

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0007339, Newton County **OFFICE** Preconstruction
STP-0007-00(339)
SR 162 @ CR 20 Intersection Improvements **DATE** July 26, 2006

FROM  Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

TO  SEE DISTRIBUTION

SUBJECT APPROVED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Brian Summers
Harvey Keepler
Ken Thompson
Michael Henry
Keith Golden
Joe Palladi
Paul Liles
Mike Thomas
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: P. I. No. 0007339, Newton County **OFFICE** Preconstruction
 STP-0007-00(339)
 SR 162/Salem Road @ CR 20/Smith Store Road **DATE** July 19, 2006

FROM *John Kunkle* Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

TO David E. Studstill, Jr., P.E., Chief Engineer

SUBJECT PROJECT CONCEPT REPORT

This project is the intersection improvements on SR 162/Salem Road at CR 20/Smith Store Road in Newton County. Due to the residential and commercial developments in southeast Rockdale and Newton counties, the roadway networks in these areas are dropping to unacceptable levels of safety and efficiency. The SR 162/Salem Road corridor between I-20 and SR 81 carries almost 20,000 VPD and has numerous access points to residential and commercial properties. Smith Store Road T-intersects the busy Salem Road corridor with a sharp skew of 41degrees. Both roads are posted at 45 MPH and neither road has auxiliary turn lanes. There have been numerous accidents reported at the intersection including 8 injuries and 2 fatalities in the past 3 years.

The proposed construction will realign Smith Store Road to intersect Salem Road at 70 degrees. Exclusive turn lanes will be provided to separate turning vehicles from through traffic. Salem Road will be widened symmetrically up to 6' on each side to allow for a right turn lane (traveling south) and a left turn lane (traveling north). Realigned Smith Store Road will have exclusive turning lanes onto Salem Road. A new traffic signal will be installed for the realigned intersection of Salem Road and Smith Store Road. Traffic will be maintained during construction.

Environmental concerns include requiring a Categorical Exclusion be prepared; a public hearing open house is not required; time saving procedures are appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C and inflation)	\$547,000	\$390,000	LS30	LUMP
Right-of-Way & Utilities*	Local	Local		

David Studstill

Page 2

P. I. No. 0007339, Newton

July 19, 2006

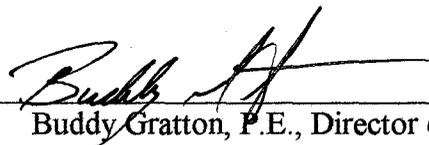
*PMA sent to Newton County to do PE and utilities; right-of-way and construction to be done by future agreements.

I recommend this project concept be approved.

MBP:JDQ/cj

Attachment

CONCUR



Buddy Gratton, P.E., Director of Preconstruction

APPROVE



David E. Studstill, Jr., P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: STP-0007-00(339) Newton
P.I. No. 0007339
Intersection Improvements

OFFICE: Engineering Services

DATE: July 10, 2006



FROM: Brian K. Summers, P.E., Project Review Engineer

TO: Meg Pirkle, P.E., Assistant Director of Preconstruction

SUBJECT: REVISED CONCEPT REPORT

We have reviewed the Revised Concept Report submitted July 6, 2006, and have no comments.

The costs for this project are:

Construction	\$473,000
Inflation	\$23,650
E & C	\$49,665
Reimbursable Utilities	\$0.00 (Newton Co. anticipated)
Right of Way	\$29,000

REW

c: Mike Thomas, Attn: Alan Smith

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
District Two

PROJECT CONCEPT REPORT

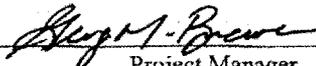
SALEM ROAD/SR 162 AT SMITH STORE ROAD/CR 20 INTERSECTION IMPROVEMENTS

Project Number: STP-0007-00(339)
P.I. NO. 0007339
County: NEWTON

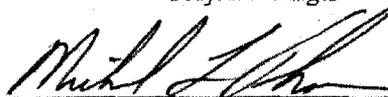
FEDERAL ROUTE NO: N/A
STATE ROUTE NO: 162

Prepared by:

DATE 6/30/06


Project Manager

DATE 6-30-06


District Engineer

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).

