

TECHNICAL APPENDIX A – DETAILED ALTERNATIVES EVALUATION

INTRODUCTION

Florida Avenue and Tampa Street/Highland Avenue are north-south streets in Central Tampa connecting Downtown Tampa, Tampa Heights, Seminole Heights, and points north. These corridors are in close proximity and run parallel to I-275, providing a local travel option to the interstate for many drivers.

Currently, Florida Avenue is a three-lane northbound road between Downtown Tampa and Violet Street. North of Violet Street, Florida Avenue is a four-lane two-way road throughout the remainder of the study area. Tampa Street/Highland Avenue is a three-lane southbound road between Downtown Tampa and Violet Street. North of Violet Street, Highland Avenue is a two-way three-lane road with a two way center turn lane.

This study evaluated three alternative configurations of the Florida Avenue and Tampa Street/Highland Avenue corridor. The alternatives considered are described below:

- No Build – Florida Avenue (3 lanes one-way northbound), Tampa Street (3 lanes one-way southbound)
- Alternative One - Florida Avenue (2 lanes one-way northbound), Tampa Street (2 lanes one-way southbound)
- Alternative Two - Florida Avenue (2 lanes bi-directional), Tampa Street (2 lanes bi-directional)

EXISTING CORRIDOR TRAFFIC AND OPERATING CONDITIONS

1.1 Traffic Counts

Traffic counts were conducted in November 2014 along Florida Avenue, Tampa Street, Highland Avenue, MLK Jr Boulevard, Palm Avenue, Columbus Drive and at the seventeen signalized intersections within the study area. The locations of the hose and turning movement counts are listed in **Table 1-1**.

Table 1-1: Florida Avenue Study Area Traffic Count Locations

Facility	Count Type
Columbus Drive east of Florida Avenue	72-hour volume count
Columbus Drive west of Tampa Street	72-hour volume count
Florida Avenue north of Hillsborough Avenue	72-hour volume count
Florida Avenue south of Hillsborough Avenue	72-hour volume count
Florida Avenue south of Violet Street	72-hour volume count
Highland Avenue north of Violet Street	72-hour volume count
Highland Avenue south of Violet Street	72 hour volume count
MLK Boulevard west of Tampa Street	72-hour volume count
Palm Avenue east of Florida Avenue	72-hour volume count
Florida Avenue at Columbus Drive	4-hour Turning Movement Count
Florida Avenue at Floribraska Avenue	4-hour Turning Movement Count

Facility	Count Type
Florida Avenue at Henderson Avenue	4-hour Turning Movement Count
Florida Avenue at Kay Street	4-hour Turning Movement Count
Florida Avenue at Hillsborough Avenue	4-hour Turning Movement Count
Florida Avenue at Indiana Avenue	4-hour Turning Movement Count
Florida Avenue at MLK Jr Boulevard	4-hour Turning Movement Count
Florida Avenue at Osbourne Avenue	4-hour Turning Movement Count
Florida Avenue at Scott Street	4-hour Turning Movement Count
Tampa Street at Columbus Drive	4-hour Turning Movement Count
Tampa Street at Floribaska Avenue	4-hour Turning Movement Count
Tampa Street at Kay Street	4-hour Turning Movement Count
Tampa Street at MLK Jr Boulevard	4-hour Turning Movement Count
Tampa Street at Scott Street	4-hour Turning Movement Count
Highland Avenue at Hillsborough Avenue	4-hour Turning Movement Count
Highland Avenue at MLK Jr Boulevard	4-hour Turning Movement Count
Highland Avenue at Osbourne Avenue	4-hour Turning Movement Count

1.2 Annual Average Daily Traffic Volumes

The existing (2014) Annual Average Daily Traffic (AADT) volumes are based on the two-day (Wednesday and Thursday) average traffic volumes collected during November 2014. The appropriate seasonal factors and axle adjustment factors obtained from the 2014 FDOT Traffic Information DVD were applied to the average daily traffic volumes to calculate the AADTs. In addition, AADT volumes at existing FDOT count sites within the study area were also utilized to streamline the data collection efforts. Study area AADTs are shown in **Table 1-2**.

Table 1-2: Florida Avenue Study Area Existing (2014) AADTs

Segment	Dates: Daily Traffic Counts		Two-Day Average	Seasonal Factor (SF)	Axle Factor	AADT
	Wed. 11/19/14	Thurs. 11/20/14				
Columbus Drive east of Florida Ave	10,530	10,879	10,705	1.03	0.95	10,500
Columbus Drive west of Tampa St	14,664	15,427	15,046	1.03	0.95	14,700
Florida Avenue north of Hillsborough Ave	17,632	18,339	17,986	1.03	0.95	17,600
Florida Avenue south of Hillsborough Ave	14,159	14,100	14,130	1.03	0.95	13,800
Florida Avenue south of Violet Street	9,774	9,764	9,769	1.03	0.95	9,600
Highland Avenue north of Violet Street	5,082	5,639	5,361	1.03	0.95	5,200
Highland Avenue south of Violet Street	8,031	8,096	8,064	1.03	0.95	7,900

Segment	Dates: Daily Traffic Counts		Two-Day Average	Seasonal Factor (SF)	Axle Factor	AADT
	Wed. 11/19/14	Thurs. 11/20/14				
MLK Boulevard west of Tampa Street	33,687	34,262	33,975	1.03	0.95	33,200
Palm Avenue east of Florida Avenue	10,623	10,939	10,781	1.03	0.95	10,500

K and D factors were applied to the 2014 AADTs to obtain the directional design hour volumes (DDHV). The K and D factors are the percentage of daily traffic volumes occurring during the peak hour and the proportion of traffic traveling in the peak direction, respectively. This represents the amount of traffic that a roadway is typically designed to accommodate. FDOT has adopted a standard K for roadways to apply between the planning and design phases, making the K factor consistent among all phases of a project. The K factor for this study was obtained from the 2014 FDOT Traffic Information DVD. Furthermore, the D factor for this study was derived from the study area-wide average directional split of two-way roadway facilities. The T factor is the percentage of truck traffic during the design hour. The aforementioned traffic factors are shown in **Table 1-3**.

Table 1-3: K and D and T Factors

D Factor (%)	K Factor (%)	T Factor (%)
63.00	9.00	2.00

1.3 Existing Design Hour Volumes

Derived from the existing AADTs, the DDHVs were developed for the existing year analysis. The DDHVs were calculated by applying the K and D traffic factors to the existing AADTs. The calculated existing year DDHVs are summarized in **Table 1-4**. The intersection turning volumes were determined by applying turning movement percentages that were derived from existing turning movement counts to the segment DDHV's. Once the segment DDHVs and intersection turning movements were calculated, the existing design hour traffic volumes were subsequently adjusted and balanced through the system.

Table 1-4: Existing (2014) Raw DDHVs

Segment	AADT	K factor	D factor	DHV	DDHV - Peak	DDHV - Off Peak
Columbus Drive east of Florida Avenue	10,500	9.00%	63%	950	600	350
Columbus Drive west of Tampa Street	14,700	9.00%	63%	1,320	830	490
Floribraska east of Florida Avenue	5,600	9.00%	63%	500	320	180
Florida Avenue north of Hillsborough Ave	17,600	9.00%	63%	1,580	1,000	580
Florida Avenue south of Columbus Drive	9,500	9.00%	100%	860	860	-
Florida Avenue south of Floribraska	11,000	9.00%	100%	990	990	-
Florida Avenue south of Hillsborough Ave	13,800	9.00%	63%	1,240	780	460
Florida Avenue south of Lake Avenue	10,000	9.00%	100%	900	900	-

Table 1-4: Existing (2014) Raw DDHVs

Segment	AADT	K factor	D factor	DHV	DDHV - Peak	DDHV - Off Peak
Florida Avenue south of Osborne Avenue	10,500	9.00%	100%	950	950	-
Florida Avenue south of Palm Avenue	10,100	9.00%	100%	910	910	-
Florida Avenue south of Scott Street	19,500	9.00%	100%	1,760	1,760	-
Florida Avenue south of Violet Street	9,600	9.00%	100%	860	860	-
Highland Avenue north of Violet Street	5,200	9.00%	63%	470	300	170
Highland Avenue south of Violet Street	7,900	9.00%	100%	710	710	-
Highlands Avenue north of MLK	8,000	9.00%	100%	720	720	-
Hillsborough Avenue east of Florida Avenue	53,500	9.00%	63%	4,820	3,040	1,780
Hillsborough Avenue west of Florida Avenue	52,000	9.00%	63%	4,680	2,950	1,730
Indiana Avenue east of Tampa Street	800	9.00%	63%	70	40	30
Lake Avenue east of Florida Avenue	1,900	9.00%	63%	170	110	60
MLK Boulevard east of Florida Avenue	34,500	9.00%	63%	3,110	1,960	1,150
MLK Boulevard west of Tampa Street	33,200	9.00%	63%	2,990	1,890	1,100
Osborne Avenue west of Florida Avenue	3,200	9.00%	63%	290	180	110
Palm Avenue east of Florida Avenue	10,500	9.00%	63%	950	600	350
Palm Avenue west of Tampa Street	6,300	9.00%	63%	570	360	210
Scott Street west of Tampa Street	6,100	9.00%	100%	550	550	-
Tampa Street north of Columbus Drive	8,800	9.00%	100%	790	790	-
Tampa Street south of MLK	6,900	9.00%	100%	620	620	-
Tampa Street south of Palm Avenue	9,800	9.00%	100%	880	880	-
Tampa Street south of Scott Street	6,500	9.00%	100%	590	590	-

According to the observed traffic counts for the peak hours, the distribution and peak direction of traffic varies along the corridor. The directional split of traffic entering and exiting the Central Business District (CBD) is more pronounced in the inbound direction during the AM and outbound direction during the PM. Specifically, the average peak directional split between Florida Avenue and Tampa Street/Highland Avenue is approximately 67 percent in the AM and 74 percent in the PM. As a result, the raw DDHVs that were developed using the standard D factor were manually adjusted to avoid underestimating peak direction traffic in the study area. Therefore, the final DDHVs more closely resemble the observed existing peak direction split. The resulting AM and PM existing year peak direction DDHVs for Tampa/Highland Street and Florida Avenue are highlighted in **Table 1-5** respectively.

