

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. # 0013323 **OFFICE** Design Policy & Support
Gwinnett County
GDOT District 1 - Gainesville **DATE** 3/14/2016
ITS: Ronald Reagan Parkway from
Pleasant Hill Road to SR 124

FROM  for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED CONCEPT REPORT

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

Attachment

DISTRIBUTION:

Hiral Patel, Director of Engineering
Joe Carpenter, Director of P3/Program Delivery
Genetha Rice-Singleton, Assistant Director of P3/Program Delivery
Albert Shelby, State Program Delivery Engineer
Darryl VanMeter, State Innovative Delivery Engineer
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Eric Duff, State Environmental Administrator
Bill DuVall, State Bridge Engineer
Andrew Heath, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Lee Upkins, State Utilities Engineer
Richard Cobb, Statewide Location Bureau Chief
Brent Cook, District Engineer
Robby Oliver, District Utilities Engineer
Anthony Tate, Project Manager
BOARD MEMBER - 7th Congressional District

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

Project Type: ITS Upgrades and System Expansion P.I. Number: 0013323
 GDOT District: 1 County: Gwinnett
 Federal Route Number: N/A State Route Number: N/A
 Project Number: _____

Ronald Reagan Parkway ITS Design from Pleasant Hill Road to SR 124 /Scenic Highway

Submitted for approval:

[Signature] 7/10/15
 Date
Josh Williams, P.E., Gresham, Smith & Partners 7-10-15
 Date
[Signature] 11-17-15
 Date
Thomas Sefer, P.E., Local Government Sponsor
Albert V. Shulby 11/9/15
 Date
State Program Delivery Engineer
[Signature] 11/9/15
 Date
GDOT Project Manager

Recommendation for approval: (Delete any inapplicable signature lines)

* HIRAL PATEL 12/19/2015
 State Environmental Administrator Date
 * KEYU WARBHO 12/22/2015
 State Traffic Engineer Date

- MPO Area: This project is consistent with the MPO adopted Regional Transportation Plan (RTP)/Long Range Transportation Plan (LRTP).
- Rural Area: This project is consistent with the goals outlined in the Statewide Transportation Plan (SWTP) and/or is included in the State Transportation Improvement Program (STIP).

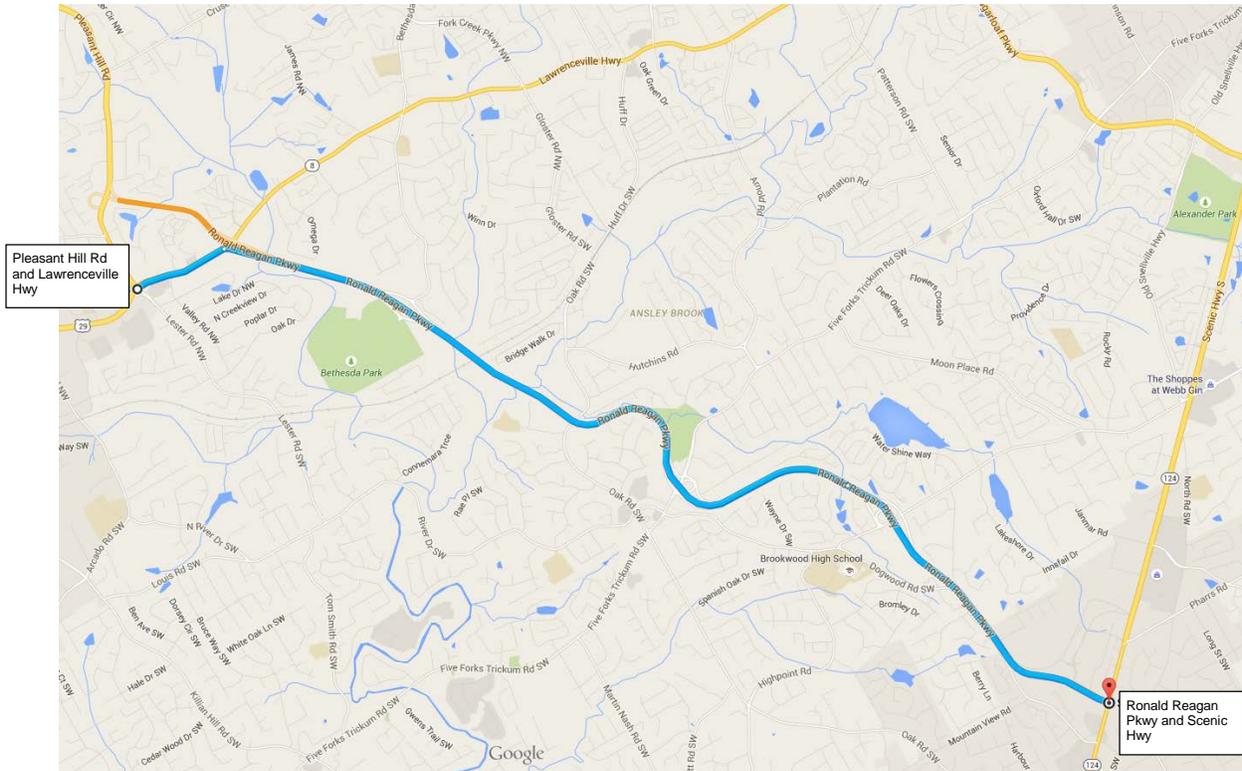
[Signature] 2-22-16
 State Transportation Planning Administrator Date

