

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 714095-, DeKalb-Clayton Counties **OFFICE** Preconstruction
CM-675-1(1)
I-675, ATMS **DATE** January 25, 2006

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

TO *MBP* SEE DISTRIBUTION

SUBJECT APPROVED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

MBP/cj

Attachment

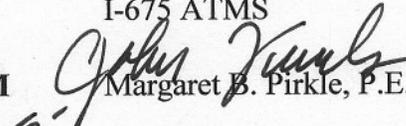
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**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 714095, DeKalb-Clayton Counties **OFFICE** Preconstruction
 CM-675-1(1)
 I-675 ATMS **DATE** January 3, 2006

FROM  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 expansion of Georgia DOT's Navigator system on I-675 from I-75 to I-285 in Clayton and DeKalb Counties. The Navigator system has nearly reached full integration inside the I-285 perimeter highway. It is currently being extended along SR 166 in Fulton County and SR 141 in DeKalb and Gwinnett Counties with further projects on I-20, I-75, I-85, I-285, I-675, I-985, SR 316, SR 400, and SR 410 planned as part of the Fast Forward Program. The expansion of the Navigator system in this region will help alleviate the congestion being experienced along this corridor during peak hours.

This project will add a fiber optic trunk line on I-675 in the median, providing a redundant link between Hubs V and U and Hubs V and N. All data and video from the project will be sent over the Department's Ethernet network. All network electronics required to operate and communicate with the devices in this project are included. Conduit and cables will be installed as follows:

- From I-285/Hub V to I-75, install conduit duct bank type 3 (four 2" conduits). Use one of the conduits to carry a single-mode fiber optic cable for new devices. Splice fibers from the I-675 cable to the existing I-75 hub-to-hub cable to connect Hub V and N and install a new cable in the existing conduit duct bank along I-75 to connect Hub V and U. This will enable redundancy.
- From I-285/Hub V to SR 138, use one of the 1-1/4" conduits to install another 72 fiber single-mode fiber optic cable for Clayton County's future use. Clayton County's 72 fiber cable will be terminated in Hub V and in a pull box at SR 138. Between termination points, the cable will be continuous and run through pull boxes located adjacent to each interchange road crossing (to enable Clayton County easy access), including SR 138, SR 42, Rex Road, Ellenwood Road, and Anvil Block Road.

Other devices included in this project will be two types of cameras: a closed circuit television (CCTV) camera for general traffic surveillance and a camera for vehicle detection (VDS). The traffic surveillance and vehicle detection cameras will be mounted on concrete poles in the median, off the shoulder, or mounted on existing sign structures.

David Studstill

Page 2

P. I. No. 714095, DeKalb-Clayton

January 3, 2006

Two changeable message signs (CMS) will be installed on this project. The northbound CMS will be located on I-675 approximately 0.3 mile south of the Double Bridge Road bridge. The southbound CMS will be located on I-675 approximately 0.3 mile north of the Grant Road bridge.

All network electronics required to operate and communicate with the devices in this project are included as well. This includes electronic equipment to be located in the hubs or in the equipment room at the TMC. Network electronics include devices for multiplexing video and data signals for converting analog signals to digital signals for transmission on fiber and video switches.

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

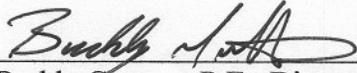
The estimated costs for this project are:

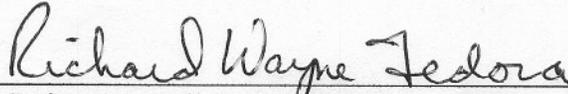
	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C and inflation)	\$7,649,000	\$16,493,000	GRVA	2007
Right-of-Way & Utilities	-0-	-0-		

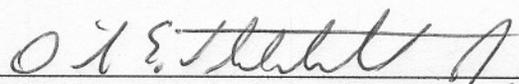
Expanding Navigator to this corridor will allow quicker detection and verification of incidents at the TMC, resulting in better information to travelers, quicker response by Highway Emergency Response Operators (HEROs), and improve highway safety. This project is in the STIP. I recommend this project 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

NOTICE OF LOCATION AND DESIGN APPROVAL
PROJECT: CM-675-1(1) DEKALB/CLAYTON COUNTY
P. I. NO. 0714095

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 projects.

