street Northbound			William Street Southbound			Caroline Street Eastbound			Caroline Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/31/2012)	16	16	13	20	4	19	21	138	14	11	133	31
Season Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
2012 Peak Season Traffic	17	17	14	21	4	20	22	144	15	11	138	32
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
2014 Background Traffic	17	17	14	21	4	20	22	146	15	12	141	33
Project Trips		3		10	3	21	20					10
2014 Total Traffic	**17**	**20**	**14**	**31**	**7**	**41**	**42**	**146**	**15**	**12**	**141**	**43**

Traf Tech
ENGINEERING, INC.

APPENDIX E

Intersection Capacity Analyses

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Caroline/Elizabeth*
Jurisdiction	*Key West*
Analysis Year	*2012 Existing*

Project Description

East/West Street: *Caroline Street* | North/South Street: *Elizabeth Street*

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)	*3*	*44*	*3*	*6*	*106*	*43*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*
Hourly Flow Rate, HFR (veh/h)	*3*	*51*	*3*	*6*	*123*	*49*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*12*	*31*	*9*	*28*	*10*	*4*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*
Hourly Flow Rate, HFR (veh/h)	*13*	*36*	*10*	*32*	*11*	*4*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*3*	*6*		*59*			*47*	
C (m) (veh/h)	*1405*	*1551*		*711*			*687*	
v/c	*0.00*	*0.00*		*0.08*			*0.07*	
95% queue length	*0.01*	*0.01*		*0.27*			*0.22*	
Control Delay (s/veh)	*7.6*	*7.3*		*10.5*			*10.6*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*10.5*			*10.6*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Caroline/Elizabeth*
Jurisdiction	*Key West*
Analysis Year	*2014 Background*

Project Description

East/West Street: *Caroline Street* | North/South Street: *Elizabeth Street*

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)	*3*	*47*	*3*	*6*	*112*	*46*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*
Hourly Flow Rate, HFR (veh/h)	*3*	*54*	*3*	*6*	*130*	*53*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*13*	*33*	*10*	*30*	*11*	*4*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*
Hourly Flow Rate, HFR (veh/h)	*15*	*38*	*11*	*34*	*12*	*4*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*3*	*6*		*64*			*50*	
C (m) (veh/h)	*1392*	*1547*		*700*			*673*	
v/c	*0.00*	*0.00*		*0.09*			*0.07*	
95% queue length	*0.01*	*0.01*		*0.30*			*0.24*	
Control Delay (s/veh)	*7.6*	*7.3*		*10.7*			*10.8*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*10.7*			*10.8*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Caroline/Elizabeth*
Jurisdiction	*Key West*
Analysis Year	*2014 Total w/Project*

Project Description

East/West Street: *Caroline Street* | North/South Street: *Elizabeth Street*

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)	*3*	*65*	*3*	*6*	*125*	*49*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*
Hourly Flow Rate, HFR (veh/h)	*3*	*75*	*3*	*6*	*145*	*56*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*13*	*33*	*10*	*34*	*11*	*4*
Peak-Hour Factor, PHF	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*	*0.86*
Hourly Flow Rate, HFR (veh/h)	*15*	*38*	*11*	*39*	*12*	*4*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*3*	*6*		*64*			*55*	
C (m) (veh/h)	*1371*	*1520*		*667*			*635*	
v/c	*0.00*	*0.00*		*0.10*			*0.09*	
95% queue length	*0.01*	*0.01*		*0.32*			*0.28*	
Control Delay (s/veh)	*7.6*	*7.4*		*11.0*			*11.2*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*11.0*			*11.2*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Caroline/Elizabeth*
Jurisdiction	*Key West*
Analysis Year	*2012 Existing*

