





MEMORANDUM

To: Justin Proffit, AICP
City of North Miami Beach

From: Adrian K. Dabkowski, P.E., PTOE 
Maddy Hollowed 

Date: May 31, 2019

**Subject: Intracoastal Mall Redevelopment
Traffic Study Methodology**

The purpose of this memorandum is to summarize the traffic study methodology for the proposed redevelopment located at 3789 NE 163rd Street in North Miami Beach, Florida. Currently, the site proposed for redevelopment is occupied by 234,026 square feet of retail space. The proposed redevelopment consists of 345,000 square feet of retail space, 2,000 multifamily residential units, 200,000 square feet of office space, and 35,000 square feet of gym space. A conceptual site plan and a site location map are included in Attachment A. The following sections summarize our proposed traffic study methodology.

TRIP GENERATION

Trip generation calculations for the existing and proposed redevelopment were performed using Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. Trip generation calculations for the proposed redevelopment were performed using ITE Land Use Codes (LUC) 820 (Shopping Center), 222 (Multifamily Housing [High-Rise]), 221 (Multifamily Housing [Mid-Rise]), 220 (Multifamily Housing [Low-Rise]), 710 (General Office Building), and 492 (Health/Fitness Club).

A multimodal (public transit, bicycle, and pedestrian) reduction of 10.0 percent (10.0%) was applied to the A.M. and P.M. peak hour trip generation calculations to account for the urban character of the area. Please note that Miami-Dade Transit (MDT) provides Metrobus transit Route 105 and Route 108 within the vicinity of the redevelopment. Additionally, the City of North Miami Beach provides the North Miami Beach Line trolley route A which operates within the vicinity of the redevelopment. Furthermore, a water taxi is proposed to operate along the Intracoastal between the proposed redevelopment and Sunny Isles Beach.

Internal capture is expected between the complementary land uses within the project. Internal capture trips for the project were determined based upon methodology contained in the ITE's, *Trip Generation Handbook*, 3rd Edition. Internal capture rates of 5.1 percent (5.1%) for the A.M. peak hour trip generation and 28.8 percent (28.8%) for the P.M. peak hour trip generation are expected for the proposed redevelopment.

Pass-by capture trip rates were determined based on average rates provided in the ITE's *Trip Generation Handbook*, 3rd Edition. The pass-by rate for the shopping center land use is 34 percent (34%) during the P.M. peak hour.

The proposed redevelopment results in 756 net new vehicle trips during the A.M. peak hour and 623 net new vehicle trips during the P.M. peak hour. Detailed trip generation calculations are included in Attachment B.

DATA COLLECTION

The peak periods selected for this study include typical weekday (Tuesday, Wednesday, or Thursday) 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M. peak periods. Turning movement counts will be collected in 15-minute intervals during the peak periods. Turning movement counts will also include pedestrian, bicycle, and truck data. All traffic counts will be adjusted to peak season conditions using the appropriate Florida Department of Transportation (FDOT) peak season category factors. Traffic signal timing information will be obtained from Miami-Dade County Department of Transportation and Public Works – Signals and Signs Division. All traffic data collected will be provided in the Appendix of the traffic impact study.

STUDY AREA

The following intersections will be examined as part of the study area:

- NE 163rd Street/SR 826 and Biscayne Boulevard/US 1
- NE 163rd Street/SR 826 and NE 26th Avenue
- NE 163rd Street/SR 826 and NE 28th Avenue
- NE 163rd Street/SR 826 and NE 2900 Block
- NE 163rd Street/SR 826 and NE 34th Avenue
- NE 163rd Street/SR 826 and NE 35th Avenue
- NE 163rd Street/SR 826 and Intracoastal Mall Driveway
- NE 164th Street and NE 35th Avenue

TRIP DISTRIBUTION

The likely distribution of project traffic was forecast for the trips expected to be generated by the proposed development. The trip distribution was based on an interpolated cardinal trip distribution for the project site's traffic analysis zone (TAZ) for the years 2010 and 2040 for the project's opening year of 2031 obtained from the Miami-Dade Metropolitan Planning Organization's (MPO) *2040 Long Range Transportation Plan Directional Trip Distribution Report*. The project is located within TAZ 91. The cardinal distribution is included in Attachment C.

BACKGROUND GROWTH RATE

A background growth rate will be calculated based on historic growth trends at nearby FDOT traffic count stations. Additionally, growth rates based on the Florida Standard Urban Transportation Model Structure (FSUTMS) Southeast Regional Planning Model (SERPM) projected 2010 and 2040 model network volumes will be examined. The higher of the two (2) growth rates will be used in the analysis.

CAPACITY ANALYSIS

Capacity analyses will be conducted for the A.M. and P.M. peak hours at the study intersections. Intersection analyses will be performed using Trafficware's *Synchro* traffic engineering analysis software, which applies methodologies outlined in the Transportation Research Board's (TRB's) *Highway Capacity Manual* (HCM), 2000/2010/6th Editions.

Capacity analyses will be conducted for five (5) scenarios: existing, build-out year without project, build-out year with project, build-out year with project and Alternative 1 geometry, and build-out year with project and Alternative 2 geometry. Schematic sketches of the proposed roadway alternative improvements are contained in Attachment A. The anticipated build-out year is 2031. If intersection or roadway segment deficiencies are identified, strategies and improvements will be developed as mitigation measures.