Date of Location and Design Approval: JANUARY 25, 2006

Project CM-675-1(1) in DeKalb/Clayton Counties consists of expanding the NaviGator ATMS system along I-675 from the I-285 interchange in DeKalb County, through Clayton County, to the I-75 interchange in Henry County. The project will include complete CCTV surveillance and detection coverage necessary to provide roadway condition information to the NaviGator system. In turn, CMSs are to be installed to allow NaviGator operators to communicate roadway condition information back to drivers. The CCTV cameras will allow for improved monitoring of the interchanges and operation of the ramp meters at the Transportation Management Center (TMC). This project will install the fiber optic trunk line along I-675 from the hub that will be installed under another project at the I-285/I-675 interchange to the existing hub U on I-75. Existing fiber optic cable will also be used to communicate north to existing hub N.

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) 635-8139
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.

SCORING RESULTS AS PER TOPPS 2440-2

Project Number: CM-675-1(1)		County: DeKalb & Clayton		PI No.: 714095	
Report Date: December 1, 2003 <input checked="" type="checkbox"/> CONCEPT		Concept By: DOT Office: Traffic Safety & Design Consultant: TransCore			
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	100				
Judgement	100				
Environmental	100				
Right of Way	100				
Utility	100				
Constructability	100				
Schedule	100				

del
 12/9/2005

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

OFFICE OF TRAFFIC SAFETY AND DESIGN

PROJECT CONCEPT REPORT

CM-675-1(1)

DeKalb & Clayton Counties

P. I. Number: 714095

Federal Route Number: I-675

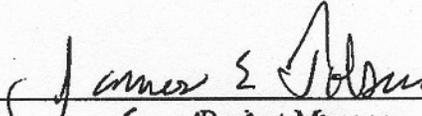
State Route Number: 413

NaviGator Communications and Surveillance
Expansion on I-675 from I-75 to I-285

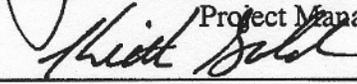
11/22/05
Date of Letter


Recommendation for approval:

DATE 11/15/05


Project Manager

DATE 11-21-05


State Traffic Safety & Design Engineer

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

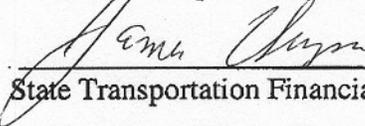
DATE _____

State Transportation Operations Engineer

DATE _____

State Transportation Planning Administrator

DATE 11-29-05


State Transportation Financial Mgmt. Administrator

DATE _____

State Environmental / Location Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

OFFICE OF TRAFFIC SAFETY AND DESIGN

PROJECT CONCEPT REPORT

CM-675-1(1)
DeKalb & Clayton Counties
P. I. Number: 714095

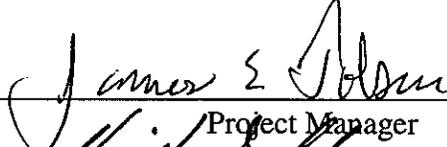
Federal Route Number: I-675
State Route Number: 413

NaviGator Communications and Surveillance
Expansion on I-675 from I-75 to I-285

Recommendation for approval:

DATE 11/15/05

DATE 11-21-05


Project Manager

State Traffic Safety & Design Engineer

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

DATE _____

State Transportation Operations Engineer

DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Financial Mgmt. Administrator

DATE _____

State Environmental / Location Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

