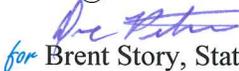


ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. #713290 **OFFICE** Design Policy & Support
IMNHO-0285-01(354)
GDOT District 7 - Metro Atlanta
DeKalb County **DATE** October 25, 2011
I-285 @ SR 155/Flat Shoals Road

FROM  for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED REVISED CONCEPT REPORT

Attached is the approved Revised Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Genetha Rice-Singleton, Program Control Administrator
Bobby Hilliard, State Program Delivery Engineer
Cindy VanDyke, State Transportation Planning Administrator
Angela Robinson, Financial Management Administrator
Glenn Bowman, State Environmental Administrator
Ben Rabun, State Bridge Engineer
Andy Casey, State Roadway Design Engineer
Attn: Jeff Simmons, Asst. Design Group Manager
Chuck Hasty, Asst. State Roadway Design Engineer
Kathy Zahul, State Traffic Engineer
Georgene Geary, State Materials & Research Engineer
Ron Wishon, State Project Review Engineer
Jeff Baker, State Utilities Engineer
Ken Thompson, Statewide Location Bureau Chief
Michael Henry, Systems & Classification Branch Chief
Bryant Poole, District Engineer
Scott Lee, District Preconstruction Engineer
Jonathan Walker, District Utilities Engineer
Karyn Matthews, Project Manager
BOARD MEMBER - 4th Congressional District

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
REVISED PROJECT CONCEPT REPORT**

Project Number: IMNH0-0285-01(354)
County: DeKalb
P. I. Number: 713290-
Federal Route Number: I-285
State Route Number: SR 155, SR 407

*Location Sketch (Attached)
Project Description (Page 2)*

Submitted for approval: (Submit to "Concept Reports" in Outlook)

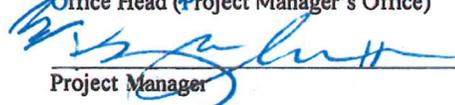
DATE 8/16/2010


Design Phase Office Head

DATE 10/5/2010


Office Head (Project Manager's Office)

DATE 10/5/2010

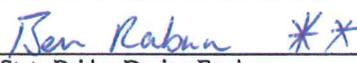

Project Manager

Recommendation for approval:

DATE 12/2/10

 **
State Environmental Administrator

DATE 1/12/11

 **
State Bridge Design Engineer

** Recommendation on File. KKF

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE 12/4/10

 *
State Transportation Planning Administrator

* THIS CONCEPT REPORT IS SIGNED WITH THE UNDERSTANDING THAT THE REVISED CONCEPT DOES NOT MATCH THE CURRENT ARC TR/RTP IN TERMS OF PROPOSED NUMBER OF LANES. UPON CONCEPT APPROVAL, THE OFFICE OF PLANNING WILL WORK WITH ARC TO COORDINATE ANY NECESSARY CHANGES TO THE TR/RTP.

REVISED PROJECT CONCEPT REPORT

Project Number: IMNH0-0285-01(354), DeKalb County
P.I. Number: 713290-

Need and Purpose:

The proposed project would reconstruct the Interchange of I-285 with SR 155 in DeKalb County. The work would include replacing the SR 155 Bridge over I-285 and jacking the existing Panthersville Road Bridge over I-285. Both structures provide substandard vertical clearance for large vehicles traveling along I-285. An increase in commercial development along the SR 155 corridor has resulted in poor traffic operations in the interchange area. Land use along the project corridor consists of commercial, industrial park, and residential development.

The need for the proposed project is to improve traffic operations in the I-285 interchange area. The combination of commercial services, employment opportunities, and transportation access between I-285 and I-20 has generated a traffic demand well above the capacity of the Interchange of I-285 with SR 155. The table below lists construction-year and design-year traffic volumes:

Roadway Section	ADT ₂₀₁₄	ADT ₂₀₃₄
SR 155 south of I-285	47,600	66,700
SR 155 north of I-285	41,200	57,650
I-285 east of SR 155	191,500	268,250
I-285 west of SR 155	191,700	268,500

The project would promote energy conservation by efficiently moving traffic through the interchange area.

The purpose of the project is to reduce crash frequency and severity and improve traffic operations.

The project is included in the Transportation Improvement Program (FY 2010-2014) of the adopted Atlanta Regional Transportation Plan (TIP Number DK-AR-206).

Project location

The proposed project is located in southwest DeKalb County, beginning along I-285 at a point east of Doless Creek (Milepost 48.61) and ending at a point west of Shoal Creek (Milepost 47.63), an approximate length of 0.98 miles. The work includes widening/reconstructing SR 155 from the intersection with Clifton Springs Road (Milepost 7.05) northward to the intersection with Panthersville Road/Fairlake Drive (Milepost 8.06).

Description of the Approved Concept (March 24, 2004):

The proposed project would reconstruct the Interchange of I-285 with SR 155/Flat Shoals Road in DeKalb County. The work would include construction of a new bridge along SR 155 over I-

285. The replacement bridge would provide three through lanes in each direction, bike lanes on both sides, and dual, left-turn lanes from SR 155 northbound and southbound onto I-285 eastbound and westbound. The Interstate Exit Ramps would be widened to provide dual, left-turn and dual, right-turn lanes onto SR 155. The Interstate Entrance Ramps would be widened to provide three lanes at the ramp intersections with SR 155. The lanes would taper down to one lane prior to the ramp nose point with I-285. Work along I-285 would include constructing urban interstate shoulders with a closed drainage system. Auxiliary lanes would be constructed along I-285 on the approach to the Interchange to provide dual exit lanes onto the Exit Ramps. Work along Panthersville Road would include replacing the existing overpass structure to accommodate the I-285 typical section. The typical section for Panthersville Road would be widened to provide for two travel lanes and a bicycle lane in each direction. The opposing travel lanes would be separated by a 14-foot flush median.

PDP Classification: Major X Minor _____

Federal Oversight: Full Oversight (), Exempt (x), State Funded (), or Other ()

Functional Classification: Urban Minor Arterial (SR 155/Flat Shoals Road)
Urban Interstate (I-285)
Urban Minor Arterial (Panthersville Road)

U. S. Route Number(s): I-285 **State Route Number(s):** SR 155, SR 407

Traffic Volume Data (as shown in the approved concept report):

Roadway Section	ADT ₂₀₀₆	ADT ₂₀₂₆
SR 155 south of I-285	30,565	45,985
SR 155 north of I-285	40,075	59,580
I-285 east of SR 155	174,210	214,135
I-285 west of SR 155	140,805	212,000

Updated Traffic Volume Data:

Roadway Section	ADT ₂₀₁₄	ADT ₂₀₃₄
SR 155 south of I-285	47,600	66,700
SR 155 north of I-285	41,200	57,650
I-285 east of SR 155	191,500	268,250
I-285 west of SR 155	191,700	268,500

Approved/Programmed Funding Schedule:

PE: 1999 ROW: 2012/2013 CST: 2017

VE Study Required Yes (X) No () Completed February 25, 2004

Benefit/Cost Ratio: 1.00

Is the project located in an Ozone Non-attainment area? Yes (X) No ()

The current ARC Air Quality Model for SR 155 between Clifton Springs Road and Panthersville Road shows three through lanes in each direction. The Air Quality Model was updated based on the currently-approved Concept Report.

Is the project in a PM2.5 Non-Attainment area? Yes (X) No ()

Approved Features:	Proposed Features:
<p>Described the features(s) of the approved project concept to be revised and the reasons for the revision:</p> <p>SR 155/Flat Shoals Road</p> <p>Construct an additional through lane and a bike lane in each direction along SR 155 from the intersection of Clifton Springs Road north to the intersection of Panthersville Road. Dual left-turn lanes will be provided in each direction along SR 155 onto I-285 in each direction. An auxiliary right-turn lane will be constructed along SR 155 in each direction on the approach to the Entrance Ramps.</p> <p>I-285</p> <p>Provide width under bridge as to not preclude future construction of a barrier-separated HOV and an additional mainline lane in each direction. Construct an auxiliary lane on the approach to the Interchange Exit Ramps to provide dual exit lanes. The Interchange Ramps will be constructed with full depth asphalt pavement.</p>	<p>List the revised feature(s):</p> <p>SR 155/Flat Shoals Road</p> <p>Omit the additional lane in each direction along SR 155 from Clifton Springs Road north to the intersection of Panthersville Road. The proposed project limits have been reduced to eliminate any work at these two intersections, therefore, no operational analysis is needed. This will reduce the project length by approximately 0.5 miles, reduce the right of way impacts and resulting displacements from six to four, and reduce construction time and associated costs. The typical section within the project limits will have two twelve foot lanes and a 4' bike lane in each direction, a variable width raised median, and twelve foot urban shoulders on both sides of the roadway.</p> <p>I-285</p> <p>Omit width under bridge providing for future barrier-separated HOV-, additional mainline-, and an auxiliary lane in each direction. Construction of HOV lanes along this section of I-285 is not included in the 2030 Long Range Transportation Plan (LRTP). However, this section of I-285 is included in Tier 4 of the Metropolitan Atlanta Managed Lane Transportation System Plan. Projects described in the Tier 4 Plan are outside the ARC's Long Range Transportation Plan and no funding source</p>

<p>Panthersville Road</p> <p>Construct an additional through lane and bicycle lane in each direction from the intersection with SR 155 southward past the bridge over I-285. Separate opposing through lanes by a 14-foot flush median.</p>	<p>has been identified. The design year of the Tier 4 project within the proposed project limits will be outside of the life-cycle of the SR 155 Bridge Overpass. Reduction in the typical section width results in shortening the work along I-285 by approximately 0.5 miles, reduces right of way impacts, reduces the length of the SR 155 replacement bridge, eliminates the need to replace the Panthersville Road Overpass bridge, and eliminates the need to widen the bridge over Shoal Creek and lengthen the Doless Creek reinforced concrete box culvert. The reduction in work substantially reduces the estimated construction time and associated costs. Retaining the Panthersville Road Overpass bridge will require a design exception for horizontal clearance along the I-285 Westbound Entrance Ramp (Ramp B). A request is currently being processed to reverse VE Alternative No. 5 which recommended reconstructing the Interstate Ramps with AC pavement. A Life Cycle Cost Analysis using current-day unit prices for asphaltic concrete and Portland cement concrete yields PCC pavement over a 40-year life cycle is a less expensive construction alternative.</p> <p>Panthersville Road</p> <p>Omit all proposed improvements other than jacking the existing bridge to achieve a minimum vertical clearance over I-285 of 17'. Eliminating work along Panthersville Road will significantly reduce right of way impacts and construction time and associated costs.</p>
<p>Reason for Change: The scope of the project is being revised to reduce right of way impacts along SR 155 and I-285. The reduction in associated right-of-way and construction costs will ensure the project is cost efficient and within allocated funding. The proposed revised concept report satisfies the Need & Purpose and provides and acceptable LOS within the project limits.</p>	

The life-cycle cost analysis for the pavement selection was performed in 2003 and is outdated with the current material costs. Also, the construction can be staged with the use of PCC. An updated life-cycle cost analysis has been performed to verify that PCC is the most cost-effective alternative.

Potential Environmental Impacts of Proposed Revision:

Due to the reduced footprint of the proposed project, there will be a reduction of the potential environmental impacts. The purpose of the project is to reduce crash frequency and severity and improve traffic operations, therefore, demonstrates independent utility and logical termini by the lengthening of the ramps and adding dual turn lanes on the bridge. There are no anticipated effects to the project schedule.

Updated Cost Estimate

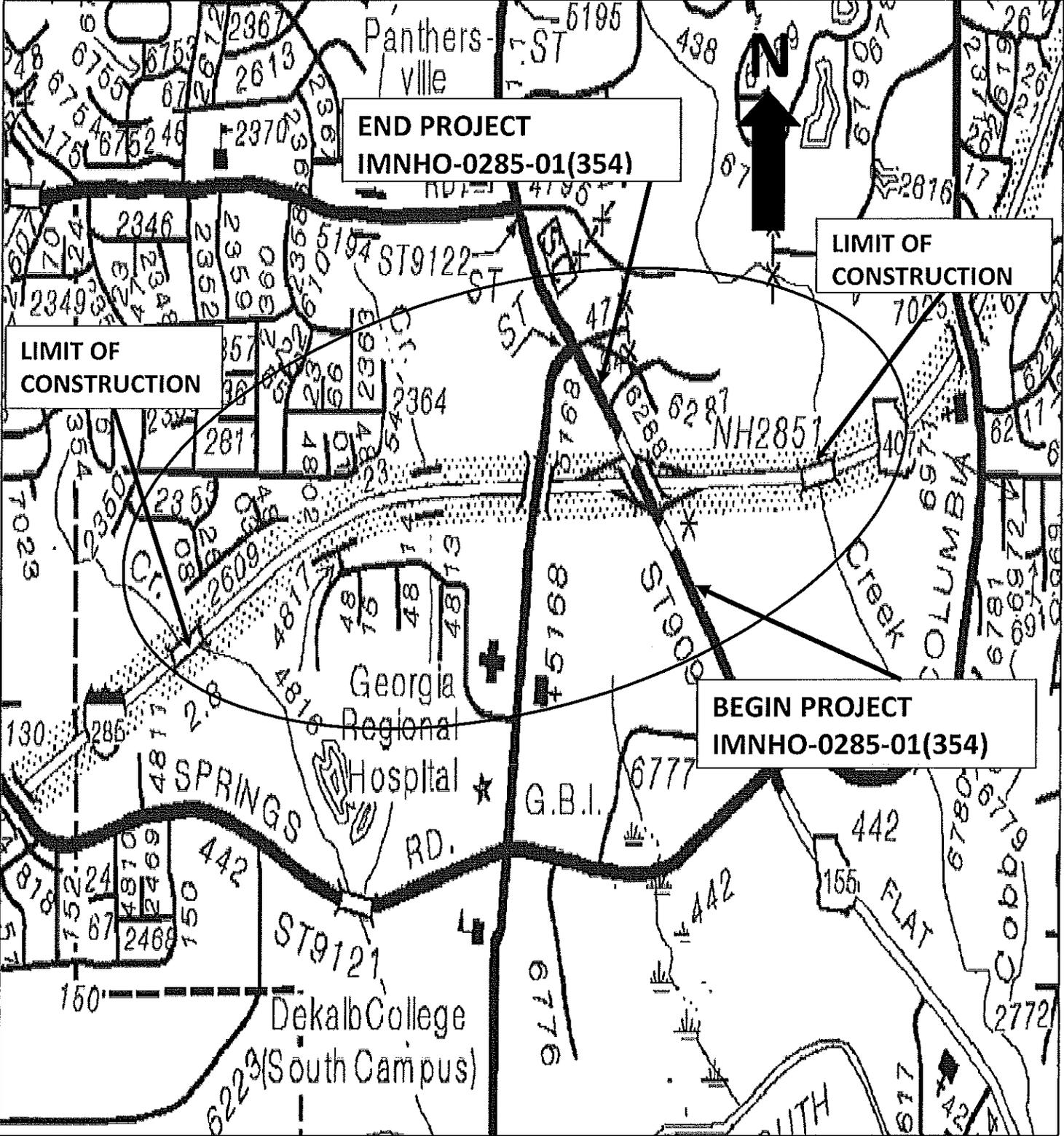
Construction (incl. E&I)	\$ 17,144,400.00
Fuel Adjustment	\$ 2,054,000.00
Right-of-Way	\$ 13,394,000.00
Utilities (reimbursable)	\$ 500,000.00

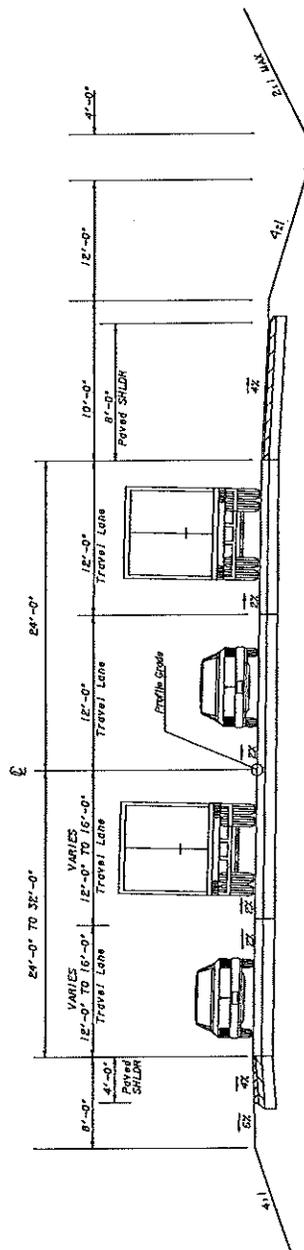
Recommendation: Recommend that the proposed revision to the concept be approved for implementation.

