

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

**OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE**

FILE P.I. # 0012606

OFFICE Design Policy & Support

Cobb County
GDOT District 7 - Metro Atlanta
SR 5 @ SR 120 ALT Intersection
Improvements

DATE May 29, 2014

FROM  for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED CONCEPT REPORT

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

Attachment

DISTRIBUTION:

Glenn Bowman, Director of Engineering
Joe Carpenter, Director of P3/Program Delivery
Genetha Rice-Singleton, Assistant Director of P3/Program Delivery
Albert Shelby, State Program Delivery Engineer
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Hiral Patel, State Environmental Administrator
Kathy Zahul, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Mike Bolden, State Utilities Engineer
Jeff Fletcher, Statewide Location Bureau Chief
Rachel Brown, District Engineer
Scott Lee, District Preconstruction Engineer
Patrick Allen, District Utilities Engineer
Azimeye Abu, Project Manager
BOARD MEMBER - 11th Congressional District

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

Project Type:	Traffic Operations Improvement	P.I. Number:	0012606
GDOT District:	District 7	County:	Cobb
Federal Route Number:	NA	State Route Number:	SR 5 & SR 120

The project is located in the City of Marietta at the intersection of SR 5/Atlanta St and SR 120/S. Marietta Pkwy. The intersection is experiencing significant delays during AM and PM peak hours. With the existing and the future projected traffic, the intersection is failing from the operational standpoint. The addition of right turn lanes along SR 5/Atlanta St will improve the traffic operations and reduce congestion. The proposed improvements will help to alleviate the immediate need for a major intersection reconstruction.

Submitted for approval:

	9/5/13
Local Government	DATE
	09/05/2013
Consultant Designer & Firm	DATE
	AVS 09/11/2013
GDOT Project Manager	DATE
	11/6/2013
State Program Delivery Engineer	DATE

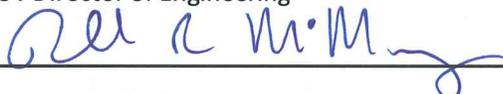
Recommendation for approval:

	GLENN BOWMAN*/EKP	12/3/2013
State Environmental Administrator		DATE
	KATHY ZAHUL*/EKP	12/30/2013
State Traffic Engineer		DATE
FOR State Utilities Engineer	JUN BIRNKAMMER*/EKP	12/5/2013
		DATE
District Engineer	RACHEL BROWN*/EKP	12/23/2013
		DATE
State Transportation Financial Management Administrator		DATE

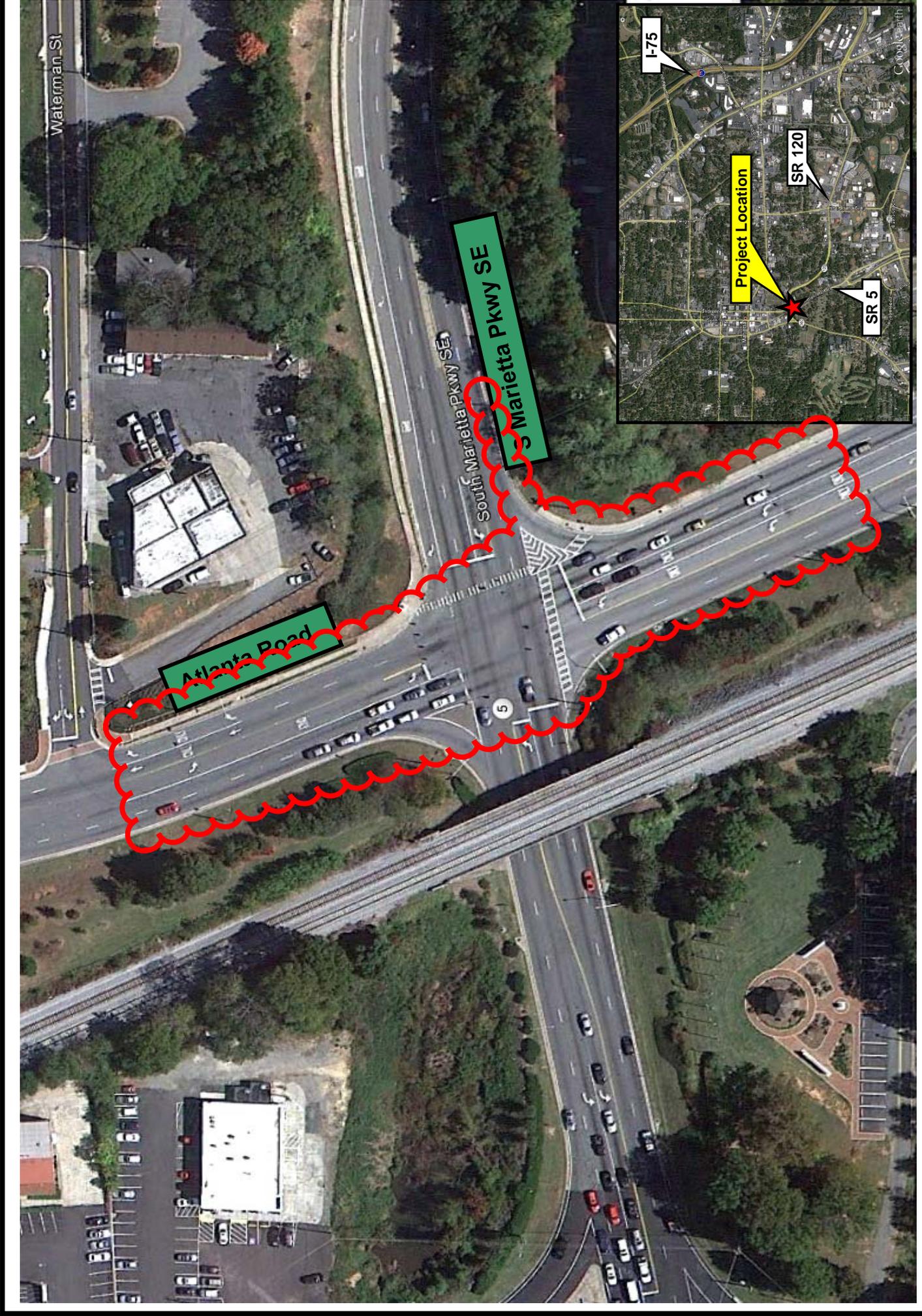
The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

	5/7/2014
State Transportation Planning Administrator	DATE

Approval:

Concur:		5/19/14
		DATE
Approve		5/27/14
		DATE
GDOT Director of Engineering		
GDOT Chief Engineer		

* - RECOMMENDATION ON FILE



PROJECT LOCATION MAP

PLANNING & BACKGROUND DATA

Project Justification Statement: The intersection of SR 5/Atlanta Street and SR 120/S. Marietta Parkway is experiencing significant delays during AM and PM peak hours. The proposed improvements along SR 5/Atlanta Street will help to alleviate the immediate need for a major intersection reconstruction. In addition, there is one Cobb County Transit (CCT) bus stop, approximately 150 feet east of the study intersection and is located along the curb of SR 120/S. Marietta Parkway with no sidewalk connectivity. There is also a proposed bus stop to be constructed along southbound SR 5/Atlanta Street to the south of S. Marietta Parkway and currently there is no sidewalk connected to the proposed bus stop.

- The City of Marietta and LAI Engineering prepared the Traffic Engineering Report (Shown in Attachment) to be approved by GDOT.
- The City of Marietta initiated the intersection improvement project at SR 5/Atlanta Street and SR 120/S. Marietta Parkway to improve the operational efficiency and reduce congestion at the intersection and to connect the existing and the proposed CCT bus stops to the intersection.
- The traffic study conducted by LAI showed significant traffic making a right turn along SR 5/Atlanta Street at the intersection. With the existing and the future projected traffic, the intersection is failing from the operational standpoint. The study intersection has also observed significant rear-end crashes at the intersection. Approximately, 70 percent of the crashes at the intersection were observed to rear-end.
- The current length of the proposed project is 900 linear feet along SR 5/Atlanta Street with the limits extending from the beginning of the proposed right turn lane south of the intersection to the beginning of the proposed right turn lane north of the intersection. Location map shows the approximate limits of the project.

Description of the proposed project: The project is located in the City of Marietta at the intersection of SR 5/Atlanta Street and SR 120/S. Marietta Parkway. The intersection improvement project will install additional northbound and southbound right turn lane on SR 5/Atlanta Street at SR 120/S. Marietta Parkway. Additionally it will upgrade the traffic signal, the pedestrian signal, and provide sidewalk connectivity to the bus stops in the project area.

Federal Oversight: Exempt State Funded Other

MPO: Atlanta

MPO Project ID: N/A

Regional Commission: Atlanta Regional Commission

RC Project ID

Congressional District(s): # 011

Projected Traffic: ADT

Atlanta Street - Current Year (2012): 21,400 Open Year (2016): 21,900 Design Year (2036): 26,700

S Marietta Pkwy- Current Year (2012): 24,900 Open Year (2016): 25,500 Design Year (2036): 31,100

Traffic Projections Performed by: LAI Engineering

Current LOS during PM Peak Hour: E

No Build LOS during Peak Peak Hour: E

Functional Classification Mainline Atlanta Street: Urban Collector Street

Functional Classification Crossroad S. Marietta Parkway: Urban Principal Arterial

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? No Yes

Pavement Evaluation and Recommendations

Preliminary Pavement Evaluation Summary Report Required? No Yes

Preliminary Pavement Type Selection Report Required? No Yes

Feasible Pavement Alternatives: HMA PCC HMA & PCC

Will Context Sensitive Solutions procedure be utilized? No Yes

DESIGN AND STRUCTURAL DATA

Atlanta Street Mainline Design Features:

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	6/5	NA	7/6
- Lane Width(s)	12'	9'-12'	12'
- Outside Shoulder or Border Area Width	12'	16'	7'
- Outside Shoulder Slope	2%	2% - 8%	2%
- Sidewalks	There are sidewalks along northbound Atlanta Street. The side walk along north leg of the intersection is 4' wide, while the sidewalk along the south leg of the intersection is 5' wide. No sidewalks on Southbound Atlanta Street.	5'	Existing 5' wide sidewalk on the southeast corner will be extended to the existing CCT bus stop. A new 5' wide sidewalk will be added along southbound Atlanta Street along the south leg of the intersection up to the proposed CCT bus stop.
Auxiliary Lanes	12'	10'-Width of travel lane	12'

Posted Speed	35 MPH		35 MPH
Design Speed	35 MPH	At least 30 MPH	35 MPH
Min Horizontal Curve Radius	N/A	371	N/A
Super Elevation Rate	N/A	6%	N/A
Grade	-0.59%	9%	-0.59%
Right-of-Way Width	43'-103'	Variable	Variable
Maximum Grade – Crossroad	4.36	9%	4.36
Design Vehicle	WB-40	BUS-40 or SU	WB-40
<i>Additional Items as needed</i>			

*According to current GDOT design policy if applicable

Major Interchanges/Intersections:

SR 5/SR 120/S. Marietta Parkway and SR 360/Powder Springs Street

Utility Involvements:

Minor ATT and Marietta Water relocations will be needed for the construction of this project.

Public Interest Determination Policy and Procedure recommended (Utilities)? No Yes

The City of Marietta will organize a public hearing for the project with necessary advertisements if it's deemed to be necessary. Utility Risk Management Plan will not be required as the utility relocations are minimum.

SUE Required: No Yes

Railroad Involvement:

Two CSX railroad tracks run along an overpass above S. Marietta Pkwy parallel to SR 5/Atlanta Street. Plans will be submitted to CSX for review and permit. The requested permit will be for the proposed retaining walls along the west side of Atlanta Street. These walls are necessary for the installation of the right turn lane in the southbound direction.

Complete Streets - Bicycle, Pedestrian, and/or Transit Warrants:

Warrants met: None Bicycle Pedestrian Transit

Right-of-Way:

Required Right-of-Way anticipated: No Yes Undetermined
 Easements anticipated: None Temporary Permanent Utility Other

Anticipated number of impacted parcels:	N/A
Displacements anticipated:	Total: N/A
	Businesses: N/A
	Residences: N/A
	Other: N/A

Transportation Management Plan [TMP] Required: No Yes (Covered under 150 S.P.)

If Yes: Project classified as: Non-Significant Significant
 TMP Components Anticipated: TTC TO PI

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

FHWA/AASHTO Controlling Criteria	No	Undetermined	Yes	Appvl Date (if applicable)
1. Design Speed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Lane Width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Shoulder Width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Bridge Width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Horizontal Alignment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Superelevation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Vertical Alignment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Grade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Stopping Sight Distance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Cross Slope	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Vertical Clearance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Lateral Offset to Obstruction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Bridge Structural Capacity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Design Variances to GDOT Standard Criteria anticipated:

GDOT Standard Criteria	Reviewing Office	No	Undetermined	Yes	Appvl Date (if applicable)
1. Access Control - Median Opening Spacing	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Median Usage & Width	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Intersection Skew Angle	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Lateral Offset to Obstruction	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Intersection Sight Distance	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Bike, Pedestrian & Transit Accommodations	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. GDOT Drainage Manual	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Georgia Standard Drawings	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. GDOT Bridge & Structural Manual	Bridge Design	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Roundabout Illumination	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Rumble Strips	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Safety Edge	DP&S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VE Study anticipated: No Yes Completed – Date:

ENVIRONMENTAL DATA

Anticipated Environmental Document:

GEPA: NEPA: CE PCE

Project Air Quality:

Is the project located in a PM 2.5 Non-attainment area? No Yes
 Is the project located in an Ozone Non-attainment area? No Yes
 Is a Carbon Monoxide hotspot analysis required? No Yes

A concept design is attached to the report. CO Hotspot Analysis will be submitted along with the PCE.

Project Length: 900 linear feet
 Open to Traffic Year: 2016
 Design Year: 2036

MS4 Compliance – Is the project located in an MS4 area? No Yes

Environmental Permits/Variations/Commitments/Coordination anticipated:

Permit/ Variance/ Commitment/ Coordination Anticipated	No	Yes	Remarks
1. U.S. Coast Guard Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Forest Service/Corps Land	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. CWA Section 404 Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Tennessee Valley Authority Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Buffer Variance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Coastal Zone Management Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. NPDES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. FEMA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Cemetery Permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10. Other Permits	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Other Commitments	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Other Coordination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

NEPA/GEPA Comments & Information: N/A

Ecology: N/A

History: N/A

Archeology:

Confederate Cemetery is located to the West of Atlanta Street but will not be impacted with the current project.

Air & Noise: N/A

Public Involvement: A public outreach is not expected for the project.

PROJECT RESPONSIBILITIES

Project Activities:

Project Activity	Party Responsible for Performing Task(s)
Concept Development	LAI
Design	LAI
Right-of-Way Acquisition	NA
Utility Relocation	Minor ATT and Marietta Water relocations
Letting to Contract	Marietta
Construction Supervision	LAI
Providing Material Pits	N/A
Providing Detours	N/A
Environmental Studies, Documents, and Permits	GT Hill
Environmental Mitigation	N/A
Construction Inspection & Materials Testing	LAI & Geo-Hydro Engineers

Lighting required: No Yes

Other projects in the area:

PI # 0010879 This project includes pedestrian mobility and safety improvements, improved vehicular movements, mast arm signal and the addition of a right turn lane at SR 5/SR 120/S. Marietta Pkwy and SR 360/Powder Springs Road.

CO-AR-BP120

PI 0006873. Kennesaw Mountain to Chattahoochee River Trail - Includes Pedestrian Bridge over S. Marietta Parkway East of Powder Springs Street from Tower Road at Roselane Street to West Atlanta Street at S. Cobb Drive.

Other coordination to date:

LAI is the lead designer for both the intersection improvement project at SR 5/Atlanta Street (PI 0012606) and the adjacent project of SR 120/S. Marietta Pkwy and SR 360/Powder Springs Road (PI 0010879). LAI will coordinate the two projects “in-house” regarding any overlapping or conflicting issues.

Project Cost Estimate and Funding Responsibilities:

City of Marietta has entered into a Project Framework Agreement with GDOT

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
By Whom	GDOT/City of Marietta	City of Marietta	Utility Owner	GDOT/City of Marietta	City of Marietta	
\$ Amount Alternative 1	\$ 112,014.00	N/A	\$0.00	\$1,070,561.47	N/A	\$1,182,575.47
Date of Estimate	January 23, 2013	January 23, 2013	April 10, 2014	April 10, 2014	January 23, 2013	April 10, 2014

***CST includes 5% per GDOT review for E&I and the liquid AC Adjustment cost.**

ALTERNATIVES DISCUSSION

Alternative selection:

Preferred Alternative: The addition of northbound and southbound right turn lanes on SR 5/Atlanta Street at SR 120/S. Marietta Parkway. Additionally, an upgrade to the traffic signal, the pedestrian signal, and new sidewalks to provide connectivity to the bus stops in the project area.			
Estimated Property Impacts:	\$0.00	Estimated Total Cost:	\$1,182,575.47
Estimated ROW Cost:	\$0.00	Estimated CST Time:	6 Months
Rationale: The intersection of SR 5/Atlanta Street and SR 120/ S. Marietta Parkway provided less delays and queue lengths with the preferred alternative.			

No-Build Alternative: <i>No-Build</i>			
Estimated Property Impacts:	\$0.00	Estimated Total Cost:	\$0.00
Estimated ROW Cost:	\$0.00	Estimated CST Time:	0 Months
Rationale: The intersection of SR 5/Atlanta Street and SR 120/ S. Marietta Parkway is experiencing significant delays during both AM and PM peak hour with no improvements.			

Comments/additional information: N/A

Attachments:

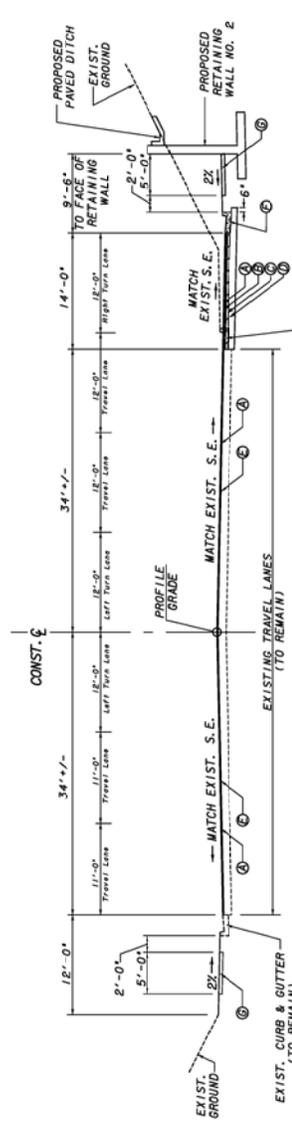
1. Concept Layout
2. Typical sections
3. Cost Estimates
 - a. Construction Cost Estimate
 - b. Liquid AC / Fuel Price Adjustment
 - c. Utility Cost Estimate
4. Traffic Report
 - a. Existing Intersection Diagram
 - b. Traffic Counts
 - c. CCT Bus Schedule
 - d. Crash Data
 - e. Capacity Analysis Summary
5. Pavement Evaluation
6. Signed Project Framework Agreement

Attachments

DATE: 1/10/2008
 DRAWN BY: BUCKER
 CHECKED BY: [blank]
 PROJECT NUMBER: [blank]
 SHEET NO.: [blank]
 TOTAL SHEETS: [blank]

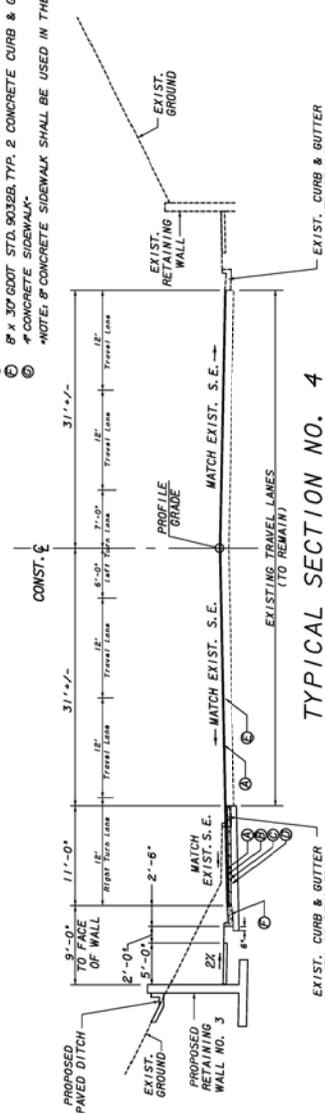


<p>PROPERTY AND EXISTING R/W LINE</p> <p>REQUIRED R/W LINE</p> <p>CONSTRUCTION LIMITS</p> <p>EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES</p> <p>EASEMENT FOR CONSTR OF DRIVES</p>	<p>BEGIN LIMIT OF ACCESS</p> <p>END LIMIT OF ACCESS</p> <p>LIMIT OF ACCESS</p> <p>REGD R/W & LIMIT OF ACCESS</p> <p>ROOT ZONES OF HISTORIC TREES</p>	<p>LAJ ENGINEERING</p> <p>1800 PARKWAY CENTER, 728</p> <p>MARIETTA, GA 30067</p> <p>PHONE: 770.432.0807</p> <p>EMAIL: INFO@LAJENGINEERING.COM</p>	<p>SCALE IN FEET</p> <p>0 30 700 200</p>	<p>REVISION DATES</p>	<p>CITY OF MARIETTA</p> <p>STATE OF GEORGIA</p> <p>OFFICE: MAINLINE PLAN</p> <p>ATLANTA ST & S MARIETTA PKWY INTERSECTION IMPROVEMENTS</p> <p>DRAWING NO. 13-01</p>
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TYPICAL SECTION NO. 3
TANGENT SECTION
 APPLICABLE TO SR 5/ATLANTA RD.
 FROM STA. 47+20.01 TO . STA. 50+00.00

- ① ASPH. CONC. 12.5 mm SUPERPAVE GROUP 2 ONLY, INCL. BITUM. MAT'L & H. LIME, 165LB/SY.
- ② ASPH. CONC. 19 mm SUPERPAVE GROUP 2 ONLY, INCL. BITUM. MAT'L & H. LIME, 220 LB/SY.
- ③ ASPH. CONC. 25 mm SUPERPAVE GROUP 2 ONLY, INCL. BITUM. MAT'L & H. LIME, 260 LB/SY.
- ④ 12" GRADED AGGREGATE BASE COURSE
- ⑤ MILL 150'
- ⑥ 8" x 30' GDOT STD. 9032B, TYP. 2 CONCRETE CURB & GUTTER
- ⑦ CONCRETE SIDEWALK
- *NOTE: 8" CONCRETE SIDEWALK SHALL BE USED IN THE INTERSECTION RADI



TYPICAL SECTION NO. 4
TANGENT SECTION
 APPLICABLE TO ATLANTA RD.
 FROM STA. 50+00.00 TO . STA. 52+18.43

 <p>LAI ENGINEERING 1000 PHOENIX BL. - STE. 700 ATLANTA, GA 30328 PHONE: 770.433.2007 FAX: 770.433.2007 EMAIL: INFO@LAIENGINEERING.COM</p>	<p>NO SCALE</p>	<p>REVISION DATES</p>	<p>CITY OF MARIETTA COBB COUNTY, GEORGIA OFFICE: DEPARTMENT OF PUBLIC WORKS TYPICAL SECTIONS ATLANTA ST & S MARIETTA PKWY INTERSECTION IMPROVEMENTS DRAWING NO. 5-002</p>
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JOB ESTIMATE REPORT

