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# Memorandum

**DATE:** April 12, 2010  
**TO:** Dr. Horacio Danovich, CRA Engineer  
**FROM:** Jeff Maxwell, P.E., PTOE  
Bryan Kelley, E.I.  
**SUBJECT:** Preliminary Traffic Feasibility Analysis  
**PROJECT:** Conversion of Dr. Martin Luther King Boulevard from I-95 to Dixie Highway from four lanes to two lanes  
**CC:**

## INTRODUCTION

Calvin, Giordano & Associates has been retained by the City of Pompano Beach Community Redevelopment Agency (CRA) to determine the feasibility of converting Dr. Martin Luther King Boulevard from I-95 to Dixie Highway from four lanes divided to two lanes with adjacent parallel parking facilities.

The preliminary feasibility analysis utilized available existing and future traffic data for Dr. Martin Luther King Boulevard and the surrounding roadway network. The existing (2008) and future (2030) traffic volumes were obtained from the Broward County Metropolitan Organization (MPO). The study area for the preliminary analysis is shown in **Exhibit 1** attached to this letter.

The performance measure for each of the roadway segments in the preliminary analysis was the volume to capacity (v/c) ratio. The capacity for each of the roadway segments were taken from the *Broward County Roadway Capacity and Level of Service Analysis Report, 2007*. A v/c ratio of less than 1.0 indicated that the roadway segment was operating at less than the roadway capacity and at an acceptable level of service. A v/c ratio of over 1.0 indicated that the roadway segment exceeded capacity and was not operating at an acceptable level of service. The roadway link analysis for years 2008 and 2030 are shown in **Table 1** attached to this letter.

The generalized planning level of service volumes are “ballpark” figures that utilize state wide averages and assumptions. Therefore, the roadway capacity thresholds do not account for individual traffic characteristics of a particular roadway. A more detailed thorough operational analysis must be performed at a later time to determine more accurate conclusions to how the roadway network will be affected.

## ROADWAY ANALYSIS

### Dr. Martin Luther King Boulevard

The 2008 AADT for the study segment (Dr. Martin Luther King Boulevard from I-95 to Dixie Highway) is 11,900. The current capacity of the roadway is 33,915. Therefore, the v/c ratio for this roadways segment is 0.35. The current projected 2030 AADT for this roadway segment is 14,275. This results in a v/c ratio of 0.42 for 2030 conditions.

If this roadway segment was converted to a two lane roadway, the AADT capacity would become 15,580. Therefore, the existing (2008) v/c ratio would be 0.76 and the future year (2030) v/c ratio would be 0.91.

Dr. Martin Luther King Boulevard from Powerline Road to I-95, which is the roadway segment immediately to the west of the proposed project, currently has a v/c ratio of 0.55. However, the 2030 v/c ratio for this roadway segment is 1.00.

Based on the above analysis, it appears to be feasible that Dr. Martin Luther King Boulevard from I-95 to Dixie Highway could be converted from a four lanes to two lanes. However, there are several factors that will need to be considered and evaluated to determine the overall effects on Dr. Martin Luther King Boulevard and the surrounding roadway network.

- 1. On-street parking facilities** – The generalized level of service volumes are broad planning estimates and do not account for individual roadway characteristics. On-street parking facilities will have a negative impact on the traffic flow and overall operations of the roadway segment. Adjustments to operational traffic factors can be me made once the number of on-street parking spaces is determined.
- 2. Proposed development** – New development in the area will create additional traffic on Dr. Martin Luther King Boulevard. When the exact land use and development density is determined, the number of trips generated can be estimated.
- 3. Effects on the surrounding roadway network** – A diversion analysis will need to be completed to determine the effects of the proposed lane reduction and proposed development on the surrounding roadway network.

### East-West (Parallel) Roadway Facilities

Parallel roadways within a mile of Dr. Martin Luther King Boulevard include NW 15<sup>th</sup> Street, Atlantic Boulevard, and Pompano Park Place. Atlantic Boulevard is the only one of these facilities including Dr. Martin Luther King Boulevard that has connection to I-95. Atlantic Boulevard from Powerline Road to Dixie Highway currently has a v/c ratio greater than 1.0 and is only expected to get worse as no roadway capacity improvements are planned by 2035.

Pompano Park Place is currently a four lane divided roadway from Powerline Road to I-95 and a six lane divided roadway from I-95 to Dixie Highway. Both segments are currently operating significantly below capacity and are expected to continue operating below capacity in year 2030.