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE _____

State Environmental / Location Engineer

DATE 7/10/06


Project Review Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

State Bridge & Structural Design Engineer

SCORING RESULTS AS PER MOG 2440-2

Project Number: STP-0007-00(339)		County: Newton		PI No.: 0007339	
Report Date: June 30, 2006		Concept By: DOT Office: District 2			
<input checked="" type="checkbox"/> Concept Stage		Consultant: URS Corp.			
Project Type: Choose One From Each Column		<input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor	<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input type="checkbox"/> Bridge Replacement <input type="checkbox"/> Building <input type="checkbox"/> Interchange Reconstruction <input checked="" type="checkbox"/> Intersection Improvement <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous	
FOCUS AREAS	SCORE	RESULTS			
Presentation	100				
Judgement	100				
Environmental	100				
Right of Way	100				
Utility	100				
Constructability	100				
Schedule	100				

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

DATE July 6, 2006

FROM Alan Smith, District Design Engineer
TO Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

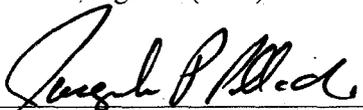
SUBJECT STP-0007-00 (339) Newton County
Salem Road / SR 162 at Smith Store Road / CR 20 Intersection improvements
Project Concept Report

Attached is the original copy of the Revised Project Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

The above mentioned project consists of intersection improvements on SR 162 at Smith Store Road / CR 20.

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

DATE 7/7/06


State Transportation Planning Administrator

Distribution:

Brian Summers
Harvey Keepler
Keith Golden
Joe Palladi
Jamie Simpson

NOTICE OF LOCATION AND DESIGN APPROVAL

STP-0007-00(339) NEWTON COUNTY

P. I. No. 0007339

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of the above project.

Date of Location and Design Approval: July 26, 2006

This project is a 0.19 mile widening of SR 162 (Salem Road) in the city limits of Covington, Georgia. The project also includes re-alignment of 0.08 miles of CR 20 (Smith Store Road) at its intersection with SR 162. The project lies entirely within Newton County and within GMD 1065.

Drawings of maps or plats of the proposed project as approved are on file and are available for inspection at the Georgia Department of Transportation.

**Bryan Gibbs, Area Engineer
Department Of Transportation
Madison Area Office
1570 Bethany Road
Madison, Georgia 30434
(706) 343-5836**

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

**Mike Thomas, PE, District Engineer
Department Of Transportation
801 Fourth Street/SR 15 South
Tennille, Georgia 31089
(478) 552-4601
Mike.Thomas@dot.state.ga.us**

Any written request of communication in reference to this project or notice SHOULD include the Project and P.I. Numbers as noted at the top of this notice.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
District Two

PROJECT CONCEPT REPORT

SALEM ROAD/SR 162 AT SMITH STORE ROAD/CR 20 INTERSECTION IMPROVEMENTS

Project Number: STP-0007-00(339)
P.I. NO. 0007339
County: NEWTON

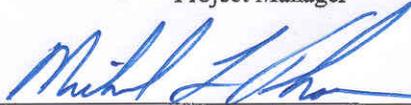
FEDERAL ROUTE NO: N/A
STATE ROUTE NO: 162

Prepared by:

DATE 6/30/06


Project Manager

DATE 6-30-06


District Engineer

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).