Approval:
 Concur: [Signature] 3-4-16
 GDOT Director of Engineering Date

Approve: [Signature] 3.8.16
 GDOT Chief Engineer Date

* RECOMMENDATION(S) ON FILE - [Signature]

PROJECT LOCATION MAP



Ronald Reagan Parkway from Pleasant Hill Road to SR 124/Scenic Highway

Georgia Department of Transportation PI # 0013323

Gwinnett County Department of Transportation Project # M-0685-38

PLANNING & BACKGROUND DATA

Project Justification Statement: The purpose of this project is to enable arterial traffic monitoring, signal control, and more rapid incident detection along Ronald Reagan Parkway in Gwinnett County. The Intelligent Transportation System (ITS), with the installation of CCTV cameras and fiber, will improve the ability to detect and verify traffic incidents, which will reduce and improve safety for responders and reduce the risk of secondary crashes. In addition, the signalized portions of the corridor will benefit from the ability to control signal timing remotely from the Gwinnett County Traffic Control Center (TCC).

In addition to the ITS infrastructure already in place, the proposed CMAQ-funded ITS expansion enables critical monitoring ability of almost every major travel corridor in Gwinnett County, significantly improving travel in the northeast Metro Atlanta region. This project is designed to reduce traffic congestion, increase travel speeds, and/or reduce delay thus meeting both goals of the CMAQ program: decreasing congestion and reducing air pollution. Interconnecting traffic signals improves both peak and off peak travel speeds and reduces congestion at intersections.

Existing conditions: Ronald Reagan Parkway has two travel lanes in each direction with a grass median, that runs from Pleasant Hill Road to Presidential Circle. From Pleasant Hill Road to Presidential Circle, the Parkway is limited access control. From Presidential Circle to SR 124/Scenic Highway, the Parkway is signalized control.

Other projects in the area:

- P.I. No. 0013143: Five Forks Trickum ITS from Rockbridge Road to Sugarloaf Parkway. This project will include fiber optic cable installation for traffic signal optimization and installation of CCTV cameras along Five Forks Trickum from Rockbridge Road to Sugarloaf Parkway.

Description of the proposed project: This project includes the design of fiber optic communications cable and CCTV cameras along Ronald Reagan Parkway from Pleasant Hill Road in Lilburn to SR 124/Scenic Highway in Snellville. The approximate length of this project is 6.5 miles. An underground fiber optic trunk line will be installed along a single shoulder of Ronald Reagan Parkway from Lawrenceville Highway to SR 124/Scenic Highway. This newly installed fiber will be tied into the existing fiber running along Lawrenceville Highway to the intersection of Pleasant Hill Road. Network connections to existing and planned (programmed) fiber optic trunk lines will be designed for the following crossing arterials: Pleasant Hill Road, Five Forks Trickum, and SR 124/Scenic Highway. Sixteen (16) CCTV cameras will be installed, as well as fiber optic drop cables to the existing cameras and existing traffic signals. The cameras and signals will communicate with the Gwinnett County TCC through Ethernet field switches. In addition, a wireless communication system will be installed at Webb Gin House Road to Dogwood Road.

