

## Griffin & Davis Consulting, Inc.



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**Mr. Vincent D. Reynolds, P.E.**

Transportation Division Manager  
The City of East Point  
1526 E. Forrest Avenue  
East Point, GA 30334

**02/07/2017**

**Mr. Reynolds,**

Thank-you for the opportunity to serve the City of East Point. Per your request, we have completed the evaluation of the need for a traffic signal at the intersection of North Commerce Drive and Redwine Road. (Purchase Order 067127). The evaluation and analysis were based on the requirements set forth in the Manual for Uniform Traffic Control devices (MUTCD) latest edition, published by the Federal Highway Administration. As part of our evaluation, we obtained traffic counts at the intersection and incorporated the proposed Cactus Carwash and the 192 room, 4-star Hotel. We also took into consideration the empty lot next to the apartment complex with future development in mind.

**Based on the criteria set forth in the MUTCD the intersection of North Commerce and Redwine Road warrants a Traffic Signal.**

In addition to the signal, we are also recommending roadway improvements notably:

1. Restriping northbound left-through lane to left only and right lane to through-right turn lane;
2. Reconfigure eastbound approach to have dedicated left and right turn lanes, 100 feet and 200 feet long respectively. This allows for a dedicated lane for the through movements;
3. Reconfigure westbound approach to provide a dedicated left turn lane (300 ft) and a through-right lane;
4. Reconfigure southbound approach to provide a dedicated left turn lane (50 ft) and a through-right lane.

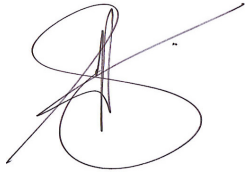
The installation of the signal without the above-recommended improvements will be an improvement over the existing conditions; however, the analysis indicates the west bound and north bound through movements will operate at a level of service of C and D respectively. Levels of C and D would convey the sense that little improvements have been made.

If the roadway Improvements listed above were made without the traffic signal, delays would be decreased; however, the resulting multi-lane stop condition will be too confusing for the traveling public which may result in accidents. It is, therefore, our recommendation that the installation of the signal should be accompanied with the recommended roadway improvements.

We also evaluated the intersection for the use of a roundabout but based on the limited right-of-way for the approach south bound leg, the significant elevation changes in topography, and the presence of overhead transmission lines, a roundabout appeared not to be practical and may also prove cost prohibitive.

Thank you for the opportunity and please call if there are any questions.