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE _____

State Environmental / Location Engineer

DATE _____

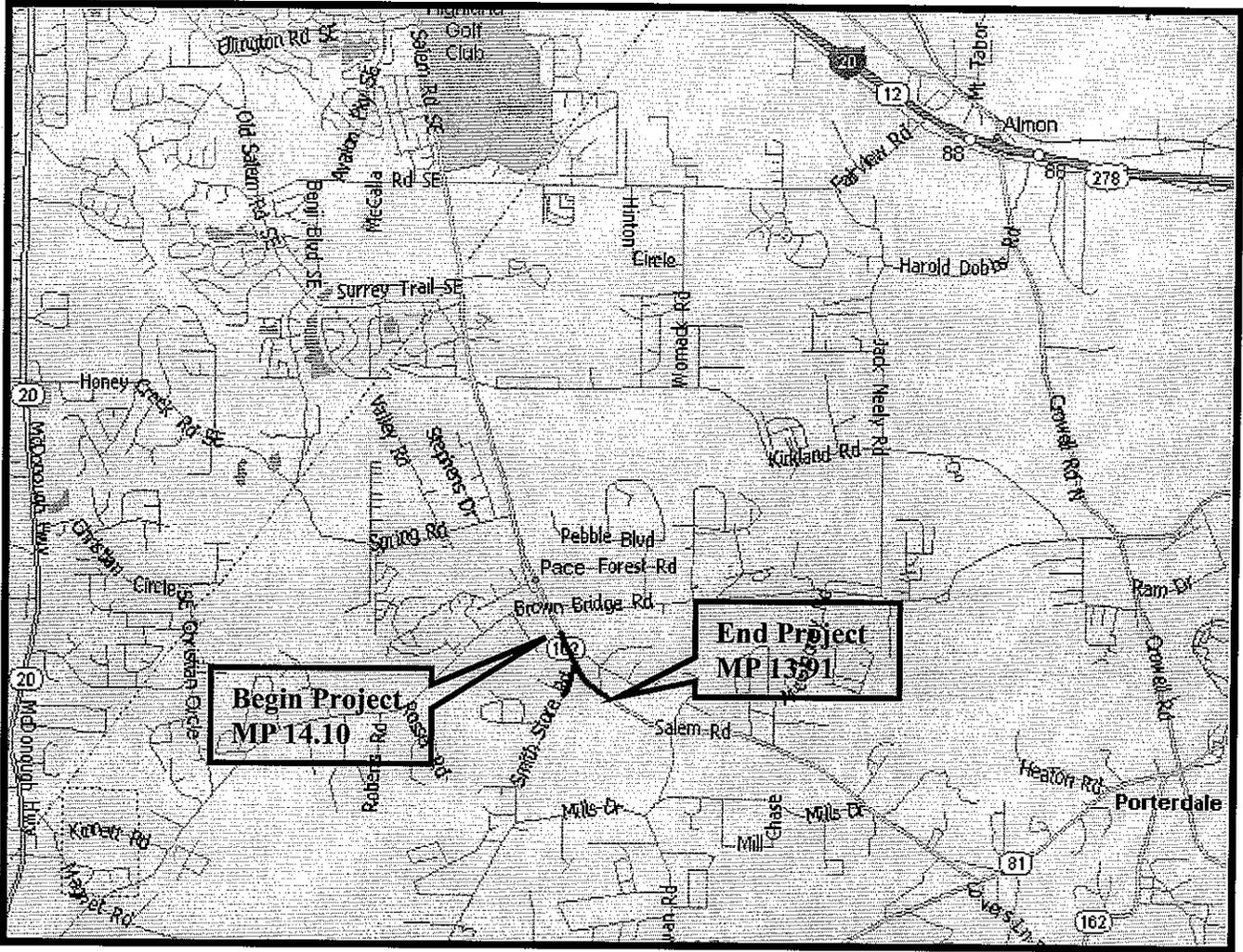
Project Review Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

State Bridge & Structural Design Engineer



LOCATION MAP

Project: STP-0007-00(339) Newton County, PI No: 0007339

Description: Salem Rd (SR 162) at Smith Store Rd (CR 20) Intersection Improvements

Need and Purpose

Due to the residential and commercial developments in the southeast Rockdale and Newton counties, the roadway networks in these areas are dropping to unacceptable levels of safety and efficiency. The Salem Road (SR 162) corridor between I-20 and SR 81 carries almost 20,000 vehicles daily and has numerous access points to residential and commercial properties. Smith Store Road T-intersects the busy Salem Road corridor with a sharp skew of 41°. Both roads are posted at 45 mph and neither roads have auxiliary turn lanes. All of these incoherencies in geometry and operation pose a challenge to the safety of residents and travelers in the area. There have been numerous accidents reported at this intersection including eight injuries and two fatalities in the past three years. Most of the accidents were angle collisions, where drivers failed to negotiate the sharply skewed intersection. To improve the safety and orderly progression of traffic through the intersection, realignment, widening and signalization as discussed in this report are recommended.