Attachments:

1. Location Sketch
2. Typical Sections
3. Pavement Life-cycle Cost Analysis
4. Cost Estimates
5. Conforming plan's network schematics showing through lanes.
6. Traffic Diagrams
7. Traffic Analysis
8. B/C ratio
9. FHWA Correspondence on HOV Lanes (2)
10. PIOH Response Letters

LOCATION SKETCH MAP
IMNHO-0285-01(354), DeKalb County





TYPICAL SECTION NO. 8
 STA. 124+20.00 TO 127+16.00 Ramp A

REVISION DATES	STATE OF GEORGIA
	DEPARTMENT OF TRANSPORTATION
	OFFICE: ROADWAY DESIGN
	TYPICAL SECTIONS
	1-285 AT FLAT SHOALS RD INTERCHANGE RECONSTRUCTION
	DATE: 5-05

GEORGIA
 DEPARTMENT
 OF
 TRANSPORTATION

Ramp A - Eastbound Exit Ramp	SF	SY
Ramp Pavement Area	99439.00	11048.78
Shoulder Pavement Area	56528.00	6280.89
Ramp B - Westbound Entrance Ramp		
Ramp Pavement Area	38339.31	4259.92
Shoulder Pavement Area	33295.18	3699.46
Ramp C - Eastbound Entrance Ramp		
Ramp Pavement Area	41586.43	4620.71
Shoulder Pavement Area	31439.84	3493.32
Ramp D - Westbound Exit Ramp		
Ramp Pavement Area	64133.00	7125.89
Shoulder Pavement Area	34912.00	3879.11

PCC Section

Plain PC Conc Pvmnt, C1 1 Conc, 10-in thick

3-in 19mm Superpave, GP 1 or 2, Incl Bitum Mat'l and H. Lime

12-in Graded Aggregate Base

Cost/Unit	Unit	Spread Rate	Amount	Unit Area
\$ 31.00	SY			SY
\$ 63.29	TN	110#/SY/in	330	#/SY
\$ 16.45	TN	150#/CF	1350	#/SY

AC Ramp Pavement Section

1.5-in 12.5 mm Superpave, GP 2 only, Incl Bitum Mat'l and H. Lime

2-in 19 mm Superpave, GP 1 or 2, Incl Bitum Mat'l and H. Lime

6-in 25 mm Superpave, GP 1 or 2, Incl Bitum Mat'l and H. Lime

12-in Graded Aggregate Base

Bituminous Tack Coat

\$ 62.17	TN	110#/SY/in	165	#/SY
\$ 63.29	TN	110#/SY/in	220	#/SY
\$ 59.01	TN	110#/SY/in	660	#/SY
\$ 16.45	TN	150#/CF	1350	#/SY
\$ 1.97	GAL	0.04GAL/SY	0.04	GAL/SY

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. IMNH0-0285-01(354), DeKalb I-285 at SR 155/Flat Shoals Road Interchange
P.I. No. 713290- **OFFICE Program Delivery**
DATE 12/3/2010

FROM  Bobby Hilliard, P.E., State Program Delivery Engineer

TO Ronald E. Wishon, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS – CONCEPT REVISION

PROJECT MANAGER Karyn Matthews

MNGT LET DATE 7/15/2014

MNGT R/W DATE 7/15/2012

PROGRAMMED COST (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$32,000,000.00

DATE 10/10/2008

RIGHT OF WAY \$16,000,000.00

DATE 3/26/2008

UTILITIES \$776,400.00

DATE 10/10/2008

REVISED COST ESTIMATES

CONSTRUCTION* \$19,198,100.00

RIGHT OF WAY \$13,394,000.00

UTILITIES \$500,000.00

* Costs contain 5% Engineering and Inspection

REASON FOR COST DECREASE Reduction in scope of the project.

CONTINGENCY SUMMARY

Construction Cost Estimate:	\$16,328,000.00	(Base Estimate)
Engineering and Inspection:	\$816,400.00	(Base Estimate x 5 %)
Total Fuel Adjustment	\$ 896,300.00	(From attached worksheet)
Total Liquid AC Adjustment	\$ 1,157,400.00	(From attached worksheet)
Construction Total:	\$19,198,100.00	

REIMBURSABLE UTILITY COST

Utility Owner	Reimbursable Costs
<u>Georgia Power Co.</u>	<u>\$500,000.00</u>
<u>AT&T Georgia</u>	<u>\$0.00</u>
<u>DeKalb County Water</u>	<u>\$0.00</u>
<u>DeKalb County Sewer</u>	<u>\$0.00</u>
<u>Atlanta Gas Light</u>	<u>\$0.00</u>
<u>Comcast</u>	<u>\$0.00</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Attachments

c: Genetha Rice-Singleton, State Program Control Administrator

DETAILED COST ESTIMATE

JOB NUMBER: 713290-

FED/STATE PROJECT NUMBER IMNH0-0285-01(354)

SPEC YEAR: 01

ENGINEERING AND INSPECTION:

DESCRIPTION: I-285 @ SR 155/FLAT SHOALS ROAD

ITEMS FOR JOB 713290-

0100 - ROADWAY

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0005	150-1000	1.000	LS	\$395,000.00	TRAFFIC CONTROL - IMNH0-0285-01(354)	\$395,000.00
0010	153-1300	1.000	EA	\$75,000.00	FIELD ENGINEERS OFFICE TP 3	\$75,000.00
0015	201-1500	1.000	LS	\$750,000.00	CLEARING & GRUBBING - IMNH0-0285-01(354)	\$750,000.00
0020	205-0001	250000.000	CY	\$3.50	UNCLASS EXCAV	\$875,000.00
0025	310-1101	32731.000	TN	\$23.29	GR AGGR BASE CRS, INCL MATL	\$762,404.49
0030	318-3000	600.000	TN	\$21.18	AGGR SURF CRS	\$12,705.56
0035	402-1812	1015.000	TN	\$79.79	RECYL AC LEVELING,INC BM&HL	\$80,990.83
0040	402-3121	28632.000	TN	\$70.82	RECYL AC 25MM SP,GP1/2,BM&HL	\$2,027,628.34
0045	402-3130	5368.000	TN	\$74.24	RECYL AC 12.5MM SP,GP2,BM&HL	\$398,520.86
0050	402-3190	7158.000	TN	\$77.05	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	\$551,504.29
0055	413-1000	4770.000	GL	\$2.48	BITUM TACK COAT	\$11,823.35
0060	432-0206	2000.000	SY	\$5.64	MILL ASPH CONC PVMT/ 1.50" DEP	\$11,278.66
0065	433-1100	784.000	SY	\$193.33	REF CONC APPR SL/INCL CURB	\$151,569.24
0070	439-0022	36139.000	SY	\$55.00	PLN PC CONC PVMT CL3 10" THK	\$1,987,645.00
0075	441-0104	2330.000	SY	\$57.89	CONC SIDEWALK, 4 IN	\$134,877.78
0080	441-0204	3600.000	SY	\$39.62	PLAIN CONC DITCH PAVING, 4 IN	\$142,641.36
0085	441-0748	7193.000	SY	\$36.86	CONC MEDIAN, 6 IN	\$265,132.25
0090	441-3999	500.000	LF	\$21.16	CONCRETE V GUTTER	\$10,579.20
0095	441-4030	241.000	SY	\$53.37	CONC VALLEY GUTTER, 8 IN	\$12,861.23
0100	441-6022	4365.000	LF	\$20.76	CONC CURB & GUTTER, 6"X30"TP2	\$90,625.82
0105	500-3800	7.000	CY	\$929.43	CL A CONC, INCL REINF STEEL	\$6,506.03
0110	550-1180	6556.000	LF	\$44.41	STM DR PIPE 18",H 1-10	\$291,177.46
0115	550-1240	3958.000	LF	\$61.88	STM DR PIPE 24",H 1-10	\$244,919.89
0120	550-1300	864.000	LF	\$70.79	STM DR PIPE 30",H 1-10	\$61,160.42
0125	550-1360	180.000	LF	\$98.46	STM DR PIPE 36",H 1-10	\$17,722.82
0130	550-4118	3.000	EA	\$422.44	FLARED END SECT 18 IN, SIDE DR	\$1,267.32
0135	550-4124	1.000	EA	\$415.33	FLARED END SECT 24 IN, SIDE DR	\$415.33
0140	550-4130	3.000	EA	\$877.40	FLARED END SECT 30 IN, SIDE DR	\$2,632.20
0145	641-1100	116.000	LF	\$64.48	GUARDRAIL, TP T	\$7,479.15
0150	641-1200	600.000	LF	\$15.56	GUARDRAIL, TP W	\$9,333.92
0155	641-5001	6.000	EA	\$696.54	GUARDRAIL ANCHORAGE, TP 1	\$4,179.24
0160	641-5012	6.000	EA	\$1,848.93	GUARDRAIL ANCHORAGE, TP 12	\$11,093.56
0165	668-1100	60.000	EA	\$2,142.04	CATCH BASIN, GP 1	\$128,522.68
0170	668-2100	65.000	EA	\$2,666.03	DROP INLET, GP 1	\$173,292.01
0175	668-4300	8.000	EA	\$2,639.95	STORM SEW MANHOLE, TP 1	\$21,119.61
Total for ROADWAY						\$9,728,609.90

0200 - SIGNING & MARKING

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0180	636-1072	2587.000	SF	\$18.38	HWY SIGNS,ALUM EXTRD PNLS, RS TP 3	\$47,537.11
0185	636-1077	356.000	SF	\$29.98	HWY SIGN,ALUM EXT PL,REFL SHT,TP 9	\$10,671.94
0190	636-2070	2289.000	LF	\$8.82	GALV STEEL POSTS, TP 7	\$20,197.47
0195	653-0110	22.000	EA	\$88.13	THERM PVMT MARK, ARROW, TP 1	\$1,938.80
0200	653-0120	71.000	EA	\$75.54	THERM PVMT MARK, ARROW, TP 2	\$5,363.18
0205	653-0170	3.000	EA	\$93.57	THERM PVMT MARK, ARROW, TP 7	\$280.71
0210	653-0210	16.000	EA	\$112.28	THERM PVMT MARK, WORD , TP 1	\$1,796.53

DETAILED COST ESTIMATE

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0215	653-1704	431.000	LF	\$4.33	THERM SOLID TRAF STRIPE,24",WH	\$1,867.79
0220	653-1810	4260.000	LF	\$1.01	THER SLD TRAF STRIPE, 10 IN, W	\$4,293.27
0225	653-2501	8.000	LM	\$1,407.64	THERMO SOLID TRAF ST, 5 IN, WH	\$11,261.09
0230	653-2502	2.000	LM	\$1,389.07	THERMO SOLID TRAF ST, 5 IN YE	\$2,778.15
0235	653-4501	4.000	GLM	\$887.64	THERMO SKIP TRAF ST, 5 IN, WHI	\$3,550.55
0240	653-6004	540.000	SY	\$4.26	THERM TRAF STRIPING, WHITE	\$2,300.04
0245	653-6006	80.000	SY	\$4.32	THERM TRAF STRIPING, YELLOW	\$345.25
0250	654-1001	90.000	EA	\$4.64	RAISED PVMT MARKERS TP 1	\$418.03
0255	654-1003	300.000	EA	\$4.98	RAISED PVMT MARKERS TP 3	\$1,492.76
Total for SIGNING & MARKING						\$116,092.67

0300 - SIGNALS

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0260	615-1200	535.000	LF	\$17.22	DIRECTIONAL BORE - IMNH0-0285-01(354)	\$9,212.84
0265	636-1041	60.000	SF	\$46.31	HWY SIGNS,TP 2MAT,REFL SH TP 9	\$2,778.61
0270	639-4004	6.000	EA	\$6,323.43	STRAIN POLE, TP IV	\$37,940.57
0275	639-4014	2.000	EA	\$7,608.30	STR POLE,TP 4,INCL LUMIN. ARM	\$15,216.60
0280	647-1000	1.000	LS	\$60,000.00	TRAF SIGNAL INSTALLATION NO - IMNH0-0285-01 (354)	\$60,000.00
0284	647-1000	1.000	LS	\$60,000.00	TRAF SIGNAL INSTALLATION NO - IMNH0-0285-01 (354)	\$60,000.00
0285	682-6233	800.000	LF	\$9.57	CONDUIT, NONMETL, TP 3, 2 IN	\$7,655.30
0290	938-1100	2.000	EA	\$6,694.89	INT VIDEO DET SYS ASMBLY, TP A	\$13,389.78
0295	938-8000	1.000	LS	\$3,000.00	TESTING	\$3,000.00
0300	938-8500	1.000	LS	\$3,500.00	TRAINING	\$3,500.00
Total for SIGNALS						\$212,693.70

