

D.O.T. 66

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0005688, Gwinnett County **OFFICE** Preconstruction
STP-0005-00(688)
SR 378 ITS Installation **DATE** October 12, 2005

FROM *John Kunk* 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.

MBP/cj

Attachment

DISTRIBUTION:

Brian Summers
Harvey Keepler
Ken Thompson
Jamie Simpson
Michael Henry
Keith Golden
Joe Palladi (file copy)
Paul Liles
Babs Abubakari
Russell McMurry
BOARD MEMBER
FHWA

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 0005688, Gwinnett County **OFFICE** Preconstruction
 STP-0005-00(688)
 SR 378 ITS Installation **DATE** September 19, 2005

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

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

SUBJECT PROJECT CONCEPT REPORT

This project consists of the installation of fiber optic communications cable and closed circuit television (CCTV) cameras along SR 378 between SR 13/US 23 in Norcross to SR 8/US 29 in Lilburn, for a total of 6.4 miles. Traffic volumes on SR 378 have increased to 40,670 VPD. This arterial has become congested and operates below an acceptable level of service during peak hours. The purpose of this project is to enable arterial traffic monitoring, signal control and quicker incident response along SR 378 in Gwinnett County from Norcross to Lilburn. An Intelligent Transportation System (ITS) will allow for improved signal progression and traffic surveillance as well as the ability to control signal timing to effectively manage traffic backup due to incidents along the roadway. The ITS system will allow for a more orderly progression of traffic through the SR 378 corridor.

The construction proposes an underground fiber trunk line be installed along the shoulder of SR 378 between SR 13/US 23 and SR 8/US 29. This cable will be spliced to an existing fiber optic cable along SR 8/US 29 to the Gwinnett TCC. Thirteen (13) new CCTV cameras will be installed and connected via Ethernet into the proposed communications system. The proposed communications network for this project consists of three (3) 1-1/4" conduits, Type 4 and Type 5 pull boxes, a 72-fiber communications cable to be installed in the shoulder of SR 378. Shoulder closures and/or right lane closures will be required for installation of ITS devices and trenching for conduit and fiber optic trunk line.

Environmental concerns include requiring a Categorical Exclusion be prepared; a public meeting 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)	\$2,048,000	\$1,421,000	Q23	2007
Right-of-Way & Utilities*	Local	Local		

David Studstill

Page 2

P. I. No. 0005688, Gwinnett

September 19, 2005

*Gwinnett County signed PMA 2-3-05 for PE, right-of-way, utilities and 20% of construction costs.

I recommend this project concept be approved.

MBP:JDQ/cj

Attachment

CONCUR



Buddy Gratton, P.E., Director of Preconstruction

APPROVE



For: Robert M. Callan, Administrator, FHWA

APPROVE



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

Project Concept Report
Project Number: STP-0005-00(688)
P.I. Number: 0005688
County: Gwinnett

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE



FILE: STP-0005-00(688) Gwinnett
P.I. No. 0005688
S.R. 378 ITS

OFFICE: Engineering Services

DATE: September 19, 2005

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

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

SUBJECT: CONCEPT REPORT

We have reviewed the Concept Report submitted September 8, 2005 from Keith Golden, and have no comments.

