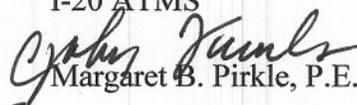


D.O.T. 66

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 714080, Douglas-Cobb-Fulton Counties **OFFICE** Preconstruction
NH-20-1(86)
I-20 ATMS **DATE** November 3, 2005

FROM *to*  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

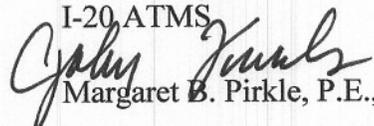
DISTRIBUTION:

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

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 714080, Douglas-Cobb-Fulton Counties **OFFICE** Preconstruction
 NH-20-1(86)
 I-20, ATMS **DATE** October 5, 2005

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

TO *Dr.* 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-20 in Douglas, Cobb, and Fulton Counties, from the Thornton Road (SR 6) intersection in Douglas County, through Cobb County, to the I-285 interchange in Fulton County. The expansion of the Navigator system in this region will help alleviate the congestion currently being experienced along this corridor during peak hours. These time savings will be accomplished by reducing incident response/clearance times, reducing secondary accidents, and providing information to motorists of the conditions ahead.

There are 2 future HOV projects programmed for construction within the project limits; one in Fiscal Year (FY) 2009 and another in FY 2010. The limits of the FY 2010 project extend from Bill Arp Road (SR 5) to Thornton Road (SR 6); however, the Department has not issued a Notice to Proceed for a consultant to begin developing a concept. The limits of the FY 2009 project extend from Thornton Road (SR 6) to HE Holmes Drive (SR 280). Based on the preliminary concept provided by the Department, this project will expand the existing roadway from 4 travel lanes in each direction to 6 travel lanes in each direction, which includes 2 dedicated HOV lanes and 4 mainline travel lanes separated by a concrete barrier. Generally the HOV project will result in the addition of approximately 40' of pavement on each side of the roadway. Locating the communications infrastructure for the ATMS project as close to the back of the current clear zone (as per recently changed Department standard) is not desirable as it will require a total relocation of the communications infrastructure by the HOV project. Locating the communications infrastructure for the ATMS project as close to the back of the future clear zone or even at the right-of-way line is also not desirable, as such a location will require a significant clearing and grubbing operation just to mobilize trenching or directional boring equipment. In addition, the current HOV concept shows numerous locations with land disturbance to the right-of-way line or even beyond the existing right-of-way line. Based on the aforementioned issues, it is recommended to locate the communications infrastructure in the median.

This project will use the new digital communications architecture. The video data and control communications from the CCTCV cameras will be sent via Gigabit Ethernet network as opposed to the older analog method involving switches and multiplexers. All network electronics required to operate and communicate with the devices in this project are included as well. This includes new field device connections to the existing Hub "G". CCTV cameras will be designed to

David Studstill

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P. I. No. 714080, Douglas-Cobb-Fulton

October 5, 2005

provide continuous coverage of I-20 within the project limits from west of Thornton Road (SR 6) to I-285. These cameras will be mounted on poles located on the median barrier wall. However, where appropriate, some cameras may be on existing sign structures. This project will include color pan/tilt/zoom surveillance cameras with typical spacing of approximately two-thirds to one mile along the project design area with cameras located as needed to provide interchange and general mainline coverage as well as coverage of future ramp meter locations. The poles or other mounting apparatus for the cameras are included in this project.

Radar locations will be chosen to provide an average spacing of one-third to one-half mile along the project design area of I-20 from Thornton Road (SR 6) to I-285. These radar units will be mounted on poles located on the median barrier wall. The radar units will be located such that existing exit ramp data can be obtained. Collection of entrance ramp data by radars is not required since inductive loops to be installed by the future ramp metering project will collect this data. In addition, every effort will be made to locate the radar units such that future exit ramp data can be obtained for both realigned general purpose ramps and proposed HOV drop ramps (per HOV concept drawings). Because of narrow existing and proposed (per HOV concept drawings) median shoulder lanes, 2 radar units will be required to monitor each direction of traffic with 1 radar positioned in a forward-facing position to monitor the closest lane and 1 radar positioned in a side-fire position to monitor all other lanes (including ramp lanes where applicable). Typically, 4 radar units will be mounted on each pole such that both traffic directions can be monitored.

Two changeable message signs (CMSs) are proposed for this project. One CMS will be mounted over eastbound traffic lanes on a full span structure approximately 2.0 miles west of Thornton Road (SR 6) and will display 3 rows by 21 characters (3 x 21). It is anticipated that this sign will be very useful in providing traveler information in advance of the first HOV project. In addition, Thornton Road (SR 6) to the south provides a diversion from I-285 to the Hartsfield-Jackson Atlanta International Airport area. A second CMS will be mounted on a butterfly structure located on the median barrier wall and will face the westbound traffic lanes approximately 1.0 mile east of Fulton Industrial Boulevard in the vicinity of the existing eastbound CMS.

This project does not include a new hub building. This project will extend the fiber optic trunk line along I-20 utilizing the existing Hub "G".