Table 1-5: Existing (2014) Adjusted DDHVs

Segment	AM Peak Hour Southbound Volumes					PM Peak Hour Northbound Volumes				
	No Build	Alt 1	Alt 2			No Build	Alt 1	Alt 2		
	Tampa/Highland	Tampa/Highland	Combined	Florida Ave	Tampa/Highland	Florida Ave	Florida Ave	Combined	Florida Ave	Tampa/Highland
Scott	1,108	1,108	975		975	2,020	2,020	2,013	2,013	
Kay	1,311	1,311	1,175		1,175	1,690	1,690	1,665	1,665	
Palm	1,354	1,354	1,450	1,016	434	2,017	2,017	1,891	1,274	617
Columbus	1,542	1,542	1,587	972	615	2,054	2,054	1,862	1,205	657
MLK	1,478	1,478	1,462	803	659	1,794	1,794	1,431	766	665
Osborne	1,477	1,477	1,488	821	667	1,749	1,749	1,409	815	594
Hillsborough	1,507	1,507	1,525	1,198	327	1,109	1,109	954	954	

1.4 Existing Intersection Analysis

An analysis of the existing signalized intersections located within the project study area was performed using actual signal phasing/timing information obtained from the City of Tampa. Existing (2014) lane configurations were determined based on a review of aerial photography as well as field observations at each location. The signalized intersections were analyzed using the Synchro software (Version 8), and the results were reported as Highway Capacity Manual (HCM) level of service output. Existing intersection level of service (LOS) results for both the AM and PM peak hours are summarized in **Table 1-6**.

Table 1-6: Existing (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour				
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Scott Street										
EB	Left/Thru	0	408	21.4	C	C	330	22.5	C	C
NB	Thru/Right	0	435	25.2	C	C	792	35.3	D	D
Intersection LOS			23.8			C		32.5		C
Signalized Intersection: Florida Avenue and Henderson Avenue										
EB	Left	50	23	58.6	E	E	84	61.6	E	E
	Thru	0	39	58.4	E		36	53.9	D	
WB	Left/Thru/Right	0	35	54.8	D	D	63	52.3	D	D
NB	Left/Thru/Right	0	50	1.6	A	A	172	3.2	A	A
Intersection LOS			5.2			A		7.2		A
Intersection: Florida Avenue and Palm Avenue										
EB	Left/Thru	0	223	29.7	C	C	578	92.3	F	F
WB	Thru/Right	0	237	28.4	C	C	343	34.1	C	C
NB	Left/Thru/Right	0	211	22.2	C	C	678	50.2	D	D
NEB	Left	0	29	61.3	E	E	213	96.7	F	F
	Right	0	15	58.5	E		34	60.5	E	
Intersection LOS			26.4			C		58.0		E
Intersection: Tampa Street and Palm Avenue										
EB	Thru/Right	0	152	30.5	C	C	347	37.3	D	D
WB	Left/Thru	0	311	61.4	E	E	433	102.8	F	F
SB	Left/Thru/Right	0	51	3.6	A	A	160	28.4	C	C
Intersection LOS			21.9			C		55.4		E

Table 1-6: Existing (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour				
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Columbus Drive										
EB	Left	0	18	6.0	A	A	171	58.8	E	D
	Thru	0	53	5.1	A		255	27.4	C	
WB	Thru/Right	0	413	23.8	C	C	587	49.4	D	D
NB	Left/Thru/Right	0	103	23.5	C	C	766	64.4	E	E
Intersection LOS			19.0			B		55.7		E
Intersection: Tampa Street and Columbus Drive										
EB	Thru/Right	0	459	34.0	C	C	1025	84.7	F	F
WB	Left	125	27	19.8	B	D	11	38.5	D	C
	Thru	0	733	37.7	D		251	19.6	B	
SB	Left/Thru	0	540	31.1	C	C	172	20.1	C	C
	Right	0	142	28.8	C		90	23.2	C	
Intersection LOS			32.7			C		45.0		D
Intersection: Florida Avenue and Floribrasca Avenue										
EB	Left/Thru	0	42	46.8	D	D	72	31.5	C	C
WB	Thru/Right	0	226	49.6	D	D	178	52.6	D	D
NB	Left/Thru/Right	0	13	0.6	A	A	21	0.8	A	A
Intersection LOS			21.7			C		8.9		A
Intersection: Tampa Street and Floribrasca Avenue										
WB	Left	0	218	36.0	D	D	19	6.0	A	A
SB	Left/Thru	0	234	11.4	B	B	104	10.1	B	B
Intersection LOS			17.2			B		9.0		A
Intersection: Highland Avenue and Hillsborough Avenue										
EB	Thru	0	624	11.5	B	B	1117	27.8	C	C
	Right	0	128	8.8	A		146	14.3	B	
WB	Left	250	5	28.8	C	B	7	71.4	E	A
	Thru	0	87	17.4	B		180	4.8	A	
NB	Left/Right	90	226	100.6	F	F	758	153.3	F	F
Intersection LOS			18.9			B		37.4		D
Intersection: Florida Avenue and Lake Avenue										
WB	Right	0	0	51.0	D	D	0	50.9	D	D
NB	Thru/Right	0	37	2.4	A	A	56	3.4	A	A
Intersection LOS			9.6			A		5.7		A
Intersection: Florida Avenue and Indiana Avenue										
EB	Left	0	50	51.4	D	D	42	49.6	D	D
NB	Left/Thru	0	13	1.0	A	A	12	0.9	A	A
Intersection LOS			3.1			A		1.5		A
Intersection: Florida Avenue and MLK Jr Boulevard										
EB	Left	140	100	59.5	E	A	267	191.6	F	C
	Thru	0	161	6.3	A		300	18.0	B	
WB	Thru/Right	0	969	37.4	D	D	650	45.6	D	D
NB	Left/Thru/Right	0	264	63.5	E	E	347	77.1	E	E
Intersection LOS			33.9			C		54.8		D
Intersection: Tampa Street, MLK Jr Boulevard, and Highland Avenue										

Table 1-6: Existing (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour					
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS	
EB	Thru/Right	0	404	23.5	C	C	397	9.5	A	A	
WB	Left/Thru	0	1137	117.2	F	F	99	3.1	A	A	
SB	Left/Thru/Right	0	504	38.2	D	D	112	40.6	D	D	
Intersection LOS			68.4			E		12.9		B	
Intersection: Florida Avenue and Osbourne Avenue											
EB	Left/Thru	0	116	18.0	B	B	465	67.3	E	E	
WB	Thru/Right	0	221	28.3	C	C	253	39.9	D	D	
SB	Left/Thru/Right	0	68	4.4	A	A	482	9.8	A	A	
Intersection LOS			15.6			B		21.4		C	
Intersection: Highland Avenue and Osbourne Avenue											
EB	Thru/Right	0	74	17.8	B	B	145	23.2	C	C	
WB	Left/Thru	0	175	17.6	B	B	185	29.0	C	C	
SB	Left/Thru/Right	0	185	8.8	A	A	71	5.8	A	A	
Intersection LOS			10.9			B		13.7		B	
Intersection: Florida Avenue and Hillsborough Avenue											
EB	Left	340	214	108.6	F	B	542	181.7	F	D	
	Thru/Right	0	203	14.1	B		343	14.4	B		
WB	Left	310	79	37.8	D	F	121	61.2	E	D	
	Thru	0	2481	160.6	F		1062	41.2	D		
NB	Right	205	1	17.0	B	F	130	22.7	C	F	
	Left	270	64	70.4	E		216	83.0	F		
SB	Thru/Right	0	527	99.5	F	F	1120	199.9	F	F	
	Left	200	357	246.4	F		184	335.0	F		
	Thru	0	961	208.5	F		340	82.8	F		
Intersection LOS			119.8			F		75.4		E	
Intersection: Tampa Street and Scott Street											
EB	Thru/Right	0	369	28.9	C	C	229	25.3	C	C	
SB	Left/Thru	0	0	0.9	A	A	311	19.0	B	B	
Intersection LOS			12.9			B		21.7		C	
Intersection: Tampa Street and Kay Street											
WB	Left	0	8	22.0	C	C	0	0.9	A	A	
	Left/Thru	0	246	20.9	C		19	2.8	A		
SB	Thru	0	345	32.4	C	C	266	49.1	D	D	
	Right	0	59	26.3	C		65	42.2	D		
Intersection LOS			28.5			C		33.5		C	

Based on the existing condition analysis, the majority of the intersections within the study area operate at acceptable level of service (LOS). However, the intersection of Florida Avenue and Hillsborough Avenue operates at LOS F in both peak hours of the day with long queues in the northbound direction during the PM peak hour as observed in the field.

1.5 Existing Intersection Analysis – Alternative One

In an effort to test the short-range impacts of Alternative One, an analysis of the signalized intersections located within the project study area was performed utilizing existing traffic volumes and signal phasing/timing. The signalized intersections were analyzed using the Synchro software (Version 8), and the results were reported as Highway Capacity Manual (HCM) level of service output. The intersection level of service (LOS) results for Alternative One in both the AM and PM peak hours are summarized in **Table 1-7**.