JOB NUMBER : 012081
DESCRIPTION: ATLANTA ROAD @ SOUTH MARIETTA PKWY

SPEC YEAR: 01

ITEMS FOR JOB 012081

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	150-1000	LS		TRAFFIC CONTROL - DAILY LANE CLOSURES	1.000	50000.00	50000.00
0010	163-0001	LS		EROSION CONTROL, NON-REFUNDABLE DEDUCT	1.000	20000.00	20000.00
0015	210-0100	LS		GRADING COMPLETE - GENERAL SITE WORK	1.000	90000.00	90000.00
0020	310-1101	TN		GR AGGR BASE CRS, INCL MATL	954.000	22.32	21300.19
0025	402-3113	TN		RECYL AC 1.2.5MM SP,GP1/2,BM&HL	1380.000	75.66	104420.93
0030	402-3190	TN		RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	97.000	84.52	8198.72
0035	402-3121	TN		RECYL AC 25MM SP,GP1/2,BM&HL	291.000	73.15	21289.46
0039	413-1000	GL		BITUM TACK COAT	908.000	2.91	2646.38
0040	441-6222	LF		CONC CURB & GUTTER/ 8"X30"TP2	908.000	16.38	14873.31
0045	441-5007	LF		CONC HEADER CURB, 8 IN, TP 7	108.000	15.00	1620.00
0050	441-0104	SY		CONC SIDEWALK, 4 IN	974.000	30.42	29629.99
0055	441-0106	SY		CONC SIDEWALK, 6 IN	137.000	47.21	6468.55
0060	500-9999	CY		CL B CONC,BASE OR PVMT WIDEN	16.000	183.21	2931.37
0065	432-0206	SY		MILL ASPH CONC PVMT/ 1.50" DEP	14629.000	2.25	32934.56
0070	550-1180	LF		STM DR PIPE 18",H 1-10	28.000	39.94	1118.52
0075	550-1240	LF		STM DR PIPE 24",H 1-10	61.000	42.13	2570.01
0080	550-1300	LF		STM DR PIPE 30",H 1-10	78.000	54.15	4224.04
0084	611-8050	EA		ADJUST MANHOLE TO GRADE	1.000	1043.87	1043.88
0085	668-4300	EA		STORM SEW MANHOLE, TP 1	3.000	1845.64	5536.94
0090	668-4311	LF		ST SEW MANHOLE,TP 1,A DEP,CL 1	2.000	234.46	468.93
0095	668-2100	EA		DROP INLET, GP 1	3.000	1711.31	5133.95
0100	668-1100	EA		CATCH BASIN, GP 1	4.000	2723.73	10894.95
0105	500-3201	CY		CL B CONC, RET WALL	24.000	505.03	12120.85
0109	647-2140	EA		PULL BOX, PB-4	5.000	1085.00	5425.00
0110	653-1501	LF		THERMO SOLID TRAF ST 5 IN, WHI	4887.000	0.39	1952.55
0115	653-3501	GLF		THERMO SKIP TRAF ST, 5 IN, WHI	3211.000	0.22	737.63
0120	653-1502	LF		THERMO SOLID TRAF ST, 5 IN YEL	2754.000	0.39	1101.35
0125	655-5000	EA		PVMT ARROW THERM W/R REFLECTOR	20.000	237.85	4757.07
0130	653-1704	LF		THERM SOLID TRAF STRIPE,24",WH	174.000	3.31	577.07
0135	653-1504	LF		THERM SOLID TRAF STRIPE,12",WH	312.000	1.78	556.59
0140	653-1804	LF		THERM SOLID TRAF STRIPE, 8",WH	386.000	1.97	763.94
0145	647-1000	LS		TRAF SIGNAL INSTALLATION NO - 1	1.000	120000.00	120000.00
0148	682-6120	LF		CONDUIT, RIGID, 2 IN TO BE DUG	2400.000	11.67	28009.13
0149	682-6120	LF		CONDUIT, RIGID, 2 IN TO BE BORED	1500.000	12.33	18501.65
0150	900-0039	SF		BRICK PAVERS	1495.000	10.00	14950.00
0155	900-0039	SF		BRICK PAVERS TRUNCATED DOMES	60.000	10.00	600.00
0160	607-3000	SF		STONE FACING GRANITE - NEW WALLS	4380.000	38.00	166440.00
0164	607-3000	SF		STONE FACING GRANITE - EXISTING WALL	3540.000	38.00	134520.00
0165	708-1000	CY		PLANT TOPSOIL	297.000	54.49	16184.85
0170	702-0030	EA		ACER RUBRUM - OCTOBER GLORY	8.000	450.00	3600.00

JOB ESTIMATE REPORT

0175	702-0542	EA	LAGERSTROEMIA INDICA - NATCHEZ	7.000	300.00	2100.00
0180	702-0006	EA	ABELIA X GRANDIFLORA - ROSE CREEK	24.000	20.00	480.00
0185	702-0095	EA	BERBERIS THUNBERGII - CRIMSON PYGMY BARBERRY	80.000	20.00	1600.00
0190	702-0254	EA	EUONYMUS ALATUS - WINGED EUONYMUS	80.000	22.00	1760.00
0195	702-0470	EA	ILEX VOMITORIA NANA - DWARF YAUPON HOLLY	136.000	15.00	2040.00
0200	702-0610	EA	LOROPETALUM CHINENSE - BURGUNDY LOROPETULUM	34.000	25.00	850.00
0205	702-0977	EA	RHAPHIOLEPIS INDICA - INDIAN PRINCESS	54.000	22.00	1188.00
0210	702-0285	EA	GELSEMIUM SEMPERVIRENS - CAROLINA JESSAMINE	226.000	15.00	3390.00
0215	702-0756	EA	PENNISSETUM ALOPECUROIDES - HALELN GRASS	52.000	20.00	1040.00
0220	700-9300	SY	SOD	587.000	3.94	2315.13
0225	700-9925	AC	GRASSING, RIPARIAN SEED MIX	1.000	400.00	400.00

 ITEM TOTAL 985265.48
 INFLATED ITEM TOTAL 985265.49

TOTALS FOR JOB 012081

 ESTIMATED COST: 985265.49
 CONTINGENCY PERCENT (0.0): 0.00
 ESTIMATED TOTAL: 985265.49

PROJ. NO.	
P.I. NO.	0012606
DATE	12/2/2013

CALL NO.

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	Apr-14	\$ 3.455
DIESEL		\$ 3.930
LIQUID AC		\$ 563.00

Link to Fuel and AC Index:

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

LIQUID AC ADJUSTMENTS

$PA = \left(\frac{APM - APL}{APL} \right) \times TMT \times APL$

Asphalt

Price Adjustment (PA)				29861.52		\$ 29,861.52
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	900.80		
Monthly Asphalt Cement Price month project let (APL)			\$	563.00		
Total Monthly Tonnage of asphalt cement (TMT)				88.4		

ASPHALT	Tons	%AC	AC ton
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	1380	5.0%	69
9.5 mm SP		5.0%	0
25 mm SP	291	5.0%	14.55
19 mm SP	97	5.0%	4.85
	1768		88.4

BITUMINOUS TACK COAT

Price Adjustment (PA)				\$ 1,317.40		\$ 1,317.40
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	900.80		
Monthly Asphalt Cement Price month project let (APL)			\$	563.00		
Total Monthly Tonnage of asphalt cement (TMT)				3.899951637		

Bitum Tack

Gals	gals/ton	tons
908	232.8234	3.89995164

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)				4853.790985		\$ 4,853.79
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	900.80		
Monthly Asphalt Cement Price month project let (APL)			\$	563.00		
Total Monthly Tonnage of asphalt cement (TMT)				14.36883062		

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.	16727	0.20	3345.4	232.8234	14.36883062
Double Surf. Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0
					14.36883062

TOTAL LIQUID AC ADJUSTMENT \$ 36,032.71

Utility Cost Estimate

Project: PI No. 0012606 Cobb

Date: 04/10/2014

Project Description: SR 5/Atlanta Street and SR 120/South Marietta Parkway
Intersection Improvements

<u>Utility Owner/ Facility Description</u>	<u>Cost</u>
1.) Marietta Power No actions are required.	\$ 0.00
2.) AT&T Corp. No actions are required	\$ 0.00
3.) Atlanta Gas Light Company No actions are required.	\$ 0.00
4.) Comcast Cable No actions are required.	\$ 0.00
5.) Zayo Fiber Solutions No actions are required.	\$ 0.00
6.) Marietta Water Relocate water valves @ Marietta Water cost	\$ 0.00
7.) Marietta Traffic No actions are required.	\$ 0.00
Total Reimbursable Cost:	\$0.00

- Estimate based on preliminary plan information
- Utility investigation was performed at Quality Level D

Prepared By: David E. Estes, P.E.
Municipal Dept. Mgr.
LAI Engineering

LAI ENGINEERING

Building Relationships Through Performance

SR 5/ATLANTA STREET AND SR 120/S MARIETTA PKWY INTERSECTION IMPROVEMENTS STUDY

Marietta, GA

PI # 0012606

LAI # 12081



Civil, Survey & Transportation

1800 Parkway Place, Suite 720
Marietta, GA 30067
770-423-0807

www.LAIEngineering.com



**SR 5/ATLANTA STREET AND
SR 120/S. MARIETTA PARKWAY
INTERSECTION IMPROVEMENTS STUDY
City of Marietta, Georgia**

Prepared for:

City of Marietta

Prepared by:



August 14, 2012

Location:

The project is located in the City of Marietta at the intersection of SR 5/Atlanta Street and SR 120/S. Marietta Parkway.

Reason for Investigation:

The intersection of SR 5/Atlanta Street and SR 120/S. Marietta Parkway is experiencing significant delays during AM and PM peak hours and has observed potential safety issues. In addition, there is one Cobb County Transit (CCT) bus stop, approximately 150 feet east of the study intersection and is located along the curb of SR 120/S. Marietta Parkway with no sidewalk connectivity. There is also a proposed bus stop to be constructed along southbound SR 5/Atlanta Street to the south of S. Marietta Parkway. Currently there is no sidewalk connected to the proposed bus stop.

With the existing and the future projected traffic, the intersection is failing from the operational standpoint. It is believed that the addition of right turn lanes on SR 5/Atlanta Street on both sides of the intersection will help to alleviate the immediate need for a major intersection reconstruction. Additionally, LED signal heads should help improve safety by making the heads more visible.

Also, the addition of sidewalks along eastbound SR 120/S. Marietta Parkway from the intersection to the existing CCT bus stop and along southbound SR 5/Atlanta Street from the intersection to the proposed bus stop will provide safer access to the bus stops.

Description of the Intersection:

SR 5/Atlanta Street: SR 5/Atlanta Street is a four-lane roadway with exclusive left turning lanes. According to GDOT Highway System Status Maps, SR 5/Atlanta Street is functionally classified as an Urban Collector Street. SR 5/Atlanta Street travels north-south with an average daily traffic of 20,600 vehicles per day. There are two pairs of CSX railroad tracks that run parallel to SR 5/Atlanta Street. The railroad runs on an overpass over SR 120/S. Marietta Parkway to the west of the study intersection. The land uses along this route consists of commercial, office, restaurants, single-family and multi-family residential dwellings.

SR 120/S. Marietta Parkway: SR 120/S. Marietta Parkway is a four-lane roadway with exclusive left turning and right turning lanes. According to GDOT Highway System Status Maps, SR 120/S. Marietta Parkway is functionally classified as an Urban Principal Arterial Street. SR 120/S. Marietta Parkway travels east-west with an average daily traffic of 24,100 vehicles per day. The land uses along this route consists of commercial, restaurants, single-family and multi-family residential dwellings.

Figure 1 shows the location map of the study intersection.

Traffic volumes in vehicles per day (vpd):

Twenty-four hour traffic counts and peak period turning movement counts for the study intersection were collected on a Wednesday August 22nd, 2012. Turning Movement Counts were collected during AM Peak hour between 7:00 AM-9:00 AM and PM Peak hour between 4:00 PM and 6:00 PM. Twenty-four hour approach counts towards the intersection were collected on SR 5/Atlanta Street and SR 120/S. Marietta Parkway during the same day. The AM and PM peak hour turning movement counts and 24-hour approach counts are included in Appendix B. Table 1 shows the existing Average Annual Daily Traffic (AADT) and the Design Hourly Volume (DHV) for SR 5/Atlanta Street and SR 120/ S Marietta Parkway.

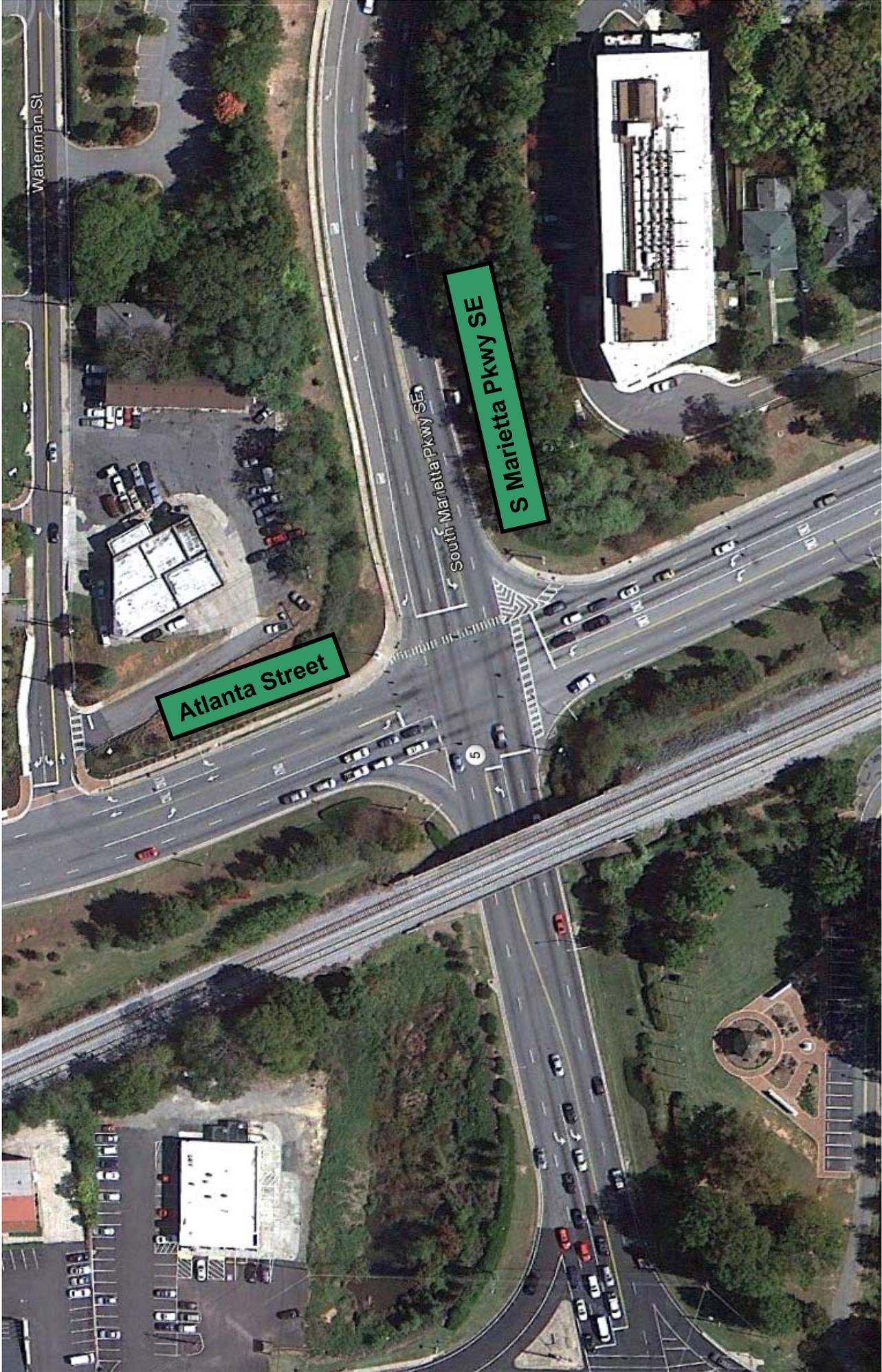


FIGURE 1: LOCATION MAP

Table 1. Existing AADT & DHV for 2012

Location	AADT 2012	DHV	
		AM	PM
SR 5/Atlanta Street	20,600	1,555	1,994
SR 120/ S. Marietta Parkway	24,100	924	2,155

Existing Traffic Control:

The intersection of SR 5/Atlanta Street and SR 120/S. Marietta Parkway is currently operating as a signal control intersection. The existing signal installation is span-wire mounted. The signal operates on an 8-phase fully actuated coordinated operation with coordination along SR 120/S. Marietta Parkway.

Vehicular Speeds:

The posted speed limit on SR 5/Atlanta Street is 35 miles per hour.
The posted speed limit on SR 120/S. Marietta Parkway is 40 miles per hour.

Pedestrian Movement:

Sidewalks are located along both SR 5/Atlanta Street and SR 120/S. Marietta Parkway. SR 5/Atlanta Street has a 5 foot sidewalk along the northbound traffic, while SR 120/S. Marietta Parkway has a 5 foot sidewalk along westbound traffic. New 5 feet sidewalks are proposed at the intersection to connect to the existing Cobb County Transit (CCT) bus stop at the southeast corner of the intersection and to the new bus stop proposed at the southwest corner of the intersection.

The proposed sidewalks will have ADA accessible ramps with raised truncated domes, GDOT standard crosswalks and count-down pedestrian signals.

Other Modes of Transportation:

Currently, Cobb Community Transit (CCT) System provides local service from Monday to Saturday along SR 5/Atlanta Street and SR 120/S. Marietta Parkway. CCT “Route 15” runs from the Marietta Transfer Center located on S. Marietta Parkway to Wildwood Parkway, while “Route 30” runs from the Marietta Transfer Center located on S. Marietta Parkway to the MARTA Holmes Station.

CCT schedules for these routes are included in Appendix C.

Parking:

No on-street parking is permitted along SR 5/Atlanta Street or SR 120/S. Marietta Parkway.

Accident History:

LAI collected five (5) years of crash data that occurred at this intersection from 2007 to 2011. Table 2 summarizes the accident types at the study intersection. Accident details are included in Appendix D.

Table 2: Crash Summary for the Intersection of SR 5/Atlanta Street and SR 120/S. Marietta Parkway

Accident Type	Year					Total
	2007	2008	2009	2010	2011	
Rear End	16	10	8	12	22	68
Angle	4	8	1	3	5	21
Side Swipe	4	0	1	1	1	7
Fixed Object	0	0	0	1	1	2
Total	24	18	10	17	29	98

Accident data obtained from Georgia Department of Transportation Office of Traffic and Safety

Adjacent Signalized Intersections:

There is an existing signal located approximately 560 feet west of SR 5/Atlanta Street the intersection of SR 360/Powder Springs Street and SR 120/S. Marietta Parkway. The next existing signal is located approximately 1,440 feet north of SR 120/S. Marietta Parkway at the intersection of SR 5/Atlanta Street and Anderson Street.

Capacity Analysis:

LAI utilized 2012 traffic counts for the purpose of this study. The traffic counts at the intersection were collected on August 22nd 2012. Both AM and PM peak hour turning movement counts and 24-Hr approach counts were collected at the study intersection. LAI utilized Synchro 7.0 to conduct the capacity analysis for Existing (2012), Opening Year (2014), and Design Year (2034) conditions at the study intersection. Future traffic projections were estimated based on one percent growth rate per year. Table 3 shows the build opening year and the design year ADT and the DHV at the subject intersection.

Table 3. Build Opening and Design Year ADT & DHV

Location	Opening Year 2014			Design Year 2034		
	ADT	DHV		ADT	DHV	
		AM	PM		AM	PM
SR 5/Atlanta Street	21,000	1,586	2,033	25,700	1,937	2,482
SR 120/ S. Marietta Parkway	24,600	2,066	2,199	30,000	2,519	2,682

Build Opening Year and No-Build Opening Year will have same ADT & DHV for the Current Project Improvement

Table 4 summarizes the Level of Service (LOS) for existing, opening year and design year traffic conditions.

Table 4. LOS for Existing, Opening & Design Year Projected Conditions

Time Period	2012 (Existing)			2014 (Opening Year)			2034 (Design Year)		
	LOS (Delay Sec)	Queue (Ft)		LOS (Delay Sec)	Queue (Ft)		LOS (Delay Sec)	Queue (Ft)	
		NB	SB		NB	SB		NB	SB
AM Peak	D (49.6)	490	457	D (48.4)	458	434	E 78.5)	644	598
PM Peak	E (67.3)	756	659	D (52.1)	576	493	E(75.8)	801	670

With the existing lane configuration along SR 5/Atlanta Street traffic operates at a LOS of E during PM peak hour with a 95 percentile queue length of 756 feet along northbound and 659 feet along southbound directions. Similarly, traffic operates at a LOS of D during AM peak hour with a 95 percentile queue length of 490 feet along northbound and 457 feet along southbound directions.

With the addition of exclusive right turn lanes by 2014 along SR 5/Atlanta Street, the traffic operates at a LOS of D during PM peak hour with a 95 percentile queue length of 576 feet along northbound and 493 feet along southbound directions. Similarly, traffic operates at a LOS of D during AM peak hour with a 95 percentile queue length of 458 feet along northbound and 434 feet along southbound directions.

The traffic for the design year (2034) operates at a LOS of E during PM peak hour with a 95 percentile queue length of 801 feet along northbound and 670 feet along southbound directions.

Based on the GDOT Design Policy Manual, the minimum right turn deceleration length required for the roadway with the posted speed limit of 35 MPH is 100 feet with a taper length of 50 feet. But based on the current and future traffic conditions the GDOT Construction Detail M-3A will be adopted for designing the right turn lanes at the intersection. The GDOT Construction Detail M-3A requires a minimum storage length of 200 feet and a taper length of 100 feet along SR 5/Atlanta Street.

Detailed Synchro analysis is included in Appendix E.



Recommendations:

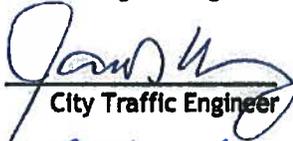
The City of Marietta is planning roadway improvements to improve the overall intersection's operations efficiency and safety by implementing the following:

- Signal upgrades will replace the existing span-wire configuration with mast-arms and back plates will be added to the existing LED signal heads,
- Adding exclusive right turn lanes on southbound and northbound Atlanta Street with a minimum storage length of 200 feet and taper length of 100 feet,
- Adding raised islands for channelizing right turn movements along SR 5/Atlanta Street,
- The existing pedestrian signal heads at the SE and NE corner of the intersection will be replaced/relocated. The new pedestrian signal heads at the intersection will have count-down heads.
- Upgrading vehicular signal control device,
- Add new CCT bus stop at the southwest corner of the intersection,
- Installation of sidewalks connecting CCT bus stops with ADA ramps,
- Optimize signal timing at the intersection

LAI recommendation for reducing accidents at this intersection includes:

- Increasing clearance times at the intersection,
- Improving pedestrian mobility,
- Improving pavement markings,
- Upgrading Signals with LED signal heads will improve the visibility,
- Additional sidewalks will provide a refuge for pedestrians going along each roadway and trying to access the bus stops.

RECOMMENDED BY:  Date: 09/05/2013
LAI Engineering

RECOMMENDED BY:  Date: 9/5/13
City Traffic Engineer

RECOMMENDED BY:  Date: 1/23/14
District Traffic Engineer

RECOMMENDED BY: _____ Date: _____
State Traffic Operations Engineer

RECOMMENDED BY: _____ Date: _____
Director of Operations

Appendix

Appendix: A Existing Intersection

Appendix: B Traffic Counts

Appendix: C CCT Bus Schedules

Appendix: D Crash Data

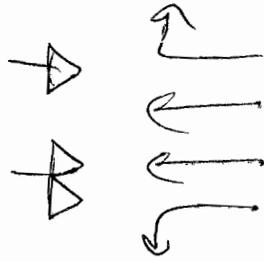
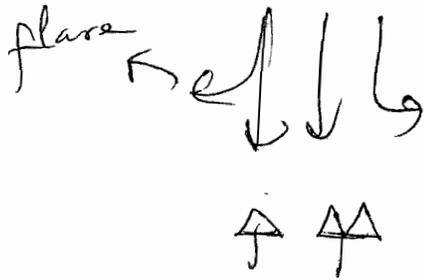
Appendix: E Capacity Analysis

APPENDIX A
Existing Intersection

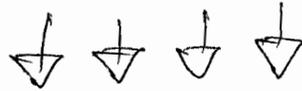
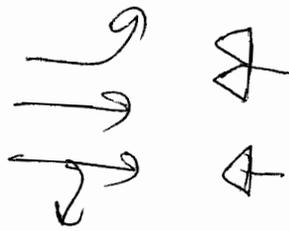
↑↑

Atlanta St.