The following graphics will be included for the study intersections:

- Existing conditions
- Trip distribution
- Trip assignment
- Future background traffic conditions (with growth rate)
- Future total traffic conditions (with project and without roadway improvements)
- Future total traffic conditions (with project and with Alternative 1 roadway improvements)
- Future total traffic conditions (with project and with Alternative 2 roadway improvements)

TRAFFIC SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis at the proposed project intersection with SR 826/NE 163rd Street as part of Alternative 2 will be prepared. The analyses will be prepared for future total conditions with the proposed development in place. The signal warrant analyses will apply the project's traffic generation volumes and hourly distribution developed from ITE's *Trip Generation Manual*, 10th Edition, ITE's *Trip Generation Handbook*, 3rd Edition, cardinal distribution, and the trip distribution/assignment to the existing traffic volumes. Those volumes will be compared to the volume traffic signal warrants contained in the of the Federal Highway Administration's (FHWA), *Manual on Uniform Traffic Control Devices* (MUTCD), 2009.

GARAGE ENTRY GATE OPERATIONS ANALYSIS

If entry gates are proposed, an entry gate analysis will be prepared for parking garage entry points. The entry gate queuing analysis will be prepared for the weekday A.M. and P.M. peak hours. Entry gate queuing analysis will be conducted consistent with the procedures outlined in *Parking Structures – Planning, Design, Construction, Maintenance, and Repair*, 2000 and 2011. The purpose of this analysis is to determine any future queue storage deficiencies at the entry gates and provide preliminary recommendations for mitigating these deficiencies.

DOCUMENTATION

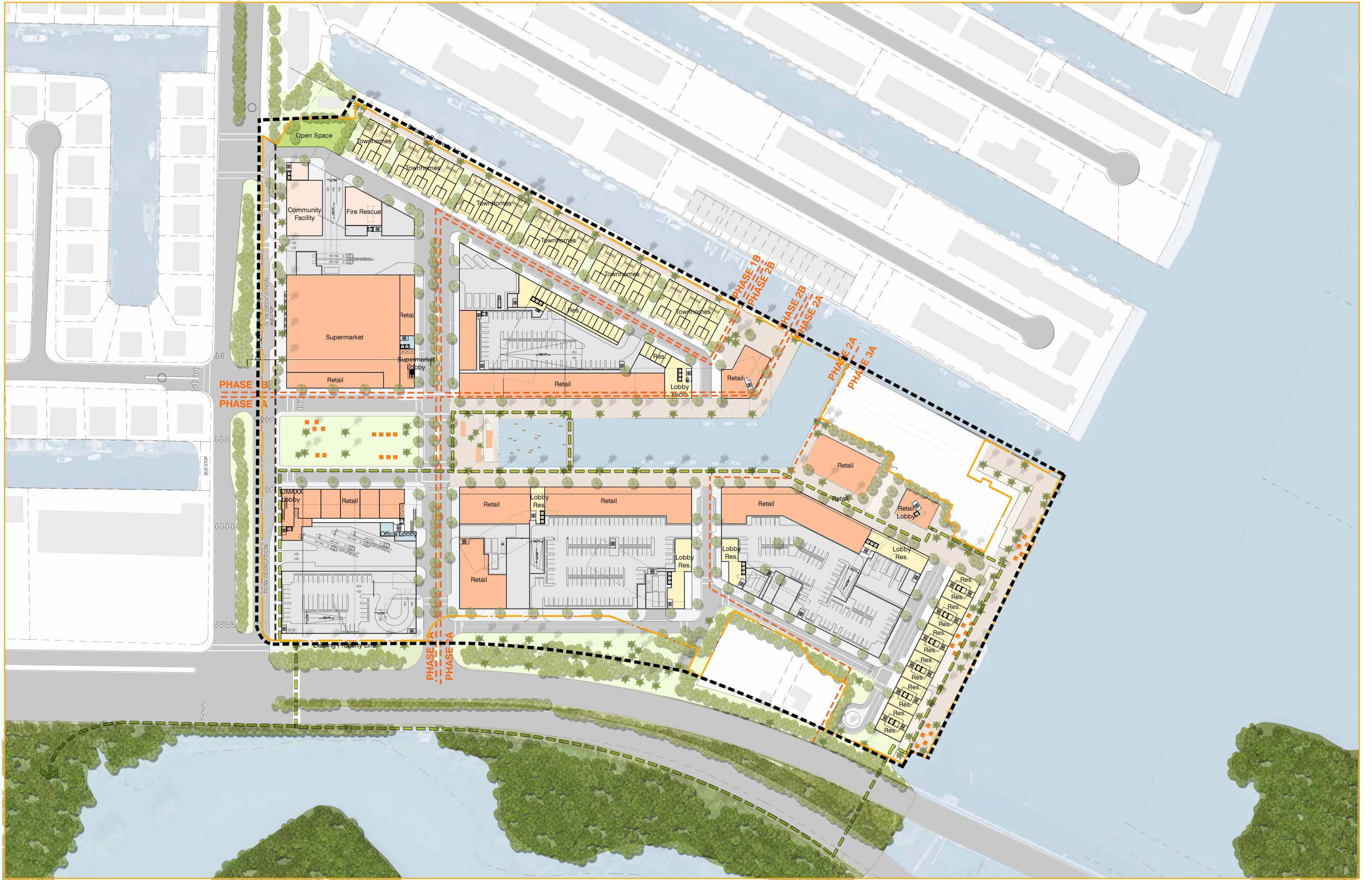
The results of the traffic analysis and signal warrant analysis will be summarized in a report. The report will include supporting documents including signal timings, lane geometry, and software output sheets. The report will also include text and graphics necessary to summarize the assumptions and analysis.