Description of the proposed project:

The proposed project STP-0007-00(339) is located at the intersection of Salem Road (SR 162) and Smith Store Road (CR 20), south of the City of Covington. The proposed project will provide three types of needed improvements:

Re-alignment: Smith Store Road will be re-aligned to intersect Salem Road at 70° angle. Since a traffic signal is already warranted for the intersection, this will provide better visibility and reduce the number of at-angle accidents. Re-alignment will reduce the amount of work in the future, if the intersection is expanded to a full four-leg intersection.

Widening: Because of the high speed on all approaches, exclusive turn lanes will be provided to separate turning vehicles from through traffic. Salem Road will be widened symmetrically up to six feet on each side to allow for a right turn lane (traveling south) and a left turn lane (traveling north). Widening will be symmetrical and will have minimal taper lengths. This reduces project length by 540 feet. Realigned Smith Store Road will be wider and will have exclusive turning lanes onto Salem Road.

Signalization: A traffic signal is already warranted for the referenced intersection as part of a prior study. A right or near-right angle intersection is needed for smoother operation of a signalized intersection.

Other Projects in the Area

Other projects in the area include a four lane widening of Salem Road between Brown Bridge Road and Flat Shoals Road. This project [STP-0922(6) Newton] at the intersection of Salem Road and Smith Store Road does not impact this or any other known project in the area.

Is the project located in a Non-attainment area? Yes No

PDP Classification: Major , or Minor

Federal Oversight: Full Oversight , Exempt , State Funded , or Other

Functional Classification: Salem Road – Urban Minor Arterial
Smith Store Road – Urban Local Road

Salem Road:

U. S. Route Number(s): N/A **State Route Number(s):** 162 **County Route Number(s):** N/A

Smith Store Road:

U. S. Route Number(s): N/A **State Route Number(s):** N/A **County Route Number(s):** 20

Traffic (AADT):

Salem Road:	Build Year: (2007):	<u>15,490</u>	Design Year (2027):	<u>31,980</u>
Smith Store Road:	Build Year: (2007):	<u>1,510</u>	Design Year (2027):	<u>2,440</u>

Existing design features:

- Typical section:
Salem Road: Rural roadway with two 12-foot travel lanes, 2 ft grassed shoulders and well defined ditches.
Smith Store Road: Rural roadway with two 10.5-foot travel lanes, 2 ft grassed shoulders and well defined ditches.
- Posted Speed: 45 mph (both roads).
- Minimum radius of curve:
Salem Road:.....1430 ft (mainline)
Smith Store Road:.....N/A
- Maximum superelevation rate for curve:
Salem Road:.....5.0% (mainline)
Smith Store Road:.....3.5%
- Maximum degree of curvature:
Salem Road:.....4° (mainline)
Smith Store Road:.....N/A
- Maximum grade:
Salem Road:.....1.44% (mainline)
Smith Store Road:.....2.32%
- Width of Right of Way:
Salem Road:.....80 ft (mainline)
Smith Store Road:.....70 ft
- Length of Roadway Segment:
Salem Road:.....0.19 miles (mainline)
Smith Store Road:.....0.08 miles

- Design Variances – None expected
- Environmental concerns: Potential Historic Impacts
- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes , No ,
 - Categorical exclusion ,
 - Environmental Assessment/Finding of No Significant Impact (FONSI) , or
 - Environmental Impact Statement (EIS) .
 - Utility involvements: *Georgia Power, Newton County Public Works, Snapping Shoals EMC, Bellsouth Telecommunications, Georgia Natural Gas*

Project responsibilities:

- Design, URS Corporation
- Right of Way Acquisition, Newton County
- Relocation of Utilities, Newton County
- Letting to contract, GDOT
- Providing material pits, Contractor

Coordination

- Concept meeting date and brief summary: *Concept Meeting was held March 14, 2006 at the Newton County Courthouse. Everyone that attended agreed that no revisions to the proposed design are required.*
- P. A. R. meetings, dates and results: *Not required*
- FEMA, USCG, and/or TVA: *None*
- Public involvement: *A public information meeting is not required as a part of the Categorical Exclusion.*
- Local government comments: *Newton County is eager to act on this project due to the accident history and the current intersection delay.*
- Other projects in the area:
 - Widening of Salem Road to a 4 lane from Brown Bridge Road to Flat Shoals Road – STP-0922(6) Newton
- Other coordination to date: *Project has appeared in County newspaper*
- Railroad Coordination: *None*