3250000



S. Marietta Pkwy

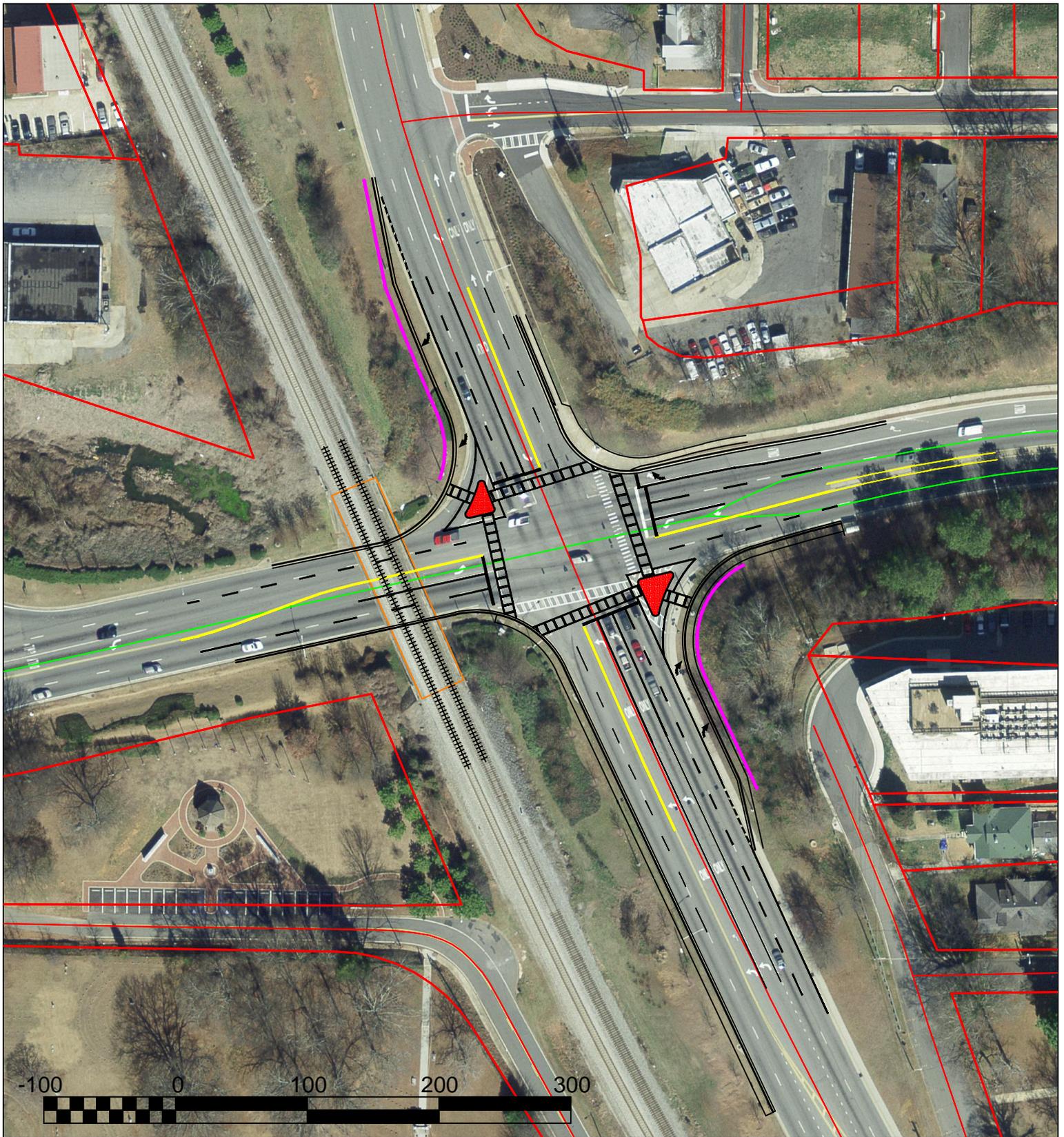


(40 uph)

Atlanta St.

(35 uph)





Atlanta St. @ S. Loop 120



APPENDIX B
Traffic Counts

Reliable Traffic Data Services, LLC

Tel: (770) 578-8158 | Fax: (770) 578-8159
 info@reliabletraffic.org | www.reliabletraffic.org

TMC Data
 S Marietta Pkwy @ Atlanta St
 7-9am | 4-6pm

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 1

Groups Printed- Cars & Buses

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	12	105	9	0	126	25	140	3	0	168	20	292	42	0	354	5	56	4	0	65	713
07:15 AM	14	127	10	0	151	36	196	1	0	233	27	318	42	0	387	4	66	8	0	78	849
07:30 AM	10	143	12	0	165	24	133	5	0	162	46	342	57	0	445	6	83	8	0	97	869
07:45 AM	19	167	11	0	197	31	167	4	0	202	48	323	51	0	422	8	79	25	0	112	933
Total	55	542	42	0	639	116	636	13	0	765	141	1275	192	0	1608	23	284	45	0	352	3364
08:00 AM	29	167	12	0	208	34	155	5	0	194	38	331	55	0	424	7	76	16	0	99	925
08:15 AM	22	158	15	0	195	20	142	10	0	172	44	282	48	0	374	5	64	18	0	87	828
08:30 AM	18	164	9	1	192	27	164	5	0	196	47	290	52	0	389	8	78	31	0	117	894
08:45 AM	25	138	12	0	175	39	97	8	0	144	43	297	42	0	382	9	117	30	0	156	857
Total	94	627	48	1	770	120	558	28	0	706	172	1200	197	0	1569	29	335	95	0	459	3504
*** BREAK ***																					
04:00 PM	53	215	16	0	284	14	113	18	0	145	13	128	13	0	154	12	290	63	0	365	948
04:15 PM	62	246	20	1	329	14	92	16	0	122	16	134	19	0	169	14	274	38	2	328	948
04:30 PM	76	257	27	3	363	16	124	26	0	166	20	146	15	0	181	11	271	21	0	303	1013
04:45 PM	63	198	21	0	282	15	73	16	0	104	14	137	16	0	167	22	319	38	1	380	933
Total	254	916	84	4	1258	59	402	76	0	537	63	545	63	0	671	59	1154	160	3	1376	3842
05:00 PM	79	213	10	0	302	17	177	16	0	210	17	148	27	0	192	21	341	24	0	386	1090
05:15 PM	76	215	16	0	307	22	182	22	0	226	14	141	21	0	176	31	296	29	1	357	1066
05:30 PM	51	182	22	0	255	20	143	10	0	173	23	160	25	0	208	18	270	31	1	320	956
05:45 PM	79	237	21	0	337	12	160	12	0	184	33	147	20	3	203	15	276	27	4	322	1046
Total	285	847	69	0	1201	71	662	60	0	793	87	596	93	3	779	85	1183	111	6	1385	4158
Grand Total	688	2932	243	5	3868	366	2258	177	0	2801	463	3616	545	3	4627	196	2956	411	9	3572	14868
Apprch %	17.8	75.8	6.3	0.1		13.1	80.6	6.3	0		10	78.1	11.8	0.1		5.5	82.8	11.5	0.3		
Total %	4.6	19.7	1.6	0	26	2.5	15.2	1.2	0	18.8	3.1	24.3	3.7	0	31.1	1.3	19.9	2.8	0.1	24	

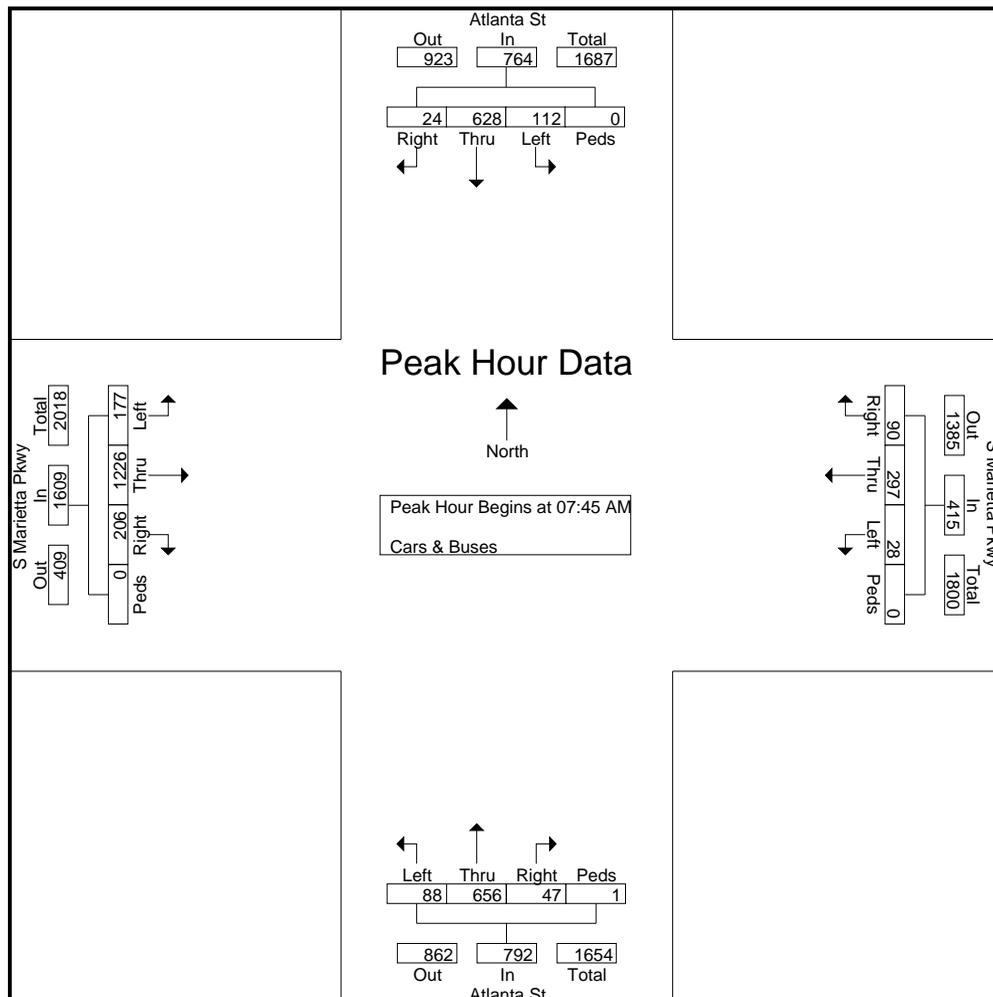
Reliable Traffic Data Services, LLC

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 info@reliabletraffic.org | www.reliabletraffic.org

TMC Data
 S Marietta Pkwy @ Atlanta St
 7-9am | 4-6pm

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 2

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	19	167	11	0	197	31	167	4	0	202	48	323	51	0	422	8	79	25	0	112	933
08:00 AM	29	167	12	0	208	34	155	5	0	194	38	331	55	0	424	7	76	16	0	99	925
08:15 AM	22	158	15	0	195	20	142	10	0	172	44	282	48	0	374	5	64	18	0	87	828
08:30 AM	18	164	9	1	192	27	164	5	0	196	47	290	52	0	389	8	78	31	0	117	894
Total Volume	88	656	47	1	792	112	628	24	0	764	177	1226	206	0	1609	28	297	90	0	415	3580
% App. Total	11.1	82.8	5.9	0.1		14.7	82.2	3.1	0		11	76.2	12.8	0		6.7	71.6	21.7	0		
PHF	.759	.982	.783	.250	.952	.824	.940	.600	.000	.946	.922	.926	.936	.000	.949	.875	.940	.726	.000	.887	.959



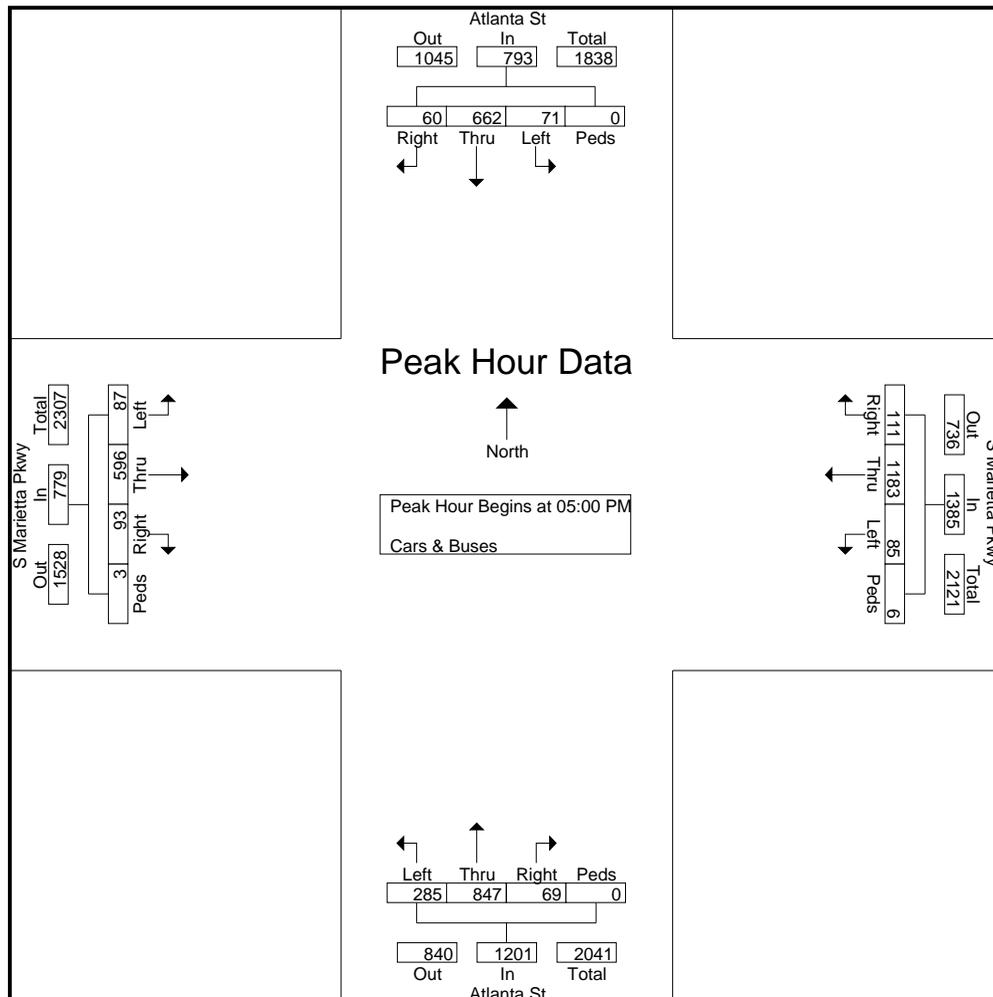
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TMC Data
 S Marietta Pkwy @ Atlanta St
 7-9am | 4-6pm

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 3

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	79	213	10	0	302	17	177	16	0	210	17	148	27	0	192	21	341	24	0	386	1090
05:15 PM	76	215	16	0	307	22	182	22	0	226	14	141	21	0	176	31	296	29	1	357	1066
05:30 PM	51	182	22	0	255	20	143	10	0	173	23	160	25	0	208	18	270	31	1	320	956
05:45 PM	79	237	21	0	337	12	160	12	0	184	33	147	20	3	203	15	276	27	4	322	1046
Total Volume	285	847	69	0	1201	71	662	60	0	793	87	596	93	3	779	85	1183	111	6	1385	4158
% App. Total	23.7	70.5	5.7	0		9	83.5	7.6	0		11.2	76.5	11.9	0.4		6.1	85.4	8	0.4		
PHF	.902	.893	.784	.000	.891	.807	.909	.682	.000	.877	.659	.931	.861	.250	.936	.685	.867	.895	.375	.897	.954



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TMC Data
 S Marietta Pkwy @ Atlanta St

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 1

7-9am | 4-6pm

Groups Printed- Trucks

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
*** BREAK ***																					
07:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	1	0	2	0	1	0	0	1	4
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	2	0	0	2	5
Total	0	0	0	0	0	0	0	1	0	1	0	3	2	0	5	0	3	0	0	3	9
08:00 AM	2	0	0	0	2	0	1	0	0	1	0	3	1	0	4	1	3	0	0	4	11
08:15 AM	2	0	1	0	3	0	0	0	0	0	0	2	2	0	4	1	1	0	0	2	9
08:30 AM	1	0	1	0	2	0	1	0	0	1	1	1	3	0	5	1	1	0	0	2	10
08:45 AM	1	0	3	0	4	0	1	0	0	1	1	2	3	0	6	0	1	1	0	2	13
Total	6	0	5	0	11	0	3	0	0	3	2	8	9	0	19	3	6	1	0	10	43
*** BREAK ***																					
04:00 PM	1	1	0	0	2	0	1	0	0	1	1	2	0	0	3	0	1	0	0	1	7
04:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
04:30 PM	2	1	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
04:45 PM	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	5
Total	6	4	0	0	10	0	1	0	0	1	1	6	0	0	7	0	2	0	0	2	20
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
05:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:45 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
Total	0	3	0	0	3	0	3	0	0	3	0	2	0	0	2	0	4	0	0	4	12
Grand Total	12	7	5	0	24	0	7	1	0	8	3	19	11	0	33	3	15	1	0	19	84
Apprch %	50	29.2	20.8	0		0	87.5	12.5	0		9.1	57.6	33.3	0		15.8	78.9	5.3	0		
Total %	14.3	8.3	6	0	28.6	0	8.3	1.2	0	9.5	3.6	22.6	13.1	0	39.3	3.6	17.9	1.2	0	22.6	

Reliable Traffic Data Services, LLC

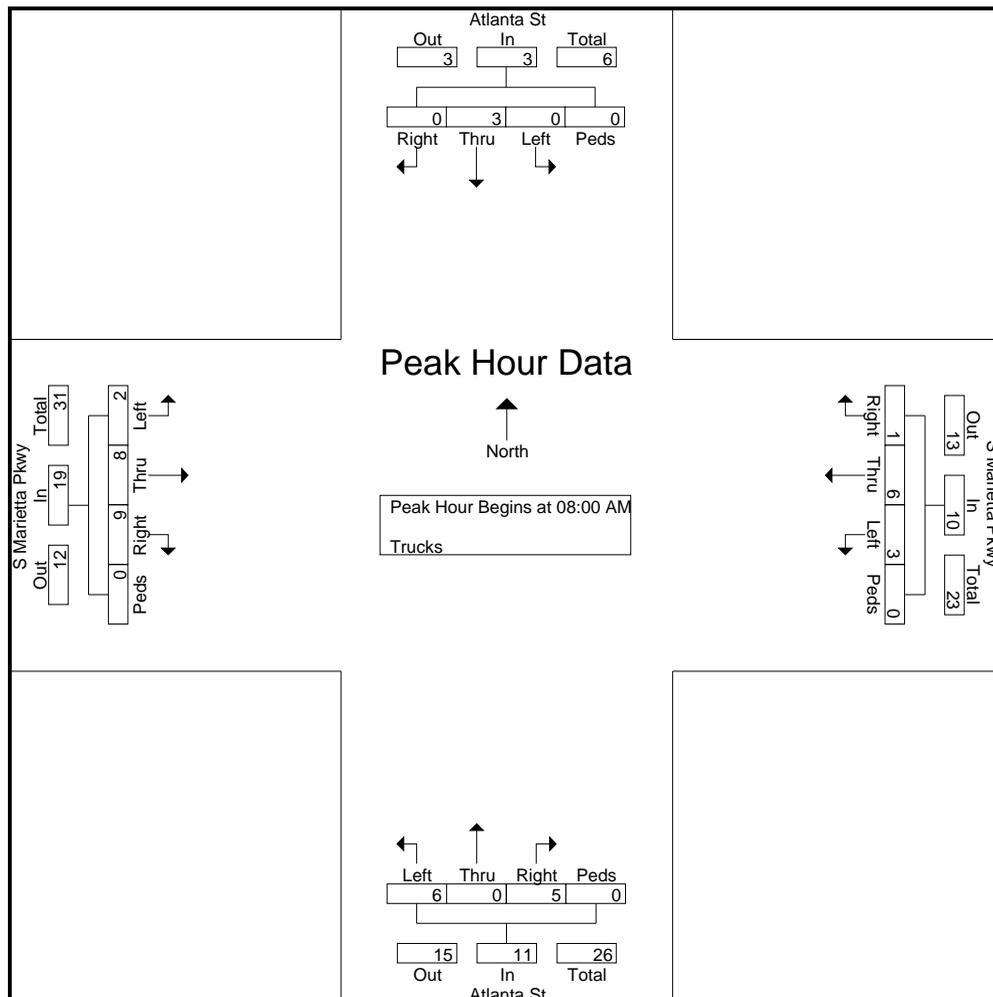
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TMC Data
 S Marietta Pkwy @ Atlanta St

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 2

7-9am | 4-6pm

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	0	0	0	2	0	1	0	0	1	0	3	1	0	4	1	3	0	0	4	11
08:15 AM	2	0	1	0	3	0	0	0	0	0	0	2	2	0	4	1	1	0	0	2	9
08:30 AM	1	0	1	0	2	0	1	0	0	1	1	1	3	0	5	1	1	0	0	2	10
08:45 AM	1	0	3	0	4	0	1	0	0	1	1	2	3	0	6	0	1	1	0	2	13
Total Volume	6	0	5	0	11	0	3	0	0	3	2	8	9	0	19	3	6	1	0	10	43
% App. Total	54.5	0	45.5	0		0	100	0	0		10.5	42.1	47.4	0		30	60	10	0		
PHF	.750	.000	.417	.000	.688	.000	.750	.000	.000	.750	.500	.667	.750	.000	.792	.750	.500	.250	.000	.625	.827



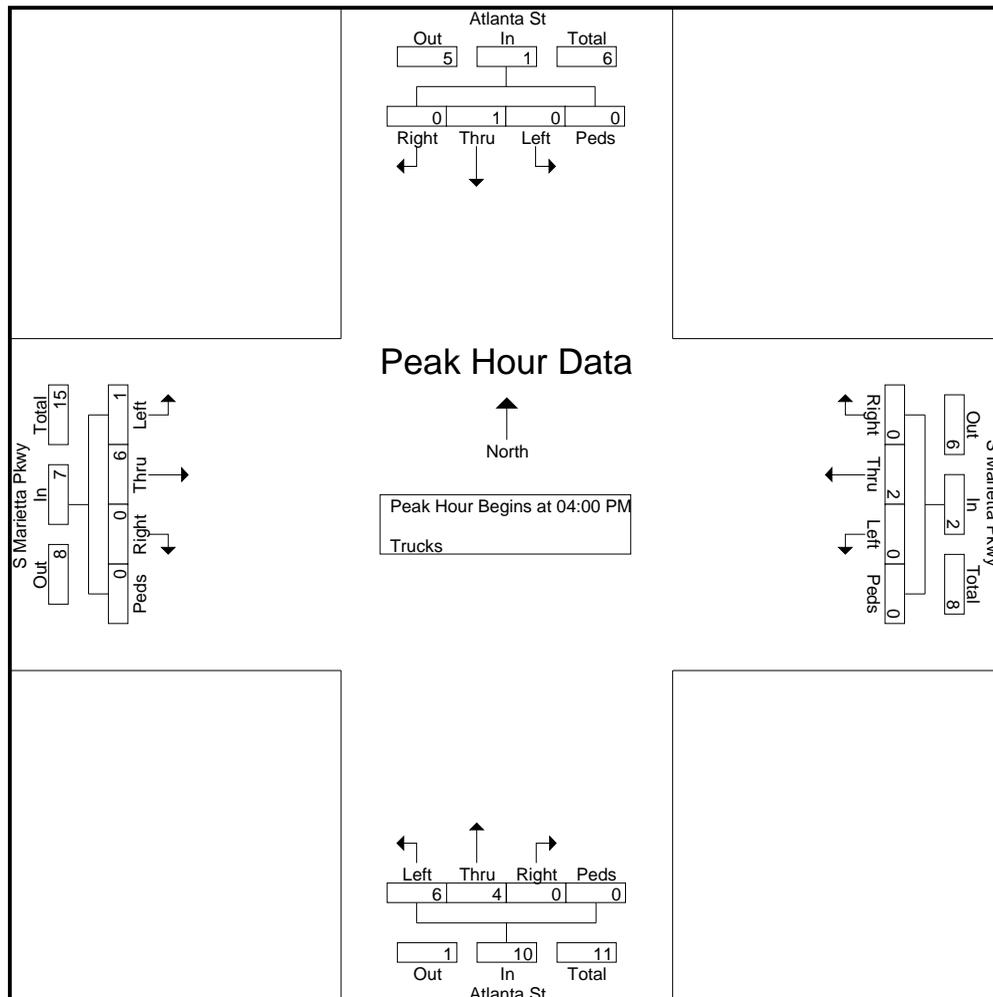
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TMC Data
 S Marietta Pkwy @ Atlanta St
 7-9am | 4-6pm