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Attachment A

Conceptual Site Plan and Location Map





SR 826/NE 163rd Street FDOT Access Class 2
660-foot Driveway Spacing
1,320-foot Directional Spacing
2,640-foot Full Access/Signal Spacing

Roadway Alignment Modified to Accommodate
Additional Eastbound Left-Turn Lane



NOT TO SCALE

Proposed
Northbound Left-
Turn Lane Closure

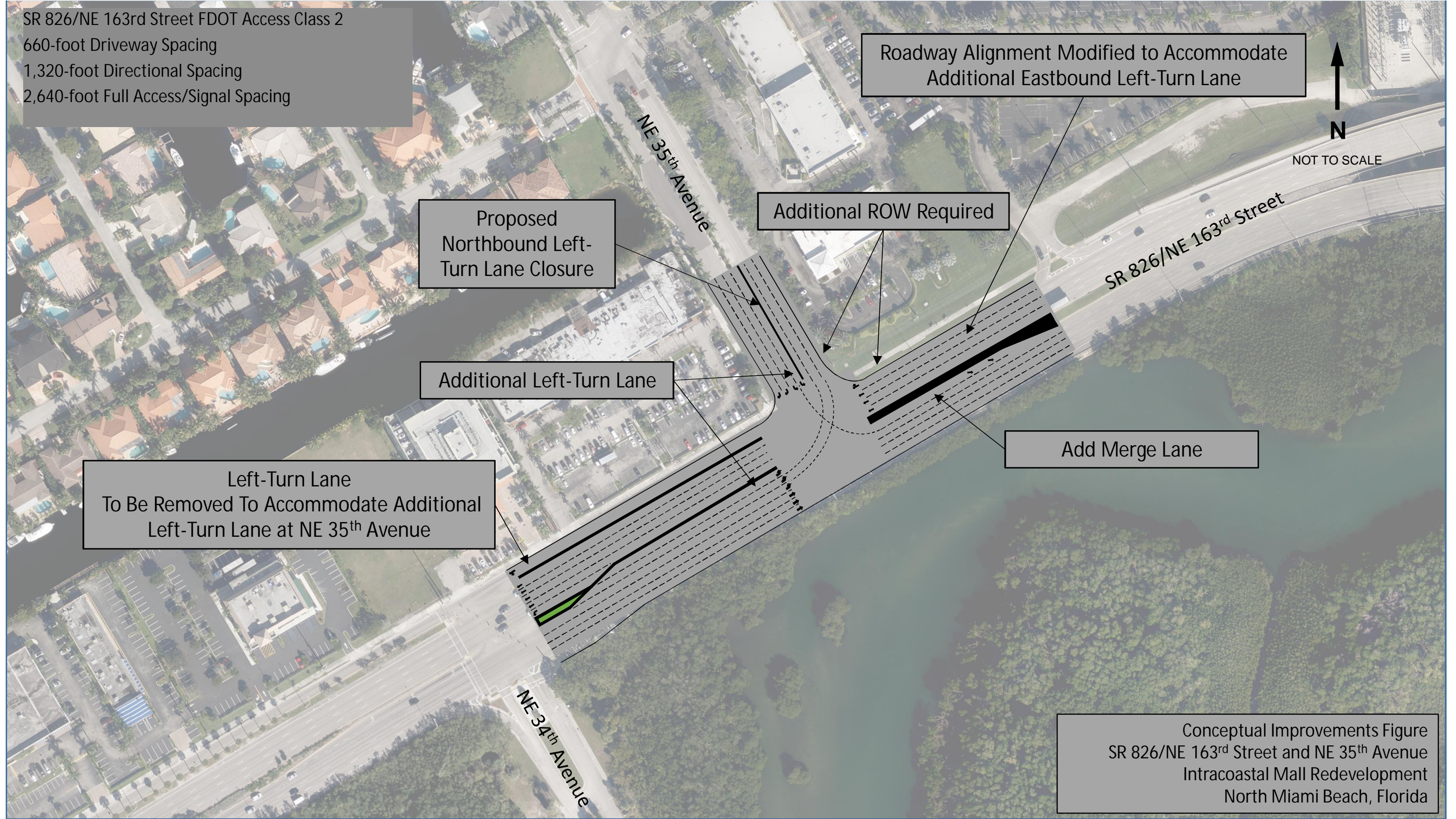
Additional ROW Required

Additional Left-Turn Lane

Add Merge Lane

Left-Turn Lane
To Be Removed To Accommodate Additional
Left-Turn Lane at NE 35th Avenue

Conceptual Improvements Figure
SR 826/NE 163rd Street and NE 35th Avenue
Intracoastal Mall Redevelopment
North Miami Beach, Florida



SR 826/NE 163rd Street FDOT Access Class 2
660-foot Driveway Spacing
1,320-foot Directional Spacing
2,640-foot Full Access/Signal Spacing

