

HCM 6th TWSC
3: Biscayne Blvd & Greynolds Park D/W

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		7	0	↑↑↑			7	↑↑↑
Traffic Vol, veh/h	0	11	70	1842	2	2	3	2317
Future Vol, veh/h	0	11	70	1842	2	2	3	2317
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	-	0	205	-	-	-	205	-
Veh in Median Storage, #	0	-	-	0	-	-	-	0
Grade, %	0	-	-	0	-	-	-	0
Peak Hour Factor	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	75	1981	2	2	3	2491

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	992 1819	0 0 1447 1983 0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14 5.64	- - 5.64 5.34 -
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92 2.32	- - 2.32 3.12 -
Pot Cap-1 Maneuver	0	210 152	- - 247 128 -
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	210 152	- - 156 156 -
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.2	1.8	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	152	-	- 210	156	-
HCM Lane V/C Ratio	0.495	-	- 0.056	0.034	-
HCM Control Delay (s)	49.9	-	- 23.2	28.8	-
HCM Lane LOS	E	-	- C	D	-
HCM 95th %tile Q(veh)	2.4	-	- 0.2	0.1	-

HCM Signalized Intersection Capacity Analysis

4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	4	107	1537	151	3	485	1277	100	143	359	283	180
Future Volume (vph)	4	107	1537	151	3	485	1277	100	143	359	283	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Flt		1.00	0.99			1.00	0.99		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1770	5017			1770	5030		1770	3305		1770
Flt Permitted		0.11	1.00			0.05	1.00		0.25	1.00		0.10
Satd. Flow (perm)		204	5017			97	5030		468	3305		195
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	114	1635	161	3	516	1359	106	152	382	301	191
RTOR Reduction (vph)	0	0	8	0	0	0	5	0	0	76	0	0
Lane Group Flow (vph)	0	118	1788	0	0	519	1460	0	152	607	0	191
Turn Type		pm+pt	NA			pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases		5	2			1	6		3	8		7
Permitted Phases		2				6			8			4
Actuated Green, G (s)		81.0	71.1			95.1	79.2		53.1	37.9		60.7
Effective Green, g (s)		81.0	71.1			95.1	79.2		53.1	37.9		60.7
Actuated g/C Ratio		0.47	0.42			0.56	0.46		0.31	0.22		0.36
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		187	2088			230	2332		261	733		244
v/s Ratio Prot		0.04	0.36			c0.24	0.29		0.05	0.18		c0.09
v/s Ratio Perm		0.26				c1.02			0.13			c0.19
v/c Ratio		0.63	0.86			2.26	0.63		0.58	0.83		0.78
Uniform Delay, d1		28.2	45.2			58.5	34.6		45.3	63.3		43.5
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		5.0	4.8			579.2	1.3		2.1	7.5		14.0
Delay (s)		33.2	50.0			637.6	35.9		47.4	70.8		57.4
Level of Service		C	D			F	D		D	E		E
Approach Delay (s)			49.0				193.3			66.6		
Approach LOS			D				F			E		

Intersection Summary

HCM 2000 Control Delay	105.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.74		
Actuated Cycle Length (s)	170.8	Sum of lost time (s)	24.8
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑	↙
Traffic Volume (vph)	471	71
Future Volume (vph)	471	71
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3469	
Flt Permitted	1.00	
Satd. Flow (perm)	3469	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	501	76
RTOR Reduction (vph)	6	0
Lane Group Flow (vph)	571	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	41.7	
Effective Green, g (s)	41.7	
Actuated g/C Ratio	0.24	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	846	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.67	
Uniform Delay, d1	58.4	
Progression Factor	1.00	
Incremental Delay, d2	1.9	
Delay (s)	60.4	
Level of Service	E	
Approach Delay (s)	59.6	
Approach LOS	E	
Intersection Summary		

Timings
4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	107	1537	485	1277	143	359	180	471
Future Volume (vph)	107	1537	485	1277	143	359	180	471
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	32.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	90.0	24.0	90.0	24.4	32.4	24.4	32.4
Total Split (%)	14.1%	52.7%	14.1%	52.7%	14.3%	19.0%	14.3%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	81.1	71.1	94.9	79.2	53.0	37.9	60.7	41.7
Actuated g/C Ratio	0.47	0.42	0.56	0.46	0.31	0.22	0.36	0.24
v/c Ratio	0.63	0.86	2.26	0.63	0.58	0.84	0.78	0.68
Control Delay	34.1	49.3	605.2	35.5	48.7	64.0	66.2	62.8
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
Total Delay	34.1	49.3	605.2	36.2	48.7	64.0	66.2	62.8
LOS	C	D	F	D	D	E	E	E
Approach Delay		48.4		185.0		61.2		63.6
Approach LOS		D		F		E		E

Intersection Summary

Cycle Length: 170.8

Actuated Cycle Length: 170.8

Offset: 27 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.26

Intersection Signal Delay: 101.7

Intersection Capacity Utilization 109.7%

Analysis Period (min) 15

Intersection LOS: F

ICU Level of Service H

Splits and Phases: 4: W Dixie Hwy & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	90 s	24.4 s	32.4 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	90 s	24.4 s	32.4 s

Queues

4: W Dixie Hwy & NE 163 St

The Riverwalk South

Future Condition w/o Project - AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	1796	519	1465	152	683	191	577
v/c Ratio	0.63	0.86	2.26	0.63	0.58	0.84	0.78	0.68
Control Delay	34.1	49.3	605.2	35.5	48.7	64.0	66.2	62.8
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
Total Delay	34.1	49.3	605.2	36.2	48.7	64.0	66.2	62.8
Queue Length 50th (ft)	61	659	~891	445	118	342	152	307
Queue Length 95th (ft)	86	664	#1124	469	192	#559	264	#483
Internal Link Dist (ft)		573		623		563		296
Turn Bay Length (ft)	290		270		140		130	
Base Capacity (vph)	272	2474	230	2478	297	809	255	852
Starvation Cap Reductn	0	0	0	602	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.73	2.26	0.78	0.51	0.84	0.75	0.68

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

														
Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT							
Lane Configurations														
Traffic Volume (vph)	0	78	1843	88	1	102	2313							
Future Volume (vph)	0	78	1843	88	1	102	2313							
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900							
Total Lost time (s)		7.1	6.8			7.1	4.0							
Lane Util. Factor		1.00	0.81			0.97	0.86							
Flt		0.86	0.99			1.00	1.00							
Flt Protected		1.00	1.00			0.95	1.00							
Satd. Flow (prot)		1611	7492			3433	6408							
Flt Permitted		1.00	1.00			0.95	1.00							
Satd. Flow (perm)		1611	7492			3433	6408							
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93							
Adj. Flow (vph)	0	84	1982	95	1	110	2487							
RTOR Reduction (vph)	0	32	3	0	0	0	0							
Lane Group Flow (vph)	0	52	2074	0	0	111	2487							
Turn Type		Perm	NA		Prot	Prot	NA							
Protected Phases			2		1	1	Free							
Permitted Phases		1												
Actuated Green, G (s)		11.6	144.4			11.6	169.9							
Effective Green, g (s)		11.6	144.4			11.6	169.9							
Actuated g/C Ratio		0.07	0.85			0.07	1.00							
Clearance Time (s)		7.1	6.8			7.1								
Vehicle Extension (s)		3.0	1.0			3.0								
Lane Grp Cap (vph)		109	6367			234	6408							
v/s Ratio Prot			0.28			0.03	0.39							
v/s Ratio Perm		0.03												
v/c Ratio		0.48	0.33			0.47	0.39							
Uniform Delay, d1		76.2	2.6			76.2	0.0							
Progression Factor		1.00	1.00			1.00	1.00							
Incremental Delay, d2		3.3	0.1			1.5	0.2							
Delay (s)		79.6	2.8			77.9	0.2							
Level of Service		E	A			E	A							
Approach Delay (s)	79.6		2.8				3.5							
Approach LOS	E		A				A							

Intersection Summary			
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	169.9	Sum of lost time (s)	13.9
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

	↖	↑	↗	↓
Lane Group	WBR	NBT	SBL	SBT
Lane Configurations	↖	↑↑↑↑	↗	↓↓↓
Traffic Volume (vph)	78	1843	102	2313
Future Volume (vph)	78	1843	102	2313
Turn Type	Perm	NA	Prot	NA
Protected Phases		2	1	Free
Permitted Phases	1			
Detector Phase	1	2	1	
Switch Phase				
Minimum Initial (s)	5.0	7.0	5.0	
Minimum Split (s)	12.1	36.8	12.1	
Total Split (s)	32.1	137.8	32.1	
Total Split (%)	18.9%	81.1%	18.9%	
Yellow Time (s)	4.8	4.8	4.8	
All-Red Time (s)	2.3	2.0	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	7.1	6.8	7.1	
Lead/Lag	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Recall Mode	None	C-Min	None	
Act Effct Green (s)	11.6	144.4	11.6	169.9
Actuated g/C Ratio	0.07	0.85	0.07	1.00
v/c Ratio	0.60	0.33	0.48	0.39
Control Delay	62.7	2.9	82.5	0.2
Queue Delay	0.0	0.2	0.0	0.0
Total Delay	62.7	3.1	82.5	0.2
LOS	E	A	F	A
Approach Delay		3.1		3.7
Approach LOS		A		A

Intersection Summary

Cycle Length: 169.9
 Actuated Cycle Length: 169.9
 Offset: 127 (75%), Referenced to phase 2:NBT and 6:, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 4.5
 Intersection Capacity Utilization 49.0%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 5: Biscayne Blvd & NE 16400 Blk

↖ Ø1	↑ Ø2 (R)
32.1 s	137.8 s

Queues

5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South

Future Condition w/o Project - AM Peak Hour

				
Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	84	2077	111	2487
v/c Ratio	0.60	0.33	0.48	0.39
Control Delay	62.7	2.9	82.5	0.2
Queue Delay	0.0	0.2	0.0	0.0
Total Delay	62.7	3.1	82.5	0.2
Queue Length 50th (ft)	55	91	62	0
Queue Length 95th (ft)	115	127	95	0
Internal Link Dist (ft)		513		290
Turn Bay Length (ft)			300	
Base Capacity (vph)	266	6370	505	6408
Starvation Cap Reductn	0	2983	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.61	0.22	0.39

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis 6: NE 163 St & Exist DW

The Riverwalk South
Future Condition w/o Project - AM Peak Hour

									
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations		↑↑↑↑	↑↑↑↑			↑			
Traffic Volume (veh/h)	0	2182	1998	44	0	107			
Future Volume (Veh/h)	0	2182	1998	44	0	107			
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91			
Hourly flow rate (vph)	0	2398	2196	48	0	118			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type		None	None						
Median storage (veh)									
Upstream signal (ft)		627							
pX, platoon unblocked					0.76				
vC, conflicting volume	2244				2820	573			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	2244				1821	573			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	100				100	74			
cM capacity (veh/h)	227				52	463			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	600	600	600	600	627	627	627	362	118
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	48	118
cSH	1700	1700	1700	1700	1700	1700	1700	1700	463
Volume to Capacity	0.35	0.35	0.35	0.35	0.37	0.37	0.37	0.21	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4
Lane LOS									C
Approach Delay (s)	0.0				0.0				15.4
Approach LOS									C
Intersection Summary									
Average Delay			0.4						
Intersection Capacity Utilization			43.0%		ICU Level of Service				A
Analysis Period (min)			15						



HCM Signalized Intersection Capacity Analysis

1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	426	1051	302	558	1353	696	490	1443	508	1	476	1190
Future Volume (vph)	426	1051	302	558	1353	696	490	1443	508	1	476	1190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	7.7	6.8	7.7	4.0	6.8	7.2	7.2		6.8	7.2
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00		0.97	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	6408	1583		3433	6408
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	6408	1583		3433	6408
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	448	1106	318	587	1424	733	516	1519	535	1	501	1253
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	448	1106	280	587	1424	733	516	1519	494	0	502	1253
Turn Type	Prot	NA	pt+ov	Prot	NA	Free	Prot	NA	pt+ov	Prot	Prot	NA
Protected Phases	7	4	4 5	3	8		5	2	2 3	1	1	6
Permitted Phases						Free						
Actuated Green, G (s)	25.3	47.0	79.7	26.7	48.4	169.5	25.0	42.3	76.2		25.0	42.3
Effective Green, g (s)	25.3	47.0	79.7	26.7	48.4	169.5	25.0	42.3	76.2		25.0	42.3
Actuated g/C Ratio	0.15	0.28	0.47	0.16	0.29	1.00	0.15	0.25	0.45		0.15	0.25
Clearance Time (s)	6.8	7.7		6.8	7.7		6.8	7.2			6.8	7.2
Vehicle Extension (s)	3.0	2.5		3.0	2.5		3.0	1.0			3.0	1.0
Lane Grp Cap (vph)	512	1410	744	540	1452	1583	506	1599	711		506	1599
v/s Ratio Prot	0.13	0.22	0.18	c0.17	c0.28		c0.15	c0.24	0.31		0.15	0.20
v/s Ratio Perm						c0.46						
v/c Ratio	0.88	0.78	0.38	1.09	0.98	0.46	1.02	0.95	0.70		0.99	0.78
Uniform Delay, d1	70.6	56.6	28.9	71.4	60.1	0.0	72.2	62.6	37.4		72.2	59.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	15.3	2.8	0.2	64.5	19.1	1.0	45.1	13.4	3.0		37.8	3.9
Delay (s)	85.9	59.4	29.1	135.9	79.2	1.0	117.3	76.0	40.3		109.9	63.2
Level of Service	F	E	C	F	E	A	F	E	D		F	E
Approach Delay (s)		60.6			70.4			76.8				69.0
Approach LOS		E			E			E				E

Intersection Summary

HCM 2000 Control Delay	69.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	169.5	Sum of lost time (s)	28.5
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

Movement	SBR
Lane Configurations	7
Traffic Volume (vph)	558
Future Volume (vph)	558
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.2
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	587
RTOR Reduction (vph)	41
Lane Group Flow (vph)	546
Turn Type	pt+ov
Protected Phases	6 7
Permitted Phases	
Actuated Green, G (s)	74.8
Effective Green, g (s)	74.8
Actuated g/C Ratio	0.44
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	698
v/s Ratio Prot	0.34
v/s Ratio Perm	
v/c Ratio	0.78
Uniform Delay, d1	40.4
Progression Factor	1.00
Incremental Delay, d2	5.7
Delay (s)	46.1
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings
1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	426	1051	302	558	1353	696	490	1443	508	476	1190	558
Future Volume (vph)	426	1051	302	558	1353	696	490	1443	508	476	1190	558
Turn Type	Prot	NA	pt+ov	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8		5	2	2 3	1	6	6 7
Permitted Phases						Free						
Detector Phase	7	4	4 5	3	8		5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	7.0		5.0	7.0	
Minimum Split (s)	11.8	54.7		11.8	54.7		12.0	49.2		12.0	49.2	
Total Split (s)	32.8	54.7		32.8	54.7		31.8	50.2		31.8	50.2	
Total Split (%)	19.4%	32.3%		19.4%	32.3%		18.8%	29.6%		18.8%	29.6%	
Yellow Time (s)	4.8	4.8		4.8	4.8		4.8	4.8		4.8	4.8	
All-Red Time (s)	2.0	2.9		2.0	2.9		2.0	2.4		2.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	7.7		6.8	7.7		6.8	7.2		6.8	7.2	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	25.3	47.0	78.8	26.7	48.4	169.5	25.0	42.3	75.8	25.0	42.3	74.4
Actuated g/C Ratio	0.15	0.28	0.46	0.16	0.29	1.00	0.15	0.25	0.45	0.15	0.25	0.44
v/c Ratio	0.88	0.78	0.41	1.09	0.98	0.46	1.02	0.95	0.72	0.99	0.78	0.80
Control Delay	88.7	61.3	24.6	127.9	78.8	1.0	114.3	75.8	38.8	108.7	63.4	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2
Total Delay	88.7	61.3	24.6	127.9	78.8	1.0	114.3	75.8	38.8	108.7	63.4	73.0
LOS	F	E	C	F	E	A	F	E	D	F	E	E
Approach Delay		61.6			68.5			75.8			75.5	
Approach LOS		E			E			E			E	

Intersection Summary

Cycle Length: 169.5

Actuated Cycle Length: 169.5

Offset: 77 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 70.8

Intersection Capacity Utilization 96.6%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service F

Splits and Phases: 1: Biscayne Blvd & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
31.8 s	50.2 s	32.8 s	54.7 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
31.8 s	50.2 s	32.8 s	54.7 s

Queues

1: Biscayne Blvd & NE 163 St

The Riverwalk South

Future Condition w/o Project - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	448	1106	318	587	1424	733	516	1519	535	502	1253	587
v/c Ratio	0.88	0.78	0.41	1.09	0.98	0.46	1.02	0.95	0.72	0.99	0.78	0.80
Control Delay	88.7	61.3	24.6	127.9	78.8	1.0	114.3	75.8	38.8	108.7	63.4	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2
Total Delay	88.7	61.3	24.6	127.9	78.8	1.0	114.3	75.8	38.8	108.7	63.4	73.0
Queue Length 50th (ft)	253	418	178	~383	~594	0	~311	484	420	291	379	492
Queue Length 95th (ft)	#336	476	263	#510	#702	0	#433	#536	572	#417	423	667
Internal Link Dist (ft)		623			547			546			513	
Turn Bay Length (ft)	230		235	400			440		410	465		410
Base Capacity (vph)	526	1410	773	541	1452	1583	506	1625	742	506	1625	735
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	169
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.78	0.41	1.09	0.98	0.46	1.02	0.93	0.72	0.99	0.77	1.04

