

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. # 0012631 **OFFICE** Design Policy & Support
DeKalb and Fulton Counties
GDOT District 7 - Metro Atlanta **DATE** 1/22/2015
Perimeter Activity Center – ITS Upgrades
& System Expansion

FROM  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:

Glenn Bowman, 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
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Hiral Patel, State Environmental Administrator
Ben Rabun, 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
Mike Bolden, State Utilities Engineer
Richard Cobb, Statewide Location Bureau Chief
Kathy Zahul, District Engineer
Scott Lee, District Preconstruction Engineer
Patrick Allen, District Utilities Engineer
Xavier James, Project Manager
BOARD MEMBER - 6th and 11th Congressional Districts

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

Project Type: <u>ITS/Reconstruction/ Rehabilitation</u>	P.I. Number: <u>0012631</u>
GDOT District: <u>District 7</u>	County: <u>DeKalb, Fulton</u>
Federal Route Number: <u>N/A</u>	State Route Number: <u>N/A</u>
Project Number: _____	

**Perimeter Activity Center – ITS Upgrades & System Expansion/
Congestion Reduction and Traffic Flow Improvements**

Submitted for approval:

<u>Ashlyn Morgan</u> Ashlyn Morgan, PE, Atkins	<u>11-14-14</u> DATE
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<u>MWD</u> Local Government Sponsor	<u>11/10/14</u> DATE
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<u>Albert Shelby</u> State Program Delivery Engineer	<u>11/24/14</u> DATE
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<u>James James</u> (C.D.P.) GDOT Project Manager	<u>11/20/14</u> DATE
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Recommendation for approval:

* <u>HIRAL PATEL</u> State Environmental Administrator	<u>12/15/2014</u> DATE
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* <u>KATHY ZAHUL</u> State Traffic Engineer	<u>12/10/2014</u> DATE
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The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

* <u>CYNTHIA L. VAN DYKE</u> State Transportation Planning Administrator	<u>12/3/2014</u> DATE
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Approval:

Concur: <u>[Signature]</u> GDOT Director of Engineering	<u>1/14/2015</u> DATE
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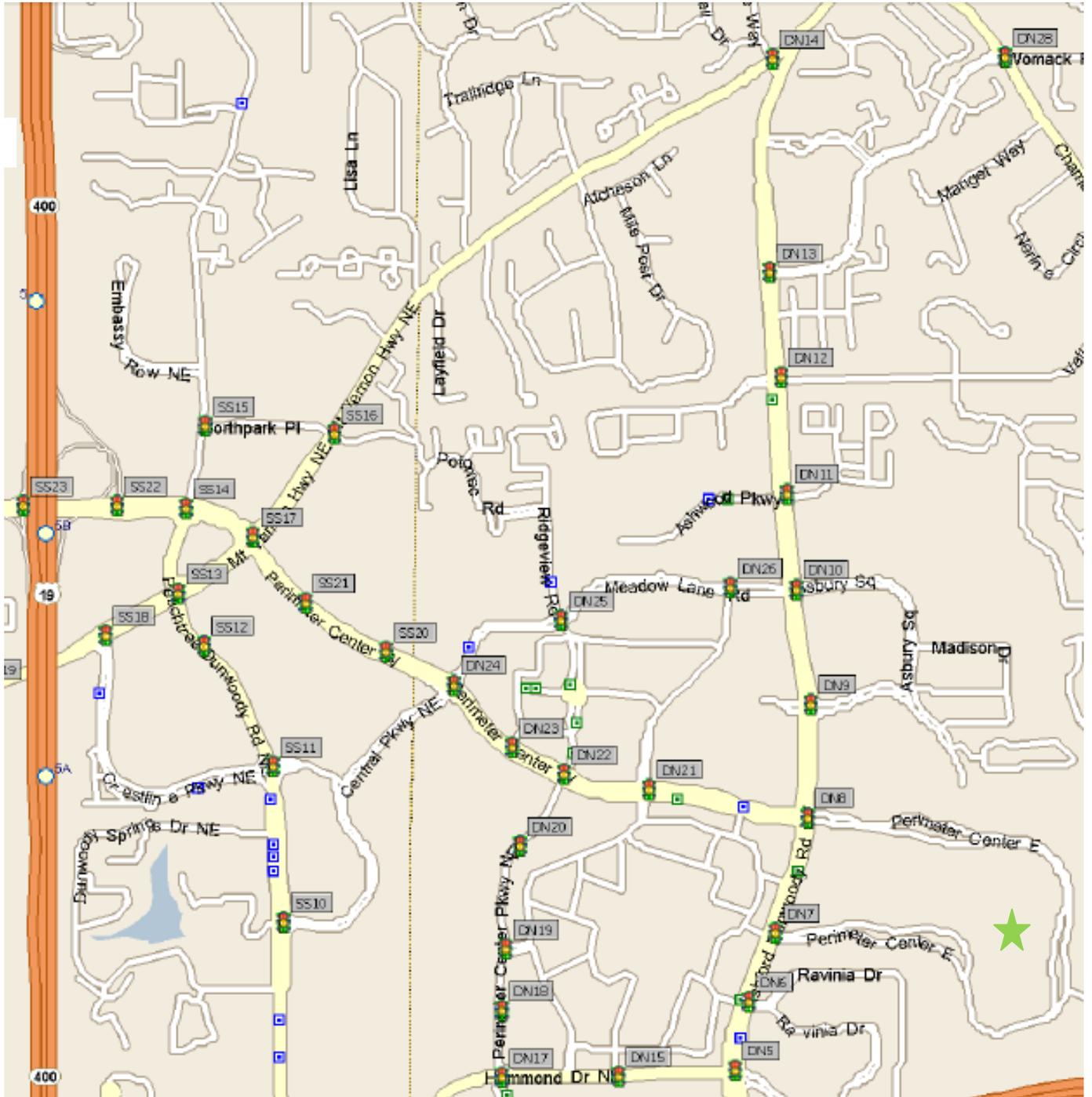
Approve: <u>[Signature]</u> GDOT Chief Engineer	<u>1.20.15</u> DATE
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* RECOMMENDATION ON FILE - [Signature]