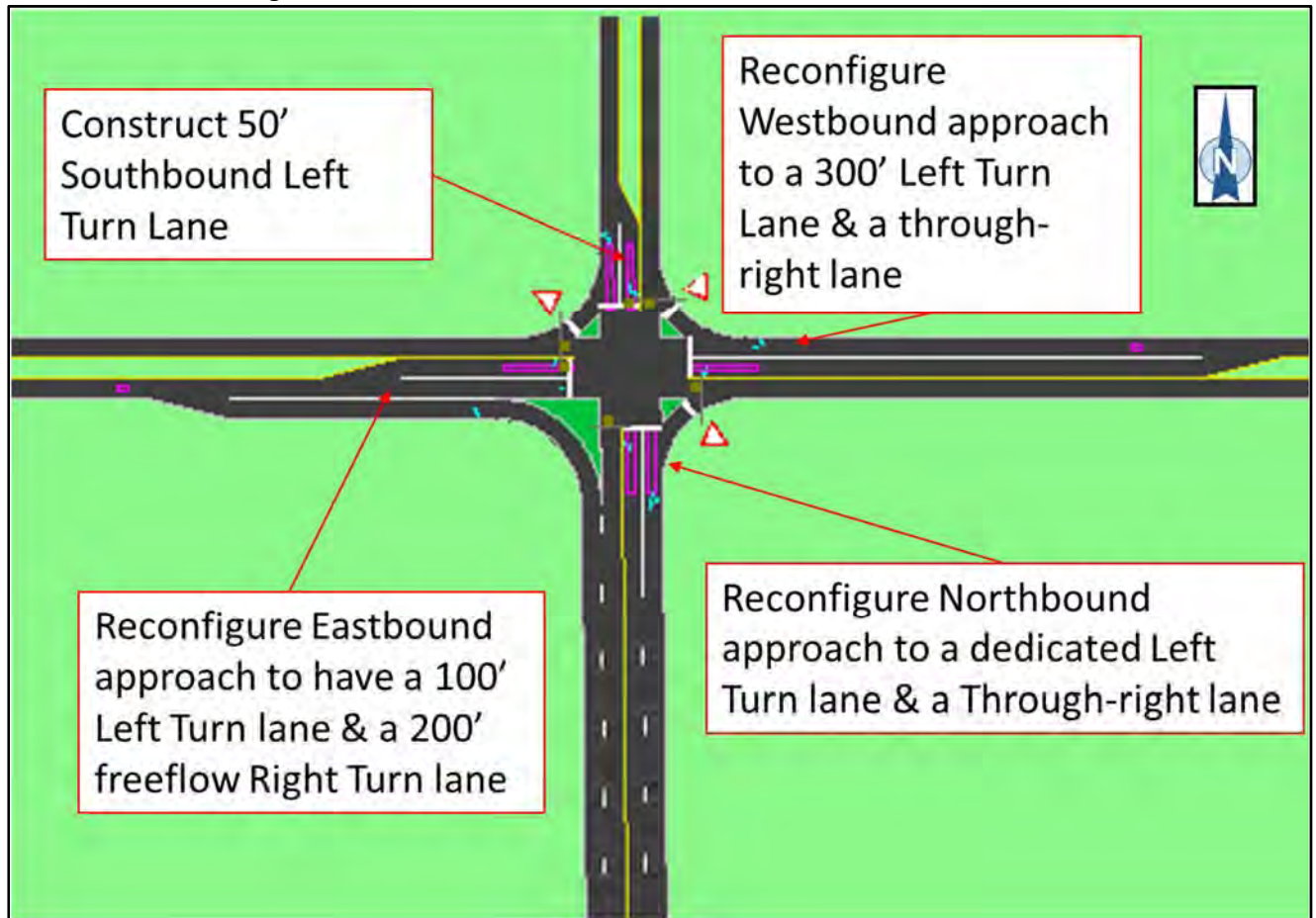
**Sincerely,**

A handwritten signature in black ink, appearing to be 'K. Griffin', written over a light blue horizontal line.

**Kenton O. Griffin, P.E., LEED AP**  
Principal

1. It is recommended that signal control is installed and the intersection be reconfigured to include the geometry shown in Figure 5.

Figure 5: SIGNAL CONTROL INSTALLED WITH PREFERRED GEOMETRY



1: N Commerce Place/The Meridan Apt & Redwine Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	207	221	141	186	7	291	40	255	8	16	7
Future Volume (vph)	16	207	221	141	186	7	291	40	255	8	16	7
Satd. Flow (prot)	1805	1900	1583	1687	1875	0	1770	1624	0	1805	1794	0
Flt Permitted	0.612			0.368			0.419			0.606		
Satd. Flow (perm)	1163	1900	1583	653	1875	0	780	1624	0	1151	1794	0
Satd. Flow (RTOR)			260		8			283			12	
Lane Group Flow (vph)	24	220	260	188	236	0	331	343	0	16	32	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		4		3	8		5	2			6	
Permitted Phases	4		4	8			2			6		
Total Split (s)	23.0	23.0	23.0	10.0	33.0		13.0	37.0		24.0	24.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Act Effct Green (s)	8.2	8.2	8.2	15.7	15.7		19.8	19.8		6.5	6.5	
Actuated g/C Ratio	0.18	0.18	0.18	0.34	0.34		0.43	0.43		0.14	0.14	
v/c Ratio	0.12	0.65	0.52	0.55	0.36		0.64	0.40		0.10	0.12	
Control Delay	17.8	27.9	7.2	17.3	12.0		19.4	4.4		21.0	16.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.8	27.9	7.2	17.3	12.0		19.4	4.4		21.0	16.3	
LOS	B	C	A	B	B		B	A		C	B	
Approach Delay		16.7			14.3			11.8			17.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	6	57	0	34	42		62	9		4	5	
Queue Length 95th (ft)	16	114	39	58	81		#159	23		10	22	
Internal Link Dist (ft)		628			657			727			125	
Turn Bay Length (ft)	100		200	300						50		
Base Capacity (vph)	469	766	793	340	1179		515	1244		490	770	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.29	0.33	0.55	0.20		0.64	0.28		0.03	0.04	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 45.8