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis 2: Biscayne Blvd & NE 165 Ter

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑			↑↑↑
Traffic Volume (veh/h)	0	71	2541	38	0	2550
Future Volume (Veh/h)	0	71	2541	38	0	2550
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	76	2732	41	0	2742
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			370			
pX, platoon unblocked	0.92	0.92			0.92	
vC, conflicting volume	3666	704			2732	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3476	271			2465	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			100	
cM capacity (veh/h)	5	672			171	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	76	781	781	781	431	914	914	914
Volume Left	0	0	0	0	0	0	0	0
Volume Right	76	0	0	0	41	0	0	0
cSH	672	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.11	0.46	0.46	0.46	0.25	0.54	0.54	0.54
Queue Length 95th (ft)	10	0	0	0	0	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.0	0.0				0.0		
Approach LOS	B							

Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			52.6%		ICU Level of Service		A	
Analysis Period (min)			15					

HCM 6th TWSC
3: Biscayne Blvd & Greynolds Park D/W

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

Intersection

Int Delay, s/veh 9.8

Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		7	0	↑↑↑			7	↑↑↑
Traffic Vol, veh/h	0	5	176	2437	0	2	1	2395
Future Vol, veh/h	0	5	176	2437	0	2	1	2395
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	-	0	205	-	-	-	205	-
Veh in Median Storage, #	0	-	-	0	-	-	-	0
Grade, %	0	-	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	191	2649	0	2	1	2603

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	- 1325	1900	0 0 1934 2649 0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	- 7.14	5.64	- - 5.64 5.34 -
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	- 3.92	2.32	- - 2.32 3.12 -
Pot Cap-1 Maneuver	0 125	~ 137	- - 131 58 -
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	- 125	~ 137	- - 91 91 -
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	WB	NB	SB
HCM Control Delay, s	35.1	18.6	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBU	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	~ 137	-	- 125	91	-
HCM Lane V/C Ratio	1.396	-	- 0.043	0.036	-
HCM Control Delay (s)	276.9	-	- 35.1	46.2	-
HCM Lane LOS	F	-	- E	E	-
HCM 95th %tile Q(veh)	12.5	-	- 0.1	0.1	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis 4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	100	1252	107	18	313	1960	123	202	434	311	202
Future Volume (vph)	7	100	1252	107	18	313	1960	123	202	434	311	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.94		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1770	5025			1770	5040		1770	3318		1770
Flt Permitted		0.05	1.00			0.09	1.00		0.20	1.00		0.13
Satd. Flow (perm)		97	5025			169	5040		367	3318		240
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	106	1332	114	19	333	2085	131	215	462	331	215
RTOR Reduction (vph)	0	0	6	0	0	0	4	0	0	73	0	0
Lane Group Flow (vph)	0	113	1440	0	0	352	2212	0	215	720	0	215
Turn Type		pm+pt	NA			pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases		5	2			1	6		3	8		7
Permitted Phases		2				6			8			4
Actuated Green, G (s)		88.6	77.0			101.0	83.4		50.6	30.7		51.4
Effective Green, g (s)		88.6	77.0			101.0	83.4		50.6	30.7		51.4
Actuated g/C Ratio		0.52	0.45			0.59	0.49		0.30	0.18		0.30
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		163	2265			268	2460		272	596		254
v/s Ratio Prot		0.05	0.29			c0.14	0.44		0.09	c0.22		c0.10
v/s Ratio Perm		0.31				c0.64			0.14			0.15
v/c Ratio		0.69	0.64			1.31	0.90		0.79	1.21		0.85
Uniform Delay, d1		40.8	36.1			45.5	39.9		49.4	70.1		49.9
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		9.8	1.4			165.1	5.8		13.5	108.7		21.3
Delay (s)		50.6	37.5			210.6	45.6		62.9	178.8		71.2
Level of Service		D	D			F	D		E	F		E
Approach Delay (s)			38.4				68.3			154.1		
Approach LOS			D				E			F		

Intersection Summary

HCM 2000 Control Delay	75.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	170.8	Sum of lost time (s)	24.8
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑	↗
Traffic Volume (vph)	411	69
Future Volume (vph)	411	69
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3463	
Flt Permitted	1.00	
Satd. Flow (perm)	3463	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	437	73
RTOR Reduction (vph)	7	0
Lane Group Flow (vph)	503	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	31.1	
Effective Green, g (s)	31.1	
Actuated g/C Ratio	0.18	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	630	
v/s Ratio Prot	0.15	
v/s Ratio Perm		
v/c Ratio	0.80	
Uniform Delay, d1	66.8	
Progression Factor	1.00	
Incremental Delay, d2	6.8	
Delay (s)	73.6	
Level of Service	E	
Approach Delay (s)	72.9	
Approach LOS	E	
Intersection Summary		

Timings
4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	100	1252	313	1960	202	434	202	411
Future Volume (vph)	100	1252	313	1960	202	434	202	411
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	32.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	90.0	24.0	90.0	24.4	32.4	24.4	32.4
Total Split (%)	14.1%	52.7%	14.1%	52.7%	14.3%	19.0%	14.3%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effect Green (s)	88.6	77.0	99.7	83.4	50.6	30.7	51.4	31.1
Actuated g/C Ratio	0.52	0.45	0.58	0.49	0.30	0.18	0.30	0.18
v/c Ratio	0.69	0.64	1.31	0.90	0.79	1.19	0.85	0.80
Control Delay	57.7	36.9	199.8	45.6	65.9	147.7	76.3	75.9
Queue Delay	0.0	0.0	0.0	46.2	0.0	0.0	0.0	0.0
Total Delay	57.7	36.9	199.8	91.8	65.9	147.7	76.3	75.9
LOS	E	D	F	F	E	F	E	E
Approach Delay		38.4		106.6		130.2		76.0
Approach LOS		D		F		F		E

Intersection Summary

Cycle Length: 170.8

Actuated Cycle Length: 170.8

Offset: 27 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.31

Intersection Signal Delay: 88.7

Intersection Capacity Utilization 100.4%

Analysis Period (min) 15

Intersection LOS: F

ICU Level of Service G

Splits and Phases: 4: W Dixie Hwy & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	90 s	24.4 s	32.4 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	90 s	24.4 s	32.4 s

Queues

4: W Dixie Hwy & NE 163 St

The Riverwalk South

Future Condition w/o Project - PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	1446	352	2216	215	793	215	510
v/c Ratio	0.69	0.64	1.31	0.90	0.79	1.19	0.85	0.80
Control Delay	57.7	36.9	199.8	45.6	65.9	147.7	76.3	75.9
Queue Delay	0.0	0.0	0.0	46.2	0.0	0.0	0.0	0.0
Total Delay	57.7	36.9	199.8	91.8	65.9	147.7	76.3	75.9
Queue Length 50th (ft)	73	449	~408	814	183	~552	188	295
Queue Length 95th (ft)	135	461	#622	866	#332	#707	#379	#417
Internal Link Dist (ft)		573		623		563		296
Turn Bay Length (ft)	290		270		140		130	
Base Capacity (vph)	230	2476	268	2502	274	669	253	638
Starvation Cap Reductn	0	0	0	522	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.58	1.31	1.12	0.78	1.19	0.85	0.80

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

																
Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT									
Lane Configurations																
Traffic Volume (vph)	0	151	2401	139	7	151	2361						151	2361		
Future Volume (vph)	0	151	2401	139	7	151	2361						151	2361		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900						1900	1900		
Total Lost time (s)		7.1	6.8			7.1	4.0						7.1	4.0		
Lane Util. Factor		1.00	0.81			0.97	0.86						0.97	0.86		
Frt		0.86	0.99			1.00	1.00						1.00	1.00		
Flt Protected		1.00	1.00			0.95	1.00						0.95	1.00		
Satd. Flow (prot)		1611	7482			3433	6408						3433	6408		
Flt Permitted		1.00	1.00			0.95	1.00						0.95	1.00		
Satd. Flow (perm)		1611	7482			3433	6408						3433	6408		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93						0.93	0.93		
Adj. Flow (vph)	0	162	2582	149	8	162	2539						162	2539		
RTOR Reduction (vph)	0	10	5	0	0	0	0						0	0		
Lane Group Flow (vph)	0	152	2726	0	0	170	2539						170	2539		
Turn Type		Perm	NA		Prot	Prot	NA						Prot	Prot		NA
Protected Phases			2		1	1	Free									
Permitted Phases		1														
Actuated Green, G (s)		21.2	134.8			21.2	169.9						21.2	169.9		
Effective Green, g (s)		21.2	134.8			21.2	169.9						21.2	169.9		
Actuated g/C Ratio		0.12	0.79			0.12	1.00						0.12	1.00		
Clearance Time (s)		7.1	6.8			7.1							7.1			
Vehicle Extension (s)		3.0	1.0			3.0							3.0			
Lane Grp Cap (vph)		201	5936			428	6408						428	6408		
v/s Ratio Prot			c0.36			0.05	0.40						0.05	0.40		
v/s Ratio Perm		c0.09														
v/c Ratio		0.76	0.46			0.40	0.40						0.40	0.40		
Uniform Delay, d1		71.9	5.7			68.5	0.0						68.5	0.0		
Progression Factor		1.00	1.00			1.00	1.00						1.00	1.00		
Incremental Delay, d2		15.0	0.3			0.6	0.2						0.6	0.2		
Delay (s)		86.9	6.0			68.9	0.2						68.9	0.2		
Level of Service		F	A			E	A						E	A		
Approach Delay (s)	86.9		6.0				4.5							4.5		
Approach LOS	F		A				A							A		

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	169.9	Sum of lost time (s)	13.9
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Timings
5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

	←	↑	↘	↓
Lane Group	WBR	NBT	SBL	SBT
Lane Configurations	↗	↑↑↑↑	↘	↓↓↓
Traffic Volume (vph)	151	2401	151	2361
Future Volume (vph)	151	2401	151	2361
Turn Type	Perm	NA	Prot	NA
Protected Phases		2	1	Free
Permitted Phases	1			
Detector Phase	1	2	1	
Switch Phase				
Minimum Initial (s)	5.0	7.0	5.0	
Minimum Split (s)	12.1	36.8	12.1	
Total Split (s)	32.1	137.8	32.1	
Total Split (%)	18.9%	81.1%	18.9%	
Yellow Time (s)	4.8	4.8	4.8	
All-Red Time (s)	2.3	2.0	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	7.1	6.8	7.1	
Lead/Lag	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Recall Mode	None	C-Min	None	
Act Effect Green (s)	21.2	134.8	21.2	169.9
Actuated g/C Ratio	0.12	0.79	0.12	1.00
v/c Ratio	0.77	0.46	0.40	0.40
Control Delay	89.7	6.3	69.8	0.2
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	89.7	6.6	69.8	0.2
LOS	F	A	E	A
Approach Delay		6.6		4.6
Approach LOS		A		A

Intersection Summary

Cycle Length: 169.9
 Actuated Cycle Length: 169.9
 Offset: 127 (75%), Referenced to phase 2:NBT and 6:, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 8.0
 Intersection Capacity Utilization 61.0%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Biscayne Blvd & NE 16400 Blk

↘ 01	↑ 02 (R)
32.1 s	137.8 s

Queues

5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South

Future Condition w/o Project - PM Peak Hour



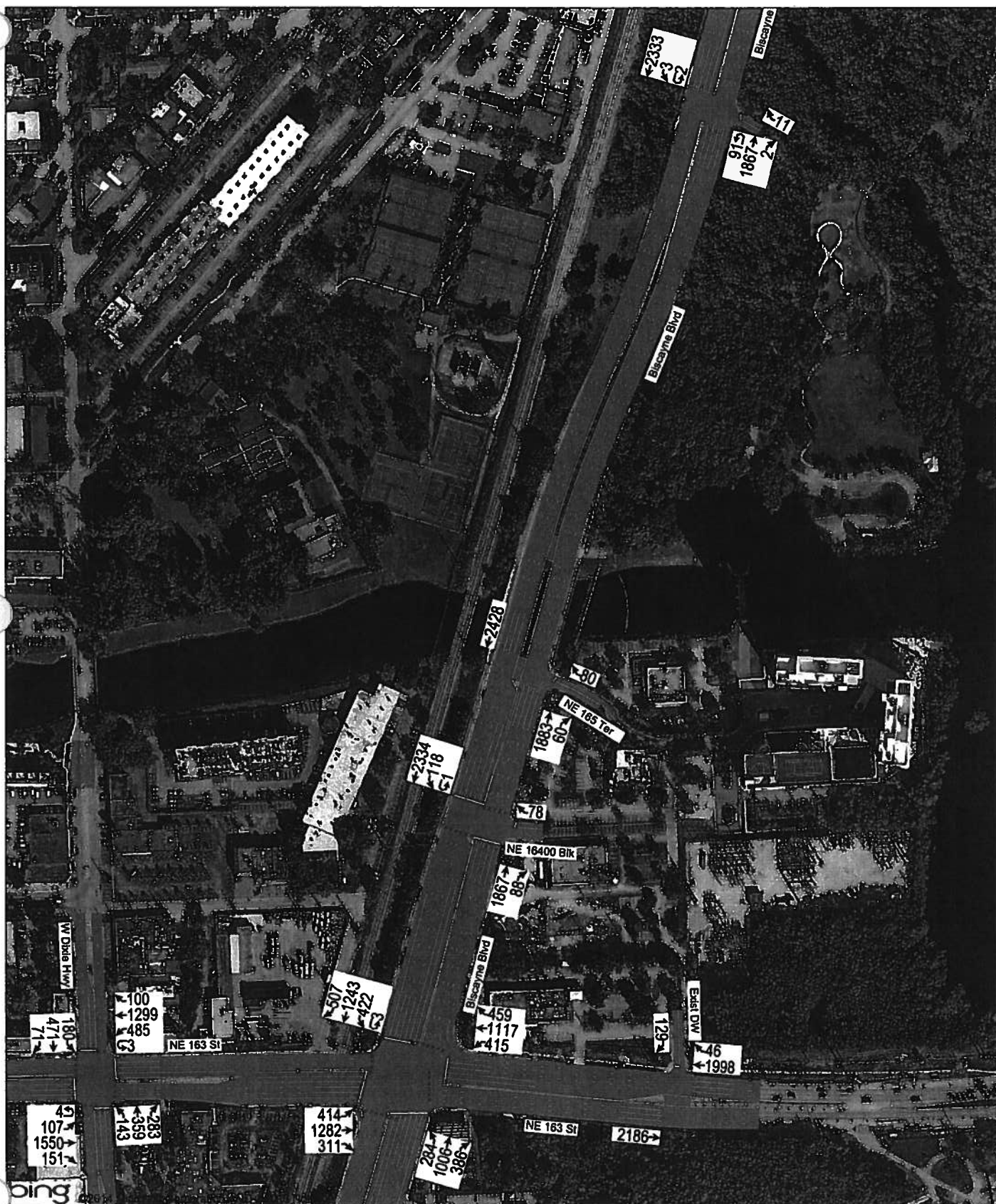
Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	162	2731	170	2539
v/c Ratio	0.77	0.46	0.40	0.40
Control Delay	89.7	6.3	69.8	0.2
Queue Delay	0.0	0.3	0.0	0.0
Total Delay	89.7	6.6	69.8	0.2
Queue Length 50th (ft)	166	212	91	0
Queue Length 95th (ft)	241	281	125	0
Internal Link Dist (ft)		513		290
Turn Bay Length (ft)			300	
Base Capacity (vph)	253	5978	521	6408
Starvation Cap Reductn	0	2305	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.74	0.33	0.40

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis 6: NE 163 St & Exist DW

The Riverwalk South
Future Condition w/o Project - PM Peak Hour

										
Movement	EBL	EBT	WBT	WBR	SBL	SBR				
Lane Configurations										
Traffic Volume (veh/h)	0	1989	2385	65	0	219				
Future Volume (Veh/h)	0	1989	2385	65	0	219				
Sign Control		Free	Free		Stop					
Grade		0%	0%		0%					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Hourly flow rate (vph)	0	2094	2511	68	0	231				
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type		None	None							
Median storage (veh)										
Upstream signal (ft)		627								
pX, platoon unblocked					0.83					
vC, conflicting volume	2579				3068	662				
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	2579				2478	662				
tC, single (s)	4.1				6.8	6.9				
tC, 2 stage (s)										
tF (s)	2.2				3.5	3.3				
p0 queue free %	100				100	43				
cM capacity (veh/h)	167				20	405				
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1	
Volume Total	524	524	524	524	717	717	717	427	231	
Volume Left	0	0	0	0	0	0	0	0	0	
Volume Right	0	0	0	0	0	0	0	68	231	
cSH	1700	1700	1700	1700	1700	1700	1700	1700	405	
Volume to Capacity	0.31	0.31	0.31	0.31	0.42	0.42	0.42	0.25	0.57	
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	86	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.1	
Lane LOS									D	
Approach Delay (s)	0.0				0.0				25.1	
Approach LOS									D	
Intersection Summary										
Average Delay			1.2							
Intersection Capacity Utilization			55.9%		ICU Level of Service				B	
Analysis Period (min)			15							