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

David Studstill

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P. I. No. 714080, Douglas-Cobb-Fulton

October 5, 2005

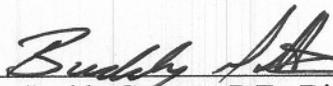
The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C and inflation)	\$5,084,000	\$9,916,000	Q05	2006
Right-of-Way & Utilities	-----	-----		

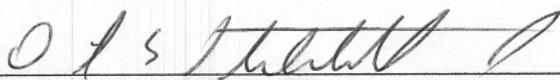
Expanding Navigator to this corridor will allow quicker detection and verification of incidents at the TMC, resulting in better information to travelers, quicker response by Highway Emergency Resonse Operators (HEROs), and improve highway safety. This project is in the STIP. I recommend this project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

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE



FILE: NH-20-1(86) Douglas/Cobb/Fulton
P.I. No. 714080
I-20 ATMS

OFFICE: Engineering Services

DATE: September 20, 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 19, 2005 from Keith Golden, and have no comments.

The costs for this project are:

Construction	\$4,621,435
Inflation	\$0.00
E & C	\$462,144
Reimbursable Utilities	\$0.00
Right of Way	\$0.00

REW

c: Keith Golden, Attn.: Jim Tolson

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

PROJECT CONCEPT REPORT
NH-20-1 (86)
DOUGLAS, COBB & FULTON COUNTIES
P.I. NO. 714080

FEDERAL ROUTE NO: NH-201, I-20
STATE ROUTE NO: 402

*ATMS/I-20 Communication/Surveillance from
Thornton Road (SR 6) to I-285*

Recommendation for approval:

DATE 8-30-05 
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

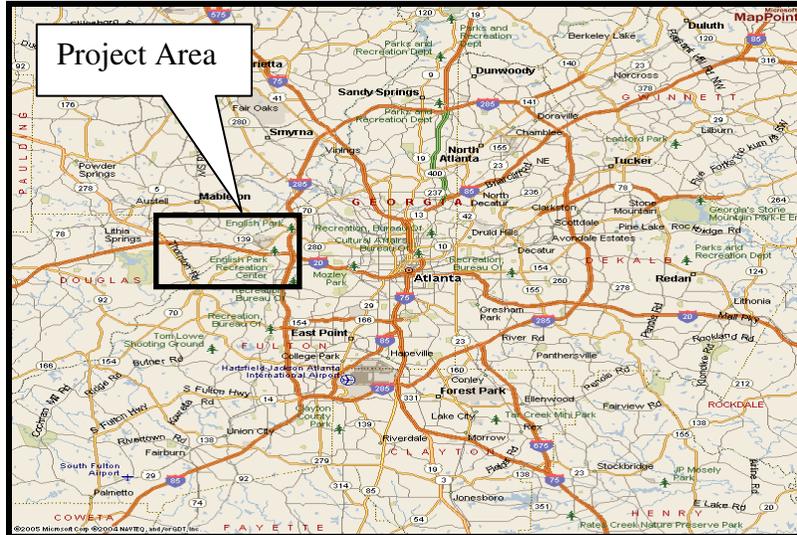
DATE _____
State Financial Management Administrator

DATE _____
State Environmental / Location Engineer

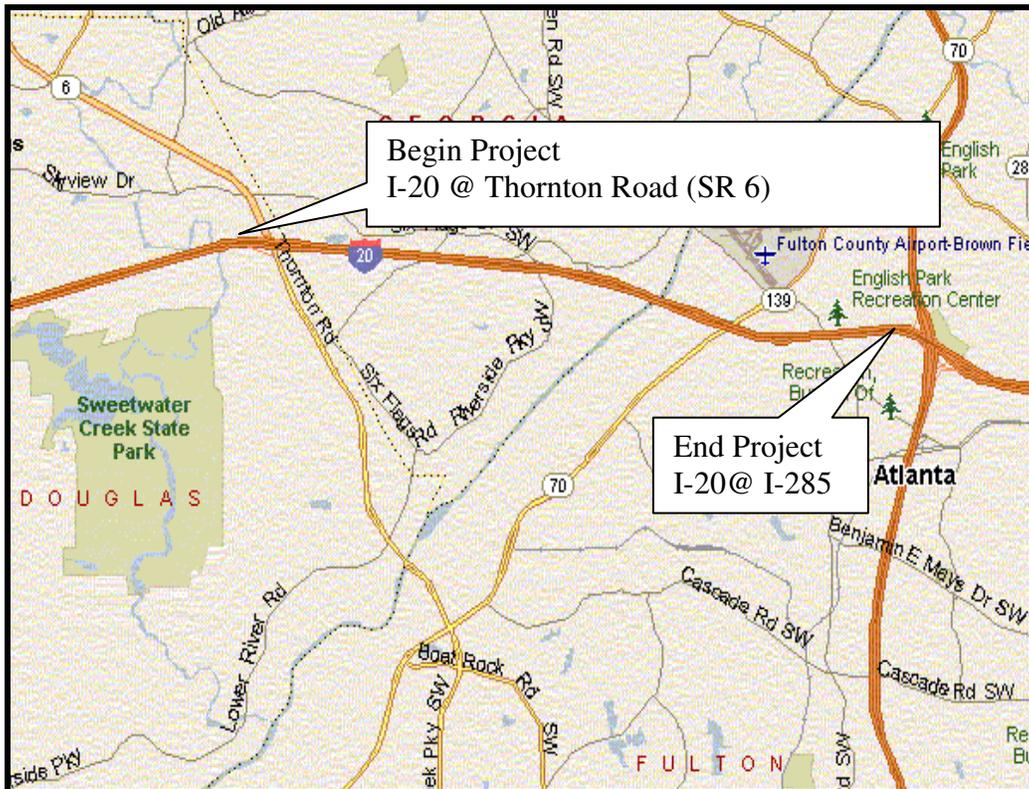
DATE _____
District Engineer

DATE _____
Project Review Engineer

PROJECT LOCATION MAPS



Location of Project in Douglas, Cobb and Fulton Counties



Need and Purpose:

The purpose of this project is to expand the NaviGator system along I-20 in Douglas, Cobb, and Fulton Counties, from the Thornton Road (State Route (SR) 6) interchange in Douglas County, through Cobb County, to the I-285 interchange in Fulton County. The expansion of the NaviGator system in this region will help alleviate the congestion currently being experienced along this corridor during peak hours. These time savings will be accomplished by reducing incident response/clearance times, reducing secondary accidents, and providing information to motorists of the conditions ahead.

The Georgia DOT's NaviGator – Intelligent Transportation System has been in operation since April 1996. Initially providing coverage on Interstates 75 and 85, primarily within 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-575, I-675, I-985, SR 316, SR 400, and SR 410 planned as part of the Fast Forward Program. The system consists of Closed Circuit Television (CCTV) cameras, Vehicle Detection System (VDS) cameras, Microwave Radars, Changeable Message Signs (CMS), and ramp meter traffic signals that use either Intersection Vehicle Detection System (I-VDS) cameras or inductive loops for detector input. By use of a fiber optic communications backbone, all the devices are tied to the Transportation Management Center (TMC) and various TCCs in the Metro Atlanta area. Operators located at the TMC are able to detect incidents and dispatch, with minimal delay, appropriate response teams. The NaviGator program benefits the trucking industry and motorists by reducing incident response/clearance times and providing better information with consequential safety improvements.

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%. This project covers I-20 from Thornton Road (SR 6) to I-285. This work will assist in faster detection of incidents at the TMC, resulting in better information to travelers, quicker response by HEROs and improved highway safety.

Description of the proposed project:

Coverage

This project will include complete CCTV and Microwave Radar 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. NaviGator equipment will be installed along I-20 between Thornton Road (SR 6) and I-285. There is an existing CMS and CCTV on I-20 east of the Fulton Industrial Boulevard interchange (refer to the "CCTV Cameras" and "CMSs" sections of this Concept Report). This project will extend the fiber optic trunk line along I-20 utilizing the existing Hub "G".

Impact of Upcoming High Occupancy Vehicle (HOV) Lanes Project

There are two (2) future HOV projects programmed for construction within the project limits, one (1) in Fiscal Year (FY) 2009 and another in FY 2010. The limits of the FY 2010 project extend from Bill Arp Road (SR 5) to Thornton Road (SR 6); however, the Department has not issued a Notice to Proceed for a consultant to begin developing a concept. The limits of the FY 2009 project extend from Thornton Road (SR 6) to HE Holmes Drive (SR 280). Based on the preliminary concept provided by the Department, this project will expand the existing roadway from four (4) travel lanes in each direction to six (6) travel lanes in each direction, which includes two (2) dedicated HOV lanes and four (4) mainline travel lanes separated by a concrete barrier. Generally the HOV project will result in the addition of approximately forty (40) feet of pavement on each side of the roadway. Locating the communications infrastructure for the ATMS project as close to the back of the current clear zone (as per recently changed Department standard) is not desirable, as it will be require a total

relocation of the communications infrastructure by the HOV project. Locating the communications infrastructure for the ATMS project as close to the back of the future clear zone or even at the right-of-way line is also not desirable, as such a location will require a significant clearing and grubbing operation just to mobilize trenching or directional boring equipment. In addition, the current HOV concept shows numerous locations with land disturbance to the right-of-way line or even beyond the existing right-of-way line. Based on the aforementioned issues, it is recommended to locate the communications infrastructure in the median.

Currently, the HOV project concept depicts a future 4' (measured from the face of the 2.5' wide median barrier wall to the inside travel lane) paved median shoulder. This ATMS concept recommends that the existing minimum 6.75' paved median shoulders be retained in the HOV concept to allow sufficient room for the installation of conduit (fiber/power) trunk, Electrical Communication Boxes (ECBs) for fiber optic cable, and pullboxes for power service. This recommendation will require that the current HOV concept be revised since it is currently calling for future 4' paved median shoulders. More explanation is provided in the "Communications Plan" section of this report. This conceptual installation location is based on the presumption that the HOV project will not disturb the existing minimum 6.75' paved median shoulders with the exception of possibly needing to install new drop inlets. Specifically the existing pavement subbase and longitudinal storm drain pipes are presumed to be adequate for the future HOV cross-section and therefore will not be disturbed.

For the same reasons that resulted in the recommendation to install the trunk conduit in the paved median shoulder, this Concept also recommends that all ITS devices be installed on poles located on the median barrier wall. It is not anticipated that Type 26 Barrier Wall Modifications will be required as poles similar to those used for luminaries are anticipated. In addition, power service will be required to each site. Because of the level of disturbance on the outside shoulders resulting from the HOV project, this Concept recommends that long longitudinal power service runs be provided minimizing the number of lateral power service runs subject to relocation by the HOV project. Longer power service runs may require step-up and step-down transformers which would most logically be located on top of the median barrier wall either at or on ITS device poles.