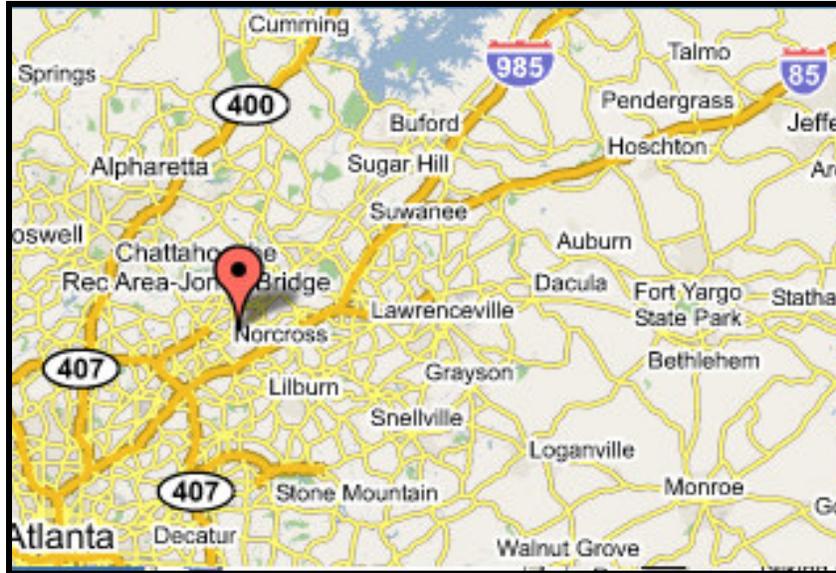
The costs for this project are:

Construction	\$2,047,310
Inflation	\$0.00
E & C	\$204,731
Reimbursable Utilities	\$0.00
Right of Way	\$0.00