HCM Signalized Intersection Capacity Analysis

1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/ Project - AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	414	1282	311	415	1117	459	284	1006	386	3	422	1243
Future Volume (vph)	414	1282	311	415	1117	459	284	1006	386	3	422	1243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	7.7	6.8	7.7	4.0	6.8	7.2	7.2		6.8	7.2
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00		0.97	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	6408	1583		3433	6408
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	6408	1583		3433	6408
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	450	1393	338	451	1214	499	309	1093	420	3	459	1351
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	450	1393	299	451	1214	499	309	1093	379	0	462	1351
Turn Type	Prot	NA	pt+ov	Prot	NA	Free	Prot	NA	pt+ov	Prot	Prot	NA
Protected Phases	7	4	4 5	3	8		5	2	2 3	1	1	6
Permitted Phases						Free						
Actuated Green, G (s)	25.4	49.0	76.4	25.3	48.9	169.5	19.7	42.9	75.4		23.8	47.0
Effective Green, g (s)	25.4	49.0	76.4	25.3	48.9	169.5	19.7	42.9	75.4		23.8	47.0
Actuated g/C Ratio	0.15	0.29	0.45	0.15	0.29	1.00	0.12	0.25	0.44		0.14	0.28
Clearance Time (s)	6.8	7.7		6.8	7.7		6.8	7.2			6.8	7.2
Vehicle Extension (s)	3.0	2.5		3.0	2.5		3.0	1.0			3.0	1.0
Lane Grp Cap (vph)	514	1470	713	512	1467	1583	398	1621	704		482	1776
v/s Ratio Prot	0.13	c0.27	0.19	c0.13	0.24		0.09	0.17	0.24		c0.13	c0.21
v/s Ratio Perm						c0.32						
v/c Ratio	0.88	0.95	0.42	0.88	0.83	0.32	0.78	0.67	0.54		0.96	0.76
Uniform Delay, d1	70.5	59.0	31.5	70.6	56.4	0.0	72.8	57.0	34.3		72.4	56.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	15.3	12.9	0.3	16.1	3.9	0.5	9.2	2.3	0.8		30.3	3.1
Delay (s)	85.8	71.9	31.8	86.8	60.3	0.5	81.9	59.3	35.1		102.6	59.2
Level of Service	F	E	C	F	E	A	F	E	D		F	E
Approach Delay (s)		68.6			52.0			57.6				62.7
Approach LOS		E			D			E				E

Intersection Summary

HCM 2000 Control Delay	60.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	169.5	Sum of lost time (s)	28.5
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/ Project - AM Peak Hour

Movement	SBR
Lane Configurations	7
Traffic Volume (vph)	507
Future Volume (vph)	507
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.2
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	551
RTOR Reduction (vph)	39
Lane Group Flow (vph)	512
Turn Type	pt+ov
Protected Phases	6 7
Permitted Phases	
Actuated Green, G (s)	79.6
Effective Green, g (s)	79.6
Actuated g/C Ratio	0.47
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	743
v/s Ratio Prot	0.32
v/s Ratio Perm	
v/c Ratio	0.69
Uniform Delay, d1	35.2
Progression Factor	1.00
Incremental Delay, d2	2.7
Delay (s)	37.9
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings

1: Biscayne Blvd & NE 163 St

The Riverwalk South

Future Condition w/ Project - AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	1282	311	415	1117	459	284	1006	386	422	1243	507
Future Volume (vph)	414	1282	311	415	1117	459	284	1006	386	422	1243	507
Turn Type	Prot	NA	pt+ov	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	Free	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8		5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	7.0		5.0	7.0	
Minimum Split (s)	11.8	56.7		11.8	56.7		12.0	49.2		12.0	49.2	
Total Split (s)	32.8	56.7		32.8	56.7		28.8	51.2		28.8	51.2	
Total Split (%)	19.4%	33.5%		19.4%	33.5%		17.0%	30.2%		17.0%	30.2%	
Yellow Time (s)	4.8	4.8		4.8	4.8		4.8	4.8		4.8	4.8	
All-Red Time (s)	2.0	2.9		2.0	2.9		2.0	2.4		2.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	7.7		6.8	7.7		6.8	7.2		6.8	7.2	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	25.4	49.0	75.4	25.3	48.8	169.5	19.7	42.9	75.0	23.8	47.1	79.3
Actuated g/C Ratio	0.15	0.29	0.44	0.15	0.29	1.00	0.12	0.25	0.44	0.14	0.28	0.47
v/c Ratio	0.88	0.95	0.45	0.88	0.83	0.32	0.78	0.67	0.57	0.96	0.76	0.71
Control Delay	88.6	72.7	27.1	89.6	62.2	0.5	86.5	59.3	31.5	102.4	59.9	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1
Total Delay	88.6	72.7	27.1	89.6	62.2	0.5	86.5	59.3	31.5	102.4	59.9	44.2
LOS	F	E	C	F	E	A	F	E	C	F	E	D
Approach Delay		68.9			53.7			57.5			64.5	
Approach LOS		E			D			E			E	

Intersection Summary

Cycle Length: 169.5

Actuated Cycle Length: 169.5

Offset: 77 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 61.4

Intersection Capacity Utilization 87.1%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service E

Splits and Phases: 1: Biscayne Blvd & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
28.8 s	51.2 s	32.8 s	56.7 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
28.8 s	51.2 s	32.8 s	56.7 s

Queues

1: Biscayne Blvd & NE 163 St

The Riverwalk South

Future Condition w/ Project - AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	450	1393	338	451	1214	499	309	1093	420	462	1351	551
v/c Ratio	0.88	0.95	0.45	0.88	0.83	0.32	0.78	0.67	0.57	0.96	0.76	0.71
Control Delay	88.6	72.7	27.1	89.6	62.2	0.5	86.5	59.3	31.5	102.4	59.9	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1
Total Delay	88.6	72.7	27.1	89.6	62.2	0.5	86.5	59.3	31.5	102.4	59.9	44.2
Queue Length 50th (ft)	255	558	202	255	464	0	173	318	279	~283	407	428
Queue Length 95th (ft)	#339	#650	288	#341	524	0	227	359	393	#403	459	593
Internal Link Dist (ft)		623			547			546			513	
Turn Bay Length (ft)	230		235	400			440		410	465		410
Base Capacity (vph)	527	1482	755	528	1483	1583	445	1663	732	482	1780	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	188
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.94	0.45	0.85	0.82	0.32	0.69	0.66	0.57	0.96	0.76	0.92

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis

The Riverwalk South
Future Condition w/ Project - AM Peak Hour

										
Movement	WBL	WBR	NBT	NBR	SBL	SBT				
Lane Configurations			 			   				
Traffic Volume (veh/h)	0	80	1883	60	0	2428				
Future Volume (Veh/h)	0	80	1883	60	0	2428				
Sign Control	Stop		Free			Free				
Grade	0%		0%			0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				
Hourly flow rate (vph)	0	87	2047	65	0	2639				
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type			None			None				
Median storage (veh)										
Upstream signal (ft)			370							
pX, platoon unblocked	0.94	0.94			0.94					
vC, conflicting volume	2739	544			2047					
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	2535	203			1800					
tC, single (s)	6.8	6.9			4.1					
tC, 2 stage (s)										
tF (s)	3.5	3.3			2.2					
p0 queue free %	100	89			100					
cM capacity (veh/h)	21	757			319					
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	87	585	585	585	357	660	660	660	660	
Volume Left	0	0	0	0	0	0	0	0	0	
Volume Right	87	0	0	0	65	0	0	0	0	
cSH	757	1700	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.11	0.34	0.34	0.34	0.21	0.39	0.39	0.39	0.39	
Queue Length 95th (ft)	10	0	0	0	0	0	0	0	0	
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS	B									
Approach Delay (s)	10.4	0.0				0.0				
Approach LOS	B									
Intersection Summary										
Average Delay			0.2							
Intersection Capacity Utilization			39.9%	ICU Level of Service			A			
Analysis Period (min)			15							

HCM 6th TWSC
3: Biscayne Blvd & Greynolds Park D/W

The Riverwalk South
Future Condition w/ Project - AM Peak Hour

Intersection

Int Delay, s/veh 1.5

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑	↑↑↑		↑	↑↑↑
Traffic Vol, veh/h	0	11	91	1867	2	2	3 2333
Future Vol, veh/h	0	11	91	1867	2	2	3 2333
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	0	205	-	-	205	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	12	98	2008	2	2	3 2509

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	- 1005	1831	0 0 1467 2010 0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	- 7.14	5.64	- - 5.64 5.34 -
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	- 3.92	2.32	- - 2.32 3.12 -
Pot Cap-1 Maneuver	0 206	150	- - 241 124 -
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	- 206	150	- - 152 152 -
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.5	3	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	150	-	-	206	152	-
HCM Lane V/C Ratio	0.652	-	-	0.057	0.035	-
HCM Control Delay (s)	65.5	-	-	23.5	29.6	-
HCM Lane LOS	F	-	-	C	D	-
HCM 95th %tile Q(veh)	3.6	-	-	0.2	0.1	-

4: W Dixie Hwy & NE 163 St

The Riverwalk South

Future Condition w/ Project - AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	4	107	1550	151	3	485	1299	100	143	359	283	180
Future Volume (vph)	4	107	1550	151	3	485	1299	100	143	359	283	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1770	5017			1770	5031		1770	3305		1770
Flt Permitted		0.11	1.00			0.05	1.00		0.25	1.00		0.10
Satd. Flow (perm)		197	5017			96	5031		460	3305		188
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	114	1649	161	3	516	1382	106	152	382	301	191
RTOR Reduction (vph)	0	0	8	0	0	0	5	0	0	76	0	0
Lane Group Flow (vph)	0	118	1802	0	0	519	1483	0	152	607	0	191
Turn Type		pm+pt	NA			pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases		5	2			1	6		3	8		7
Permitted Phases		2				6			8			4
Actuated Green, G (s)		81.5	71.6			95.6	79.7		52.7	37.5		60.1
Effective Green, g (s)		81.5	71.6			95.6	79.7		52.7	37.5		60.1
Actuated g/C Ratio		0.48	0.42			0.56	0.47		0.31	0.22		0.35
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		185	2103			230	2347		258	725		241
v/s Ratio Prot		0.04	0.36			0.24	0.29		0.05	0.18		0.09
v/s Ratio Perm		0.27				1.02			0.13			0.19
v/c Ratio		0.64	0.86			2.26	0.63		0.59	0.84		0.79
Uniform Delay, d1		28.1	45.0			58.6	34.5		45.6	63.7		44.3
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		5.2	4.8			579.2	1.3		2.2	8.2		15.2
Delay (s)		33.3	49.7			637.7	35.8		47.8	71.9		59.5
Level of Service		C	D			F	D		D	E		E
Approach Delay (s)			48.7				191.4			67.5		
Approach LOS			D				F			E		

Intersection Summary

HCM 2000 Control Delay	104.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	170.8	Sum of lost time (s)	24.8
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/ Project - AM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑	↘
Traffic Volume (vph)	471	71
Future Volume (vph)	471	71
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3469	
Flt Permitted	1.00	
Satd. Flow (perm)	3469	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	501	76
RTOR Reduction (vph)	6	0
Lane Group Flow (vph)	571	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	41.2	
Effective Green, g (s)	41.2	
Actuated g/C Ratio	0.24	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	836	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.68	
Uniform Delay, d1	58.9	
Progression Factor	1.00	
Incremental Delay, d2	2.1	
Delay (s)	61.0	
Level of Service	E	
Approach Delay (s)	60.6	
Approach LOS	E	
Intersection Summary		

Timings
4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/ Project - AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	107	1550	485	1299	143	359	180	471
Future Volume (vph)	107	1550	485	1299	143	359	180	471
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	32.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	90.0	24.0	90.0	24.4	32.4	24.4	32.4
Total Split (%)	14.1%	52.7%	14.1%	52.7%	14.3%	19.0%	14.3%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effect Green (s)	81.5	71.6	95.4	79.7	52.7	37.5	60.1	41.2
Actuated g/C Ratio	0.48	0.42	0.56	0.47	0.31	0.22	0.35	0.24
v/c Ratio	0.64	0.86	2.26	0.63	0.59	0.85	0.79	0.69
Control Delay	35.5	49.1	605.2	35.4	49.3	64.8	68.4	63.3
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	35.5	49.1	605.2	36.1	49.3	64.8	68.4	63.3
LOS	D	D	F	D	D	E	E	E
Approach Delay		48.3		183.3		62.0		64.6
Approach LOS		D		F		E		E

Intersection Summary

Cycle Length: 170.8

Actuated Cycle Length: 170.8

Offset: 27 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.26

Intersection Signal Delay: 101.5

Intersection LOS: F

Intersection Capacity Utilization 110.0%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 4: W Dixie Hwy & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	90 s	24.4 s	32.4 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	90 s	24.4 s	32.4 s

Queues

4: W Dixie Hwy & NE 163 St

The Riverwalk South

Future Condition w/ Project - AM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	1810	519	1488	152	683	191	577
v/c Ratio	0.64	0.86	2.26	0.63	0.59	0.85	0.79	0.69
Control Delay	35.5	49.1	605.2	35.4	49.3	64.8	68.4	63.3
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	35.5	49.1	605.2	36.1	49.3	64.8	68.4	63.3
Queue Length 50th (ft)	61	664	~891	452	118	343	156	308
Queue Length 95th (ft)	90	668	#1124	476	193	#559	#272	#488
Internal Link Dist (ft)		573		623		563		296
Turn Bay Length (ft)	290		270		140		130	
Base Capacity (vph)	269	2474	230	2480	294	801	252	842
Starvation Cap Reductn	0	0	0	608	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.73	2.26	0.79	0.52	0.85	0.76	0.69

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Biscayne Blvd & NE 16400 Bldg

Future Condition w/ Project - AM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations		T TTTT	TTTT			T TTT	TTTT
Traffic Volume (vph)	0	78	1867	88	1	118	2334
Future Volume (vph)	0	78	1867	88	1	118	2334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	6.8			7.1	4.0
Lane Util. Factor		1.00	0.81			0.97	0.86
Frt		0.86	0.99			1.00	1.00
Flt Protected		1.00	1.00			0.95	1.00
Satd. Flow (prot)		1611	7493			3433	6408
Flt Permitted		1.00	1.00			0.95	1.00
Satd. Flow (perm)		1611	7493			3433	6408
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	84	2008	95	1	127	2510
RTOR Reduction (vph)	0	30	3	0	0	0	0
Lane Group Flow (vph)	0	54	2100	0	0	128	2510
Turn Type		Perm	NA		Prot	Prot	NA
Protected Phases			2		1	1	Free
Permitted Phases		1					
Actuated Green, G (s)		12.1	143.9			12.1	169.9
Effective Green, g (s)		12.1	143.9			12.1	169.9
Actuated g/C Ratio		0.07	0.85			0.07	1.00
Clearance Time (s)		7.1	6.8			7.1	
Vehicle Extension (s)		3.0	1.0			3.0	
Lane Grp Cap (vph)		114	6346			244	6408
v/s Ratio Prot			0.28			0.04	0.39
v/s Ratio Perm		0.03					
v/c Ratio		0.48	0.33			0.52	0.39
Uniform Delay, d1		75.9	2.8			76.1	0.0
Progression Factor		1.00	1.00			1.00	1.00
Incremental Delay, d2		3.1	0.1			2.0	0.2
Delay (s)		79.0	2.9			78.3	0.2
Level of Service		E	A			E	A
Approach Delay (s)	79.0		2.9				4.0
Approach LOS	E		A				A
Intersection Summary							
HCM 2000 Control Delay		4.8		HCM 2000 Level of Service		A	
HCM 2000 Volume to Capacity ratio		0.43					
Actuated Cycle Length (s)		169.9		Sum of lost time (s)		13.9	
Intersection Capacity Utilization		49.3%		ICU Level of Service		A	
Analysis Period (min)		15					
c Critical Lane Group							

Timings

5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South

Future Condition w/ Project - AM Peak Hour

	←	↑	↘	↓
Lane Group	WBR	NBT	SBL	SBT
Lane Configurations	↗	↑↑↑↑	↘	↑↑↑
Traffic Volume (vph)	78	1867	118	2334
Future Volume (vph)	78	1867	118	2334
Turn Type	Perm	NA	Prot	NA
Protected Phases		2	1	Free
Permitted Phases	1			
Detector Phase	1	2	1	
Switch Phase				
Minimum Initial (s)	5.0	7.0	5.0	
Minimum Split (s)	12.1	36.8	12.1	
Total Split (s)	32.1	137.8	32.1	
Total Split (%)	18.9%	81.1%	18.9%	
Yellow Time (s)	4.8	4.8	4.8	
All-Red Time (s)	2.3	2.0	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	7.1	6.8	7.1	
Lead/Lag	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Recall Mode	None	C-Min	None	
Act Effct Green (s)	12.1	143.9	12.1	169.9
Actuated g/C Ratio	0.07	0.85	0.07	1.00
v/c Ratio	0.58	0.33	0.52	0.39
Control Delay	63.0	3.0	83.5	0.2
Queue Delay	0.0	0.2	0.0	0.0
Total Delay	63.0	3.2	83.5	0.2
LOS	E	A	F	A
Approach Delay		3.2		4.2
Approach LOS		A		A

Intersection Summary

Cycle Length: 169.9

Actuated Cycle Length: 169.9

Offset: 127 (75%), Referenced to phase 2:NBT and 6:, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 4.8

Intersection Capacity Utilization 49.3%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 5: Biscayne Blvd & NE 16400 Blk