The following sections outline ITS field device locations:

Closed Circuit Television (CCTV) Cameras

Sixteen (16) new CCTV cameras will be installed and connected via Ethernet into the proposed communications system. Proposed camera locations will be placed to provide full coverage of the entire Ronald Reagan Parkway corridor. This will include eleven (11) cameras along Ronald Reagan Parkway along with cameras at the following intersections and interchanges:

- Ronald Reagan Parkway @ Bethesda Church Road
- Ronald Reagan Parkway @ Webb Gin House Road
- Ronald Reagan Parkway @ Presidential Circle
- Ronald Reagan Parkway @ Presidential Market Driveway
- Ronald Reagan Parkway @ SR 124/Scenic Highway

Existing or future cameras installed under other projects:

- Ronald Reagan Parkway @ Pleasant Hill Road (Existing Gwinnett County camera)
- Ronald Reagan Parkway @ Lawrenceville Highway (Existing Gwinnett County camera)
- Ronald Reagan Parkway @ Five Forks Trickum (To be installed under project P.I. 0013143)

Mainline Design Features:

Ronald Reagan Parkway – Urban Principal Arterial

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	4		N/A
- Lane Width(s)	12'		N/A
- Median Width & Type	16' grass		N/A
- Outside Shoulder or Border Area Width	4'		N/A
- Inside Shoulder Width	2'		N/A
Posted Speed	50 mph from Pleasant Hill Road to Snellville City Limits. 45 mph from Snellville City Limits to SR 124/Scenic Hwy		N/A

*According to current GDOT design policy if applicable

Major Interchanges/Intersections Along Ronald Reagan Parkway:

- Pleasant Hill Road
- Lawrenceville Highway
- Bethesda Church Road
- Five Forks Trickum Road
- Webb Ginn House Road
- Presidential Circle
- Presidential Market Driveway
- SR 124/Scenic Highway

Lighting required: No Yes

Transportation Management Plan [TMP] Required: No Yes
 If Yes: Project classified as: Non-Significant Significant
 TMP Components Anticipated: TTC TO PI

Will Context Sensitive Solutions procedures be utilized? No Yes

Design Exceptions to FHWA/AASHTO controlling criteria anticipated: None

Design Variances to GDOT Standard Criteria anticipated: None

UTILITY AND PROPERTY

Temporary State Route Needed: No Yes Undetermined

Railroad Involvement: Coordination with CSX to make them aware of project. No impact anticipated.

Utility Involvements:

- Georgia Power
- Atlanta Gas Light
- AT&T
- Jackson EMC
- Comcast
- Gwinnett Public Utilities Water & Sewer

Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
Funded By	Gwinnett County	Gwinnett County	Gwinnett County	GDOT	Gwinnett County	
\$ Amount	\$204,000	\$0	\$0	\$1,484,232.51	\$0	\$1,688,232.51
Date of Estimate	6/30/15	6/30/15	6/30/15	8/7/15	6/30/15	

*CST Cost includes: Construction, Engineering and Inspection, and Contingencies. CST Cost will be 80% GDOT and 20% Gwinnett County.

ALTERNATIVES DISCUSSION

Preferred Alternative: The preferred alternative includes the trenching of fiber optic cable for the entire project length with the installation of 16 CCTV cameras and connectivity to the existing signals along the project corridor.

Estimated Property Impacts:	None	Estimated Total Cost:	\$1,688,232.51
Estimated ROW Cost:	\$0	Estimated CST Time:	18 months
Rationale: This alternative will help improve traffic operations along Ronald Reagan Parkway and provide Gwinnett County Transportation Department with real-time monitoring of the roadway conditions along Ronald Reagan Parkway.			

No-Build Alternative: No improvement to the existing Gwinnett County ITS infrastructure along Ronald Reagan Parkway.

Estimated Property Impacts:	None	Estimated Total Cost:	\$0
Estimated ROW Cost:	\$0	Estimated CST Time:	None
Rationale: This alternative would not improve traffic operations along Ronald Reagan Parkway and would not provide Gwinnett County Transportation Department with real-time monitoring of the roadway conditions along Ronald Reagan Parkway. Does not fulfill the objective of the Project Justification Statement.			

Alternative 1: Alternative 1 would entail utilizing directional bore for the installation of the conduit, instead of open trenching.