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 9 months
- Time to complete preliminary construction plans: 6 months
- Time to complete right of way plans: 2 months
- Time to complete the Section 404 Permit: 0 months
- Time to complete final construction plans: 2 months
- Time to purchase right of way: 6 months
- Other major items that will affect the project schedule: N/A

Other Alternates considered:

1. The intersection of Smith Store Road and Salem Road would intersect at a 90° angle. Keeping all other factors (alignment, speed design, etc) the same and acquiring one property with a displacement on the southwest corner.

2. The intersection of Smith Store Road and Salem Road would intersect at a 90° angle, but Smith Store Road would be designed at a 35 mph speed design and a horizontal re-alignment to avoid any displacements.

Comments: None

Attachments:

1. Construction Cost Estimate
2. Typical Sections
3. Capacity Analysis
4. L & D Approval
5. Concept Team Meeting Minutes
6. Concept Team Meeting Sign-In Sheet
7. Concept Layout

PRELIMINARY COST ESTIMATE

PROJECT: Salem Road @ Smith Store Road Intersection

PREPARED BY: Nick Castronova/URS Corporation PROJECT LENGTH: 0.25 miles

ESTIMATED LETTING DATE: None

PROGRAMMING PROCESS CONCEPT DEVELOPMENT DURING PROJECT DEV.

PROJECT COST	
A. RIGHT-OF-WAY:	
1. PROPERTY (LAND & EASEMENT)	\$ 20,000.00
2. DISPLACEMENTS: RES: 0 BUS: 0 M.H.: 0	\$ 0.00
3. OTHER COST (ADM./COST, INFLATION)	\$ 9,000.00
SUBTOTAL:A	\$ 29,000.00
B. REIMBURSABLE UTILITIES:	
1. RAILROAD	\$ 0.00
2. TRANSMISSION LINES	\$ 0.00
3. SERVICES	\$ 0.00
SUBTOTAL:B	\$ 0.00
C. CONSTRUCTION:	
1. MAJOR STRUCTURES	\$ 0.00
SUBTOTAL:C-1	\$ 0.00
2. GRADING AND DRAINAGE:	
a. EARTHWORK (20,000 cy @ \$5.00)	\$ 100,000.00
b. DRAINAGE:	
Pipe - 18" (440 ft @ \$35/ft)	\$ 15,400.00
Pipe - 24" (50 ft @ \$40/ft)	\$ 2,000.00
Pipe - 30" (80 ft @ \$50/ft)	\$ 4,000.00
Flared End Sections (30 @ \$500/EA)	\$ 15,000.00
SUBTOTAL:C-2	\$ 136,400.00
3. BASE AND PAVING:	
a. AGGREGATE BASE (1,900 tons @ \$20/ton)	\$ 38,000.00

PROJECT COST		
b. ASPHALT PAVING:		
12.5mm Superpave (600 tons @ \$60/ton)	\$	36,000.00
19mm Superpave (425 tons @ \$60/ton)	\$	25,500.00
25mm Superpave (410 tons @ \$60/ton)	\$	24,600.00
	SUBTOTAL:C-3.b	\$ 86,100.00
	SUBTOTAL:C-3	\$ 124,100.00
4. LUMP ITEMS:		
a. GRASSING (1 acre @ \$5,000/acre)	\$	5,000.00
b. CLEARING AND GRUBBING (1 acres @ \$8,000/acre)	\$	8,000.00
c. LANDSCAPING	\$	5,000.00
d. EROSION CONTROL	\$	20,000.00
e. TRAFFIC CONTROL	\$	50,000.00
	SUBTOTAL:C-4	\$ 88,000.00
5. MISCELLANEOUS:		
a. SIGNAL	\$	100,000.00
b. SIGNING - MARKING	\$	3,000.00
	SUBTOTAL:C-5	\$ 103,000.00
6. SPECIAL FEATURES:		
	SUBTOTAL:C-6	\$ 0.00