0400 - BRIDGES

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0305	500-0000	1.000	\$	\$3,720,461.00	SEC 500 CONC STRUCTURES CONSTRUCT BRIDGE #1 - FLAT SHOALS ROAD	\$3,720,461.00
0315	540-1102	1.000	LS	\$100,000.00	REM OF EX BR, BR NO - IMNH0-0285-01(354)	\$100,000.00
Total for BRIDGES						\$3,820,461.00

0500 - WALLS

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0320	617-0510	1.000	LS	\$250,000.00	PERMANENTLY ANCHORED WALL NO - IMNH0-0285-01(354)	\$250,000.00
0325	627-1000	35000.000	SF	\$50.97	MSE WALL FACE, 0 - 10 FT HT, WALL NO - IMNH0-0285-01(354)	\$1,783,803.00
Total for WALLS						\$2,033,803.00

0600 - TEMPORARY EROSION CONTROL

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0330	163-0232	5.000	AC	\$614.83	TEMPORARY GRASSING	\$3,074.16
0335	163-0240	144.000	TN	\$263.28	MULCH	\$37,912.81
0340	163-0300	6.000	EA	\$1,914.05	CONSTRUCTION EXIT	\$11,484.30
0345	163-0501	1.000	EA	\$672.05	CONSTR AND REMOVE SILT CONTROL GATE,TP 1	\$672.05
0350	163-0520	1000.000	LF	\$18.07	CONSTR AND REMOVE TEMP PIPE SLOPE DRAIN	\$18,074.71
0355	163-0529	3700.000	LF	\$3.35	CNST/REM TEMP SED BAR OR BLD STRW CK DM	\$12,395.00
0360	163-0531	4.000	EA	\$8,423.74	CONSTR & REM SEDIMENT BASIN,TP 1,STA NO-IMNH0-0285-01(354)	\$33,694.97
0365	163-0550	126.000	EA	\$256.70	CONS & REM INLET SEDIMENT TRAP	\$32,344.64
0370	165-0010	5236.000	LF	\$1.01	MAINT OF TEMP SILT FENCE, TP A	\$5,298.94
0375	165-0030	4298.000	LF	\$1.31	MAINT OF TEMP SILT FENCE, TP C	\$5,610.14
0380	165-0060	4.000	EA	\$1,408.33	MAINT OF TEMP SEDIMENT BASIN,STA NO -	\$5,633.31
0385	165-0071	1850.000	LF	\$1.50	MAINT OF SEDIMENT BARRIER - BALED STRAW	\$2,775.00
0390	165-0085	1.000	EA	\$326.30	MAINT OF SILT CONTROL GATE, TP 1	\$326.30

DETAILED COST ESTIMATE

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0395	165-0101	6.000	EA	\$608.13	MAINT OF CONST EXIT	\$3,648.80
0400	165-0105	126.000	EA	\$85.02	MAINT OF INLET SEDIMENT TRAP	\$10,712.22
0405	167-1000	2.000	EA	\$1,355.20	WATER QUALITY MONITORING AND SAMPLING	\$2,710.40
0410	171-0010	10473.000	LF	\$1.96	TEMPORARY SILT FENCE, TYPE A	\$20,544.15
0415	171-0030	8595.000	LF	\$3.09	TEMPORARY SILT FENCE, TYPE C	\$26,596.02
0310	518-1000	1.000	LS	\$115,200.00	RAISE EXISTING BRIDGE, STA - IMNH0-0285-01 (354)	\$115,200.00
0420	716-2000	7500.000	SY	\$1.33	EROSION CONTROL MATS, SLOPES	\$9,982.73
Total for TEMPORARY EROSION CONTROL						\$358,690.65

0700 - PERMANENT EROSION CONTROL

LINE	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0425	603-2024	600.000	SY	\$56.50	STN DUMPED RIP RAP, TP 1, 24"	\$33,900.22
0430	603-2180	100.000	SY	\$46.07	STN DUMPED RIP RAP, TP 3, 12"	\$4,606.59
0435	603-7000	700.000	SY	\$6.61	PLASTIC FILTER FABRIC	\$4,627.70
0440	700-6910	9.000	AC	\$943.47	PERMANENT GRASSING	\$8,491.23
0445	700-7000	36.000	TN	\$66.06	AGRICULTURAL LIME	\$2,378.22
0450	700-7010	33.000	GL	\$20.51	LIQUID LIME	\$676.91
0455	700-8000	3.000	TN	\$380.25	FERTILIZER MIXED GRADE	\$1,140.75
0460	700-8100	660.000	LB	\$2.70	FERTILIZER NITROGEN CONTENT	\$1,779.09
Total for PERMANENT EROSION CONTROL						\$57,600.71

GRAND TOTAL FOR JOB 713290- \$16,327,951.63

TOTALS FOR JOB 713290-

ESTIMATED COST:	\$16,327,951.63
CONTINGENCY PERCENT (0.0):	0.00
ENGINEERING AND INSPECTION (0.0):	0.00
ESTIMATED TOTAL:	\$16,327,951.63

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE IMNH0-0285-01(354), DeKalb County
I-285 @ SR 155/Flat Shoals Road
PI # 713290

OFFICE District #7 Office
Chamblee, GA

DATE September 30, 2009

FROM Rachel Brown, District Engineer

TO Bobby Hilliard, State Program Delivery Engineer
ATTN Karyn M. Matthews, P.E.

SUBJECT PRELIMINARY UTILITY COST (ESTIMATE)

As requested by your office, we are furnishing you with a Preliminary Utility Cost estimates for each utility with facilities potentially located within the project limits.

FACILITY OWNER		NON-REIMBURSABLE	REIMBURSABLE
Georgia Power Co.	Power Pole		\$500,000.00
AT&T of Georgia	Fiber	\$60,000.00	
DeKalb County Water,	Fire Hydrant	\$8,000.00	
DeKalb County Water,	Water main	\$157,500.00	
DeKalb County Sewer,	Sewer main	\$85,000.00	
Atlanta Gas Light	Gas main	\$60,000.00	
Comcast	Fiber	\$40,000.00	
Totals		\$410,500.00	\$500,000.0

Total Reimbursement Cost: \$500,000.00

Total reimbursable cost for the above project is \$500,000.00.

DeKalb County Water and Sewer wants their facilities to be added to the contract as a CIA.

If you have any questions, please contact Wade Woodard at 770-986-1117.

Sincerely,

Rachel Brown
District Engineer

By: Jonathan Walker
District Utilities Engineer

RB: JW: WW
Attachments
CC: Jeff Baker P.E. / Utilities (O.G.C. 10th Floor)
File

2010-08-23 util cost verification.txt

From: Woodard, Wade
Sent: Monday, August 23, 2010 5:14 PM
To: Matthews, Karyn
Cc: Walker, Jonathan; Witherspoon, Sharon
Subject: RE: P.I. 713290 Cost Estimate 9-30-09

Karyn, I have looked at the estimate I sent you last year and it's ok to use it. Nothing has changed in that area since I worked up that estimate. When the 1st submission of plans goes out we will have a better estimate from the utilities that are out there.

Thanks

Wade Woodard
Georgia Department of Transportation
District #7 Metro Utility Engineer
Serving: DeKalb, Rockdale Counties
5025 New Peachtree Road
Chamblee Georgia, 30341
Phone 770-986-1117
Fax 770-986-1411

Preliminary Right of Way Cost Estimate



Phil Copeland
Right of Way Administrator
By: LaShone Alexander

Date: January 26, 2010

Project: IMNHO-0285-01(354) DeKalb County (Additional Req'd RW)

P.L. Number: 713290

Existing/Required R/W: Varies/Varies

No. Parcels:

Project Termini : I-285 at SR 155/Flat Shoal Road

Project Description: I-285 at SR 155/Flat Shoal Road Interchange Improvement

Land:

Comm. R/W: 2.689 acres @ \$400,000.00/acre \$ 1,075,600

Improvements : signs, fencing, businesses, landscaping
misc. site improvements \$ 3,725,000

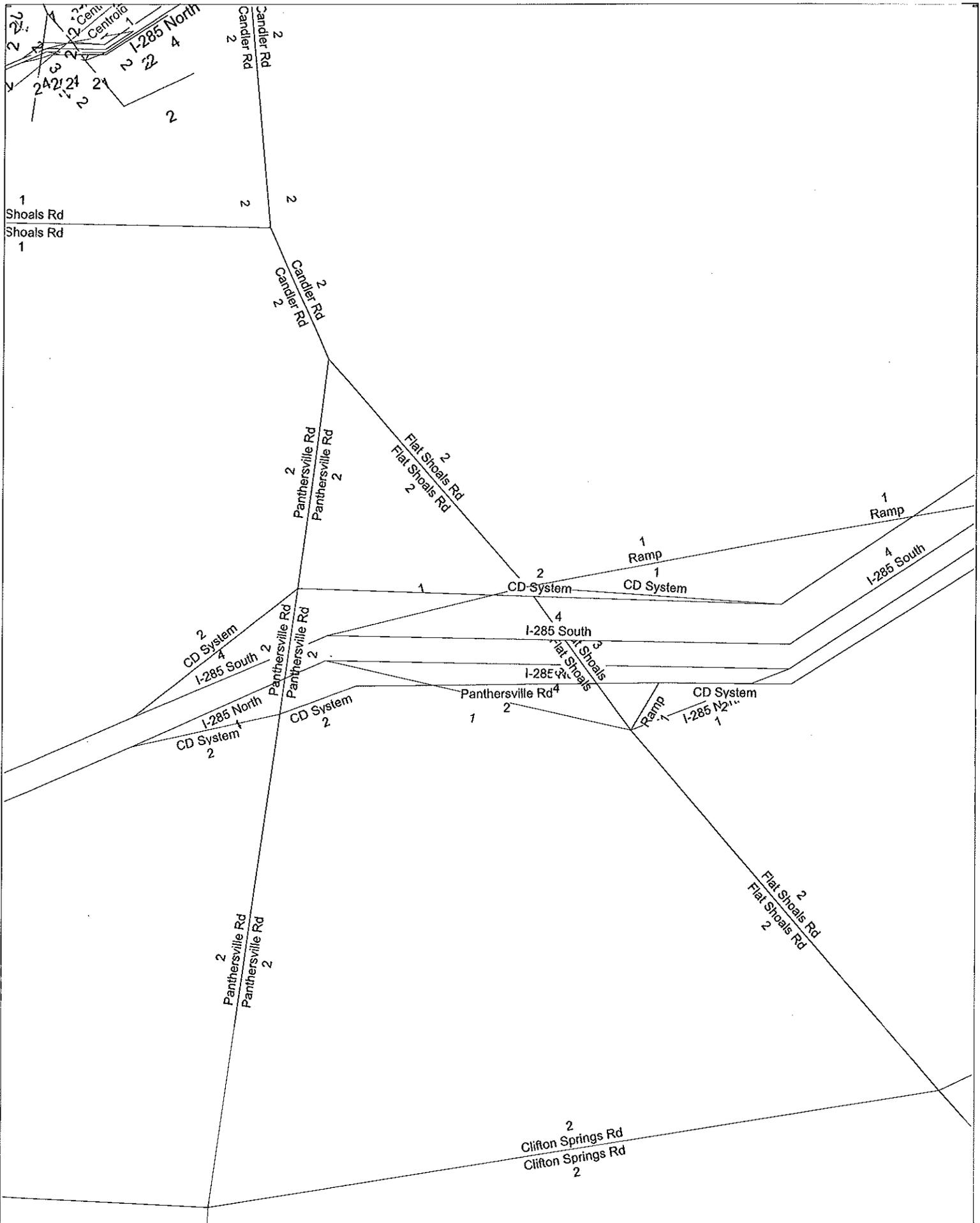
Relocation: Residential (0) \$
Commercial (4) 600,000
\$ 600,000

Damage : Proximity (0) \$
Cost to Cure (0) \$
Net Cost \$ 5,400,600

Net Cost		\$ 5,400,600
Scheduling Contingency	55 %	2,970,330
Adm/Court Cost	60 %	<u>5,022,558</u>
		\$ 13,393,488

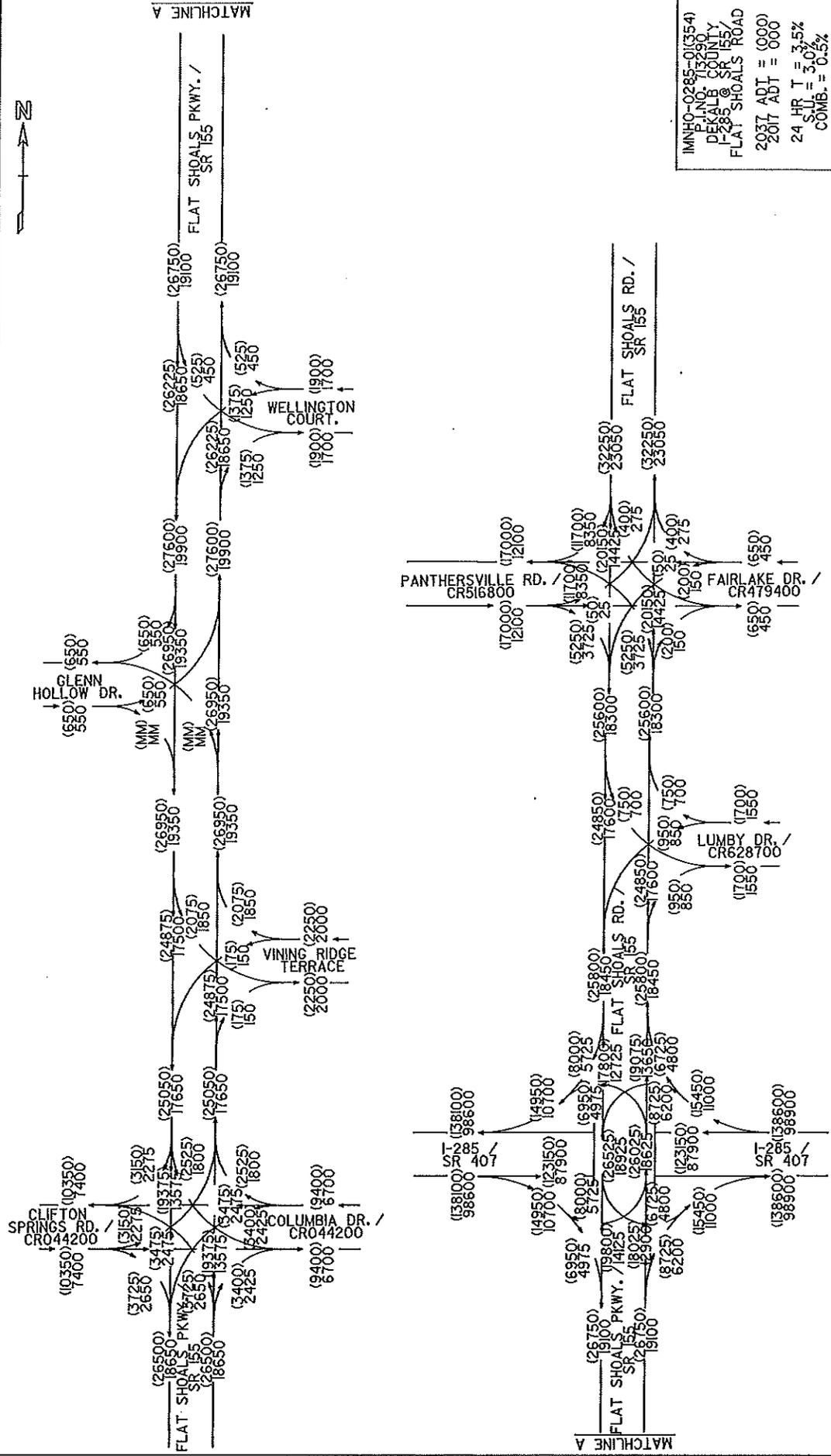
Total Cost \$ 13,394,000

Note: The Market Appreciation (40%) is not included in the updated Preliminary Cost Estimate.



