

Department of Transportation State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE Cobb County
P.I. # 0011657
OFFICE Planning
DATE January 30, 2013

FROM Cynthia L. VanDyke, State Transportation Planning Administrator

TO Genetha Rice-Singleton, State Program Delivery Engineer
Attention: Merishia Robinson

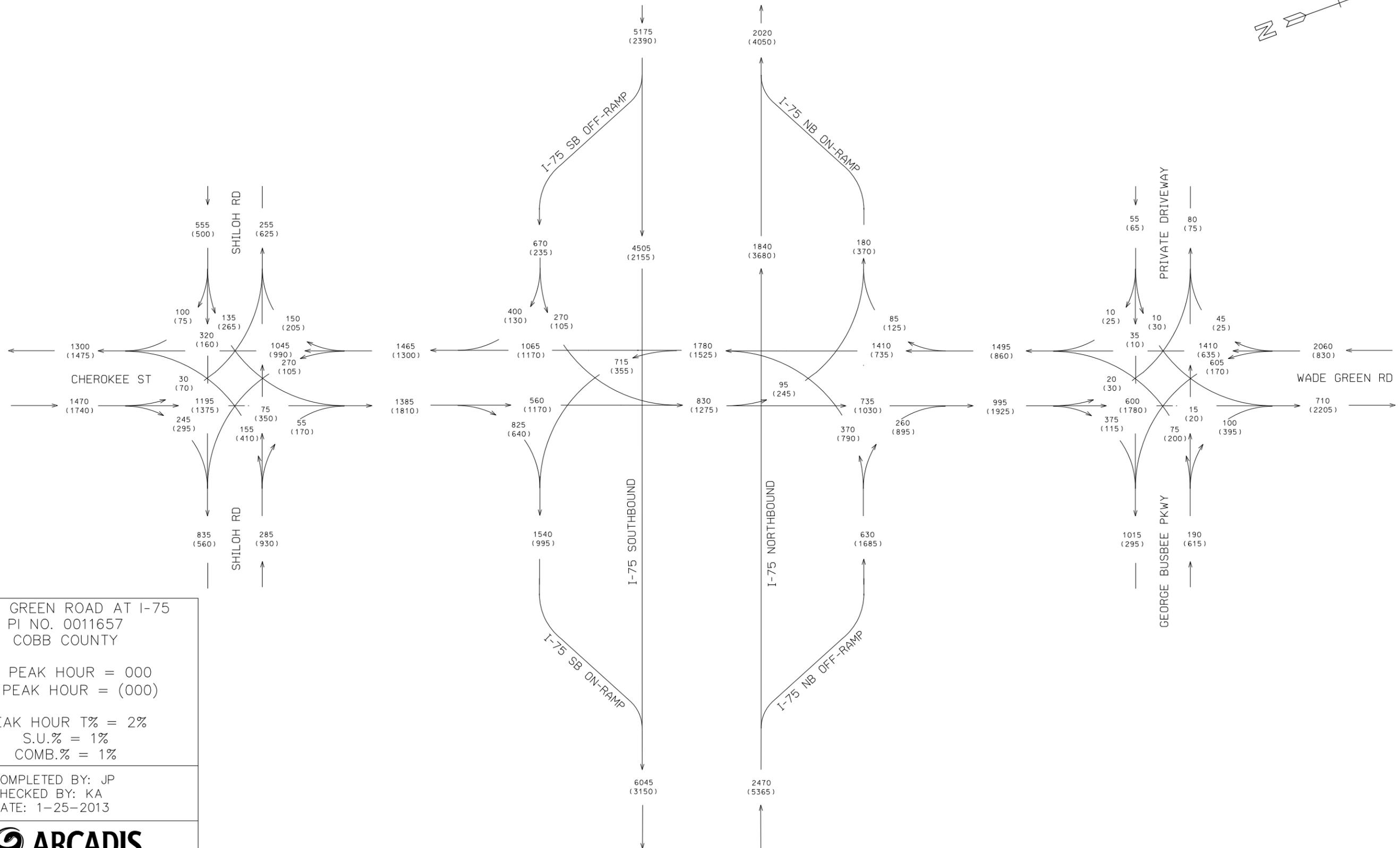
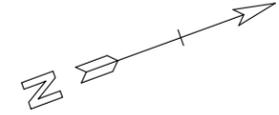
SUBJECT **Reviewed** Design Traffic for I-75 @ CR 4396/WADE GREEN ROAD.

As per your request, we reviewed the consultant's Design Traffic for the above project.

The Design Traffic is approved based on the information furnished. If you have any questions concerning this information please contact Abby Ebodaghe at (404) 631-1923.