Locating the infrastructure in the median shoulder lane also results in increased maintenance of traffic (MOT) costs and more expensive night-time work since a travel lane will need to be closed. In addition, future maintenance access will likely require closures of a travel lane.

The recommendation to install Microwave Radars on significantly smaller poles than the poles required for VDS cameras will mitigate, although not eliminate, some of these MOT concerns. It is worthy to recognize that GDOT currently has to close a travel lane to maintain a significant percentage of its CCTV and VDS cameras. Therefore, with respect to maintenance, lane closures are an existing condition to which GDOT is accustomed.

Locating devices in the median shoulder lane also results in the installation of a single conduit duct bank versus one (1) on each side of the roadway. This reduced conduit cost will help offset the increased MOT and night-time construction costs.

The loss of a diversely routed Ethernet network ring with the installation of a single fiber optic trunk was considered; however, the median location should be less prone to damage in the future in that guardrail, sign, and utility crossing projects are more likely to damage conduits installed in the outside shoulder. The main reason for the recommendation to install infrastructure in the paved median shoulder is that it appears that this location is the most likely location to survive HOV construction without relocation thus increasing the probability that useful traveler information will be available via an operating NaviGator system during the significantly more intensive HOV project.

Funding does not currently exist as part of this project to abandon the existing conduit/fiber optic system that was installed in the paved shoulder on both sides of I-20 from just east of Fulton Industrial Boulevard to Hub “G” and install under this ATMS project in advance of the HOV project a new conduit/fiber optic system in the paved median shoulder within those same limits. In addition, based on the existing HOV concept, I-20 will be realigned in the vicinity of the interchange at I-285 to facilitate the construction of a new flyover ramp for the I-20 west to/from I-285 north HOV traffic. If a new conduit/fiber optic system were installed in the existing paved median shoulder, it would also likely require relocation by the future HOV project.

In order to serve local agency needs, fiber optic drops will be provided at every interchange from the trunk fiber optic cable located in the median to a pull box to be located on the outside shoulders of the I-20 mainline. Other projects will be responsible for splicing local fiber optic cable to these fiber optic drop cables in the provided pull box. To reduce costs of providing dedicated crossings under I-20 mainline which will likely be impacted by future HOV projects, it is anticipated that this drop could be routed in the same crossing under I-20 mainline that will be provided for future ramp meters (refer to the “Ramp Meters” section of this Concept Report). In addition, it is anticipated that a large coil of the fiber optic drop cable will be stored in the same Type 5 Pullboxes used for future ramp meter connections. Larger fiber optic closures will be provided as necessary in the ECBs to accommodate the yet-to-be determined number of fiber optic fusion splices (drop fiber optic cable fibers to trunk fiber optic cable fibers).

In addition, to satisfy a request made by Cobb County traffic signal operations staff, conduit containing fiber optic cable will be mounted on the Riverside Parkway overpass for the purpose of interconnecting traffic signals at the ramp terminals. This project will not install cable into the traffic signal cabinets; therefore, Cobb County will be responsible for this effort.

Communications Plan

This project will use the new digital communications architecture. The video data and control communications from the CCTV cameras will be sent via Gigabit Ethernet network, as opposed to the older analog method involving switches and multiplexers. All network electronics required to operate and communicate with the devices in this project are included as well. This includes new field device connections to existing Hub “G”.

Throughout this section from the proposed eastbound CMS west of Thornton Road (SR 6) to the end of existing fiber optic cable (the existing eastbound CMS and westbound CCTV located approximately at the Martin Luther King Road underpass east of Fulton of Industrial Boulevard), the conduit/fiber optic trunk line will be located in the paved median shoulder which varies from 6.75’-12.75’ in width measured from the face of the 2.5’ wide (measured at the base at pavement level) median barrier wall to the inside travel lane. The conduit will be installed between the median drop inlets and left travel lane. In the case of 6.75’ shoulders, this “strip” is slightly less than 2’. Electrical Communication Boxes (ECBs) will be located closer to the wall, and the trunk conduit/fiber will be offset from its typical alignment into the ECBs. This offset is required so that the ECBs are not in existing travel lanes. As the HOV project may need to install new drop inlets, ECBs will not be located in low areas that may be likely candidates for future drop inlets. In addition, based on a review of previous construction plans, ECBs will be located in areas without existing longitudinal storm drain pipes. If necessary, based on not being able to meet the above constraints, the conduit/fiber trunk may be routed to the other side of the barrier such that ECBs can be installed in a more favorable location. Although, piles are not anticipated in the median to support bridge structures at the conceptual locations of HOV drop ramps, the conduit trunk line can be installed via deeper directional bores.

Throughout this section from the proposed eastbound CMS to the end of existing fiber optic cable (the existing

eastbound CMS and westbound CCTV located approximately at the Martin Luther King Road underpass east of Fulton of Industrial Boulevard), the trunk will be carried within a continuous conduit duct bank, which will consist of four (4) 2" conduits. ECBs will be located at a maximum spacing of 1/3 mile; however, the spacing between ECBs will typically be less than 1/3 mile since an ECB will be located adjacent to every pole supporting ITS devices. A single fiber optic cable will be installed in one (1) of the conduits with the other remaining spare. Based on the new communications architecture with its spare fiber requirement, the fiber count of this cable will exceed the combined total fiber counts of the two (2) existing 96-fiber cables that end at the existing eastbound CMS and westbound CCTV located approximately at the Martin Luther King Road underpass east of Fulton of Industrial Boulevard and that continue to Hub "G". Therefore, 96 of the fibers of the proposed fiber optic cable will be spliced to one (1) of the two (2) existing fiber optic cables that extend back to Hub "G", and another 96 fibers will be spliced to the other existing fiber optic cable. The existing fiber optic cables on both sides of I-20 will be sufficient for connectivity to Hub "G" until the existing fiber optic cables can be upgraded to be consistent with the new communications architecture.