PROJECT LOCATION

#	Primary Route	Secondary Route
DK1	Ashford Dunwoody	Perimeter Summit Pkwy
DK2	Ashford Dunwoody	Ashford Green
DK3	Ashford Dunwoody	Lake Hearn
DN1	Ashford Dunwoody Rd	I-285 EB
DN6	Ashford Dunwoody Rd	Ravinia Pkwy
DN7	Ashford Dunwoody Rd	Perimeter Center East
DN8	Ashford Dunwoody Rd	Perimeter Center West
DN10	Ashford Dunwoody Rd	Meadow Lane
DN13	Ashford Dunwoody Rd	Ashford Center Pkwy
DN14	Ashford Dunwoody Rd	Mt Vernon Rd
DN15	Hammond Dr	Perimeter Mall
DN17	Hammond Dr	Perimeter Center Pkwy
DN19	Perimeter Center Pkwy	Perimeter Mall
DN21	Perimeter Center West	Perimeter Center Pl
DN22	Perimeter Center West	Perimeter Center Pkwy
DN24	Perimeter Center West	Crown Pointe
DN25	Meadow Lane Rd	Ridgeview Rd
SS1	Peachtree Dunwoody Rd	Glenridge Connector
SS2	Peachtree Dunwoody Rd	Johnson Ferry Rd
SS3	Peachtree Dunwoody Rd	Northside Hospital
SS5	Peachtree Dunwoody Rd	Lake Hearn Dr
SS7	Peachtree Dunwoody Rd	I-285 WB Off Ramp
SS8	Peachtree Dunwoody Rd	Concourse Pkwy
SS9	Peachtree Dunwoody Rd	Hammond Dr
SS11	Peachtree Dunwoody Rd	Crestline Pkwy
SS13	Peachtree Dunwoody Rd	Mt. Vernon Hwy
SS17	Perimeter Center West	Mt. Vernon Hwy
SS21	Perimeter Center West	Sandy Springs MARTA
SS24	Abernathy Rd	Barfield Rd
SS29	Glenridge Connector	Johnson Ferry Rd
SS30	Glenridge Dr	I-285 EB Off Ramp
SS31	Glenridge Dr	I-285 WB On Ramp
SS32	Glenridge Dr	Glenforest Rd
SS36	Hammond Dr	SR 400 SB Off Ramp
SS37	Hammond Dr	Concourse Entrance (East)
SS39	Glenridge Dr	Johnson Ferry Rd
SS41	Johnson Ferry	Glenridge Point Pkwy
SS44	Glenlake Pkwy	Glenlake I Entrance
SS55	Hammond Dr	Hammond Center Apartments
	Perimeter Center East	Dunwoody City Hall

North



PLANNING & BACKGROUND DATA

Project Justification Statement:

ITS Upgrades and System Expansion: The purpose of the project is to provide Advanced Transportation Management System (ATMS) upgrades within the Perimeter Community Improvement Districts (PCIDs) in order to provide infrastructure to enhance the capabilities of the Perimeter Traffic Operations Program (PTOP), thus reducing delays and increasing efficiency. The proposed project is to be funded by the Congestion Mitigation and Air Quality Improvement Program (CMAQ).

Operational improvement: The intersection of Peachtree Dunwoody Road at Hammond Drive is located in the City of Sandy Springs in Fulton County, Georgia and has been identified by PCIDs and the City of Sandy Springs as a high priority for an operational improvement. The proposed project is to be funded by CMAQ. The purpose of the proposed project is to improve traffic operations by creating an additional northbound left turn lane, thereby decreasing delays and increasing efficiency.