Table 1-7: Alternative 1 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Scott Street										
EB	Left/Thru	0	408	21.4	C	C	330	22.5	C	C
NB	Thru/Right	0	435	25.2	C	C	792	35.3	D	D
Intersection LOS			23.8		C		32.5		C	
Signalized Intersection: Florida Avenue and Henderson Avenue										
EB	Left	50	22	48.7	D	D	84	53.2	D	D
	Thru	0	37	47.3	D		36	45.7	D	
WB	Left/Thru/Right	0	35	48.2	D	D	63	48.6	D	D
NB	Left	0	9	1.8	A	A	17	2.5	A	A
	Thru/Right	0	77	2.7	A		326	6.3	A	
Intersection LOS			5.7		A		9.5		A	
Intersection: Florida Avenue and Palm Avenue										
EB	Left/Thru	0	225	31.6	C	C	578	92.3	F	F
WB	Thru/Right	0	237	28.4	C	C	343	34.1	C	C
NB	Left/Thru/Right	0	351	25.6	C	C	1321	201.9	F	F
NEB	Left	0	29	61.3	E	E	213	96.7	F	F
	Right	0	15	58.5	E		34	60.5	E	
Intersection LOS			28.3		C		136.5		F	
Intersection: Tampa Street and Palm Avenue										
EB	Thru/Right	0	152	31.5	C	C	347	38.9	D	D
WB	Left/Thru	0	307	59.8	E	D	433	157.2	F	E
SB	Left/Thru/Right	0	76	40.3	D	D	228	28.7	C	C
Intersection LOS			41.5		D		48.6		D	
Intersection: Florida Avenue and Columbus Drive										
EB	Left	0	17	14.8	B	A	224	101.4	F	E
	Thru	0	50	23.6	A		457	48.5	D	
WB	Thru/Right	0	413	53.3	C	C	714	138.5	F	F
NB	Left/Thru/Right	0	173	50.8	D	D	1204	101.0	F	E
Intersection LOS			31.4		C		85.1		F	
Intersection: Tampa Street and Columbus Drive										
EB	Thru/Right	0	459	34.7	C	C	1025	88.5	F	F
WB	Left	125	24	22.0	C	C	25	66.0	E	C
	Thru	0	733	20.2	C		410	27.9	C	
SB	Left/Thru	0	541	48.0	D	D	293	35.7	D	D
	Right	0	141	35.2	D		75	35.4	D	
Intersection LOS			36.5		D		53.9		D	
Intersection: Florida Avenue and Floribrasca Avenue										

Table 1-7: Alternative 1 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour					
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS	
EB	Left/Thru	0	30	30.5	C	C	61	39.5	D	D	
WB	Thru/Right	0	226	37.5	D	D	178	41.9	D	D	
NB	Left/Thru/Right	0	24	17.0	B	B	801	32.7	C	C	
Intersection LOS			25.5			C		33.6		C	
Intersection: Tampa Street and Floribraska Avenue											
WB	Left	0	218	36.0	D	D	26	6.3	A	A	
SB	Left/Thru	0	298	13.6	B	B	175	12.1	B	B	
Intersection LOS			18.8			B		10.6		B	
Intersection: Highland Avenue and Hillsborough Avenue											
EB	Thru	0	624	11.5	B	B	1117	27.8	C	C	
	Right	0	128	8.8	A		146	14.3	B		
WB	Left	250	5	28.8	C	B	7	71.4	E	A	
	Thru	0	87	17.4	B		182	4.8	A		
NB	Left/Right	90	226	100.6	F	F	758	153.3	F	F	
Intersection LOS			18.9			B		37.5		D	
Intersection: Florida Avenue and Lake Avenue											
WB	Right	0	0	51.0	D	D	0	50.9	D	D	
NB	Thru/Right	0	52	2.5	A	A	378	7.5	A	A	
Intersection LOS			9.7			A		9.6		A	
Intersection: Florida Avenue and Indiana Avenue											
EB	Left	0	47	50.4	D	D	43	56.4	E	E	
NB	Left/Thru	0	18	1.1	A	A	30	2.4	A	A	
Intersection LOS			3.2			A		3.1		A	
Signalized Intersection: Florida Avenue and MLK Jr Boulevard											
EB	Left	140	93	64.9	E	A	252	257.1	F	D	
	Thru	0	151	0.5	A		684	26.0	C		
WB	Thru/Right	0	969	31.3	C	C	763	101.1	F	F	
NB	Left/Thru/Right	0	464	123.4	F	F	1221	179.5	F	F	
Intersection LOS			38.7			D		108.7		F	
Intersection: Tampa Street, MLK Jr Boulevard, and Highland Avenue											
EB	Thru/Right	0	404	26.0	C	C	503	13.1	B	B	
WB	Left/Thru	0	1106	88.8	F	F	453	2.1	A	A	
SB	Left/Thru/Right	0	905	103.3	F	F	269	43.9	D	D	
Intersection LOS			74.0			E		14.4		B	
Intersection: Florida Avenue and Osbourne Avenue											
EB	Left/Thru	0	103	21.3	C	C	465	37.1	D	D	
WB	Thru/Right	0	221	27.7	C	C	253	38.3	D	D	
NB	Left/Thru/Right	0	84	8.0	A	A	251	19.0	B	B	
Intersection LOS			17.5			B		23.1		C	
Intersection: Highland Avenue and Osbourne Avenue											
EB	Thru/Right	0	74	16.5	B	B	145	19.9	B	B	
WB	Left/Thru	0	181	23.2	C	C	175	21.4	C	C	
SB	Left/Thru/Right	0	421	16.3	B	B	116	6.8	A	A	
Intersection LOS			16.4			B		12.2		B	

Table 1-7: Alternative 1 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour				
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Hillsborough Avenue										
EB	Left	340	214	130.0	F	A	542	166.5	F	C
	Thru/Right	0	383	2.3	A		343	13.3	B	
WB	Left	310	79	18.8	B	F	121	32.3	C	D
	Thru	0	2481	123.6	F		1062	39.0	D	
	Right	205	1	8.7	A		130	23.7	C	
NB	Left	270	64	74.1	E	F	216	88.5	F	F
	Thru/Right	0	527	117.0	F		1120	184.5	F	
SB	Left	200	357	233.3	F	F	184	366.8	F	F
	Thru	0	961	193.8	F		340	82.0	F	
	Right	150	326	95.7	F		164	60.3	E	
Intersection LOS			101.5			F		70.5		E
Intersection: Tampa Street and Scott Street										
EB	Thru/Right	0	369	28.9	C	C	229	25.6	C	C
SB	Left/Thru	0	0	0.9	A	A	311	788.2	F	F
Intersection LOS			12.9			B		103.6		F
Intersection: Tampa Street and Kay Street										
WB	Left	0	8	22.0	C	C	0	0.9	A	A
	Left/Thru	0	246	20.9	C		19	2.8	A	
SB	Thru	0	345	32.4	C	C	266	49.1	D	D
	Right	0	59	26.3	C		65	42.2	D	
Intersection LOS			28.5			C		33.5		C

Based on the existing analysis of Alternative One, the majority of the intersections within the study area operate at acceptable level of service (LOS). However, the following intersections are expected to operate at LOS E or below:

- Tampa Street and MLK Jr Boulevard (AM)
- Florida Avenue and Hillsborough Avenue (AM & PM)
- Florida Avenue and Palm Avenue (PM)
- Florida Avenue and Columbus Drive (PM)
- Florida Avenue and MLK Jr Boulevard (PM)
- Tampa Street and Scott Street (PM)

1.6 Existing Intersection Analysis – Alternative Two

In an effort to test the short-range impacts of Alternative Two, an analysis of the signalized intersections located within the project study area was performed based on existing traffic volumes and signal phasing/timing that were modified to reflect two-way operations. The signalized intersections were analyzed using the Synchro software (Version 8), and the results were reported as Highway Capacity Manual (HCM) level of service output. The intersection level of service (LOS) results for Alternative Two in both the AM and PM peak hours are summarized in **Table 1-7**.

Table 1-7: Alt. 2 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Scott Street										
EB	Left/Thru	0	123	20.0	C	C	444	49.2	D	D
NB	Thru/Right	0	542	39.5	D	D	736	23.0	C	C
Intersection LOS			32.6		C		28.5		C	
Signalized Intersection: Florida Avenue and Henderson Avenue										
EB	Left	50	21	33.7	C	D	115	96.1	F	F
	Thru	0	61	39.6	D		123	80.5	F	
WB	Left/Thru/Right	0	45	65.7	E	E	76	82.1	F	F
NB	Left	0	62	5.4	A	A	17	0.9	A	B
	Thru	0	275	9.6	A		505	18.3	B	
	Right	0	0	7.9	A		0	0.0	A	
SB	Left	250	309	66.2	E	C	113	64.4	E	D
	Right	0	28	5.8	A		161	51.5	D	
Intersection LOS			16.3		B		26.6		C	
Intersection: Florida Avenue and Palm Avenue*										
EB	Left	0	349	459.1	F	F	45	30.3	C	D
	Thru/Right	0	280	52.0	D		933	44.0	D	
WB	Left	0	150	63.4	E	D	375	729.7	F	F
	Thru/Right	0	266	49.6	D		358	43.0	D	
NB	Left	300	100	54.6	D	F	102	49.5	D	F
	Thru/Right	0	823	254.7	F		2700	477.9	F	
SB	Left	250	227	817.1	F	F	195	376.5	F	F
	Thru/Right	0	1237	246.1	F		677	391.5	F	
NEB	Left	0	37	62.6	E	E	49	108.6	F	F
	Right	0	29	61.4	E		38	98.4	F	
Intersection LOS			225.4		F		287.8		F	
Intersection: Tampa Street and Palm Avenue										
EB	Left	0	35	30.7	C	D	92	18.3	B	D
	Thru/Right	0	460	37.6	D		799	37.9	D	
WB	Left	200	53	27.9	C	D	15	27.7	C	A
	Thru/Right	0	626	40.3	D		954	6.7	A	
NB	Left	200	34	34.1	C	D	30	38.7	D	E
	Thru/Right	0	275	40.1	D		623	59.7	E	
SB	Left	300	98	29.4	C	D	42	41.2	D	C
	Thru/Right	0	448	40.9	D		262	22.6	C	
Intersection LOS			38.7		D		29.8		C	
Intersection: Florida Avenue and Columbus Drive										
EB	Left	90	84	121.7	F	E	223	90.1	F	D
	Thru/Right	0	244	67.1	E		1019	48.2	F	
WB	Left	125	89	98.8	F	F	74	135.7	F	E
	Thru/Right	0	709	150.7	F		708	61.2	E	
NB	Left	250	70	26.7	C	C	11	0.1	A	D
	Thru/Right	0	58	27.2	C		71	48.0	F	
SB	Left	100	2	6.6	A	A	113	168.1	F	B
	Thru/Right	0	516	4.0	A		301	0.9	A	
Intersection LOS			50.1		D		45.2		D	