CCTV Cameras

CCTV cameras will be designed to provide continuous coverage of I-20 within the project limits from west of Thornton Road (SR 6) to I-285. These cameras will be mounted on poles located on the median barrier wall to accommodate the proposed poles. However, where appropriate, some cameras may be on existing sign structures. This project will include color pan/tilt/zoom surveillance cameras with typical spacing of approximately two-third to one mile along the project design area with cameras located as needed to provide interchange and general mainline coverage as well as coverage of future ramp meter locations. The poles or other mounting apparatus for the cameras are included in this project.

Although this project does not include new ramp meters as they will be installed in a FY 2007 project (GDOT PI# 0006402) that will install ramp meters from Thornton Road (SR 6) through Downtown Atlanta to Stockbridge Highway (SR 138) in Conyers, a CCTV will be located on a pole in the median near each potential ramp meter location to ensure adequate monitoring of future ramp meter operations. This pole will also serve as a candidate location for a future I-VDS camera to be potentially installed by the ramp metering project for the purposes of providing mainline traffic data to the ramp meter controller.

Microwave Radars

Radar locations will be chosen to provide an average spacing of one-third to one-half mile along the project design area of I-20 from Thornton Road (SR 6) to I-285. These radar units will be mounted on poles located on the median barrier wall. The radar units will be located such that existing exit ramp data can be obtained. Collection of entrance ramp data by radars is not required since inductive loops to be installed by the future ramp metering project will collect this data. In addition, every effort will be made to locate the radar units such that future exit ramp data can be obtained for both realigned general purpose ramps and proposed HOV drop ramps (per HOV concept drawings). Because of narrow existing and proposed (per HOV concept drawings) median shoulder lanes, two (2) radar units will be required to monitor each direction of traffic, with one (1) radar positioned in a forward-facing position to monitor the closest lane and one (1) radar positioned in a side-fire position to monitor all other lanes (including ramp lanes were applicable). Typically, four (4) radar units will be mounted on each pole such that both traffic directions can be monitored.

CMSs

Two (2) CMSs are proposed for this project. One CMS will be mounted over eastbound traffic lanes on a full-span structure approximately two (2) miles west of Thornton Road (SR 6) and will display 3 rows by 21 characters (3 X 21). It is anticipated that this sign will be very useful in providing traveler information in advance of the first HOV project. In addition, Thornton Road (SR 6) to the south provides a diversion from I-

285 to the Hartfield-Jackson Atlanta International Airport area. However, the CMS will require relocation by the second HOV project scheduled to be let in 2010. Locating the CMS west versus east of Thornton Road (SR 6) as currently reflected in the Department's "ITS Coverage Metro Atlanta" map ensures approximately another year without possibly being impacted by a construction project. In addition, the proposed CMS would be just under eight (8) miles west of the existing eastbound CMS which is very close to meeting the Department's current five (5) to six (6) mile spacing guideline for CMS spacing.

A second CMS will be mounted on a butterfly structure located on the median barrier wall and will face the westbound traffic lanes approximately one mile east of Fulton Industrial Boulevard in the vicinity of the existing eastbound CMS. This CMS will display 3 rows by 15 characters (3 X 15). It is anticipated that since this CMS will be mounted on a butterfly structure located on the median barrier wall it will not require relocation by the HOV project. This CMS will provide traveler information to those westbound travelers who have not been alerted to incidents via messages posted on the existing CMS located over the westbound lanes of I-20 east of HE Holmes (SR 280), on the future CMS to be installed by the recently let I-285 Northwest ATMS project (GDOT PI# 713370) over the southbound lanes of I-285 north of Bolton Road, or on a future CMS to be installed by the FY 2006 I-285 Southwest ATMS project (GDOT PI# 713371) over the northbound I-285 lanes south of I-20. In addition, Fulton Industrial Boulevard provides some attractive diversion opportunities.

In the cabinet of the existing CMS located approximately 100 feet east of the Martin Luther King Boulevard underpass or ¾ mile west of the I-285 SB ramp, this project will install a Serial Data Terminal Server and a Field Ethernet Switch such that this CMS will communicate via the Ethernet network.

Ramp Meters

As previously explained, this project does not include new ramp meters as they will be installed by the future ramp metering project. However, to eliminate the need for the future ramp metering project to tie in "drop" conduits from the ramp meters to the ECBs in the paved median shoulder and thus disturb the pavement, this ATMS project will install two (2) 2" conduit via the directional bore method under the I-20 travel lanes which will be terminated in a large Type 5 Pullbox near the potential location of the ramp meter traffic signal control cabinet. This ATMS project will install a fiber optic drop cable in one (1) of the two (2) conduits and will splice it to the trunk fiber in the paved median shoulder. A large coil of the fiber optic drop cable will be stored in the Type 5 Pullboxes to provide additional flexibility in ultimately locating the ramp meter traffic signal control cabinet. The second conduit will be a spare to be potentially used for routing a coaxial cable from a future I-VDS camera (refer the "CCTV Cameras" section of this Concept Report).