Estimated Property Impacts:	None	Estimated Total Cost:	\$1,991,736.96
Estimated ROW Cost:	\$0	Estimated CST Time:	18 months
Rationale: This alternative would provide a similar finished project, but would have a higher cost of construction, by using directional boring for conduit installation instead of open trenching. Due to minimal utility impacts and obstacles that would require directional boring, open trenching is preferred for the conduit installation.			

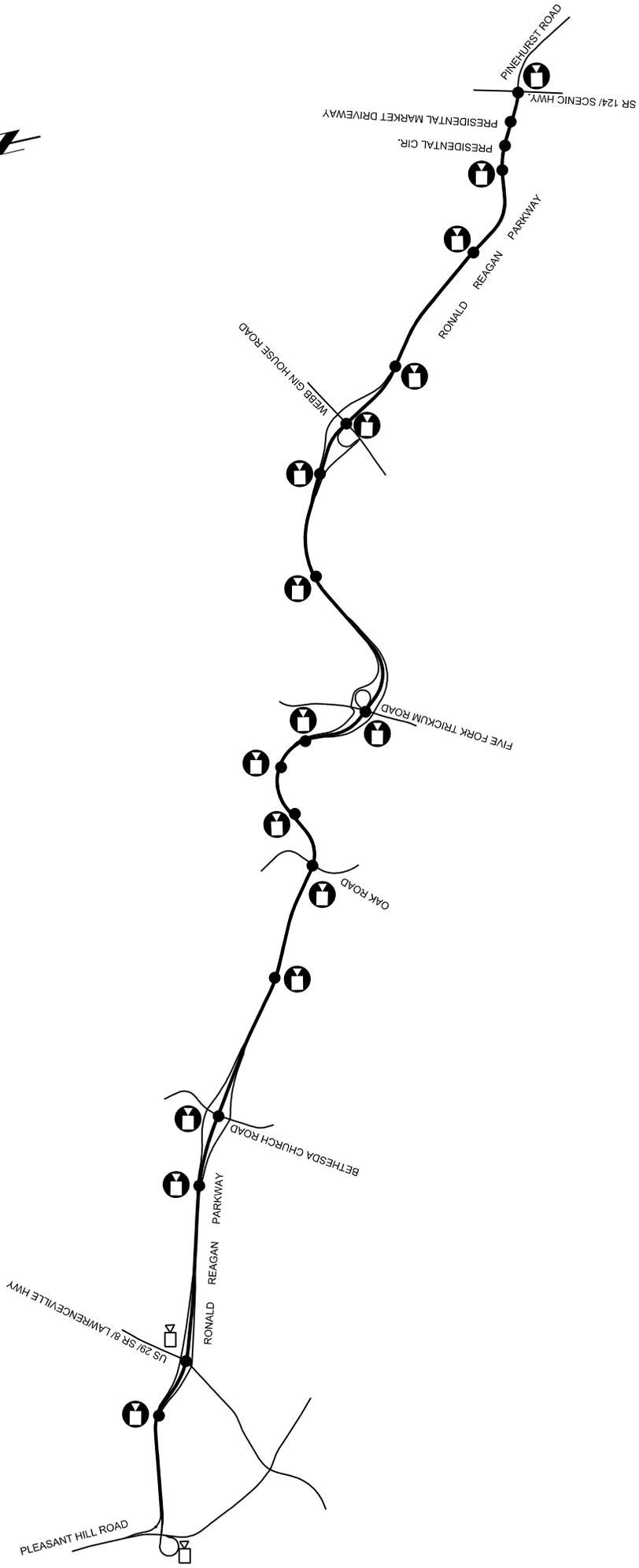
Comments/Additional Information:

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout
2. Cost Estimates
3. Kick-Off Meeting Minutes – June 11, 2015

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CCTV CAMERA AND DROP CABLE SCHEMATIC



LEGEND	
	EXISTING CCTV LOCATION
	PROPOSED CCTV CAMERA
	FIBER OPTIC DROP

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 0013323

OFFICE Program Delivery

PROJECT DESCRIPTION

RONALD REAGAN PKWY FM PLEASANT HILL RD TO SR 124 - ITS

DATE August 7, 2015

From: Albert V. Shelby, III, State Program Delivery Engineer

To: Lisa L. Myers, State Project Review Engineer

Subject: **REVISIONS TO PROGRAMMED COSTS**

PROJECT MANAGER Anthony Tate

MGMT LET DATE 9/17/2017

MGMT ROW DATE N/A

PROGRAMMED COSTS (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$ 1,675,575.00