Table 1-7: Alt. 2 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour				
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Tampa Street and Columbus Drive										
EB	Left	250	130	63.9	E	D	96	21.8	C	D
	Thru/Right	0	427	36.8	D		647	40.2	D	
WB	Left	125	10	26.3	C	F	12	20.2	C	C
	Thru/Right	0	356	101.4	F		768	25.1	C	
NB	Left	200	29	17.9	B	B	81	34.4	C	D
	Thru/Right	0	159	18.7	B		762	49.2	D	
SB	Left	100	5	1.6	A	A	39	41.7	D	C
	Thru/Right	0	386	6.3	A		127	17.9	B	
Intersection LOS			47.8			D		34.1		C
Intersection: Florida Avenue and Floribraska Avenue										
EB	Left	250	31	32.7	C	D	18	31.0	C	E
	Thru/Right	0	117	37.7	D		306	72.2	E	
WB	Left	0	243	26.5	C	C	124	37.0	D	D
	Thru/Right	0	235	30.5	C		246	51.0	D	
NB	Left	300	7	9.8	A	A	106	8.5	A	B
	Thru/Right	0	525	3.0	A		595	21.3	C	
SB	Left	150	4	9.8	A	A	3	19.9	B	B
	Thru/Right	0	816	6.0	A		184	15.8	B	
Intersection LOS			12.4			B		28.4		C
Intersection: Tampa Street and Floribraska Avenue*										
WB	Left/Right	0	36	10.6	B	B	65	40.9	D	D
NB	Thru	0	120	14.2	B	B	107	8.5	A	A
	Right	250	5	10.6	B		0	7.5	A	
SB	Left	350	35	16.2	B	C	20	4.2	A	A
	Thru	0	377	20.6	C		58	3.6	A	
Intersection LOS			16.4			B		11.0		B
Intersection: Florida Avenue and Lake Avenue *										
WB	Left/Right	0	66	51.2	D	D	59	50.9	D	D
NB	Thru/Right	0	756	128.0	F	F	1046	116.8	F	F
SB	Left	50	0	6.5	A	B	32	28.4	C	A
	Thru	0	569	13.1	B		128	5.1	A	
Intersection LOS			61.8			E		83.3		F
Intersection: Florida Avenue and Indiana Avenue*										
EB	Left	0	61	51.2	D	D	50	56.5	E	E
NB	Left	50	9	9.3	A	F	6	4.4	A	E
	Thru	0	525	130.8	F		85	61.2	E	
SB	Thru/Right	0	1112	151.6	F	F	507	54.2	D	D
Intersection LOS			133.7			F		56.0		E
Signalized Intersection: Florida Avenue and MLK Jr Boulevard										
EB	Left	140	148	117.1	F	D	153	160.5	F	E
	Thru/Right	0	256	40.2	D		370	53.9	D	
WB	Left	150	59	30.8	C	F	21	39.9	D	E
	Thru/Right	0	1497	116.2	F		888	64.8	E	
NB	Left	300	360	82.8	F	E	185	32.7	C	E
	Thru/Right	0	711	53.9	D		1074	63.3	E	

Table 1-7: Alt. 2 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
SB	Left	250	80	46.0	D	F	131	69.6	E	C
	Thru/Right	0	1607	314.8	F		464	26.0	C	
Intersection LOS			122.4		F		58.5		E	
Intersection: Tampa Street, MLK Jr Boulevard, and Highland Avenue										
EB	Left	350	35	48.6	D	C	58	43.9	D	E
	Thru/Right	0	477	24.8	C		1014	60.3	E	
WB	Left	150	3	8.6	A	C	39	84.8	F	C
	Thru/Right	0	182	23.4	C		238	19.8	B	
NB	Left	200	197	56.9	E	F	81	36.2	D	C
	Thru/Right	0	988	180.2	F		141	32.3	C	
SB	Left	300	137	106.0	F	E	196	48.1	D	D
	Thru/Right	0	171	59.4	E		316	51.5	D	
Intersection LOS			50.1		D		42.7		D	
Intersection: Florida Avenue and Osbourne Avenue										
EB	Left/Thru	0	144	54.0	D	D	170	22.7	C	C
WB	Thru/Right	0	487	60.0	E	E	189	31.5	C	C
NB	Left	100	14	18.8	B	B	9	10.8	B	B
	Thru/Right	0	246	11.5	B		807	10.1	B	
SB	Left	200	4	7.9	A	A	6	28.9	C	B
	Thru/Right	0	43	8.3	A		26	12.6	B	
Intersection LOS			23.8		C		16.6		B	
Intersection: Highland Avenue and Osbourne Avenue										
EB	Thru/Right	0	181	28.3	C	C	322	39.6	D	D
WB	Left/Thru	0	268	35.8	D	D	181	29.8	C	C
NB	Left	100	17	6.7	A	A	21	5.7	A	A
	Thru/Right	0	171	8.3	A		388	9.0	A	
SB	Left	200	29	5.7	A	A	14	6.3	A	A
	Thru/Right	0	780	2.1	A		192	0.7	A	
Intersection LOS			13.1		B		17.0		B	
Intersection: Florida Avenue and Hillsborough Avenue										
EB	Left	340	205	164.8	F	B	16	58.1	E	B
	Thru/Right	0	743	3.4	A		1783	11.4	B	
WB	Left	310	449	27.3	C	F	143	17.1	B	C
	Thru	0	2358	112.7	F		928	26.6	C	
NB	Right	250	1	9.2	A	F	117	9.5	A	F
	Left	270	91	73.3	E		841	480.6	F	
SB	Thru/Right	0	613	127.1	F	F	586	108.0	F	E
	Left	200	378	263.4	F		83	71.8	E	
SB	Thru	0	957	199.9	F	F	339	81.3	F	E
	Right	150	330	101.3	F		170	71.9	E	
Intersection LOS			95.3		F		57.8		E	
Intersection: Tampa Street and Henderson Avenue										
EB	Left	0	30	8.1	A	A	39	5.2	A	A
	Thru/Right	0	53	8.2	A		84	6.1	A	
WB	Left	250	942	17.0	B	B	245	6.6	A	A
	Thru/Right	0	62	9.8	A		88	8.1	A	
SB	Left	200	24	16.0	B	C	63	9.3	A	B

Table 1-7: Alt. 2 (2014) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
	Thru	0	628	32.6	C		258	16.9	B	
	Right	140	0	16.1	B		20	9.6	A	
Intersection LOS			20.2		C		8.9		A	
Intersection: Highland Avenue and Hillsborough Avenue*										
EB	Thru	0	1045	28.3	C	C	1296	21.2	C	C
	Right	0	112	14.4	B		63	7.9	A	
WB	Left	250	222	88.2	F	D	10	72.0	E	A
	Thru	0	1775	34.3	C		282	4.3	A	
NB	Left/Right	90	272	100.1	F	F	318	99.1	F	F
Intersection LOS			37.4		D		20.1		C	
Intersection: Tampa Street and Indiana Avenue										
EB	Left/Thru/Right	0	104	51.7	D	D	50	32.5	C	C
WB	Left/Thru/Right	0	75	50.3	D	D	86	34.4	C	C
NB	Left	100	0	0.2	A	A	6	0.1	A	A
	Thru/Right	0	1	0.2	A		233	0.7	A	
SB	Left	100	5	1.3	A	A	3	1.5	A	A
	Thru/Right	0	106	2.2	A		51	2.1	A	
Intersection LOS			10.3		B		5.9		A	
Intersection: Florida Avenue and Violet Street										
EB	Left	250	25	43.1	D	D	268	27.2	C	C
	Thru/Right	0	11	42.8	D		17	20.2	C	
WB	Left/Thru/Right	0	30	44.4	D	D	19	19.6	B	B
NB	Left	300	4	4.5	A	A	145	7.6	A	A
	Thru/Right	0	237	0.8	A		357	1.2	A	
SB	Thru	0	643	5.1	A	A	368	14.1	B	B
	Right	0	38	3.5	A		54	12.5	B	
Intersection LOS			4.0		A		11.0		B	
Intersection: Highland Avenue and Violet Street										
EB	Left/Thru/Right	0	48	20.0	C	C	30	20.9	C	C
WB	Left	475	369	28.8	C	C	173	24.2	C	C
	Thru/Right	0	45	20.3	C		130	34.2	C	
NB	Left/Thru	0	81	0.8	A	A	101	5.2	A	A
	Right	150	0	0.4	A		121	6.4	A	
SB	Left	150	5	8.0	A	A	48	8.1	A	A
	Thru/Right	0	326	8.3	A		69	6.5	A	
Intersection LOS			15.3		B		17.5		B	

Based on the existing analysis of Alternative One, the majority of the intersections within the study area operate at acceptable level of service (LOS). However, the following intersections are expected to operate at LOS E or below:

- Florida Avenue and Hillsborough Avenue (AM & PM)
- Florida Avenue and Palm Avenue (AM & PM)
- Florida Avenue and Columbus Drive (PM)
- Florida Avenue and MLK Jr Blvd. (AM & PM)
- Florida Avenue & Lake Avenue (AM & PM)
- Florida Avenue & Indiana Avenue (AM & PM)

FUTURE TRAFFIC PROJECTIONS

2.1 Annual Daily Traffic Projections

Version 8.0 of the Tampa Bay Regional Planning Model (TBRPM) was used to prepare the future traffic projections within the study area. The TBRPM was validated to a 2010 dataset consisting of US Census and employment data, transportation network, travel characteristics survey data, and traffic counts. In addition, the TBRPM 2040 socioeconomic data projections were developed and adopted by local governments in Citrus, Hernando, Hillsborough, Pasco, and Pinellas Counties.

For the development of the future year AADTs, the volumes from the TBRPM 2040 Adopted Cost Affordable network were examined. Upon review of the 2040 Cost Affordable traffic projections, it was determined that the volumes at certain locations within the study area were unreasonably high or low compared to existing traffic volumes. The locations are as follows:

- Columbus Drive west of Tampa Street
- Floribraska Avenue east of Florida Avenue
- Florida Avenue south of Palm Avenue
- Hillsborough Avenue east of Florida Avenue
- Hillsborough Avenue west of Florida Avenue
- Indiana Avenue east of Tampa Street
- MLK Boulevard east of Florida Avenue

In order to estimate the future year traffic at these locations, a growth rate of one percent per year was applied to the existing traffic. The AADTs estimated for 2040 for No-Build, Alternatives 1 and 2 are summarized in **Table 2-1**.