CLV/afe

EXISTING (2012) DHV



WADE GREEN ROAD AT I-75
 PI NO. 0011657
 COBB COUNTY

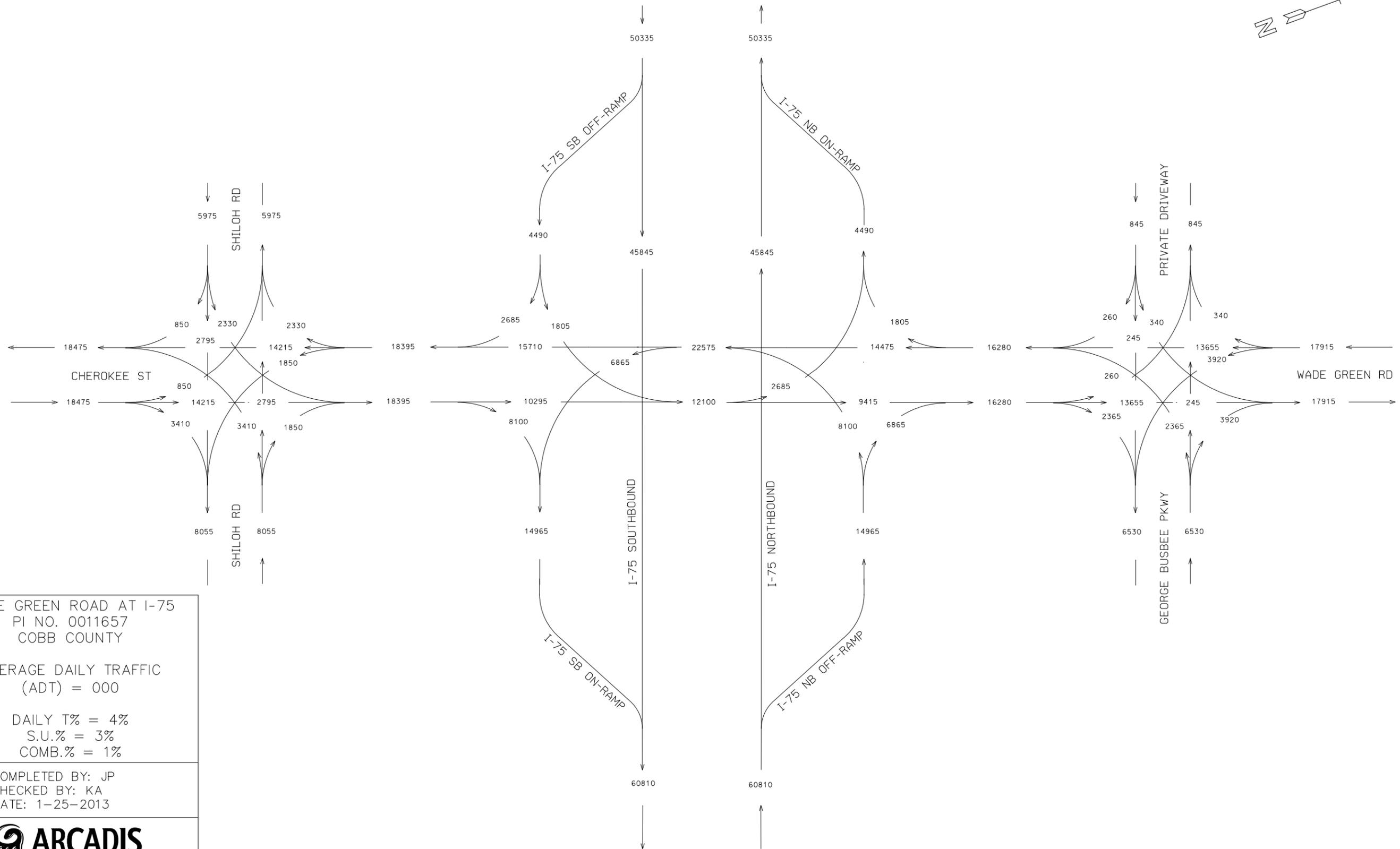
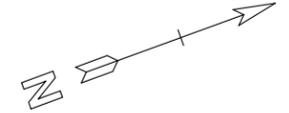
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 PM PEAK HOUR = (000)