ESTIMATE SUMMARY

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY		\$ 29,000.00
B. REIMBURSABLE UTILITIES		\$ 0.00
C. CONSTRUCTION		
1. MAJOR STRUCTURES		\$ 0.00
2. GRADING AND DRAINAGE		\$ 136,400.00
3. BASE AND PAVING		\$ 124,100.00
4. LUMP ITEMS		\$ 88,000.00
5. MISCELLANEOUS		\$ 103,000.00
6. SPECIAL FEATURES		\$ 0.00
SUBTOTAL CONSTRUCTION COST		\$ 451,500.00
E. & C. (10%)		\$ 45,150.00
INFLATION (5% PER YEAR)		\$ 24,850.00
NUMBER OF YEARS	1	
TOTAL CONSTRUCTION COST		\$ 521,500.00
TOTAL DESIGN COST		\$ 100,322.00
GRAND TOTAL PROJECT COST		\$ 650,822.00



Movement	EBL	EBR	NBL	NBT	SBL	SBR
Lane Configurations	↙	↘	↙	↑	↑	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	964	1863	1863	1583
Volume (vph)	261	13	8	724	309	81
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	14	9	787	336	88
Lane Group Flow (vph)	273	14	9	787	336	88
Pha Type		Perm	Perm			Perm
Protected Phases	4			2		6
Permitted Phases		4	2			6
Actuated Green, G (s)	27.0	27.0	55.0	55.0	55.0	55.0
Effective Green, g (s)	27.0	27.0	55.0	55.0	55.0	55.0
Actuated g/C Ratio	0.30	0.30	0.61	0.61	0.61	0.61
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	531	475	589	1139	1139	967
v/s Ratio Prot	0.15			0.42	0.18	
v/s Ratio Perm		0.01	0.01			0.06
v/c Ratio	0.51	0.03	0.02	0.69	0.29	0.09
Uniform Delay, d1	26.1	22.2	6.9	11.8	8.3	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	0.0	3.4	0.7	0.2
Delay (s)	29.6	22.4	6.9	15.2	9.0	7.4
Level of Service	C	C	A	B	A	A
Approach Delay (s)	29.2			15.1	8.6	
Approach LOS	C			B	A	
Intersection Summary						
HCM Average Control Delay	16.0		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.63					
Cycle Length (s)	90.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	63.2%		ICU Level of Service		B	

c Critical Lane Group



Movement	EBL	EBR	NBL	NBR	SEB	SEB
Lane Configurations	↙	↘	↙	↘	↕	↕
Ideal Flow (vph)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction	1.00	0.85	1.00	1.00	1.00	0.85
Flt. Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt. Permitted	0.95	1.00	0.21	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	395	1863	1863	1583
Volume (vph)	130	23	11	443	855	374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	23	11	443	855	374
Lane Group Flow (vph)	141	23	11	443	855	374
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	22.0	22.0	60.0	60.0	60.0	60.0
Effective Green, g (s)	22.0	22.0	60.0	60.0	60.0	60.0
Actuated g/C Ratio	0.24	0.24	0.67	0.67	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	433	387	263	1242	1242	1055
v/s Ratio Prot	0.08			0.24	0.46	
v/s Ratio Perm		0.01	0.03			0.24
v/c Ratio	0.33	0.06	0.04	0.36	0.69	0.35
Uniform Delay, d1	27.9	26.1	5.1	6.6	9.2	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.3	0.3	0.8	3.1	0.9
Delay (s)	29.9	26.4	5.4	7.4	12.4	7.5
Level of Service	C	C	A	A	B	A
Approach Delay (s)	29.4			7.3	10.9	
Approach LOS	C			A	B	
Intersection Summary						
HCM Average Control Delay	11.7		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.59					
Cycle Length (s)	90.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	59.5%		ICU Level of Service		A	