Hubs

This project does not include a new hub building. This project will extend the fiber optic trunk line along I-20 utilizing the existing Hub "G".

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 Principal Arterial

U. S. Route Number(s): I-20

State Route Number(s): SR 402

Traffic (AADT):

Current Year (2004):

Source: http://www.dot.state.ga.us/dot/plan-prog/transportation_data/traffic_counts/index.shtml

I-20 (Holmes Drive HUB “G” to I-285)	164,570
I-20 (I-285 to Fulton Industrial Blvd.)	168,670
I-20 (EB off to Fulton Industrial to WB on to Fulton Industrial)	142,660
I-20 (Chattahoochee River to Six Flags Pkwy)	142,660
I-20 (Six Flags Drive to WB off to Six Flags Dr.)	134,770
I-20 (Factory Shoals Rd. to WB off to Six Flags Dr.)	124,370

Existing design features:

- Typical Sections:
 - *I-20: 3-4 lanes in each direction*
- Posted speed:
 - *I-20: 50 mph east of I-285*
 - *I-20: 60 mph from I-285 to Factory Shoals Road overpass*
 - *I-20: 65 mph west of Factory Shoals Road overpass*
- Minimum Radius: *N/A*
- Maximum grade: *N/A*
- Major structures:
 - *Bridge at Fairburn Road overpass at I-20*
 - *Bridge at Martin Luther King Drive underpass at I-20*
 - *Bridge at Fulton Industrial Boulevard underpass at I-20*
 - *Bridge at CSX Railroad underpass at I-20*
 - *Bridge at Chattahoochee River underpass at I-20*
 - *Bridge at Six Flags Parkway underpass at I-20*
 - *Bridge at Six Flags Drive/Riverside Parkway overpass at I-20*
 - *Bridge at Factory Shoals overpass at I-20*
 - *Bridge at Thornton Road (SR 6) overpass at I-20*
 - *Bridge at Sweetwater Water Creek underpass at I-20*
- Major interchanges or intersections along the project:
 - *I-20 @ I-285*
 - *I-20 @ Fulton Industrial Boulevard*
 - *I-20 @ Six Flags Parkway*
 - *I-20 @ Six Flags Drive/Riverside Parkway*
 - *I-20 @ Thornton Road (SR 6)*
- Existing length:
 - *I20 from approximately 1 mile west of Thornton Road to Thornton Road: 1 mile*
 - *I-20 from Thornton Road (SR 6) to I-285: 7 miles*
 - *I-20 from I-285 to Hub “G” at HE Holmes Drive: 1.5 miles*
 - *Total Project Length: 9.5 miles*

Proposed Design Features:

- Typical Sections:
 - *I-20: Existing section to remain*

- Posted speed:
 - *I-20: Existing posted speed limit to remain*
- 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*
- Type of Access: *Limited Access*
- Right of way: *Project will be constructed within the existing Limited Access/Right of Way. No additional right of way and/or easements will be required.*
 - Number of parcels: *0* Number of displacements: *0*
 - Business: *0*
 - Residences: *0*
 - Mobile homes: *0*
 - Other: *0*
- Structures:
 - CMS: Full-span overhead structure located over eastbound travel lanes approximately 2 miles west of Thornton Road (SR 6). Butterfly structure located on median barrier wall, facing westbound travel lanes, approximately 1 mile east of Fulton Industrial Boulevard
 - Strain Poles for CCTV and Microwave Radars
- Major intersections and interchanges:
 - *I-20 @ I-285*
 - *I-20 @ Fulton Industrial Boulevard*
 - *I-20 @ Six Flags Parkway*
 - *I-20 @ Six Flags Drive/Riverside Parkway*
 - *I20 @ Thornton Road (SR 6)*
- Traffic control during construction: *Shoulder closures and/ or lane closures will be necessary during installation of conduit, fiber optic cables, changeable message signs, and strain poles,. Traffic pacing will be required during installation of the changeable message sign.*

• 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*
- Probable Locations of UST's: *N/A*
- Probable Locations of Hazardous Waste: *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 CMSs, cameras, and radars.*
- Meets Logical Termini Requirements: *Yes*
- Conforms to TIP/STIP: *Yes*

Project responsibilities:

- Design: *URS Corporation on Behalf of the Georgia DOT*
- Right of Way Acquisition: *N/A*
- Relocation of Utilities: *GDOT*
- Letting to contract: *GDOT*
- Supervision of construction: *GDOT*
- Providing material pits: *None Required*
- Providing detours: *None Anticipated*

Coordination:

- Pre-Concept Meeting: *7-7-05*
- 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: *N/A*
- Other projects in the area: *See attached list*
- Other coordination to date: *URS to contact Douglas, Cobb, and Fulton Counties to determine any needs they may have with regards to this project.*

Scheduling – Responsible Parties' Estimate:

- Time to complete the environmental process: *4 Months*
- Time to complete preliminary construction plans: *6 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: *7 Months*

Project Concept Report
Project Number: NH-20-1 (86)
P.I. Number: 714080
County: Douglas, Cobb and Fulton

- Time to complete to purchase right of way: *N/A*

Other alternates considered:

Alternative #1: No Build

Comments: *Extension of NaviGator system, Current fiscal year FY 06.*

Attachments:

1. Cost Estimate including E & C
2. List of other projects in the area
3. Notice of Location and Design Approval
4. Concept Report Rating Form

ATTACHMENT #1

**COST ESTIMATE:
 ATMS/I-20 Communication/Surveillance from SR 6 to I-285
 NH-20-1 (86), PI 714080
 Douglas/Cobb/Fulton County
 Quantities and Cost Summary
 Concept Cost Estimate**

Item Code	Description	Unit	Quantity	Engineer Estimate	
				Unit Price (\$)	Amount (\$)
150-1000	Traffic Control - NH-20-1 (86)	Lump	Lump		\$ 500,000.00
151-1300	Field Engineer's Office, Type 3	Each	1	\$ 50,000.00	\$ 50,000.00
610-1075	Remove Guardrail Anch, All Types	Each	1	\$ 200.00	\$ 200.00
615-1200	Directional Bore, 3 IN	Lin Ft	1,425	\$ 30.00	\$ 42,750.00
615-1200	Directional Bore, 5 IN	Lin Ft	100	\$ 30.00	\$ 3,000.00
615-1201	Directional Bore, 7 IN	Lin Ft	8,600	\$ 31.00	\$ 266,600.00
621-3150	Concrete Barrier, Type 26	Lin Ft	120	\$ 375.00	\$ 45,000.00
631-2343	LED Pixel CMS, Non Walk in, 3x15, 18 IN, Type B	Each	1	\$ 75,000.00	\$ 75,000.00
631-2463	LED Pixel CMS, Walk in, 3x21, 18 IN, Type B	Each	1	\$ 125,000.00	\$ 125,000.00
631-8000	Testing	Lump	Lump		\$ 10,000.00
632-0003	Changeable Message Sign, Portable, Type 3	Each	6	\$ 10,000.00	\$ 60,000.00
638-1001	Str Support for Overhead Sign, TP 1	Lump	Lump	\$ 60,000.00	\$ 60,000.00
638-1003	Str Support for Overhead Sign, TP 3	Lump	Lump	\$ 35,000.00	\$ 60,000.00
639-3004	Steel Strain Pole, Type IV -25'	Each	23	\$ 9,000.00	\$ 207,000.00
639-3004	Steel Strain Pole, Type IV -35'	Each	11	\$ 10,000.00	\$ 110,000.00
641-1200	Guardrail, TP W	Lin Ft	125	\$ 13.00	\$ 1,625.00
641-5001	Guardrail Anch, TP 1	Each	1	\$ 450.00	\$ 450.00
641-5012	Guardrail Anch, TP 12	Each	1	\$ 1,400.00	\$ 1,400.00
647-2150	Pullbox, PB-5	Each	7	\$ 1,300.00	\$ 9,100.00
682-9033	Electrical Communication Box, TP 6	Each	37	\$ 3,950.00	\$ 146,150.00
682-6120	Conduit, Rigid, 2 IN	Lin Ft	1,440	\$ 15.00	\$ 21,600.00
682-6231	Conduit, Nonmetl, TP 3, 2 IN (FOR POWER)	Lin Ft	36,900	\$ 6.00	\$ 221,400.00
682-6231	Conduit, Nonmetl, TP 3, 2 IN	Lin Ft	3,250	\$ 4.00	\$ 13,000.00
682-6520	Fiberglass, 2 IN	Lin Ft	4,300	\$ 45.00	\$ 193,500.00
682-7062	Duct Bank, Type 3	Lin Ft	35,900	\$ 25.00	\$ 897,500.00
935-1107	Outside Plant Fiber Optic Cable, Loose Tube, SM, 96 Fiber	Lin Ft	340	\$ 3.30	\$ 1,122.00
935-1109	Outside Plant Fiber Optic Cable, Loose Tube, SM, 288 Fiber	Lin Ft	41,340	\$ 6.00	\$ 248,040.00
935-15xx	Outside Plant Fiber Optic Cable, Drop, SM, 4 Fiber	Lin Ft	1,645	\$ 3.00	\$ 4,935.00
935-1513	Outside Plant Fiber Optic Cable, Drop, SM, 24 Fiber	Lin Ft	2,775	\$ 3.50	\$ 9,712.50
935-3103	Fiber Optic Closure, Underground, 24 Fiber	Each	37	\$ 600.00	\$ 22,200.00
935-3107	Fiber Optic Closure, Underground, 96 Fiber	Each	2	\$ 800.00	\$ 1,600.00
935-3109	Fiber Optic Closure, Underground, 288 Fiber	Each	4	\$ 1,400.00	\$ 5,600.00
935-3403	Fiber Optic Cable, FDC (Rack Mounted), 24 Fiber	Each	37	\$ 750.00	\$ 27,750.00
935-4010	Fiber Optic Splice, Fusion	Each	2,112	\$ 50.00	\$ 105,600.00
935-8000	Testing	Lump	Lump		\$ 13,000.00