Roadway Alignment Modified to Accommodate
Additional Eastbound Left-Turn Lane



NOT TO SCALE

SR 826/NE 163rd Street

Proposed
Northbound Left-
Turn Lane Closure

Additional ROW Required

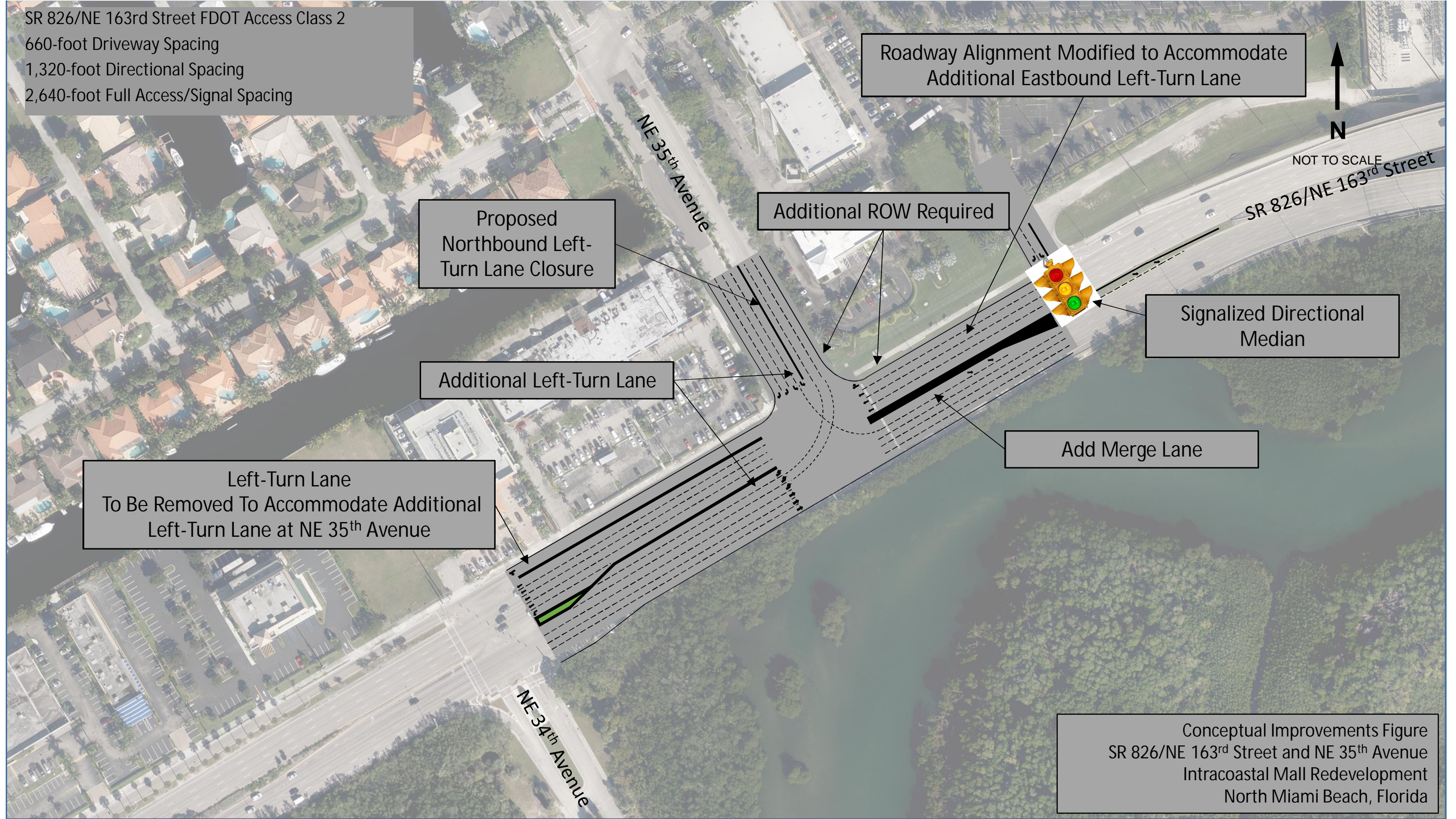
Signalized Directional
Median

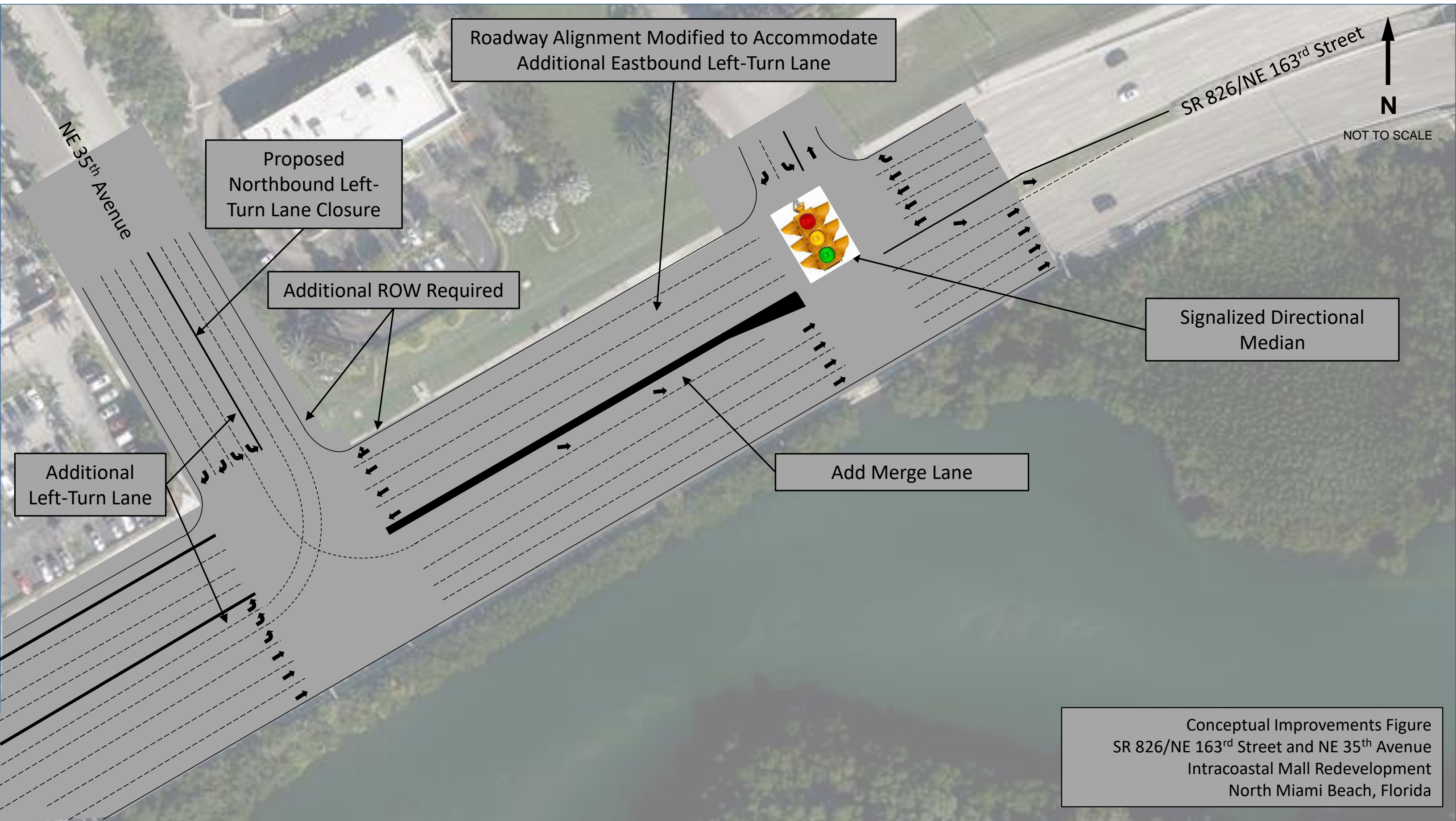
Additional Left-Turn Lane

Add Merge Lane

Left-Turn Lane
To Be Removed To Accommodate Additional
Left-Turn Lane at NE 35th Avenue

Conceptual Improvements Figure
SR 826/NE 163rd Street and NE 35th Avenue
Intracoastal Mall Redevelopment
North Miami Beach, Florida





Conceptual Improvements Figure
SR 826/NE 163rd Street and NE 35th Avenue
Intracoastal Mall Redevelopment
North Miami Beach, Florida

Attachment B
Trip Generation Calculations

AM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS				
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total		
						In	Out																				
GROUP 1	1 Shopping Center	10	820	234,026	ksf	62%	38%	167	102	269	10.0%	27	150	92	242	0.0%	0	150	92	242	0.0%	0	150	92	242		
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	3																										
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	10																										
	11																										
	12																										
	13																										
	14																										
	15																										
ITE Land Use Code		Rate or Equation		Total:		167	102	269	10.2%	27	150	92	242	0.0%	0	150	92	242	0.0%	0	150	92	242				
820		Y=0.5*(X)+151.78																									

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS					
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total			
						In	Out																					
GROUP 2	1 Shopping Center	10	820	345	ksf	62%	38%	201	123	324	10.0%	32	181	111	292	7.5%	22	169	101	270	0.0%	0	169	101	270			