c Critical Lane Group

3: Smith Store Road & SR 162
 HCM Signalized Intersection Capacity Analysis

2027 AM
 Baseline



Movement	EBL	EBR	NBL	NBSL	SBSL	SBR
Lane Configurations	↖	↗	↖	↑	↑	↗
Ideal Flow (vph/pl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction	1.00	0.85	1.00	1.00	1.00	0.85
Gravel Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Gravel Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	588	1863	1863	1583
Volume (vph)	411	22	14	1669	713	139
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	433	22	14	1669	713	139
Lane Group Flow (vph)	433	22	14	1669	713	139
Turn type		Perm	Perm		Perm	
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	27.0	27.0	95.0	95.0	95.0	95.0
Effective Green, g (s)	27.0	27.0	95.0	95.0	95.0	95.0
Actuated g/C Ratio	0.21	0.21	0.73	0.73	0.73	0.73
Clearance time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	368	329	430	1361	1361	1157
v/s Ratio Prot	0.24			0.90	0.38	
v/s Ratio Perm		0.01	0.02			0.09
v/c Ratio	1.18	0.07	0.03	1.29	0.52	0.12
Uniform Delay, d1	51.5	41.4	4.8	17.5	7.6	5.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	104.3	0.4	0.1	108.6	1.4	0.2
Delay (s)	155.8	41.8	5.0	126.1	9.1	5.4
Level of Service	F	D	A	F	A	A
Approach Delay (s)	150.3			125.1	8.5	
Approach LOS	F			F	A	
Intersection Summary						
HCM Average Control Delay	95.7		HCM Level of Service		F	
HCM Volume to Capacity ratio	1.22					
Cycle Length (s)	130.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	118.5%		ICU Level of Service		G	

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3: Smith Store Road & SR 162
 HCM Signalized Intersection Capacity Analysis

2027 PM
 Baseline



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	243	1863	1863	1583
Volume (vph)	218	34	17	972	1874	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	232	34	17	972	1874	613
Lane Group Flow (vph)	232	34	17	972	1874	613
Phs Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	17.0	17.0	125.0	125.0	125.0	125.0
Effective Green, g (s)	17.0	17.0	125.0	125.0	125.0	125.0
Actuated g/C Ratio	0.11	0.11	0.83	0.83	0.83	0.83
Clearance time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	201	179	203	1553	1553	1319
v/s Ratio Prot	0.13			0.52	0.01	
v/s Ratio Perm		0.02	0.07			0.39
w/c Ratio	1.15	0.19	0.08	0.63	1.21	0.46
Uniform Delay, d1	66.5	60.3	2.2	4.4	12.5	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	111.2	2.3	0.8	1.9	99.3	1.2
Delay (s)	177.7	62.6	3.0	6.3	111.8	4.6
Level of Service	F	E	A	A	F	A
Approach Delay (s)	163.0			6.2	86.4	
Approach LOS	F			A	F	
Intersection Summary						
HCM Average Control Delay	70.0		HCM Level of Service		E	
HCM Volume to Capacity ratio	1.20					
Cycle Length (s)	150.0		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	118.1%		ICU Level of Service		G	

c Critical Lane Group

MINUTES OF THE CONCEPT TEAM MEETING

The concept meeting for Georgia DOT Project No. STP-0007-00(339), PI No. 0007339, Newton County was held at the Newton County Courthouse the downstairs conference room on March 14th, 2006.

The meeting attendees included Kevin Walter (Newton County), Tom Garrett (Newton County), Aaron Varner (Newton County), Bryan Gibbs (GDOT Madison Area Engineer), Jamie Lindsey (GDOT Utilities), Ronald Brantley (GDOT R/W), George Brewer (GDOT District Preconstruction Engineer), Kedrick Collins (GDOT Traffic Ops), Roger Price (GDOT Traffic Ops), Todd Price (GDOT Traffic Ops), Don Harris (URS Corporation), Nick Castronova (URS Corporation).

Nick Castronova welcomed the attendees and briefly introduced the project. He then asked everyone to introduce themselves.

The meeting proceeded with Nick Castronova explaining the project in detail by reviewing the concept report and then describing the concept layout. He emphasized that the number of serious accidents, including 2 fatalities, and the sub-standard intersection skew angle as the major reasons for implementing this safety improvement. Nick continued by describing the geometry of the improvement and its development process. He then opened the floor for any questions and comments.

Kevin asked if the District uses video detection for the signals and if this project could qualify.

Kedrick responded that the District prefers to install loops.

With no further comments, the meeting adjourned.