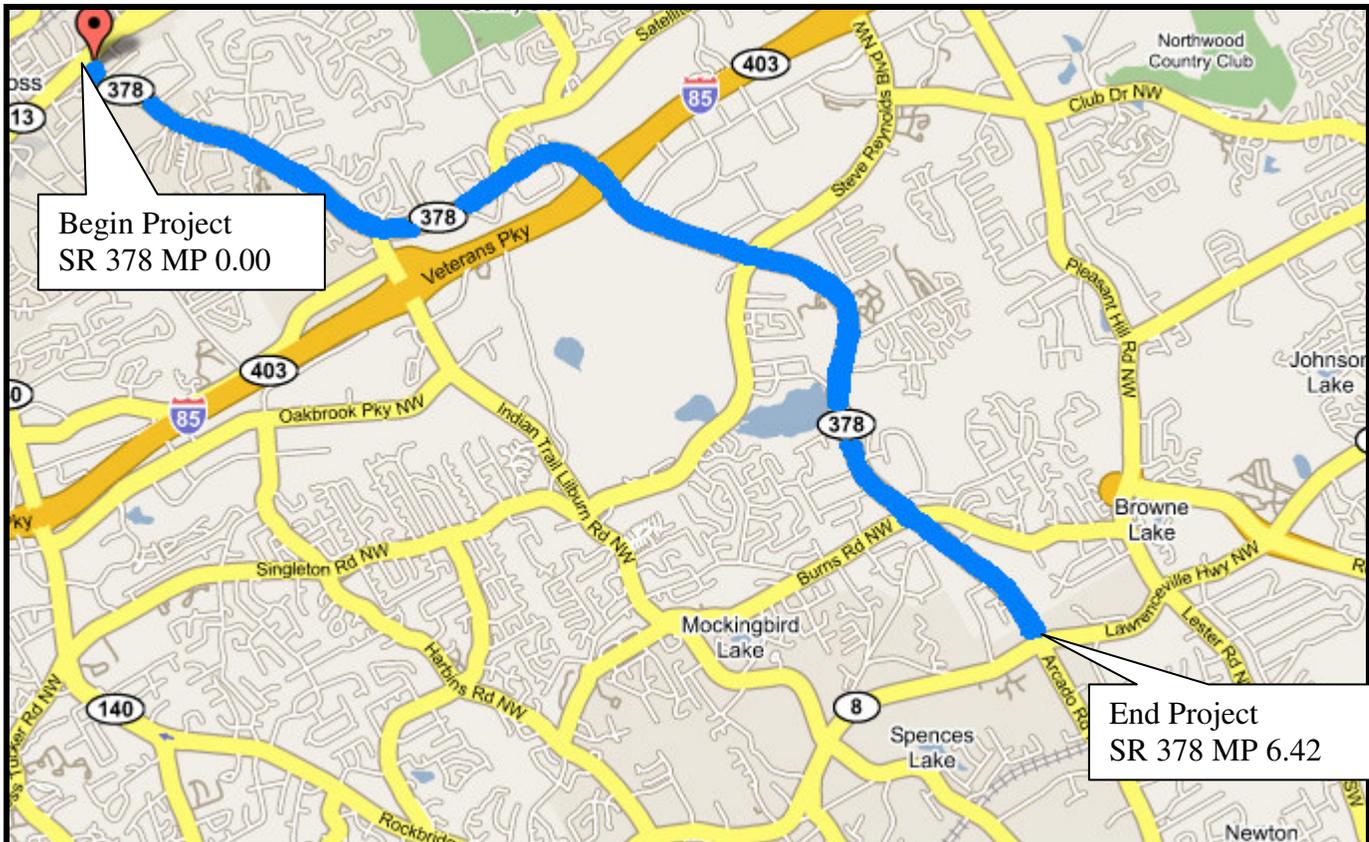
REW

c: Keith Golden, Attn.: Jim Tolson

PROJECT LOCATION MAP



Location of Project in Gwinnett County



Need and Purpose:

Traffic volumes on SR 378 have increased to 40,670 vpd. This arterial is congested and operates at an unacceptable LOS during peak hours. A traffic management system is needed to help reduce peak hour congestion and improve safety.

The purpose of this project is to enable arterial traffic monitoring, signal control and more rapid incident detection along SR 378 in Gwinnett County from Norcross to Lilburn. An intelligent transportation system will improve signal progression and traffic surveillance, as well as the ability to control signal timing to manage traffic back-up due to incidents along the roadway. The ITS system will provide opportunity for more responsive progression of traffic through the SR 378 corridor.

Description of the proposed project:

This project includes the design of fiber optic communications cable and closed-circuit television (CCTV) cameras along SR 378 between US 23/SR 13 in Norcross and US 29/SR 8 in Lilburn. The approximate length of this project is 6.4 miles. An underground fiber optic trunk line will be installed along the shoulder of SR 378 between US 23/SR 13 and US 29/SR 8. This cable will be spliced to an existing fiber optic cable along US 29/SR 8 to the Gwinnett County TCC. Thirteen CCTV cameras will be installed as well as fiber optic drop cables to 13 traffic signals. The cameras will communicate with the TCC through Ethernet field switches.

The following sections outline ITS field device locations:

Closed Circuit Television (CCTV)

Thirteen new CCTV cameras will be installed and connected via Ethernet into the proposed communications system. Proposed camera locations include the following intersections:

1. SR 378 @ US 23/SR 13
2. SR 378 @ Light Circle
3. SR 378 near Stanford Village Lane
4. SR 378 @ East Hill Way/Wexford Drive
5. SR 378 @ Indian Trail Road
6. SR 378 @ Satellite Blvd.
7. SR 378 east of Satellite Blvd.
8. SR 378 @ Shackelford Road
9. SR 378 @ Steve Reynolds Blvd.
10. SR 378 @ Singletree Place
11. SR 378 south of Arc Way
12. SR 378 near Burns Road
13. SR 378 @ Beaver Ruin Court

Communications Network

The proposed communications infrastructure for this project consists of three (3) 1-1/4" conduits, Type 4 and 5 pull boxes, and a 72-single mode fiber communication cable, which will be installed in the shoulder of SR 378. Fiber optic drop cables will be installed for traffic signals at the following intersections:

1. US 23 /SR 13/ Buford Highway
2. East Hill Way / Wexford Drive
3. Pinnacle Way
4. Indian Trail Road
5. Castor Drive
6. Satellite Blvd.