PEAK HOUR T% = 2%
 S.U.% = 1%
 COMB.% = 1%

COMPLETED BY: JP
 CHECKED BY: KA
 DATE: 1-25-2013



EXISTING (2012) ADT



WADE GREEN ROAD AT I-75
 PI NO. 0011657
 COBB COUNTY

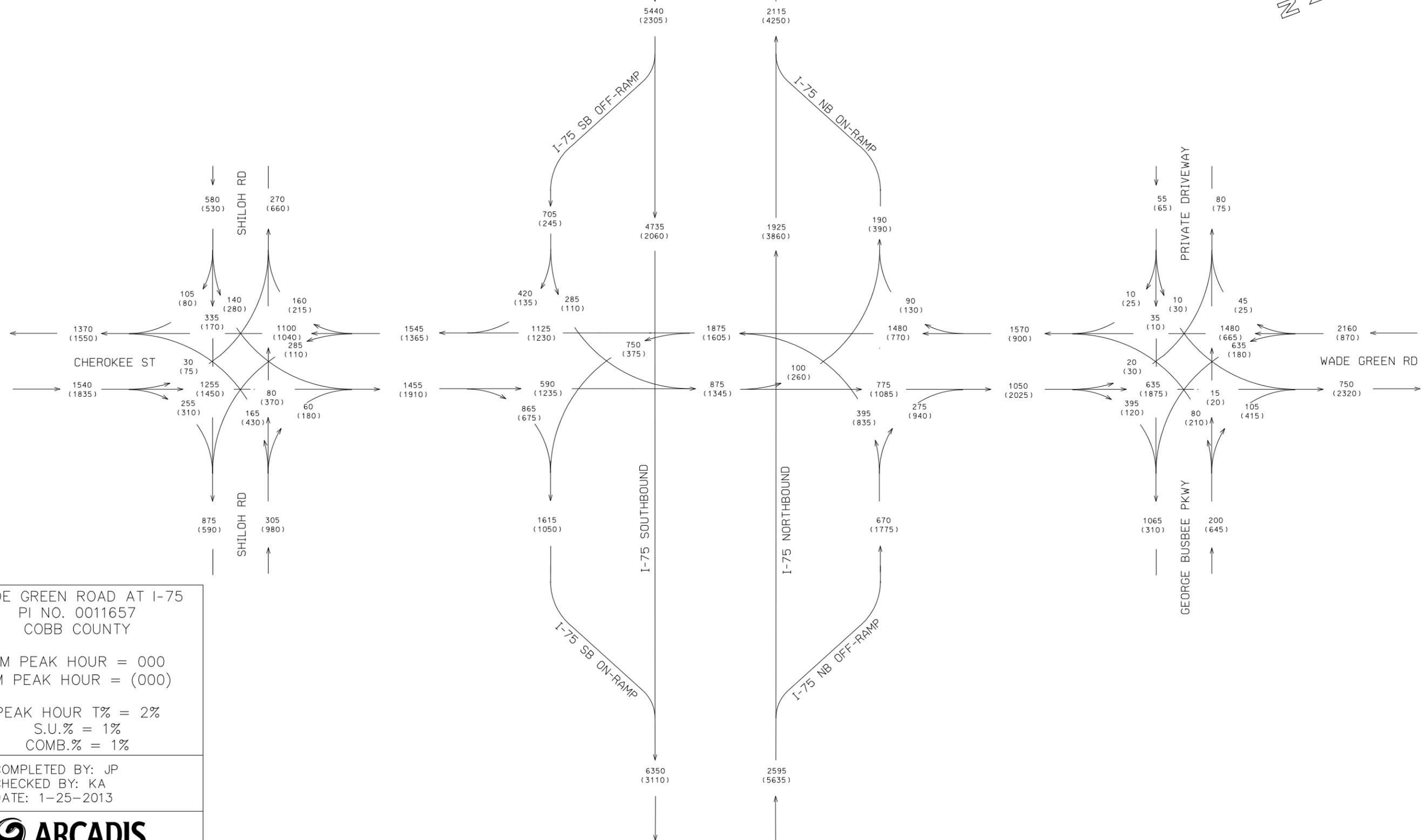
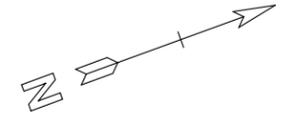
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 COMB.% = 1%