DATE 3/3/2015

RIGHT OF WAY \$

DATE

UTILITIES \$

DATE

REVISED COST ESTIMATES

CONSTRUCTION* \$ 1,484,232.51

RIGHT OF WAY \$ N/A

UTILITIES \$

*Cost Contains 10 % Contingency

REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:

Low risk ITS project. Updated cost estimate being submitted due to initial CES detailed estimate, which includes 10% contingency risk factor for concept phase.

CONTINGENCY SUMMARY

A. CONSTRUCTION COST ESTIMATE:	\$	1,285,049.79	Base Estimate From CES	
B. ENGINEERING AND INSPECTION (E & I):	\$	64,252.49	Base Estimate (A) x	5 %
C. CONTINGENCY:	\$	134,930.23	Base Estimate (A) + E & I (B) x	10 %
			See % Table in "Risk Based Cost Estimation" Memo	
D. TOTAL LIQUID AC ADJUSTMENT:	\$		Total From Liquid AC Spreadsheet	
E. CONSTRUCTION TOTAL:	\$	1,484,232.51	(A + B + C + D = E)	

REIMBURSABLE UTILITY COSTS

UTILITY OWNER	REIMBURSABLE COST
TOTAL	\$ -

ATTACHMENTS:

Detailed Cost Estimate Printout

ITEMS FOR JOB 0013323

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	150-0001		LS	TRAFFIC CONTROL, NON-REFUNDABLE DEDUCT PI # 0013323	1.000	50000.00	50000.00
0010	163-0232		AC	TEMPORARY GRASSING	1.000	633.76	633.77
0015	163-0240		TN	MULCH	15.000	324.42	4866.43
0020	171-0010		LF	TEMPORARY SILT FENCE, TYPE A	5000.000	2.10	10545.45
0025	639-4004		EA	STRAIN POLE, TP IV	16.000	8000.00	128000.00
0030	004-0012		EA	EXTRA WORK - 2010 IP CONFLICT MONITOR	5.000	650.00	3250.00
0035	004-0012		EA	EXTRA WORK - IP UPS CONTROLLER	2.000	2900.00	5800.00
0040	004-0012		EA	EXTRA WORK - 2070 1C BOARD WITH CURRENT GDOT FIRMWARE	5.000	1000.00	5000.00
0045	647-2130		EA	PULL BOX, PB-3	40.000	500.00	20000.00
0050	647-2170		EA	PULL BOX, PB-7	30.000	1512.07	45362.22
0055	682-6120		LF	CONDUIT, RIGID, 2 IN	500.000	4.00	2000.00
0060	682-6222		LF	CONDUIT, NONMETL, TP 2, 2 IN	500.000	5.00	2500.00
0065	682-6233		LF	CONDUIT, NONMETL, TP 3, 2 IN	70000.000	5.00	350000.00
0070	682-9950		LF	DIRECTIONAL BORE - 5 IN	7000.000	15.00	105000.00
0075	700-6910		AC	PERMANENT GRASSING	1.000	1208.68	1208.69
0080	700-7000		TN	AGRICULTURAL LIME	3.000	117.28	351.87
0085	700-8000		TN	FERTILIZER MIXED GRADE	3.000	565.76	1697.31
0090	700-8100		LB	FERTILIZER NITROGEN CONTENT	250.000	2.66	666.05
0095	926-2000		EACH	SPRD SPRM WRLS TRSVR W/FSK&RS 232,TP -	2.000	2420.00	4840.00
0100	926-2075		EACH	900mhz DIR RADIO ANT AND CONN CABLE	2.000	738.00	1476.00
0105	926-3000		L S	WIRELESS TRAINING	1.000	2832.00	2832.00
0110	926-4000		EA	SPRD SPECT WIREL RADIO SURVEY	1.000	2656.00	2656.00
0115	935-1116		LF	OUT PLNT FBR OPT CBL,LOOSE TB,SM,72 FBR	40000.000	2.10	84000.00
0120	935-1512		LF	OUT PLNT FBR OPT CBL,DROP,SM,12 FBR	5000.000	1.95	9757.00
0125	935-3102		EA	FIBER OPTIC CLOSURE,UNDRGRD,12 FIBER	21.000	531.00	11151.00
0130	935-3208		EA	FBR OPTIC CLOSURE,AERL(SLD),144 FBR	1.000	420.00	420.00
0135	935-3409		EA	FBR OPTIC CLOSURE,FDC(RACK MTD),288 FBR	2.000	1218.00	2436.00
0140	935-3502		EA	FBR OPTIC CLOSURE,FDC(WALL MTD),12 FBR	21.000	400.00	8400.00
0145	935-4010		EA	FIBER OPTIC SPLICE, FUSION	700.000	53.00	37100.00
0150	935-8000		LS	TESTING FIBER OPTIC (PI# 0013323)	1.000	5000.00	5000.00
0155	936-1000		EA	CCTV SYSTEM TYPE C	16.000	6000.00	96000.00
0160	936-8000		LS	TESTING CCTV SYSTEM (PI# 0013323)	1.000	5000.00	5000.00
0165	936-8500		LS	TRAINING CCTV SYSTEM (PI# 0013323)	1.000	4500.00	4500.00
0170	004-0012		EA	EXTRA WORK - VIDEO DETECTION REMOTE MANAGEMENT HARDWA	1.000	3000.00	3000.00
0175	939-2215		EA	NTWK SWITCH, LAYER 3 GIGE, TP E	4.000	7500.00	30000.00
0180	939-2230		EA	GBIC, TYPE A LX	50.000	200.00	10000.00
0185	939-2235		EA	GBIC, TYPE C ZX	8.000	1000.00	8000.00
0190	939-2300		EA	FIELD SWITCH, TYPE A	21.000	2100.00	44100.00
0195	939-4030		EA	TYPE C CABINET	2.000	20000.00	40000.00
0200	939-4050		EA	TYPE E CABINET	16.000	4000.00	64000.00
0205	939-5010		EA	ELEC PWR SVC ASSEMBLY,AERIAL SVC POINT	16.000	3500.00	56000.00
0210	939-8000		LS	TESTING COMMUNICATION AND ELECTRONIC EQUIPMENT	1.000	10000.00	10000.00
0215	939-8500		LS	TRAINING COMMUNICATION AND ELECTRONIC EQUI	1.000	7500.00	7500.00