↙ Ø1	↑ Ø2 (R)
32.1 s	137.8 s

Queues

5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South

Future Condition w/ Project - AM Peak Hour

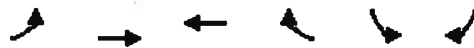


Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	84	2103	128	2510
v/c Ratio	0.58	0.33	0.52	0.39
Control Delay	63.0	3.0	83.5	0.2
Queue Delay	0.0	0.2	0.0	0.0
Total Delay	63.0	3.2	83.5	0.2
Queue Length 50th (ft)	57	97	72	0
Queue Length 95th (ft)	117	130	107	0
Internal Link Dist (ft)		513		290
Turn Bay Length (ft)			300	
Base Capacity (vph)	264	6347	505	6408
Starvation Cap Reductn	0	2949	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.62	0.25	0.39

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis 6: NE 163 St & Exist DW

The Riverwalk South
Future Condition w/ Project - AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑
Traffic Volume (veh/h)	0	2186	1998	46	0	129
Future Volume (Veh/h)	0	2186	1998	46	0	129
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	2402	2196	51	0	142
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		627				
pX, platoon unblocked					0.76	
vC, conflicting volume	2247				2822	574
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2247				1826	574
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	69
cM capacity (veh/h)	226				52	461

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	600	600	600	600	627	627	627	365	142
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	51	142
cSH	1700	1700	1700	1700	1700	1700	1700	1700	461
Volume to Capacity	0.35	0.35	0.35	0.35	0.37	0.37	0.37	0.21	0.31
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	32
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.2
Lane LOS									C
Approach Delay (s)	0.0				0.0				16.2
Approach LOS									C

Intersection Summary									
Average Delay			0.5						
Intersection Capacity Utilization			44.4%		ICU Level of Service				A
Analysis Period (min)			15						



HCM Signalized Intersection Capacity Analysis

1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	441	1051	302	558	1366	696	490	1456	508	1	478	1201
Future Volume (vph)	441	1051	302	558	1366	696	490	1456	508	1	478	1201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	7.7	6.8	7.7	4.0	6.8	7.2	7.2		6.8	7.2
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.86	1.00		0.97	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	6408	1583		3433	6408
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	6408	1583		3433	6408
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	464	1106	318	587	1438	733	516	1533	535	1	503	1264
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	464	1106	280	587	1438	733	516	1533	494	0	504	1264
Turn Type	Prot	NA	pt+ov	Prot	NA	Free	Prot	NA	pt+ov	Prot	Prot	NA
Protected Phases	7	4	4 5	3	8		5	2	2 3	1	1	6
Permitted Phases						Free						
Actuated Green, G (s)	25.5	47.0	79.7	26.6	48.1	169.5	25.0	42.4	76.2		25.0	42.4
Effective Green, g (s)	25.5	47.0	79.7	26.6	48.1	169.5	25.0	42.4	76.2		25.0	42.4
Actuated g/C Ratio	0.15	0.28	0.47	0.16	0.28	1.00	0.15	0.25	0.45		0.15	0.25
Clearance Time (s)	6.8	7.7		6.8	7.7		6.8	7.2			6.8	7.2
Vehicle Extension (s)	3.0	2.5		3.0	2.5		3.0	1.0			3.0	1.0
Lane Grp Cap (vph)	516	1410	744	538	1443	1583	506	1602	711		506	1602
v/s Ratio Prot	0.14	0.22	0.18	c0.17	c0.28		c0.15	c0.24	0.31		0.15	0.20
v/s Ratio Perm						c0.46						
v/c Ratio	0.90	0.78	0.38	1.09	1.00	0.46	1.02	0.96	0.70		1.00	0.79
Uniform Delay, d1	70.7	56.6	28.9	71.5	60.6	0.0	72.2	62.6	37.4		72.2	59.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	18.3	2.8	0.2	65.9	22.7	1.0	45.1	14.3	3.0		38.7	4.0
Delay (s)	89.0	59.4	29.1	137.4	83.3	1.0	117.3	77.0	40.3		110.9	63.4
Level of Service	F	E	C	F	F	A	F	E	D		F	E
Approach Delay (s)		61.6			72.9			77.5				69.1
Approach LOS		E			E			E				E

Intersection Summary

HCM 2000 Control Delay	71.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	169.5	Sum of lost time (s)	28.5
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 1: Biscayne Blvd & NE 163 St

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

Movement SBR

Lane Configurations 7
Traffic Volume (vph) 558
Future Volume (vph) 558
Ideal Flow (vphpl) 1900
Total Lost time (s) 7.2
Lane Util. Factor 1.00
Frt 0.85
Flt Protected 1.00
Satd. Flow (prot) 1583
Flt Permitted 1.00
Satd. Flow (perm) 1583

Peak-hour factor, PHF 0.95
Adj. Flow (vph) 587
RTOR Reduction (vph) 41
Lane Group Flow (vph) 546

Turn Type pt+ov
Protected Phases 6 7
Permitted Phases
Actuated Green, G (s) 75.1
Effective Green, g (s) 75.1
Actuated g/C Ratio 0.44
Clearance Time (s)
Vehicle Extension (s)

Lane Grp Cap (vph) 701
v/s Ratio Prot 0.34
v/s Ratio Perm
v/c Ratio 0.78
Uniform Delay, d1 40.1
Progression Factor 1.00
Incremental Delay, d2 5.5
Delay (s) 45.6
Level of Service D
Approach Delay (s)
Approach LOS

Intersection Summary

Timings

1: Biscayne Blvd & NE 163 St

The Riverwalk South

Future Condition w/ Project - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	1051	302	558	1366	696	490	1456	508	478	1201	558
Future Volume (vph)	441	1051	302	558	1366	696	490	1456	508	478	1201	558
Turn Type	Prot	NA	pt+ov	Prot	NA	Free	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8		5	2	2 3	1	6	6 7
Permitted Phases						Free						
Detector Phase	7	4	4 5	3	8		5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		5.0	7.0		5.0	7.0	
Minimum Split (s)	11.8	54.7		11.8	54.7		12.0	49.2		12.0	49.2	
Total Split (s)	32.8	54.7		32.8	54.7		31.8	50.2		31.8	50.2	
Total Split (%)	19.4%	32.3%		19.4%	32.3%		18.8%	29.6%		18.8%	29.6%	
Yellow Time (s)	4.8	4.8		4.8	4.8		4.8	4.8		4.8	4.8	
All-Red Time (s)	2.0	2.9		2.0	2.9		2.0	2.4		2.0	2.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.8	7.7		6.8	7.7		6.8	7.2		6.8	7.2	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effect Green (s)	25.5	47.0	78.8	26.6	48.1	169.5	25.0	42.4	75.8	25.0	42.4	74.7
Actuated g/C Ratio	0.15	0.28	0.46	0.16	0.28	1.00	0.15	0.25	0.45	0.15	0.25	0.44
v/c Ratio	0.90	0.78	0.41	1.09	1.00	0.46	1.02	0.96	0.72	1.00	0.79	0.80
Control Delay	91.4	61.3	24.6	129.4	82.6	1.0	114.3	76.6	38.8	109.7	63.5	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2
Total Delay	91.4	61.3	24.6	129.4	82.6	1.0	114.3	76.6	38.8	109.7	63.5	72.6
LOS	F	E	C	F	F	A	F	E	D	F	E	E
Approach Delay		62.5			70.9			76.3			75.6	
Approach LOS		E			E			E			E	

Intersection Summary

Cycle Length: 169.5

Actuated Cycle Length: 169.5

Offset: 77 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 71.9

Intersection Capacity Utilization 97.5%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service F

Splits and Phases: 1: Biscayne Blvd & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
31.8 s	50.2 s	32.8 s	54.7 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
31.8 s	50.2 s	32.8 s	54.7 s

Queues

1: Biscayne Blvd & NE 163 St

The Riverwalk South

Future Condition w/ Project - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SEB	SEB
Lane Group Flow (vph)	464	1106	318	587	1438	733	516	1533	535	504	1264	587
v/c Ratio	0.90	0.78	0.41	1.09	1.00	0.46	1.02	0.96	0.72	1.00	0.79	0.80
Control Delay	91.4	61.3	24.6	129.4	82.6	1.0	114.3	76.6	38.8	109.7	63.5	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2
Total Delay	91.4	61.3	24.6	129.4	82.6	1.0	114.3	76.6	38.8	109.7	63.5	72.6
Queue Length 50th (ft)	264	418	178	~383	~617	0	~311	490	420	292	382	492
Queue Length 95th (ft)	#356	476	263	#510	#714	0	#433	#557	572	#419	428	667
Internal Link Dist (ft)		623			547			546			513	
Turn Bay Length (ft)	230		235	400			440		410	465		410
Base Capacity (vph)	526	1410	773	538	1442	1583	506	1625	741	506	1625	735
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	169
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.78	0.41	1.09	1.00	0.46	1.02	0.94	0.72	1.00	0.78	1.04

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

										
Movement	WBL	WBR	NBT	NBR	SEL	SBT				
Lane Configurations			   			   				
Traffic Volume (veh/h)	0	127	2541	129	0	2580				
Future Volume (Veh/h)	0	127	2541	129	0	2580				
Sign Control	Stop		Free			Free				
Grade	0%		0%			0%				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				
Hourly flow rate (vph)	0	137	2732	139	0	2774				
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type			None			None				
Median storage (veh)										
Upstream signal (ft)			370							
pX, platoon unblocked	0.88	0.88			0.88					
vC, conflicting volume	3495	752			2732					
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	3145	19			2275					
tC, single (s)	6.8	6.9			4.1					
tC, 2 stage (s)										
tF (s)	3.5	3.3			2.2					
p0 queue free %	100	85			100					
cM capacity (veh/h)	7	925			193					
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4	
Volume Total	137	781	781	781	529	694	694	694	694	
Volume Left	0	0	0	0	0	0	0	0	0	
Volume Right	137	0	0	0	139	0	0	0	0	
cSH	925	1700	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.15	0.46	0.46	0.46	0.31	0.41	0.41	0.41	0.41	
Queue Length 95th (ft)	13	0	0	0	0	0	0	0	0	
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A									
Approach Delay (s)	9.6	0.0				0.0				
Approach LOS	A									
Intersection Summary										
Average Delay			0.2							
Intersection Capacity Utilization			53.5%		ICU Level of Service				A	
Analysis Period (min)			15							

HCM 6th TWSC
3: Biscayne Blvd & Greynolds Park D/W

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

Intersection

Int Delay, s/veh 12.3

Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↑	↑↑↑	↑↑↑			↑	↑↑↑
Traffic Vol, veh/h	0	5	189	2453	0	2	1	2412
Future Vol, veh/h	0	5	189	2453	0	2	1	2412
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	-	0	205	-	-	-	205	-
Veh in Median Storage, #	0	-	-	0	-	-	-	0
Grade, %	0	-	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	205	2666	0	2	1	2622

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	- 1333	1914	0 0 1946 2666 0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	- 7.14	5.64	- - 5.64 5.34 -
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	- 3.92	2.32	- - 2.32 3.12 -
Pot Cap-1 Maneuver	0 124	~ 135	- - 129 57 -
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	- 124	~ 135	- - 89 89 -
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	35.4	23.5	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBU	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	~ 135	-	- 124	89	-
HCM Lane V/C Ratio	1.522	-	- 0.044	0.037	-
HCM Control Delay (s)	\$ 328.1	-	- 35.4	46.9	-
HCM Lane LOS	F	-	- E	E	-
HCM 95th %tile Q(veh)	14.2	-	- 0.1	0.1	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis

4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	100	1267	107	18	313	1973	123	202	434	311	202
Future Volume (vph)	7	100	1267	107	18	313	1973	123	202	434	311	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.94		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1770	5026			1770	5040		1770	3318		1770
Flt Permitted		0.05	1.00			0.09	1.00		0.19	1.00		0.13
Satd. Flow (perm)		96	5026			165	5040		362	3318		241
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	106	1348	114	19	333	2099	131	215	462	331	215
RTOR Reduction (vph)	0	0	6	0	0	0	4	0	0	73	0	0
Lane Group Flow (vph)	0	113	1456	0	0	352	2226	0	215	720	0	215
Turn Type		pm+pt	NA			pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases		5	2			1	6		3	8		7
Permitted Phases		2				6			8			4
Actuated Green, G (s)		89.0	77.4			101.4	83.8		50.2	30.5		51.0
Effective Green, g (s)		89.0	77.4			101.4	83.8		50.2	30.5		51.0
Actuated g/C Ratio		0.52	0.45			0.59	0.49		0.29	0.18		0.30
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		163	2277			267	2472		268	592		251
v/s Ratio Prot		0.05	0.29			c0.14	0.44		0.09	c0.22		c0.10
v/s Ratio Perm		0.31				c0.64			0.14			0.15
v/c Ratio		0.69	0.64			1.32	0.90		0.80	1.22		0.86
Uniform Delay, d1		41.0	36.0			46.1	39.7		49.7	70.2		50.2
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		9.8	1.4			167.2	5.8		14.9	112.1		23.0
Delay (s)		50.8	37.3			213.2	45.5		64.6	182.2		73.3
Level of Service		D	D			F	D		E	F		E
Approach Delay (s)			38.3				68.4			157.1		
Approach LOS			D				E			F		

Intersection Summary

HCM 2000 Control Delay	76.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	170.8	Sum of lost time (s)	24.8
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis 4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑	↙
Traffic Volume (vph)	411	69
Future Volume (vph)	411	69
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3463	
Flt Permitted	1.00	
Satd. Flow (perm)	3463	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	437	73
RTOR Reduction (vph)	7	0
Lane Group Flow (vph)	503	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	30.9	
Effective Green, g (s)	30.9	
Actuated g/C Ratio	0.18	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	626	
v/s Ratio Prot	0.15	
v/s Ratio Perm		
v/c Ratio	0.80	
Uniform Delay, d1	67.0	
Progression Factor	1.00	
Incremental Delay, d2	7.2	
Delay (s)	74.2	
Level of Service	E	
Approach Delay (s)	73.9	
Approach LOS	E	
Intersection Summary		

Timings
4: W Dixie Hwy & NE 163 St

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SEL	SBT
Lane Configurations								
Traffic Volume (vph)	100	1267	313	1973	202	434	202	411
Future Volume (vph)	100	1267	313	1973	202	434	202	411
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	32.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	90.0	24.0	90.0	24.4	32.4	24.4	32.4
Total Split (%)	14.1%	52.7%	14.1%	52.7%	14.3%	19.0%	14.3%	19.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	89.0	77.4	100.1	83.9	50.2	30.5	50.9	30.9
Actuated g/C Ratio	0.52	0.45	0.59	0.49	0.29	0.18	0.30	0.18
v/c Ratio	0.69	0.64	1.32	0.90	0.80	1.19	0.86	0.81
Control Delay	57.3	36.8	203.4	45.4	67.6	150.8	77.7	76.5
Queue Delay	0.0	0.0	0.0	46.1	0.0	0.0	0.0	0.0
Total Delay	57.3	36.8	203.4	91.6	67.6	150.8	77.7	76.5
LOS	E	D	F	F	E	F	E	E
Approach Delay		38.2		106.8		133.0		76.8
Approach LOS		D		F		F		E

Intersection Summary

Cycle Length: 170.8

Actuated Cycle Length: 170.8

Offset: 27 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 89.3

Intersection Capacity Utilization 100.6%

Analysis Period (min) 15

Intersection LOS: F

ICU Level of Service G

Splits and Phases: 4: W Dixie Hwy & NE 163 St

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	90 s	24.4 s	32.4 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	90 s	24.4 s	32.4 s

Queues

4: W Dixie Hwy & NE 163 St

The Riverwalk South

Future Condition w/ Project - PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	1462	352	2230	215	793	215	510
v/c Ratio	0.69	0.64	1.32	0.90	0.80	1.19	0.86	0.81
Control Delay	57.3	36.8	203.4	45.4	67.6	150.8	77.7	76.5
Queue Delay	0.0	0.0	0.0	46.1	0.0	0.0	0.0	0.0
Total Delay	57.3	36.8	203.4	91.6	67.6	150.8	77.7	76.5
Queue Length 50th (ft)	73	456	~413	822	183	~554	188	295
Queue Length 95th (ft)	135	468	#626	875	#334	#707	#379	#417
Internal Link Dist (ft)		573		623		563		296
Turn Bay Length (ft)	290		270		140		130	
Base Capacity (vph)	230	2476	266	2508	271	665	251	633
Starvation Cap Reductn	0	0	0	520	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.59	1.32	1.12	0.79	1.19	0.86	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Future Condition w/ Project - PM Peak Hour