	2 Multifamily Housing (High-Rise)	10	222	1917	du	24%	76%	132	418	550	10.0%	55	119	376	495	2.3%	12	116	367	483	0.0%	0	116	367	483			
	3 Multifamily Housing (Mid-Rise)	10	221	48	du	26%	74%	4	13	17	10.0%	2	3	12	15	2.3%	0	3	12	15	0.0%	0	3	12	15			
	4 Multifamily Housing (Low-Rise)	10	220	35	du	23%	77%	4	14	18	10.0%	2	3	13	16	2.3%	0	3	13	16	0.0%	0	3	13	16			
	5 General Office Building	10	710	200	ksf	86%	14%	184	30	214	10.0%	21	166	27	193	10.4%	20	154	19	173	0.0%	0	154	19	173			
	6 Health/Fitness Club	10	492	35	ksf	51%	49%	23	23	46	10.0%	5	21	20	41	0.0%	0	21	20	41	0.0%	0	21	20	41			
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											
	13																											
	14																											
	15																											
ITE Land Use Code		Rate or Equation		Total:		548	621	1,169	10.0%	117	493	559	1,052	5.1%	54	466	532	998	0.0%	0	466	532	998					

820 Y=0.5*(X)+151.78
 222 Y=0.28*(X)+12.86
 221 LN(Y) = 0.98*LN(X)+0.98
 220 LN(Y) = 0.95*LN(X)+0.51
 710 Y=0.94*(X)+26.49
 492 Y=1.31(X)

NET NEW TRIPS	IN	OUT	TOTAL
316	440	756	

PM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS				
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total		
						In	Out																				
GROUP 1	1 Shopping Center	10	820	234,026	ksf	48%	52%	489	530	1,019	10.0%	102	440	477	917	0.0%	0	440	477	917	34.0%	312	290	315	605		
	2																										
	3																										
	4																										
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	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										
	13																										
	14																										
	15																										
ITE Land Use Code		Rate or Equation		Total:		489	530	1,019	10.0%	102	440	477	917	0.0%	0	440	477	917	34.0%	312	290	315	605				
820		LN(Y) = 0.74*LN(X)+2.89																									