COMPLETED BY: JP
 CHECKED BY: KA
 DATE: 1-25-2013



OPEN (2015) DHV
NO-BUILD/BUILD



WADE GREEN ROAD AT I-75
PI NO. 0011657
COBB COUNTY

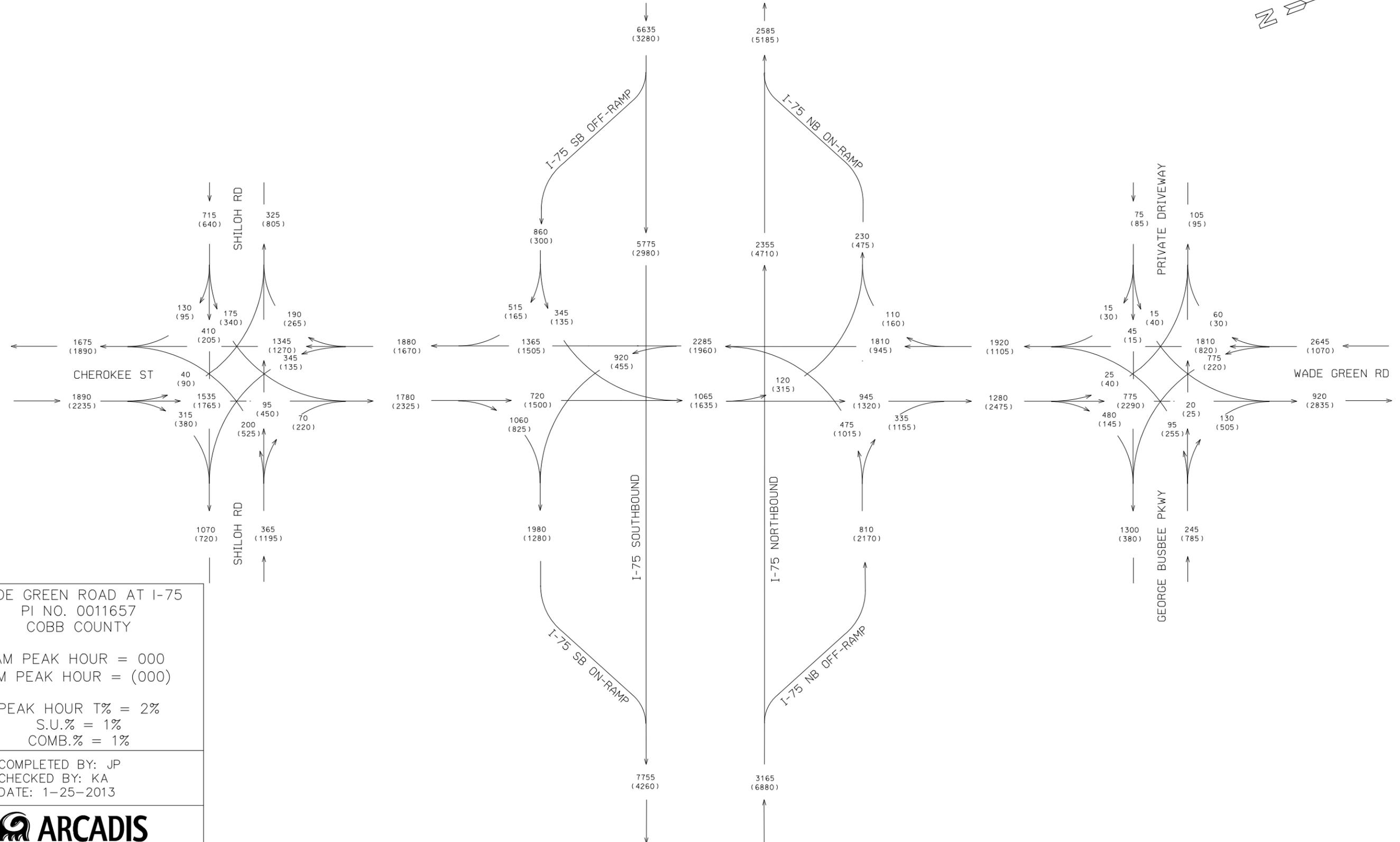
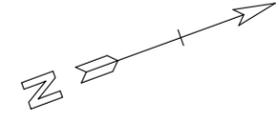
AM PEAK HOUR = 000
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PEAK HOUR T% = 2%
S.U.% = 1%
COMB.% = 1%