7. I-85 SB Ramps
8. I-85 NB Ramps
9. Park Dr.
10. Steve Reynolds Blvd.
11. Arc Way
12. Burns Road
13. US 29/ SR 8/ Lawrenceville Highway

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

PDP Classification: Major Minor

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

Functional Classification: Urban Principal Arterial

U. S. Route Number(s): N/A

State Route Number(s): SR 378

Traffic (AADT):

Current Year (2002): 40,670 Design Year (2022): N/A

Existing design features:

- Typical Sections:
 - 1.) US 23 to Wynhollow Trace: 4-12 ft. travel lanes with a 16' two-way-left-turn lane and concrete curb and gutter on both sides of the roadway.
 - 2.) Wynhollow Trace to Indian Trail Rd.: 4-12 ft. travel lanes with a 20' raised median and concrete curb and gutter on both sides of the roadway.
 - 3.) Indian Trail Rd. to Satellite Blvd.: 6-12 ft. travel lanes with a 20' raised median and concrete curb and gutter on both sides of the roadway.
 - 4.) Satellite Blvd. to I-85 SB Ramps: 4-12 ft. travel lanes with a 20' raised median and concrete curb and gutter on both sides of the roadway.
 - 5.) I-85 NB Ramps to Park Dr.: 4-12 ft. travel lanes with a 14' two-way-left-turn lane and concrete curb and gutter on west side of the roadway.
 - 6.) Park Dr. to US 29: 4-12 ft. travel lanes with a 20' raised median and concrete curb and gutter on both sides of the roadway.
- Posted speed:
 - 1.) US 23/SR 13 to Light Circle: 35 mph
 - 2.) Light Circle to US 29/SR 8: 45 mph
- Minimum Radius: N/A
- Maximum grade: N/A
- Width of right of way: *Varies from 100 ft to 150 ft*
- Major structures: *None*
- Major interchanges or intersections along the project: *See intersection list on pages 2 and 3*
- Existing length: 6.42 mi
Begin Project MP 0.00

End Project MP 6.42

Proposed Design Features:

- Typical Sections:
 - SR 378: *Existing sections to remain*
- Posted speed:
 - SR 378: *Varies 35 mph to 45 mph*
- Minimum Radius: *N/A*
- Maximum grade: *N/A*
- Proposed Maximum grade Mainline: *N/A* Maximum grade allowable: *N/A*
- Proposed Maximum grade Side Street: *N/A* Maximum grade allowable: *N/A*
- Proposed Maximum grade driveway : *N/A*
- Proposed Minimum Radius Mainline: *N/A* Minimum Radius allowable: *N/A*
- Proposed Minimum Radius Side Street: *N/A* Minimum Radius allowable: *N/A*
- Right of way:
 - Width: *Varies 100 ft to 150 ft*
 - Easements: Temporary , Permanent , Utility , Other .
 - Type of access control: Full , Partial , By Permit , Other .
 - Number of parcels: *0* Number of displacements: *0*
 - Business: *0*
 - Residences: *0*
 - Mobile homes: *0*
 - Other: *0*
- Structures:
 - Bridges: *Beaver Ruin Rd. over I-85*
Beaver Ruin Rd. over Beaver Ruin Creek near Plantation Ln.
 - Retaining walls: *Between I-85 and Satellite Blvd.*
- Major intersections and interchanges: *See intersection list on pages 2 and 3*
- Traffic control during construction: *Shoulder closures and/or right lane closures will be required for installation of ITS devices and boring for conduit and fiber optic trunk line.*
- Design Exceptions to controlling criteria anticipated: *None anticipated.*

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ROADWAY WIDTH:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SHOULDER WIDTH:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VERTICAL GRADES:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CROSS SLOPES:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
STOPPING SIGHT DISTANCE:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SUPERELEVATION RATES:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HORIZONTAL CLEARANCE:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPEED DESIGN:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VERTICAL CLEARANCE:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BRIDGE WIDTH:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BRIDGE STRUCTURAL CAPACITY:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Design Variances: *None Anticipated*
- Environmental Concerns: *None Anticipated*
- 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: *Power service will be required for all CCTV cameras.*

Project responsibilities:

- Design: *Gresham Smith and Partners on Behalf of Gwinnett County*
- Right of Way Acquisition: *Gwinnett County*
- Relocation of Utilities: *Gwinnett County*
- Letting to contract: *Gwinnett County*
- Supervision of construction: *Gwinnett County*
- Providing material pits: *None Required*
- Providing detours: *None Anticipated*