Project Description

East/West Street: *Caroline Street* | North/South Street: *Elizabeth Street*

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)	*11*	*116*	*9*	*11*	*113*	*63*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*12*	*130*	*10*	*12*	*126*	*70*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*	*35*	*12*	*52*	*32*	*10*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*12*	*39*	*13*	*58*	*35*	*11*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*12*	*12*		*64*			*104*	
C (m) (veh/h)	*1377*	*1443*		*592*			*571*	
v/c	*0.01*	*0.01*		*0.11*			*0.18*	
95% queue length	*0.03*	*0.03*		*0.36*			*0.66*	
Control Delay (s/veh)	*7.6*	*7.5*		*11.8*			*12.7*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*11.8*			*12.7*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Caroline/Elizabeth*
Jurisdiction	*Key West*
Analysis Year	*2014 Background*

Project Description

East/West Street: *Caroline Street* | North/South Street: *Elizabeth Street*

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)	*12*	*123*	*10*	*12*	*120*	*67*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*13*	*138*	*11*	*13*	*134*	*75*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*12*	*37*	*13*	*55*	*34*	*11*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*13*	*41*	*14*	*61*	*38*	*12*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*13*	*13*		*68*			*111*	
C (m) (veh/h)	*1362*	*1432*		*573*			*550*	
v/c	*0.01*	*0.01*		*0.12*			*0.20*	
95% queue length	*0.03*	*0.03*		*0.40*			*0.75*	
Control Delay (s/veh)	*7.7*	*7.5*		*12.1*			*13.2*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*12.1*			*13.2*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Caroline/Elizabeth*
Jurisdiction	*Key West*
Analysis Year	*2014 Total w/Project*

Project Description

East/West Street: *Caroline Street* | North/South Street: *Elizabeth Street*

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)	*12*	*140*	*10*	*12*	*138*	*70*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*13*	*157*	*11*	*13*	*155*	*78*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*12*	*37*	*13*	*58*	*34*	*11*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*13*	*41*	*14*	*65*	*38*	*12*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*13*	*13*		*68*			*115*	
C (m) (veh/h)	*1335*	*1410*		*543*			*517*	
v/c	*0.01*	*0.01*		*0.13*			*0.22*	
95% queue length	*0.03*	*0.03*		*0.43*			*0.84*	
Control Delay (s/veh)	*7.7*	*7.6*		*12.6*			*13.9*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*12.6*			*13.9*		
Approach LOS	--	--	*B*			*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Caroline/William*
Jurisdiction	*Key West*
Analysis Year	*2012 Existing*

Project Description

East/West Street: *Caroline Street* | North/South Street: *William Street*

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)	*11*	*70*	*7*	*9*	*132*	*19*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR (veh/h)	*12*	*79*	*7*	*10*	*150*	*21*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*9*	*10*	*9*	*8*	*5*	*7*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR (veh/h)	*10*	*11*	*10*	*9*	*5*	*7*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*12*	*10*		*31*			*21*	
C (m) (veh/h)	*1406*	*1510*		*705*			*691*	
v/c	*0.01*	*0.01*		*0.04*			*0.03*	
95% queue length	*0.03*	*0.02*		*0.14*			*0.09*	
Control Delay (s/veh)	*7.6*	*7.4*		*10.3*			*10.4*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*10.3*			*10.4*		
Approach LOS	--	--	*B*			*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Caroline/William*
Jurisdiction	*Key West*
Analysis Year	*2014 Background*

Project Description

East/West Street: *Caroline Street* | North/South Street: *William Street*

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)	*12*	*74*	*7*	*10*	*140*	*20*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR (veh/h)	*13*	*84*	*7*	*11*	*159*	*22*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*10*	*11*	*10*	*8*	*5*	*7*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR (veh/h)	*11*	*12*	*11*	*9*	*5*	*7*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*13*	*11*		*34*			*21*	
C (m) (veh/h)	*1394*	*1504*		*688*			*674*	
v/c	*0.01*	*0.01*		*0.05*			*0.03*	
95% queue length	*0.03*	*0.02*		*0.16*			*0.10*	
Control Delay (s/veh)	*7.6*	*7.4*		*10.5*			*10.5*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*10.5*			*10.5*		
Approach LOS	--	--	*B*			*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Caroline/William*
Jurisdiction	*Key West*
Analysis Year	*2014 Total w/Project*