Existing conditions:

- Ashford Dunwoody Rd at Perimeter Summit Pkwy is a two-lane roadway with a left and right turn lane in the SB direction.
- Ashford Dunwoody Rd at Ashford Green is a one-lane roadway with a right turn lane in the SB direction and two-lane with a left turn lane in the NB direction.
- Ashford Dunwoody Rd at Lake Hearn is a two lane with left turn lane in the SB direction and a three-lane with left turn lane in the NB direction.
- Ashford Dunwoody Rd at I-285 EB ramp is one side of a diverging diamond interchange with a three lane configuration (thru, shared thru left-turn, and dedicated left-turn lanes) for the SB direction, and a three lane configuration (dedicated left-turn and two thru lanes) for the NB direction.
- Ashford Dunwoody Rd at Hammond Dr is a four-lane divided roadway with dual left turn lanes and a single right turn lane in the SB direction, and a four-lane roadway with dual left turn lanes in the NB direction.
- Ashford Dunwoody Rd at Ravinia Dr is a four-lane divided roadway with a left turn lane in the SB direction, and a four-lane roadway with a left turn lane and a single right turn lane in the NB direction.
- Ashford Dunwoody Rd at Perimeter Center East is a four-lane divided roadway with one shared through-right lane and single left turn lane
- Ashford Dunwoody Rd at Perimeter Center North is a four-lane divided roadway with one left and right turn lanes.
- Ashford Dunwoody Rd at Perimeter Center West is a three-lane divided roadway with a right and left turn lane in the SB direction, and a two-lane roadway with dual left turn lanes and a right turn lane in the NB direction.
- Ashford Dunwoody Rd at Meadow Lane is a two-lane divided roadway with left turn lane in the SB direct and a two-lane roadway with left and right turn lanes in the NB direction.
- Ashford Dunwoody Rd at Ashford Center Pkwy is a two-lane divided roadway with left and right turn lanes.
- Ashford Dunwoody Rd at Mt Vernon Rd is a one-lane roadway for a neighborhood in the SB direction, and a one-lane roadway with a left and right turn lane in the NB direction.
- Peachtree Dunwoody Rd at Glendridge Connector is a one-lane roadway with a left and right turn lane in the SB direction, and a one-lane roadway with dual left turn lanes and a right turn lane in the NB direction.

- Peachtree Dunwoody Rd at Johnson Ferry Road is a two-lane roadway with a left and right turn lane in the SB direction, and a two-lane roadway with dual left turn lanes and a right turn lane in the NB direction.
- Peachtree Dunwoody Rd at Northside Hospital is a two-lane roadway with left and right turn lanes.
- Peachtree Dunwoody Rd at Lake Hearn is a two-lane roadway with left and right turn lanes.
- Peachtree Dunwoody Rd at I-285 WB ramp is a two-lane roadway, divided in the SB direction.
- Peachtree Dunwoody Rd at Concourse Pkwy is a two-lane roadway with left and right turn lanes.
- Peachtree Dunwoody Rd at Crestline Pkwy is a two-lane roadway with left and right turn lanes, and divided in the NB direction.
- Peachtree Dunwoody Rd at Mt. Vernon Hwy is a two-lane roadway with a right turn lane in the SB direction, and a two-lane roadway with a left turn lane and a shared through-right lane.
- Hammond Dr at SR 400 SB ramp is a five-lane roadway with a continuous through and right turn lane through the intersection in the EB direction, and a three-lane roadway in the WB direction.
- Hammond Dr at Concourse Entrance East is a three-lane roadway with a left and right turn lane in the EB direction and dual lefts and a signal right turn lane in the WB direction.
- Hammond Dr at Perimeter mall is a three lane roadway with a left and right turn lane in the WB direction, and a two lane roadway with a left turn lane in the EB direction.
- Hammond Dr at Perimeter Center Pkwy is a two lane roadway with dual lefts in the WB direction and a left and right turn lane in the EB direction.
- Hammond Dr at Hammond Center Apartments is a two-lane roadway with left and right turn lanes.
- Perimeter Center West at Mt Vernon is a two-lane roadway with dual left turn lanes and single right turn lanes.
- Perimeter Center West at Sandy Springs MARTA station is a two-lane roadway with left and right turn lanes. A bike lane ends in the SB direction and begins in the NB direction.
- Perimeter Center West at Perimeter Center Place is a two-lane divided roadway with left turn lanes and bike lanes in each direction.
- Perimeter Center West at Perimeter Center Pkwy is a two-lane divided roadway with bike lanes and a right and left turn lane in the WB direction and left turn lane in the EB direction.
- Perimeter Center West at Crown Pointe Pkwy is a two-lane divided roadway with bike lanes, dual left turn lanes, and single right turn lanes.
- Meadow Lane at Ridgeview Road is a two-lane divided roadway with bike lanes and a right turn lane in the WB direction and a left turn lane in the EB direction.
- Perimeter Center Pkwy at Perimeter Mall is a two-lane divided roadway with bike lanes and left turn lanes.
- Perimeter Center Pkwy at MARTA is a two-lane divided roadway with a left turn lane in the SB direction and a left and right turn lane in the NB direction.
- Abernathy Rd at Barfield Rd is a two-lane divided roadway with a left and right turn lane in the WB direction and dual left turn lanes and a single right turn lane in the EB direction.
- Glenlake Pkwy at Glenlake I Entrance is a two-lane roadway with a left turn lane in the NB direction.
- Johnson Ferry Rd at Glenridge Point Pkwy is two-lane roadway with left and right turn lanes.
- Glenridge Connector at Johnson Ferry Rd is a two-lane roadway with dual left turn lanes in the SB direction and a three-lane roadway with a left turn lane in the NB direction.
- Johnson Ferry Rd at Glenridge Dr is a two-lane roadway with left turn lanes.