DEKALB COUNTY

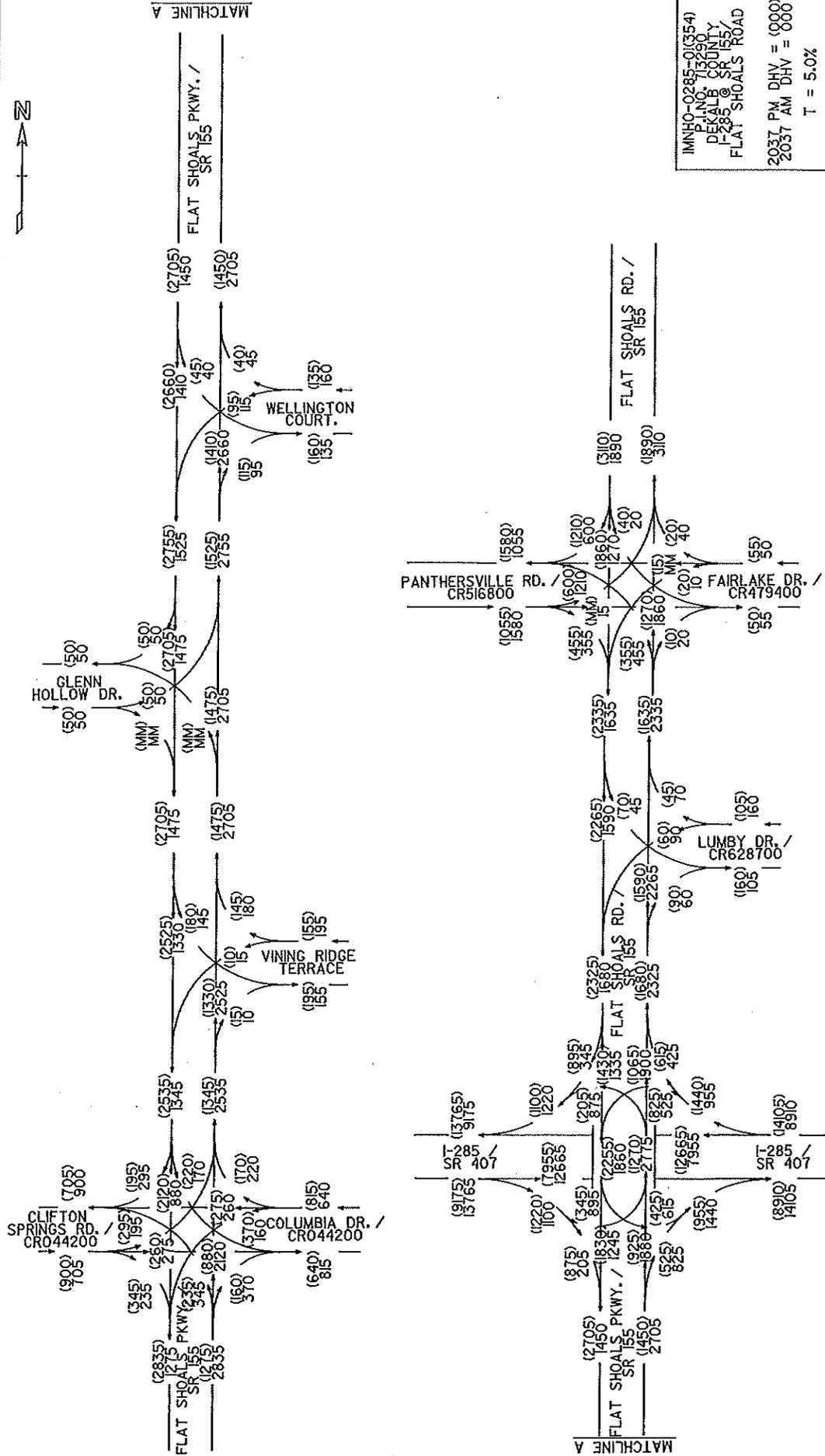
GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



1MNH0-0285-0(354)
PLNO. 715290
DEKALB COUNTY
I-285 @ SR 155/
FLAT SHOALS ROAD
2037 ADT = 000
2017 ADT = 000
24 HR. T = 3.5%
S.U. = 3.0%
COMB. = 0.5%
ANN
05/76

DEKALB COUNTY

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF PLANNING



MNHO-0285-01(354)
 P.I. NO. 713290
 DEKALB COUNTY
 I-285 @ SR 155/
 FLAT SHOALS ROAD
 2037 PM DHV = 1000
 2037 AM DHV = 800
 T = 5.0%
 AMW
 03/76

Updated traffic 10/6/01, sign 02/20/10, 10/26/04, AM, gmk

SHORT REPORT												
General Information						Site Information						
Analyst <i>Gordon Sisk</i>						Intersection <i>Eastbound exit at Flat Shoals</i>						
Agency or Co. <i>GDOT</i>						Area Type <i>All other areas</i>						
Date Performed <i>8/10/2010</i>						Jurisdiction						
Time Period <i>AM</i>						Analysis Year <i>2037</i>						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2		2					4	1	2	2	
Lane Group	L		R					T	R	L	T	
Volume (vph)	895		205					1880	825	615	1245	
% Heavy Vehicles	2		2					5	2	2	5	
PHF	0.95		0.95					0.95	0.95	0.95	0.95	
Pretimed/Actuated (P/A)	A		A					A	A	A	A	
Startup Lost Time	3.0		3.0					3.0	3.0	3.0	3.0	
Extension of Effective Green	2.0		2.0					2.0	2.0	2.0	2.0	
Arrival Type	3		3					4	4	4	4	
Unit Extension	3.0		3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0	20	0	0	
Lane Width	12.0		12.0					12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	-1	N	N	2	N	N	5	N	N	-5	N
Parking/Hour												
Bus Stops/Hour	0		0					2	2	2	2	
Minimum Pedestrian Time		16.9			16.9			30.6			30.6	
Phasing	EB Only	02	03	04	SB Only	Thru & RT	07	08				
Timing	G = 33.0	G =	G =	G =	G = 22.0	G = 33.0	G =	G =				
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate	942		216					1979	847	647	1311	
Lane Group Capacity	1105		1634					2046	1056	737	2040	
v/c Ratio	0.85		0.13					0.97	0.80	0.88	0.64	
Green Ratio	0.32		0.58					0.32	0.69	0.21	0.58	
Uniform Delay d ₁	31.8		9.6					33.5	10.8	38.3	14.1	
Delay Factor k	0.38		0.11					0.47	0.35	0.40	0.22	
Incremental Delay d ₂	6.6		0.0					13.1	4.5	11.7	0.7	
PF Factor	1.000		1.000					0.970	0.297	1.000	0.621	
Control Delay	38.4		9.6					45.5	7.7	50.0	9.4	
Lane Group LOS	D		A					D	A	D	A	
Approach Delay	33.0						34.2			22.8		
Approach LOS	C						C			C		
Intersection Delay	30.2			Intersection LOS						C		

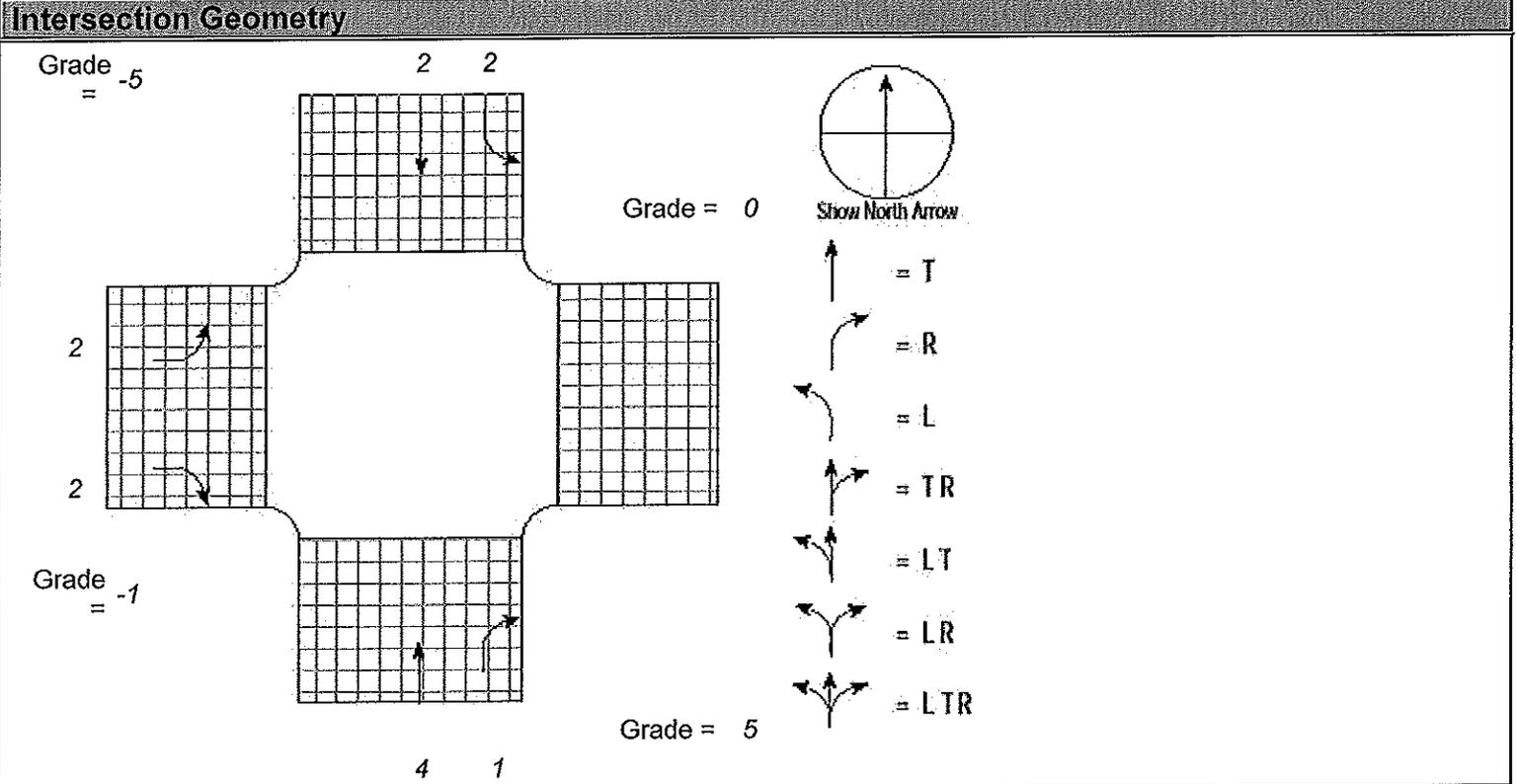
SHORT REPORT													
General Information						Site Information							
Analyst <i>Gordon Sisk</i> Agency or Co. <i>GDOT</i> Date Performed <i>8/10/2010</i> Time Period <i>PM</i>						Intersection <i>Eastbound exit at Flat Shoals</i> Area Type <i>All other areas</i> Jurisdiction Analysis Year <i>2037</i>							
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Number of Lanes	2		2					4	1	2	2		
Lane Group	L			R				T			R		
Volume (vph)	345			205				925	525	425	1830		
% Heavy Vehicles	2			2				5	2	2	5		
PHF	0.95			0.95				0.95	0.95	0.95	0.95		
Pretimed/Actuated (P/A)	A			A				A	A	A	A		
Startup Lost Time	3.0			3.0				3.0	3.0	3.0	3.0		
Extension of Effective Green	2.0			2.0				2.0	2.0	2.0	2.0		
Arrival Type	3			3				4	4	4	4		
Unit Extension	3.0			3.0				3.0	3.0	3.0	3.0		
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0	20	0	0		
Lane Width	12.0			12.0				12.0	12.0	12.0	12.0		
Parking/Grade/Parking	N	-1	N	N	0	N	N	5	N	N	-5	N	
Parking/Hour													
Bus Stops/Hour	0			0				2	2	2	2		
Minimum Pedestrian Time	16.9			16.9				30.6			30.6		
Phasing	EB Only		02	03	04	SB Only		Thru & RT		07	08		
Timing	G = 18.0		G =	G =	G =	G = 31.0		G = 39.0		G =	G =		
	Y = 4		Y =	Y =	Y =	Y = 4		Y = 4		Y =	Y =		
Duration of Analysis (hrs) = 0.25								Cycle Length C = 100.0					
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adjusted Flow Rate	363		216					974	532	447	1926		
Lane Group Capacity	587			1465				2430	919	1052	2567		
v/c Ratio	0.62			0.15				0.40	0.58	0.42	0.75		
Green Ratio	0.17			0.52				0.38	0.60	0.30	0.73		
Uniform Delay d ₁	38.5			12.5				22.7	12.3	28.1	8.1		
Delay Factor k	0.20			0.11				0.11	0.17	0.11	0.31		
Incremental Delay d ₂	2.0			0.0				0.1	0.9	0.3	1.3		
PF Factor	1.000			1.000				0.915	0.575	0.986	0.213		
Control Delay	40.5			12.5				20.9	8.0	28.0	3.0		
Lane Group LOS	D			B				C	A	C	A		
Approach Delay	30.1						16.3			7.7			
Approach LOS	C						B			A			
Intersection Delay	13.5						Intersection LOS						B