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS					
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total			
						In	Out																					
GROUP 2	1 Shopping Center	10	820	345	ksf	48%	52%	652	707	1,359	10.0%	136	587	636	1,223	24.0%	294	485	444	929	34.0%	316	320	293	613			
	2 Multifamily Housing (High-Rise)	10	222	1917	du	61%	39%	403	257	660	10.0%	66	363	231	594	38.0%	227	201	166	367	0.0%	0	201	166	367			
	3 Multifamily Housing (Mid-Rise)	10	221	48	du	61%	39%	13	9	22	10.0%	2	12	8	20	38.0%	7	7	6	13	0.0%	0	7	6	13			
	4 Multifamily Housing (Low-Rise)	10	220	35	du	63%	37%	14	9	23	10.0%	2	13	8	21	38.0%	7	8	6	14	0.0%	0	8	6	14			
	5 General Office Building	10	710	200	ksf	16%	84%	35	185	220	10.0%	22	31	167	198	28.8%	57	10	131	141	0.0%	0	10	131	141			
	6 Health/Fitness Club	10	492	35	ksf	57%	43%	71	53	124	10.0%	12	64	48	112	28.6%	32	47	33	80	0.0%	0	47	33	80			
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											
	13																											
	14																											
	15																											
ITE Land Use Code		Rate or Equation		Total:		1,188	1,220	2,408	10.0%	240	1,070	1,098	2,168	28.8%	624	758	786	1,544	20.5%	316	593	635	1,228					
820		LN(Y) = 0.74*LN(X)+2.89																										
222		Y=0.34*(X)+8.56																										
221		LN(Y) = 0.96*LN(X)+0.63																										
220		LN(Y) = 0.89*LN(X)+0.02																										
710		LN(Y) = 0.95*LN(X)+0.36																										
492		LN(Y) = 0.67*LN(X)+2.44																										

NET NEW TRIPS	IN	OUT	TOTAL
303	320	623	623

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook*, 3rd Edition, published by the Institute of
Transportation Engineers

SUMMARY (EXISTING)

GROSS TRIP GENERATION					
INPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	0	0	0	0
	Retail	150	92	440	477
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		150	92	440	477
INTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	0	0	0	0
	Retail	0	0	0	0
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		0	0	0	0
OUTPUT	<i>Total % Reduction</i>	0.0%		0.0%	
	Office				
	Retail	0.0%		0.0%	
	Restaurant				
	Cinema/Entertainment				
	Residential				
	Hotel				
EXTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	0	0	0	0
	Retail	150	92	440	477
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		150	92	440	477

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook*, 3rd Edition, published by the Institute of
Transportation Engineers

SUMMARY (PROPOSED)

GROSS TRIP GENERATION					
INPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	166	27	31	167
Retail	181	111	587	636	
Restaurant	0	0	0	0	
Cinema/Entertainment	21	20	64	48	
Residential	125	401	388	247	
Hotel	0	0	0	0	
		493	559	1,070	1,098
INTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	12	8	21	36
Retail	12	10	102	192	
Restaurant	0	0	0	0	
Cinema/Entertainment	0	0	17	15	
Residential	3	9	172	69	
Hotel	0	0	0	0	
		27	27	312	312
OUTPUT	<i>Total % Reduction</i>	5.1%		28.8%	
	Office	10.4%		28.8%	
	Retail	7.5%		24.0%	
	Restaurant				
	Cinema/Entertainment	0.0%		28.6%	
	Residential	2.3%		38.0%	
	Hotel				
EXTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	154	19	10	131
Retail	169	101	485	444	
Restaurant	0	0	0	0	
Cinema/Entertainment	21	20	47	33	
Residential	122	392	216	178	
Hotel	0	0	0	0	
		466	532	758	786