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 3

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	1	0	0	2	0	1	0	0	1	1	2	0	0	3	0	1	0	0	1	7
04:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
04:30 PM	2	1	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
04:45 PM	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	5
Total Volume	6	4	0	0	10	0	1	0	0	1	1	6	0	0	7	0	2	0	0	2	20
% App. Total	60	40	0	0		0	100	0	0		14.3	85.7	0	0		0	100	0	0		
PHF	.500	.500	.000	.000	.833	.000	.250	.000	.000	.250	.250	.750	.000	.000	.583	.000	.500	.000	.000	.500	.714



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TMC Data
 S Marietta Pkwy @ Atlanta St
 7-9am | 4-6pm

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 1

Groups Printed- Bikes

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
*** BREAK ***																					
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	2
*** BREAK ***																					
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	2
*** BREAK ***																					
08:15 AM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	3	0	0	3	1	2	0	0	3	0	0	0	0	0	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	3
Total	0	1	0	0	1	1	4	0	0	5	1	4	1	0	6	0	0	0	0	0	12
*** BREAK ***																					
04:00 PM	2	2	0	0	4	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	7
04:15 PM	0	4	0	0	4	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	10
04:30 PM	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	7
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	4
Total	3	9	1	0	13	0	4	0	0	4	0	2	0	0	2	0	8	1	0	9	28
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	3
05:15 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
05:30 PM	1	1	0	0	2	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	6
05:45 PM	2	2	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
Total	4	4	0	0	8	0	4	0	0	4	1	0	0	0	1	0	5	0	0	5	18
Grand Total	7	14	1	0	22	1	13	0	0	14	2	6	1	0	9	1	13	1	0	15	60
Apprch %	31.8	63.6	4.5	0		7.1	92.9	0	0		22.2	66.7	11.1	0		6.7	86.7	6.7	0		
Total %	11.7	23.3	1.7	0	36.7	1.7	21.7	0	0	23.3	3.3	10	1.7	0	15	1.7	21.7	1.7	0	25	

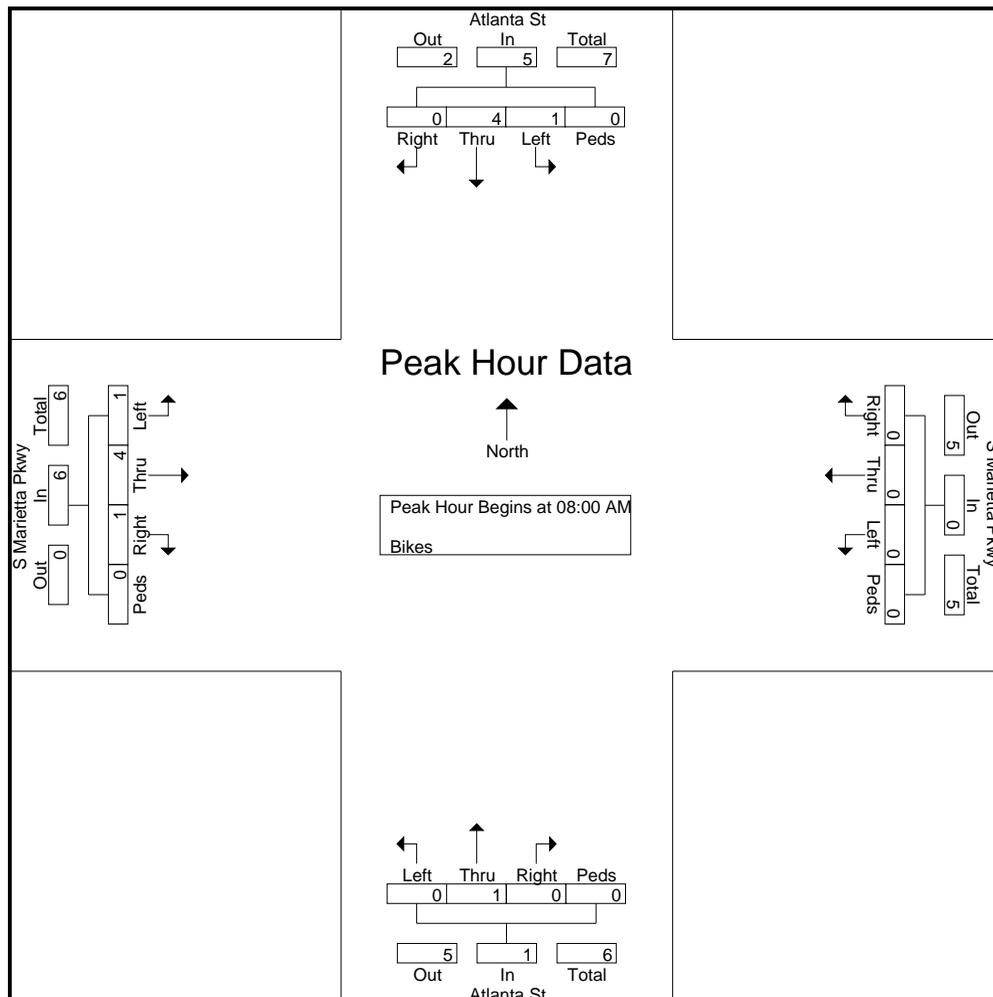
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TMC Data
 S Marietta Pkwy @ Atlanta St
 7-9am | 4-6pm

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 2

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	3	0	0	3	1	2	0	0	3	0	0	0	0	0	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	3
Total Volume	0	1	0	0	1	1	4	0	0	5	1	4	1	0	6	0	0	0	0	0	12
% App. Total	0	100	0	0		20	80	0	0		16.7	66.7	16.7	0		0	0	0	0		
PHF	.000	.250	.000	.000	.250	.250	.333	.000	.000	.417	.250	.500	.250	.000	.500	.000	.000	.000	.000	.000	.500



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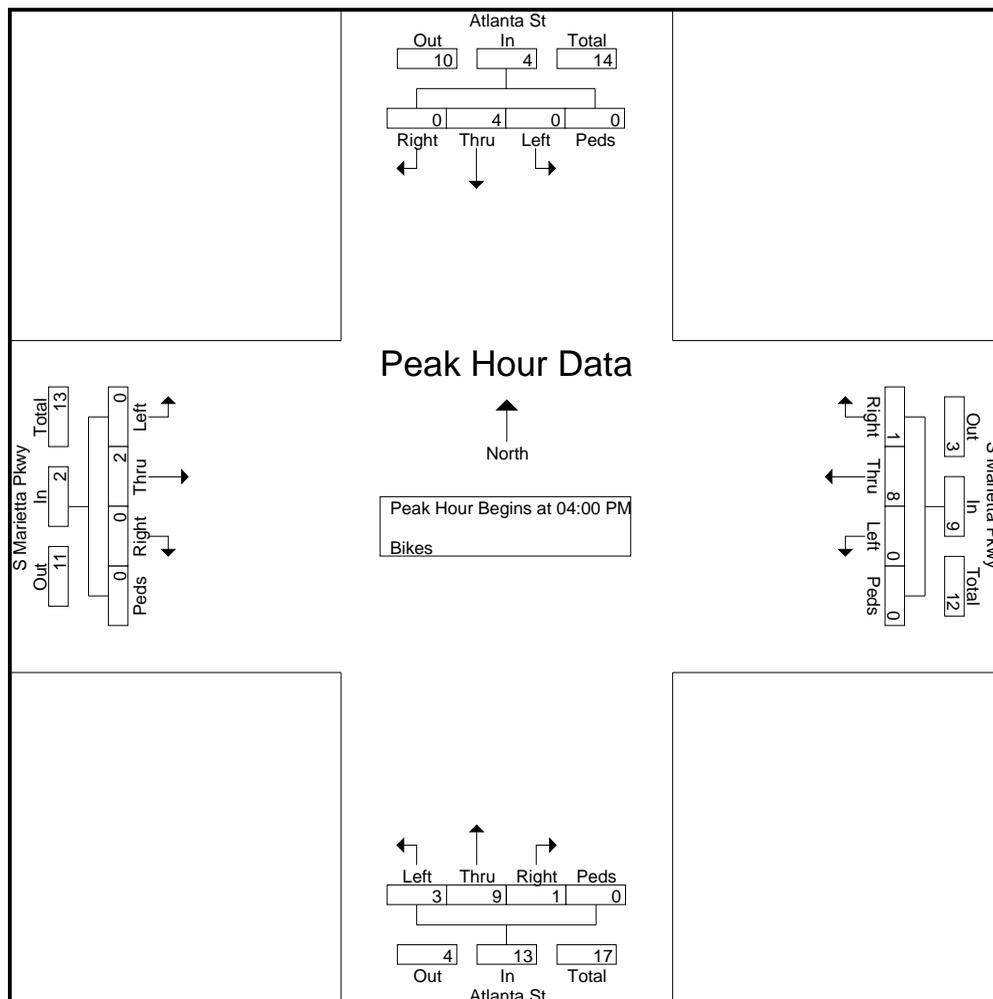
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TMC Data
 S Marietta Pkwy @ Atlanta St

File Name : 32500001
 Site Code : 32500001
 Start Date : 8/22/2012
 Page No : 3

7-9am | 4-6pm

Start Time	Atlanta St Northbound					Atlanta St Southbound					S Marietta Pkwy Eastbound					S Marietta Pkwy Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	2	2	0	0	4	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	7
04:15 PM	0	4	0	0	4	0	3	0	0	3	0	1	0	0	1	0	2	0	0	2	10
04:30 PM	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	7
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	4
Total Volume	3	9	1	0	13	0	4	0	0	4	0	2	0	0	2	0	8	1	0	9	28
% App. Total	23.1	69.2	7.7	0		0	100	0	0		0	100	0	0		0	88.9	11.1	0		
PHF	.375	.563	.250	.000	.650	.000	.333	.000	.000	.333	.000	.500	.000	.000	.500	.000	.667	.250	.000	.563	.700



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Approach Data

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Site Code: 32500101
 Atlanta St South of S Marietta Pkwy

Start Time	22-Aug-12 Wed	Northbound		Hour Totals	
		Morning	Afternoon	Morning	Afternoon
12:00		18	136		
12:15		17	132		
12:30		10	124		
12:45		17	138	62	530
01:00		31	142		
01:15		17	154		
01:30		22	152		
01:45		5	133	75	581
02:00		4	139		
02:15		0	177		
02:30		3	134		
02:45		3	176	10	626
03:00		5	206		
03:15		7	213		
03:30		12	234		
03:45		4	256	28	909
04:00		11	318		
04:15		7	331		
04:30		5	293		
04:45		8	293	31	1235
05:00		11	287		
05:15		13	281		
05:30		35	310		
05:45		40	307	99	1185
06:00		36	277		
06:15		59	245		
06:30		87	218		
06:45		105	178	287	918
07:00		121	164		
07:15		148	132		
07:30		185	109		
07:45		181	93	635	498
08:00		194	82		
08:15		205	76		
08:30		182	81		
08:45		155	58	736	297
09:00		136	72		
09:15		129	56		
09:30		127	47		
09:45		108	44	500	219
10:00		89	41		
10:15		94	39		
10:30		120	19		
10:45		107	29	410	128
11:00		113	24		
11:15		132	22		
11:30		157	19		
11:45		138	14	540	79
Total		3413	7205		
Percent		32.1%	67.9%		
Grand Total			3413	7205	
Percent			32.1%	67.9%	
ADT			ADT 10,618		AADT 10,618

Reliable Traffic Data Services, LLC

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Approach Data

Site Code: 32500102
 Atlanta St North of S Marietta Pkwy

Start Time	22-Aug-12 Wed	Southbound		Hour Totals	
		Morning	Afternoon	Morning	Afternoon
12:00		6	102		
12:15		10	114		
12:30		6	123		
12:45		2	116	24	455
01:00		7	108		
01:15		6	87		
01:30		1	96		
01:45		3	78	17	369
02:00		2	92		
02:15		2	118		
02:30		1	122		
02:45		1	114	6	446
03:00		1	113		
03:15		1	95		
03:30		3	121		
03:45		2	147	7	476
04:00		3	145		
04:15		2	135		
04:30		3	128		
04:45		14	125	22	533
05:00		19	185		
05:15		37	209		
05:30		54	196		
05:45		72	185	182	775
06:00		101	136		
06:15		117	112		
06:30		123	103		
06:45		129	88	470	439
07:00		176	66		
07:15		197	78		
07:30		194	63		
07:45		177	61	744	268
08:00		180	44		
08:15		177	63		
08:30		183	54		
08:45		153	47	693	208
09:00		123	31		
09:15		106	36		
09:30		108	35		
09:45		93	42	430	144
10:00		86	30		
10:15		88	28		
10:30		87	25		
10:45		83	13	344	96
11:00		73	24		
11:15		76	18		
11:30		98	25		
11:45		96	21	343	88
Total		3282	4297		
Percent		43.3%	56.7%		
Grand Total			3282	4297	
Percent			43.3%	56.7%	
ADT			ADT 7,579		AADT 7,579

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Site Code: 32500103
 S Marietta Pkwy West of Atlanta St

Start Time	22-Aug-12 Wed	Eastbound		Hour Totals	
		Morning	Afternoon	Morning	Afternoon
12:00		19	248		
12:15		15	221		
12:30		13	225		
12:45		6	207	53	901
01:00		8	207		
01:15		10	221		
01:30		9	193		
01:45		3	202	30	823
02:00		1	166		
02:15		10	176		
02:30		3	170		
02:45		8	154	22	666
03:00		6	172		
03:15		8	183		
03:30		12	190		
03:45		18	184	44	729
04:00		15	145		
04:15		23	172		
04:30		35	168		
04:45		39	177	112	662
05:00		50	191		
05:15		81	169		
05:30		90	182		
05:45		149	223	370	765
06:00		172	169		
06:15		180	195		
06:30		229	190		
06:45		270	172	851	726
07:00		375	189		
07:15		439	160		
07:30		378	137		
07:45		396	144	1588	630
08:00		316	101		
08:15		335	121		
08:30		406	90		
08:45		519	90	1576	402
09:00		400	87		
09:15		377	99		
09:30		351	63		
09:45		343	75	1471	324
10:00		343	70		
10:15		275	75		
10:30		287	52		
10:45		317	39	1222	236
11:00		242	25		
11:15		276	33		
11:30		256	29		
11:45		243	25	1017	112
Total		8356	6976		
Percent		54.5%	45.5%		
Grand Total		8356	6976	6976	
Percent		54.5%	45.5%		
ADT		ADT 15,332			AADT 15,332

Reliable Traffic Data Services, LLC

Approach Data

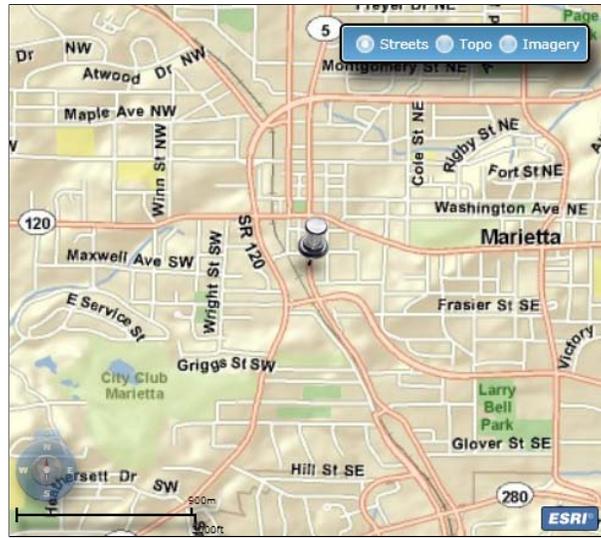
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Site Code: 32500104
 S Marietta Pkwy East of Atlanta St

Start Time	22-Aug-12 Wed	Westbound		Hour Totals	
		Morning	Afternoon	Morning	Afternoon
12:00		31	190		
12:15		30	184		
12:30		28	183		
12:45		17	194	106	751
01:00		25	165		
01:15		18	185		
01:30		15	198		
01:45		12	182	70	730
02:00		8	254		
02:15		12	196		
02:30		12	188		
02:45		10	187	42	825
03:00		9	217		
03:15		6	208		
03:30		15	225		
03:45		4	234	34	884
04:00		9	337		
04:15		6	332		
04:30		9	339		
04:45		11	347	35	1355
05:00		16	352		
05:15		13	357		
05:30		27	342		
05:45		23	324	79	1375
06:00		36	341		
06:15		52	308		
06:30		60	268		
06:45		68	244	216	1161
07:00		66	210		
07:15		73	253		
07:30		98	236		
07:45		114	155	351	854
08:00		119	182		
08:15		104	132		
08:30		118	158		
08:45		113	150	454	622
09:00		105	147		
09:15		120	126		
09:30		123	121		
09:45		115	106	463	500
10:00		139	83		
10:15		120	77		
10:30		128	57		
10:45		110	51	497	268
11:00		151	49		
11:15		154	42		
11:30		146	45		
11:45		191	33	642	169
Total		2989	9494		
Percent		23.9%	76.1%		
Grand Total			2989	9494	
Percent			23.9%	76.1%	
ADT			ADT 12,483		AADT 12,483

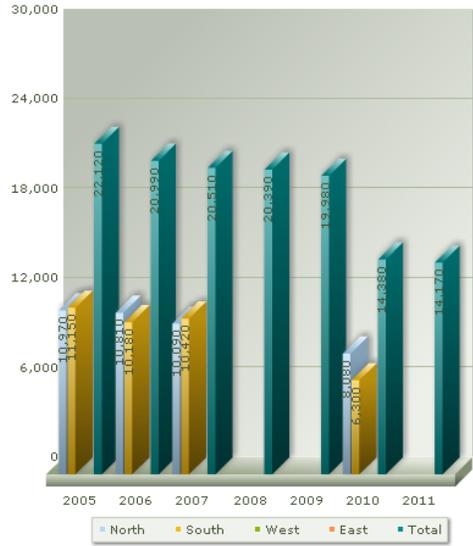


067 Cobb, Traffic Counter: 2230



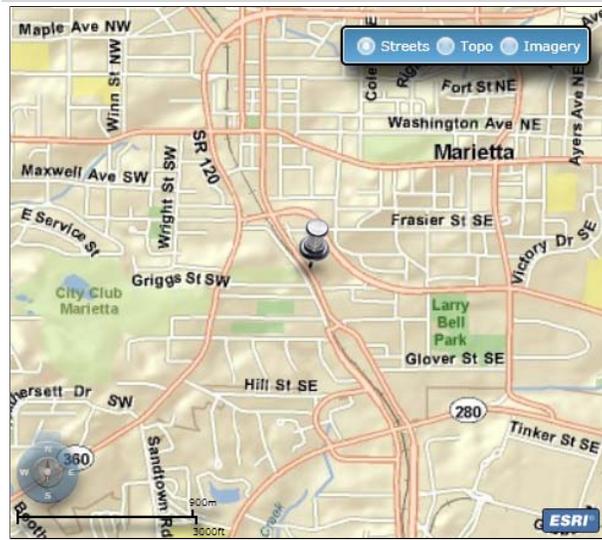
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Year	RCLINK	Beginning Milepoint	Ending Milepoint	Directional	Actual/Estimate	Direction 1	Direction 2	Total AADT	Truck%
2011	0673139013	0.00	0.17	Non-Directional	Estimate			14170	
2010	0673139013	0.00	0.17	Directional	Actual	8080 (North)	6300 (South)	14380	3%
2009	0673139013	0.00	0.17	Non-Directional	Estimate			19980	
2008	0673139013	0.00	0.17	Non-Directional	Estimate			20390	
2007	0673139013	0.00	0.17	Bi-Directional	Actual	10420 (South)	10090 (North)	20510	
2006	0673139013	0.00	0.17	Bi-Directional	Actual	10180 (South)	10810 (North)	20990	
2005	0673139013	0.00	0.17	Bi-Directional	Actual	10970 (North)	11150 (South)	22120	



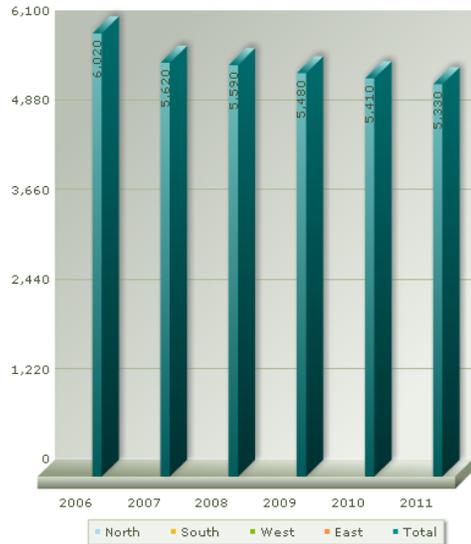


067 Cobb, Traffic Counter: 2036



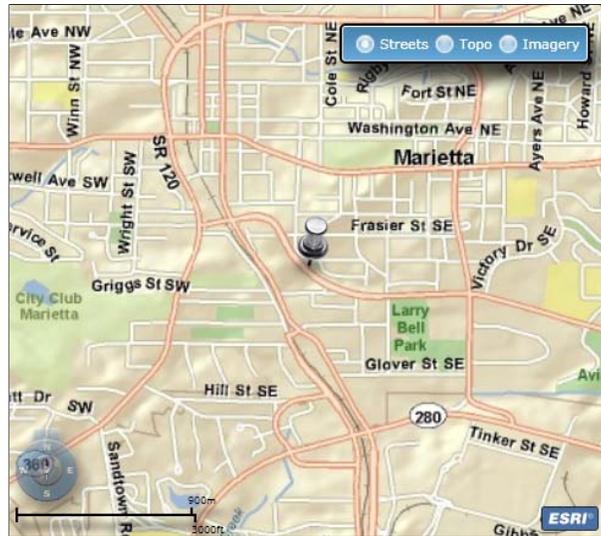
Disclaimer: The Georgia Department of Transportation makes no representation or warranties, implied or expressed, concerning the accuracy, completeness, reliability, or suitability for any particular purpose of this information and data contained on this Web Site.

Year	RCLINK	Beginning Milepoint	Ending Milepoint	Directional	Actual/Estimate	Direction 1	Direction 2	Total AADT	Truck%
2011	0671000500	11.76	12.21	Non-Directional	Estimate			5330	
2010	0671000500	11.76	12.21	Non-Directional	Estimate			5410	
2009	0671000500	11.76	12.21	Non-Directional	Estimate			5480	
2008	0671000500	11.76	12.20	Non-Directional	Estimate			5590	
2007	0671000500	12.07	12.55	Non-Directional	Estimate			5620	
2006	0671000500	12.07	12.55	Non-Directional	Actual			6020	



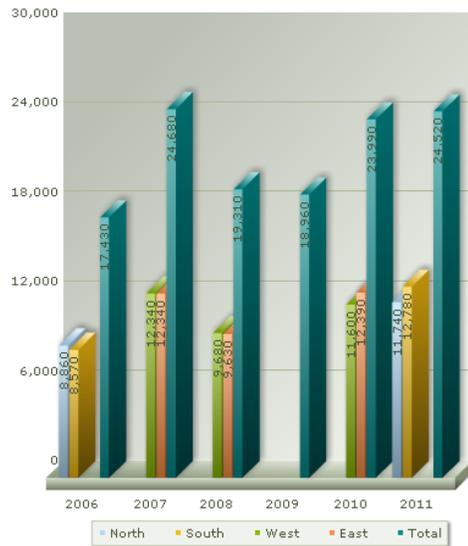


067 Cobb, Traffic Counter: 2432



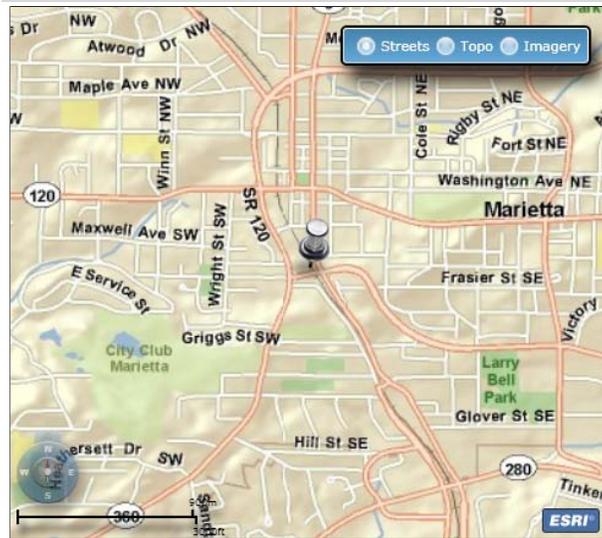
Disclaimer: The Georgia Department of Transportation makes no representation or warranties, implied or expressed, concerning the accuracy, completeness, reliability, or suitability for any particular purpose of this information and data contained on this Web Site.