COMPLETED BY: JP
CHECKED BY: KA
DATE: 1-25-2013



DESIGN (2035) DHV
NO-BUILD/BUILD



WADE GREEN ROAD AT I-75
PI NO. 0011657
COBB COUNTY

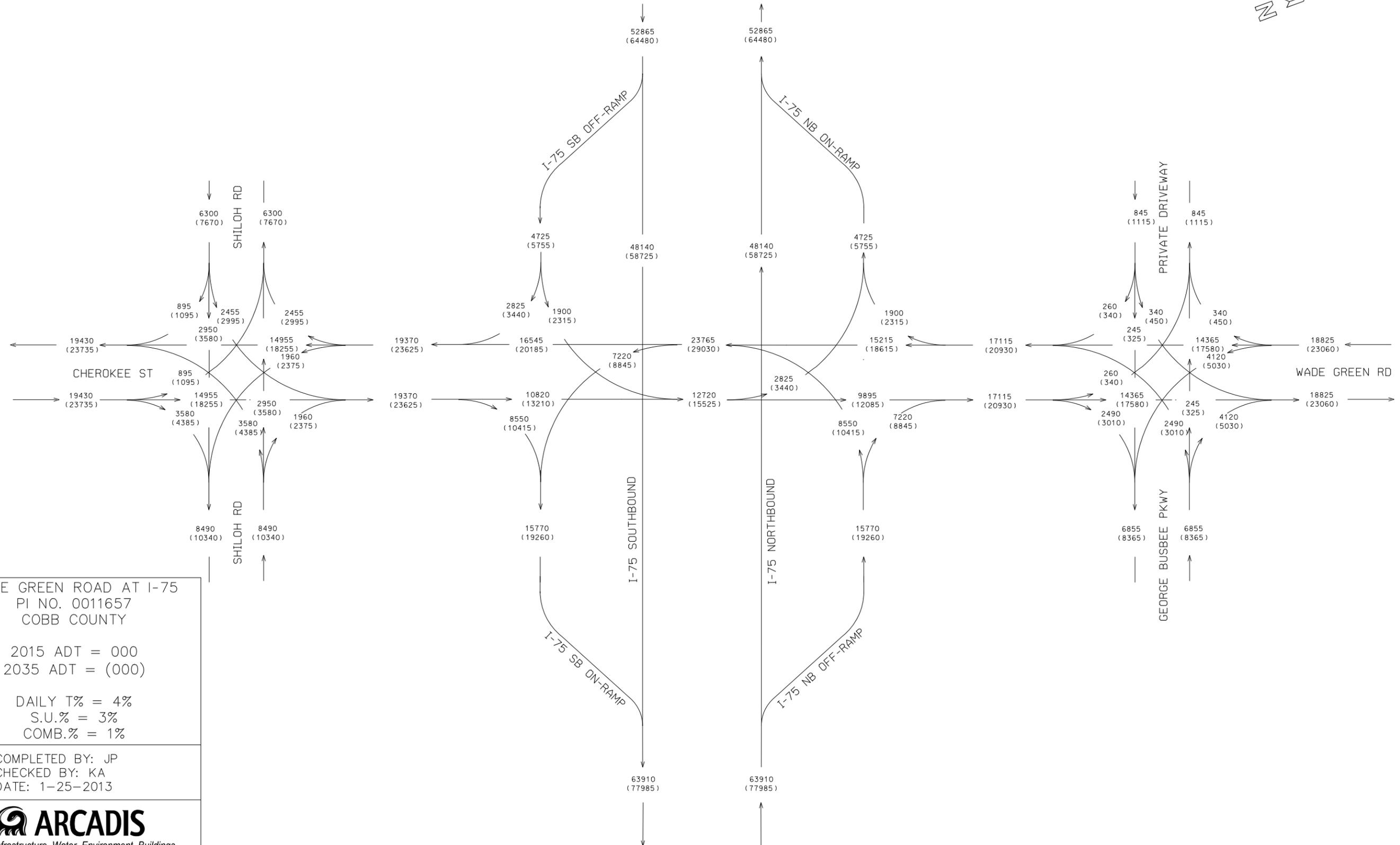
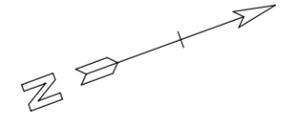
AM PEAK HOUR = 000
PM PEAK HOUR = (000)

PEAK HOUR T% = 2%
S.U.% = 1%
COMB.% = 1%

COMPLETED BY: JP
CHECKED BY: KA
DATE: 1-25-2013



OPEN (2015)/DESIGN (2035) ADT
NO-BUILD/BUILD



WADE GREEN ROAD AT I-75
PI NO. 0011657
COBB COUNTY

2015 ADT = 000
2035 ADT = (000)

DAILY T% = 4%
S.U.% = 3%
COMB.% = 1%

COMPLETED BY: JP
CHECKED BY: KA
DATE: 1-25-2013





ARCADIS U.S., Inc.
2410 Paces Ferry Road
Suite 400
Atlanta
Georgia 30339
Tel 770.431.8666
Fax 770.435.2666

MEMO

To:
Abby F. Ebodaghe, Office of Planning

From:
Jody Peace, PE

Date:
January 15, 2013

ARCADIS Project No.:
GA064005

Subject:
PI. No. 0011657 (Wade Green Road at I-75 Interchange Improvement) Projected
Traffic Growth
Cobb County, Georgia

ARCADIS U.S., Inc. (ARCADIS) conducted a growth trend analysis and a study of existing traffic counts to develop traffic volumes for the Wade Green Road at I-75 Interchange Improvement project, PI No. 0011657, in Cobb County, Georgia. The sections below explain the methodology and findings for both the growth rate calculation and the determination of K and D factors.