- Glenridge Dr at I-285 EB is a two-lane roadway in the SB direction and a three-lane roadway in the NB direction with a lane dedicated to the turn lane for I-285 WB and Glenforest Dr.
- Glenridge Dr at I-285 WB is a two-lane divided roadway with a left turn lane and divided through lanes in the NB direction.
- Glenridge Dr at Glenforest Rd is a two-lane divided roadway with a left turn lane in the SB direction and a left and right turn lane in the NB direction.

Other projects in the area:

- 0013138 – Ashford Dunwoody Road and Dresden Drive – ITS Expansion – Project will expand the ITS along Ashford Dunwoody Road from Perimeter Summit Parkway to SR 141 (Peachtree Road) and Dresden Drive from SR 141 to Clairmont Road.
- 0009981 – CR 262/Hammond Drive from DeKalb County Line to CR 1318/Mt Vernon Hwy – Project used to be a widening project and is currently being re-scoped.
- 721850 – SR 400 from at Hammond/Abernathy to North of Spalding including CD System – Project adds two collector distributor lanes (plus auxiliary lanes) on SR 400 NB and SB from I-285 to Spalding Drive. The exiting north facing ramps at the Hammond Drive Half Diamond interchange will be modified dot access the proposed CD lanes.

Description of the proposed project:

ITS Upgrades and System Expansion: The ATMS upgrades will include a Traffic Control Center (TCC) located in the City of Dunwoody for the purposes of local monitoring and active management, signal equipment, intersection vehicle detection, and communication devices. The communication devices will include fiber optic interconnect cabling, Closed Circuit Television Cameras (CCTVs), and wireless arterial travel time devices. The following Tables will show what the PCIDs have noted as reasons to upgrade each intersection. The following 43 intersections located in DeKalb and Fulton Counties have been identified by the Perimeter Community Improvement Districts (PCIDs), the City of Brookhaven, City of Dunwoody, and City of Sandy Springs as high priority for ATMS related upgrades. See attached Concept of Operations for additional information.

Table 1: Signal Equipment Upgrade Needs

County	City	Primary Route	Intersecting Road	Reason for Upgrade
DeKalb	Brookhaven	Ashford Dunwoody	Perimeter Summit Pkwy	Vehicle Detection
DeKalb	Brookhaven	Ashford Dunwoody	Ashford Green	Vehicle Detection
DeKalb	Brookhaven	Ashford Dunwoody	Lake Hearn	Vehicle Detection
DeKalb	Dunwoody	Ashford Dunwoody	Hammond	Vehicle Detection
DeKalb	Dunwoody	Ashford Dunwoody	Ravinia Entrance	Vehicle Detection
DeKalb	Dunwoody	Ashford Dunwoody	Perimeter Center East	Vehicle Detection
DeKalb	Dunwoody	Ashford Dunwoody	Perimeter Center North	Vehicle Detection
DeKalb	Dunwoody	Hammond Dr	Perimeter Mall Entrance	Vehicle Detection
DeKalb	Dunwoody	Hammond Dr	Perimeter Center Pkwy	Vehicle Detection
DeKalb	Dunwoody	Perimeter Center Pkwy	MARTA Entrance	Vehicle Detection
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Northside Hospital	Signal Conduit Repair
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Concourse Pkwy	Vehicle Detection
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Mt. Vernon Hwy	Vehicle Detection
Fulton	Sandy Springs	Perimeter Center West	Mt. Vernon Hwy	Vehicle Detection

Fulton	Sandy Springs	Perimeter Center West	MARTA	Vehicle Detection
Fulton	Sandy Springs	Glenridge Connector	Johnson Ferry Rd	Vehicle Detection
Fulton	Sandy Springs	Glenridge Dr	I-285 EB Off Ramp	Vehicle Detection
Fulton	Sandy Springs	Glenridge Dr	Johnson Ferry Rd	Vehicle Detection
County	City	Primary Route	Intersecting Road	Reason for Upgrade
Fulton	Sandy Springs	Hammond Dr	SR 400 SB Off Ramp	Vehicle Detection
Fulton	Sandy Springs	Hammond Dr	Concourse Entrance (East)	Pedestrian Detection
Fulton	Sandy Springs	Johnson Ferry	Glenridge Point Pkwy	Vehicle Detection