Year	RCLINK	Beginning Milepoint	Ending Milepoint	Directional	Actual/Estimate	Direction 1	Direction 2	Total AADT	Truck%
2011	0671012000	10.76	11.67	Directional	Actual	11740 (North)	12780 (South)	24520	3%
2010	0671012000	10.76	11.67	Directional	Actual	11600 (West)	12390 (East)	23990	
2009	0671012000	10.76	11.67	Non-Directional	Estimate			18960	
2008	0671012000	10.76	11.67	Bi-Directional	Actual	9630 (East)	9680 (West)	19310	
2007	06710120LO	5.47	6.39	Bi-Directional	Estimate	12340 (West)	12340 (East)	24680	
2006	06710120LO	5.47	6.39	Bi-Directional	Actual	8570 (South)	8860 (North)	17430	



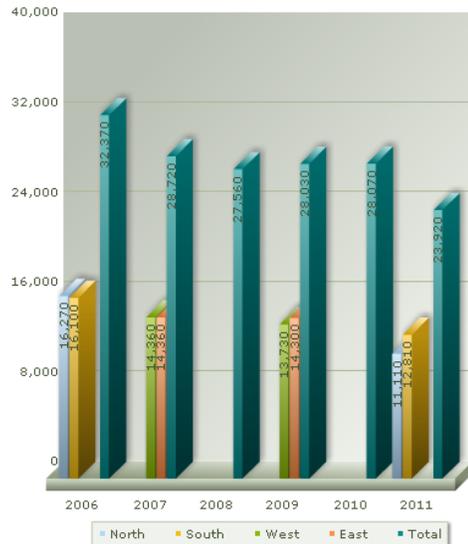


067 Cobb, Traffic Counter: 2434



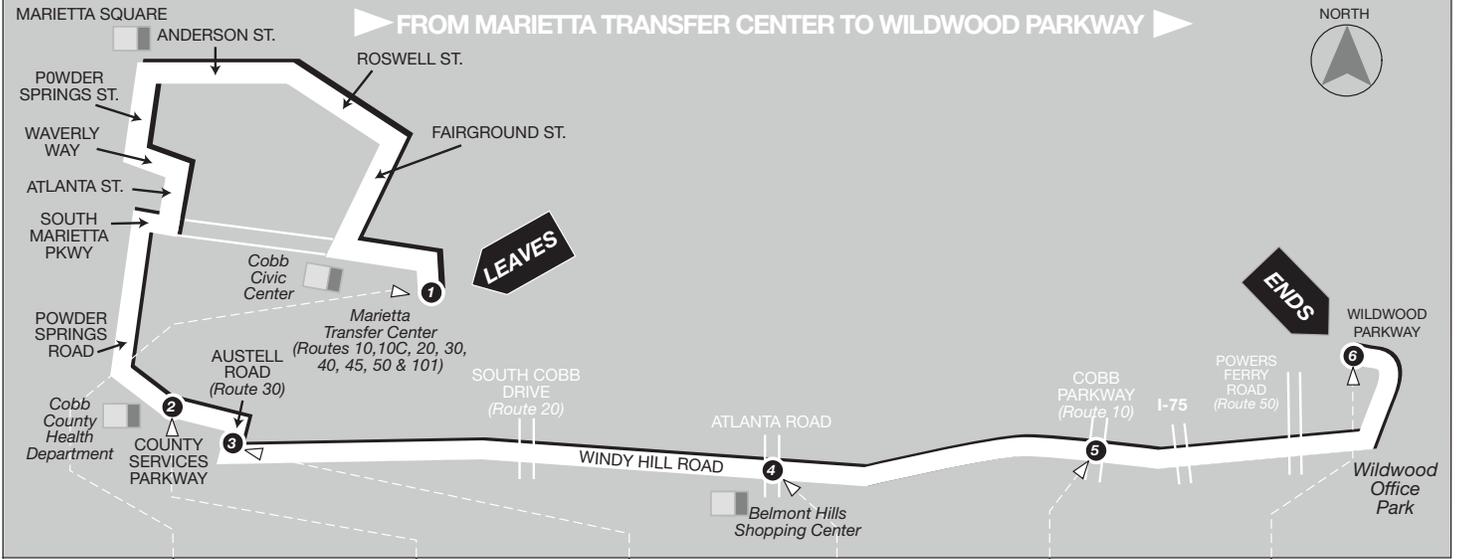
Disclaimer: The Georgia Department of Transportation makes no representation or warranties, implied or expressed, concerning the accuracy, completeness, reliability, or suitability for any particular purpose of this information and data contained on this Web Site.

Year	RCLINK	Beginning Milepoint	Ending Milepoint	Directional	Actual/Estimate	Direction 1	Direction 2	Total AADT	Truck%
2011	0671000500	12.21	12.31	Directional	Actual	11110 (North)	12810 (South)	23920	
2010	0671000500	12.21	12.31	Non-Directional	Estimate			28070	
2009	0671000500	12.21	12.30	Bi-Directional	Actual	14300 (East)	13730 (West)	28030	3%
2008	0671000500	12.21	12.30	Non-Directional	Estimate			27560	
2007	0671000500	12.56	12.67	Bi-Directional	Estimate	14360 (East)	14360 (West)	28720	
2006	0671000500	12.56	12.67	Bi-Directional	Actual	16100 (South)	16270 (North)	32370	



APPENDIX C
CCT Bus Schedules

Windy Hill Road



1
BUS LEAVES
Marietta
Transfer
Center

2
Bus Leaves
Cobb County
Health Department

3
Bus Leaves
Austell Road
& Windy Hill Road

4
Bus Leaves
Windy Hill Road
& Atlanta Road

5
Bus Leaves
Windy Hill Road
& Cobb Parkway

6
BUS ENDS
Wildwood
Parkway

WEEKDAY

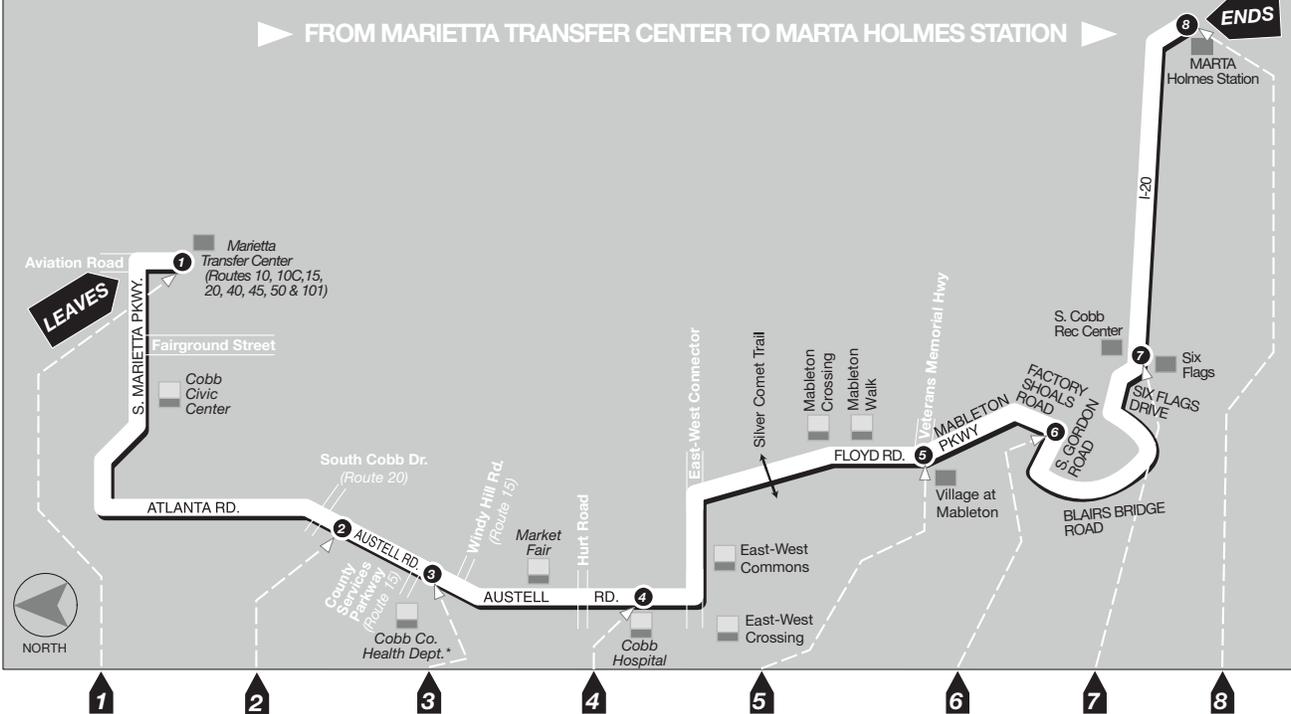
A.M.	5:00	5:21	5:28	5:38	5:46	5:55
	6:00	6:21	6:28	6:38	6:46	6:55
	6:30	6:51	6:58	7:08	7:16	7:25
	7:00	7:21	7:28	7:38	7:46	7:55
	7:30	7:51	7:58	8:08	8:16	8:25
	8:00	8:21	8:28	8:38	8:46	8:55
	8:30	8:51	8:58	9:08	9:16	9:25
	9:00	9:22	9:27	9:37	9:43	9:51
	10:00	10:22	10:27	10:37	10:43	10:51
	11:00	11:22	11:27	11:37	11:43	11:51
P.M.	12:00	12:22	12:27	12:37	12:43	12:51
	1:00	1:22	1:27	1:37	1:43	1:51
	2:00	2:22	2:27	2:37	2:43	2:51
	3:00	3:24	3:28	3:39	3:47	3:55
	3:30	3:54	3:58	4:09	4:17	4:25
	4:00	4:24	4:28	4:39	4:47	4:55
	4:30	4:54	4:58	5:09	5:17	5:25
	5:00	5:24	5:28	5:39	5:47	5:55
	5:30	5:54	5:58	6:09	6:17	6:25
	6:00	6:17	6:21	6:30	6:38	6:47
	6:30	6:47	6:51	7:00	7:08	7:17
	7:00	7:17	7:21	7:28	7:35	7:44
	8:00	8:17	8:21	8:28	8:35	8:44

SATURDAY

A.M.	7:00	7:17	7:21	7:29	7:33	7:40
	8:00	8:17	8:21	8:29	8:33	8:40
	9:00	9:17	9:21	9:29	9:33	9:40
	10:00	10:17	10:21	10:29	10:33	10:40
	11:00	11:17	11:21	11:29	11:33	11:40
P.M.	12:00	12:17	12:21	12:29	12:33	12:40
	1:00	1:17	1:21	1:29	1:33	1:40
	2:00	2:17	2:21	2:29	2:33	2:40
	3:00	3:17	3:21	3:29	3:33	3:40
	4:00	4:17	4:21	4:29	4:33	4:40
	5:00	5:17	5:21	5:29	5:33	5:40
	6:00	6:17	6:21	6:29	6:33	6:40
	7:00	7:17	7:21	7:29	7:33	7:40

ROUTE 30 Austell Road – Floyd Road – MARTA Holmes Station ROUTE 30

▶ FROM MARIETTA TRANSFER CENTER TO MARTA HOLMES STATION ▶



1	2	3	4	5	6	7	8
BUS LEAVES Marietta Transfer Center	Bus Leaves Austell Rd. & South Cobb Dr.	Bus Leaves Austell Rd. & County Services Pkwy.	Bus Leaves Cobb Hospital	Bus Leaves Floyd Rd. & Veterans Memorial Hwy	Bus Leaves Factory Shoals Rd. & S. Gordon Rd.	Bus Leaves Six Flags	BUS ENDS MARTA Holmes Station

WEEKDAY

A.M.	4:30	4:40	4:44	4:54	5:04	5:10	5:22	5:40
	5:00	5:09	5:13	5:18	5:28	5:34	5:46	6:12
	5:30	5:39	5:43	5:53	6:03	6:09	6:21	6:47
	6:00	6:10	6:14	6:24	6:34	6:40	6:52	7:18
	6:15	6:25	6:29	6:39	6:49	6:55	7:07	7:33
	6:30	6:40	6:44	6:54	7:04	7:10	7:22	7:48
	6:45	6:55	6:59	7:09	7:19	7:25	7:37	8:03
	7:00	7:10	7:14	7:24	7:34	7:40	7:52	8:18
	7:15	7:25	7:29	7:39	7:49	7:55	8:07	8:33
	7:30	7:40	7:44	7:54	8:04	8:10	8:22	8:48
	7:45	7:55	7:59	8:09	8:19	8:25	8:37	9:03
	8:00	8:10	8:14	8:24	8:34	8:40	8:52	9:18
	8:15	8:25	8:29	8:39	8:49	8:55	9:07	9:33
	8:30	8:40	8:44	8:54	9:04	9:10	9:22	9:48
	9:00	9:10	9:14	9:24	9:34	9:40	9:52	10:18
	9:30	9:40	9:44	9:54	10:04	10:10	10:22	10:48
	10:00	10:10	10:14	10:24	10:34	10:40	10:52	11:18
	10:30	10:40	10:44	10:54	11:04	11:10	11:22	11:48
	11:00	11:10	11:14	11:24	11:34	11:40	11:52	12:18
P.M.	11:30	11:40	11:44	11:54	12:04	12:10	12:22	12:48
	12:00	12:10	12:14	12:24	12:34	12:40	12:52	1:18
	12:30	12:40	12:44	12:54	1:04	1:10	1:22	1:48
	1:00	1:10	1:14	1:24	1:34	1:40	1:52	2:18
	1:30	1:40	1:44	1:54	2:04	2:10	2:22	2:48
	2:00	2:10	2:14	2:24	2:34	2:40	2:52	3:18
	2:30	2:40	2:44	2:54	3:04	3:10	3:22	3:48
	3:00	3:10	3:14	3:24	3:34	3:40	3:52	4:18
	3:30	3:40	3:44	3:54	4:04	4:10	4:22	4:48
	3:45	3:55	3:59	4:09	4:19	4:25	4:37	5:03
	4:00	4:10	4:14	4:24	4:34	4:40	4:52	5:18
	4:15	4:25	4:29	4:39	4:49	4:55	5:07	5:33
	4:30	4:40	4:44	4:54	5:04	5:10	5:22	5:48
	4:45	4:55	4:59	5:09	5:19	5:25	5:37	6:03
	5:00	5:10	5:14	5:24	5:34	5:40	5:52	6:18
	5:15	5:25	5:29	5:39	5:49	5:55	6:07	6:33
	5:30	5:40	5:44	5:54	6:04	6:10	6:22	6:48
	6:00	6:10	6:14	6:24	6:34	6:40	6:52	7:18
	6:30	6:40	6:44	6:54	7:04	7:10	7:22	7:48
	7:00	7:10	7:14	7:24	7:34	7:40	7:52	8:18
	7:30	7:40	7:44	7:54	8:04	8:10	8:22	8:48
	8:00	8:10	8:14	8:24	8:34	8:40	8:52	9:18
	8:30	8:40	8:44	8:54	9:04	9:10	9:22	9:48
	9:00	9:10	9:14	9:24	9:34	9:40	9:52	10:18
	9:30	9:40	9:44	9:54	10:04	10:10	10:22	10:48
	10:00	10:10	10:14	10:24	10:34	10:40	10:52	11:18
	10:30	10:40	10:44	10:54	11:04	11:10	11:22	11:48

SATURDAY

A.M.	7:00	7:10	7:14	7:24	7:34	7:40	7:54	8:05
	8:00	8:12	8:17	8:27	8:34	8:40	8:56	9:18
	9:00	9:12	9:17	9:27	9:34	9:40	9:56	10:18
	9:30	9:42	9:47	9:57	10:04	10:10	10:26	10:48
	10:30	10:42	10:47	10:57	11:04	11:10	11:26	11:48
P.M.	12:00	12:12	12:17	12:27	12:34	12:40	12:56	1:18
	1:00	1:12	1:17	1:27	1:34	1:40	1:56	2:18
	2:00	2:12	2:17	2:27	2:34	2:40	2:56	3:18
	3:30	3:42	3:47	3:57	4:04	4:10	4:26	4:48
	5:00	5:12	5:17	5:25	5:34	5:40	5:56	6:18
	6:00	6:12	6:17	6:27	6:34	6:40	6:56	7:18
	7:00	7:12	7:17	7:27	7:34	7:40	7:56	8:18
	8:30	8:40	8:44	8:54	9:04	9:10	9:24	9:33
	9:30	9:40	9:44	9:54	10:04	10:10	10:16	10:25

*The Cobb County Health Dept. and other County facilities located on County Services Pkwy are served by CCT'S Route 15. Please refer to the Route 15 schedules.

APPENDIX D
Crash Data

AccidentNumber	Date	Time	Route	Mile	IntersectingRoute	RampSeq	Distance	Directio	Injuries	Fatalities	MannerOfCollision	LocationOfImpact	FirstHarmfulEvent	Light	Surface	DirVeh1	DirVeh2	MnvrVeh1	MnvrVeh2
758652	1/5/2007	7:14:00	S MARIETTA PKWY	0	W ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dawn	Wet	Southeast	Southeast	Straight	Stopped
829539	2/2/2007	13:40:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		1	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
818787	2/6/2007	14:57:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Sideswipe-Same Direction	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	North	North	Changing Lanes	Straight
811659	2/10/2007	16:51:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	East	Straight	Straight
839367	2/19/2007	7:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Northeast	Northeast	Straight	Stopped
854835	2/19/2007	6:50:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Dawn	Dry	East	Southeast	Turning Left	Straight
839096	2/27/2007	11:30:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Backing	Stopped
882218	3/5/2007	15:40:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Straight	Straight
880530	3/16/2007	1:07:00	S MARIETTA PKWY	0	ATLANTA RD	0	0		1	0	Angle	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Wet	Northeast	Southeast	Straight	Straight
935892	6/4/2007	15:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
949965	6/18/2007	10:45:00	S MARIETTA PKWY	0	ATLANTA RD	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Straight	Stopped
985485	6/29/2007	17:28:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Straight	Stopped
977141	7/14/2007	23:45:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Wet	Southeast	North	Straight	Straight
1013553	7/28/2007	1:00:00	S MARIETTA PKWY	0	ATLANTA RD	0	0		0	0	Sideswipe-Same Direction	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	East	East	Changing Lanes	Straight
1016178	8/10/2007	16:38:00	ATLANTA RD	0	S MARIETTA PKWY	0	0		2	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
1033580	8/29/2007	17:20:00	ATLANTA RD	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Northeast	Northeast	Straight	Straight
1039664	9/7/2007	13:20:00	S MARIETTA PKWY	0	ATLANTA	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Straight	Stopped
1071767	9/19/2007	18:00:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Backing	Stopped
1056972	9/25/2007	10:50:00	ATLANTA RD	0	S MARIETTA PKWY	0	0		0	0	Sideswipe-Same Direction	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Stopped	Straight
1070936	10/13/2007	14:41:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		2	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	North	Straight	Straight
1066651	10/23/2007	16:45:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Turning Right	Turning Right
427705	10/26/2007	19:10:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	Southeast	Southeast	Straight	Stopped
453344	11/17/2007	17:15:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
464472	12/4/2007	17:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Sideswipe-Same Direction	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Changing Lanes	Straight
526062	2/15/2008	12:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	East	Turning Right	Straight
547551	2/23/2008	21:20:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Dry	East	Northeast	Straight	Straight
543826	2/25/2008	12:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Changing Lanes	Straight
591455	4/25/2008	9:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Passing	Stopped
603412	5/13/2008	15:30:00	S MARIETTA PKWY	0	ATLANTA RD	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Straight	Stopped
622074	5/15/2008	13:15:00	ATLANTA RD	0	S MARIETTA PKWY	0	0		1	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Northeast	Northeast	Straight	Stopped
597580	5/23/2008	16:36:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Southeast	Southeast	Straight	Stopped
652198	8/1/2008	21:30:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Dry	Northeast	Southeast	Turning Right	Straight
673856	8/5/2008	9:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Straight	Straight
661107	8/12/2008	18:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Southeast	Southeast	Straight	Stopped
661986	8/20/2008	6:10:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Northeast	Straight	Straight
679778	9/17/2008	17:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight
679870	9/17/2008	8:10:00	ATLANTA RD	0	S MARIETTA PKWY	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
715181	9/19/2008	10:10:00	S MARIETTA PKWY	0	ATLANTA RD	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	East	Turning Right	Straight
713812	10/1/2008	15:50:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Turning Right	Turning Right
708193	10/4/2008	12:57:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		2	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Straight	Stopped
722977	10/8/2008	9:21:00	S MARIETTA PKWY	0	ATLANTA RD	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	East	East	Straight	Stopped
735751	11/9/2008	14:23:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Negotiating A Curve	Stopped
334947	8/28/2009	8:50:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Stopped
336644	9/11/2009	11:35:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		2	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Southeast	Southeast	Turning Left	Stopped
374698	10/13/2009	12:20:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
374517	10/15/2009	13:45:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Stopped
390076	11/11/2009	12:15:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Straight
393687	11/17/2009	9:20:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Sideswipe-Opposite Direction	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Southeast	Northeast	Straight	Straight
1776386	12/2/2009	13:37:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Stopped
2601807	12/10/2009	12:15:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Dry	North	North	Straight	Stopped
2601770	12/14/2009	15:00:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Shoulder	Motor Vehicle In Motion	Daylight	Wet	North	North	Turning Right	Turning Right
2601801	12/18/2009	17:19:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	Southeast	Southeast	Straight	Straight
1790269	1/5/2010	18:30:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	Southeast	Southeast	Straight	Stopped
1781695	1/12/2010	18:55:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	North	North	Straight	Stopped
3421421	2/9/2010	19:00:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Straight
3447552	2/24/2010	10:20:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
3467310	3/2/2010	17:32:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Straight
3628947	7/16/2010	8:10:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	East	Turning Left	Straight
3578947	8/3/2010	18:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight
3578965	8/3/2010	18:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight
3579313	8/3/2010	18:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0		0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight
3691039	8/30/2010	17:30:00	S MARIETTA PKWY	0	ATLANTA ST	0	0		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Changing Lanes	Straight