Attachment C

Trip Distribution



MOBILITY OPTIONS
2040 Miami-Dade
Transportation Plan
EYES ON THE FUTURE

MIAMI-DADE 2040

Long Range Transportation Plan

Directional Trip Distribution Report

October 23, 2014



MIAMI-DADE METROPOLITAN
PLANNING ORGANIZATION



Photo by Asad Gilani

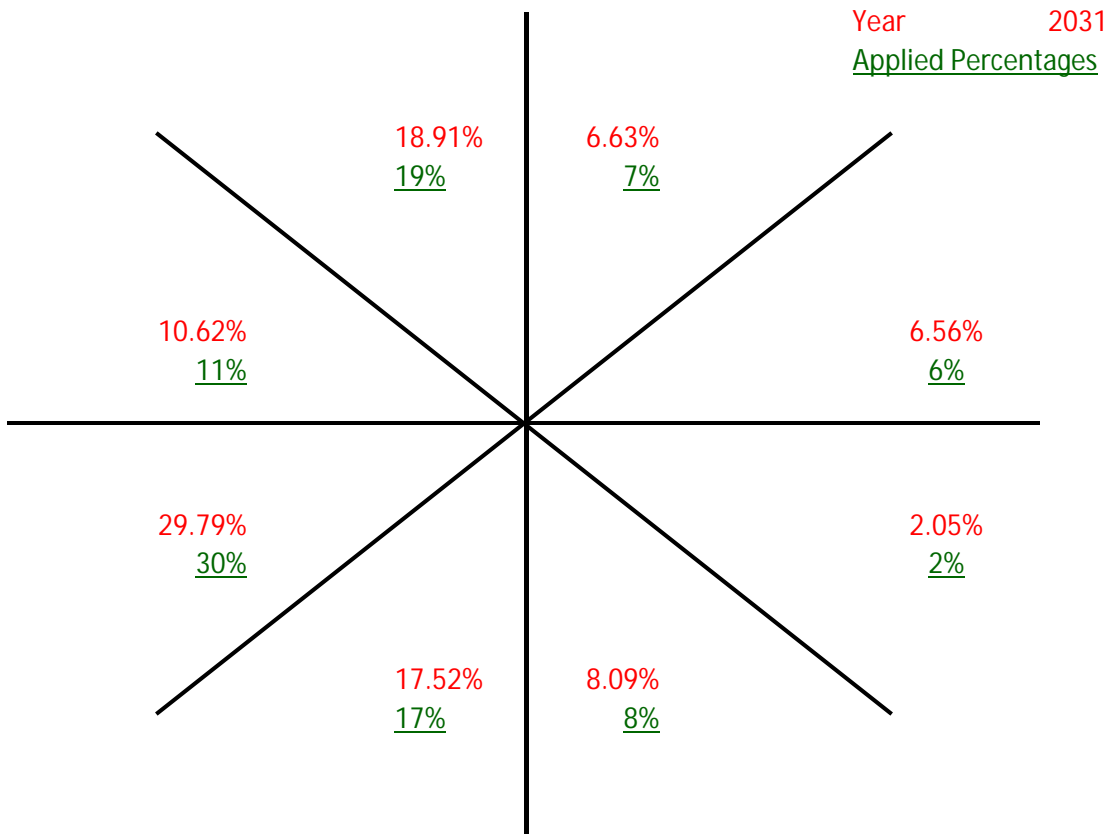
Miami-Dade 2010 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
83	2983	TRIPS	351	40	1	115	242	220	179	98	1,246
83	2983	PERCENT	28.2	3.2	0.1	9.2	19.4	17.7	14.4	7.9	
84	2984	TRIPS	559	465	153	365	865	746	334	514	4,001
84	2984	PERCENT	14.0	11.6	3.8	9.1	21.6	18.7	8.4	12.9	
85	2985	TRIPS	188	95	250	96	304	63	164	218	1,378
85	2985	PERCENT	13.6	6.9	18.1	7.0	22.1	4.6	11.9	15.8	
86	2986	TRIPS	729	318	175	394	899	1,068	479	705	4,767
86	2986	PERCENT	15.3	6.7	3.7	8.3	18.9	22.4	10.1	14.8	
87	2987	TRIPS	617	93	194	162	635	433	374	357	2,865
87	2987	PERCENT	21.5	3.3	6.8	5.7	22.2	15.1	13.1	12.5	
88	2988	TRIPS	404	39	25	180	295	156	148	172	1,419
88	2988	PERCENT	28.5	2.8	1.8	12.7	20.8	11.0	10.4	12.1	
89	2989	TRIPS	439	194	25	110	400	312	209	409	2,098
89	2989	PERCENT	20.9	9.3	1.2	5.2	19.1	14.9	10.0	19.5	
90	2990	TRIPS	3,896	381	391	963	4,381	3,762	2,705	3,769	20,248
90	2990	PERCENT	19.2	1.9	1.9	4.8	21.6	18.6	13.4	18.6	
91	2991	TRIPS	384	345	57	518	1,028	1,569	711	1,160	5,772
91	2991	PERCENT	6.7	6.0	1.0	9.0	17.8	27.2	12.3	20.1	
92	2992	TRIPS	285	363	90	433	876	827	388	701	3,963
92	2992	PERCENT	7.2	9.2	2.3	10.9	22.1	20.9	9.8	17.7	
93	2993	TRIPS	333	106	3	113	321	270	255	180	1,581
93	2993	PERCENT	21.1	6.7	0.2	7.2	20.3	17.1	16.1	11.4	
94	2994	TRIPS	723	134	78	236	580	389	471	351	2,962
94	2994	PERCENT	24.4	4.5	2.6	8.0	19.6	13.1	15.9	11.9	
95	2995	TRIPS	1,114	208	132	432	836	871	670	535	4,798
95	2995	PERCENT	23.2	4.3	2.8	9.0	17.4	18.2	14.0	11.2	
96	2996	TRIPS	419	66	25	139	406	295	257	194	1,801
96	2996	PERCENT	23.3	3.7	1.4	7.7	22.5	16.4	14.3	10.8	
97	2997	TRIPS	443	23	42	136	434	389	389	247	2,103
97	2997	PERCENT	21.1	1.1	2.0	6.5	20.6	18.5	18.5	11.8	
98	2998	TRIPS	366	342	59	254	480	250	436	317	2,504
98	2998	PERCENT	14.6	13.7	2.4	10.1	19.2	10.0	17.4	12.7	
99	2999	TRIPS	1,032	663	214	768	1,149	754	738	800	6,118
99	2999	PERCENT	16.9	10.8	3.5	12.6	18.8	12.3	12.1	13.1	
100	3000	TRIPS	711	1,020	394	880	939	1,040	645	451	6,080
100	3000	PERCENT	11.7	16.8	6.5	14.5	15.4	17.1	10.6	7.4	
101	3001	TRIPS	2,051	720	290	949	1,366	1,177	1,651	2,084	10,288
101	3001	PERCENT	19.9	7.0	2.8	9.2	13.3	11.4	16.1	20.3	
102	3002	TRIPS	1,290	1,226	338	1,238	1,466	1,285	919	960	8,722
102	3002	PERCENT	14.8	14.1	3.9	14.2	16.8	14.7	10.5	11.0	
103	3003	TRIPS	623	571	316	426	794	561	461	357	4,109