ITEM TOTAL 1285049.78
 INFLATED ITEM TOTAL 1285049.79

TOTALS FOR JOB 0013323

ESTIMATED COST: 1285049.79
 CONTINGENCY PERCENT (0.0%): 0.00
 ESTIMATED TOTAL: 1285049.79



G R E S H A M
S M I T H A N D
P A R T N E R S

June 30, 2015

KICKOFF MEETING MINUTES

RONALD REAGAN PARKWAY ITS DESIGN PLEASANT HILL ROAD TO SR 124/SCENIC HIGHWAY GWINNETT COUNTY, GA

Gwinnett County Project No. M-0685-38
GDOT PI No. 0013323
GS&P Project No. 28246.09

MEETING DATE: June 11, 2015

PARTICIPANTS: Tom Sever, Gwinnett County
Ken Keena, Gwinnett County
Josh Williams, Gresham, Smith and Partners
Steve Gabriel, Gresham, Smith and Partners
Carla Holmes, Gresham, Smith and Partners
Chris Parypinski, MAAI
Anthony Tate, GDOT

This meeting served as a kickoff the Ronald Reagan Parkway ITS Design project. Below are the items discussed:

Introduction of key project staff:

1. GS&P staff:
 - a. Project Manager – Carla Holmes
 - b. Project Engineer – Josh Williams
 - c. ITS Designer – Steve Gabriel
2. Gwinnett County staff:
 - a. Chuck Bailey
 - b. Tom Sever
 - c. Ken Keena – **Ken will serve as primary point of contact, copy Tom on e-mails**
3. Moreland Altobelli staff
 - a. Dean Miller
 - b. Chris Parypinski
4. GDOT Program Delivery – Anthony Tate – **If GS&P needs to coordinate directly with GDOT, just make sure that Gwinnett County is copied on all correspondence.**
5. Review project scope
 - a. Phase 1 (Concept Development)