Project Description

East/West Street: *Caroline Street* | North/South Street: *William Street*

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)	*34*	*74*	*7*	*10*	*140*	*31*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR (veh/h)	*38*	*84*	*7*	*11*	*159*	*35*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*10*	*15*	*10*	*16*	*8*	*23*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*	*0.88*
Hourly Flow Rate, HFR (veh/h)	*11*	*17*	*11*	*18*	*9*	*26*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*38*	*11*		*39*			*53*	
C (m) (veh/h)	*1379*	*1504*		*612*			*666*	
v/c	*0.03*	*0.01*		*0.06*			*0.08*	
95% queue length	*0.08*	*0.02*		*0.20*			*0.26*	
Control Delay (s/veh)	*7.7*	*7.4*		*11.3*			*10.9*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*11.3*			*10.9*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Caroline/William*
Jurisdiction	*Key West*
Analysis Year	*2012 Existing*

Project Description

East/West Street: *Caroline Street* | North/South Street: *William Street*

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)	*21*	*138*	*14*	*11*	*133*	*31*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*
Hourly Flow Rate, HFR (veh/h)	*23*	*151*	*15*	*12*	*146*	*34*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*16*	*16*	*13*	*20*	*4*	*19*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*
Hourly Flow Rate, HFR (veh/h)	*17*	*17*	*14*	*21*	*4*	*20*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*23*	*12*		*48*			*45*	
C (m) (veh/h)	*1396*	*1412*		*595*			*637*	
v/c	*0.02*	*0.01*		*0.08*			*0.07*	
95% queue length	*0.05*	*0.03*		*0.26*			*0.23*	
Control Delay (s/veh)	*7.6*	*7.6*		*11.6*			*11.1*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*11.6*			*11.1*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Caroline/William*
Jurisdiction	*Key West*
Analysis Year	*2014 Background*

Project Description

East/West Street: *Caroline Street* | North/South Street: *William Street*

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)	*22*	*146*	*15*	*12*	*141*	*33*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*
Hourly Flow Rate, HFR (veh/h)	*24*	*160*	*16*	*13*	*154*	*36*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*17*	*17*	*14*	*21*	*4*	*20*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*
Hourly Flow Rate, HFR (veh/h)	*18*	*18*	*15*	*23*	*4*	*21*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*24*	*13*		*51*			*48*	
C (m) (veh/h)	*1384*	*1400*		*578*			*616*	
v/c	*0.02*	*0.01*		*0.09*			*0.08*	
95% queue length	*0.05*	*0.03*		*0.29*			*0.25*	
Control Delay (s/veh)	*7.6*	*7.6*		*11.8*			*11.3*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*11.8*			*11.3*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Vargas*
Agency/Co.	*Traf Tech Engineering, Inc.*
Date Performed	*2/23/2012*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Caroline/William*
Jurisdiction	*Key West*
Analysis Year	*2014 Total w/Project*

Project Description

East/West Street: *Caroline Street* | North/South Street: *William Street*

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)	*42*	*146*	*15*	*12*	*141*	*43*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*
Hourly Flow Rate, HFR (veh/h)	*46*	*160*	*16*	*13*	*154*	*47*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*17*	*20*	*14*	*31*	*7*	*41*
Peak-Hour Factor, PHF	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*	*0.91*
Hourly Flow Rate, HFR (veh/h)	*18*	*21*	*15*	*34*	*7*	*45*
Percent Heavy Vehicles	*2*	*2*	*2*	*2*	*2*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (veh/h)	*46*	*13*		*54*			*86*	
C (m) (veh/h)	*1371*	*1400*		*521*			*605*	
v/c	*0.03*	*0.01*		*0.10*			*0.14*	
95% queue length	*0.10*	*0.03*		*0.34*			*0.49*	
Control Delay (s/veh)	*7.7*	*7.6*		*12.7*			*11.9*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*12.7*			*11.9*		
Approach LOS	--	--	*B*			*B*		

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