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	0	151	2429	139	7	168	2374
Future Volume (vph)	0	151	2429	139	7	168	2374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	6.8			7.1	4.0
Lane Util. Factor		1.00	0.81			0.97	0.86
Frt		0.86	0.99			1.00	1.00
Flt Protected		1.00	1.00			0.95	1.00
Satd. Flow (prot)		1611	7483			3433	6408
Flt Permitted		1.00	1.00			0.95	1.00
Satd. Flow (perm)		1611	7483			3433	6408
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	162	2612	149	8	181	2553
RTOR Reduction (vph)	0	9	5	0	0	0	0
Lane Group Flow (vph)	0	153	2756	0	0	189	2553
Turn Type		Perm	NA		Prot	Prot	NA
Protected Phases			2		1	1	Free
Permitted Phases		1					
Actuated Green, G (s)		21.3	134.7			21.3	169.9
Effective Green, g (s)		21.3	134.7			21.3	169.9
Actuated g/C Ratio		0.13	0.79			0.13	1.00
Clearance Time (s)		7.1	6.8			7.1	
Vehicle Extension (s)		3.0	1.0			3.0	
Lane Grp Cap (vph)		201	5932			430	6408
v/s Ratio Prot			c0.37			0.06	0.40
v/s Ratio Perm		c0.10					
v/c Ratio		0.76	0.46			0.44	0.40
Uniform Delay, d1		71.9	5.8			68.8	0.0
Progression Factor		1.00	1.00			1.00	1.00
Incremental Delay, d2		15.6	0.3			0.7	0.2
Delay (s)		87.5	6.0			69.4	0.2
Level of Service		F	A			E	A
Approach Delay (s)	87.5		6.0				5.0
Approach LOS	F		A				A
Intersection Summary							
HCM 2000 Control Delay			7.8		HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.50				
Actuated Cycle Length (s)			169.9		Sum of lost time (s)		13.9
Intersection Capacity Utilization			61.9%		ICU Level of Service		B
Analysis Period (min)			15				
c Critical Lane Group							

Timings
5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

	←	↑	↘	↓
Lane Group	WBR	NBT	SBL	SBT
Lane Configurations	↘	↑↑↑↑	↘↘	↑↑↑↑
Traffic Volume (vph)	151	2429	168	2374
Future Volume (vph)	151	2429	168	2374
Turn Type	Perm	NA	Prot	NA
Protected Phases		2	1	Free
Permitted Phases	1			
Detector Phase	1	2	1	
Switch Phase				
Minimum Initial (s)	5.0	7.0	5.0	
Minimum Split (s)	12.1	36.8	12.1	
Total Split (s)	32.1	137.8	32.1	
Total Split (%)	18.9%	81.1%	18.9%	
Yellow Time (s)	4.8	4.8	4.8	
All-Red Time (s)	2.3	2.0	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	7.1	6.8	7.1	
Lead/Lag	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	
Recall Mode	None	C-Min	None	
Act Effect Green (s)	21.3	134.7	21.3	169.9
Actuated g/C Ratio	0.13	0.79	0.13	1.00
v/c Ratio	0.77	0.46	0.44	0.40
Control Delay	90.1	6.3	70.9	0.2
Queue Delay	0.0	0.4	0.0	0.0
Total Delay	90.1	6.7	70.9	0.2
LOS	F	A	E	A
Approach Delay		6.7		5.1
Approach LOS		A		A

Intersection Summary

Cycle Length: 169.9
 Actuated Cycle Length: 169.9
 Offset: 127 (75%), Referenced to phase 2:NBT and 6:, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 8.3
 Intersection Capacity Utilization 61.9%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Biscayne Blvd & NE 16400 Blk

↘ Ø1	↑ Ø2 (R)
32.1 s	137.8 s

Queues
5: Biscayne Blvd & NE 16400 Blk

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

				
Lane Group	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	162	2761	189	2553
v/c Ratio	0.77	0.46	0.44	0.40
Control Delay	90.1	6.3	70.9	0.2
Queue Delay	0.0	0.4	0.0	0.0
Total Delay	90.1	6.7	70.9	0.2
Queue Length 50th (ft)	167	216	102	0
Queue Length 95th (ft)	242	287	138	0
Internal Link Dist (ft)		513		290
Turn Bay Length (ft)			300	
Base Capacity (vph)	253	5974	521	6408
Starvation Cap Reductn	0	2288	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.75	0.36	0.40
Intersection Summary				

HCM Unsignalized Intersection Capacity Analysis 6: NE 163 St & Exist DW

The Riverwalk South
Future Condition w/ Project - PM Peak Hour

									
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations		↑↑↑↑	↑↑↑↑			↑			
Traffic Volume (veh/h)	0	1991	2385	68	0	232			
Future Volume (Veh/h)	0	1991	2385	68	0	232			
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Hourly flow rate (vph)	0	2096	2511	72	0	244			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type		None	None						
Median storage (veh)									
Upstream signal (ft)		627							
pX, platoon unblocked					0.83				
vC, conflicting volume	2583				3071	664			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	2583				2481	664			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	100				100	39			
cM capacity (veh/h)	166				20	403			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	524	524	524	524	717	717	717	431	244
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	72	244
cSH	1700	1700	1700	1700	1700	1700	1700	1700	403
Volume to Capacity	0.31	0.31	0.31	0.31	0.42	0.42	0.42	0.25	0.61
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	96
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.7
Lane LOS									D
Approach Delay (s)	0.0				0.0				26.7
Approach LOS									D
Intersection Summary									
Average Delay			1.3						
Intersection Capacity Utilization			56.7%		ICU Level of Service				B
Analysis Period (min)			15						

**Appendix 6: Traffic Concurrency Analysis & Evaluation of Policy
1.1.2 and 1.1.3**



TABLE: A8

ROADWAY'S PEAK HOUR PERIOD (PHP)TRAFFIC VOLUMES

EXISTING CONDITION

Project Name: The Riverwalk South

1	2	3	4	5	
				Existing Traffic Volumes - Peak Period (PM Peak Hour)	PHP
Roadway	Location	Roadway Classification	Dir	Two Highest Consecutive Hours	
1	Biscayne Boulevard (US-1 / SR 5)	8-Lane Divided State Road Class I - 45 MPH	Two-Way	4,865	5,137
2	Biscayne Boulevard (US-1 / SR 5)	8-Lane Divided State Road Class I - 45 MPH	Two-Way	4,364	4,542
3	NE 163 Street (SR 826)	8-Lane Divided State Road Class I - 45 MPH	Two-Way	4,822	4,155
4	NE 163 Street (SR 826)	6-Lane Divided State Road Class I - 35 MPH	Two-Way	3,209	3,222
					3,216

Notes: 1 Roadway Name
2 Location of Count
3 Roadway Classification
4 Date of counts (from/to)

5 Direction
6 Traffic data (2 highest consecutive hours) & Peak Hour Period (PHP)
Traffic data obtained from FDOT (Florida Traffic Online).
* Peak Hour Period (PHP) = Average Traffic Count between two highest consecutive hours

TABLE: A9

CONCURRENCY ANALYSIS (PM PEAK HOUR) EXISTING CONDITION & PROPOSED FUTURE CONDITIONS

Project Name: The Riverwalk South

1		2		3		4		5				6							
Traffic Concurrency Analysis						Existing Condition		Proposed Future Condition w/o Project				Proposed Future Condition w/ Project							
Roadway		Location		LOS / Volume Standard		PHP Volume	Available Capacity	LOS		Committed Development Trips (PM Peak Hour)	PHP Volume	Available Capacity	LOS		Project Net Trips (PM Peak Hour)	PHP Volume	Available Capacity	LOS	
1	Biscayne Boulevard (US-1 / SR 5)	North of SR 826		LOS D+20 / 8,652 VPH Class I - 8LD		5,001	3,651	C		382	5,383	3,269	C		59	5,442	3,210	C	
2	Biscayne Boulevard (US-1 / SR 5)	South of SR 826		LOS D+20 / 8,652 VPH Class I - 8LD		4,453	4,199	C		232	4,685	3,967	C		24	4,709	3,943	C	
3	NE 163 Street (SR 826)	East of SR 5		LOS D+20 / 8,652 VPH Class I - 8LD		4,489	4,164	C		522	5,010	3,642	C		15	5,025	3,627	C	
4	NE 163 Street (SR 826)	West of SR 5		LOS E+20 / 5,508 VPH Class II - 6LD		3,216	2,293	D		564	3,779	1,729	D		28	3,807	1,701	D	

Notes:

- 1 Roadway Name
- 2 Location
- 3 Roadway / Volume Standard
- 4 Existing Condition, PHP Volume, Available Capacity, LOS
- 5 Proposed Future Condition w/o Project; PHP Volume, Available Capacity, LOS
- 6 Proposed Future Condition w/ Project; PHP Volume, Available Capacity, LOS
- * LOS / Volume Standard based on the FDOT Q/LOS Handbook (Table 4, Peak Hour Two-Way Volumes for Florida's Urbanized Areas). Volume Standard was increased by 20% since transit service with headways of 20 minutes or less is provided within the studied roadways (120% of their capacity).

TABLE: A10

EVALUATION OF ALTERNATIVE REQUIREMENT (a.) OF POLICY 1.1.3

Project Name: The Riverwalk South

SIS Facility (Freeway)	Direction	Freeway Description			Project Net Trips (PM Peak)	Project Net Trip To Freeway Capacity Ratio (%)	Less Than 0.25% Threshold
		Lanes	LOS	Volume			
SR 826 / Palmetto Expressway	Two-way	6	E	12,950	9	0.07%	Met
I-95	Two-way	8	E	17,483	5	0.03%	Met
SR 91 / Florida's Turnpike	Two-way	6	E	12,950	5	0.04%	Met

Notes:

LOS / Volume Standard based on the FDOT Q/LOS Handbook (Table 4, Peak Hour Two-Way Volumes for Florida's Urbanized Areas).

COUNTY: 87
STATION: 0183
DESCRIPTION: SR 5/US-1, 800' N OF NE 172 ST
START DATE: 07/18/2019
START TIME: 0000

TIME	DIRECTION: N				DIRECTION: S				COMBINED	
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL
0000	116	111	94	81	402	105	115	105	73	398
0100	61	56	47	29	193	65	51	57	40	213
0200	37	31	20	114	25	35	29	31	25	120
0300	18	28	21	28	95	23	23	18	27	91
0400	18	35	39	33	125	18	25	24	27	94
0500	42	66	100	107	315	35	64	72	97	268
0600	101	137	218	269	725	123	163	203	263	752
0700	241	282	352	421	1296	351	414	447	454	1666
0800	473	492	494	558	2017	503	529	530	528	2090
0900	509	487	506	482	1984	508	464	486	472	1930
1000	426	473	449	451	1799	461	450	472	440	1823
1100	478	503	559	501	2041	470	438	548	470	1926
1200	562	517	551	606	2236	508	505	473	532	2018
1300	588	552	605	522	2247	527	522	535	551	2135
1400	508	570	599	607	2284	553	515	568	551	2187
1500	564	574	667	603	2408	561	596	565	617	2339
1600	579	559	672	585	2395	638	591	608	633	2470
1700	606	664	686	620	2576	615	628	675	643	2561
1800	617	645	551	572	2385	543	610	560	488	2201
1900	570	552	531	534	2187	447	492	451	434	1824
2000	417	475	384	409	1685	402	374	369	332	1477
2100	366	352	297	325	1340	359	361	327	323	1370
2200	270	282	239	238	1029	300	251	233	229	1013
2300	221	188	169	141	719	256	192	170	149	767
24-HOUR TOTALS:					34597					33733

	DIRECTION: N		DIRECTION: S		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	845	2060	815	2095	815	4148
P.M.	1715	2587	1700	2561	1700	5137
DAILY	1715	2587	1700	2561	1700	5137
TRUCK PERCENTAGE	1.77		2.86		2.30	

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
N	0	30486	3498	134	331	53	0	43	48	2	0	0	0	0	2	611	34597
S	0	27204	5565	168	618	103	3	47	24	0	0	0	1	0	0	964	33733

COUNTY: 87
STATION: 5219
DESCRIPTION: SR 5/US-1, 300' S NE 163 ST/SUNNY ISLES CSWY
START DATE: 07/18/2019
START TIME: 0000

TIME	DIRECTION: N				TOTAL	DIRECTION: S				TOTAL	COMBINED TOTAL
	1ST	2ND	3RD	4TH		1ST	2ND	3RD	4TH		
0000	104	87	82	89	362	114	122	92	74	402	764
0100	51	57	54	41	203	63	41	39	36	179	382
0200	41	47	26	14	128	27	44	32	31	134	262
0300	26	24	29	41	120	23	15	24	24	86	206
0400	31	35	44	54	164	30	26	35	43	134	298
0500	42	60	84	97	283	40	36	66	105	247	530
0600	110	136	207	221	674	113	152	209	237	711	1385
0700	186	250	291	308	1035	240	415	359	457	1471	2506
0800	373	441	487	440	1741	471	470	553	464	1958	3699
0900	438	386	376	384	1584	522	445	480	492	1939	3523
1000	374	377	372	409	1532	487	429	439	429	1784	3316
1100	374	420	461	461	1716	403	403	515	486	1807	3523
1200	445	450	452	475	1822	442	511	450	447	1850	3672
1300	446	443	464	470	1823	456	473	489	509	1927	3750
1400	409	458	490	450	1807	404	449	496	466	1815	3622
1500	472	504	528	511	2015	531	485	523	584	2123	4138
1600	515	506	570	522	2113	600	527	547	577	2251	4364
1700	606	599	594	628	2427	490	530	478	617	2115	4542
1800	581	576	542	556	2255	545	471	478	465	1959	4214
1900	541	477	506	456	1980	438	442	383	394	1657	3637
2000	367	427	380	367	1541	371	349	311	299	1330	2871
2100	289	250	254	239	1032	301	295	265	297	1158	2190
2200	232	209	194	180	815	257	223	199	166	845	1660
2300	177	155	158	120	610	208	175	153	140	676	1286
24-HOUR TOTALS:					29782	30558					60340

DIRECTION: N				DIRECTION: S			
HOUR	815	1806	2427	HOUR	815	2009	2258
A.M.	815	1806	2427	COMBINED DIRECTIONS	815	3815	
P.M.	1700	2427		HOUR	1715	4572	
DAILY	1700	2427			1715	4572	
TRUCK PERCENTAGE	2.13			2.18			

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK TOTVOL
N	182	26786	2113	201	233	98	0	44	49	1	0	0	8	0	67	634
S	91	26826	2961	166	297	115	0	42	60	0	0	0	0	0	0	680
																29782
																30558

COUNTY: 87
 STATION: 0556
 DESCRIPTION: SR 826/NE 163 ST, 1700' E SR 5/US-1
 START DATE: 05/09/2019
 START TIME: 0000

TIME	DIRECTION: E				TOTAL	DIRECTION: W				TOTAL	COMBINED TOTAL
	1ST	2ND	3RD	4TH		1ST	2ND	3RD	4TH		
0000	93	77	62	62	294	187	120	117	73	497	791
0100	60	50	35	35	180	80	74	69	48	271	451
0200	29	24	20	15	88	38	34	29	39	140	228
0300	22	22	16	10	70	17	15	22	26	80	150
0400	24	23	33	34	114	22	37	23	31	113	227
0500	43	77	138	168	426	46	58	68	114	286	712
0600	282	334	428	396	1440	141	164	265	373	943	2383
0700	389	471	518	450	1828	386	353	380	463	1588	3416
0800	452	524	603	571	2150	528	554	472	469	2017	4167
0900	477	539	434	390	1840	479	382	447	472	1780	3620
1000	461	400	423	424	1708	427	390	420	414	1651	3359
1100	404	370	406	431	1611	453	440	450	388	1731	3342
1200	375	348	488	388	1599	534	397	543	477	1951	3550
1300	441	455	468	394	1758	444	482	458	476	1860	3618
1400	444	494	475	517	1930	519	568	541	492	2120	4050
1500	479	430	463	458	1830	554	609	733	597	2493	4323
1600	467	409	491	503	1870	566	578	617	443	2204	4074
1700	544	387	573	520	2024	795	587	772	644	2798	4822
1800	560	498	507	550	2115	582	438	532	488	2040	4155
1900	401	542	518	377	1838	468	459	385	347	1659	3497
2000	407	359	354	313	1433	366	377	265	291	1299	2732
2100	331	290	261	260	1142	305	300	329	267	1201	2343
2200	273	239	241	205	958	237	250	224	221	932	1890
2300	199	133	161	116	609	288	208	188	178	862	1471
24-HOUR TOTALS:											63371
					30855						32516

PEAK VOLUME INFORMATION

	DIRECTION: E		DIRECTION: W		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	830	2190	745	2023	800	4167
P.M.	1730	2151	1700	2798	1700	4822
DAILY	030	2190	1700	2798	1700	4822

TRUCK PERCENTAGE 3.51 2.76 3.13

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	0	24143	5626	196	681	99	4	70	31	2	0	0	0	0	0	3	1083
W	0	26836	4780	184	543	49	3	82	35	2	0	0	0	0	2	898	32516