Table 2: Communication Equipment Upgrade Needs

County	City	Primary Route	Intersecting Road	Reason for Upgrade
DeKalb	Brookhaven	Ashford Dunwoody Rd	Perimeter Summit Pkwy	Communication Upgrade
DeKalb	Brookhaven	Ashford Dunwoody Rd	I-285 EB	Communication Upgrade
DeKalb	Dunwoody	Ashford Dunwoody Rd	Ravinia	Communication Upgrade
DeKalb	Dunwoody	Ashford Dunwoody Rd	Perimeter Center East	Communication Upgrade
DeKalb	Dunwoody	Ashford Dunwoody Rd	Perimeter Center West	Communication Upgrade
DeKalb	Dunwoody	Ashford Dunwoody Rd	Meadow Lane	Communication Upgrade
DeKalb	Dunwoody	Ashford Dunwoody Rd	Ashford Center Pkwy	Communication Upgrade
DeKalb	Dunwoody	Ashford Dunwoody Rd	Mt Vernon Rd	Communication Upgrade
DeKalb	Dunwoody	Perimeter Center West	Perimeter Pl	Communication Upgrade
DeKalb	Dunwoody	Perimeter Center West	Perimeter Center Pkwy	Communication Upgrade
DeKalb	Dunwoody	Perimeter Center West	Crown Pointe	Communication Upgrade
DeKalb	Dunwoody	Hammond Dr	Perimeter Mall Entrance	Communication Upgrade
DeKalb	Dunwoody	Hammond Dr	Perimeter Center Pkwy	Communication Upgrade
DeKalb	Dunwoody	Perimeter Center Pkwy	Mall Entrance	Communication Upgrade
DeKalb	Dunwoody	Meadow Lane Rd	Ridgeview Rd	Communication Upgrade
DeKalb	Dunwoody	Perimeter Center East	Dunwoody City Hall	Communication Upgrade
Fulton	Sandy Springs	Perimeter Center West	MARTA	Communication Upgrade
Fulton	Sandy Springs	Abernathy Rd	Barfield Rd	Communication Upgrade
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Lake Hearn Dr	Communication Upgrade
Fulton	Sandy Springs	Peachtree Dunwoody Rd	I-285 WB	Communication Upgrade
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Crestline Pkwy	Communication Upgrade
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Mt Vernon Rd	Communication Upgrade
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Johnson Ferry Rd	Communication Upgrade
Fulton	Sandy Springs	Hammond Dr	Hammond Center Apartments	Communication Upgrade
Fulton	Sandy Springs	Glenridge Dr	Glenforest Rd	Communication Upgrade
Fulton	Sandy Springs	Glenridge Dr	I-285 WB On Ramp	Communication Upgrade
Fulton	Sandy Springs	Glenlake Pkwy	Glenlake I Entrance	Communication Upgrade

Table 3: Travel Time Information Needs

County	City	Primary Route	Intersecting Road	Reason for Upgrade
DeKalb	Brookhaven & Dunwoody	Ashford Dunwoody Rd	Perimeter Summit to Mt Vernon Hwy	Travel Time Information
Fulton	Sandy Springs	Peachtree Dunwoody Rd	Glenridge Connector to	Travel Time Information

			Abernathy	
DeKalb & Fulton	Dunwoody & Sandy Springs	Perimeter Center West / Abernathy	Ashford Dunwoody Rd to Glenridge Dr	Travel Time Information
County	City	Primary Route	Intersecting Road	Reason for Upgrade
DeKalb & Fulton	Dunwoody & Sandy Springs	Hammond Drive	Ashford Dunwoody Rd to Glenridge Dr	Travel Time Information
Fulton	Sandy Springs	Glenridge Dr	Peachtree Dunwoody Rd to Hammond	Travel Time Information
DeKalb	Dunwoody	Perimeter Center Parkway	Lake Hearn to Perimeter Center West	Travel Time Information
DeKalb & Fulton	Dunwoody & Sandy Springs	Mt. Vernon	Ashford Dunwoody Rd to Barfield	Travel Time Information

Operational improvement: This project will add operational improvements that include an additional northbound left turn lane. The improvements will modify the existing signal infrastructure to accommodate dual turn lanes, and modify pedestrian accommodations consistent with ADA standards, all of which will serve to enhance the capabilities of the Perimeter Traffic Operations Program (PTOP).

The proposed project consists of the following key elements:

1. Widening the northbound approach to accommodate an additional left turn lane along Peachtree Dunwoody Road approximately 525 feet to provide dual left turn lane storage and taper. Proposed turn lane will be constructed at a minimum of 11-foot wide.
2. Removal of the existing median on the south leg of the intersection. Narrowing of lane widths, repaving and restriping lanes on the northbound approach. All restriped lanes will be a minimum of 11-foot wide.

The standard project limits will be 300 feet north and 900 feet south of Hammond Drive along Peachtree Dunwoody Road and 300 feet east and west of Peachtree Dunwoody Road along Hammond Drive. The project proposes to maintain the existing urban typical section along Peachtree Dunwoody Road. The existing signalized intersection at Peachtree Dunwoody Road and Hammond Drive will be modified to accommodate the proposed lane configuration.