Miami-Dade 2040 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
83	2983	TRIPS	383	99	16	129	328	292	186	207	1,640
83	2983	PERCENT	23.4	6.0	1.0	7.9	20.0	17.8	11.3	12.6	
84	2984	TRIPS	1,429	1,141	312	896	1,983	1,378	942	1,148	9,229
84	2984	PERCENT	15.5	12.4	3.4	9.7	21.5	14.9	10.2	12.4	
85	2985	TRIPS	279	96	257	122	354	292	200	242	1,842
85	2985	PERCENT	15.2	5.2	14.0	6.6	19.2	15.9	10.9	13.1	
86	2986	TRIPS	1,315	352	210	564	1,270	1,178	538	638	6,065
86	2986	PERCENT	21.7	5.8	3.5	9.3	20.9	19.4	8.9	10.5	
87	2987	TRIPS	766	140	263	149	825	540	447	578	3,708
87	2987	PERCENT	20.7	3.8	7.1	4.0	22.3	14.6	12.1	15.6	
88	2988	TRIPS	555	85	25	152	413	322	203	320	2,075
88	2988	PERCENT	26.8	4.1	1.2	7.3	19.9	15.5	9.8	15.4	
89	2989	TRIPS	452	249	60	114	569	399	244	289	2,376
89	2989	PERCENT	19.0	10.5	2.5	4.8	24.0	16.8	10.3	12.2	
90	2990	TRIPS	5,044	561	691	1,099	5,956	4,093	2,851	4,467	24,762
90	2990	PERCENT	20.4	2.3	2.8	4.4	24.1	16.5	11.5	18.0	
91	2991	TRIPS	461	473	175	538	1,216	2,167	690	1,288	7,008
91	2991	PERCENT	6.6	6.8	2.5	7.7	17.4	30.9	9.9	18.4	
92	2992	TRIPS	393	608	103	397	846	1,178	475	826	4,826
92	2992	PERCENT	8.1	12.6	2.1	8.2	17.5	24.4	9.8	17.1	
93	2993	TRIPS	318	151	40	121	303	398	328	147	1,806
93	2993	PERCENT	17.6	8.4	2.2	6.7	16.8	22.0	18.2	8.1	
94	2994	TRIPS	1,962	549	137	460	2,200	1,423	1,227	1,012	8,970
94	2994	PERCENT	21.9	6.1	1.5	5.1	24.5	15.9	13.7	11.3	
95	2995	TRIPS	1,343	274	186	677	1,205	935	822	658	6,100
95	2995	PERCENT	22.0	4.5	3.1	11.1	19.8	15.3	13.5	10.8	
96	2996	TRIPS	698	306	170	207	513	332	412	351	2,989
96	2996	PERCENT	23.4	10.2	5.7	6.9	17.2	11.1	13.8	11.7	
97	2997	TRIPS	697	158	77	348	739	500	507	332	3,358
97	2997	PERCENT	20.8	4.7	2.3	10.4	22.0	14.9	15.1	9.9	
98	2998	TRIPS	740	391	285	455	713	553	700	567	4,404
98	2998	PERCENT	16.8	8.9	6.5	10.3	16.2	12.6	15.9	12.9	
99	2999	TRIPS	2,877	1,784	1,094	1,735	2,812	2,129	2,402	1,891	16,724
99	2999	PERCENT	17.2	10.7	6.5	10.4	16.8	12.7	14.4	11.3	
100	3000	TRIPS	821	1,023	529	1,273	1,213	1,291	812	488	7,450
100	3000	PERCENT	11.0	13.7	7.1	17.1	16.3	17.3	10.9	6.6	
101	3001	TRIPS	931	487	262	438	656	643	657	899	4,973
101	3001	PERCENT	18.7	9.8	5.3	8.8	13.2	12.9	13.2	18.1	
102	3002	TRIPS	1,303	1,366	533	1,360	1,810	1,412	1,245	1,110	10,139
102	3002	PERCENT	12.9	13.5	5.3	13.4	17.9	13.9	12.3	11.0	
103	3003	TRIPS	746	605	454	475	914	728	452	433	4,807

Cardinal Distribution for TAZ 91



Cardinal Trip Distribution

Cardinal Direction	Percentage of Trips		2031 Interpolated	2031 Rounded
	2010	2040		
North-Northeast	6.7%	6.60%	6.63%	7.00%
East-Northeast	6.0%	6.80%	6.56%	6.00%
East-Southeast	1.0%	2.50%	2.05%	2.00%
South-Southeast	9.0%	7.70%	8.09%	8.00%
South-Southwest	17.8%	17.40%	17.52%	17.00%
West-Southwest	27.2%	30.90%	29.79%	30.00%
West-Northwest	12.3%	9.90%	10.62%	11.00%
North-Northwest	20.1%	18.40%	18.91%	19.00%
Total	100.1%	100.2%	100.17%	100.00%