3705858	10/13/2010	17:30:00	S MARIETTA PARKWAY	0	ATLANTA STREET	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	Southeast	Southeast	Changing Lanes	Changing Lanes
3758795	10/27/2010	18:00:00	ATLANTA RD	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Stopped
3601294	11/18/2010	19:00:00	ATLANTA STREET	0	S MARIETTA PARKWAY	0	0	3	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	North	North	Straight	Straight
3589401	11/22/2010	22:52:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	1	1	Not A Collision with Motor Vehicle	On Roadway	Pedestrian	Dark-Lighted	Dry	East		Straight	
3711184	12/22/2010	8:20:00	ATLANTA STREET	0	S MARIETTA PARKWAY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Stopped
3710439	12/27/2010	16:00:00	S MARIETTA PARKWAY	0	ATLANTA STREET	0	0	0	0	Sideswipe-Same Direction	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Changing Lanes	Straight
3773707	12/28/2010	12:20:00	S MARIETTA PKWY	0	S ATLANTA ST	0	0	0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	West	Turning Left	Straight
3599506	1/14/2011	17:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Icy	None	West		Straight
3610910	1/24/2011	19:00:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight
3617628	2/5/2011	9:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	North	North	Straight	Straight
3638789	2/14/2011	17:50:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Straight	Stopped
3641043	2/21/2011	17:42:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	4	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight
3646874	2/24/2011	19:00:00	ATLANTA RD	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Dry	North	North	Straight	Straight
3652270	3/5/2011	6:50:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Wet	North	North	Straight	Stopped
3657058	3/15/2011	12:40:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	South	South	Straight	Straight
3662201	3/15/2011	12:40:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Wet	South	South	Straight	Straight
3662178	3/18/2011	10:40:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Sideswipe-Same Direction	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Changing Lanes	Straight
3670366	3/28/2011	17:15:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Straight	Stopped
3796007	5/31/2011	12:14:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
3806528	6/15/2011	5:51:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dawn	Dry	South	South		Stopped
3820479	6/23/2011	15:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	South	South	Straight	Straight
3836809	7/13/2011	19:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	1	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Turning Right	Turning Right
3836688	7/22/2011	22:45:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	1	0	Not A Collision with Motor Vehicle	On Shoulder	Embankment	Dark-Lighted	Wet	West	None	Negotiating A Curve	
3840750	7/26/2011	16:15:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Straight	Stopped
3842419	8/5/2011	16:20:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	South	North	Turning Left	Straight
3849174	8/16/2011	7:00:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped
3857921	8/18/2011	6:28:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Straight	Stopped
3859314	8/23/2011	7:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Straight	Stopped
3978784	8/29/2011	14:35:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	South	Straight	Straight
3868928	9/3/2011	11:00:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	3	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Straight	Stopped
3878429	9/12/2011	16:26:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Changing Lanes	Straight
3876458	9/14/2011	15:15:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	East	East	Straight	Straight
3917445	11/2/2011	13:50:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Daylight	Dry	West	West	Straight	Stopped
3917405	11/5/2011	10:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Not A Collision with Motor Vehicle	Off Roadway	Motor Vehicle In Motion	Daylight	Dry	South		Straight	
3930612	11/12/2011	9:40:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Turning Right
3938239	11/16/2011	18:30:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Lighted	Wet	North	North	Straight	Straight
3958261	12/13/2011	19:46:00	ATLANTA ST	0	S MARIETTA PKWY	0	0	0	0	Rear End	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Dry	North	North	Straight	Stopped
3957151	12/25/2011	15:41:00	S MARIETTA PKWY	0	ATLANTA ST	0	0	0	0	Not A Collision with Motor Vehicle	Off Roadway	Curb	Daylight	Wet	West		Negotiating A Curve	

APPENDIX E
Capacity Analysis

Queues

Existing 2012_AM

1: Int

8/30/2012



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	1575	34	329	99	102	770	122	712
v/c Ratio	0.34	0.86	0.38	0.18	0.06	0.65	0.91	0.89	0.83
Control Delay	19.1	38.9	27.7	22.5	0.1	93.7	74.4	93.2	66.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	38.9	27.7	22.5	0.1	93.7	74.4	93.2	66.7
Queue Length 50th (ft)	95	763	15	100	0	55	407	90	367
Queue Length 95th (ft)	141	904	32	132	0	88	490	#206	457
Internal Link Dist (ft)		352		573			552		303
Turn Bay Length (ft)	120		90			300			
Base Capacity (vph)	578	1836	107	1779	1562	305	892	138	856
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	0.34	0.86	0.32	0.18	0.06	0.33	0.86	0.88	0.83

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Existing 2012_AM

1: Int

8/30/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	
Volume (vph)	179	1234	215	31	303	91	94	656	52	112	631	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	14	12	12	14
Total Lost time (s)	6.7	6.2		6.8	6.2	4.0	7.1	6.1		6.7	6.1	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3442		1641	3539	1562	3273	3475		1770	3518	
Flt Permitted	0.52	1.00		0.05	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	963	3442		86	3539	1562	3273	3475		192	3518	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	1341	234	34	329	99	102	713	57	122	686	26
RTOR Reduction (vph)	0	8	0	0	0	0	0	4	0	0	2	0
Lane Group Flow (vph)	195	1567	0	34	329	99	102	766	0	122	710	0
Confl. Peds. (#/hr)			1	1			1		1	1		
Confl. Bikes (#/hr)			6			6			6			6
Heavy Vehicles (%)	2%	2%	4%	10%	2%	2%	7%	2%	10%	2%	2%	2%
Turn Type	pm+pt			pm+pt		Free	Prot			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		Free				8		
Actuated Green, G (s)	90.7	83.7		84.2	80.5	160.0	7.6	38.6		47.0	38.8	
Effective Green, g (s)	90.7	83.7		84.2	80.5	160.0	7.6	38.6		47.0	38.8	
Actuated g/C Ratio	0.57	0.52		0.53	0.50	1.00	0.05	0.24		0.29	0.24	
Clearance Time (s)	6.7	6.2		6.8	6.2		7.1	6.1		6.7	6.1	
Vehicle Extension (s)	0.2	1.9		0.2	1.9		0.2	1.9		0.2	1.9	
Lane Grp Cap (vph)	581	1801		81	1781	1562	155	838		137	853	
v/s Ratio Prot	c0.01	c0.46		0.01	0.09		0.03	c0.22		c0.05	0.20	
v/s Ratio Perm	0.18			0.21		c0.06				0.22		
v/c Ratio	0.34	0.87		0.42	0.18	0.06	0.66	0.91		0.89	0.83	
Uniform Delay, d1	17.6	33.4		29.4	21.8	0.0	74.9	59.1		46.5	57.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	6.1		1.3	0.2	0.1	7.5	14.1		44.9	6.7	
Delay (s)	17.7	39.5		30.7	22.0	0.1	82.4	73.2		91.4	64.2	
Level of Service	B	D		C	C	A	F	E		F	E	
Approach Delay (s)		37.1			17.9			74.2			68.2	
Approach LOS		D			B			E			E	

Intersection Summary

HCM Average Control Delay	49.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.7
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	755	92	1288	121	316	1000	77	786
v/c Ratio	0.64	0.45	0.28	0.74	0.08	0.87	1.05	0.64	1.09
Control Delay	36.5	27.9	18.5	36.1	0.1	94.1	98.3	60.0	117.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	27.9	18.5	36.1	0.1	94.1	98.3	60.0	117.3
Queue Length 50th (ft)	45	264	43	564	0	170	-604	55	-490
Queue Length 95th (ft)	#76	331	73	653	0	223	#756	96	#659
Internal Link Dist (ft)		352		573			552		303
Turn Bay Length (ft)	120		90			300			
Base Capacity (vph)	157	1682	398	1734	1556	427	951	138	721
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	0.61	0.45	0.23	0.74	0.08	0.74	1.05	0.56	1.09

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Existing 2012_PM

1: Int

8/30/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	602	93	85	1185	111	291	851	69	71	663	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	14	12	12	14
Total Lost time (s)	6.7	6.2		6.8	6.2	4.0	7.1	6.1		6.7	6.1	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3458		1769	3539	1556	3433	3492		1769	3487	
Flt Permitted	0.10	1.00		0.28	1.00	1.00	0.95	1.00		0.12	1.00	
Satd. Flow (perm)	182	3458		523	3539	1556	3433	3492		226	3487	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	654	101	92	1288	121	316	925	75	77	721	65
RTOR Reduction (vph)	0	7	0	0	0	0	0	4	0	0	4	0
Lane Group Flow (vph)	96	748	0	92	1288	121	316	996	0	77	782	0
Confl. Peds. (#/hr)	3		3	6		6	3		6	6		3
Confl. Bikes (#/hr)			17			17			11			11
Turn Type	pm+pt			pm+pt		Free	Prot			pm+pt		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		Free				8		
Actuated Green, G (s)	83.2	77.5		84.9	78.4	160.0	16.9	43.4		39.7	32.9	
Effective Green, g (s)	83.2	77.5		84.9	78.4	160.0	16.9	43.4		39.7	32.9	
Actuated g/C Ratio	0.52	0.48		0.53	0.49	1.00	0.11	0.27		0.25	0.21	
Clearance Time (s)	6.7	6.2		6.8	6.2		7.1	6.1		6.7	6.1	
Vehicle Extension (s)	0.2	1.9		0.2	1.9		0.2	1.9		0.2	1.9	
Lane Grp Cap (vph)	151	1675		328	1734	1556	363	947		122	717	
v/s Ratio Prot	c0.02	0.22		0.01	c0.36		c0.09	c0.29		0.03	0.22	
v/s Ratio Perm	0.31			0.14		c0.08				0.13		
v/c Ratio	0.64	0.45		0.28	0.74	0.08	0.87	1.05		0.63	1.09	
Uniform Delay, d1	26.8	27.1		19.8	32.7	0.0	70.5	58.3		50.0	63.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.3	0.9		0.2	2.9	0.1	19.2	43.9		7.6	61.0	
Delay (s)	33.1	28.0		19.9	35.6	0.1	89.7	102.2		57.6	124.6	
Level of Service	C	C		B	D	A	F	F		E	F	
Approach Delay (s)		28.6			31.8			99.2			118.6	
Approach LOS		C			C			F			F	

Intersection Summary

HCM Average Control Delay	67.3	HCM Level of Service	E
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.9
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

1: Int



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	199	1606	35	336	101	104	727	58	124	700	26
v/c Ratio	0.34	0.86	0.41	0.19	0.06	0.73	0.89	0.15	0.86	0.83	0.06
Control Delay	17.4	38.3	30.9	24.3	0.1	102.5	73.7	14.9	85.7	66.6	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	38.3	30.9	24.3	0.1	102.5	73.7	14.9	85.7	66.6	16.8
Queue Length 50th (ft)	94	771	15	105	0	56	388	7	93	366	2
Queue Length 95th (ft)	146	927	34	146	0	#95	458	45	#190	434	28
Internal Link Dist (ft)		352		573			552			303	
Turn Bay Length (ft)	120		90			300					
Base Capacity (vph)	604	1870	87	1736	1562	162	900	428	149	922	450
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.86	0.40	0.19	0.06	0.64	0.81	0.14	0.83	0.76	0.06

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Proposed 2014_AM

1: Int

8/30/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	1259	219	32	309	93	96	669	53	114	644	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	14	12	12	14
Total Lost time (s)	6.7	6.2		6.8	6.2	4.0	7.1	6.1	6.1	6.7	6.1	6.1
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3443		1641	3539	1562	3273	3539	1536	1770	3539	1659
Flt Permitted	0.49	1.00		0.05	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	911	3443		88	3539	1562	3273	3539	1536	195	3539	1659
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	199	1368	238	35	336	101	104	727	58	124	700	26
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	39	0	0	18
Lane Group Flow (vph)	199	1598	0	35	336	101	104	727	20	124	700	8
Confl. Peds. (#/hr)			1	1			1		1	1		
Confl. Bikes (#/hr)			6			6			6			6
Heavy Vehicles (%)	2%	2%	4%	10%	2%	2%	7%	2%	10%	2%	2%	2%
Turn Type	pm+pt			pm+pt		Free	Prot		Perm	pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		Free			4	8		8
Actuated Green, G (s)	95.3	85.2		81.8	78.5	160.0	7.0	36.8	36.8	47.2	38.3	38.3
Effective Green, g (s)	95.3	85.2		81.8	78.5	160.0	7.0	36.8	36.8	47.2	38.3	38.3
Actuated g/C Ratio	0.60	0.53		0.51	0.49	1.00	0.04	0.23	0.23	0.30	0.24	0.24
Clearance Time (s)	6.7	6.2		6.8	6.2		7.1	6.1	6.1	6.7	6.1	6.1
Vehicle Extension (s)	0.2	1.9		0.2	1.9		0.2	1.9	1.9	0.2	1.9	1.9
Lane Grp Cap (vph)	597	1833		77	1736	1562	143	814	353	145	847	397
v/s Ratio Prot	c0.02	c0.46		0.01	0.09		0.03	c0.21		c0.05	0.20	
v/s Ratio Perm	0.18			0.22		c0.06			0.01	0.21		0.00
v/c Ratio	0.33	0.87		0.45	0.19	0.06	0.73	0.89	0.06	0.86	0.83	0.02
Uniform Delay, d1	15.1	32.6		29.7	22.9	0.0	75.6	59.7	48.0	45.8	57.7	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	6.0		1.5	0.2	0.1	14.4	11.9	0.0	34.9	6.3	0.0
Delay (s)	15.2	38.7		31.3	23.2	0.1	90.0	71.6	48.1	80.7	64.0	46.5
Level of Service	B	D		C	C	A	F	E	D	F	E	D
Approach Delay (s)		36.1			18.8			72.2			65.9	
Approach LOS		D			B			E			E	

Intersection Summary

HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.7
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

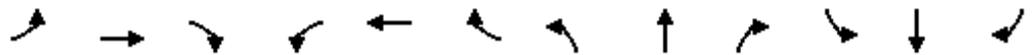
1: Int



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	98	770	95	1314	123	323	943	76	78	735	66
v/c Ratio	0.69	0.48	0.32	0.81	0.08	0.89	0.90	0.14	0.69	0.92	0.16
Control Delay	47.0	30.8	21.9	43.0	0.1	96.3	65.9	14.7	64.4	77.3	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	30.8	21.9	43.0	0.1	96.3	65.9	14.7	64.4	77.3	15.6
Queue Length 50th (ft)	51	297	49	644	0	173	487	15	52	391	9
Queue Length 95th (ft)	#104	361	83	758	0	#239	576	56	#101	#493	51
Internal Link Dist (ft)		352		573			552			303	
Turn Bay Length (ft)	120		90			300					
Base Capacity (vph)	161	1617	311	1627	1556	406	1117	557	120	841	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.48	0.31	0.81	0.08	0.80	0.84	0.14	0.65	0.87	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↘		↖	↗↘	↗	↖↗	↗↘	↗	↖	↗↘	↗
Volume (vph)	90	614	95	87	1209	113	297	868	70	72	676	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	14	12	12	14
Total Lost time (s)	6.7	6.2		6.8	6.2	4.0	7.1	6.1	6.1	6.7	6.1	6.1
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3457		1769	3539	1556	3433	3539	1643	1769	3539	1644
Flt Permitted	0.07	1.00		0.27	1.00	1.00	0.95	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	135	3457		508	3539	1556	3433	3539	1643	206	3539	1644
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	667	103	95	1314	123	323	943	76	78	735	66
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	39	0	0	43
Lane Group Flow (vph)	98	763	0	95	1314	123	323	943	37	78	735	23
Confl. Peds. (#/hr)	3		3	6		6	3		6	6		3
Confl. Bikes (#/hr)			17			17			11			11
Turn Type	pm+pt			pm+pt		Free	Prot		Perm	pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3		8
Permitted Phases	6			2		Free			4	8		8
Actuated Green, G (s)	81.7	74.5		79.8	73.6	160.0	16.9	47.4	47.4	42.3		36.2
Effective Green, g (s)	81.7	74.5		79.8	73.6	160.0	16.9	47.4	47.4	42.3		36.2
Actuated g/C Ratio	0.51	0.47		0.50	0.46	1.00	0.11	0.30	0.30	0.26		0.23
Clearance Time (s)	6.7	6.2		6.8	6.2		7.1	6.1	6.1	6.7		6.1
Vehicle Extension (s)	0.2	1.9		0.2	1.9		0.2	1.9	1.9	0.2		1.9
Lane Grp Cap (vph)	143	1610		302	1628	1556	363	1048	487	114		801
v/s Ratio Prot	c0.03	0.22		0.01	c0.37		c0.09	c0.27		0.03		0.21
v/s Ratio Perm	0.32			0.14		c0.08			0.02	0.15		0.01
v/c Ratio	0.69	0.47		0.31	0.81	0.08	0.89	0.90	0.08	0.68		0.92
Uniform Delay, d1	30.1	29.3		22.4	37.1	0.0	70.6	54.0	40.5	47.6		60.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	10.3	1.0		0.2	4.4	0.1	21.8	10.1	0.0	12.7		14.9
Delay (s)	40.5	30.3		22.6	41.5	0.1	92.4	64.1	40.6	60.3		75.4
Level of Service	D	C		C	D	A	F	E	D	E		E
Approach Delay (s)		31.5			37.0			69.6				72.0
Approach LOS		C			D			E				E

Intersection Summary

HCM Average Control Delay	52.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	26.1
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

1: Int



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	242	1960	42	410	123	127	887	71	151	854	32
v/c Ratio	0.45	1.08	0.50	0.25	0.08	0.88	1.00	0.17	1.09	0.95	0.07
Control Delay	19.5	81.9	39.0	27.6	0.1	121.9	89.8	18.6	143.0	77.6	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.5	81.9	39.0	27.6	0.1	121.9	89.8	18.6	143.0	77.6	20.5
Queue Length 50th (ft)	120	~1223	19	137	0	69	~495	17	~127	466	6
Queue Length 95th (ft)	172	#1355	#46	182	0	#133	#644	61	#284	#598	36
Internal Link Dist (ft)		352		573			552			303	
Turn Bay Length (ft)	120		90			300					
Base Capacity (vph)	557	1817	84	1617	1562	149	885	422	138	902	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	1.08	0.50	0.25	0.08	0.85	1.00	0.17	1.09	0.95	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Proposed 2034_AM

1: Int

8/30/2012



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	1536	267	39	377	113	117	816	65	139	786	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	14	12	12	14
Total Lost time (s)	6.7	6.2		6.8	6.2	4.0	7.1	6.1	6.1	6.7	6.1	6.1
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3443		1641	3539	1562	3273	3539	1537	1770	3539	1660
Flt Permitted	0.43	1.00		0.05	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	805	3443		95	3539	1562	3273	3539	1537	183	3539	1660
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	242	1670	290	42	410	123	127	887	71	151	854	32
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	38	0	0	18
Lane Group Flow (vph)	242	1951	0	42	410	123	127	887	34	151	854	14
Confl. Peds. (#/hr)			1	1			1		1	1		
Confl. Bikes (#/hr)			6			6			6			6
Heavy Vehicles (%)	2%	2%	4%	10%	2%	2%	7%	2%	10%	2%	2%	2%
Turn Type	pm+pt			pm+pt		Free	Prot		Perm	pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		Free			4	8		8
Actuated Green, G (s)	92.7	82.7		76.3	73.1	160.0	7.1	40.0	40.0	49.1	40.8	40.8
Effective Green, g (s)	92.7	82.7		76.3	73.1	160.0	7.1	40.0	40.0	49.1	40.8	40.8
Actuated g/C Ratio	0.58	0.52		0.48	0.46	1.00	0.04	0.25	0.25	0.31	0.26	0.26
Clearance Time (s)	6.7	6.2		6.8	6.2		7.1	6.1	6.1	6.7	6.1	6.1
Vehicle Extension (s)	0.2	1.9		0.2	1.9		0.2	1.9	1.9	0.2	1.9	1.9
Lane Grp Cap (vph)	544	1780		76	1617	1562	145	885	384	138	902	423
v/s Ratio Prot	c0.04	c0.57		0.01	0.12		0.04	0.25		c0.06	0.24	
v/s Ratio Perm	0.22			0.25		c0.08			0.02	c0.28		0.01
v/c Ratio	0.44	1.10		0.55	0.25	0.08	0.88	1.00	0.09	1.09	0.95	0.03
Uniform Delay, d1	17.0	38.7		37.8	26.7	0.0	76.0	60.0	46.0	49.4	58.5	44.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	52.8		4.9	0.4	0.1	39.4	30.8	0.0	104.1	18.1	0.0
Delay (s)	17.2	91.4		42.6	27.1	0.1	115.4	90.8	46.0	153.5	76.6	44.8
Level of Service	B	F		D	C	A	F	F	D	F	E	D
Approach Delay (s)		83.3			22.4			90.7			86.8	
Approach LOS		F			C			F			F	

Intersection Summary

HCM Average Control Delay	78.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.6
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

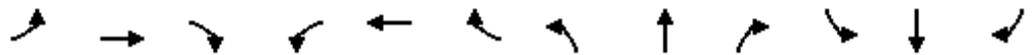
1: Int



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	940	115	1603	150	393	1151	92	96	897	80
v/c Ratio	0.98	0.63	0.50	1.03	0.10	1.02	1.01	0.16	0.90	1.04	0.18
Control Delay	110.3	37.6	27.5	75.1	0.1	119.8	81.3	17.4	100.8	99.8	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.3	37.6	27.5	75.1	0.1	119.8	81.3	17.4	100.8	99.8	19.2
Queue Length 50th (ft)	76	395	60	~943	0	~224	~644	26	64	~532	20
Queue Length 95th (ft)	#223	487	98	#1081	0	#336	#801	71	#168	#670	67
Internal Link Dist (ft)		352		573			552			303	
Turn Bay Length (ft)	120		90			300					
Base Capacity (vph)	123	1497	273	1553	1556	384	1144	569	107	860	442
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.63	0.42	1.03	0.10	1.02	1.01	0.16	0.90	1.04	0.18

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	749	116	106	1475	138	362	1059	85	88	825	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	14	12	12	14
Total Lost time (s)	6.7	6.2		6.8	6.2	4.0	7.1	6.1	6.1	6.7	6.1	6.1
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3457		1769	3539	1556	3433	3539	1644	1770	3539	1646
Flt Permitted	0.06	1.00		0.18	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	108	3457		329	3539	1556	3433	3539	1644	192	3539	1646
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	814	126	115	1603	150	393	1151	92	96	897	80
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	38	0	0	42
Lane Group Flow (vph)	120	933	0	115	1603	150	393	1151	54	96	897	38
Confl. Peds. (#/hr)	3		3	6		6	3		6	6		3
Confl. Bikes (#/hr)			17			17			11			11
Turn Type	pm+pt			pm+pt		Free	Prot		Perm	pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3		8
Permitted Phases	6			2		Free			4	8		8
Actuated Green, G (s)	75.9	69.0		78.2	70.2	160.0	17.9	51.7	51.7	44.4	38.9	38.9
Effective Green, g (s)	75.9	69.0		78.2	70.2	160.0	17.9	51.7	51.7	44.4	38.9	38.9
Actuated g/C Ratio	0.47	0.43		0.49	0.44	1.00	0.11	0.32	0.32	0.28	0.24	0.24
Clearance Time (s)	6.7	6.2		6.8	6.2		7.1	6.1	6.1	6.7	6.1	6.1
Vehicle Extension (s)	0.2	1.9		0.2	1.9		0.2	1.9	1.9	0.2	1.9	1.9
Lane Grp Cap (vph)	123	1491		233	1553	1556	384	1144	531	108	860	400
v/s Ratio Prot	c0.04	0.27		0.02	c0.45		c0.11	c0.33		0.03	0.25	
v/s Ratio Perm	0.42			0.22		c0.10			0.03	0.22		0.02
v/c Ratio	0.98	0.63		0.49	1.03	0.10	1.02	1.01	0.10	0.89	1.04	0.10
Uniform Delay, d1	41.7	35.4		25.8	44.9	0.0	71.1	54.1	37.9	52.7	60.6	46.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	72.7	2.0		0.6	31.6	0.1	52.0	28.1	0.0	51.5	42.5	0.0
Delay (s)	114.4	37.4		26.4	76.5	0.1	123.1	82.3	37.9	104.2	103.0	47.0
Level of Service	F	D		C	E	A	F	F	D	F	F	D
Approach Delay (s)		46.1			67.2			89.6			99.0	
Approach LOS		D			E			F			F	

Intersection Summary

HCM Average Control Delay	75.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.9
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

ATTACHMENT
Pavement Evaluation

Flexible Pavement Design Analysis

PI Number	0012606	County(s)	Cobb
Project Number	NA	Design Name	ATLANTA STREET(FULL DEPTH)
Project Description	SR 5/ATLANTA ST AT SR 120/SOUTH MARIETTA PKWY INTERSECTION IMPROVEMEWNT		

Traffic Data (AADTs are one-way)					Miscellaneous Data		
Initial Design Year	2016	Initial AADT, VPD	11,786	24 Hour Truck %	3.00	Lanes in one direction	4
Final Design Year	2036	Final AADT, VPD	14,425	SU Truck %	2.20	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	13,106	MU Truck %	0.80		

Design Data					
Lane Distribution Factor (%)	80.00	Soil Support Value	2.00	Single Unit ESAL	0.40
Terminal Serviceability Index	2.50	Regional Factor	1.80	Multiple Unit ESAL	1.50
		User Defined 18-KIP ESAL	1.06	Calculated 18-KIP ESAL	0.69
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL
13,106	80.00	Single Unit Truck	2.20	0.40	93
		Multi Unit Truck	0.80	1.50	126
Total Daily ESALs					219
Total Design Period ESALs					1,598,700