MPO: Atlanta TMA

TIP #: FN-284

TIA Regional Commission: Not a TIA Project

Congressional District(s): 6 and 11

Federal Oversight: Exempt State Funded Other

Projected Traffic: N/A

Current Year (20WW): N/A Open Year (20XX): N/A

Design Year (20YY): N/A

Traffic Projections Performed by: N/A

Functional Classification (Mainline):

Ashford Dunwoody Rd – Urban Principal Arterial
 Peachtree Dunwoody Rd – Minor Arterial
 Perimeter Center West – Principal Arterial
 Perimeter Center East – County Road
 Perimeter Center Pkwy – Minor Street
 Hammond Dr – Minor Arterial
 Glenrdige Connector – Minor Arterial
 Glenridge Dr – Minor Arterial
 Johnson Ferry Rd – Minor Arterial
 Glenlake Pkwy – Collector
 Meadow Lane Rd – Minor Street
 Abernathy Rd – Principal Arterial

Complete Streets - Bicycle, Pedestrian, and/or Transit Warrants:

Warrants met: None Bicycle Pedestrian Transit

DESIGN AND STRUCTURAL

Description of Proposed Project:

Major Structures: N/A

Mainline Design Features: The only mainline design feature changes are at Peachtree Dunwoody Road and Hammond Drive. All other intersections will remain unchanged.

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	4 Travel Lanes	4 Travel Lanes	4 Travel Lanes
- Lane Width(s)	12-13' (+/-)	11-12'	11' min.
- Median Width & Type	24' Raised, Landscaped	20' Raised	0-24' Raised, Landscaped (portions of exist. Median removed)
- Outside Shoulder or Border Area Width	12-16'	10-16'	Match Exist
- Outside Shoulder Slope	Unknown	2% max.	Match Exist.
- Inside Shoulder Width	N/A	N/A	N/A
- Sidewalks	Varies 5' to 8'	5' min.	Match Exist.
- Auxiliary Lanes	1 12' NB Left Turn Lane, 1 NB 11' Right Turn Lane	11' min.	2 11' NB Left Turn Lanes, 1 12' NB Right Turn Lane
- Bike Lanes	N/A	4'	N/A
Posted Speed	35		35
Design Speed	35	35	35
Min Horizontal Curve Radius	1,000' +/-	371'	1,000' +/-
Maximum Superelevation Rate	Unknown	4.0%	Match Exist.
Maximum Grade	Unknown	8%	Match Exist.
Access Control	By Permit	By Permit	By Permit
Design Vehicle	Unknown	WB-40 or BUS-40	WB-67

Major Interchanges/Intersections:

- Ashford Dunwoody Road at I-285 EB
- Glenridge Drive at I-285 EB
- Glenridge Drive at I-285 WB
- Peachtree Dunwoody at I-285
- Hammond Drive at SR 400 SB
- Hammond Drive at SR 400 NB

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: None

Utility Involvements: Utility companies are as follows:

- AT&T - Communications
- Atlanta Gas Light Resources - Gas
- City of Atlanta Bureau of Watershed Management - Water
- DeKalb County Watershed Management - Water
- Comcast, Inc. - Communications
- Zayo Fiber Solutions – Communications
- Level 3 - Communications
- Fulton County Public Works
- Georgia Power Company – Electric (Distribution)
- Georgia Power Transmission - Electric
- Sawnee EMC - Electric

SUE Required: No Yes

Public Interest Determination Policy and Procedure recommended? No Yes

Right-of-Way: Existing width: _ft Proposed width: _ft
Required Right-of-Way anticipated: No Yes Undetermined
Easements anticipated: None Temporary Permanent Utility Other

Anticipated number of impacted parcels:	N/A
Displacements anticipated:	Total: N/A
	Businesses: N/A
	Residences: N/A
	Other: N/A

ENVIRONMENTAL AND PERMITS

Anticipated Environmental Document:

GEPA:

NEPA: CE

PCE

MS4 Compliance – Is the project located in an MS4 area? No Yes

Environmental Permits, Variances, Commitments, and Coordination anticipated: None anticipated.

Air Quality:

Is the project located in a PM 2.5 Non-attainment area? No Yes

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

Is a Carbon Monoxide hotspot analysis required? No Yes

NEPA/GEPA Comments & Information: Based on the nature of the project, impacts to history, archaeology, ecology, air and noise are expected to be minimal to none.

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Project Meetings: Concept Team Meeting 9/26/2014

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Atkins
Design	Kimley-Horn
Right-of-Way Acquisition	N/A
Utility Relocation	N/A
Letting to Contract	City of Dunwoody
Construction Supervision	City of Dunwoody & Sandy Springs
Providing Material Pits	N/A
Providing Detours	N/A
Environmental Studies, Documents, & Permits	Kimley-Horn
Environmental Mitigation	N/A
Construction Inspection & Materials Testing	City of Dunwoody & Sandy Springs

Other coordination to date: Concept Team Meeting 9/26/2014

Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
Funded By	Dunwoody	Dunwoody	Dunwoody	80% Federal 20% Local	Dunwoody	
\$ Amount	\$387,229.24	N/A	N/A	\$1,692,011.39	N/A	\$2,079,240.63
Date of Estimate	2/1/2013	N/A	N/A	10/8/2014		

*CST Cost includes: Construction, Engineering and Inspection, Liquid AC Cost Adjustment, and Risk Contingency.