SHORT REPORT													
General Information						Site Information							
Analyst <i>Gordon Sisk</i> Agency or Co. <i>GDOT</i> Date Performed <i>8/10/2010</i> Time Period <i>AM</i>						Intersection <i>Westbound exit at Flat Shoals</i> Area Type <i>All other areas</i> Jurisdiction Analysis Year <i>2037</i>							
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Number of Lanes				2		2	2	2			4	1	
Lane Group				L		R	L	T			T	R	
Volume (vph)				525		425	875	1900			1335	345	
% Heavy Vehicles				5		5	5	5			5	5	
PHF				0.95		0.95	0.95	0.95			0.95	0.95	
Pretimed/Actuated (P/A)				A		A	A	A			A	A	
Startup Lost Time				3.0		3.0	3.0	3.0			3.0	3.0	
Extension of Effective Green				2.0		2.0	2.0	2.0			2.0	2.0	
Arrival Type				3		3	4	4			4	4	
Unit Extension				3.0		3.0	3.0	3.0			3.0	3.0	
Ped/Bike/RTOR Volume	0	0		0	0	0	0	0		0	0	9	
Lane Width				12.0		12.0	12.0	12.0			12.0	12.0	
Parking/Grade/Parking	N	0	N	N	2	N	N	1	N	N	-3	N	
Parking/Hour													
Bus Stops/Hour				0		0	2	2			2	2	
Minimum Pedestrian Time		16.9			16.9			3.2			30.6		
Phasing	WB Only		02	03		04		NB Only		Thru & RT		07	08
Timing	G = 24.0		G =	G =		G =		G = 35.0		G = 29.0		G =	
	Y = 4		Y =	Y =		Y =		Y = 4		Y = 4		Y =	
Duration of Analysis (hrs) = 0.25								Cycle Length C = 100.0					
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Adjusted Flow Rate				553		447	921	2000			1405	354	
Lane Group Capacity				760		2695	1125	2287			1864	867	
v/c Ratio				0.73		0.17	0.82	0.87			0.75	0.41	
Green Ratio				0.23		1.00	0.34	0.67			0.28	0.56	
Uniform Delay d ₁				35.6		0.0	30.2	13.1			32.9	12.5	
Delay Factor k				0.29		0.11	0.36	0.40			0.31	0.11	
Incremental Delay d ₂				3.5		0.0	4.9	4.1			1.8	0.3	
PF Factor				1.000		0.950	0.953	0.372			1.000	0.662	
Control Delay				39.1		0.0	33.6	9.0			34.6	8.6	
Lane Group LOS				D		A	C	A			C	A	
Approach Delay				21.7			16.8			29.4			
Approach LOS				C			B			C			
Intersection Delay	21.5			Intersection LOS						C			

SHORT REPORT												
General Information						Site Information						
Analyst	Gordon Sisk					Intersection	Westbound exit at Flat Shoals					
Agency or Co.	GDOT					Area Type	All other areas					
Date Performed	8/10/2010					Jurisdiction						
Time Period	PM					Analysis Year	2037					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				2		2	2	2			4	1
Lane Group				L		R	L	T			T	R
Volume (vph)				825		615	205	1065			1430	895
% Heavy Vehicles				5		5	5	5			5	5
PHF				0.95		0.95	0.95	0.95			0.95	0.95
Pretimed/Actuated (P/A)				A		A	A	A			A	A
Startup Lost Time				3.0		3.0	3.0	3.0			3.0	3.0
Extension of Effective Green				2.0		2.0	2.0	2.0			2.0	2.0
Arrival Type				3		3	4	4			4	4
Unit Extension				3.0		3.0	3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume	0	0		0	0	0	0	0		0	0	22
Lane Width				12.0		12.0	12.0	12.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	2	N	N	1	N	N	-3	N
Parking/Hour												
Bus Stops/Hour				0		0	2	2			2	2
Minimum Pedestrian Time		16.9			16.9			3.2			30.6	
Phasing	WB Only	02	03	04	NB Only	Thru & RT	07	08				
Timing	G = 33.0	G =	G =	G =	G = 23.0	G = 32.0	G =	G =				
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate				868		647	216	1121			1505	919
Lane Group Capacity				1058		2695	728	1980			2064	1053
v/c Ratio				0.82		0.24	0.30	0.57			0.73	0.87
Green Ratio				0.32		1.00	0.22	0.58			0.31	0.68
Uniform Delay d ₁				31.4		0.0	32.5	13.1			30.8	12.6
Delay Factor k				0.36		0.11	0.11	0.16			0.29	0.40
Incremental Delay d ₂				5.3		0.0	0.2	0.4			1.3	8.2
PF Factor				1.000		0.950	1.000	0.621			0.978	0.335
Control Delay				36.6		0.0	32.8	8.5			31.4	12.4
Lane Group LOS				D		A	C	A			C	B
Approach Delay				21.0			12.4			24.2		
Approach LOS				C			B			C		
Intersection Delay	20.3			Intersection LOS						C		

LONG REPORT

General Information		Site Information	
Analyst	Gordon Sisk	Intersection	Eastbound exit at Flat Shoals
Agency or Co.	GDOT	Area Type	All other areas
Date Performed	8/10/2010	Jurisdiction	
Time Period	AM	Analysis Year	2037



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	895		205					1880	825	615	1245	
% Heavy Veh	5		5					5	5	5	5	
PHF	0.95		0.95					0.95	0.95	0.95	0.95	
Actuated (P/A)	A		A					A	A	A	A	
Startup Lost Time	3.0		3.0					3.0	3.0	3.0	3.0	
Extension of Effective Green	2.0		2.0					2.0	2.0	2.0	2.0	
Arrival type	3		3					4	4	4	4	
Unit Extension	3.0		3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0	20	0	0	
Lane Width	12.0		12.0					12.0	12.0	12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/Hour												

Bus Stops/Hour		0		0				2	2	2	2
Pedestrian Timing		16.9		16.9		30.6		30.6			
	EB Only	02	03	04	SB Only	Thru & RT	07	08			
Timing	G = 34.0	G =	G =	G =	G = 20.0	G = 34.0	G =	G =			
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =			
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0					

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	895		205					1880	825	615	1245	
PHF	0.95		0.95					0.95	0.95	0.95	0.95	
Adjusted Flow Rate	942		216					1979	847	647	1311	
Lane Group	L		R					T	R	L	T	
Adjusted Flow Rate	942		216					1979	847	647	1311	
Proportion of LT or RT		--	1.000		--			--	1.000	1.000	--	0.000

Saturation Flow Rate

Base Satflow	1900		1900					1900	1900	1900	1900	
Number of Lanes	2		2					4	1	2	2	
f_w	1.000		1.000					1.000	1.000	1.000	1.000	
f_{HV}	0.952		0.952					0.952	0.952	0.952	0.952	
f_g	1.005		1.005					0.975	0.975	1.025	1.025	
f_p	1.000		1.000					1.000	1.000	1.000	1.000	
f_{bb}	1.000		1.000					0.998	0.992	0.996	0.996	
f_a	1.000		1.000					1.000	1.000	1.000	1.000	
f_{LU}	0.971		0.885					0.908	1.000	0.971	0.952	
f_{LT}	0.950		--			--		1.000	--	0.950	1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--		0.850	--		--		1.000	0.850	--	1.000	
f_{Lpb}	1.000		--			--		1.000	--	1.000	1.000	--
f_{Rpb}	--		1.000	--		--		1.000	1.000	--	1.000	

Adjusted Satflow	3355		2736					6395	1488	3408	3517	
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
	L		R				T	R	L	T		
Lane Group												
Adjusted Flow Rate	942		216				1979	847	647	1311		
Satflow Rate	3355		2736				6395	1488	3408	3517		
Lost Time	3.0		3.0				3.0	3.0	3.0	3.0		
Green Ratio	0.33		0.33				0.33	0.71	0.19	0.57		
Lane Group Capacity	1107		903				2110	1056	648	2005		
v/c Ratio	0.85		0.24				0.94	0.80	1.00	0.65		
Flow Ratio	0.28		0.08				0.31	0.57	0.19	0.37		
Critical Lane Group	Y		N				Y	N	Y	N		
Sum Flow Ratios	0.78											
Lost Time/Cycle	15.00											
Critical v/c Ratio	0.92											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L		R				T	R	L	T		
Lane Group												
Adjusted Flow Rate	942		216				1979	847	647	1311		
Lane Group Capacity	1107		903				2110	1056	648	2005		
v/c Ratio	0.85		0.24				0.94	0.80	1.00	0.65		
Green Ratio	0.33		0.33				0.33	0.71	0.19	0.57		
Uniform Delay d_1	31.2		24.4				32.5	9.8	40.5	14.7		
Delay Factor k	0.38		0.11				0.45	0.35	0.50	0.23		
Incremental Delay d_2	6.5		0.1				8.8	4.5	34.9	0.8		
PF Factor	1.000		1.000				0.961	0.211	1.000	0.642		
Control Delay	37.7		24.5				40.1	6.6	75.4	10.2		
Lane Group LOS	D		C				D	A	E	B		

Approach Delay	35.2		30.1	31.8
Approach LOS	D		C	C
Intersection Delay	31.6	Intersection LOS		C

SUPPLEMENTAL UNIFORM DELAY WORKSHEET FOR LEFT TURNS FROM EXCLUSIVE LANES WITH PROTECTED AND PERMITTED PHASES

General Information

Project Description *I-285 at flat shoals*

v/c Ratio Computation

	EB	WB	NB	SB
Cycle Length, C (s)	100.0			
Prot. Phase Eff. Green Interval, g (s)				
Opposed Queue Eff. Green Interval, gq (s)				
Unopposed green interval, gu (s)				
Red Time, r(s)				
Arrival Rate, qa (veh/s)				
Protected Phase Departure Rate, sp (veh/s)				
Perm. Phase Departure Rate, ss (veh/s)				
Xperm				
Xprot (N/A for Lagging Left-turns)				

Uniform Queue Size and Delay Computations

Queue at Start of Green Arrow, Qa				
Queue at Start of Unsaturated Green, Qu				
Residual Queue, Qr				
Uniform Delay, d1				

Uniform Queue Size and Delay Equations

	Case	Qa	Qu	Qr	d1
If Xperm ≤ 1.0 & Xprot ≤ 1.0	1	qa _r	qa _g q _q	0	$[0.5/(q_a C)] [r Q_a + Q_a^{2/(S_p - q_s)} + g_q Q_u + Q_u^{2/(S_s - q_a)}$
If Xperm ≤ 1.0 & Xprot > 1.0	2	qa _r	Q _r + qa _g q _q	Q _a - g(S _p - q _a)	$[0.5/(q_a C)] [r Q_a + g(Q_a + Q_r) + g_q (Q_r + Q_u) + Q_u^{2/(S_s - q_a)}$
If Xperm > 1.0 & Xprot ≤ 1.0	3	Q _r + qa _r	qa _g q _q	Q _u - g _u (S _s - q _a)	$[0.5/(q_a C)] [g_q Q_u + g_u(Q_a + Q_r) + r(Q_r + Q_a) + Q_a^{2/(S_p - q_a)}$

If $X_{perm} \leq 1.0$ (lagging lefts)	4	0	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + Q_u^{2/(S_s - q_a)}$
If $X_{perm} > 1.0$ (lagging lefts)	5	$Q_u - g_u(S_s - q_a)$	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + g_u(Q_u + Q_a) + Q_a^{2/(S_p - q_a)}$

BACK-OF-QUEUE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group	<i>L</i>		<i>R</i>					<i>T</i>	<i>R</i>	<i>L</i>	<i>T</i>	
Initial Queue/Lane	0.0		0.0					0.0	0.0	0.0	0.0	
Flow Rate/Lane	942		216					1979	847	647	1311	
Satflow/Lane	1728		1546					1760	1488	1755	1847	
Capacity/Lane	1107		903					2110	1056	648	2005	
Flow Ratio	0.3		0.1					0.3	0.6	0.2	0.4	
v/c Ratio	0.85		0.24					0.94	0.80	1.00	0.65	
I Factor	1.000		1.000					1.000	1.000	1.000	1.000	
Arrival Type	3		3					4	4	4	4	
Platoon Ratio	1.00		1.00					1.33	1.33	1.33	1.33	
PF Factor	1.00		1.00					0.98	0.33	1.00	0.70	
Q1	12.6		2.5					14.4	5.2	9.2	9.1	
kB	0.5		0.5					0.5	0.8	0.4	0.8	
Q2	2.4		0.2					4.2	2.8	4.0	1.4	
Q Average	15.0		2.6					18.6	8.0	13.2	10.5	

Percentile Back of Queue (95th percentile)

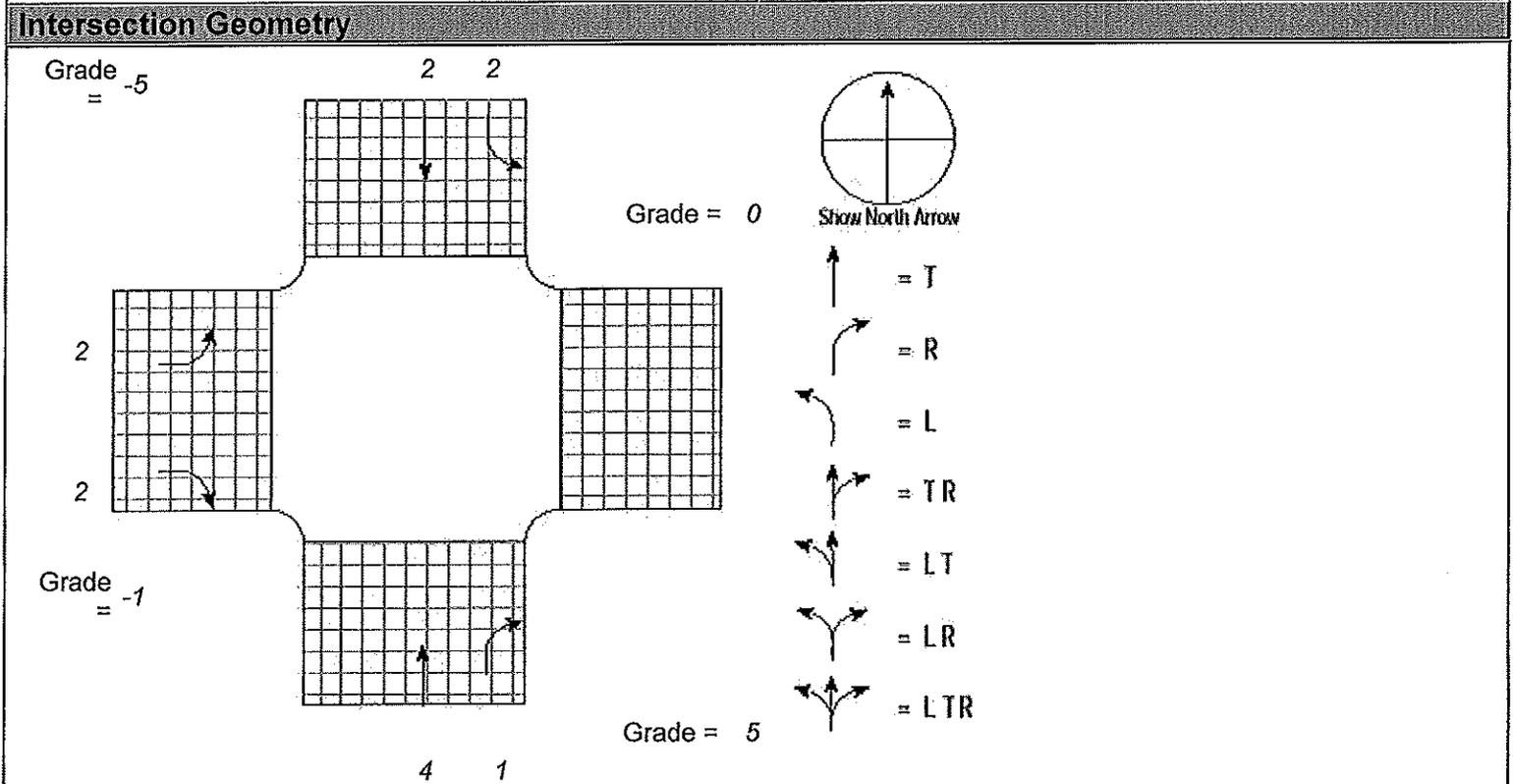
fB%	1.8		2.0					1.7	1.9	1.8	1.8	
BOQ, Q%	26.4		5.3					31.8	15.1	23.6	19.3	