Proposed Flexible Full Depth Pavement Structure				
Course	Material	Thickness (inches)	Structural Coefficient	Structural Value
Course 1	12.5 mm Superpave	1.50	0.4400	0.66
Course 2	19 mm Superpave	2.00	0.4400	0.88
Course 3	25 mm Superpave	1.00	0.4400	0.44
		5.00	0.3000	1.50
Course 4	Graded Aggregate Base	12.00	0.1600	1.92
Required SN	5.25	Proposed pavement is 2.78% Overdesigned		Proposed SN
				5.40

Design Remarks	PROPOSED DESIGN
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Prepared By _____ 12/4/2013 2:37 PM
Vamshi Mudumba Date

Recommended By _____
Consultant Design Phase Leader Date

Approved By _____
State Pavement Engineer Date

Flexible Pavement Design Analysis

PI Number	0012606	County(s)	Cobb
Project Number	NA	Design Name	SOUTH MARIETTA PARKWAY (FULL DEPTH)
Project Description	SR 5/ATLANTA ST AT SR 120/SOUTH MARIETTA PKWY INTERSECTION IMPROVEMEWT		

Traffic Data (AADTs are one-way)					Miscellaneous Data		
Initial Design Year	2016	Initial AADT, VPD	12,494	24 Hour Truck %	3.00	Lanes in one direction	4
Final Design Year	2036	Final AADT, VPD	15,245	SU Truck %	1.60	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	13,870	MU Truck %	1.40		

Design Data					
Lane Distribution Factor (%)	80.00	Soil Support Value	2.00	Single Unit ESAL	0.40
Terminal Serviceability Index	2.50	Regional Factor	1.80	Multiple Unit ESAL	1.50
		User Defined 18-KIP ESAL	1.06	Calculated 18-KIP ESAL	0.91
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL
13,870	80.00	Single Unit Truck	1.60	0.40	72
		Multi Unit Truck	1.40	1.50	234
Total Daily ESALs					306
Total Design Period ESALs					2,233,800

Proposed Flexible Full Depth Pavement Structure				
Course	Material	Thickness (inches)	Structural Coefficient	Structural Value
Course 1	12.5 mm Superpave	1.50	0.4400	0.66
Course 2	19 mm Superpave	3.00	0.4400	1.32
Course 3	25 mm Superpave	6.00	0.3000	1.80
Course 4	Graded Aggregate Base	12.00	0.1600	1.92
Required SN	5.50	Proposed pavement is 3.65% Overdesigned		Proposed SN 5.70

Design Remarks	PROPOSED DESIGN
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Prepared By _____ 12/4/2013 2:37 PM
Vamshi Mudumba Date

Recommended By _____
Consultant Design Phase Leader Date

Approved By _____
State Pavement Engineer Date

Flexible Pavement Design Analysis

PI Number	0012606	County(s)	Cobb
Project Number	NA	Design Name	ATLANTA STREET (OVERLAY)
Project Description	SR 5/ATLANTA ST AT SR 120/SOUTH MARIETTA PKWY INTERSECTION IMPROVEMEWNT		

Traffic Data (AADTs are one-way)					Miscellaneous Data		
Initial Design Year	2016	Initial AADT, VPD	11,786	24 Hour Truck %	3.00	Lanes in one direction	4
Final Design Year	2036	Final AADT, VPD	14,425	SU Truck %	2.20	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	13,106	MU Truck %	0.80	Milling Depth (inches)	1.50

Design Data					
Lane Distribution Factor (%)	80.00	Soil Support Value	2.00	Single Unit ESAL	0.40
Terminal Serviceability Index	2.50	Regional Factor	1.80	Multiple Unit ESAL	1.50
		User Defined 18-KIP ESAL	1.06	Calculated 18-KIP ESAL	0.69
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL
13,106	80.00	Single Unit Truck	2.20	0.40	93
		Multi Unit Truck	0.80	1.50	126
Total Daily ESALs					219
Total Design Period ESALs					1,598,700

Proposed Flexible Overlay Pavement Structure				
Course	Material	Thickness (inches)	Structural Coefficient	Structural Value
Overlay 1	12.5 mm Superpave	1.50	0.4400	0.66
Existing 1	Asphaltic Concrete	10.25	0.3000	3.08
Existing 2	Graded Aggregate Base	10.00	0.1600	1.60
Required SN	5.25	Proposed pavement is 1.55% Overdesigned		Proposed SN 5.34

Design Remarks	PROPOSED OVERLAY DESIGN
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Prepared By _____ 12/4/2013 2:37 PM
Vamshi Mudumba **Date**

Recommended By _____
Consultant Design Phase Leader **Date**

Approved By _____
State Pavement Engineer **Date**

Flexible Pavement Design Analysis

PI Number	0012606	County(s)	Cobb
Project Number	NA	Design Name	SOUTH MARIETTA PARKWAY (OVERLAY)
Project Description	SR 5/ATLANTA ST AT SR 120/SOUTH MARIETTA PKWY INTERSECTION IMPROVEMEWT		

Traffic Data (AADTs are one-way)					Miscellaneous Data		
Initial Design Year	2016	Initial AADT, VPD	12,494	24 Hour Truck %	3.00	Lanes in one direction	4
Final Design Year	2036	Final AADT, VPD	15,245	SU Truck %	1.60	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	13,870	MU Truck %	1.40	Milling Depth (inches)	1.50

Design Data					
Lane Distribution Factor (%)	80.00	Soil Support Value	2.00	Single Unit ESAL	0.40
Terminal Serviceability Index	2.50	Regional Factor	1.80	Multiple Unit ESAL	1.50
		User Defined 18-KIP ESAL	1.06	Calculated 18-KIP ESAL	0.91
Non-Standard Value Comment					

Design Loading (Calculated 18-KIP ESAL)					
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL
13,870	80.00	Single Unit Truck	1.60	0.40	72
		Multi Unit Truck	1.40	1.50	234
Total Daily ESALs					306
Total Design Period ESALs					2,233,800

Proposed Flexible Overlay Pavement Structure				
Course	Material	Thickness (inches)	Structural Coefficient	Structural Value
Overlay 1	12.5 mm Superpave	1.50	0.4400	0.66
Existing 1	Asphaltic Concrete	12.50	0.3000	3.75
Existing 2	Graded Aggregate Base	10.00	0.1600	1.60
Required SN	5.50	Proposed pavement is 9.29% Overdesigned		Proposed SN 6.01

Design Remarks	PROPOSED OVERLAY DESIGN
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Prepared By _____ 12/4/2013 2:37 PM
Vamshi Mudumba **Date**

Recommended By _____
Consultant Design Phase Leader **Date**

Approved By _____
State Pavement Engineer **Date**

ATTACHMENT
Signed Project Agreement

Keith Golden, P.E., Commissioner



GEORGIA DEPARTMENT OF TRANSPORTATION

One Georgia Center, 600 West Peachtree Street, NW
Atlanta, Georgia 30308
Telephone: (404) 631-1000

September 4, 2013

Mr. Dan Conn
City of Marietta, Director of Public Works
205 Lawrence Street
Marietta, GA 30060

Dear Mr. Conn:

I am returning for your files an executed agreement between the Georgia Department of Transportation and the City of Marietta for the following project:

Cobb County, PI# 0012606

We look forward to working with you on the successful completion of the joint project.
Should you have any questions, please contact the Project Manager Kim Nesbitt at (404) 631-1575.

Sincerely,

A handwritten signature in black ink, appearing to read "Angela Robinson", written over a horizontal line.

Angela Robinson,
Financial Management Administrator

AR:kp

Enclosure

c: Bob Rogers
Rachel Brown – District 7 Engineer
Vicki Gavalas – District 7 Planning & Programming Engineer
Patrick Allen, P.E. – District 7 Utilities Engineer
Mike Bolden – State Utilities Engineer

AGREEMENT
BETWEEN
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
AND
CITY OF MARIETTA
FOR
TRANSPORTATION FACILITY IMPROVEMENTS

This Framework Agreement is made and entered into this 23rd day of August, 2013, by and between the DEPARTMENT OF TRANSPORTATION, an agency of the State of Georgia, hereinafter called the "DEPARTMENT", and the CITY OF MARIETTA, acting by and through its Mayor and City Council, hereinafter called the "LOCAL GOVERNMENT".

WHEREAS, the LOCAL GOVERNMENT has represented to the DEPARTMENT a desire to improve the transportation facility described in Attachment "A", attached and incorporated herein by reference and hereinafter referred to as the "PROJECT"; and

WHEREAS, the LOCAL GOVERNMENT has represented to the DEPARTMENT a desire to participate in certain activities, including the funding of certain portions of the PROJECT and the DEPARTMENT has relied upon such representations; and

WHEREAS, the DEPARTMENT has expressed a willingness to participate in certain activities of the PROJECT as set forth in this Agreement; and

WHEREAS, the DEPARTMENT has provided an estimated cost to the LOCAL GOVERNMENT for its participation in certain activities of the PROJECT; and

WHEREAS, the Constitution authorizes intergovernmental agreements whereby state and local entities may contract with one another "for joint services, for the provision of services, or for the joint or separate use of facilities or equipment; but such contracts must deal with activities, services or facilities which the parties are authorized by law to undertake or provide." Ga. Constitution Article IX, §III, ¶I(a).

NOW THEREFORE, in consideration of the mutual promises made and of the benefits to flow from one to the other, the DEPARTMENT and the LOCAL GOVERNMENT hereby agree each with the other as follows:

1. The LOCAL GOVERNMENT has applied for and received "Qualification Certification" to administer federal-aid projects. The GDOT Local Administered Project (LAP) Certification Committee has reviewed, confirmed and approved the certification for the LOCAL GOVERNMENT to develop federal project(s) within the scope of its certification using the DEPARTMENT'S Local Administered Project Manual procedures. The LOCAL GOVERNMENT shall contribute to the PROJECT by funding all or certain portions of the PROJECT costs for the preconstruction engineering (design) activities,

Revised: 12/2011

hereinafter referred to as "PE", all reimbursable utility relocations, all non-reimbursable utilities owned by the LOCAL GOVERNMENT, railroad costs, right of way acquisitions and construction, as specified in Attachment "A", affixed hereto and incorporated herein by reference. In addition, the September 17, 2010 Planning Office memorandum titled "Preliminary Engineering Oversight for Project Managers/Project Delivery Staff", outlines the five (5) conditions when the LOCAL GOVERNMENT will be requested to fund the PE oversight activities at 100%, and is enclosed as Attachment "C" and incorporated herein by reference. Expenditures incurred by the LOCAL GOVERNMENT prior to the execution of this AGREEMENT or subsequent funding agreements shall not be considered for reimbursement by the DEPARTMENT. PE expenditures incurred by the LOCAL GOVERNMENT after execution of this AGREEMENT shall be reimbursed by the DEPARTMENT once a written notice to proceed is given by the DEPARTMENT.

2. The DEPARTMENT shall contribute to the PROJECT by funding all or certain portions of the PROJECT costs for the PE, right of way acquisitions, reimbursable utility relocations, railroad costs, or construction (specified in Attachment "A") affixed hereto and incorporated herein by reference, and none of the five (5) conditions apply from the Planning Office memorandum dated September 17, 2010 (specified in Attachment "C").

3. The DEPARTMENT shall provide a PE Oversight Estimate to the LOCAL GOVERNMENT, if appropriate, appended as Attachment "D" and incorporated by reference as if fully set out herein. The LOCAL GOVERNMENT will be responsible for

Revised: 12/2011

providing payment, which represents 100% of the DEPARTMENT's PE Oversight Estimate at the time of the Project Framework Agreement execution.

If at any time the PE Oversight funds are depleted within \$5,000 of the remaining PE Oversight balance and project activities and tasks are still outstanding, the LOCAL GOVERNMENT shall, upon request, make additional payment to the DEPARTMENT. The payment shall be determined by prorating the percentage complete and using the same estimate methodology as provided in Attachment "D". If there is an unused balance after completion of all tasks and phases of the project, then pending a final audit, the remainder will be refunded to the sponsor.

4. It is understood and agreed by the DEPARTMENT and the LOCAL GOVERNMENT that the funding portion as identified in Attachment "A" of this Agreement only applies to the PE. The Right of Way and Construction funding estimate levels as specified in Attachment "A" are provided herein for planning purposes and do not constitute a funding commitment for right of way and construction. The DEPARTMENT will prepare LOCAL GOVERNMENT Specific Activity Agreements for funding applicable to other activities when appropriate.

Further, the LOCAL GOVERNMENT shall be responsible for repayment of any expended federal funds if the PROJECT does not proceed forward to completion due to a lack of available funding in future PROJECT phases, changes in local priorities or

cancellation of the PROJECT by the LOCAL GOVERNMENT without concurrence by the DEPARTMENT.

5. In accordance with Georgia Code 32-2-2, the LOCAL GOVERNMENT shall be responsible for all costs for the continual maintenance and operations of any and all sidewalks and the grass strip between the curb and sidewalk within the PROJECT limits. The LOCAL GOVERNMENT shall also be responsible for the continual maintenance and operation of all lighting systems installed to illuminate any roundabouts constructed as part of this PROJECT. Furthermore, the LOCAL GOVERNMENT shall also be responsible for the maintaining of all landscaping installed as part of any roundabout constructed as part of this PROJECT.

6. Both the LOCAL GOVERNMENT and the DEPARTMENT hereby acknowledge that Time is of the Essence. It is agreed that both parties shall adhere to the schedule of activities currently established in the approved Transportation Improvement Program/State Transportation Improvement Program, hereinafter referred to as "TIP/STIP". Furthermore, all parties shall adhere to the detailed project schedule as approved by the DEPARTMENT, attached as Attachment "B" and incorporated herein by reference. In the completion of respective commitments contained herein, if a change in the schedule is needed, the LOCAL GOVERNMENT shall notify the DEPARTMENT in writing of the proposed schedule change and the DEPARTMENT shall acknowledge the change through written response letter; provided that the DEPARTMENT shall have final authority for approving any change.

Revised: 12/2011

If, for any reason, the LOCAL GOVERNMENT does not produce acceptable deliverables in accordance with the approved schedule, the DEPARTMENT reserves the right to delay the PROJECT's implementation until funds can be re-identified for right of way or construction phases, as applicable.

7. The LOCAL GOVERNMENT shall certify that the regulations for "CERTIFICATION OF COMPLIANCES WITH FEDERAL PROCUREMENT REQUIREMENTS, STATE AUDIT REQUIREMENTS, and FEDERAL AUDIT REQUIREMENTS" are understood and will comply in full with said provisions.

8. The LOCAL GOVERNMENT shall accomplish the PE activities for the PROJECT. The PE activities shall be accomplished in accordance with the DEPARTMENT's Plan Development Process hereinafter referred to as "PDP", the applicable guidelines of the American Association of State Highway and Transportation Officials, hereinafter referred to as "AASHTO", the DEPARTMENT's Standard Specifications Construction of Transportation Systems, and all applicable design guidelines and policies of the DEPARTMENT to produce a cost effective PROJECT. Failure to follow the PDP and all applicable guidelines and policies will jeopardize the use of Federal Funds in some or all categories outlined in this agreement, and it shall be the responsibility of the LOCAL GOVERNMENT to make up the loss of that funding. The LOCAL GOVERNMENT's responsibility for PE activities shall include, but is not limited to the following items:

a. Prepare the PROJECT Concept Report and Design Data Book in accordance with the format used by the DEPARTMENT. The concept for the PROJECT shall be developed to accommodate the future traffic volumes as generated by the LOCAL GOVERNMENT as provided for in paragraph 8b and approved by the DEPARTMENT. The concept report shall be approved by the DEPARTMENT prior to the LOCAL GOVERNMENT beginning further development of the PROJECT plans. It is recognized by the parties that the approved concept may be updated or modified by the LOCAL GOVERNMENT as required by the DEPARTMENT and re-approved by the DEPARTMENT during the course of PE due to updated guidelines, public input, environmental requirements, Value Engineering recommendations, Public Interest Determination (PID) for utilities, utility/railroad conflicts, or right of way considerations.

b. Prepare a Traffic Study for the PROJECT that includes Average Daily Traffic, hereinafter referred to as "ADT", volumes for the base year (year the PROJECT is expected to be open to traffic) and design year (base year plus 20 years) along with Design Hour Volumes, hereinafter referred to as "DHV", for the design year. DHV includes morning (AM) and evening (PM) peaks and other significant peak times. The Study shall show all through and turning movement volumes at intersections for the ADT and DHV volumes and shall indicate the percentage of trucks on the facility. The Study shall also include signal warrant evaluations for any additional proposed signals on the PROJECT.

c. Prepare environmental studies, documentation reports and complete Environmental Document for the PROJECT along with all environmental re-

evaluations required that show the PROJECT is in compliance with the provisions of the National Environmental Policy Act or the Georgia Environmental Policy Act as per the DEPARTMENT's Environmental Procedures Manual, as appropriate to the PROJECT funding. This shall include any and all archaeological, historical, ecological, air, noise, community involvement, environmental justice, flood plains, underground storage tanks, and hazardous waste site studies required. The completed Environmental Document approval shall occur prior to Right of Way funding authorization. A re-evaluation is required for any design change as described in Chapter 7 of the Environmental Procedures Manual. In addition, a re-evaluation document approval shall occur prior to any Federal funding authorizations if the latest approved document is more than 6 months old. The LOCAL GOVERNMENT shall submit to the DEPARTMENT all studies, documents and reports for review and approval by the DEPARTMENT, the FHWA and other environmental resource agencies. The LOCAL GOVERNMENT shall provide Environmental staff to attend all PROJECT related meetings where Environmental issues are discussed. Meetings include, but are not limited to, concept, field plan reviews and value engineering studies.

d. Prepare all PROJECT public hearing and public information displays and conduct all required public hearings and public information meetings with appropriate staff in accordance with DEPARTMENT practice.

e. Perform all surveys, mapping, soil investigations and pavement evaluations needed for design of the PROJECT as per the appropriate DEPARTMENT Manual.

f. Perform all work required to obtain all applicable PROJECT permits, including, but not limited to, Cemetery, TVA and US Army Corps of Engineers permits, Stream Buffer Variances and Federal Emergency Management Agency (FEMA) approvals. The LOCAL GOVERNMENT shall provide all mitigation required for the project, including but not limited to permit related mitigation. All mitigation costs are considered PE costs. PROJECT permits and non-construction related mitigation must be obtained and completed 3 months prior to the scheduled let date. These efforts shall be coordinated with the DEPARTMENT.

g. Prepare the stormwater drainage design for the PROJECT and any required hydraulic studies for FEMA Floodways within the PROJECT limits. Acquire of all necessary permits associated with the Hydrology Study or drainage design.

h. Prepare utility relocation plans for the PROJECT following the DEPARTMENT's policies and procedures for identification, coordination and conflict resolution of existing and proposed utility facilities on the PROJECT. These policies and procedures, in part, require the Local Government to submit all requests for existing, proposed, and relocated facilities to each utility owner within the project area. Copies of all such correspondence, including executed agreements for reimbursable utility/railroad relocations, shall be forwarded to the DEPARTMENT's Project Manager and the District Utilities Engineer and require that any conflicts with the PROJECT be resolved by the LOCAL GOVERNMENT. If it is determined that the PROJECT is located on an on-system route or is a DEPARTMENT LET PROJECT, the LOCAL GOVERNMENT and the District Utilities Engineer shall ensure that permit applications are approved for each utility company in conflict with

Revised: 12/2011

the project. If it is determined through the DEPARTMENT's Project Manager and State Utilities Office during the concept or design phases the need to utilize Overhead/Subsurface Utility Engineering, hereinafter referred to as "SUE", to obtain the existing utilities, the LOCAL GOVERNMENT shall be responsible for acquiring those services. SUE costs are considered PE costs.

i. Prepare, in English units, Preliminary Construction plans, Right of Way plans and Final Construction plans that include the appropriate sections listed in the Plan Presentation Guide, hereinafter referred to as "PPG", for all phases of the PDP. All drafting and design work performed on the project shall be done utilizing Microstation V8i and InRoads software respectively using the DEPARTMENT's Electronic Data Guidelines. The LOCAL GOVERNMENT shall further be responsible for making all revisions to the final right of way plans and construction plans, as deemed necessary by the DEPARTMENT, for whatever reason, as needed to acquire the right of way and construct the PROJECT.

j. Prepare PROJECT cost estimates for construction, Right of Way and Utility/railroad relocation at the following project stages: Concept, Preliminary Field Plan Review, Right of Way plan approval (Right of Way cost only), Final Field Plan Review and Final Plan submission using the applicable method approved by the DEPARTMENT. The cost estimates shall also be updated annually if the noted project stages occur at a longer frequency. Failure of the LOCAL GOVERNMENT to provide timely and accurate cost estimates may delay the PROJECT's implementation until additional funds can be identified for right of way or construction, as applicable.

k. Provide certification, by a Georgia Registered Professional Engineer, that the Design and Construction plans have been prepared under the guidance of the professional engineer and are in accordance with AASHTO and DEPARTMENT Design Policies.

l. Provide certification, by a Level II Certified Design Professional that the Erosion Control Plans have been prepared under the guidance of the certified professional in accordance with the current Georgia National Pollutant Discharge Elimination System.

m. Provide a written certification that all appropriate staff (employees and consultants) involved in the PROJECT have attended or are scheduled to attend the Department's PDP Training Course. The written certification shall be received by the Department no later than the first day of February of every calendar year until all phases have been completed.

9. The Primary Consultant firm or subconsultants hired by the LOCAL GOVERNMENT to provide services on the PROJECT shall be prequalified with the DEPARTMENT in the appropriate area-classes. The DEPARTMENT shall, on request, furnish the LOCAL GOVERNMENT with a list of prequalified consultant firms in the appropriate area-classes. The LOCAL GOVERNMENT shall comply with all applicable state and federal regulations for the procurement of design services and in accordance with the Brooks Architect-Engineers Act of 1972, better known as the Brooks Act, for any consultant hired to perform work on the PROJECT.

10. The DEPARTMENT shall review and has approval authority for all aspects of the PROJECT provided however this review and approval does not relieve the LOCAL GOVERNMENT of its responsibilities under the terms of this agreement. The DEPARTMENT will work with the FHWA to obtain all needed approvals as deemed necessary with information furnished by the LOCAL GOVERNMENT.

11. The LOCAL GOVERNMENT shall be responsible for the design of all bridge(s) and preparation of any required hydraulic and hydrological studies within the limits of this PROJECT in accordance with the DEPARTMENT's policies and guidelines. The LOCAL GOVERNMENT shall perform all necessary survey efforts in order to complete the hydraulic and hydrological studies and the design of the bridge(s). The final bridge plans shall be incorporated into this PROJECT as a part of this Agreement.

12. The LOCAL GOVERNMENT unless otherwise noted in Attachment "A" shall be responsible for funding all LOCAL GOVERNMENT owned utility relocations and all other reimbursable utility/railroad costs. The utility costs shall include but are not limited to PE, easement acquisition, and construction activities necessary for the utility/railroad to accommodate the PROJECT. The terms for any such reimbursable relocations shall be laid out in an agreement that is supported by plans, specifications, and itemized costs of the work agreed upon and shall be executed prior to certification by the DEPARTMENT. The LOCAL GOVERNMENT shall certify via written letter to the DEPARTMENT's Project Manager and District Utilities Engineer that all Utility owners' existing and proposed facilities are shown on the plans with no conflicts 3 months prior

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to advertising the PROJECT for bids and that any required agreements for reimbursable utility/railroad costs have been fully executed. Further, this certification letter shall state that the LOCAL GOVERNMENT understands that it is responsible for the costs of any additional reimbursable utility/railroad conflicts that arise during construction.

13. The DEPARTMENT will be responsible for all railroad coordination on DEPARTMENT Let and/or State Route (On-System) projects; the LOCAL GOVERNMENT shall address concerns, comments, and requirements to the satisfaction of the Railroad and the DEPARTMENT. If the LOCAL GOVERNMENT is shown to LET the construction in Attachment "A" on off-system routes, the LOCAL GOVERNMENT shall be responsible for all railroad coordination and addressing concerns, comments, and requirements to the satisfaction of the Railroad and the DEPARTMENT for PROJECT.

14. The LOCAL GOVERNMENT shall be responsible for acquiring a Value Engineering Consultant for the DEPARTMENT to conduct a Value Engineering Study if the total estimated PROJECT cost is \$10 million or more. The Value Engineering Study cost is considered a PE cost. The LOCAL GOVERNMENT shall provide project related design data and plans to be evaluated in the study along with appropriate staff to present and answer questions about the PROJECT to the study team. The LOCAL GOVERNMENT shall provide responses to the study recommendations indicating whether they will be implemented or not. If not, a valid response for not implementing

shall be provided. Total project costs include PE, right of way, and construction, reimbursable utility/railroad costs.