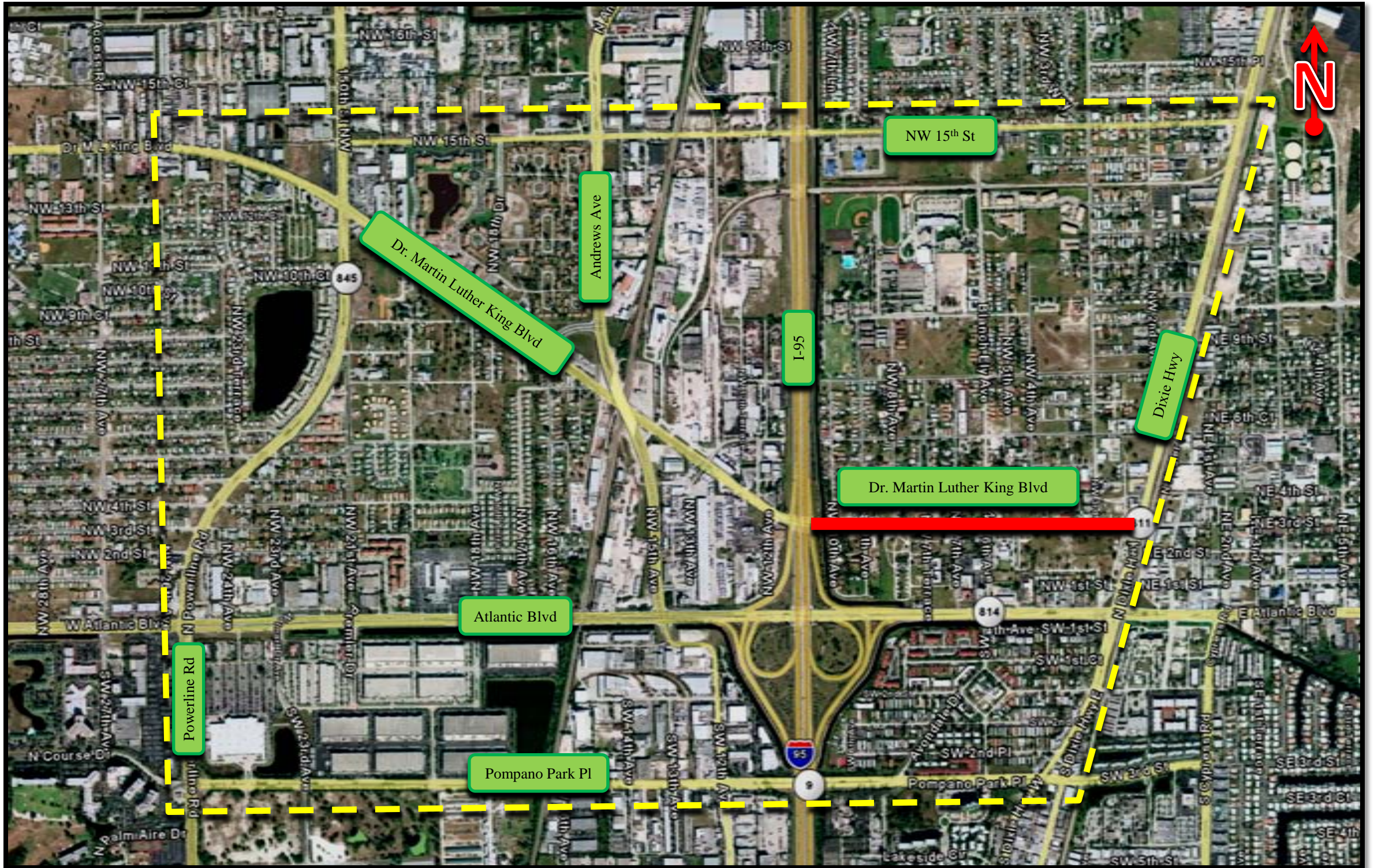
#### North-South Roadway Facilities

Major north-south roadways within the area include Powerline Road, Andrews Avenue, and Dixie Highway. For the roadway segments that existing traffic data was available, each of the roadway segments are currently operating below a v/c ratio of 1.0. However, by 2030, many of these roadway segments are expected to approach or exceed a v/c ratio of 1.0. It should be noted that Andrews Avenue from Atlantic Boulevard to Pompano Park Place is anticipated to be widened from two lanes to four lanes by 2035.

#### **CONCLUSION**

The preliminary feasibility analysis indicates that there is a realistic possibility of being able to convert Dr. Martin Luther King Boulevard from I-95 to Dixie Highway from four lanes divided to two lanes with adjacent parallel parking facilities. The existing and future roadway volumes for this roadway segment can be accommodated by two lanes based on current projections. A more detailed operational analysis will need be completed to determine the effects of the on-street parking facilities, any proposed development, and overall effects on the surrounding roadway network. It is possible that Dr. Martin Luther King Boulevard will not operate at an acceptable level of service once these factors are sufficiently analyzed. If this occurs, then additional roadway mitigation alternatives can be developed for Dr. Martin Luther King Boulevard and/ or the surrounding roadway network.