Queue Storage Ratio

Q Spacing	25.0		25.0					25.0	25.0	25.0	25.0	
Q Storage	200		200					200	200	200	200	
Average RQ	1.9		0.3					2.3	1.0	1.7	1.3	
95% RQ%	3.3		0.7					4.0	1.9	3.0	2.4	

LONG REPORT

General Information		Site Information	
Analyst	Gordon Sisk	Intersection	Eastbound exit at Flat Shoals
Agency or Co.	GDOT	Area Type	All other areas
Date Performed	8/10/2010	Jurisdiction	
Time Period	PM	Analysis Year	2037



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	345		205					925	525	425	1830	
% Heavy Veh	5		5					5	5	5	5	
PHF	0.95		0.95					0.95	0.95	0.95	0.95	
Actuated (P/A)	A		A					A	A	A	A	
Startup Lost Time	3.0		3.0					3.0	3.0	3.0	3.0	
Extension of Effective Green	2.0		2.0					2.0	2.0	2.0	2.0	
Arrival type	3		3					4	4	4	4	
Unit Extension	3.0		3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0	20	0	0	
Lane Width	12.0		12.0					12.0	12.0	12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/Hour												

Bus Stops/Hour		0	0			2	2	2	2
Pedestrian Timing		16.9		16.9		30.6		30.6	
	EB Only	02	03	04	SB Only	Thru & RT	07	08	
Timing	G = 18.0	G =	G =	G =	G = 31.0	G = 39.0	G =	G =	
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =	
Duration of Analysis (hrs) = 0.25					Cycle Length C = 100.0				

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	345		205					925	525	425	1830	
PHF	0.95		0.95					0.95	0.95	0.95	0.95	
Adjusted Flow Rate	363		216					974	532	447	1926	
Lane Group	L		R					T	R	L	T	
Adjusted Flow Rate	363		216					974	532	447	1926	
Proportion of LT or RT		--	1.000		--			--	1.000	1.000	--	0.000

Saturation Flow Rate

Base Satflow	1900		1900					1900	1900	1900	1900	
Number of Lanes	2		2					4	1	2	2	
f_w	1.000		1.000					1.000	1.000	1.000	1.000	
f_{HV}	0.952		0.952					0.952	0.952	0.952	0.952	
f_g	1.005		1.005					0.975	0.975	1.025	1.025	
f_p	1.000		1.000					1.000	1.000	1.000	1.000	
f_{bb}	1.000		1.000					0.998	0.992	0.996	0.996	
f_a	1.000		1.000					1.000	1.000	1.000	1.000	
f_{LU}	0.971		0.885					0.908	1.000	0.971	0.952	
f_{LT}	0.950		--			--		1.000	--	0.950	1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--		0.850	--			--	1.000	0.850	--	1.000	
f_{Lpb}	1.000		--			--		1.000	--	1.000	1.000	--
f_{Rpb}	--		1.000	--			--	1.000	1.000	--	1.000	

Adjusted Satflow	3355		2736					6395	1488	3408	3517	
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB	
	L		R				T	R	L	T	
Adjusted Flow Rate	363		216				974	532	447	1926	
Satflow Rate	3355		2736				6395	1488	3408	3517	
Lost Time	3.0		3.0				3.0	3.0	3.0	3.0	
Green Ratio	0.17		0.52				0.38	0.60	0.30	0.73	
Lane Group Capacity	570		1423				2430	893	1022	2567	
v/c Ratio	0.64		0.15				0.40	0.60	0.44	0.75	
Flow Ratio	0.11		0.08				0.15	0.36	0.13	0.55	
Critical Lane Group	Y		N				N	N	N	Y	
Sum Flow Ratios	0.66										
Lost Time/Cycle	10.00										
Critical v/c Ratio	0.73										

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB	
	L		R				T	R	L	T	
Adjusted Flow Rate	363		216				974	532	447	1926	
Lane Group Capacity	570		1423				2430	893	1022	2567	
v/c Ratio	0.64		0.15				0.40	0.60	0.44	0.75	
Green Ratio	0.17		0.52				0.38	0.60	0.30	0.73	
Uniform Delay d_1	38.6		12.5				22.7	12.5	28.2	8.1	
Delay Factor k	0.22		0.11				0.11	0.18	0.11	0.31	
Incremental Delay d_2	2.4		0.0				0.1	1.1	0.3	1.3	
PF Factor	1.000		1.000				0.915	0.575	0.986	0.213	
Control Delay	41.0		12.6				20.9	8.2	28.1	3.0	
Lane Group LOS	D		B				C	A	C	A	

Approach Delay	30.4		16.4	7.7
Approach LOS	C		B	A
Intersection Delay	13.6	Intersection LOS		B

SUPPLEMENTAL UNIFORM DELAY WORKSHEET FOR LEFT TURNS FROM EXCLUSIVE LANES WITH PROTECTED AND PERMITTED PHASES

General Information

Project Description *I-285 at flat shoals*

v/c Ratio Computation

	EB	WB	NB	SB
Cycle Length, C (s)	100.0			
Prot. Phase Eff. Green Interval, g (s)				
Opposed Queue Eff. Green Interval, gq (s)				
Unopposed green interval, gu (s)				
Red Time, r(s)				
Arrival Rate, qa (veh/s)				
Protected Phase Departure Rate, sp (veh/s)				
Perm. Phase Departure Rate, ss (veh/s)				
Xperm				
Xprot (N/A for Lagging Left-turns)				

Uniform Queue Size and Delay Computations

Queue at Start of Green Arrow, Qa				
Queue at Start of Unsaturated Green, Qu				
Residual Queue, Qr				
Uniform Delay, d1				

Uniform Queue Size and Delay Equations

	Case	Qa	Qu	Qr	d1
If Xperm <= 1.0 & Xprot <= 1.0	1	qa _r	qa _g q	0	$[0.5/(qaC)][rQa + Qa^{2/(Sp - qa)} + gqQu + Qu^{2/(Ss - qa)}$
If Xperm <= 1.0 & Xprot > 1.0	2	qa _r	Qr + qa _g q	Qa - g(sp - qa)	$[0.5/(qaC)][rQa + g(Qa + Qr) + gq(Qr + Qu) + Qu^{2/(Ss - qa)}$
If Xperm > 1.0 & Xprot <= 1.0	3	Qr + qa _r	qa _g q	Qu - gu(ss - qa)	$[0.5/(qaC)][gqQu + gu(Qa + Qr) + r(Qr + Qa) + Qa^{2/(Sp - qa)}$

If $X_{perm} \leq 1.0$ (lagging lefts)	4	0	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + Q_u^{2/(S_s - q_a)}$
If $X_{perm} > 1.0$ (lagging lefts)	5	$Q_u - g_u(S_s - q_a)$	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + g_u(Q_u + Q_a) + Q_a^{2/(S_p - q_a)}$

BACK-OF-QUEUE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group	<i>L</i>		<i>R</i>					<i>T</i>	<i>R</i>	<i>L</i>	<i>T</i>	
Initial Queue/Lane	<i>0.0</i>		<i>0.0</i>					<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	
Flow Rate/Lane	<i>363</i>		<i>216</i>					<i>974</i>	<i>532</i>	<i>447</i>	<i>1926</i>	
Satflow/Lane	<i>1728</i>		<i>1546</i>					<i>1760</i>	<i>1488</i>	<i>1755</i>	<i>1847</i>	
Capacity/Lane	<i>570</i>		<i>1423</i>					<i>2430</i>	<i>893</i>	<i>1022</i>	<i>2567</i>	
Flow Ratio	<i>0.1</i>		<i>0.1</i>					<i>0.2</i>	<i>0.4</i>	<i>0.1</i>	<i>0.5</i>	
v/c Ratio	<i>0.64</i>		<i>0.15</i>					<i>0.40</i>	<i>0.60</i>	<i>0.44</i>	<i>0.75</i>	
I Factor	<i>1.000</i>		<i>1.000</i>					<i>1.000</i>	<i>1.000</i>	<i>1.000</i>	<i>1.000</i>	
Arrival Type	<i>3</i>		<i>3</i>					<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	
Platoon Ratio	<i>1.00</i>		<i>1.00</i>					<i>1.33</i>	<i>1.33</i>	<i>1.33</i>	<i>1.30</i>	
PF Factor	<i>1.00</i>		<i>1.00</i>					<i>0.85</i>	<i>0.61</i>	<i>0.90</i>	<i>0.29</i>	
Q1	<i>4.8</i>		<i>1.8</i>					<i>4.6</i>	<i>5.6</i>	<i>4.6</i>	<i>4.9</i>	
kB	<i>0.4</i>		<i>0.6</i>					<i>0.6</i>	<i>0.7</i>	<i>0.5</i>	<i>0.9</i>	
Q2	<i>0.6</i>		<i>0.1</i>					<i>0.4</i>	<i>1.0</i>	<i>0.4</i>	<i>2.5</i>	
Q Average	<i>5.4</i>		<i>1.9</i>					<i>5.0</i>	<i>6.6</i>	<i>5.0</i>	<i>7.4</i>	

Percentile Back of Queue (95th percentile)

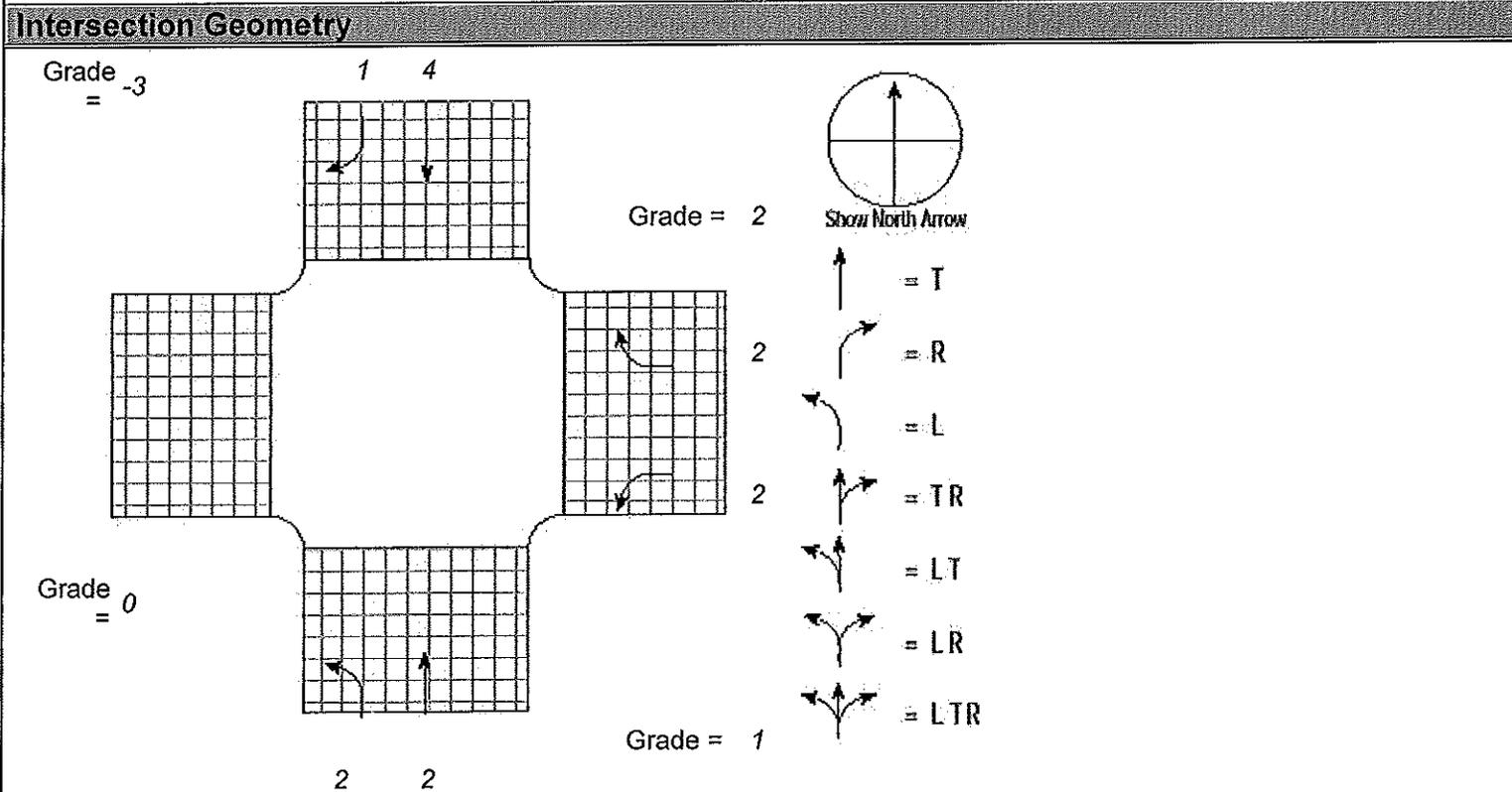
fB%	<i>1.9</i>		<i>2.0</i>					<i>2.0</i>	<i>1.9</i>	<i>2.0</i>	<i>1.9</i>	
BOQ, Q%	<i>10.5</i>		<i>3.8</i>					<i>9.8</i>	<i>12.7</i>	<i>9.8</i>	<i>14.0</i>	