Table 2-1: Florida Avenue/Tampa Street Study Area Projected AADT, 2040

Segment	2040 No-Build AADT	2040 Alt. 1 – One lane Drop	2040 Alt. 2 – Two-way
Columbus Drive east of Florida Avenue	11,500	11,500	11,100
Columbus Drive west of Florida Avenue	12,700	12,700	14,100
Columbus Drive west of Tampa Street	19,000	19,000	19,000
Floribraska east of Florida Avenue	12,100	12,100	12,100
Florida Avenue north of Hillsborough Avenue	31,000	30,400	30,800
Florida Avenue south of Columbus Drive	18,800	15,100	17,400
Florida Avenue south of Floribraska	19,100	15,400	18,100
Florida Avenue south of Hillsborough Avenue	29,500	26,500	27,600
Florida Avenue south of Lake Avenue	17,400	13,700	11,900
Florida Avenue south of Osborne Avenue	16,600	13,600	12,300
Florida Avenue south of Palm Avenue	21,800	14,400	20,500
Florida Avenue south of Scott Street	31,200	31,200	31,700
Florida Avenue south of Violet Street	20,300	17,900	17,900
Highland Avenue north of Violet Street	8,600	6,600	5,900
Highland Avenue south of Violet Street	17,800	14,700	15,400
Highlands Avenue north of MLK Boulevard	14,800	9,900	10,500
Hillsborough Avenue east of Florida Avenue	69,300	69,300	69,300
Hillsborough Avenue west of Florida Avenue	67,400	67,400	67,400
Indiana Avenue east of Tampa Street	1,000	1,000	1,000
Lake Avenue east of Florida Avenue	3,200	2,800	2,800
MLK Boulevard east of Florida Avenue	44,700	44,700	44,600
MLK Boulevard west of Tampa Street	55,200	53,800	55,200
Osborne Avenue west of Florida Avenue	7,000	7,100	5,400
Palm Avenue east of Florida Avenue	19,000	18,700	18,900
Palm Avenue west of Florida Avenue	22,900	22,800	25,500
Palm Avenue west of Tampa Street	27,100	27,300	27,300
Scott Street west of Tampa Street	28,600	29,400	29,200
Scott Street east of Florida Avenue	31,700	31,700	31,300
Scott Street west of Florida Ave	29,100	28,600	27,800
Tampa Street north of Columbus Drive	23,600	18,000	18,500
Tampa Street south of MLK Boulevard	17,300	12,300	14,100
Tampa Street south of Palm Avenue	23,600	19,200	15,800
Tampa Street south of Scott Street	20,400	19,200	19,600
Kay Street east of Florida Avenue	14,000	14,000	13,900
Kay Street west of Florida Avenue	23,200	23,500	24,700
Kay Street west of Tampa Street	27,800	28,300	27,700
Henderson east of Florida Avenue	15,100	14,700	14,300
Henderson west of Florida Avenue	10,700	9,700	11,300
Osborne Avenue east of Florida Avenue	7,000	7,300	8,400
Osborne Avenue west of Highland Avenue	8,800	9,500	9,400
Hillsborough west of Highland Avenue	59,200	59,200	58,200

2.2 Design Hour Volumes

Derived from the forecasted 2040 AADTs, the DDHVs were calculated for the future year analyses by applying the aforementioned K and D traffic factors to the 2040 AADTs. The calculated 2040 DDHVs are summarized in **Table 2-2**. The intersection turning volumes were determined by applying turning

movement percentages that were derived from existing turning movement counts to the segment DDHV's. Once the segment DDHVs and intersection turning movements were calculated, the existing design hour traffic volumes were subsequently adjusted and balanced through the system.

Table 2-2: Florida Avenue/Tampa Street Study Area Design Hourly Volumes, 2040

Segment	No Build		Alternative 1		Alternative 2	
	DDHV - Peak	DDHV - Off Peak	DDHV - Peak	DDHV - Off Peak	DDHV - Peak	DDHV - Off Peak
Columbus Drive east of Florida Avenue	660	380	660	380	660	380
Columbus Drive west of Tampa Street	1,080	630	1,080	630	1,080	630
Floribraska east of Florida Avenue	420	240	690	400	690	400
Florida Avenue north of Hillsborough Avenue	1,760	1,030	1,730	1,010	1,750	1,020
Florida Avenue south of Columbus Drive	1,690	-	1,360	-	1,110	650
Florida Avenue south of Floribraska	1,720	-	1,390	-	1,150	670
Florida Avenue south of Hillsborough Avenue	1,680	980	1,510	880	1,690	990
Florida Avenue south of Lake Avenue	1,570	-	1,230	-	850	490
Florida Avenue south of Osborne Avenue	1,490	-	1,220	-	890	520
Florida Avenue south of Palm Avenue	1,180	-	1,300	-	1,210	710
Florida Avenue south of Scott Street	2,810	-	2,810	-	2,850	-
Florida Avenue south of Violet Street	1,830	-	1,610	-	1,170	690
Highland Avenue north of Violet Street	490	280	370	220	330	200
Highland Avenue south of Violet Street	1,600	-	1,320	-	860	500
Highlands Avenue north of MLK	1,330	-	890	-	610	360
Hillsborough Avenue east of Florida Avenue	3,940	2,300	3,940	2,300	3,940	2,300
Hillsborough Avenue west of Florida Avenue	3,830	2,240	3,830	2,240	3,830	2,240
Indiana Avenue east of Tampa Street	60	30	60	30	60	30
Lake Avenue east of Florida Avenue	180	110	160	90	160	100
MLK Boulevard east of Florida Avenue	2,540	1,480	2,540	1,480	2,490	1,450
MLK Boulevard west of Tampa Street	3,140	1,830	3,050	1,790	3,120	1,820
Osborne Avenue west of Florida Avenue	400	230	400	240	330	190
Palm Avenue east of Florida Avenue	1,080	630	1,060	620	1,070	630
Palm Avenue west of Tampa Street	470	270	1,550	910	1,550	910
Scott Street west of Tampa Street	710	-	2,650	-	2,630	-
Tampa Street north of Columbus Drive	2,120	-	1,620	-	1,030	600
Tampa Street south of MLK	1,560	-	1,110	-	830	490
Tampa Street south of Palm Avenue	2,120	-	1,730	-	920	540
Tampa Street south of Scott Street	1,840	-	1,730	-	1,780	-
Kay Street east of Florida Avenue	1,260	-	1,260	-	1,260	-
Henderson east of Florida Avenue	860	500	830	490	810	480
Osborne Avenue east of Florida Avenue	400	230	420	240	470	270
Osborne Avenue west of Highland Avenue	500	290	540	320	500	290
Hillsborough west of Highland Avenue	3,360	1,970	3,360	1,970	3,380	1,980

According to the observed traffic counts for the peak hours, the distribution and peak direction of traffic varies along the corridor. The directional split of traffic entering and exiting the Central Business District (CBD) is more pronounced in the inbound direction during the AM and outbound direction during the PM.

Specifically, the average peak directional split between Florida Avenue and Tampa Street/Highland Avenue is approximately 67 percent in the AM and 74 percent in the PM. As a result, the raw DDHVs that were developed using the standard D factor were manually adjusted to avoid underestimating peak direction traffic in the study area. Therefore, the final DDHVs more closely resemble the observed existing peak direction split. The resulting AM and PM existing year peak direction DDHVs for Tampa/Highland Street and Florida Avenue are highlighted in **Table 2-3** respectively.

Table 2-3: 2040 Adjusted DDHVs

Segment	AM Peak Hour Southbound Volumes					PM Peak Hour Northbound Volumes				
	No Build	Alt 1	Alt 2			No Build	Alt 1	Alt 2		
	Tampa/ Highland	Tampa/ Highland	Combined	Florida Ave	Tampa/ Highland	Florida Ave	Florida Ave	Combined	Florida Ave	Tampa/ Highland
Scott	2,044	1,953	1,545		1,545	2,669	2,694	2,689	2,689	
Kay	2,360	2,251	1,785		1,785	1,906	1,917	1,902	1,902	
Palm	2,236	2,224	2,147	1,130	1,017	2,609	2,613	2,556	1,479	1,077
Columbus	2,320	2,303	2,169	1,178	991	2,581	2,584	2,535	1,299	1,236
MLK	2,113	2,089	1,823	995	828	2,425	2,418	2,040	994	1,046
Osborne	2,113	2,083	2,028	1,223	805	2,351	2,344	2,132	1,182	950
Hillsborough	2,173	2,173	2,118	1,535	583	1,529	1,522	1,512	1,512	

ALTERNATIVES CONSIDERED AND ANALYSIS

2.3 No Build Alternative Traffic Analysis

An evaluation of the existing geometric conditions with the design year (2040) traffic volumes was conducted for the signalized intersections along the study area. The signalized intersections were analyzed using the Synchro software (Version 8), and the results were reported as Highway Capacity Manual (HCM) level of service output. In order to optimize the traffic operations of future scenarios, the following improvements were included in the analysis:

- Protected/permitted WB Left turn phase at Columbus Drive
- New Signalized intersection at Florida Avenue and Kay Street intersection
 - Additional WB through lane coded in the WB approach
- New Signalized intersection at Tampa Street and Henderson Avenue intersection

The No-Build analyses results are shown in **Tables 2-4**

Table 2-4: No Build (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour				
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Scott Street										
EB	Left/Thru	0	881	362.1	F	F	603	359.9	F	F
NB	Thru/Right	0	1521	278.8	F	F	1521	278.6	F	F
Intersection LOS			318.6			F		318.1		F
Signalized Intersection: Florida Avenue and Henderson Avenue										
EB	Left	50	13	53.8	D	D	306	301.9	F	F
	Thru	0	19	25.6	C		41	9.0	A	
WB	Left/Thru/Right	0	455	43.8	D	D	834	28.0	C	C
NB	Left/Thru/Right	0	454	18.2	B	B	897	199.8	F	F
Intersection LOS			24.5			C		154.5		F
Intersection: Florida Avenue and Palm Avenue										
EB	Left/Thru	0	373	39.0	D	D	1117	308.3	F	F
WB	Thru/Right	0	445	28.6	C	C	422	28.7	C	C
NB	Left/Thru/Right	0	95	23.6	C	C	1271	272.7	F	F
NEB	Left	0	37	62.6	E	E	326	317.4	F	F
	Right	0	29	61.4	E		41	63.9	E	
Intersection LOS			29.3			C		235.3		F
Intersection: Tampa Street and Palm Avenue										
EB	Thru/Right	0	320	21.3	C	B	470	15.6	B	B
WB	Left/Thru	0	775	95.8	F	F	484	112.4	F	F
SB	Left/Thru/Right	0	475	133.7	F	E	147	57.3	E	E
Intersection LOS			99.9			F		54.2		D
Intersection: Florida Avenue and Columbus Drive										
EB	Left	0	71	17.8	B	A	185	102.9	F	D
	Thru	0	212	0.1	A		506	25.4	C	
WB	Thru/Right	0	628	28.4	C	C	892	142.6	F	F
NB	Left/Thru/Right	0	398	53.1	D	D	1067	90.9	F	F
Intersection LOS			35.1			D		88.0		F
Intersection: Tampa Street and Columbus Drive										
EB	Thru/Right	0	900	182.4	F	F	1293	89.3	F	F
WB	Left	125	386	264.9	F	F	46	62.0	E	A
	Thru	0	746	42.2	D		80	0.2	A	
SB	Left/Thru	0	1110	138.9	F	F	496	94.7	F	F
	Right	0	306	41.4	D		280	83.1	F	
Intersection LOS			117.6			F		65.8		E
Intersection: Florida Avenue and Floribraska Avenue										
EB	Left/Thru	0	27	30.0	C	D	90	43.7	D	D
WB	Thru/Right	0	337	41.9	D	D	223	48.0	D	D
NB	Left/Thru/Right	0	47	27.0	C	C	20	35.3	D	D
Intersection LOS			33.5			C		37.5		D
Intersection: Tampa Street and Floribraska Avenue										
WB	Left	0	150	0.0	A	A	14	0.0	A	A
SB	Left/Thru	0	98	0.9	A	A	28	0.5	A	A
Intersection LOS			0.9			A		0.5		A
Intersection: Highland Avenue and Hillsborough Avenue										
EB	Thru	0	1296	32.1	C	C	3140	196.8	F	F