Growth Rate Determination

To determine the appropriate growth rate to use for this study, data was obtained from two sources: Georgia Department of Transportation (GDOT) traffic count systems and Atlanta Regional Commission's (ARC) Travel Demand Model. The sections below discuss the findings from each of the sources.

Georgia Department of Transportation Historical Traffic Counts

Historical traffic data, obtained from GDOT Traffic Count Database System and GDOT State Traffic and Report Statistics, was first evaluated. Seven stations were located within the study area and are listed below:

- Station 0670872 – Wade Green Road East of George Busbee Parkway
- Station 0670869 – Wade Green Road/Cherokee Street West of Shiloh Road
- Station R025 – I-75 NB Off-Ramp

- Station R626 – I-75 SB On-Ramp
- Station R069 – I-75 NB On-Ramp
- Station R627 – I-75 SB Off-Ramp
- Station R027 – I-75 slip movement to Wade Green Ramp

The analysis showed that, for many of the count locations, the counts varied greatly from year to year with annual changes of greater than 50 percent occurring on five occasions. Table 1 shows the historical data for the seven count stations.

Table 1: GDOT Historical Daily Traffic Counts

Location	Year	Volume	Growth	Location	Year	Volume	Growth
Station 0670872 (Wade Green East of I-75)	2011	35,520	0%	Station 0670869 (Wade Green West of I-75)	2011	35,110	0%
	2010	35,560	16%		2010	35,150	0%
	2009	30,540	-3%		2009	35,080	-3%
	2008	31,410	-6%		2008	36,200	-6%
	2007	33,370	81%		2007	38,460	127%
	2006	18,450	-5%		2006	16,910	0%
	2005	19,470	-53%		2005	16,860	-12%
	2004	41,010	4%		2004	19,100	-61%
	2003	39,400	1%		2003	48,850	188%
	2002	39,036	5%		2002	16,961	-3%
2001	37,100		2001	17,500			
R025 (I-75 NB Off-Ramp)	2011	16,060	12%	R626 (I-75 SB On-Ramp)	2011	14,770	-3%
	2010	14,380	-17%		2010	15,280	-7%
	2009	17,380	26%		2009	16,500	27%
	2008	13,800	-18%		2008	12,970	-14%
	2007	16,800			2007	15,160	
	2006	N/A ¹			2006	N/A ¹	
	2005	16,990			2005	19,180	
R069 (I-75 NB On-Ramp)	2011	3,860	-2%	R627 (I-75 SB Off-Ramp)	2011	3,930	-5%
	2010	3,920			2010	4,150	-5%
	2009	N/A ¹			2009	4,350	15%
	2008	N/A ¹			2008	3,790	-17%
	2007	N/A ¹			2007	4,560	
	2006	N/A ¹			2006	N/A ¹	
	2005	N/A ¹			2005	5,270	
R027 (I-75 Slip Movement)	2011	3,450	-1%				
	2010	3,500	-1%				
	2009	3,540	-2%				
	2008	3,610					
	2007	N/A ¹					
	2006	N/A ¹					
	2005	4,460					

Note: 1. Counts are not available for this year

With the significant variation of volumes, it was determined to use only growth rates between 2007 and 2011 for both locations along Wade Green Road/Cherokee Street. For the ramp count locations, all consecutive, historic data was taken into account even though some locations showed volumes changing by more than 10 percent annually. The average growth rate for each of the locations is shown in Table 2 below.

Table 2: Average Annual Growth by Count Location

Location	Annual Growth Rate
Wade Green East of I-75	2%
Wade Green West of I-75	-2%
I-75 NB Off-Ramp	1%
I-75 SB On-Ramp	1%
I-75 NB On-Ramp	-2%
I-75 SB Off-Ramp	-3%

The average growth rate from these seven stations combined showed little change in volumes historically, with the average being a slight decrease of one percent. This lack of growth can be attributed to the lack of new construction during the economic downturn and the roadway nearing capacity during peak hours. However, due to the significant variation in traffic at several of the count locations, less emphasis was placed on these historical counts.

Atlanta Regional Commission Travel Demand Model

To gain additional knowledge of growth in the area, ARCADIS also studied ARC’s regional travel demand model. In addition to population and employment growth, ARC’s model includes travel pattern changes due to new facilities and capacity improvements. One such improvement which will have a significant impact on Wade Green Road traffic volumes is the Northwest Corridor Project. This project will provide new managed lane interchanges within the region which will divert some traffic from Wade Green Road. Figure 1 shows ARC annual growth rates which range from -0.25 percent to 0.96 percent between model years 2010 and 2040. The average growth rate from the travel demand model is 0.5 percent. This growth is expected to come from development of currently undeveloped land and the increase in development density.