PROJECT LOCATION MAPS

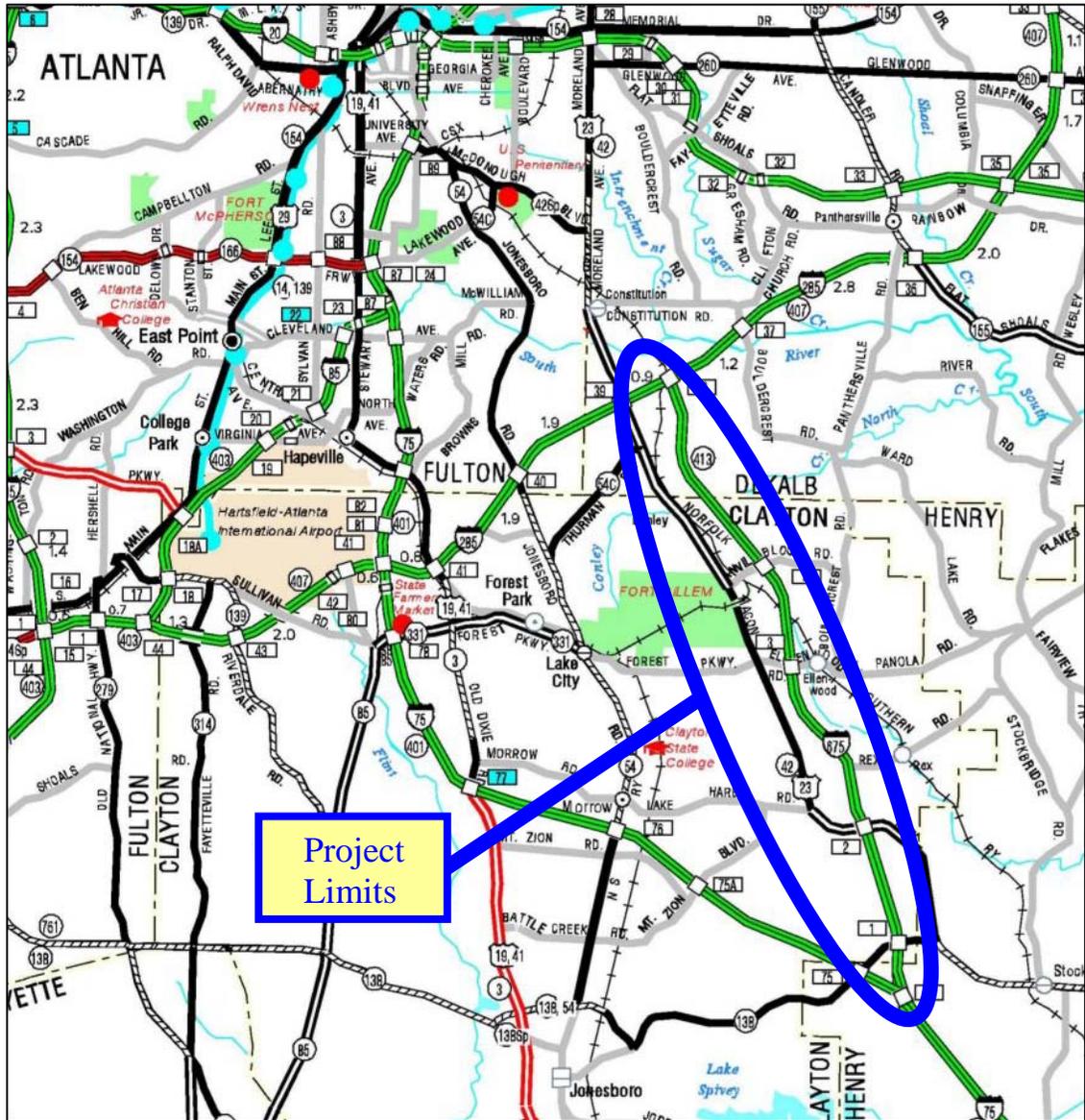


Figure 1: Location of Project in DeKalb and Clayton Counties

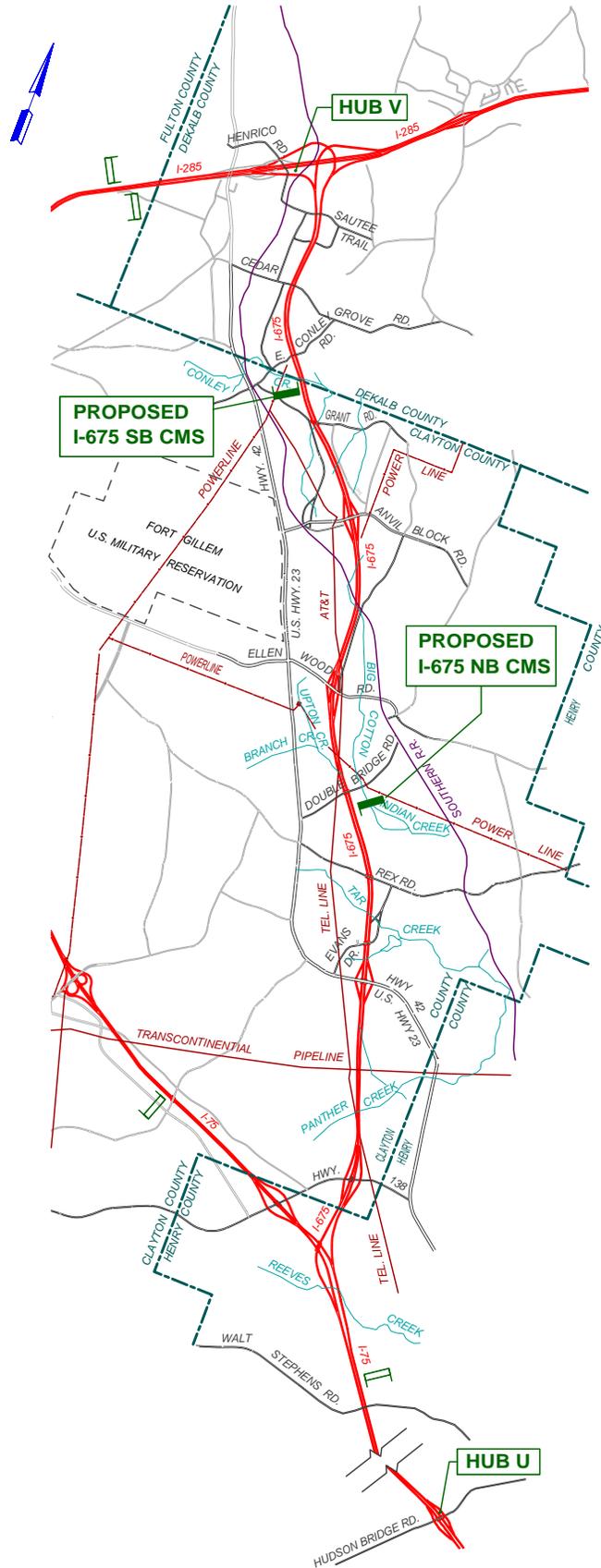


Figure 2: Detail Map of Project

Need and Purpose:

The purpose of this project is to increase the efficiency and safety of the corridor by expanding the NaviGator system on I-675 from the interchange with I-285 to the interchange with I-75. The expansion of the NaviGator system in this region permits operators at the TMC to detect incidents and dispatch appropriate response teams to clear incidents with minimal delay. Time savings along this corridor will be accomplished by reducing incident response/clearance times, preventing secondary accidents, and providing information to motorists of roadway/traffic conditions.

The Georgia DOT's NaviGator – Intelligent Transportation System has been in operation since April 1996. It is currently being extended with project on I-20, I-75, I-85, I-285, I-575, I-675, SR 400 and US 78 planned as part of the Fast Forward Program. The system consists of surveillance cameras (CCTV), vehicle detection system (VDS) cameras, radar detection systems (RDS), changeable message signs (CMS), and ramp meters. By use of a fiber optic communications backbone, all the devices are tied to the Transportation Management Center (TMC) and various traffic control centers (TCCs) in the Metro Atlanta area. Operators at the TMC are able to detect incidents and dispatch the appropriate response teams with minimal delay. The NaviGator system benefits the trucking industry and motorists by reducing incident response/clearance times and by providing better information with consequential safety improvement.