Queue Storage Ratio

Q Spacing	<i>25.0</i>		<i>25.0</i>					<i>25.0</i>	<i>25.0</i>	<i>25.0</i>	<i>25.0</i>	
Q Storage	<i>200</i>		<i>200</i>					<i>200</i>	<i>200</i>	<i>200</i>	<i>200</i>	
Average RQ	<i>0.7</i>		<i>0.2</i>					<i>0.6</i>	<i>0.8</i>	<i>0.6</i>	<i>0.9</i>	
95% RQ%	<i>1.3</i>		<i>0.5</i>					<i>1.2</i>	<i>1.6</i>	<i>1.2</i>	<i>1.7</i>	

LONG REPORT

General Information		Site Information	
Analyst	Gordon Sisk	Intersection	Westbound exit at Flat Shoals
Agency or Co.	GDOT	Area Type	All other areas
Date Performed	8/10/2010	Jurisdiction	
Time Period	AM	Analysis Year	2037



Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)				525		425	875	1900			1335	345
% Heavy Veh				5		5	5	5			5	5
PHF				0.95		0.95	0.95	0.95			0.95	0.95
Actuated (P/A)				A		A	A	A			A	A
Startup Lost Time				3.0		3.0	3.0	3.0			3.0	3.0
Extension of Effective Green				2.0		2.0	2.0	2.0			2.0	2.0
Arrival type				3		3	4	4			4	4
Unit Extension				3.0		3.0	3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume	0	0		0	0	0	0	0		0	0	9
Lane Width				12.0		12.0	12.0	12.0			12.0	12.0
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/Hour												

Bus Stops/Hour				0		0	2	2			2	2
Pedestrian Timing		16.9		16.9		3.2			30.6			
	WB Only	02	03	04	NB Only	Thru & RT	07	08				
Timing	G = 24.0	G =	G =	G =	G = 35.0	G = 29.0	G =	G =				
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume				525		425	875	1900			1335	345
PHF				0.95		0.95	0.95	0.95			0.95	0.95
Adjusted Flow Rate				553		447	921	2000			1405	354
Lane Group				L		R	L	T			T	R
Adjusted Flow Rate				553		447	921	2000			1405	354
Proportion of LT or RT		--			--	1.000	1.000	--	0.000		--	1.000

Saturation Flow Rate

Base Satflow				1900		1900	1900	1900			1900	1900
Number of Lanes				2		2	2	2			4	1
f_w				1.000		1.000	1.000	1.000			1.000	1.000
f_{HV}				0.952		0.952	0.952	0.952			0.952	0.952
f_g				0.990		0.990	0.995	0.995			1.015	1.015
f_p				1.000		1.000	1.000	1.000			1.000	1.000
f_{bb}				1.000		1.000	0.996	0.996			0.998	0.992
f_a				1.000		1.000	1.000	1.000			1.000	1.000
f_{LU}				0.971		0.885	0.971	0.952			0.908	1.000
f_{LT}			--	0.950		--	0.950	1.000	--		1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--			--		0.850	--	1.000		--	1.000	0.850
f_{Lpb}			--	1.000		--	1.000	1.000	--		1.000	--
f_{Rpb}	--			--		1.000	--	1.000		--	1.000	1.000

Adjusted Satflow				3305		2695	3308	3414			6657	1549
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
Lane Group				L		R	L	T			T	R
Adjusted Flow Rate				553		447	921	2000			1405	354
Satflow Rate				3305		2695	3308	3414			6657	1549
Lost Time				3.0		3.0	3.0	3.0			3.0	3.0
Green Ratio				0.23		1.00	0.34	0.67			0.28	0.56
Lane Group Capacity				760		2695	1125	2287			1864	867
v/c Ratio				0.73		0.17	0.82	0.87			0.75	0.41
Flow Ratio				0.17		0.17	0.28	0.59			0.21	0.23
Critical Lane Group				Y		N	N	Y			N	N
Sum Flow Ratios	0.75											
Lost Time/Cycle	10.00											
Critical v/c Ratio	0.84											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane Group				L		R	L	T			T	R
Adjusted Flow Rate				553		447	921	2000			1405	354
Lane Group Capacity				760		2695	1125	2287			1864	867
v/c Ratio				0.73		0.17	0.82	0.87			0.75	0.41
Green Ratio				0.23		1.00	0.34	0.67			0.28	0.56
Uniform Delay d_1				35.6		0.0	30.2	13.1			32.9	12.5
Delay Factor k				0.29		0.11	0.36	0.40			0.31	0.11
Incremental Delay d_2				3.5		0.0	4.9	4.1			1.8	0.3
PF Factor				1.000		0.950	0.953	0.372			1.000	0.662
Control Delay				39.1		0.0	33.6	9.0			34.6	8.6
Lane Group LOS				D		A	C	A			C	A

Approach Delay		21.7	16.8	29.4
Approach LOS		C	B	C
Intersection Delay	21.5	Intersection LOS		C

SUPPLEMENTAL UNIFORM DELAY WORKSHEET FOR LEFT TURNS FROM EXCLUSIVE LANES WITH PROTECTED AND PERMITTED PHASES

General Information

Project Description *I-285 at flat shoals*

v/c Ratio Computation

	EB	WB	NB	SB
Cycle Length, C (s)	100.0			
Prot. Phase Eff. Green Interval, g (s)				
Opposed Queue Eff. Green Interval, gq (s)				
Unopposed green interval, gu (s)				
Red Time, r(s)				
Arrival Rate, qa (veh/s)				
Protected Phase Departure Rate, sp (veh/s)				
Perm. Phase Departure Rate, ss (veh/s)				
Xperm				
Xprot (N/A for Lagging Left-turns)				

Uniform Queue Size and Delay Computations

Queue at Start of Green Arrow, Qa				
Queue at Start of Unsaturated Green, Qu				
Residual Queue, Qr				
Uniform Delay, d1				

Uniform Queue Size and Delay Equations

	Case	Qa	Qu	Qr	d1
If Xperm ≤ 1.0 & Xprot ≤ 1.0	1	qa _r	qa _g q _q	0	$[0.5/(q_a C)] [r Q_a + Q_a^{2/(S_p - q_a)} + g_q Q_u + Q_u^{2/(S_s - q_a)}$
If Xperm ≤ 1.0 & Xprot > 1.0	2	qa _r	Q _r + qa _g q _q	Q _a - g(S _p - q _a)	$[0.5/(q_a C)] [r Q_a + g(Q_a + Q_r) + g_q (Q_r + Q_u) + Q_u^{2/(S_s - q_a)}$
If Xperm > 1.0 & Xprot ≤ 1.0	3	Q _r + qa _r	qa _g q _q	Q _u - g _u (S _s - q _a)	$[0.5/(q_a C)] [g_q Q_u + g_u(Q_a + Q_r) + r(Q_r + Q_a) + Q_a^{2/(S_p - q_a)}$

If $X_{perm} \leq 1.0$ (lagging lefts)	4	0	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + Q_u^{2/(S_s - q_a)}$
If $X_{perm} > 1.0$ (lagging lefts)	5	$Q_u - g_u(S_s - q_a)$	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + g_u(Q_u + Q_a) + Q_a^{2/(S_p - q_a)}$

BACK-OF-QUEUE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group				L		R	L	T			T	R
Initial Queue/Lane				0.0		0.0	0.0	0.0			0.0	0.0
Flow Rate/Lane				553		447	921	2000			1405	354
Satflow/Lane				1702		1523	1703	1793			1832	1549
Capacity/Lane				760		2695	1125	2287			1864	867
Flow Ratio				0.2		0.2	0.3	0.6			0.2	0.2
v/c Ratio				0.73		0.17	0.82	0.87			0.75	0.41
I Factor				1.000		1.000	1.000	1.000			1.000	1.000
Arrival Type				3		3	4	4			4	4
Platoon Ratio				1.00		1.00	1.33	1.33			1.33	1.33
PF Factor				1.00			0.95	0.61			0.96	0.64
Q1				7.3			11.4	14.2			9.3	3.6
kB				0.4		0.9	0.5	0.8			0.5	0.7
Q2				1.0		0.2	2.1	4.6			1.4	0.5
Q Average				8.3			13.5	18.8			10.7	4.0

Percentile Back of Queue (95th percentile)

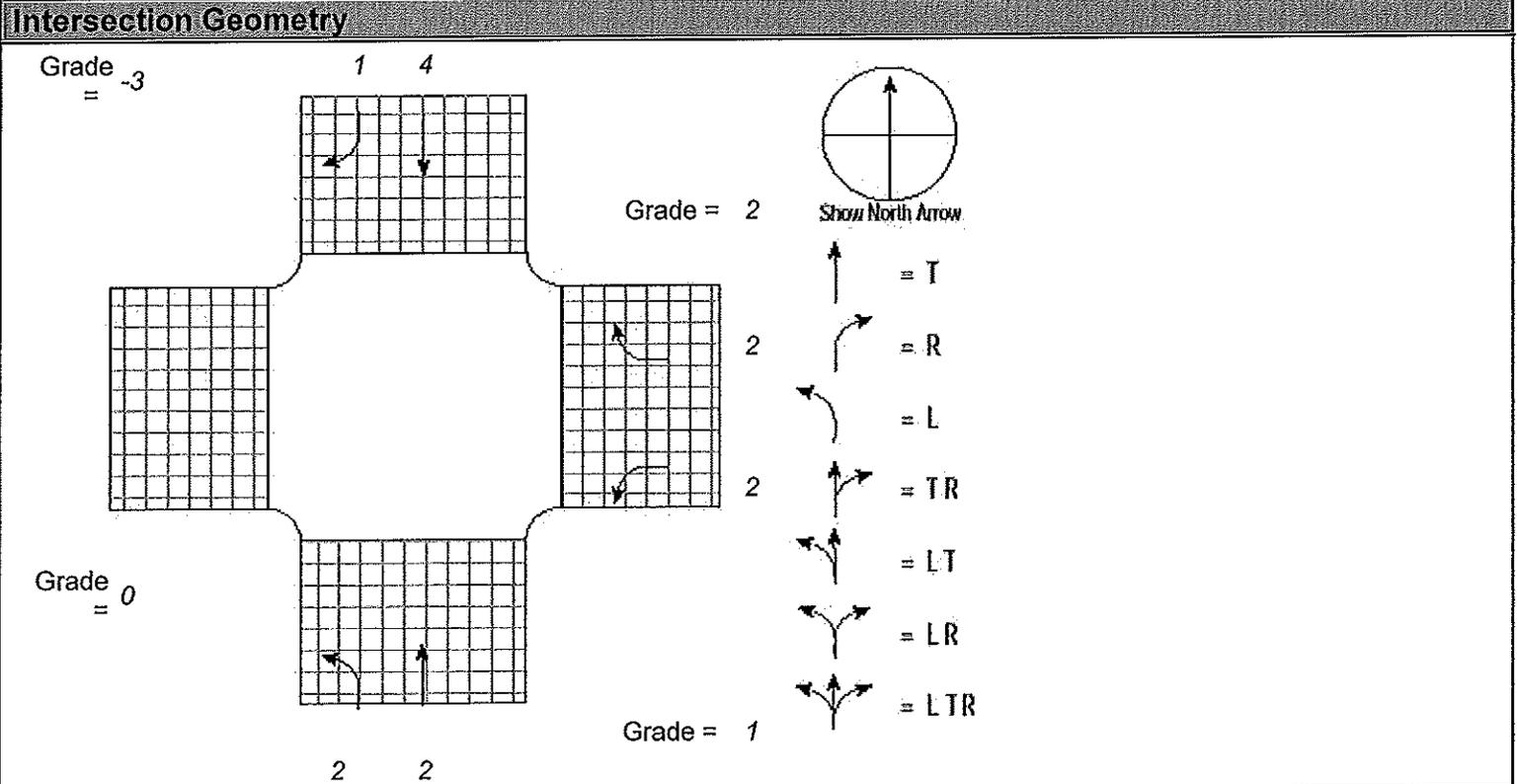
fB%				1.9			1.8	1.7			1.8	2.0
BOQ, Q%				15.6			24.1	32.2			19.6	8.0

Queue Storage Ratio

Q Spacing				25.0		25.0	25.0	25.0			25.0	25.0
Q Storage				200		200	200	200			200	200
Average RQ				1.0			1.7	2.3			1.3	0.5
95% RQ%				2.0			3.0	4.0			2.5	1.0

LONG REPORT

General Information		Site Information	
Analyst	Gordon Sisk	Intersection	Westbound exit at Flat Shoals
Agency or Co.	GDOT	Area Type	All other areas
Date Performed	8/10/2010	Jurisdiction	
Time Period	PM	Analysis Year	2037



Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)				825		615	205	1065			1430	895
% Heavy Veh				5		5	5	5			5	5
PHF				0.95		0.95	0.95	0.95			0.95	0.95
Actuated (P/A)				A		A	A	A			A	A
Startup Lost Time				3.0		3.0	3.0	3.0			3.0	3.0
Extension of Effective Green				2.0		2.0	2.0	2.0			2.0	2.0
Arrival type				3		3	4	4			4	4
Unit Extension				3.0		3.0	3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume	0	0		0	0	0	0	0		0	0	22
Lane Width				12.0		12.0	12.0	12.0			12.0	12.0
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/Hour												

Bus Stops/Hour				0		0	2	2			2	2
Pedestrian Timing		16.9			16.9			3.2			30.6	
	WB Only	02	03	04	NB Only	Thru & RT	07	08				
Timing	G = 33.0	G =	G =	G =	G = 23.0	G = 32.0	G =	G =				
	Y = 4	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume				825		615	205	1065			1430	895
PHF				0.95		0.95	0.95	0.95			0.95	0.95
Adjusted Flow Rate				868		647	216	1121			1505	919
Lane Group				L		R	L	T			T	R
Adjusted Flow Rate				868		647	216	1121			1505	919
Proportion of LT or RT		--			--	1.000	1.000	--	0.000		--	1.000