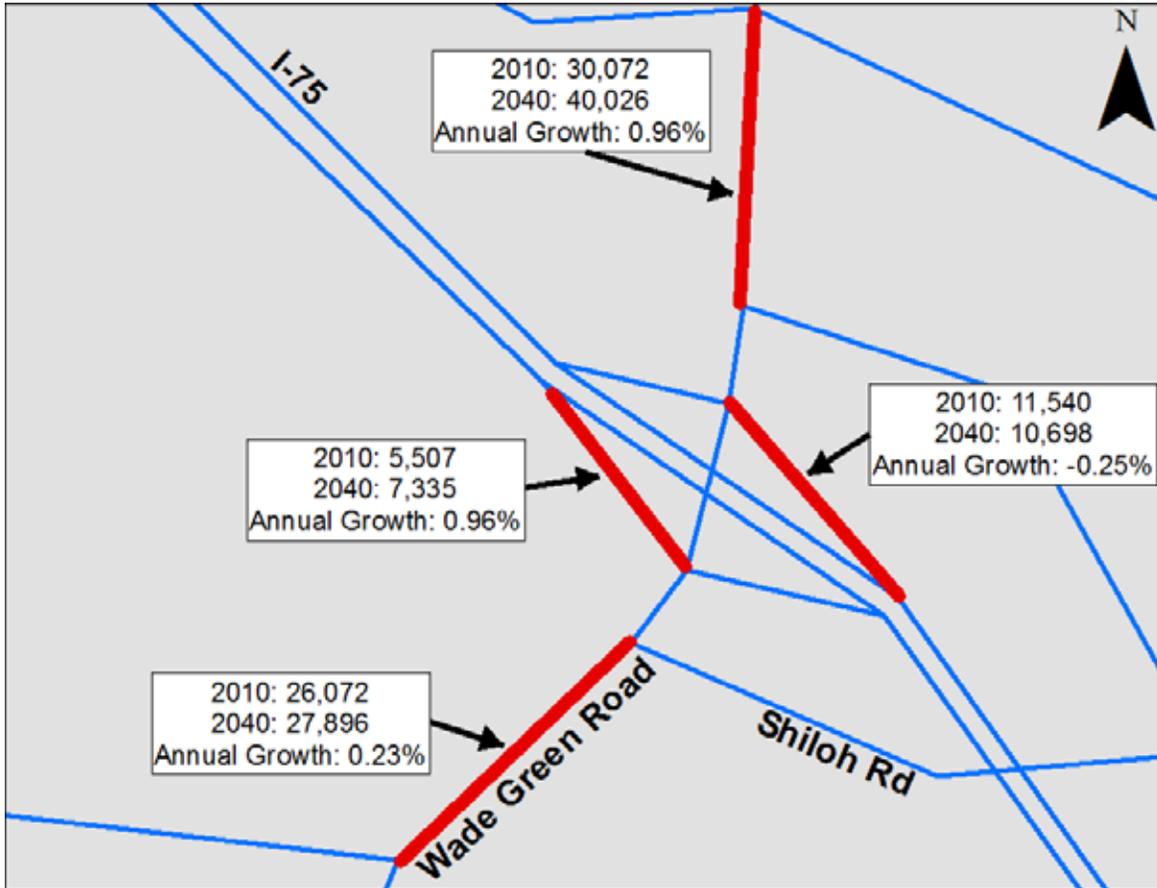


Figure 1: Atlanta Regional Commission (ARC) Travel Demand Model Growth

Recommendations

Historical data shows that during the past few years, traffic has remained steady or declined very slightly within the study area. The accepted regional model estimates that traffic will grow by about 0.5 percent annually. Due to the current slow economy and significant variations in historical data, more emphasis should be placed on the expected growth in the area. ARCADIS expects an annual growth rate in the study area to range between 0.5 and 1 percent over the next 20-30 years. ARCADIS recommends a conservative approach, using an annual growth rate of 1 percent for the project area.

Traffic Characteristics (K and D)

In addition to determining an appropriate growth rate, an analysis of traffic counts collected in November, 2012 was completed. 24-hr classification counts and 4-hr turning movement counts (TMCs) were collected at four locations each. The locations are shown in Figure 2.