ALTERNATIVES DISCUSSION

No-Build Alternative:			
Estimated Property Impacts:	N/A	Estimated Total Cost:	N/A
Estimated ROW Cost:	N/A	Estimated CST Time:	N/A
Rationale: Does not fulfill the objectives of the Project Justification Statement.			

Comments/Additional Information: None

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Revision to Programmed Costs
2. Construction cost estimate
3. Operational Improvement Concept Layout
4. Concept of Operations
5. PFA

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. **0012631**

OFFICE **Program Delivery**

PROJECT DESCRIPTION

Perimeter Activity Center - ITS Upgrades and System
Expansion/Congestion Reduction and Traffic Flow Improvements

DATE **November 11, 2014**

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

To: Lisa L. Myers, State Project Review Engineer

Subject: **REVISIONS TO PROGRAMMED COSTS**

PROJECT MANAGER **Xavier James**

MGMT LET DATE

MGMT ROW DATE

PROGRAMMED COSTS (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$ **1,050,000.00**

DATE **7/14/2014**

RIGHT OF WAY \$

DATE

UTILITIES \$

DATE

REVISED COST ESTIMATES

CONSTRUCTION* \$ **1,692,011.39**

RIGHT OF WAY \$

UTILITIES \$

*Cost Contains **10** % Contingency

REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:

Project Type: Reconstruction/Rehabilitation Risk:High Project Phase: Concept
Original estimate was from Planning. Updated CST cost estimate based on information gathered during field visit and proposed work to intersections. Also, it was determined during the field visit that right-of-way will not be required for this project.

CONTINGENCY SUMMARY

A. CONSTRUCTION COST ESTIMATE:	\$	1,454,255.00	Base Estimate From CES
B. ENGINEERING AND INSPECTION (E & I):	\$	72,712.75	Base Estimate (A) x 5 %
C. CONTINGENCY:	\$	152,696.78	Base Estimate (A) + E & I (B) x 10 % See % Table in "Risk Based Cost Estimation" Memo
D. TOTAL LIQUID AC ADJUSTMENT:	\$	12,346.86	Total From Liquid AC Spreadsheet
E. CONSTRUCTION TOTAL:	\$	1,692,011.39	(A + B + C + D = E)

REIMBURSABLE UTILITY COSTS

UTILITY OWNER	REIMBURSABLE COST
TOTAL	\$ -

ATTACHMENTS:

Detailed Cost Estimate Printout From TRAQS Liquid AC Adjustment Spreadsheet
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PROJ. NO. 0012631
P.I. NO. 0012631
DATE 10/8/2014

CALL NO. 9/29/2009

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	Oct-14	\$ 3.312
DIESEL		\$ 3.718
LIQUID AC		\$ 615.00

Link to Fuel and AC Index:
<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt

Price Adjustment (PA)				11808	\$	11,808.00
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	984.00		
Monthly Asphalt Cement Price month project let (APL)			\$	615.00		
Total Monthly Tonnage of asphalt cement (TMT)				32		

ASPHALT	Tons	%AC	AC ton
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	475	5.0%	23.75
9.5 mm SP		5.0%	0
25 mm SP	110	5.0%	5.5
19 mm SP	55	5.0%	2.75
	640		32

BITUMINOUS TACK COAT

Price Adjustment (PA)				\$	538.86	\$	538.86
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	984.00			
Monthly Asphalt Cement Price month project let (APL)			\$	615.00			
Total Monthly Tonnage of asphalt cement (TMT)				1.460334313			

Bitum Tack

Gals	gals/ton	tons
340	232.8234	1.46033431

BITUMINOUS TACK COAT (surface treatment)