15. The LOCAL GOVERNMENT, unless shown otherwise on Attachment "A", shall acquire the Right of way in accordance with the law and the rules and regulations of the FHWA including, but not limited to, Title 23, United States Code; 23 CFR 710, et. Seq., and 49 CFR Part 24 and the rules and regulations of the DEPARTMENT. Upon the DEPARTMENT's approval of the PROJECT right of way plans, verification that the approved environmental document is valid and current, a written notice to proceed will be provided by the DEPARTMENT for the LOCAL GOVERNMENT to stake the right of way and proceed with all pre-acquisition right of way activities. The LOCAL GOVERNMENT shall not proceed to property negotiation and acquisition whether or not the right of way funding is Federal, State or Local, until the right of way agreement named "Contract for the Acquisition of Right of Way" prepared by the DEPARTMENT's Office of Right of Way is executed between the LOCAL GOVERNMENT and the DEPARTMENT. Failure of the LOCAL GOVERNMENT to adhere to the provisions and requirements specified in the acquisition contract may result in the loss of Federal funding for the PROJECT and it will be the responsibility of the LOCAL GOVERNMENT to make up the loss of that funding. Right of way costs eligible for reimbursement include land and improvement costs, property damage values, relocation assistance expenses and contracted property management costs. Non reimbursable right of way costs include administrative expenses such as appraisal, consultant, attorney fees and any in-house property management or staff expenses. The LOCAL GOVERNMENT

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shall certify that all required right of way is obtained and cleared of obstructions, including underground storage tanks, 3 months prior to advertising the PROJECT for bids.

16. The DEPARTMENT unless otherwise shown in Attachment "A" shall be responsible for Letting the PROJECT to construction, solely responsible for executing any agreements with all applicable utility/railroad companies and securing and awarding the construction contract for the PROJECT when the following items have been completed and submitted by the LOCAL GOVERNMENT:

- a. Submittal of acceptable PROJECT PE activity deliverables noted in this Agreement.
- b. Certification that all needed rights of way have been obtained and cleared of obstructions.
- c. Certification that the environmental document is current and all needed permits and mitigation for the PROJECT have been obtained.
- d. Certification that all Utility/Railroad facilities, existing and proposed, within the PROJECT limits are shown, any conflicts have been resolved and reimbursable agreements, if applicable, are executed.

If the LOCAL GOVERNMENT is shown to LET the construction in Attachment "A", the LOCAL GOVERNMENT shall provide the above deliverables and certifications and shall follow the requirements stated in Chapters 10, 11, 12 and 13 of the DEPARTMENT's Local Administered Project Manual. The LOCAL GOVERNMENT

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shall be responsible for providing qualified construction oversight with their personnel or by employing a Consultant firm prequalified in Area Class 8.01 to perform construction oversight. The LOCAL GOVERNMENT shall be responsible for employing a GDOT prequalified consultant in area classes 6.04a and 6.04b for all materials testing on the PROJECT, with the exception of field concrete testing. All materials testing, including field concrete testing shall be performed by GDOT certified technicians who are certified for the specific testing they are performing on the PROJECT. The testing firm(s) and the individual technicians must be submitted for approval prior to Construction.

17. The LOCAL GOVERNMENT shall provide a review and recommendation by the engineer of record concerning all shop drawings prior to the DEPARTMENT review and approval. The DEPARTMENT shall have final authority concerning all shop drawings.

18. The LOCAL GOVERNMENT agrees that all reports, plans, drawings, studies, specifications, estimates, maps, computations, computer files and printouts, and any other data prepared under the terms of this Agreement shall become the property of the DEPARTMENT if the PROJECT is being let by the DEPARTMENT. This data shall be organized, indexed, bound, and delivered to the DEPARTMENT no later than the advertisement of the PROJECT for letting. The DEPARTMENT shall have the right to use this material without restriction or limitation and without compensation to the LOCAL GOVERNMENT.

19. The LOCAL GOVERNMENT shall be responsible for the professional quality, technical accuracy, and the coordination of all reports, designs, drawings, specifications, and other services furnished by or on behalf of the LOCAL GOVERNMENT pursuant to this Agreement. The LOCAL GOVERNMENT shall correct or revise, or cause to be corrected or revised, any errors or deficiencies in the reports, designs, drawings, specifications, and other services furnished for this PROJECT. Failure by the LOCAL GOVERNMENT to address the errors, omissions or deficiencies within 30 days of notification shall cause the LOCAL GOVERNMENT to assume all responsibility for construction delays and supplemental agreements caused by the errors and deficiencies. All revisions shall be coordinated with the DEPARTMENT prior to issuance. The LOCAL GOVERNMENT shall also be responsible for any claim, damage, loss or expense, to the extent allowed by law that is attributable to errors, omissions, or negligent acts related to the designs, drawings, specifications, and other services furnished by or on behalf of the LOCAL GOVERNMENT pursuant to this Agreement.

20. The DEPARTMENT shall be furnished with a copy of all contracts and agreements between the LOCAL GOVERNMENT and any other agency or contractor associated with construction activities. The DEPARTMENT's Project Manager shall be the primary point of contact unless otherwise specified.

21. The LOCAL GOVERNMENT shall provide the DEPARTMENT with a detailed project schedule that reflects milestones, deliverables with durations for all pertinent

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activities to develop critical path elements. An electronic project schedule shall be submitted to the Project Manager after execution of this agreement.

This Agreement is made and entered into in FULTON COUNTY, GEORGIA, and shall be governed and construed under the laws of the State of Georgia.

The covenants herein contained shall, except as otherwise provided, accrue to the benefit of and be binding upon the successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the DEPARTMENT and the LOCAL GOVERNMENT have caused these presents to be executed under seal by their duly authorized representatives.

DEPARTMENT OF
TRANSPORTATION

LOCAL GOVERNMENT NAME

BY: [Signature]
Commissioner

BY: [Signature]
Steve Tumlin
Mayor

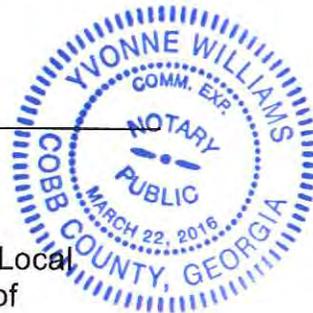
ATTEST: [Signature]
Treasurer

Signed, sealed and delivered this 10th
day of July, 2013, in the
presence of:

[Signature]
Witness



[Signature]
Notary Public



This Agreement approved by Local
Government, the 10th day of
July, 2013

Attest
[Signature]
Stephanie Guy, City Clerk

FEIN: 58-6000616

Attachment "A" Funding Sources and Distribution

Project No.: 0012606 Sponsor: City of Marietta

Attach "Project Manager" Project Charging Form for Approval

Preliminary Engineering Phase I		Preliminary Engineering - Phase I ¹				GDOT Oversight for PE (Phase I) ²			Preliminary Engineering Grand Total (Phase I)	
Percentage	PE Amount	Maximum PE Participation Amount (\$)	Participant	PE Activity Sponsor	Percentage	Amount	Participant	Percentage	Amount	
80%	\$89,611.20	\$89,611.20	Federal	Local Government	#DIV/0!	\$0.00	Federal	80%	\$89,611.20	
0%	\$0.00	\$0.00	State		#DIV/0!	\$0.00	State	0%	\$0.00	
20%	\$22,402.80	N/A	Local		0%	\$0.00	Local	20%	\$22,402.80	
0%	\$0.00	\$0.00	Other		#DIV/0!	\$0.00	Other	0%	\$0.00	
100%	\$112,014.00				#DIV/0!	\$0.00		100%	\$112,014.00	

Right of Way Phase II		Right of Way - Phase II ³				Utility Relocation - Phase IV	
Percentage	ROW Amount	Maximum ROW Participation Amount (\$)	Participant	Acquisition By:	Utility Funding By:	Amount	By:
80%	\$24,000.00	\$0.00	Federal	Local Government	Local Government	100%	Local Government
0%	\$0.00	\$0.00	State				
20%	\$6,000.00	N/A	Local				
0%	\$0.00	\$0.00	Other				
100%	\$30,000.00					100%	100%

Construction Phase III		Construction - Phase III ³				GDOT Oversight for CST (Phase III) ²	
Percentage	CST Amount	Maximum CST Participation Amount (\$)	Participant	Letting By:	Testing (Phase V) Funding By:	Amount	By:
80%	\$725,408.00	\$0.00	Federal	Local Govt	Local Government	100%	Local Government
0%	\$0.00	\$0.00	State				
20%	\$181,352.00	N/A	Local				
0%	\$0.00	\$0.00	Other				
100%	\$906,760.00					100%	100%

Grand Total - All Phases I through III			
Percentage	TOTAL Amount	Maximum Participation Amount (\$)	Participant
80%	\$839,019.20	\$839,019.20	Federal
0%	\$0.00	\$0.00	State
20%	\$209,754.80	N/A	Local
0%	\$0.00	\$0.00	Other
100%	\$1,048,774.00		

¹The maximum allowable GDOT participating amounts for PE phase are shown above. The local government will only be reimbursed the percentage of the accrued invoiced amounts up to but not to exceed the maximum amount indicated.

²GDOT Oversight for PE (Phase I) is detailed in Attachment "D".

³ Right-of-Way and Construction amounts shown are for budget planning purposes only.

NOTE: Separate GDOT P.O.s will be established for each funding phase.

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ATTACHMENT "B" Project Timeline

PI # 0012606 – City of Marietta

Proposed Project Timeline

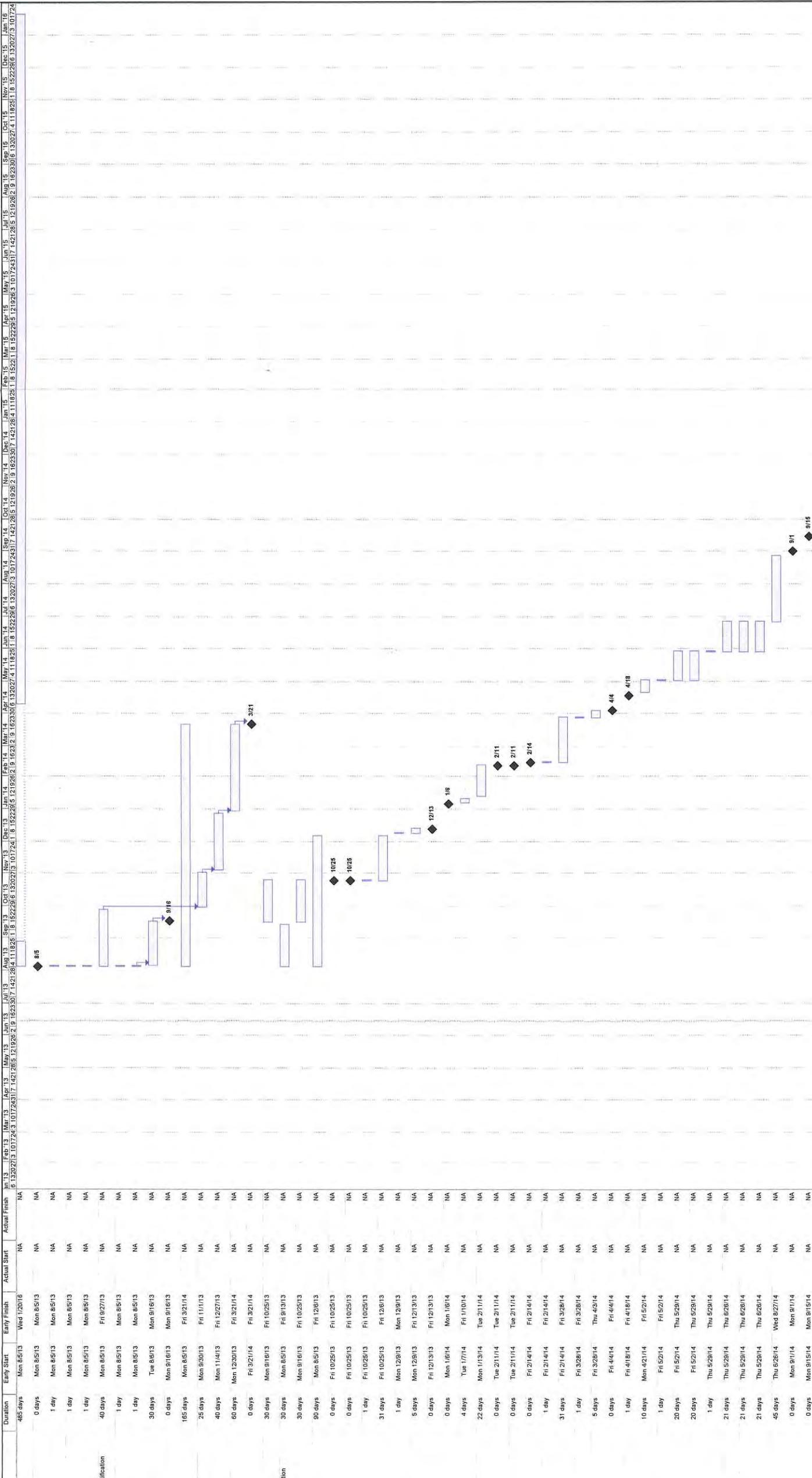
Environmental Phase			
Concept Phase			
Preliminary Plan Phase			
Right of Way Phase			

Deadlines for Responsible Parties	Execute Agreement	Month/Year (Approve Concept)	Month/Year (Approve Env. Document)	Month/Year (Authorize Right of Way funds)	Month/Year (Authorize Const. funds)
	<i>July, 2013</i>	<i>SEPT, 2013</i>	<i>MARCH 2014</i>	<i>MARCH, 2014</i>	<i>SEPT, 2015</i>

Annual Reporting Requirements

The Local Government shall provide a written status report to the Department's Project Manager with the actual phase completion date(s) and the percent complete/proposed completion date of incomplete phases. The written status report shall be received by the Department no later than the first day of February of every calendar year until all phases have been completed.

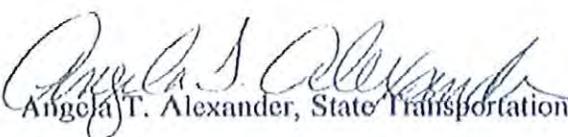
SCHEDULE
SR-5/ATLANTA ROAD AND
SR-5/SR-120/SOUTH MARIEITA PARKWAY
INTERSECTION IMPROVEMENTS
 LAI PROJECT: 12081



D.O.T. 66

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE		OFFICE	Planning
		DATE	September 17, 2010
FROM	 Angela T. Alexander, State Transportation Planning Administrator		
TO	Todd I. Long, PE, PTOE, Director of Planning Gerald M. Ross, PE, Chief Engineer/Deputy Commissioner		
SUBJECT	Preliminary Engineering Oversight for Project Managers/Project Delivery Staff		

Note: This memo supersedes the previous PE Oversight Memo, dated August 17, 2010. PE Oversight funding for Safe Route to School (SRTS) projects are eligible for PE Oversight funds, paid for with funding from the SRTS program. No other changes were made to the memo.

As you are aware, the Department is unable to continue funding PE oversight with 100% motor fuel funds due to the decline in motor fuel revenues. As a result, the Department needs an established procedure detailing the circumstances under which the Department will fund PE oversight with federal-aid funds (matched with state motor fuel funds) and when the Department will request that the local government/project sponsor fund the Department's expenses associated with PE oversight. The PE Oversight funds will be used to fund staff man-hours and any other associated expenses incurred by any GDOT employee working on the project. Please note that the process detailed below applies equally to routes both on and off the state highway system.

GDOT Funds PE Oversight with Federal-Aid:

The Department will fund PE oversight with federal-aid funds (and matching motor fuel funds), only if a subsequent project phase (ROW, UTL, CST) is programmed within the first 4 active years of the currently approved TIP/STIP. The source of federal-aid funds to be used for the PE oversight activities is as follows:

- 1) Projects on the National Highway System will use NHS funds (L050) to finance GDOT's PE oversight expenses
- 2) Projects *not* on the National Highway System but eligible for Surface Transportation Program (STP) funds, will follow one of the scenarios below:
 - a) Projects in urban areas between 5,000 and 199,999 in population will use L200 funds (with MPO approval, if applicable)
 - b) Projects in urban areas with a population greater than 200,000 will use L230 funds (with MPO approval)
 - c) Projects in rural areas with a population less than 5,000 will use L250 funds
 - d) The Department may, at the joint discretion of the Chief Engineer and Director of Planning, apply L240 funds to any federal-aid eligible project

- 3) Projects which have received an earmark in federal legislation, will use a portion of the earmark funding for GDOT's PE oversight expenses, pending MPO approval if applicable. (Note: earmark funded projects could receive PE oversight funding regardless of the funding being programmed within the first 4 active years of a currently approved TIP/STIP).
- 4) Projects funded with Safe Route to School (SRTS) funds will use SRTS funds to finance GDOT's PE oversight expenses, regardless of whether or not a subsequent phase of the project appears in the STIP/TIP.

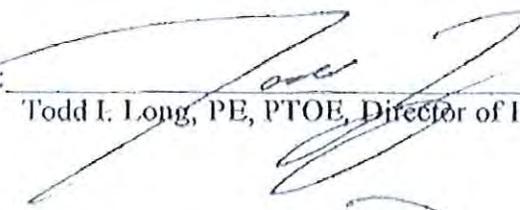
GDOT Requests Local Government/Project Sponsor to Fund PE Oversight:

The Department will request that the local government fund PE oversight with 100% local funds under the following conditions:

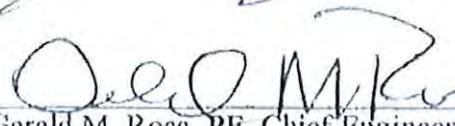
- 1) A subsequent phase of the project is not programmed within the first 4 active years of the Currently approved TIP/STIP
- 2) The MPO has elected to not approve the use of L200 or L230 funds for GDOT's PE oversight expenses
- 3) The project is funded with CMAQ funds
- 4) The project is funded with an earmark identified in federal legislation and the local government/entity which secured the earmark (or MPO, if applicable) declines to allow GDOT to use a portion of the earmark for PE oversight expenses
- 5) The project is currently funded entirely with local funds; however, the local government intends to secure federal funding at a future date

Once the PE oversight process is implemented, it will be the responsibility of the GDOT Project Manager to work with the GDOT Office of Financial Management to establish an appropriate amount of federal-aid funded PE oversight funding, or work with the local government to secure locally sourced PE oversight funds.

If you approve of this process, please sign below. Once an acceptable process is developed and approved by both the Chief Engineer and Director of Planning, we will provide the finalized process to the Office of Program Control for distribution to the GDOT Project Managers and incorporation into future Project Framework Agreements. If you have any questions, please contact Matthew Fowler at 404-631-1777.

Approved: 
Todd I. Long, PE, PTOE, Director of Planning

7/27/10
Date

Approved: 
Gerald M. Ross, PE, Chief Engineer/Deputy Commissioner

10/7/20
Date

ATTACHMENT "D"
GDOT Oversight Estimate for Locally Administered Project

Thursday, June 05, 2013 2:14 PM

PI Number	<input type="text" value="0012606"/>	Project Number	<input type="text"/>
County	<input type="text" value="Cobb"/>	Project Length	<input type="text" value=".60"/> Miles
Project Manager	<input type="text" value="Nesbitt, Kimberly"/>	Project Cost	<input type="text" value="\$1,048,774.00"/>
Project Type	<input type="text" value="Intersection Improvement"/>		
Project Description	<input type="text" value="SR 5 @ SR 120 ALT"/>		
Expected Life of Project	<input type="text" value="2.50"/>	Years	

Project Phase	Oversight Hours	Oversight Cost
1. Project Initiation	0	\$ 0.00
2. Concept Development	0	\$ 0.00
3. Database Preparation*	0	\$ 0.00
4. Preliminary Design	0	\$ 0.00
5. Environmental	0	\$ 0.00
6. Final Design	0	\$ 0.00
Travel Expenses		\$ -
Total Oversight Estimate	0	\$ 0.00
Percentage of Project Cost	.00%	

C:\Documents and Settings\vaavalas\Mv Documents\Oversight Estimate 0012606.dox

Revised: 12/2011

ATTACHMENT "E" GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT

Name of Contracting Entity: CITY OF MARIETTA

Contract No. and Name: PI 00 12606 SRS @ SE 120

By executing this affidavit, the undersigned person or entity verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm, or entity which is contracting with the Georgia Department of Transportation has registered with, is authorized to participate in, and is participating in the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91.

The undersigned person or entity further agrees that it will continue to use the federal work authorization program throughout the contract period, and it will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the undersigned with the information required by O.C.G.A. § 13-10-91(b).

The undersigned person or entity further agrees to maintain records of such compliance and provide a copy of each such verification to the Georgia Department of Transportation within five (5) business days after any subcontractor is retained to perform such service.

48936
E-Verify / Company Identification Number

Ashana Barrett
Signature of Authorized Officer or Agent

8/7/2007
Date of Authorization

SHANON BARRETT
Printed Name of Authorized Officer or Agent

ACTING HUMAN RESOURCES DIRECTOR
Title of Authorized Officer or Agent

July 19, 2013
Date

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

19th DAY OF July, 2013

Elizabeth Hammock
Notary Public

My Commission Expires: Oct. 8, 2013



ATTACHMENT "F"

TITLE VI INTRODUCTION

As a sub-recipient of federal funds from Georgia Department of Transportation, all municipalities are required to comply with Title VI of the Civil Rights Act of 1964 which provides that:

"No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, or be denied the benefits of, or be subjected To discrimination under any program or activity receiving federal assistance under This title or carried out under this title."

Additionally, the Civil Rights Restoration Act of 1987, expanded the definition of the terms "programs and activities" to include all programs or activities of federal recipients, subrecipients, and contractors, whether or not such programs and activities are federally assisted.

The provisions of Title VI apply to all contractors, subcontractors, consultants and suppliers. And is a condition for receiving federal funds. All sub recipients must sign Title VI assurances that they will not discriminate as stated in Title VI of the Civil Rights Act of 1964.

In the event that the sub recipient distributes federal aid funds to second tier entity, the sub-recipient shall include Title VI language in all written documents and will monitor for compliance. If, these assurances are not signed, the City or County government may be subjected to the loss of federal assistance.

All sub recipients that receive federal assistance must also include Federal Highways Administrations 1273 in their contracts. The FHWA 1273 sets out guidance for ensuring non discrimination and encouraging minority participation and outreach.

Enclosed you will find Title VI acknowledgment form and the Title VI assurances. The Title VI acknowledgment form and Title VI assurances must be signed by your local government official if it has not been signed.

ATTACHMENT "F"

TITLE VI ACKNOWLEDGEMENT FORM

The CITY OF MARIETTA assures that no person shall on the grounds or race, color, national origin or sex as provided by Title VI of the Civil Rights Act of 1964, and the Civil Rights Restoration Act of 1987 be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any City or County sponsored program or activity. The CITY OF MARIETTA assures that every effort will be made to ensure non discrimination in all of its programs or activities, whether those programs are federally funded or not.

Assurance of compliance therefore falls under the proper authority of the City Council or the County Board of Commissioners. The Title VI Coordinator or Liaison is authorized to ensure compliance with provisions of this policy and with the Law, including the requirements of 23 Code of Federal Regulations (CFR) 200 and 49 CFR 21.

R. Steve Tindal,
Official Name and Title

July 19, 2013
Date

Citations:

Title VI of the Civil Rights Act of 1964; 42 USC 2000d to 2000d-4; 42 USC 4601 to 4655; 23 USC 109(h); 23 USC 324; DOT Order 1050.2; EO 12250; EO 12898; 28CFR 50.3

Other Nondiscrimination Authorities Expanded the range and scope of Title VI coverage and applicability

- The 1970 Uniform Act (42 USC 4601)
- Section 504 of the 1973 Rehabilitation Act (29 USC 790)
- The 1973 Federal-aid Highway Act (23 USC 324)
- The 1975 Age Discrimination Act (42 USC 6101)
- Implementing Regulations (49 CFR 21 & 23 CFR 200)
- Executive Order 12898 on Environmental Justice (EJ)
- Executive Order 13166 on Limited English Proficiency (LEP)