On April 14, 2004 Governor Sonny Perdue introduced the Fast Forward Congestion Relief Program, which includes accelerated growth of the NaviGator system throughout the Metro Atlanta region. The Fast Forward Program provides \$211 million to expand the NaviGator and Highway Emergency Response Operator (HERO) coverage with a goal of reducing peak hour delays by 30 percent. This project will assist in faster detection of incidents at the TMC, resulting in quicker response by emergency personnel, better information to travelers, and improved highway safety.

Description of the proposed project: This project, CM-675-1(1), will include the installation of the NaviGator system along I-675 from I-75 to I-285, 10.7 miles. Included in the project will be two changeable message signs, vehicle detection coverage, CCTV cameras, and conduit/fiber optic cable communications system. The following outlines the proposed facilities included in this project:

Changeable Message Signs

Two changeable message signs (CMSs) will be installed on this project. The northbound CMS will be located on I-675 approximately 0.3 miles south of the Double Bridge Road bridge. This location allows a motorist two northbound diversion points (Ellenwood Road and Anvil Block Rd.) prior to reaching I-285. The southbound CMS will be located on I-675 approximately 0.3 miles north of the Grant Road bridge. This location allows a motorist four southbound diversion points (Anvil Block Road, Ellenwood Road, US 23/SR 42, and SR 138) prior to merging with southbound I-75.