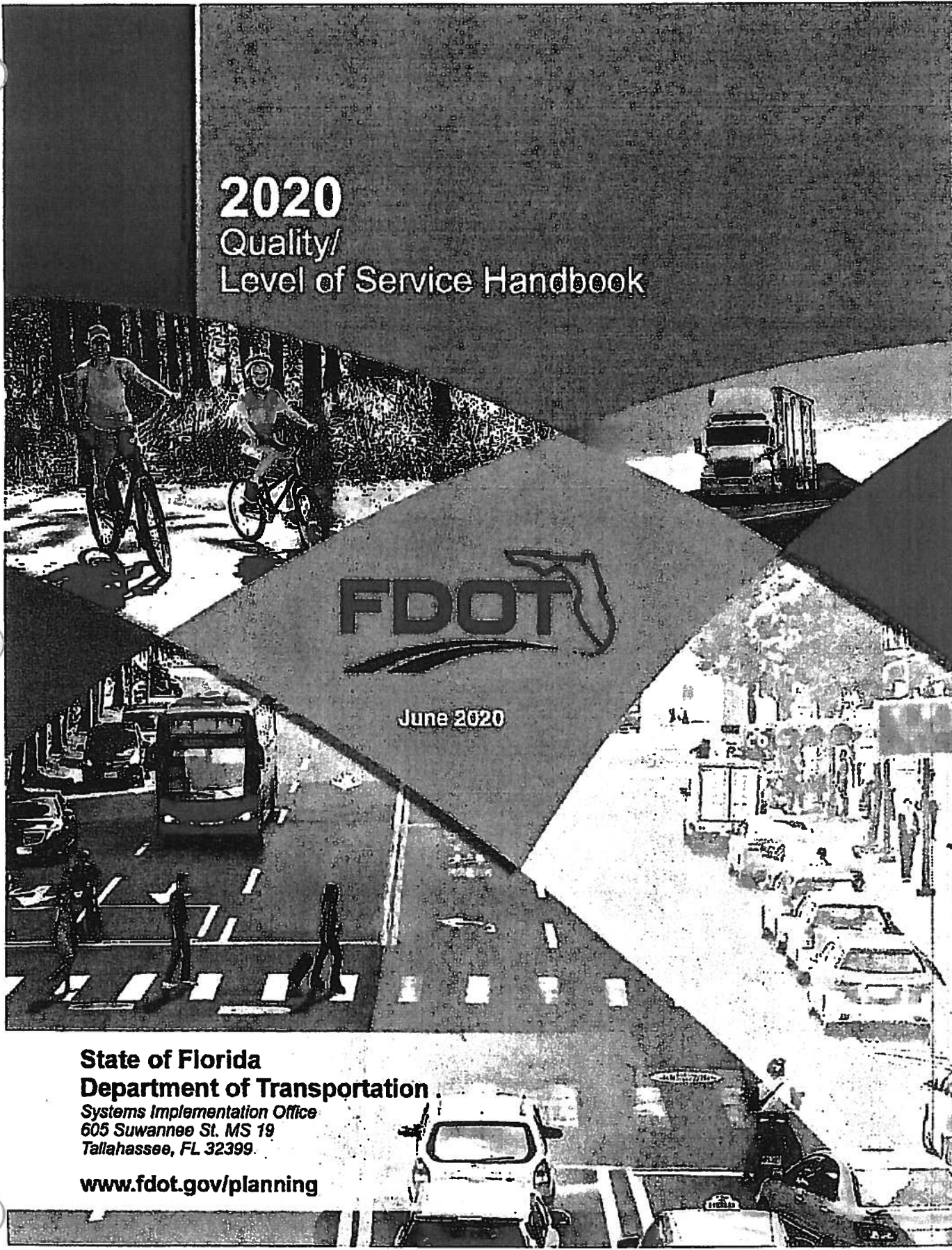
COUNTY: 87
 STATION: 5225
 DESCRIPTION: SR 826/NE 163 ST, 100' E OF NE 20 AVE
 START DATE: 07/18/2019
 START TIME: 0000

TIME	DIRECTION: E				TOTAL	DIRECTION: W				TOTAL	COMBINED TOTAL
	1ST	2ND	3RD	4TH		1ST	2ND	3RD	4TH		
0000	111	72	79	67	329	139	119	101	78	437	766
0100	53	41	25	29	148	69	57	44	47	217	365
0200	36	37	35	24	132	45	46	29	29	149	281
0300	23	13	20	27	83	28	22	41	27	118	201
0400	23	31	43	53	150	24	32	29	35	120	270
0500	46	75	175	209	505	41	44	47	95	227	732
0600	271	342	394	343	1350	95	111	145	193	544	1894
0700	291	367	394	418	1470	231	290	214	298	1033	2503
0800	425	396	315	393	1529	314	290	307	310	1221	2750
0900	366	401	365	402	1534	332	282	317	309	1240	2774
1000	401	341	391	349	1482	319	289	334	316	1258	2740
1100	396	381	360	424	1561	297	243	376	329	1245	2806
1200	362	373	391	393	1519	344	316	373	310	1343	2862
1300	397	419	433	361	1610	369	363	332	317	1381	2991
1400	461	437	440	386	1724	394	345	377	369	1485	3209
1500	367	413	408	407	1595	424	369	425	409	1627	3222
1600	346	372	421	388	1527	403	384	437	430	1654	3181
1700	447	361	413	389	1610	313	447	373	400	1533	3143
1800	390	393	413	402	1598	395	375	385	320	1475	3073
1900	407	382	346	340	1475	328	301	267	321	1217	2692
2000	306	282	294	239	1121	303	276	271	264	1114	2235
2100	269	264	251	204	988	255	292	218	240	1005	1993
2200	214	205	220	190	829	219	235	208	178	840	1669
2300	151	154	122	111	538	223	202	173	137	735	1273
24-HOUR TOTALS:					26407	23218					49625

DIRECTION: E				DIRECTION: W				COMBINED DIRECTIONS	
AM.	PM.	DAILY	TRUCK PERCENTAGE	1ST	2ND	3RD	4TH	1ST	2ND
730	1633	845	3.90	1241	1241	1241	1241	845	845
1400	1724	1600		1654	1654	1654	1654	1630	1630
1400	1724	1600		1654	1654	1654	1654	1630	1630
								4.28	

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK TOTVOL
E	352	22075	2949	158	426	144	27	179	89	6	0	0	1	0	1	1030
W	65	19681	2209	223	676	35	5	94	40	8	0	0	11	0	171	1092



2020 Quality/ Level of Service Handbook



June 2020

**State of Florida
Department of Transportation**
Systems Implementation Office
605 Suwannee St. MS 19
Tallahassee, FL 32399

www.fdot.gov/planning

TABLE 4

Generalized Peak Hour Two-Way Volumes for Florida's
Urbanized Areas¹

January 2020

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Core Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	1,510	1,600	**	4	4,050	5,640	6,800	7,420	
4	Divided	*	3,420	3,580	**	6	5,960	8,310	10,220	11,150	
6	Divided	*	5,250	5,390	**	8	7,840	10,960	13,620	14,850	
8	Divided	*	7,090	7,210	**	10	9,800	13,510	17,040	18,580	
						12	11,600	16,350	20,930	23,200	
Class II (35 mph or slower posted speed limit)						Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	660	1,330	1,410	4	4,130	5,640	7,070	7,690	
4	Divided	*	1,310	2,920	3,040	6	6,200	8,450	10,510	11,530	
6	Divided	*	2,090	4,500	4,590	8	8,270	11,270	13,960	15,380	
8	Divided	*	2,880	6,060	6,130	10	10,350	14,110	17,310	19,220	
Non-State Signalized Roadway Adjustments (Alter corresponding state volumes by the indicated percent.)						Freeway Adjustments					
Non-State Signalized Roadways - 10%						Auxiliary Lanes Present in Both Directions + 1,800					
Median & Turn Lane Adjustments						Ramp Metering + 5%					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		UNINTERRUPTED FLOW HIGHWAYS					
2	Divided	Yes	No	+5%		Lanes	Median	B	C	D	E
2	Undivided	No	No	-20%		2	Undivided	1,050	1,620	2,180	2,930
Multi	Undivided	Yes	No	-5%		4	Divided	3,270	4,730	5,960	6,780
Multi	Undivided	No	No	-25%		6	Divided	4,910	7,090	8,950	10,180
-	-	-	Yes	+ 5%		Uninterrupted Flow Highway Adjustments					
One-Way Facility Adjustment Multiply the corresponding two-directional volumes in this table by 0.6						Lanes	Median	Exclusive left lanes	Adjustment factors		
						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE² (Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						¹ Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.					
Paved Shoulder/Bicycle Lane Coverage	B	C	D	E		² Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.					
0-49%	*	260	680	1,770		³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.					
50-84%	190	600	1,770	>1,770		* Cannot be achieved using table input value defaults.					
85-100%	830	1,700	>1,770	**		** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
PEDESTRIAN MODE² (Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						Source: Florida Department of Transportation Systems Implementation Office https://www.fltdot.gov/planning/systems/					
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	250	850							
50-84%	*	150	780	1,420							
85-100%	340	960	1,560	>1,770							
BUS MODE (Scheduled Fixed Route)³ (Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							



II. Transportation Element

Goals, Objectives, and Policies

Goal 1

To maintain a financially feasible, multimodal, urban transportation system that meets the mobility needs of the residents in a safe, convenient and efficient manner and that operates in harmony with the existing and future land use pattern and the environment.

Objective 1.1 Level of Service (LOS)

The City will ensure that the impact on the traffic circulation system from new development and redevelopment occurring within the City is minimized through the implementation of the Smart Growth North Miami Beach Vision, transportation concurrency, the capital improvement program, and programs that reduce automobile demand and support alternative modes of transportation to the automobile.

Policy 1.1.1

Consistent with the Capital Improvements Element and Transportation Element of the Miami-Dade Comprehensive Development Master Plan (CDMP), as amended, the City designates the area within its corporate boundaries east of I-95 as the Urban Infill Area (UIA) and transportation concurrency exception area. The City has amended its Future Land Use Map to reflect these boundaries and has added a consistency policy to its Future Land Use Element.

Policy 1.1.1

Consistent with the Capital Improvements Element and Transportation Element of the Miami-Dade Comprehensive Development Master Plan (CDMP), as amended, the City designates the area within its corporate boundaries east of I-95 as the Urban Infill Area (UIA) and transportation concurrency exception area. The City has amended its Future Land Use Map to reflect these boundaries and has added a consistency policy to its Future Land Use Element.

Policy 1.1.2

The City hereby ~~adopts traffic circulation level of service standards based on peak period conditions consistent with those standards established in the Miami-Dade CDMP for arterials and collectors.~~ Peak period means the average of the two highest consecutive hours of traffic volume during a weekday.



1. *Florida Intrastate Highway System (FIHS)* – Limited access State highways shall operate at LOS D or better. Where exclusive through lanes exist, such as high occupancy vehicle (HOV) lanes, roadways may operate at LOS E.
2. *Arterials and Collectors* – Within the UIA:
 - (a) Where no public mass transit service exists, roadways shall operate at or above LOS E;
 - (b) Where mass transit service having headways of 20 minutes or less is provided within ½ mile distance, roadways shall operate at no greater than 120 percent of their capacity;
 - (c) Roadways parallel to and within ½ mile distance of I-95/Tri-Rail, US 1, or any other corridors where extraordinary transit service such as commuter rail or express bus service exists, shall operate at no greater than 150 percent of their capacity.
3. *Local Roads* – Within the City limits, local roads shall operate at LOS D.

Policy 1.1.3

No development shall be approved if the projected impacts of the development (including redevelopment) would reduce service levels of any roadway on the traffic circulation system below the standards in Policy 1.1.2, unless the development qualifies for a transportation concurrency exception. ~~In order to qualify for a transportation concurrency exception, the development must be located within the Community Redevelopment Area and designated Mixed-Use, MU/TC Mixed Use Town Center, MU/EC Mixed-Use Employment Center or MU/NC Mixed-Use Neighborhood Center, subject to FLUE Policy 1.8.1, and/or located within ¼ mile of either an MDTA transit center, or an MDTA or city circulator bus stop with existing, or planned and funded, peak hour headway service of 20 minutes or less, or express bus service, and shall comply with one of the following alternative requirements:~~

- a. the additional peak travel hour trips generated by the development do not exceed one-quarter of one percent (0.25 percent) of the peak travel hour capacity of any SIS facility, adjacent to the city, at the adopted LOS standard; or
- b. the development shall incorporate, on or off-site, a premium transit shelter; or the development shall accommodate and provide for alternative modes of transportation, or transportation demand management, as follows, provided that the city shall determine the acceptability of alternatives proposed for any given development.
 - i. Incorporate secure bicycle storage.
 - ii. Ensure that a complete sidewalk network is available for pedestrian access no later than issuance of a certificate of occupancy, such that



- the sidewalk network within ¼ mile in each direction within the city limits is complete.
- iii. Enhance existing pedestrian and bicycle ways with shade cover.
 - iv. Provide convenient group transportation for residents or employees, as applicable, through private van transportation, during peak travel hours, with commensurate reduction in the number of on-site parking spaces consistent with Policy 1.2.7.
 - v. Coordinate an employee carpooling program, including the provision and enforcement of reserved parking spaces for car poolers, with a commensurate reduction in the number of on-site parking spaces consistent with Policy 1.2.7. This program must be supplemented with a guaranteed ride home program.
 - vi. Provide a transit discount program to all residents or employees, as applicable.
 - vii. Provide for flexible work hours or telecommuting with a commensurate reduction in the number of on-site parking spaces consistent with Policy 1.2.7.
 - viii. Innovative alternatives the City deems equally effective

Policy 1.1.4

Traffic impact shall be limited to the collector or arterial roadway(s) serving the local road(s) providing access to the project site, or to the collector or arterial road providing direct access to the project site.

Policy 1.1.5

Project traffic shall be based on the application of ITE trip rates (Trip Generation Manual, 6th Edition or subsequent editions). Alternatively, project traffic may be based upon trip rates developed from existing facilities of the same type as proposed, following established traffic engineering procedures as approved by FDOT, the County and the City.

Policy 1.1.6

Roadway capacity shall be calculated as specified in the most current version of the Florida DOT "Level of Service Standards and Guidelines Manual for Planning". The City may allow roadway capacity to be measured using the Miami-Dade County Concurrency Information Center and Miami-Dade County Administrative Order #4-85 (July 1989) or other traffic engineering analysis such as ART-PLAN or speed-delay studies which are technically sound and acceptable.

The Riverwalk South

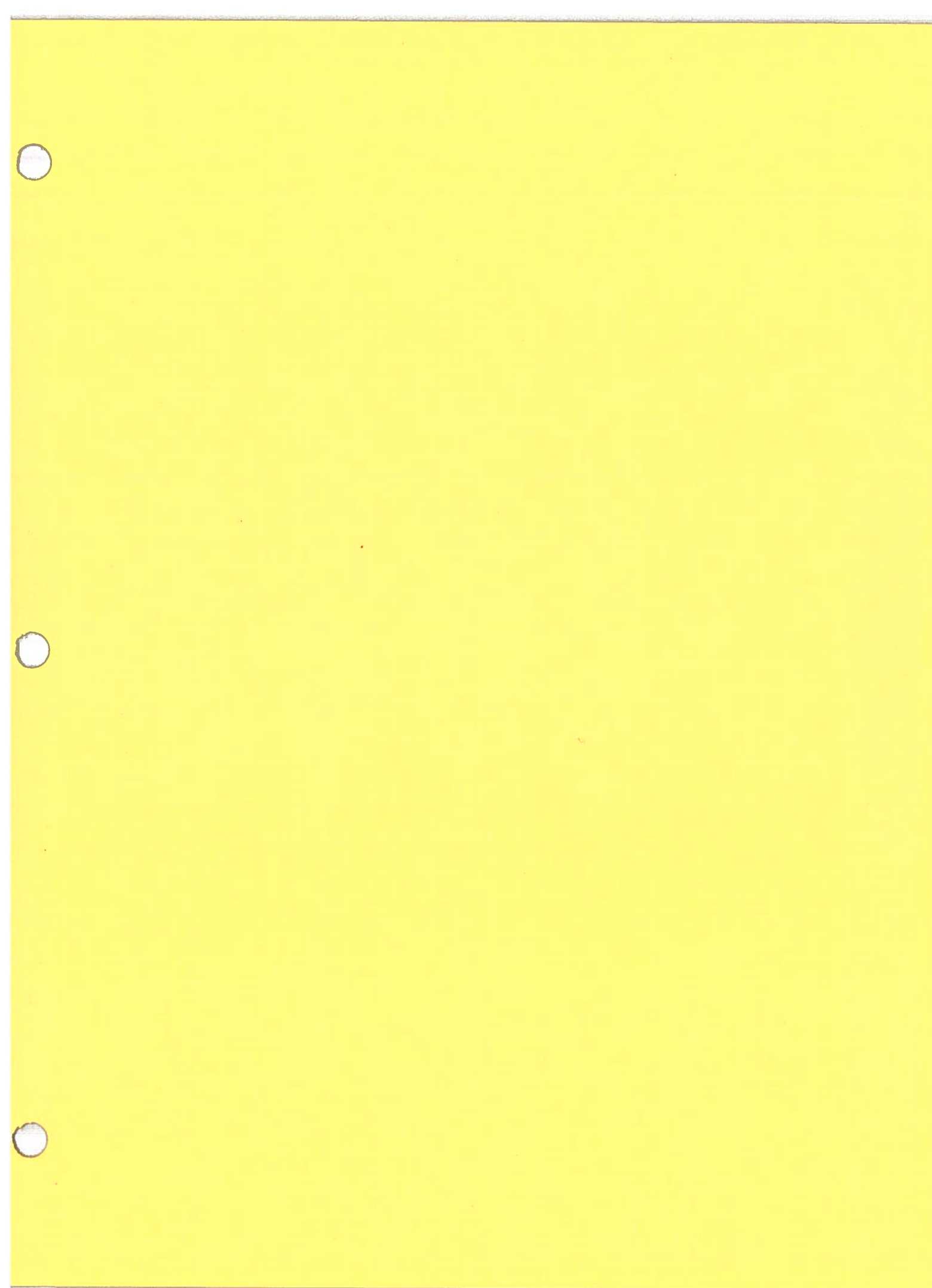
Notes:
Sources: ITE Trip Generation, 11th Edition & ITE Trip Generation Handbook, 3rd Edition.
 1 Th.SF. = 1,000 Square Feet; D.U. = Dwelling Unit
 Trips utilized in the analysis.