Design Services For The Built Environment



**KICKOFF MEETING MINUTES
RONALD REAGAN PARKWAY ITS DESIGN**

GS&P Project No. 28246.09

June 30, 2015

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- i. Concept Layout – review project limits map – **It was discussed if the project should begin at Pleasant Hill Road or possibly terminate at the fire station near Ronald Reagan & Lawrenceville Hwy. This will be discussed further during concept development and finalized at the beginning of the design phase.**
 - ii. GIS database – Gwinnett Co. to furnish to GS&P – **Gwinnett County provided GIS cd's at the meeting**
 - iii. Existing signal plans – Gwinnett Co. to furnish to GS&P – **Gwinnett County will provide GS&P with existing signal information.**
 - iv. Recently Completed or Existing GDOT/Gwinnett/CID projects requiring coordination? – **Atkins is beginning an ITS project along Five Forks Triukum (PI No. 0013143), GS&P will coordinate with Atkins and Gwinnett County regarding the connection of the two projects. In addition, Gwinnett County has existing 24SM fiber on the eastern end of the project, it is possible that the conduit could be reused for this project.**
 - v. Develop Concept Report for Gwinnett County & GDOT review and approval – **GS&P will begin work on concept report and provide draft to Gwinnett County by June 2.**
- b. Phase 2 (Preliminary Design)
- i. **Gwinnett County provided a list of design standards for ITS projects, to ensure that all of the upcoming ITS design projects are designed similarly.**
 - ii. GS&P will begin field review of existing conditions
 - iii. Utility locates - GS&P will call locates for entire corridor
 - iv. Communications - proposed trunk line may be underground or aerial. – **It is intended that the trunk line will be all underground. It was discussed that the conduit could be installed by open trench, instead of directional bore, since it would be cheaper and there are limited obstructions along the shoulder of Ronald Reagan Parkway. There is existing 24SM fiber from Presidential Circle to SR 124 and the conduit may be reusable.**
 - v. CCTV cameras - GS&P will schedule filming of proposed CCTV locations with Gwinnett DOT – review preliminary CCTV locations. – **GS&P has estimated that there will be 15 cameras needed to provide full coverage for the project. Gwinnett County proposed that some locations might be better served by 2 cameras located on the existing traffic signal poles, instead of 1 camera installed on a new strain pole. GS&P will take this into account during design. For Gwinnett County also requested that poles be placed outside clear zone to avoid the need for guardrail.**



**KICKOFF MEETING MINUTES
RONALD REAGAN PARKWAY ITS DESIGN**

GS&P Project No. 28246.09

June 30, 2015

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- vi. **Wireless connection at Webb Gin Road House – GS&P will look at putting a 900 MHz wireless connection to the Webb Gin Road House & Dogwood Road intersection.**
 - vii. **Weather Monitoring – Gwinnett County proposed the possibility of installing some form of RWIS device(s) as part of the project. GS&P will coordinate further with Gwinnett County and GDOT regarding this.**
 - viii. **Environmental Coordination – GS&P will provide rough layout to Chris (MAAI) as soon as it is available to begin environmental process.**
 - ix. **Trenching vs. Boring – GS&P will look into the potential cost difference between trenching and boring of the conduit. In addition GS&P will determine if trenching will have an impact on the overall disturbed area (greater than 1 acre), which would potentially require full erosion control plans.**
 - x. Plan submittal: Preliminary design for Gwinnett County review & PFPR Submittal to GDOT
- c. Phase 3 (Final Design)
- i. Address GDOT and Gwinnett County’s preliminary design comments
 - ii. Final quantities and cost estimate
 - iii. Final special provisions (use latest GDOT specs)
 - iv. Final plan submittal for Gwinnett Co. review & FFPR Submittal to GDOT
 - v. Address final comments
 - vi. PS&E Submission
- d. Right of Way – will identify R/W conflicts early and work to resolve with County – **No R/W impacts are anticipated on the project.**
6. Review schedule
- a. Concept Development – 4 weeks
 - b. Preliminary Design – 12 months
 - c. Final Design – 7 months
7. Progress meeting schedule – **It was agreed that progress meetings would be held on the 2nd Tuesday of the month, beginning with July 14th.**