Saturation Flow Rate

Base Satflow				1900		1900	1900	1900			1900	1900
Number of Lanes				2		2	2	2			4	1
f_w				1.000		1.000	1.000	1.000			1.000	1.000
f_{HV}				0.952		0.952	0.952	0.952			0.952	0.952
f_g				0.990		0.990	0.995	0.995			1.015	1.015
f_p				1.000		1.000	1.000	1.000			1.000	1.000
f_{bb}				1.000		1.000	0.996	0.996			0.998	0.992
f_a				1.000		1.000	1.000	1.000			1.000	1.000
f_{LU}				0.971		0.885	0.971	0.952			0.908	1.000
f_{LT}			--	0.950		--	0.950	1.000	--		1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--			--		0.850	--	1.000		--	1.000	0.850
f_{Lpb}			--	1.000		--	1.000	1.000	--		1.000	--
f_{Rpb}	--			--		1.000	--	1.000		--	1.000	1.000

				3305		2695	3308	3414			6657	1549
Adjusted Satflow												
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
Lane Group				L		R	L	T			T	R
Adjusted Flow Rate				868		647	216	1121			1505	919
Satflow Rate				3305		2695	3308	3414			6657	1549
Lost Time				3.0		3.0	3.0	3.0			3.0	3.0
Green Ratio				0.32		1.00	0.22	0.58			0.31	0.68
Lane Group Capacity				1058		2695	728	1980			2064	1053
v/c Ratio				0.82		0.24	0.30	0.57			0.73	0.87
Flow Ratio				0.26		0.24	0.07	0.33			0.23	0.59
Critical Lane Group				N		N	Y	N			N	Y
Sum Flow Ratios	0.66											
Lost Time/Cycle	6.00											
Critical v/c Ratio	0.70											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane Group				L		R	L	T			T	R
Adjusted Flow Rate				868		647	216	1121			1505	919
Lane Group Capacity				1058		2695	728	1980			2064	1053
v/c Ratio				0.82		0.24	0.30	0.57			0.73	0.87
Green Ratio				0.32		1.00	0.22	0.58			0.31	0.68
Uniform Delay d_1				31.4		0.0	32.5	13.1			30.8	12.6
Delay Factor k				0.36		0.11	0.11	0.16			0.29	0.40
Incremental Delay d_2				5.3		0.0	0.2	0.4			1.3	8.2
PF Factor				1.000		0.950	1.000	0.621			0.978	0.335
Control Delay				36.6		0.0	32.8	8.5			31.4	12.4
Lane Group LOS				D		A	C	A			C	B

Approach Delay		21.0	12.4	24.2
Approach LOS		C	B	C
Intersection Delay	20.3	Intersection LOS		C

SUPPLEMENTAL UNIFORM DELAY WORKSHEET FOR LEFT TURNS FROM EXCLUSIVE LANES WITH PROTECTED AND PERMITTED PHASES

General Information

Project Description *I-285 at flat shoals*

v/c Ratio Computation

	EB	WB	NB	SB
Cycle Length, C (s)	100.0			
Prot. Phase Eff. Green Interval, g (s)				
Opposed Queue Eff. Green Interval, gq (s)				
Unopposed green interval, gu (s)				
Red Time, r(s)				
Arrival Rate, qa (veh/s)				
Protected Phase Departure Rate, sp (veh/s)				
Perm. Phase Departure Rate, ss (veh/s)				
Xperm				
Xprot (N/A for Lagging Left-turns)				

Uniform Queue Size and Delay Computations

Queue at Start of Green Arrow, Qa				
Queue at Start of Unsaturated Green, Qu				
Residual Queue, Qr				
Uniform Delay, d1				

Uniform Queue Size and Delay Equations

	Case	Qa	Qu	Qr	d1
If Xperm ≤ 1.0 & Xprot ≤ 1.0	1	qar	qa ^g gq	0	$[0.5/(qaC)][rQa + Qa^{2/(Sp - Qs)} + gqQu + Qu^{2/(Ss - qa)}$
If Xperm ≤ 1.0 & Xprot > 1.0	2	qar	Qr + qa ^g gq	Qa - g(sp - qa)	$[0.5/(qaC)][rQa + g(Qa + Qr) + gq(Qr + Qu) + Qu^{2/(Ss - qa)}$
If Xperm > 1.0 & Xprot ≤ 1.0	3	Qr + qar	qa ^g gq	Qu - gu(ss - qa)	$[0.5/(qaC)][gqQu + gu(Qa + Qr) + r(Qr + Qa) + Qa^{2/(Sp - qa)}$

If $X_{perm} \leq 1.0$ (lagging lefts)	4	0	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + Q_u^{2/(S_s - q_a)}$
If $X_{perm} > 1.0$ (lagging lefts)	5	$Q_u - g_u(S_s - q_a)$	$q_a(r + g_q)$	0	$[0.5/(q_a C)][r + g_q]Q_u + g_u(Q_u + Q_a) + Q_a^{2/(S_p - q_a)}$

BACK-OF-QUEUE WORKSHEET

General Information

Project Description *I-285 at flat shoals*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group				L		R	L	T			T	R
Initial Queue/Lane				0.0		0.0	0.0	0.0			0.0	0.0
Flow Rate/Lane				868		647	216	1121			1505	919
Satflow/Lane				1702		1523	1703	1793			1832	1549
Capacity/Lane				1058		2695	728	1980			2064	1053
Flow Ratio				0.3		0.2	0.1	0.3			0.2	0.6
v/c Ratio				0.82		0.24	0.30	0.57			0.73	0.87
I Factor				1.000		1.000	1.000	1.000			1.000	1.000
Arrival Type				3		3	4	4			4	4
Platoon Ratio				1.00		1.00	1.33	1.33			1.33	1.33
PF Factor				1.00			0.93	0.64			0.94	0.57
Q1				11.4			2.4	6.6			9.7	11.4
kB				0.5		0.9	0.4	0.8			0.5	0.8
Q2				2.0		0.3	0.2	1.0			1.3	4.2
Q Average				13.4			2.6	7.5			11.0	15.6

Percentile Back of Queue (95th percentile)

fB%				1.8			2.0	1.9			1.8	1.8
BOQ, Q%				23.9			5.2	14.3			20.0	27.3

Queue Storage Ratio

Q Spacing				25.0		25.0	25.0	25.0			25.0	25.0
Q Storage				200		200	200	200			200	200
Average RQ				1.7			0.3	0.9			1.4	1.9
95% RQ%				3.0			0.6	1.8			2.5	3.4

**Benefit Cost Analysis Work Sheet
CONGESTION Projects**

IM-NH-285-1(354)

PI # 713290

DEKALB COUNTY

I-285 AT FLAT SHOALS ROAD INTERCHANGE IMPROVEMENT

Congestion Benefit = Tb + CMb + Fb

Person Time Savings Benefit (Tb)

*Db (hrs)	0.0252
ADT	26,525.00
Tb (\$s)	\$22,977,281.25

Commercial or Truck Time Savings Benefit (CMb)

Db (hrs)	0.0252
% Truck Traffic	0.035
ADT	26,525.00
CMb	\$4,249,125.96

Fuel Savings Benefit (Fb)

ADT	26,525.00
Fb (\$s)	\$8,007,234.38

Total Congestion Benefit	\$35,233,641.58
Total Project Cost	\$35,144,320.00
B/C Ratio	1.00



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Georgia Division
61 Forsyth Street, S.W., Suite 17T100
Atlanta, Georgia 30303
August 28, 2001**

**IN REPLY REFER TO
HTM-GA**

**Mr. J. Tom Coleman, Jr.
Commissioner
Georgia Department of Transportation
No. 2 Capitol Square, S.W.
Atlanta, Georgia 30334-1002**

Attn: Wayne Hutto, Preconstruction Division

Subject: IM-285-1(345), IM-285-1(352), IM-285-1(354), and HPP-0000-00(949) Concept Reports

Dear Mr. Coleman:

The subject concept reports are for I-285 Interchanges at Bouldercrest Road, Jonesboro Road, Flat Shoals Road, and a bridge only for Perimeter Center Parkway. We are approving these concept reports under the following condition:

As discussed with your Urban Design Staff, design of these interchanges needs to be coordinated with any future improvements on I-285, including HOV lanes. Therefore, the design of these interchanges should not preclude the future HOV typical section(s) that, we understand, have yet to be determined. Also, as with all projects in the concept stage, the final design will also be dependent on the NEPA process.

If you have any questions, please contact Walter Boyd at (404) 562-3651.

Sincerely,

A handwritten signature in black ink, appearing to read 'Larry R. Dreihaup'.

Ln. Larry R. Dreihaup, P.E.
Division Administrator

**Enclosures
cc: Joe Palladi, Urban Design**

Matthews, Karyn

From: Latoya.Johnson@dot.gov
Sent: Thursday, July 16, 2009 9:28 AM
To: Matthews, Karyn
Cc: melinda.roberson@dot.gov; Haithcock, Michael
Subject: IMNH0-0285-01(354) I-285 @ SR155/Flat Shoals Rd

Hi Karyn,

I wanted to follow-up on our discussion from June 16, 2009 about the subject project. During our meeting you expressed some concern about the August 28, 2001 memo from Walter Boyd. The memo required that the final design of the I-285 @ SR155/Flat Shoals Rd interchange not preclude future HOV typical sections. Because no HOV lanes are anticipated or programmed in the near future for this portion of I-285, the memo should not be an issue. The approved revised concept report will supersede the approval of the original concept report. Consequently, the August 2001 memo will be superseded. However, the revised concept report should cite the memo and address why the conditions of the memo may not be appropriate today. Let me know if you have any questions.

LaToya Johnson
Transportation Engineer
Federal Highway Administration
Georgia Division
61 Forsyth Street, SW
Suite 17T100
Atlanta, GA 30303
404-562-4280 phone
404-562-3703 fax

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: P. I. No. 713290- OFFICE: Environmental Services
GB - MH DATE: April 14, 2010
FROM Glenn Bowman, P.E., State Environmental Administrator
TO Distribution Below
SUBJECT PUBLIC INFORMATION OPEN HOUSE SYNOPSIS

PROJECT No. & COUNTY: IMNH0-0285-01(354), Dekalb
PROJECT DESCRIPTION: I-285 at SR 155/Flat Shoals Road interchange reconstruction
DATE: April 13, 2010
NUMBER IN ATTENDANCE: 19
FOR: 4
CONDITIONAL: 0
UNCOMMITTED: 0
AGAINST: 0
OFFICIALS IN ATTENDANCE: None
ADDITIONAL COMMENTS: One comment feels this improvement will make the intersections associated with the highway safer and more accessible to the community.
PREPARED BY: Alexis John
TELEPHONE No.: (404) 631-1407

cc: Gerald M. Ross, P.E.
Ben Buchan, P.E.
Rachel Brown
Karyn Mathews
Bobby Hilliard, P.E.
Scott Lee
Barbara Holmes
Jeremy Busby



August 18, 2010

Ms. Sonya Scandrick
3042 Waldrop Circle
Decatur, GA 30034

Re: Project IMNH0-0285-01(354), DeKalb County - P.I. No. 713290 - I-285 at SR 155/Flat Shoals
Road Interchange Reconstruction

Dear Ms. Scandrick:

Thank you for your comments concerning the proposed project referenced above. We appreciate your participation and all of the input that was received as a result of the April 13, 2010 Public Information Open House (PIOH). Every comment will be made part of the official record of the project. On behalf of the Georgia Department of Transportation, please accept our apologies for the delay in sending this response.

A total of 19 people attended the PIOH. Of the nine (9) respondents who formally commented, seven (7) were in support of the project, and two (2) were uncommitted. No comments were received in opposition of the project.

The attendees of the PIOH, and those persons sending in comments afterward, raised the following questions and concerns. The Georgia Department of Transportation (GDOT) has prepared this one response letter that addresses all comments received so that everyone can be aware of the concerns raised and the responses given. Please find the comments summarized below (*in italics*) followed by our response.

- *Provide a website link on the sign to get more information.*

The Department posts signs along the project corridor to provide additional notification to local residents and travelers of upcoming open houses. In order to give the basic details of the open house while balancing the need for brevity, it is often not possible to add the website information to the road signs. However, whenever possible, we do include our website in the legal ads published in the local newspaper announcing our open houses.

- *Such extensions in our community will aid in the overall daily congestion of the commuters of I-285. This improvement will make the intersections associated with the highway safer and more accessible to our community*

The improvements are expected to increase the overall safety on the I-285 at SR 155/Flat Shoals Road intersection, as well as improve the efficiency of traffic flow for all citizens travelling to and through the area.

- *Concern project schedule will start and not be finished due to economy and track record of the Department.*

The project is currently funded in the Atlanta Transportation Improvement Program (TIP) for Right of Way acquisition in fiscal years 2012 and 2013. We are committed to delivering this and all projects identified in the Atlanta TIP on time and on budget.

- *There is a lot of pedestrian walking all times of day and night. The project doesn't propose lighting. Improving the lighting, streets, and the roads will help [pedestrian] safety.*

The proposed project is still within the preliminary design phase. Lighting may be added to the plan further along in the designing process contingent on a lighting agreement with Dekalb County.

- *Concerned there will be a lack of access to "Mr. Johnson" property, a motel, and a gas station. The only entrance shown is on the Lumby Drive entrance.*

In order to meet the Department's limit of access guidelines, a minimum of 300 feet is required from the freeway ramp terminal. The distance from the motel/gas station driveway to the exit ramp is less than the required minimum 300 feet. Since this parcel has two driveways, access to the gas station would be maintained along Flat Shoals Road. Access to the hotel will be maintained by the rear entrance, which can be accessed by Gus Place and Lumby Drive from Flat Shoals Road.

- *How successful will the expansion be with the I-20 traffic back up on the exit ramp going north on I-285. Has adding an extra lane leading into I-20 East been considered?*

The purpose of the proposed project is to reconstruct the I-285 interchange at SR 155/Flat Shoals Road. The need to add a lane to the I-20 Eastbound Ramp is outside the scope of this project. However, another project, Project Number 0000378, is currently in the preliminary design stage and is proposing to reconstruct the I-285 and I-20 East Interchange. Unfortunately, that project currently does not have funding identified in the current Atlanta TIP. We will continue working with state and local planning officials and residents to identify priority projects that ultimately get funded through the planning process. For more information on the Atlanta regional planning process, please visit www.atlantaregional.com.

Again, thank you for your comments concerning this project. Should you have any further questions, comments, or concerns, please call the project manager, Karyn Matthews, at (404) 631-1584 or the environmental analyst, Alexis H. John, at (404) 631-1407.

Sincerely,



Glenn Bowman, P.E.
State Environmental Administrator

GB/ahj

cc: Karyn Matthews, GDOT Project Manager

713290-

2010 PIOH Response Letter

Distribution:

Title	First Name	Last Name	Address Line 1	City	State	ZIP Code
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Mr.	Leon	Richards	2906 Hillside Way	Decatur	GA	30034
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