Table 2-4: No Build (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour					
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS	
WB	Right	0	337	19.1	B		236	15.6	B		
	Left	250	98	96.1	F	F	22	88.9	F	B	
	Thru	0	198	251.7	F		262	9.7	A		
NB	Left/Right	90	266	100.1	F	F	980	244.3	F	F	
Intersection LOS			159.4			F		126.0		F	
Intersection: Florida Avenue and Lake Avenue											
WB	Right	0	0	51.1	D	D	32	51.1	D	D	
NB	Thru/Right	0	153	4.6	A	A	69	2.7	A	A	
Intersection LOS			10.7			B		5.4		A	
Intersection: Florida Avenue and Indiana Avenue											
EB	Left	0	69	46.0	D	D	65	62.9	E	E	
NB	Left/Thru	0	19	1.6	A	A	25	1.2	A	A	
Intersection LOS			4.0			A		2.6		A	
Signalized Intersection: Florida Avenue and MLK Jr Boulevard											
EB	Left	140	105	72.1	E	A	371	369.8	F	F	
	Thru	0	642	2.5	A		910	201.2	F		
WB	Thru/Right	0	1699	214.6	F	F	1051	207.6	F	F	
NB	Left/Thru/Right	0	447	119.3	F	F	1001	235.6	F	F	
Intersection LOS			124.4			F		225.5		F	
Intersection: Tampa Street, MLK Jr Boulevard, and Highland Avenue											
EB	Thru/Right	0	932	30.3	C	C	1960	172.4	F	F	
WB	Left/Thru	0	1163	373.1	F	F	60	39.1	D	D	
SB	Left/Thru/Right	0	969	287.4	F	F	471	154.0	F	F	
Intersection LOS			239.8			F		133.9		F	
Intersection: Florida Avenue and Osbourne Avenue											
EB	Left/Thru	0	216	13.1	B	B	801	266.4	F	F	
WB	Thru/Right	0	242	24.1	C	C	359	43.9	D	D	
SB	Left/Thru/Right	0	110	9.2	A	A	43	17.7	B	B	
Intersection LOS			14.2			B		58.2		E	
Intersection: Highland Avenue and Osbourne Avenue											
EB	Thru/Right	0	155	17.8	B	B	193	22.5	C	C	
WB	Left/Thru	0	208	27.7	C	C	232	24.9	C	C	
SB	Left/Thru/Right	0	357	20.5	C	C	160	9.6	A	A	
Intersection LOS			21.0			C		14.1		B	
Intersection: Florida Avenue and Hillsborough Avenue											
EB	Left	340	233	83.6	F	D	507	124.2	F	F	
	Thru/Right	0	1700	34.9	C		1765	85.5	F		
WB	Left	310	290	139.6	F	F	551	506.0	F	F	
	Thru	0	4603	516.6	F		1660	69.2	E		
	Right	205	24	19.3	B		189	24.9	C		
NB	Left	270	78	71.2	E	F	454	376.2	F	F	
	Thru/Right	0	763	133.0	F		1737	393.5	F		
SB	Left	200	568	384.5	F	F	304	760.7	F	F	
	Thru	0	1426	292.7	F		733	166.7	F		

Table 2-4: No Build (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
	Right	150	531	107.3	F		477	180.9	F	
Intersection LOS			306.9		F		166.3		F	
Intersection: Tampa Street and Scott Street										
EB	Thru/Right	0	2119	362.7	F	F	1779	125.4	F	F
SB	Left/Thru	0	699	70.9	E	E	673	160.9	F	F
Intersection LOS			233.4		F		138.2		F	
Intersection: Tampa Street and Kay Street*										
WB	Left	0	20	13.0	B	F	60	10.1	B	B
	Left/Thru	0	1257	112.8	F		505	17.8	B	
SB	Thru	0	912	108.9	F	F	487	54.7	D	E
	Right	0	459	45.2	D		428	56.4	E	
Intersection LOS			103.4		F		33.7		C	
Intersection: Florida Avenue and Kay Street*										
WB	Thru/Right	0	842	80.7	F	F	867	94.1	F	F
NB	Left/Thru/Right	0	162	114.2	F	F	152	115.2	F	F
Intersection LOS			103.1		F		108.5		F	
Intersection: Tampa Street and Henderson Avenue										
EB	Thru/Right	0	75	30.0	C	C	269	24.9	C	C
WB	Left	60	23	17.8	B	C	50	21.1	C	B
	Thru	0	563	34.1	C		249	14.8	B	
SB	Left/Thru	0	199	41.3	D	D	151	13.1	B	B
	Right	140	0	20.4	C		1	9.1	A	
Intersection LOS			40.2		D		16.6		B	

Based on the analysis, the following intersections are expected to operate below the acceptable LOS by 2040:

- Florida Avenue and Scott Street (AM & PM)
- Florida Avenue and Henderson Avenue (PM)
- Florida Avenue and Palm Avenue (PM)
- Tampa Street and Palm Avenue (AM)
- Florida Avenue and Columbus Drive (PM)
- Tampa Street and Columbus Drive (AM & PM)
- Highland Avenue and Hillsborough Avenue (AM & PM)
- Florida Avenue and MLK Jr Boulevard (AM & PM)
- Tampa Street and MLK Jr Boulevard (AM & PM)
- Florida Avenue and Osbourne Avenue (PM)
- Florida Avenue and Hillsborough Avenue (AM & PM)
- Tampa Street and Scott Street (AM & PM)
- Tampa Street and Kay Street (AM)
- Florida Avenue and Kay Street (AM & PM)

2.4 Alternative 1 Traffic Analysis

An evaluation of the lane reductions with the design year (2040) traffic volumes was conducted for the signalized intersections along the study area. The signalized intersections were analyzed using the Synchro software (Version 8), and the results were reported as Highway Capacity Manual (HCM) level of service output. In order to optimize the traffic operations of future scenarios, the following improvements were included in the analysis:

- New Signalized intersection at Tampa Street and Indiana Avenue intersection
- New Signalized intersection at Tampa Street and Henderson Avenue intersection
- New Signalized intersection at Florida Avenue and Kay Street intersection
 - Additional WB through lane coded in the WB approach

The Alternative 1 analyses results are shown in **Table 2-5**.

Table 2-1: Alternative 1 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour				
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Scott Street										
EB	Left/Thru	0	1086	275.6	F	F	1399	383.8	F	F
NB	Thru/Right	0	1447	270.2	F	F	1521	278.6	F	F
Intersection LOS			272.8			F		330.4		F
Signalized Intersection: Florida Avenue and Henderson Avenue										
EB	Left	50	97	25.1	C	B	314	130.6	F	F
	Thru	0	100	3.3	A		40	2.4	A	
WB	Left/Thru/Right	0	491	44.6	D	D	1122	172.6	F	F
NB	Left/Thru/Right	0	459	24.8	C	C	789	75.6	E	E
Intersection LOS			26.6			C		104.4		F
Intersection: Florida Avenue and Palm Avenue										
EB	Left/Thru	0	396	87.5	F	F	1023	447.4	F	F
WB	Thru/Right	0	464	32.6	C	C	410	32.7	C	C
NB	Left/Thru/Right	0	889	82.1	F	F	1249	344.6	F	F
NEB	Left	0	37	62.6	E	E	37	62.6	E	E
	Right	0	29	61.4	E		29	61.4	E	
Intersection LOS			67.3			E		309.7		F
Intersection: Tampa Street and Palm Avenue										
EB	Thru/Right	0	398	30.4	C	C	589	23.8	C	C
WB	Left/Thru	0	788	241.9	F	F	148	167.3	F	F
SB	Left/Thru/Right	0	772	238.7	F	F	340	63.1	E	E
Intersection LOS			177.2			F		74.4		E
Intersection: Florida Avenue and Columbus Drive										
EB	Left	0	97	27.6	C	A	87	172.7	F	F
	Thru	0	193	0.1	A		193	75.6	E	
WB	Thru/Right	0	798	58.2	E	E	982	259.3	F	F
NB	Left/Thru/Right	0	508	49.8	D	D	451	237.1	F	F
Intersection LOS			44.1			D		208.6		F
Intersection: Tampa Street and Columbus Drive										
EB	Thru/Right	0	960	275.5	F	F	1482	227.2	F	F
WB	Left	125	271	259.3	F	F	52	76.2	F	B