Vehicle Detection

Full detection coverage of I-675 will be provided using microwave radar detection or other non-intrusive vehicle detection at 1/3 mile spacing (approximately 64 detection units). The vehicle detectors will be mounted on concrete poles located in the median of the freeway wherever possible, with one vehicle detector unit facing the southbound lanes and a second facing the northbound lanes. If detection other than microwave radar is used, make sure the alternative detectors can be placed in the median or the project cost may increase substantially to locate detectors along the shoulders.

Closed Circuit Television (CCTV) Cameras

Full camera surveillance coverage of I-675 will be provided using dome cameras at 1 mile spacing (approximately 16 cameras). The cameras will be mounted on concrete poles located in the median (co-located with vehicle detection), off the shoulder, or mounted on existing sign structures. The poles or other mounting apparatus for the cameras are included in this project.

Communications System

This project will add a fiber optic trunk line on I-675 in the median, providing a redundant link between Hubs V and U and Hubs V and N. All data and video from the project will be sent over the Department's Ethernet network. All network electronics required to operate and communicate with the devices in this project are included. Conduit and cables will be installed as follows:

- From I-285/Hub V to I-75, install conduit duct bank type 3 (four 2" conduits). Use one of the conduits to carry a single-mode fiber optic cable for new devices. Splice fibers from the I-675 cable to the existing I-75 hub-to-hub cable to connect Hub V and N and install a new cable in the existing conduit duct bank along I-75 to connect Hub V and U. This will enable redundancy.
- From I-285/Hub V to SR 138, use one of the 1¼ inch conduits to install another 72 fiber single-mode fiber optic cable for Clayton County's future-use. Clayton County's 72-fiber cable will be terminated in hub V and in a pull box at SR 138. Between termination points, the cable will be continuous and run through pull boxes located adjacent to each interchange road crossing (to enable Clayton County easy access), including SR 138, SR 42, Rex Road, Ellenwood Road, and Anvil Block Road. If this cable is installed in time, Clayton County will use it during their ATMS expansion in 2005 through 2010. If the I-675 ATMS project is constructed after Clayton County has completed their expansion, then the need for this cable should be discussed with Clayton County. Contact the Clayton County Traffic Engineer at 770-477-3691 to determine their status.

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: Interstate Principle Arterial

U. S. Route Number(s): I-675 State Route Number(s): 413

Traffic (AADT):

Year: (2005) 71,360 Design Year: (20YY) N/A Current

Existing design features:

- Typical Section: 4 lane divided
- Posted speed 65 mph Maximum degree of curvature: N/A
- Maximum grade: N/A % (List mainline, cross roads, and driveways)
- Width of right of way: N/A ft.
- Major structures: Yes List all bridge structures including length, width, and sufficient rating).

SR 138	(bridge)
Panther Creek	(bridge)
SR 42 / US 23	(freeway under crossing)
Evans Drive	(freeway under crossing)
Tar Creek	(bridge)
Rex Rd.	(freeway under crossing)
Double Bridge Rd.	(freeway under crossing)
Upton Creek	(bridge)
Ellenwood Rd.	(freeway under crossing)
Big Cotton Indian Creek	(bridge)
Southern Railway	(bridge)
Anvil Block Rd.	(freeway under crossing)
Grant Rd.	(freeway under crossing)
Conley Creek	(bridge)
E. Conley Rd.	(bridge)
Cedar Grove Rd.	(freeway under crossing)
Henrico Rd.	(bridge)
- Major interchanges or intersections along the project: SR 138, SR 42/US 23, Ellenwood Rd., and Anvil Block Rd.
- Existing length of roadway segment and the beginning mile logs for each county segment. For new location projects, the existing length of roadway is zero (0).