Coordination

- Initial Concept Meeting date and brief summary. *To be determined.*
- Concept meeting date and brief summary. *To be determined.*
- P. A. R. meetings, dates and results. *None Required*
- Public involvement. *No public meetings are anticipated.*
- Local government comments.
- Other projects in the area:
- Other coordination to date:

Scheduling – Responsible Parties’ Estimate

- Time to complete the environmental process: *4 Months*
- Time to complete preliminary construction plans: *4 Months*
- Time to complete right of way plans: *N/A*
- Time to complete the Section 404 Permit: *N/A*
- Time to complete final construction plans: *2 Months*
- Time to complete to purchase right of way: *N/A*

Other alternates considered:

Alternative #1: No Build

Alternative #2: Gwinnett County considered aerial installation of the fiber optic trunk line, but because of the existing aerial utilities and anticipated make-ready work, it was decided that underground installation by directional boring was the most practical way to install the trunk line.

Comments: *None*

Attachments:

1. Cost Estimate including E & C
2. Lists of Projects in the Area
3. CCTV Camera and Drop Cable Schematic
4. Concept Report Rating Form
5. Notice of Location and Design Approval

PROJECTS IN AREA:

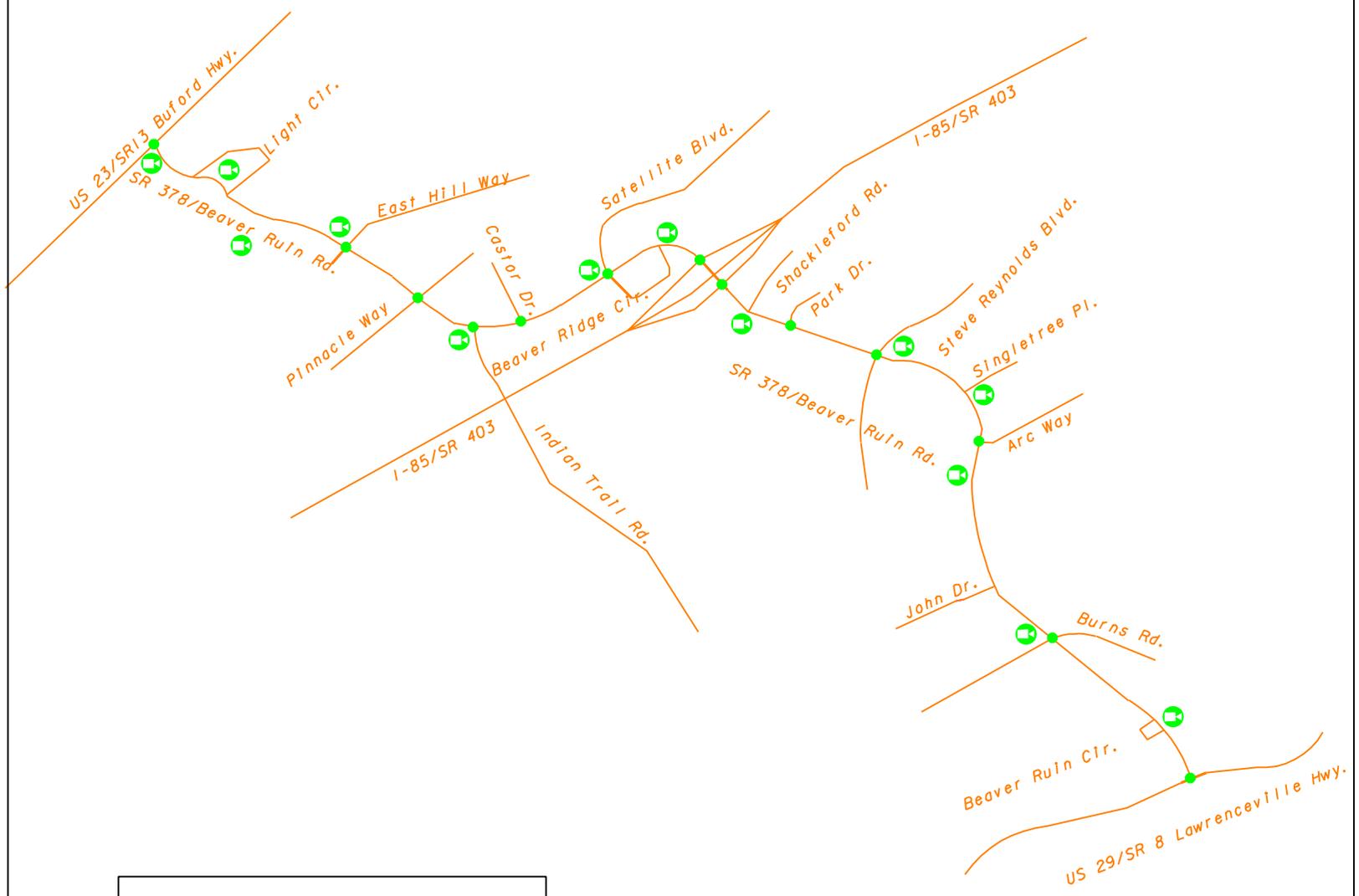
- 1. Fast Forward Signal Upgrades**

- 2. US 29 CCTV Upgrades**

- 3. Fast Forward Ramp Meters**

**SR 378 from US 23 to US 29 ITS Design
STP-0005-00(688), PI 0005688
Gwinnett County
Quantities and Cost Summary
Concept Cost Estimate**

Item Code	Description	Unit	Quantity	Engineer Estimate	
				Unit Price (\$)	Amount (\$)
150-1000	Traffic Control STP-0005-00(688)	Lump	Lump		\$ 80,000.00
151-1000	Mobilization	Lump	Lump		\$ 80,000.00
615-1200	Directional Bore, 4 IN	Lin Ft	35,000	\$ 25.00	\$ 875,000.00