936-1001	CCTV System, Type B	Each	11	\$	12,000.00	\$	132,000.00
936-8000	Testing	Lump	Lump			\$	5,000.00
936-8500	Training	Lump	Lump			\$	2,000.00
938-0503	Microwave Radar Detection Assembly	Each	88	\$	3,200.00	\$	281,600.00
938-8000	Testing	Lump	Lump			\$	7,500.00
938-8500	Training	Lump	Lump			\$	7,500.00
939-1190	Video Encoder, Type A	Each	11	\$	5,000.00	\$	55,000.00
939-1195	Video Decoder, Type A	Each	4	\$	5,000.00	\$	20,000.00
939-2025	Serial Data Terminal Server, Type B	Each	1	\$	2,000.00	\$	2,000.00
939-2221	GBIC Enterprise Routing Switch Module, 8 Port	Each	1	\$	15,000.00	\$	15,000.00
939-2232	GBIC Type B	Each	5	\$	4,000.00	\$	20,000.00
939-2300	Field Switch, Type A	Each	27	\$	4,000.00	\$	108,000.00
939-2301	Field Switch, Type B	Each	10	\$	7,000.00	\$	70,000.00
939-4040	Type D Cabinet	Each	34	\$	4,000.00	\$	136,000.00
939-5020	Electrical Power Service	Each	37	\$	5,000.00	\$	185,000.00
939-8000	Testing	Lump	Lump			\$	7,500.00
939-8500	Training	Lump	Lump			\$	7,500.00
Total Estimate							\$ 4,621,434.50

Total Estimate:	\$ 4,621,434.50
Inflation:	0
10% E & C	\$ 462,143.45
Total Project Cost	\$ 5,083,577.95

ATTACHMENT #2

PROJECTS IN AREA:

1. HOV Lanes – I-20 from SR 6 (Thornton Road) to SR 280 (HE Holmes Drive)
(ARC # AR-H-200A-B / GDOT PI# 0001760 / Construction\$ Programmed 2009)
2. HOV Lanes – I-20 from SR 5 (Bill Arp Road) to SR 6 (Thornton Road)
(ARC # NA / GDOT PI# 0003165 / Construction\$ Programmed 2010)
3. I-20 West Noise Barriers from Fulton Industrial Boulevard to HE Holmes Drive
(ARC # AR-304 / GDOT PI# 714115 / Construction\$ Programmed 2007)
4. I-20 West from SR 6 (Thornton Road) to I-285 West – Includes Interchange and Ramp
Reconstruction and Associated 6-Lane Collector/Distributor System
(ARC # AT-AR-178 / GDOT PI# 713330 / Construction\$ Programmed >2010)
5. I-20 West from SR 70 (Fulton Industrial Boulevard) to SR 6 (Thornton Road)
Includes 6-Lane Collector/Distributor System
(ARC # DO-AR-057 / GDOT PI# 713620 / Construction\$ Programmed >2010)

ATTACHMENT #3

NOTICE OF LOCATION AND DESIGN APPROVAL

**PROJECT: NH-20-1 (86) DOUGLAS/COBB/FULTON COUNTY
P. I. NO. 0714080**

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: NOVEMBER 3, 2005

Project NH-20-1 (86) in Douglas/Cobb/Fulton Counties consists of expanding the NaviGator ATMS system along I-20 from the Thornton Road (SR 6) interchange in Douglas County, through Cobb County, to the I-285 interchange in Fulton County. The project will include complete CCTV surveillance and Microwave Radar 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. This project will extend the fiber optic trunk line along I-20 that exists from just east of Fulton Industrial Boulevard to Hub "G" located at HE Holmes Drive. The fiber will be extended westward to a proposed CMS and associated CCTV camera located approximately two (2) miles west of Thornton Road (SR 6).

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.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

NH-20-1 (86)
DOUGLAS, COBB & FULTON COUNTIES
P.I. NO. 714080

FEDERAL ROUTE NO: NH-201, I-20
STATE ROUTE NO: 402

*ATMS/I-20 Communication/Surveillance from
Thornton Road (SR 6) to I-285*

Recommendation for approval:

DATE 8-30-05 *Kevin Bell*
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 Financial Management Administrator

DATE _____
State Environmental / Location Engineer

DATE _____
District Engineer

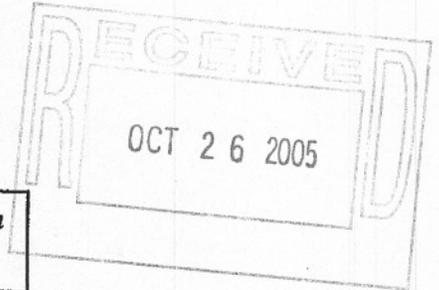
DATE 9/20/05 *Bruce K. Semmel*
Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

NH-20-1 (86)
DOUGLAS, COBB & FULTON COUNTIES
P.I. NO. 714080

FEDERAL ROUTE NO: NH-201, I-20
STATE ROUTE NO: 402



ATMS/I-20 Communication/Surveillance from
Thornton Road (SR 6) to I-285

Recommendation for approval:

DATE 8-30-05 *Keith 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 Financial Management Administrator

DATE _____
State Environmental / Location Engineer

DATE 10/4/05 *Bryan Pool*
District Engineer

DATE _____
Project Review Engineer

ATTACHMENT #4

SCORING RESULTS AS PER TOPPS 2440-2

Project Number: NH-20-1 (86)		County: Douglas/Cobb/Fulton		PI No.: 714080	
Report Date:		Concept By: DOT Office: Traffic Safety and Design			
<input checked="" type="checkbox"/> CONCEPT		Consultant: URS Corporation			
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					