Length of roadway segment = 10.7 miles

Begin Project:	Henry Co.	Mile 0.3 to Mile 0.7
	Clayton Co.	Mile 0.0 to Mile 7.6
End Project:	DeKalb Co.	Mile 0.0 to Mile 2.7

Proposed Design Features:

- Proposed typical section(s): Existing section to remain
- Proposed Design Speed Mainline N/A mph
- 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 Maximum degree of curve N/A Maximum grade allowable N/A %.
- Right of way
 - Width Existing
 - Easements: Temporary (), Permanent (), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (), Other ().
 - Number of parcels: None Number of displacements:
 - Business: None
 - Residences: None
 - Mobile homes: None
 - Other: None
- Structures:
 - Bridges: N/A
 - Retaining walls: N/A
- Major intersections and interchanges: N/A
- Traffic control during construction: Left and/or right shoulder closures will be required for installation of ITS devices and trenching for conduit and fiber optic communications. Traffic pacing will be required for the installation of CMS.
- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

- Design Variances: None
- Environmental concerns: None anticipated
- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (X), No (),

- Categorical exclusion (X),
- Environmental Assessment/Finding of No Significant Impact (FONSI) (X), or
- Environmental Impact Statement (EIS) ().
- Utility involvements: Power service will be required for all field devices. Freeway crosses the Southern railroad, permits may be required to work over railroad ROW for conduit installation on existing bridge.

Project responsibilities:

- Design, *Office of Traffic Safety and Design*
- Right of Way Acquisition, *None required*
- Relocation of Utilities, *None required*
- Letting to contract, *GDOT*
- Supervision of construction, *District Construction*
- Providing material pits, *None required*
- Providing detours. *None anticipated*

Coordination

- Concept meeting date and brief summary. *The concept meeting was conducted on 3/29/04. Twelve attendees were present. The draft concept report was presented. The southbound CMS was moved at GDOT TMC Operations request to 1.1 mile north of Anvil Block Road. The 24-fiber cable being installed for Clayton County was increased to a 72-fiber cable to meet Clayton County's future communications needs in the area. These two items were the only recommended changes to the draft concept report.*
- P. A. R. meetings, dates and results. *None*
- FEMA, USCG, and/or TVA, *None*
- Public involvement. *No public meetings are anticipated.*
- Local government comments. *None*
- Other projects in the area:

322050 STP-037-2(56) RDY_TO_LET: JULY 2009. SR 42 FM SR 138/STOCK'GE TO I-675 NB RAMPS|&CLVERT/32205X. HENRY CO.

713300 IM-NH-285-1(352) UNDER DESIGN. I-285/BOULDERCREST RD INTRCHG PROJ. RECOSTRUCTING RAMPS BETWEEN BOULDERCREST AND I-675.

- Other coordination to date.
- Railroads: I-675 crosses over the Southern Railway at MP 5.77 in Clayton Co.

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 3 Months.
- Time to complete preliminary construction plans: 6 Months.
- Time to complete right of way plans: N/A Months.
- Time to complete the Section 404 Permit: N/A Months.
- Time to complete final construction plans: 3 Months.
- Time to complete to purchase right of way: N/A Months.

- List other major items that will affect the project schedule: ___N/A___Months

Other alternates considered: *No Build*

Comments: *None*

Attachments: Cost Estimate for I-675 ATMS Construction including E&C
Notice of Location and Design Approval
Concept Report Rating Form