639-2001	Steel Wire Strand Cable, 1/4 IN	Lin Ft	500	\$ 2.50	\$ 1,250.00
639-4004	Strain Pole, Type IV, 50 ft	Each	13	\$ 8,000.00	\$ 104,000.00
647-2140	Pullbox, PB-4	Each	30	\$ 1,000.00	\$ 30,000.00
647-2150	Pullbox, PB-5	Each	30	\$ 1,500.00	\$ 45,000.00
682-6110	Conduit, Rigid, 1 IN	Lin Ft	1,000	\$ 10.00	\$ 10,000.00
682-6120	Conduit, Rigid, 2 IN	Lin Ft	1,000	\$ 20.00	\$ 20,000.00
682-6231	Conduit, Nonmetl, TP 3, 1 1/4 IN	Lin Ft	105,000	\$ 2.00	\$ 210,000.00
935-1116	Outside Plant Fiber Optic Cable, Loose Tube, SM, 72 Fiber	Lin Ft	41,600	\$ 3.00	\$ 124,800.00
935-1512	Outside Plant Fiber Optic Cable, Drop, SM, 12 Fiber	Lin Ft	5,200	\$ 2.00	\$ 10,400.00
935-3102	Fiber Optic Closure, Underground, 12 Fiber	Each	19	\$ 800.00	\$ 15,200.00
935-3106	Fiber Optic Closure, Underground, 72 Fiber	Each	7	\$ 800.00	\$ 5,600.00
935-3603	Fiber Optic Closure, FDC Preterminated, Type A, 12 Fiber	Each	26	\$ 700.00	\$ 18,200.00
935-4010	Fiber Optic Splice, Fusion	Each	608	\$ 70.00	\$ 42,560.00
935-8000	Testing	Lump	Lump		\$ 20,000.00
935-8500	Training	Lump	Lump		\$ 10,000.00
936-1001	CCTV System, Type B	Each	13	\$ 6,000.00	\$ 78,000.00
936-8000	Testing	Lump	Lump		\$ 5,000.00
936-8500	Training	Lump	Lump		\$ 5,000.00
939-1190	Video Encoder, Type A	Each	13	\$ 5,000.00	\$ 65,000.00
939-1195	Video Decoder, Type A	Each	3	\$ 5,000.00	\$ 15,000.00
939-2300	Field Switch, Type A	Each	6	\$ 4,000.00	\$ 24,000.00
939-2305	Field Switch, Type C	Each	20	\$ 2,000.00	\$ 40,000.00
939-2232	GBIC, Type B	Each	6	\$ 4,000.00	\$ 24,000.00
939-4040	Type D Cabinet	Each	13	\$ 3,600.00	\$ 46,800.00
939-5010	Electrical Power Assembly Aerial Point	Each	13	\$ 2,500.00	\$ 32,500.00
939-8000	Testing	Lump	Lump		\$ 5,000.00
939-8500	Training	Lump	Lump		\$ 5,000.00
Total Estimate					\$ 2,047,310.00