**TRIP GENERATION COMPARISON - PM PEAK HOUR
PREVIOUSLY APPROVED 2015 VS. PROPOSED PROJECT 2022**

The Riverwalk South

LAND USE (LU)	UNITS	ITE LU CODE	ITE TRIP GENERATION RATE / EQUATION	PM PEAK HOUR TRIPS				
				%	IN	%	OUT	TOTAL
Previously Approved 2015								
Multi-Family Housing (High-Rise)	250 D.U.	222	0.36	61%	55	39%	35	90
			$T=0.34(X)+8.56$	61%	57	39%	37	94
Hotel	177 Rooms	310	0.60	51%	54	49%	52	106
			$T=0.75(X)-26.02$	51%	55	49%	52	107
Retail	9,178 Th.SF.	820	3.81	48%	17	52%	18	35
			$Ln(T)=0.74Ln(X)+2.89$	48%	45	52%	48	93
Previously Approved Gross Trips				53%	156	47%	137	293
Proposed Project 2022								
Multi-Family Housing (High-Rise)	363 D.U.	222	0.32	56%	65	44%	51	116
			$T=0.34(X)+8.56$	61%	81	39%	51	132
Retail (<40k SF)	8,807 Th.SF.	822	6.59	50%	29	50%	29	58
			$Ln(T)=0.71Ln(X)+2.72$	50%	36	50%	36	71
Fine Dining Restaurant	8,806 Th.SF.	931	7.80	48%	33	52%	36	69
	No Equation Available							
Proposed Site Gross Trips				52%	127	48%	116	243
				PM Peak Hour Percent Change (%)				
				-17%				

Notes:
 Sources: ITE Trip Generation, 11th Edition & ITE Trip Generation Handbook, 3rd Edition.
 1 Th.SF. = 1,000 Square Feet; D.U.= Dwelling Unit
 Trips utilized in the analysis.



TRAD COMMENTS

Project: SOLESTE On The Bay
Address: 16375 Biscayne Blvd

PLANNING

Bermello Ajamil & Partners Review Comments, May 25, 2022

Item 19. Please double-check the information on the unit type breakdown table and the information on the floor plans. Seem to be discrepancies where Units are labeled a type, but the square footage corresponds to a different type. Confirm all counts

-Follow-up: *Sheet A-107*: Unit B is labeled as 857 SF, when the table says B is 854 SF. This Unit should be B1. Unit B16 is labeled as 1,022 SF, when the table says it is 1,200 SF. The unit should be B12. *Sheet A-107 & 108*: Unit B11 is on both as two different units. I suspect the B11 on Sheet A-107 should be B14. *Sheets A-106, A-109, A-110*: A12 is labeled on each plan but as different units. I suspect the Units labeled as A12 on Sheets A-109 and A-110 should really be labeled A13.

Response: Refer to sheets A-107, A-109 & A-110 Floor Plans for corrections. Refer to sheets A-106 through A-110 Floor Plan for updated Unit Breakdown table.

Item 20. The Unit Type Breakdown on Sheet A-002 indicates Studio/1 Bath Units that are less than 550 SF.

-Follow-up: To be confirmed once the unit types are reconciled.

Response: Refer to Unit Type Breakdown on sheet A-002 Data for compliance.

Item 21. Please double-check the provided average unit size on the unit type breakdown.

-Follow-up: To be confirmed once the unit types are reconciled.

Response: Refer to Unit Type Breakdown on sheet A-002 Data for correction.

TRAFFIC

Eric Czerniejewski Review Comments, May 25, 2022

Item 1. Projects that have direct or immediate access to Biscayne Boulevard/US-1 shall be subject to the review and approval by FDOT for compliance with FDOT standards. Please provide an approval letter from FDOT at the time of building permit for the proposed traffic at the ingress and egress driveway connections to US-1/Biscayne Boulevard and NE 163rd Street.

RGA Response: The Client will submit the traffic study to FDOT for review and approval. The approval by FDOT will be provided to the City as requested.

Item 2. Please update Figure 1 and label and identify the driveway connections.

RGA Response: Figure 1 of the report is a location map and not intended to identify driveways. Figure 2 is the site plan and depicts the project driveways. Regardless, attached please find the revised location map including labels of the existing driveways for the subject project as requested.

Item 3. Please reconfirm that this development will not have valet parking as referenced in the executive summary of the traffic study dated 01/24/22. The prior iteration of this development proposed valet parking and had an extensive valet parking operational analysis.

RGA Response: Confirmed. The subject project is not proposing valet parking.

Item 4. There is a traffic operational concern at the US-1/Biscayne Boulevard and NE 163rd Street intersection. The 95th percentile vehicle queue for the southbound right turn movement in the AM and PM peak hours is 593 LF and 667 LF accordingly per Table A7-1 in Appendix 5. The existing southbound right turn vehicle queue storage from the stop bar to the end of the turn lane at the US-1/Biscayne Boulevard is 550 LF. Please provide traffic mitigation improvements including extending the southbound right turn lane (if feasible) to ensure that this traffic operational issue at the US-1/Biscayne Boulevard and NE 163rd Street intersection will be resolved.

RGA Response: *Note, the subject project is not adding any southbound right-turns at the intersection of Biscayne Boulevard (US 1) and NE 163rd Street (SR 826). In fact, the southbound right-turn movement for the proposed future condition without project (No Build) yielded 95th percentile queues of 593 and 667 linear feet, same results as for the future condition with project. Based on our traffic study, these queues are the result of the southbound right-turns added by the background traffic and committed traffic (SBRT AM: 177 vph & SBRT PM: 101 vph). Therefore, no traffic mitigation improvements should be required from this project. Lastly, the subject intersection is comprised of two (2) state roads and typically FDOT does not make any improvements based on trip generation estimates and short term traffic studies, as these trips may not materialize.*

Item 5. There are traffic operational concerns at the US-1/Biscayne Boulevard and NE 22nd Avenue/West Dixie Highway signalized intersection. The 95th percentile vehicle queues for the following turn lanes are exceeded as follows:

- Westbound left turn lane movement- 1124 LF in the AM peak hour; 626 LF in the PM peak hour with a storage length of 315 LF
- Northbound left turn lane movement-334 LF in the PM peak hour with a storage length of 200 LF
- Southbound left turn lane movement- 272 LF in the AM peak hour; 379LF in the PM peak hour with a storage length of 180 LF Please provide traffic mitigation improvements including extending these three turn lanes (if feasible) to ensure that these traffic operational issues at the NE 22nd Avenue/West Dixie Highway signalized intersection will be resolved.

RGA Response: *The subject project is not adding any trips to the referenced movements at the intersection of NE 22nd Avenue/Dixie Highway and NE 163rd Street. The traffic operational concern by the reviewer is not caused by the project traffic and therefore, no traffic mitigation improvements should be required for this project. Please note any excessive queue is the result of the background traffic and committed traffic added to the referenced movements. The background traffic and committed traffic at the movements are as follows:*

- WBLT - AM: 284 vph & PM: 118 vph
- NBLT - AM: 69 vph & PM: 64 vph
- SBLT - AM: 32 vph & PM: 22 vph (Based on our study, the existing queues currently exceed the storage capacity)

Lastly, the subject intersection is comprised of two (2) state roads and typically FDOT does not make any improvements based on trip generation estimates and short term traffic studies, as these trips may not materialize.

Item 6. Please provide a separate pavement marking and signage plan signed and sealed by a professional engineer. Please ensure that the appropriate signage per MUTCD is provided for movement restrictions at the proposed ingress and egress locations. Please include typical handicap and regular parking stall details per City of North Miami Beach criteria. The Civil plans provided only included the water, sewer and drainage plan along with AutoTURN maneuverability exhibits.

FORMGROUP Response: *Refer to sheets C-2.0 & C-2.1 On-Site Pavement Markings & Sign Plans & Details.*

Item 7. Please provide pedestrian crossing signs per MUTCD criteria at the uncontrolled pedestrian crosswalks depicted on the pavement marking and signage plans.

FORMGROUP Response: *Refer to sheets C-2.0 & C-2.1 On-Site Pavement Markings & Sign Plans & Details.*

Item 8. Please provide sight visibility triangles on the site plan at each of the driveway connections to US-1/Biscayne Boulevard and NE 163rd Street. The sight triangles should also be depicted on the landscape plans and the pavement marking and signage plans. The sight triangles along Biscayne Boulevard/US-1 should meet FDOT criteria as outlined in the FDOT Design Manual (Section 212.11).
RGA Response: *Refer to sheet A-006 Site Plan Furnishing Plan for visibility triangles.*

Item 9. Please ensure that the handicap parking spaces are oriented appropriately on all plan sheets and sufficient cross hatch striping provided per the Miami Dade County and North Miami Beach handicap accessible parking space details and criteria. Please label the dimensions for all parking spaces on the pavement marking and signage plan sheet. The standard parking space dimensions should be a minimum of 9' wide x 18' long per Section 24-93 of the Code of Ordinances. The handicap parking space dimensions should be a minimum of 12' wide x 20' long per Section 24-93 of the Code of Ordinances. The handicap symbol should be mirrored on certain sheets. Please check all garage floor sheets as well.

FORMGROUP Response: *Refer to sheets A-101 through A-103 Floor Plans & A-006 Site Furnishing Plan for handicap parking space orientation and details.*

Item 10. Please explain how the assigned tandem parking spaces will work with regards to the traffic circulation for both spaces in tandem. Please confirm that each resident will be responsible for the internal circulation for both vehicles (i.e. backing out of second vehicle to gain access to first vehicle). This is a typical comment for all garage floors.

FORMGROUP Response: *Tandem parking spaces will be assigned to private use by residents with 2-bedroom & 3-bedroom apartments. Refer to sheets A-102 through A-105 Floor Plans for note.*

I hope these address your comments and concerns. Please feel free to contact me with any questions you may have regarding these comment responses.

Sincerely,



Omar A. Morales
Principal Architect

Technical Memorandum

Date: May 3rd, 2022

To: The Estate Companies
6201 SW 70th Street
South Miami, FL 33143

From: Carlos X. Valentin, P.E.
8065 NW 98th Street
Hialeah Gardens, Florida 33016

Subject: Soleste on the Bay (fka The Riverwalk South) - Traffic Review Comments

This technical memorandum was prepared to provide responses to the City of North Miami Beach traffic review comments prepared by the Corradino Group, Inc dated April 27th, 2022. Please accept this memorandum as an addendum to the Traffic Impact Study dated January 24th, 2022. The comments and responses are as follows:

1. Projects that have direct or immediate access to Biscayne Boulevard/US-1 shall be subject to the review and approval by FDOT for compliance with FDOT standards. Please provide an approval letter from FDOT at the time of building permit for the proposed traffic at the ingress and egress driveway connections to US-1/Biscayne Boulevard and NE 163rd Street.

RGA Response: The Client will submit the traffic study to FDOT for review and approval. The approval by FDOT will be provided to the City as requested.

2. Please update Figure 1 and label and identify the driveway connections.

RGA Response: Figure 1 of the report is a location map and not intended to identify driveways. Figure 2 is the site plan and depicts the project driveways. Regardless, attached please find the revised location map including labels of the existing driveways for the subject project as requested.

3. Please reconfirm that this development will not have valet parking as referenced in the executive summary of the traffic study dated 01/24/22. The prior iteration of this development proposed valet parking and had an extensive valet parking operational analysis.

RGA Response: Confirmed. The subject project is not proposing valet parking.

4. There is a traffic operational concern at the US-1/Biscayne Boulevard and NE 163rd Street intersection. The 95th percentile vehicle queue for the southbound right turn movement in the AM and PM peak hours is 593 LF and 667 LF accordingly per Table A7-1 in Appendix 5. The existing southbound right turn vehicle queue storage from the stop bar to the end of the turn lane at the US-1/Biscayne Boulevard is 550 LF. Please provide traffic mitigation improvements including

extending the southbound right turn lane (if feasible) to ensure that this traffic operational issue at the US-1/Biscayne Boulevard and NE 163rd Street intersection will be resolved.

RGA Response: Note, the subject project is not adding any southbound right-turns at the intersection of Biscayne Boulevard (US 1) and NE 163rd Street (SR 826). In fact, the southbound right-turn movement for the proposed future condition without project (No Build) yielded 95th percentile queues of 593 and 667 linear feet, same results as for the future condition with project. Based on our traffic study, these queues are the result of the southbound right-turns added by the background traffic and committed traffic (SBRT AM: 177 vph & SBRT PM: 101 vph). Therefore, no traffic mitigation improvements should be required from this project. Lastly, the subject intersection is comprised of two (2) state roads and typically FDOT does not make any improvements based on trip generation estimates and short term traffic studies, as these trips may not materialize.

5. There are traffic operational concerns at the US-1/Biscayne Boulevard and NE 22nd Avenue/West Dixie Highway signalized intersection. The 95th percentile vehicle queues for the following turn lanes are exceeded as follows:

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- Southbound left turn lane movement- 272 LF in the AM peak hour; 379 LF in the PM peak hour with a storage length of 180 LF

Please provide traffic mitigation improvements including extending these three turn lanes (if feasible) to ensure that these traffic operational issues at the NE 22nd Avenue/West Dixie Highway signalized intersection will be resolved.

RGA Response: The subject project is not adding any trips to the referenced movements at the intersection of NE 22nd Avenue/Dixie Highway and NE 163rd Street. The traffic operational concern by the reviewer is not caused by the project traffic and therefore, no traffic mitigation improvements should be required for this project. Please note any excessive queue is the result of the background traffic and committed traffic added to the referenced movements. The background traffic and committed traffic at the movements are as follows:

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Lastly, the subject intersection is comprised of two (2) state roads and typically FDOT does not make any improvements based on trip generation estimates and short term traffic studies, as these trips may not materialize.

6. Please provide a separate pavement marking and signage plan signed and sealed by a professional engineer. Please ensure that the appropriate signage per MUTCD is provided for movement restrictions at the proposed ingress and egress locations. Please include typical handicap and regular parking stall details per City of North Miami Beach criteria. The Civil plans provided only included the water, sewer and drainage plan along with AutoTURN maneuverability exhibits.

RGA Response: The design team for this project will address this comment and will provide the any additional plan as necessary.

7. Please provide pedestrian crossing signs per MUTCD criteria at the uncontrolled pedestrian crosswalks depicted on the pavement marking and signage plans.

RGA Response: The design team for this project will address this comment and will provide the revised plans as necessary.

8. Please provide sight visibility triangles on the site plan at each driveway connections to US-1/Biscayne Boulevard and NE 163rd Street. The sight triangles should also be depicted on the landscape plans and the pavement marking and signage plans. The sight triangles along Biscayne Boulevard/US-1 should meet FDOT criteria outlined in the FDOT Design Manual (Section 212.11).

RGA Response: The design team for this project will address this comment and will provide the revised plans.

9. Please ensure that the handicap parking spaces are oriented appropriately on all plan sheets and sufficient cross hatch striping provided per the Miami Dade County and North Miami Beach handicap accessible parking space details and criteria. Please label the dimensions for all parking spaces on the pavement marking and signage plan sheet. The standard parking space dimensions should be a minimum of 9' wide x 18' long per Section 24-93 of the Code of Ordinances. The handicap parking space dimensions should be a minimum of 12' wide x 20' long per Section 24-93 of the Code of Ordinances. The handicap symbol should be mirrored on certain sheets. Please check all garage floor sheets as well.