Table 2-1: Alternative 1 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour			PM Peak Hour					
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS	
SB	Thru	0	655	51.5	F		210	0.4	A		
	Left/Thru	0	1031	88.5	F	F	1101	204.7	F	F	
	Right	0	205	37.2	D		206	51.4	D		
Intersection LOS			111.4			F		142.2		F	
Intersection: Florida Avenue and Floribraska Avenue											
EB	Left/Thru	0	23	26.8	C	C	118	78.9	E	E	
WB	Thru/Right	0	351	38.2	D	D	287	99.3	F	F	
NB	Left/Thru/Right	0	89	29.7	C	C	26	52.3	D	D	
Intersection LOS			32.8			C		60.0		E	
Intersection: Tampa Street and Floribraska Avenue											
WB	Left	0	181	14.7	B	A	6	0.0	A	A	
SB	Left/Thru	0	453	25.1	C	B	71	7.7	A	A	
Intersection LOS			22.5			C		7.7		A	
Intersection: Highland Avenue and Hillsborough Avenue											
EB	Thru	0	1296	32.1	C	C	3077	166.1	F	F	
	Right	0	337	19.1	B		212	12.8	B		
WB	Left	250	88	109.3	F	F	22	106.8	F	C	
	Thru	0	1887	230.3	F		128	23.1	C		
NB	Left/Right	90	241	100.5	F	F	989	322.5	F	F	
Intersection LOS			147.8			F		125.5		F	
Intersection: Florida Avenue and Lake Avenue											
WB	Right	0	0	23.0	C	C	52	50.9	D	D	
NB	Thru/Right	0	246	15.0	B	B	913	28.1	C	C	
Intersection LOS			16.0			B		29.4		C	
Intersection: Florida Avenue and Indiana Avenue											
EB	Left	0	41	34.0	C	C	100	64.2	E	E	
NB	Left/Thru	0	286	5.0	A	A	48	4.0	A	A	
Intersection LOS			6.5			A		5.7		A	
Signalized Intersection: Florida Avenue and MLK Jr Boulevard											
EB	Left	140	182	307.5	F	D	302	533.7	F	F	
	Thru	0	250	16.9	B		645	265.0	F		
WB	Thru/Right	0	1712	230.5	F	F	1046	246.7	F	F	
NB	Left/Thru/Right	0	500	172.7	F	F	1556	358.6	F	F	
Intersection LOS			162.8			F		310.3		F	
Intersection: Tampa Street, MLK Jr Boulevard, and Highland Avenue											
EB	Thru/Right	0	1008	65.2	E	E	2160	351.2	F	F	
WB	Left/Thru	0	1199	730.3	F	F	431	114.3	F	F	
SB	Left/Thru/Right	0	617	411.5	F	F	553	48.8	D	D	
Intersection LOS			449.2			F		231.7		F	
Intersection: Florida Avenue and Osbourne Avenue											
EB	Left/Thru	0	270	24.2	C	C	937	165.2	F	F	
WB	Thru/Right	0	171	13.6	B	B	325	33.2	C	C	
NB	Left/Thru/Right	0	92	15.1	B	B	551	160.8	F	F	
Intersection LOS			16.5			B		149.2		F	

Table 2-1: Alternative 1 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Highland Avenue and Osbourne Avenue										
EB	Thru/Right	0	327	37.5	D	D	491	32.8	C	C
WB	Left/Thru	0	526	91.3	F	F	139	17.3	B	B
SB	Left/Thru/Right	0	1207	74.5	F	E	438	28.6	C	C
Intersection LOS			62.8			E		28.5		C
Intersection: Florida Avenue and Hillsborough Avenue										
EB	Left	340	198	183.8	F	B	490	97.4	F	F
	Thru/Right	0	692	3.9	A		2142	207.0	F	
WB	Left	310	319	22.0	C	F	514	336.9	F	F
	Thru	0	4481	402.9	F		1948	176.9	F	
NB	Right	205	21	9.4	A	F	205	39.9	D	F
	Left	270	92	73.5	E		291	79.2	E	
SB	Thru/Right	0	987	270.8	F	F	1627	287.1	F	F
	Left	200	598	560.9	F		190	181.6	F	
	Thru	0	1594	471.3	F		578	85.8	F	
	Right	150	661	238.3	F		349	73.0	E	
Intersection LOS			295.8			F		189.5		F
Intersection: Tampa Street and Scott Street										
EB	Thru/Right	0	1965	205.7	F	F	1877	148.1	F	F
SB	Left/Thru	0	788	348.0	F	F	696	163.1	F	F
Intersection LOS			392.4			F		153.5		F
Intersection: Tampa Street and Kay Street										
WB	Left	0	21	13.2	B	F	47	7.4	A	B
	Left/Thru	0	1314	119.3	F		424	14.5	B	
SB	Thru	0	845	83.6	F	E	502	53.9	D	D
	Right	0	432	42.5	D		442	55.4	E	
Intersection LOS			95.4			F		31.8		C
Intersection: Florida Avenue and Kay Street										
WB	Thru/Right	0	829	70.7	E	E	867	94.1	F	F
NB	Left/Thru/Right	0	171	19.7	B	B	160	119.0	F	F
Intersection LOS			37.1			D		111.1		F
Intersection: Tampa Street and Henderson Avenue										
EB	Thru/Right	0	418	51.9	D	D	23	39.5	D	D
WB	Left	60	33	51.1	D	F	144	44.8	D	C
	Thru	0	694	106.4	F		333	24.1	C	
SB	Left/Thru	0	236	70.9	F	E	20	43.6	D	D
	Right	140	0	18.0	B		0	25.1	C	
Intersection LOS			65.8			E		39.5		D
Intersection: Tampa Street and Indiana Avenue										
EB	Thru/Right	0	53	19.6	B	B	36	22.7	C	C
WB	Left/Thru	0	64	20.8	C	C	57	25.3	C	C
SB	Left/Thru/Right	0	205	13.3	B	B	130	5.3	A	A
Intersection LOS			12.9			B		8.0		A

Based on the analysis, the following intersections are expected to operate below the acceptable LOS by 2040:

- Florida Avenue and Scott Street (AM & PM)
- Florida Avenue and Henderson Avenue (PM)
- Florida Avenue and Palm Avenue (PM)
- Tampa Street and Palm Avenue (AM & PM)
- Florida Avenue and Columbus Drive (PM)
- Tampa Street and Columbus Drive (AM & PM)
- Florida Avenue & Floribaska Avenue (PM)
- Highland Avenue and Hillsborough Avenue (AM & PM)
- Florida Avenue and MLK Jr Boulevard (AM & PM)
- Tampa Street and MLK Jr Boulevard (AM & PM)
- Florida Avenue and Osbourne Avenue (PM)
- Highland Avenue & Osbourne Avenue (AM)
- Florida Avenue and Hillsborough Avenue (AM & PM)
- Tampa Street and Scott Street (AM & PM)
- Tampa Street and Henderson Avenue (AM)
- Tampa Street and Kay Street (AM)
- Florida Avenue and Kay Street (PM)

2.5 Alternative 2 Traffic Analysis

An evaluation of the two-way, two-lane conversion with the design year (2040) traffic volumes was conducted for the signalized intersections along the study area. The signalized intersections were analyzed using the Synchro software (Version 8), and the results were reported as Highway Capacity Manual (HCM) level of service output. In order to optimize the traffic operations of future scenarios, the following improvements were included in the analysis:

- Tampa Street
 - Protected/permitted EB Left and WB Left turn phase at MLK Jr Boulevard intersection
 - Protected/permitted EB Left turn phase at Henderson Avenue intersection
 - Split phases EB/WB at Henderson Avenue intersection
 - Protected/permitted WB Left turn phase at Columbus Drive
 - Split phases EB/WB at Henderson Avenue intersection
 - Split phases EB/WB at Osborne Avenue
 - New Traffic Signal at Tampa Street and Violet Street intersection
- Florida Avenue
 - WB Left at Palm Avenue intersection
 - Protected/permitted WB Left turn phase at Columbus Drive intersection
 - WB Left at MLK Jr Boulevard intersection
 - Split phases EB/WB at Osborne Avenue intersection
 - Traffic Signal at Florida Avenue and Violet Street intersection
 - Split phases EB/WB at Violet Street intersection
 - New Signalized intersection at Florida Avenue and Kay Street intersection

- Additional WB through lane coded in the WB approach

The No-Build analyses results are shown in **Table 2-6**.

Table 2-6: Alternative 2 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
Intersection: Florida Avenue and Scott Street										
EB	Left/Thru	0	1274	365.1	F	F	1940	310.1	F	F
NB	Thru/Right	0	1530	270.7	F	F	1872	268.2	F	F
Intersection LOS			315.3			F		327.6		F
Signalized Intersection: Florida Avenue and Henderson Avenue										
EB	Left	50	0	51.1	D	C	67	155.3	F	E
	Thru	0	33	27.1	C		226	58.6	E	
WB	Left/Thru/Right	0	651	87.4	F	F	1715	390.6	F	F
NB	Left	0	162	30.6	C	E	145	12.1	B	F
	Thru	0	382	60.1	E		2289	292.7	F	
	Right	0	62	43.5	D		11	23.3	C	
SB	Left	250	455	58.0	E	E	158	102.0	F	C
	Right	0	948	0.0	A		58	6.9	A	
Intersection LOS			54.7			E		257.5		F
Intersection: Florida Avenue and Palm Avenue										
EB	Left	0	464	1050	F	F	13	29.4	C	F
	Thru/Right	0	602	68.0	E		782	448.8	F	
WB	Left	0	114	55.1	E	D	148	201.4	F	D
	Thru/Right	0	684	50.9	D		574	46.6	D	
NB	Left	300	816	941.8	F	F	136	180.1	F	F
	Thru/Right	0	1085	283.4	F		1910	1457.4	F	
SB	Left	250	494	1550	F	F	9	34.2	C	F
	Thru/Right	0	2290	591.9	F		1070	199.9	F	
NEB	Left	0	49	108.6	F	F	49	108.6	F	F
	Right	0	38	98.4	F		38	98.4	F	
Intersection LOS			410.0			F		623.5		F
Intersection: Tampa Street and Palm Avenue										
EB	Left	0	96	78.1	E	F	437	614.7	F	F
	Thru/Right	0	1624	189.6	F		3017	500.3	F	
WB	Left	200	233	185.5	F	F	509	417.0	F	F
	Thru/Right	0	1679	202.4	F		1446	95.8	F	
NB	Left	200	209	180.8	F	E	27	52.8	D	F
	Thru/Right	0	701	50.0	D		377	160.9	F	
SB	Left	300	141	40.5	D	F	363	445.4	F	F
	Thru/Right	0	1760	221.6	F		664	53.5	D	
Intersection LOS			175.8			F		284.4		F
Intersection: Florida Avenue and Columbus Drive										
EB	Left	90	29	66.5	E	F	8	106.2	F	F
	Thru/Right	0	217	92.1	F		179	203.0	F	
WB	Left	125	116	135.0	F	F	96	160.3	F	F
	Thru/Right	0	956	281.5	F		1064	87.1	F	
NB	Left	250	308	2.3	A	A	1	63.6	E	F