# Exhibit 1 Preliminary Study Area



## Legend



Study Area Boundary

Proposed Roadway Modification



Calvin, Giordano & Associates, Inc.  
EXCEPTIONAL SOLUTIONS

Table 1 - Link Analysis

Roadway Segment	From	To	Classification	2008							2030						
				# of lanes	AADT	Capacity <sup>(1)</sup>	V/C	Peak Hour Two-Way	Capacity <sup>(1)</sup>	V/C	# of lanes	AADT	Capacity <sup>(1)</sup>	V/C	Peak Hour Two-Way	Capacity <sup>(1)</sup>	V/C
<b>East-West Roadways</b>																	
NW 15th St	Powerline Rd	I-95	Non-State Local Roadway	2	9,500	10,000	0.95	860	950	0.91	2	10,624	10,000	1.06	1,009	950	1.06
NW 15th St	I-95	Dixie Hwy	Non-State Local Roadway	2	4,700	10,000	0.47	420	950	0.44	2	N/A	10,000	N/A	N/A	950	N/A
Dr. Martin Luther King Blvd	Powerline Rd	I-95	Class I State Arterial	4	18,500	33,915	0.55	1,670	3,221	0.52	4	34,027	33,915	1.00	3,233	3,221	1.00
<b>Dr. Martin Luther King Blvd</b>	<b>I-95</b>	<b>Dixie Hwy</b>	<b>Class I State Arterial</b>	<b>4</b>	<b>11,900</b>	<b>33,915</b>	<b>0.35</b>	<b>1,070</b>	<b>3,221</b>	<b>0.33</b>	<b>4</b>	<b>14,275</b>	<b>33,915</b>	<b>0.42</b>	<b>1,356</b>	<b>3,221</b>	<b>0.42</b>
Atlantic Blvd	Powerline Rd	I-95	Class II State Arterial	6	60,000	49,200	1.22	5,400	4,680	1.15	6	77,304	49,200	1.57	7,344	4,680	1.57
Atlantic Blvd	I-95	Dixie Hwy	Class II State Arterial	6	51,000	49,200	1.04	4,590	4,680	0.98	6	55,992	49,200	1.14	5,319	4,680	1.14
Pompano Pk Pl	Powerline Rd	I-95	Non-State Major Roadway	4	17,300	31,100	0.56	1,560	2,950	0.53	4	15,880	31,100	0.51	1,509	2,950	0.51
Pompano Pk Pl	I-95	Dixie Hwy	Non-State Major Roadway	6	14,000	46,800	0.30	1,260	4,450	0.28	6	31,554	46,800	0.67	2,998	4,450	0.67
<b>North-South Roadways</b>																	
Powerline Rd	NW 15th St	Dr. Martin Luther King Blvd	Class I State Arterial	6	N/A	53,500	N/A	N/A	5,080	N/A	6	N/A	53,500	N/A	N/A	5,080	N/A
Powerline Rd	Dr. Martin Luther King Blvd	Atlantic Blvd	Class I State Arterial	6	38,500	53,500	0.72	3,470	5,080	0.68	6	62,458	53,500	1.17	5,934	5,080	1.17
Powerline Rd	Atlantic Blvd	Pompano Pk Pl	Class II State Arterial	6	49,000	49,200	1.00	4,410	4,680	0.94	6	N/A	49,200	N/A	N/A	4,680	N/A
Andrews Ave	NW 15th St	Atlantic Blvd	Class I State Arterial	4	N/A	33,915	N/A	N/A	3,019	N/A	4	31,775	33,915	0.94	3,019	3,221	0.94
Andrews Ave	Atlantic Blvd	Pompano Pk Pl	Class I State Arterial	2	10,500	15,580	0.67	950	1,482	0.64	4	38,138	33,915	1.12	3,623	3,221	1.12
Dixie Hwy	NW 15th St	Dr. Martin Luther King Blvd	Class II State Arterial	4	N/A	32,700	N/A	N/A	3,110	N/A	4	N/A	32,700	N/A	N/A	3,110	N/A
Dixie Hwy	Dr. Martin Luther King Blvd	Atlantic Blvd	Class II State Arterial	4	N/A	32,700	N/A	N/A	3,110	N/A	4	32,742	32,700	1.00	3,110	3,110	1.00
Dixie Hwy	Atlantic Blvd	Pompano Pk Pl	Class II State Arterial	4	25,000	32,700	0.76	2,250	3,110	0.72	4	31,088	32,700	0.95	2,953	3,110	0.95
<b>Proposed modification from 4 lanes to 2 lanes utilizing existing traffic data</b>																	
<b>Dr. Martin Luther King Blvd</b>	<b>I-95</b>	<b>Dixie Hwy</b>	<b>Class I State Arterial</b>	<b>2</b>	<b>11,900</b>	<b>15,580</b>	<b>0.76</b>	<b>1,070</b>	<b>1,482</b>	<b>0.72</b>	<b>2</b>	<b>14,275</b>	<b>15,580</b>	<b>0.92</b>	<b>1,356</b>	<b>1,482</b>	<b>0.91</b>

(1) From Broward County Roadway Capacity and Level of Service Analysis Report, 2007