Attachment – Cost Estimate for I-675 ATMS Construction

Item Code	Item	Unit	Quantity	Unit Price	Total
150-1000	TRAFFIC CONTROL NH-00TS(54)	LUMP	LS	\$ 175,000.00	\$ 175,000.00
153-1300	FIELD OFFICE, TP 3	EA	1	\$ 54,000.00	\$ 54,000.00
615-1200	DIRECTIONAL BORE, 5 IN	LF	2775	\$ 18.50	\$ 51,338.00
622-1032	PRECAST CONCRETE MEDIAN BARRIER, METHOD 2	LF	1000	\$ 43.00	\$ 43,000.00
631-2163	LED PIXEL CMS, WALK-IN, 3x21, 18 IN, TYPE B	EA	2	\$ 120,000.00	\$ 240,000.00
631-8000	TESTING	LUMP	LS	\$ 5,500.00	\$ 5,500.00
631-8500	TRAINING	LUMP	LS	\$ 5,500.00	\$ 5,500.00
632-0003	VARIABLE MESSAGE SIGN, PROTABLE, TYPE 3	EA	2	\$ 15,000.00	\$ 30,000.00
638-1001	STR. SUPPORT FOR OVERHEAD SIGN, TP 1	EA	2	\$ 45,000.00	\$ 90,000.00
639-4004	STRAIN POLE, TP IV	EA	36	\$ 5,200.00	\$ 187,200.00
641-1200	GUARDRAIL, TP W	LF	13550	\$ 18.00	\$ 243,900.00
641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	78	\$ 580.00	\$ 45,240.00
641-5012	GUARDRAIL ANCHORAGE, TP 12	EA	78	\$ 1,650.00	\$ 128,700.00
647-XXXX	PULLBOX, PB 7	EA	70	\$ 1,500.00	\$ 105,000.00
682-6222	CONDUIT, NONMETL, TP2, 2 IN	LF	57000	\$ 8.50	\$ 484,500.00
682-6233	CONDUIT, NONMETL, TP3, 2 IN	LF	1900	\$ 3.00	\$ 5,700.00
682-6540	CONDUIT, FIBERGLASS, 2 IN	LF	7200	\$ 45.00	\$ 324,000.00
682-7062	CONDUIT DUCT BANK, TYPE 3	LF	60000	\$ 30.00	\$ 1,800,000.00
682-9028	ELECTRICAL COMMUNICATION BOX, TP 5	EA	10	\$ 3,500.00	\$ 35,000.00
935-1113	OUTSIDE PLANT FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 24 FIBER	LF	58080	\$ 2.00	\$ 116,160.00
935-1118	OUTSIDE PLANT FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 144 FIBER	LF	132000	\$ 5.00	\$ 660,000.00
935-1513	OUTSIDE PLANT FIBER OPTIC CABLE, DROP, SINGLE MODE, 24 FIBER	LF	7600	\$ 3.50	\$ 26,600.00
935-3103	FIBER OPTIC CLOSURE, UNDERGROUND, 24 FIBER	EA	66	\$ 600.00	\$ 39,600.00
935-3108	FIBER OPTIC CLOSURE, UNDERGROUND, 144 FIBER	EA	12	\$ 2,000.00	\$ 24,000.00
935-3403	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 24 FIBER	EA	56	\$ 750.00	\$ 42,000.00
935-3406	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 144 FIBER	EA	2	\$ 2,000.00	\$ 4,000.00
935-4010	FIBER OPTIC SPLICE, FUSION	EA	3750	\$ 50.00	\$ 187,500.00
935-8000	TESTING	LUMP	LS	\$ 5,000.00	\$ 5,000.00
935-8500	TRAINING	LUMP	LS	\$ 5,000.00	\$ 5,000.00
936-1001	CCTV SYSTEM, TYPE B	EA	16	\$ 12,000.00	\$ 192,000.00

936-8000	TESTING	LUMP	LS	\$ 9,500.00	\$ 9,500.00
936-8500	TRAINING	LUMP	LS	\$ 5,000.00	\$ 5,000.00
937-1000	VIDEO DETECTION SENSOR ASSEMBLY	EA	64	\$ 5,100.00	\$ 326,400.00
937-3010	VIDEO DETECTION SYSTEM PROCESSOR, TYPE A	EA	54	\$ 12,000.00	\$ 648,000.00
937-8000	TESTING	LUMP	LS	\$ 12,000.00	\$ 12,000.00
937-8500	TRAINING	LUMP	LS	\$ 7,500.00	\$ 7,500.00
937-3010	VIDEO ENCODER, TYPE A	EA	16	\$ 5,000.00	\$ 80,000.00
939-2221	GBIC ENTERPRISE ROUTING SWITCH MODULE, 8 PORT	EA	3	\$ 15,000.00	\$ 45,000.00
939-2232	GBIC TYPE B	EA	15	\$ 4,000.00	\$ 60,000.00
939-2300	FIELD SWITCH, TYPE A	EA	16	\$ 4,000.00	\$ 64,000.00
939-2301	FIELD SWITCH, TYPE B	EA	20	\$ 7,000.00	\$ 140,000.00
939-4040	TYPE D CABINET	EA	36	\$ 4,000.00	\$ 144,000.00
939-5010	ELECTRICAL POWER SERVICE ASSEMBLY, AERIAL SERVICE POINT	EA	15	\$ 2,750.00	\$ 41,250.00
939-8000	TESTING	LUMP	LS	\$ 7,500.00	\$ 7,500.00
939-8500	TRAINING	LUMP	LS	\$ 7,500.00	\$ 7,500.00
TOTAL ESTIMATE					\$ 6,953,088.00

TOTAL ESTIMATE:	\$ 6,953,088.00
INFLATION:	\$ -
10% E & C:	\$ 695,309.00
TOTAL PROJECT COST:	\$ 7,648,397.00