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 14.1

Intersection LOS: B

Intersection Capacity Utilization 54.0%

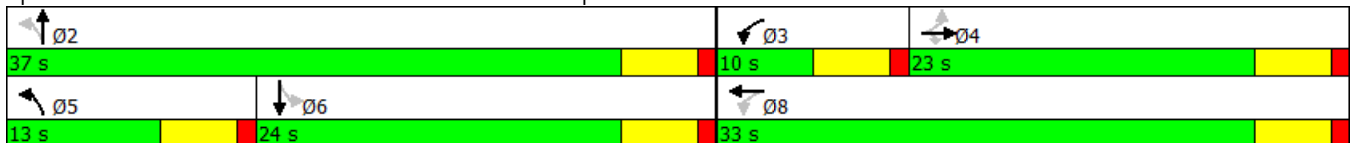
ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: N Commerce Place/The Meridan Apt & Redwine Road



1: N Commerce Place/The Meridan Apt & Redwine Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	207	221	141	186	7	291	40	255	8	16	7
Future Volume (vph)	16	207	221	141	186	7	291	40	255	8	16	7
Satd. Flow (prot)	0	1745	0	0	1798	1615	0	1792	1568	0	1806	0
Flt Permitted		0.974			0.609			0.725			0.858	
Satd. Flow (perm)	0	1703	0	0	1121	1615	0	1355	1568	0	1575	0
Satd. Flow (RTOR)		130				30			283		12	
Lane Group Flow (vph)	0	504	0	0	404	20	0	391	283	0	48	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Total Split (s)	30.0	30.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	
Total Lost Time (s)		4.5			4.5	4.5		4.5	4.5		4.5	
Act Effct Green (s)		25.6			25.6	25.6		17.9	17.9		17.9	
Actuated g/C Ratio		0.49			0.49	0.49		0.34	0.34		0.34	
v/c Ratio		0.56			0.74	0.02		0.85	0.39		0.09	
Control Delay		10.5			23.3	3.0		35.3	3.7		9.6	
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	
Total Delay		10.5			23.3	3.0		35.3	3.7		9.6	
LOS		B			C	A		D	A		A	
Approach Delay		10.5			22.3			22.1			9.6	
Approach LOS		B			C			C			A	
Queue Length 50th (ft)		79			103	0		109	0		7	
Queue Length 95th (ft)		159			#226	0		128	39		21	
Internal Link Dist (ft)		628			657			727			125	
Turn Bay Length (ft)						100						
Base Capacity (vph)		896			545	801		530	785		624	
Starvation Cap Reductn		0			0	0		0	0		0	
Spillback Cap Reductn		0			0	0		0	0		0	
Storage Cap Reductn		0			0	0		0	0		0	
Reduced v/c Ratio		0.56			0.74	0.02		0.74	0.36		0.08	

Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 52.6

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 18.2

Intersection LOS: B

Intersection Capacity Utilization 79.0%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: N Commerce Place/The Meridan Apt & Redwine Road

25 s	30 s	30 s	30 s
25 s	30 s	30 s	30 s