<i>LEGEND</i>	
	<i>PROPOSED CCTV CAMERA</i>
	<i>FIBER OPTIC DROP CABLE</i>

CCTV CAMERA AND DROP CABLE SCHEMATIC

SCORING RESULTS AS PER TOPPS 2440-2

Project Number: STP-0005-00(688)		County: Gwinnett		PI No.: 0005688		
Report Date:						
<input checked="" type="checkbox"/> CONCEPT			Concept By: DOT Office: Traffic Safety and Design			
Consultant: Gresham Smith and Partners						
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 checked="" type="checkbox"/> ATMS <input type="checkbox"/> Bridge <input type="checkbox"/> Building <input type="checkbox"/> Interchange <input type="checkbox"/> Intersection <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous		
FOCUS AREAS	SCORE	RESULTS				
Presentation						
Judgment						
Environmental						
Right of Way						
Utility						
Constructability						
Schedule						

Project Concept Report
Project Number: STP-0005-00(688)
P.I. Number: 0005688
County: Gwinnett

NOTICE OF LOCATION AND DESIGN APPROVAL

**PROJECT: STP-0005-00(688) GWINNETT COUNTY
P. I. NO. 0005688**

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: OCTOBER 12, 2005

Project STP-0005-00(688) in Gwinnett County consists of installing CCTV cameras and fiber optic proposed communications cable along SR 378 between US 23/ SR 13 in Norcross and US 29/ SR 8 in Lilburn. An underground fiber optic trunk line will be installed along the shoulder of SR 378 between US 23/SR 13 and US 29/SR 8. This cable will be spliced to an existing fiber optic cable along US 29/SR 8 to the Gwinnett County TCC. Thirteen CCTV cameras will be installed as well as fiber optic drop cables to 13 traffic signals. The cameras will communicate with the TCC through Ethernet field switches.

Drawings of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation:

Mr. Jim Tolson, Traffic Design Manager
935 E. Confederate Avenue
Wayne Shackelford Building
Atlanta, GA 30316
(404) 635-8135
Email: jim.tolson@dot.state.ga.us

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

Keith Golden, P. E.
Office of Traffic Safety & Design
935 E. Confederate Avenue
Building 24
Atlanta, GA 30316
Email: keith.golden@dot.state.ga.us

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

Project Concept Report
Project Number: STP-0005-00(688)
P.I. Number: 0005688
County: Gwinnett

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

STP-0005-00(688)
GWINNETT COUNTY
P.I. NO. 0005688

FEDERAL ROUTE NO: N/A
STATE ROUTE NO: 378

SR 378 from US 23 to US 29 ITS Design

Recommendation for approval:

DATE 8-30-05 Heid Gold
State Traffic Safety & Design Administrator

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

DATE _____ State Traffic Operations Engineer
DATE _____ State Transportation Planning Administrator
DATE _____ State Transportation Programming Engineer
DATE _____ State Environmental / Location Engineer
DATE _____ District Engineer
DATE 9/19/05 Brian K. Summers
Project Review Engineer