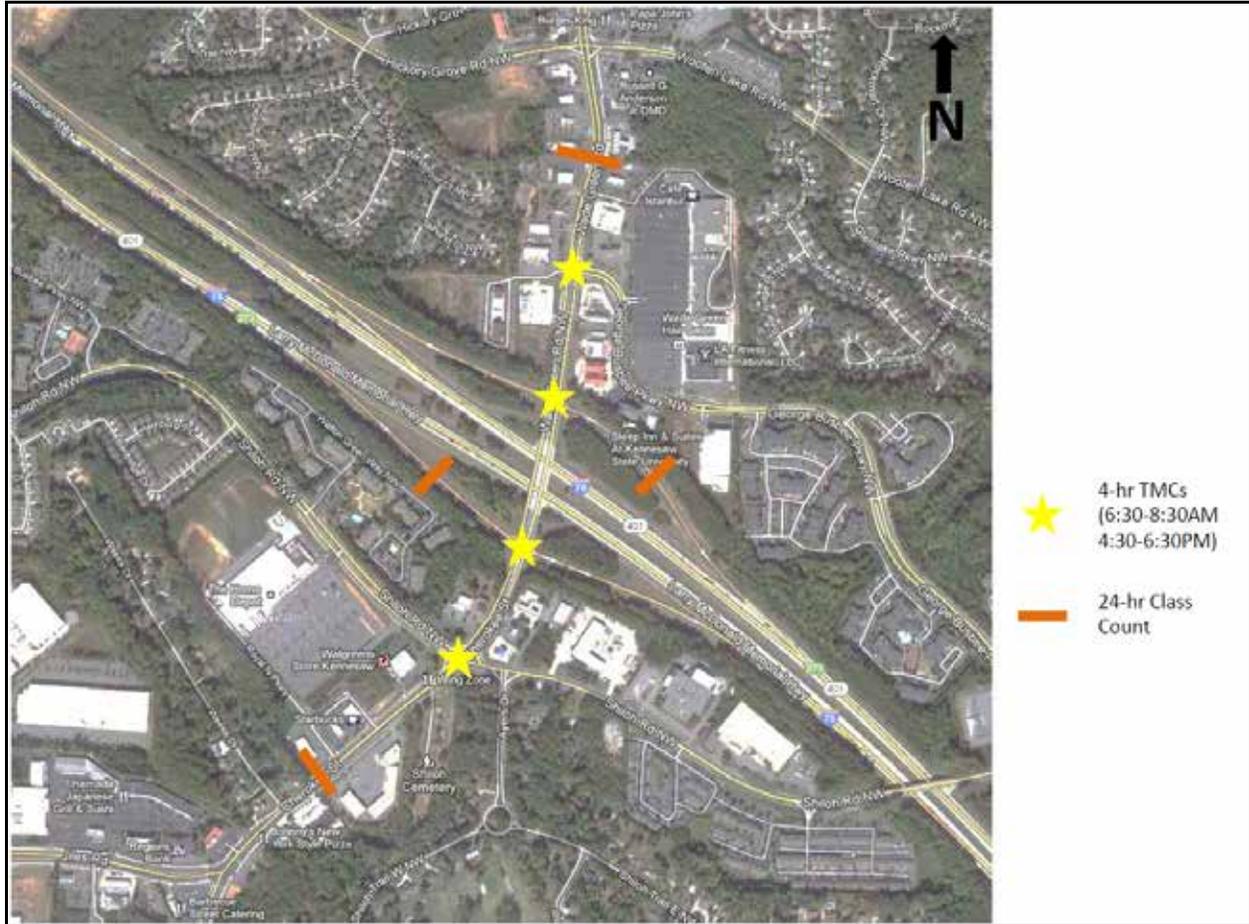


Figure 2: Count Location Map

Based on traffic counts collected by ARCADIS and GDOT traffic count data, it was determined the most appropriate K-factor is 0.07.

Because the study area crosses I-75, a major commuter corridor in Atlanta, two different directional factors, D, were developed. Table 3 shows the AM and PM directional factor for the eastern and western side of I-75.

Table 3: Directional Factors for Wade Green Road

Location	AM Peak Hour	PM Peak Hour
Wade Green West of I-75	0.54	0.52
Wade Green East of I-75	0.73	0.69

Mainline counts were not collected for I-75. To develop traffic volumes for these facilities, ARCADIS used a combination of GDOT STARS data and counts collected for the Northwest Corridor Project. Average Daily Traffic (ADT) volumes were obtained from GDOT count station (Station 0670756) which is located on I-75 south of Wade Green Road. ADT's were converted to peak hour volumes using the k-factor and

split into directional volumes using a directional factor calculated from traffic counts collected as part of the Northwest Corridor Study (Reported in Appendix A of the Final Environmental Impact Statement). The D factor used for I-75 volumes was 0.71 and 0.63 for the AM and PM peak hours respectively.