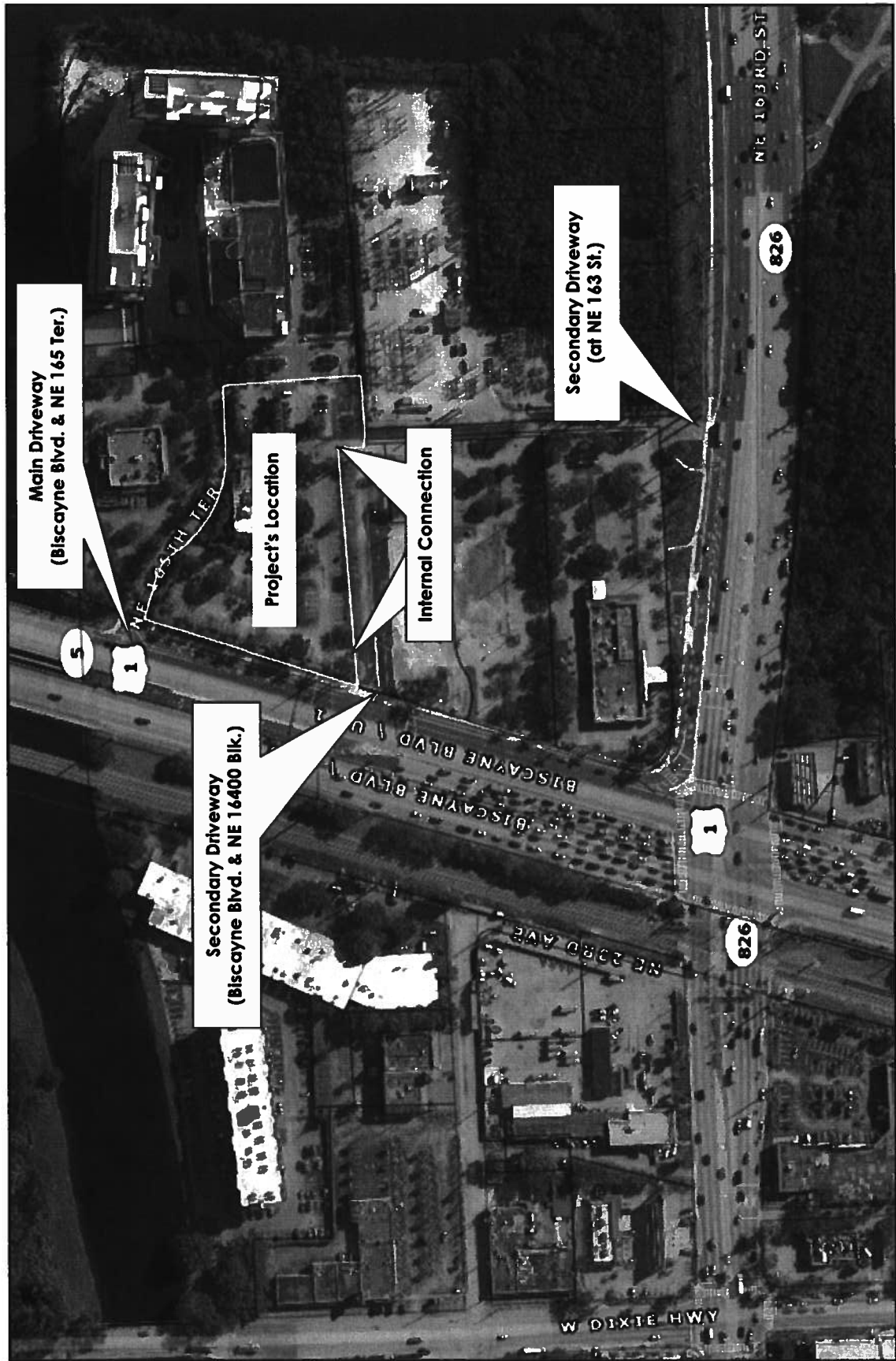
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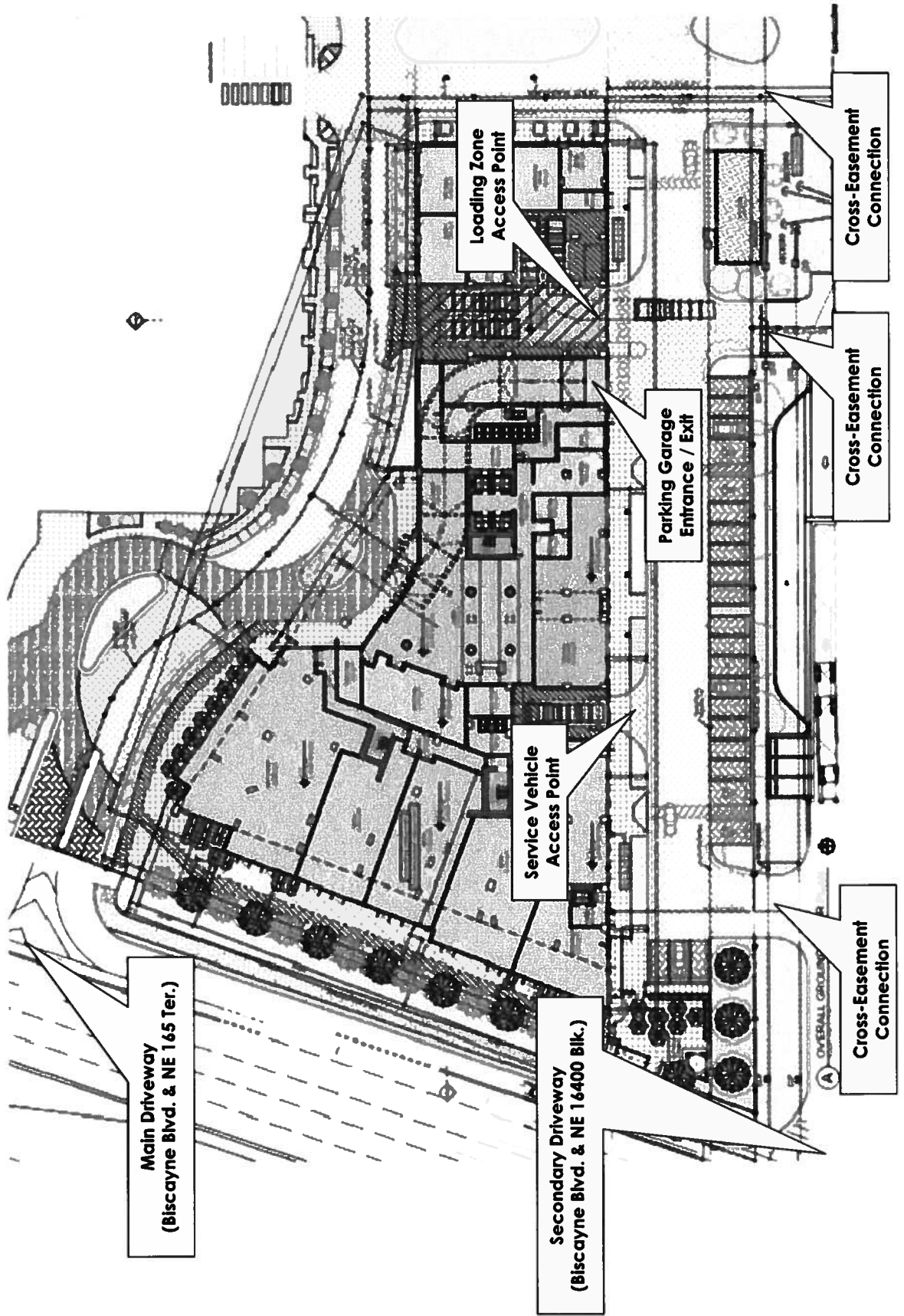
RGA Response: The design team for this project will address this comment and will provide the necessary documentation.

ATTACHMENT

Location Map



Site Plan





February 25, 2022

City of North Miami Building
Department 17050 NE 19th Ave
North Miami Beach, FL 33162

Re: SOLESTE ON THE BAY Site Plan Modification
Architects Design Intent - 16375 Biscayne Boulevard

To whom it may concern;

As the Architect of record for the above referenced project, I am pleased to proffer the following design intent statement in support of the project.

This project sits on a very dynamic but challenging site. The property, which is part of the Mixed-Use Waterfront District (MU/SWF), makes up the South portion of the originally approved Riverwalk at North Miami Beach site. The site is adjacent to the 100' wide FPL Easement that impacts it's Southern boundary, narrowing the buildable area on the site into a wedgelike shape. This factor, combined with the broad frontage of Biscayne Blvd, are two key elements that influenced the overall building design.

We felt strongly that this building had to serve two major functions, those being; a. Take advantage of the stunning surround views, and b. Present a strong frontal façade to the urban traffic of Biscayne Boulevard. When designing a high-rise tower in the South Florida environment, we felt that the project site and it's prevailing environmental orientation had to be a major driving forces. The fact that the site is just yards away from the Maule Lake, the Oleta River State Park to the South, and could take advantage of views to the beaches further East all had a strong influence on the overall massing and geometry of the Project. Given the program for this site, and the Owners desire to keep the building within the buildable height, we felt that the development of a T-Shaped footprint over the parking podium would result in a dynamic massing and provide for multiple view opportunities around the site. The building steps back at level 18 to further breakdown and articulate the overall massing. The existing FPL easement on the South boundary lead us to carve away at this façade in order to break down the massing and to make up for the lack of the required podium setback. This results in an interesting symmetrical composition facing South which terminates at the main roof element above.

In addressing the main Biscayne Blvd façade, we proposed a prominent public arcade which creates a continuous covered promenade for the retail component of the project. Restaurant and café seating will take advantage of this covered public space and greatly enhance the main façade.

A prominent drop-off feature off the main site entrance directs visitors to the main lobby while all residential and loading vehicle access is oriented deep into the site through the South garage façade. We have also proposed a secondary visitors entrance to the leasing office from the South that will give future tenants additional access into and through the main lobby.

Pedestrian connectivity is maintained and enhanced with this proposal giving residences 360deg access around and through the site.

This is a complex site with complicating features but we believe the design manages to take full advantage of its dramatic position within the City of North Miami Beach and enhances the City and its urban amenities.

We look forward to bringing this project to the City and we hope that it will be a strong contributor to it's continued growth and success.

Please feel free to contact me with any questions you may have or if I can be of assistance in any way.

Sincerely,

A handwritten signature in black ink, consisting of a large, stylized 'O' followed by a series of loops and a long horizontal stroke extending to the right.

Omar A. Morales,
AIA Principal
Architect



SOLESTE ON THE BAY

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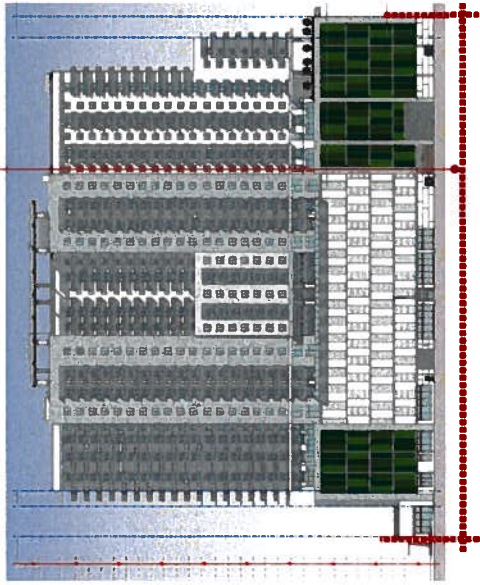
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2

VARIANCE OF OVERALL BUILDING LENGTH

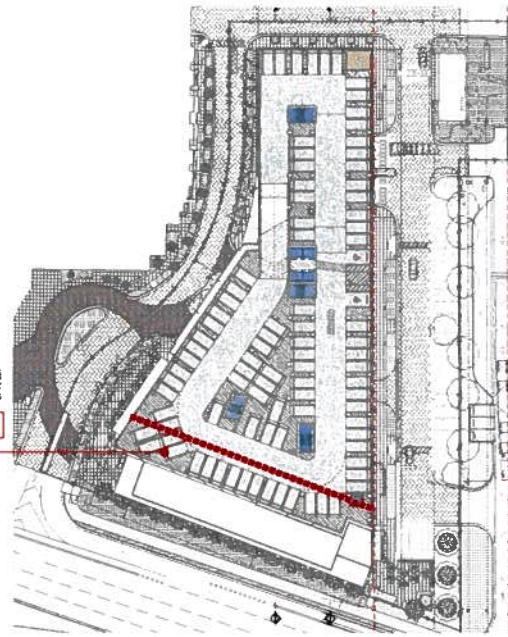


2 L.O.I EXHIBIT 2

REQUEST: PROPOSED OVERALL BUILDING LENGTH VARIANCE OF 385' 6" WHERE 300' FT. IS PERMITTED

4

VARIANCE OF ACTIVE USE LINES ALONG PRIMARY STREET (BECOMING BUILDING-1) ON ALL PARKING LEVELS

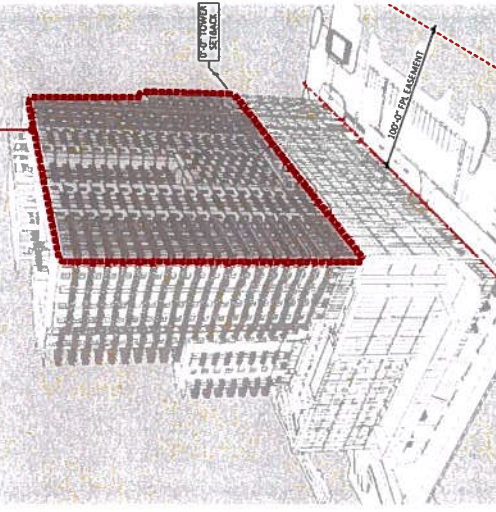


4 L.O.I EXHIBIT 4

REQUEST: PARKING USE VARIANCE IN USE OF ACTIVE USE LINES ON ALL PARKING LEVELS

1

REDUCTION OF FRONT PORCH SETBACK FROM PODIUM ABOVE LEVEL 8TH

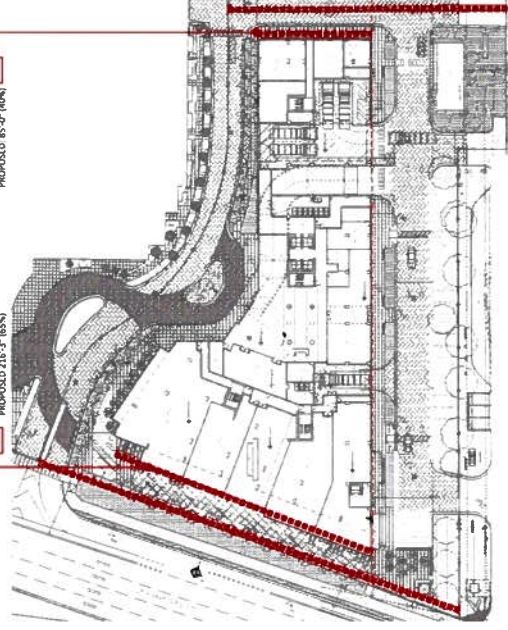


1 L.O.I EXHIBIT 1

REQUEST: REDUCTION OF LOWER SETBACK FROM EXISTING 17' 6" SETBACK TO 17' 0" SETBACK

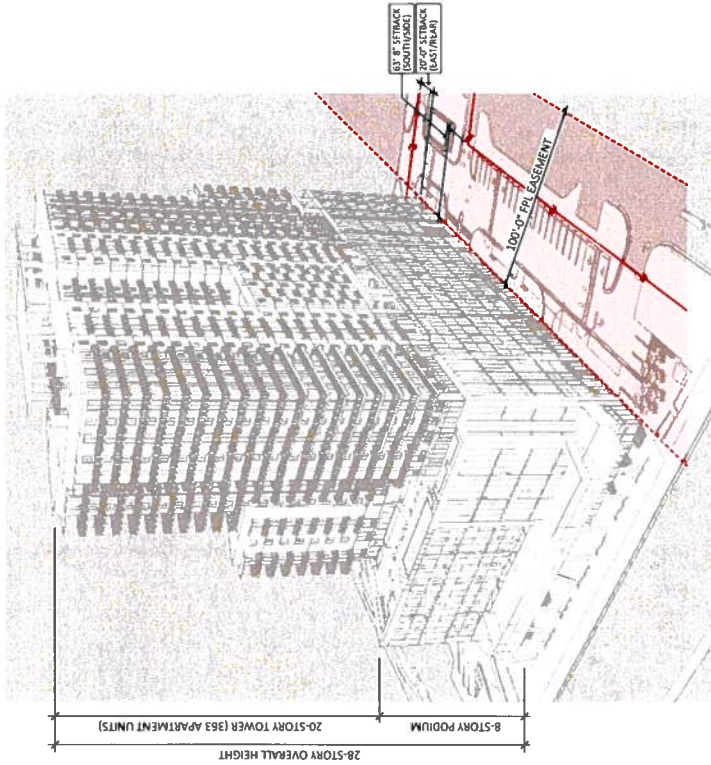
3

REDUCTION OF FRONT PORCH SETBACK FROM PODIUM ABOVE LEVEL 8TH



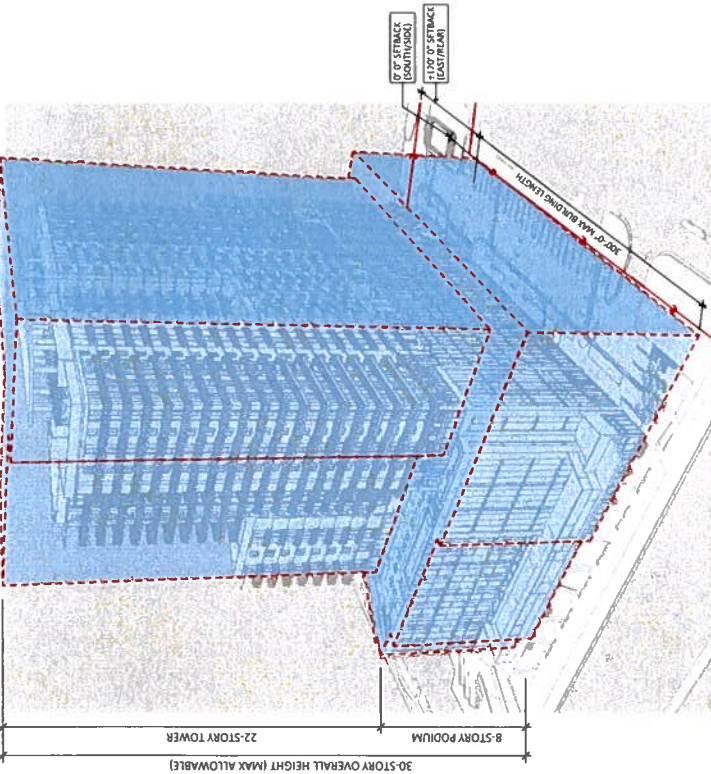
3 L.O.I EXHIBIT 3

REQUEST: REDUCTION OF REQUIRED BUILDING FRONTAGES DUE TO IRREGULAR LOT



1 PROPOSED BUILDING MASS STUDY (WITH VARIANCES)

FLOOR PLATE SUMMARY (GROSS)	
TOTAL	746,375 S.F.



2 ALTERNATE BUILDING MASS STUDY (WITHOUT FPL EASEMENT RESTRICTION & MAINTAINING 300'-0" OVERALL LENGTH)

FLOOR PLATE SUMMARY (GROSS)	
TOTAL	897,134 S.F.