Table 2-6: Alternative 2 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
SB	Thru/Right	0	273	1.9	A		560	217.6	F	
	Left	100	2	0.5	A	A	4	76.7	E	B
	Thru/Right	0	249	0.5	A		611	12.0	B	
Intersection LOS			74.1		E		151.7		F	
Intersection: Tampa Street and Columbus Drive										
EB	Left	250	168	133.0	F	F	468	232.6	F	F
	Thru/Right	0	680	93.8	F		1793	263.5	F	
WB	Left	125	79	43.0	D	F	303	171.3	F	F
	Thru/Right	0	292	169.2	F		1109	107.9	F	
NB	Left	200	132	133.4	F	C	101	54.8	D	F
	Thru/Right	0	437	24.6	C		947	145.8	F	
SB	Left	100	21	8.3	A	F	11	52.0	D	A
	Thru/Right	0	1266	101.6	F		700	7.5	A	
Intersection LOS			101.6		F		143.5		F	
Intersection: Florida Avenue and Floribraska Avenue										
EB	Left	250	168	33.8	C	F	105	39.1	D	F
	Thru/Right	0	1177	274.5	F		1173	128.7	F	
WB	Left	0	388	172.8	F	F	139	91.9	F	E
	Thru/Right	0	655	53.8	D		476	50.8	D	
NB	Left	300	354	186.4	F	F	117	31.5	C	F
	Thru/Right	0	288	23.5	C		1004	107.6	F	
SB	Left	150	4	26.7	C	F	32	47.2	D	D
	Thru/Right	0	1207	292.3	F		378	47.7	D	
Intersection LOS			187.2		F		85.4		F	
Intersection: Tampa Street and Floribraska Avenue*										
WB	Left/Right	0	303	40.8	D	D	281	45.0	D	D
NB	Thru	0	104	37.8	D	F	581	33.7	C	D
	Right	250	163	114.9	F		41	69.0	E	
SB	Left	350	388	23.9	C	C	159	50.4	D	C
	Thru	0	262	20.1	C		64	5.6	A	
Intersection LOS			50.2		D		42.2		D	
Intersection: Florida Avenue and Lake Avenue *										
WB	Left/Right	0	82	52.0	D	D	80	51.9	D	D
NB	Thru/Right	0	747	158.9	F	F	1182	185.8	F	F
SB	Left	50	1	9.9	A	C	22	12.7	B	B
	Thru	0	782	22.9	C		398	10.2	B	
Intersection LOS			72.3		E		117.1		F	
Intersection: Florida Avenue and Indiana Avenue*										
EB	Left	0	101	49.7	D	D	106	59.2	E	E
NB	Left	50	11	12.2	B	F	5	5.4	A	F
	Thru	0	530	164.6	F		701	172.7	F	
SB	Thru/Right	0	1209	164.9	F	F	749	121.8	F	F
Intersection LOS			152.9		F		144.1		F	
Signalized Intersection: Florida Avenue and MLK Jr Boulevard										
EB	Left	140	154	194.9	F	F	103	170.7	F	F
	Thru/Right	0	1382	88.1	F		1371	255.6	F	

Table 2-6: Alternative 2 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
WB	Left	150	130	65.9	E	F	21	46.3	D	E
	Thru/Right	0	2485	319.2	F		1091	59.2	E	
NB	Left	300	639	331.9	D	F	164	56.7	E	F
	Thru/Right	0	477	54.5	D		1776	325.8	F	
SB	Left	250	154	43.3	F	F	136	122.8	F	E
	Thru/Right	0	1959	452.4	F		772	48.6	D	
Intersection LOS			252.3		F		193.7		F	
Intersection: Tampa Street, MLK Jr Boulevard, and Highland Avenue										
EB	Left	350	226	292.0	F	E	1103	1204.3	F	F
	Thru/Right	0	1186	46.4	D		2574	253.7	F	
WB	Left	150	5	70.4	E	F	41	109.8	F	B
	Thru/Right	0	212	225.8	F		196	10.8	B	
NB	Left	200	203	178.5	F	F	178	99.7	F	E
	Thru/Right	0	276	65.1	E		304	47.5	D	
SB	Left	300	223	64.1	E	F	1338	2151.6	F	F
	Thru/Right	0	1407	346.2	F		1072	340.4	F	
Intersection LOS			175.3		F		409.1		F	
Intersection: Florida Avenue and Osbourne Avenue										
EB	Left/Thru	0	319	151.5	F	F	401	110.6	F	F
WB	Thru/Right	0	621	85.2	F	F	203	21.4	C	C
NB	Left	100	8	62.5	E	B	7	32.1	C	F
	Thru/Right	0	246	11.7	B		904	144.0	F	
SB	Left	200	7	1.9	A	D	134	250.0	F	E
	Thru/Right	0	154	46.7	F		282	25.8	C	
Intersection LOS			59.7		E		98.5		F	
Intersection: Highland Avenue and Osbourne Avenue										
EB	Thru/Right	0	450	27.4	C	C	1033	100.2	F	F
WB	Left/Thru	0	481	43.5	D	D	596	59.8	E	E
NB	Left	100	8	17.0	B	B	6	11.7	B	D
	Thru/Right	0	325	16.3	B		609	45.6	F	
SB	Left	200	28	11.1	B	B	47	45.6	D	A
	Thru/Right	0	1002	18.8	B		613	1.3	A	
Intersection LOS			25.8		C		49.4		D	
Intersection: Florida Avenue and Hillsborough Avenue										
EB	Left	340	265	245.8	F	D	630	1042.6	F	F
	Thru/Right	0	1962	20.8	F		1808	204.2	F	
WB	Left	310	735	693.0	F	F	581	502.8	F	E
	Thru	0	4298	377.5	F		1448	42.1	D	
NB	Right	205	21	9.4	A	F	151	11.1	B	F
	Left	270	87	73.3	E		1048	1081.1	F	
SB	Thru/Right	0	923	239.1	F	F	1694	570.6	F	F
	Left	200	624	594.6	F		189	109.0	F	
SB	Thru	0	1573	454.9	F	F	641	119.6	F	F
	Right	150	751	274.1	F		606	249.5	F	
Intersection LOS			292.1		F		294.9		F	
Intersection: Tampa Street and Henderson Avenue										
EB	Left	0	231	52.4	D	F	245	12.2	C	E

Table 2-6: Alternative 2 (2040) Signalized Intersection Analysis Results

Approach	Movement	Storage Length (ft)	AM Peak Hour				PM Peak Hour			
			Queue (ft)	Delay (sec)	LOS	Approach LOS	Queue (ft)	Delay (sec)	LOS	Approach LOS
WB	Thru/Right	0	375	90.4	F		434	17.0	F	
	Left	250	963	123.4	F	F	611	18.6	F	F
	Thru/Right	0	1675	415.7	F		1694	315.1	F	
SB	Left	200	33	28.4	C	F	20	13.9	C	F
	Thru	0	1753	336.6	F		945	106.0	F	
	Right	140	11	28.8	C		1	14.0	C	
Intersection LOS			283.6		F		140.7		F	
Intersection: Highland Avenue and Hillsborough Avenue*										
EB	Thru	0	1563	23.4	C	C	3357	221.5	F	F
	Right	0	212	9.8	A		127	12.8	B	
WB	Left	250	47	102.7	F	F	96	98.5	F	B
	Thru	0	1845	209.3	F		586	10.6	B	
NB	Left/Right	90	150	100.8	F	F	800	231.3	F	F
Intersection LOS			132.5		F		135.2		F	
Intersection: Tampa Street and Indiana Avenue										
EB	Left/Thru/Right	0	102	57.6	E	E	74	37.7	D	D
WB	Left/Thru/Right	0	71	56.0	E	E	87	37.3	D	D
NB	Left	100	10	0.9	A	A	2	0.3	A	A
	Thru/Right	0	247	0.4	A		120	1.9	A	
SB	Left	100	8	1.3	A	A	8	1.6	A	A
	Thru/Right	0	232	3.1	A		193	2.4	A	
Intersection LOS			8.7		A		5.5		A	
Intersection: Florida Avenue and Violet Street										
EB	Left	250	393	90.7	F	F	1123	74.7	E	E
	Thru/Right	0	52	41.7	D		46	33.4	C	
WB	Left/Thru/Right	0	30	40.5	D	D	51	31.5	C	C
NB	Left	300	15	31.7	C	A	296	64.9	F	C
	Thru/Right	0	193	0.9	A		671	A	B	
SB	Thru	0	1387	21.8	C	B	1077	57.2	E	D
	Right	0	87	6.9	A		314	46.1	D	
Intersection LOS			21.6		C		43.5		D	
Intersection: Highland Avenue and Violet Street										
EB	Left/Thru/Right	0	111	22.5	C	C	73	17.4	B	B
WB	Left	475	421	32.1	C	C	245	22.1	C	C
	Thru/Right	0	51	22.5	C		101	24.5	C	
NB	Left/Thru	0	101	2.4	A	A	266	13.0	B	D
	Right	150	61	2.6	A		183	73.9	F	
SB	Left	150	114	9.1	A	A	90	11.8	B	A
	Thru/Right	0	451	10.1	B		143	8.8	A	
Intersection LOS			15.0		B		34.4		C	

Based on the analysis, the following intersections are expected to operate below the acceptable LOS by 2040:

- Florida Avenue and Scott Street (AM & PM)

- Florida Avenue and Henderson Avenue (AM & PM)
- Florida Avenue and Palm Avenue (AM & PM)
- Tampa Street and Palm Avenue (AM & PM)
- Florida Avenue and Columbus Drive (AM & PM)
- Tampa Street and Columbus Drive (AM & PM)
- Florida Avenue & Floribraska Avenue (AM & PM)
- Florida Avenue & Lake Avenue (AM & PM)
- Florida Avenue & Indiana Avenue (AM & PM)
- Highland Avenue and Hillsborough Avenue (AM & PM)
- Florida Avenue and MLK Jr Boulevard (AM & PM)
- Tampa Street and MLK Jr Boulevard (AM & PM)
- Florida Avenue and Osbourne Avenue (AM & PM)
- Florida Avenue and Hillsborough Avenue (AM & PM)
- Tampa Street and Scott Street (AM & PM)
- Tampa Street and Henderson Avenue (AM & PM)
- Tampa Street and Kay Street (AM)
- Florida Avenue and Kay Street (PM)