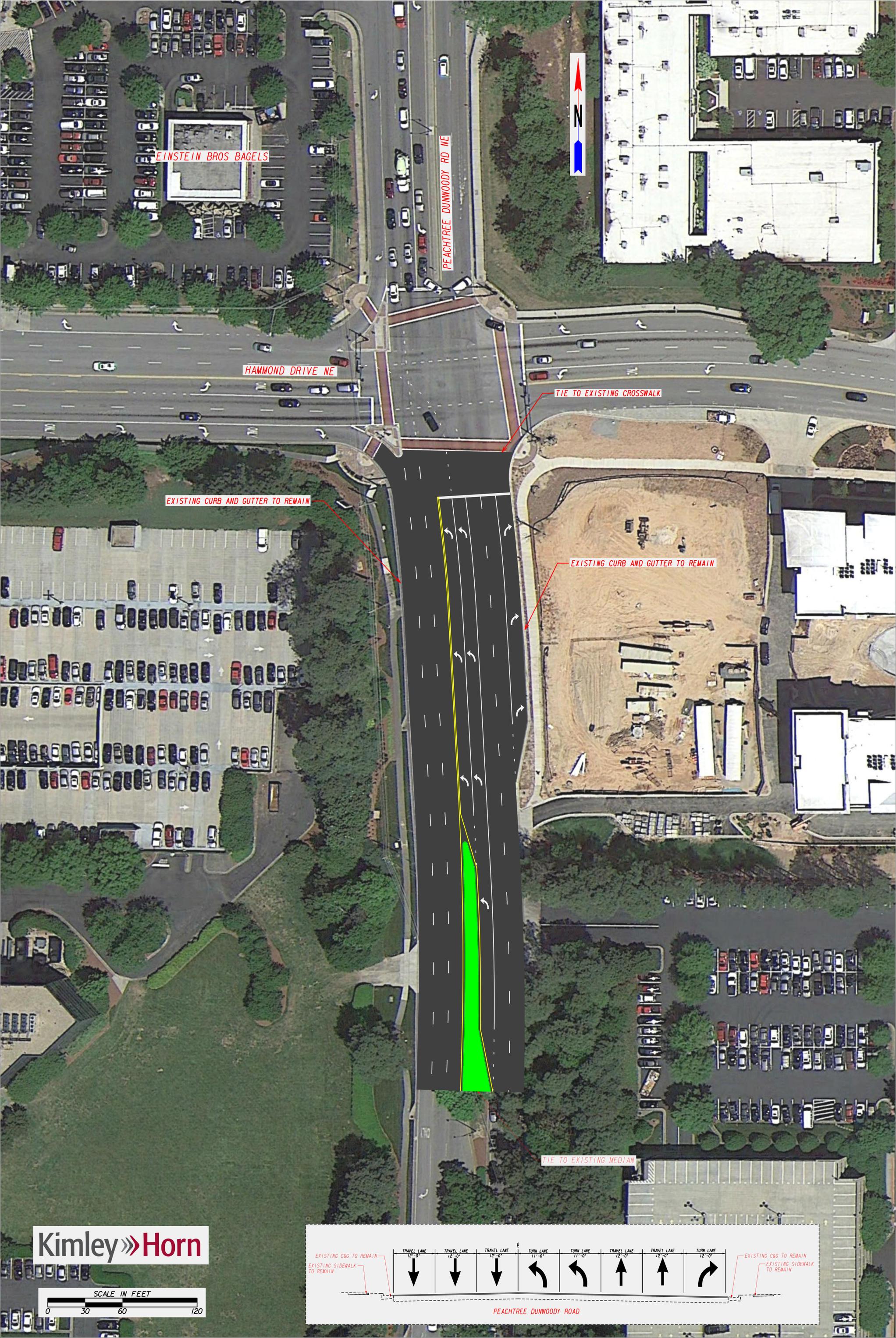
Price Adjustment (PA)					\$	0	\$	-
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	984.00				
Monthly Asphalt Cement Price month project let (APL)			\$	615.00				
Total Monthly Tonnage of asphalt cement (TMT)				0				

Bitum Tack

	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0

TOTAL LIQUID AC ADJUSTMENT \$ 12,346.86

PCIDs ATMS COST ESTIMATE					
ITEM NO.	UNIT	DESCRIPTION	QUANTITY	UNIT PRICE	EXTENDED AMOUNT
009-3000	LS	MISCELLANEOUS CONST - CONST SITE SIGNS	1	\$2,000.00	\$2,000
009-3500	LS	MISCELLANEOUS LANDSCAPE ITEMS	1	\$8,000.00	\$8,000
150-1000	LS	TRAFFIC CONTROL (\$400/DAY FOR 90 DAYS)	1	\$36,000.00	\$36,000
163-0232	AC	TEMPORARY GRASSING	1	\$500.00	\$500
163-0240	TN	MULCH	10	\$300.00	\$3,000
165-0010	LF	MAINT OF TEMP SILT FENCE, TP A	200	\$1.00	\$200
171-0010	LF	TEMPORARY SILT FENCE, TYPE A	400	\$2.00	\$800
210-0100	LS	GRADING COMPLETE	1	\$75,000.00	\$75,000
310-1101	TN	GR AGGR BASE CRS, INCL MATL	325	\$30.00	\$9,750
402-3130	TN	RECYL AC 12.5MM SP, INCL BM&HL	475	\$125.00	\$59,375
402-3121	TN	RECYL AC 25MM SP, GP 1/2, BM&HL	110	\$90.00	\$9,900
402-3190	TN	RECYL AC 19MM SP, GP 1/2, BM&HL	55	\$95.00	\$5,225
413-1000	GAL	BITUM TACK COAT	340	\$7.00	\$2,380
432-0206	SY	MILL ASPH CONC PVMT/ 1.50" DEP	4600	\$4.00	\$18,400
441-0754	SY	CONCRETE MEDIAN, 7 1/2 IN	11	\$55.00	\$605
441-6216	LF	CONC CURB & GUTTER/ 8"X24"TP2	170	\$20.00	\$3,400
500-3101	CY	CLASS A CONCRETE	4	\$700.00	\$2,800
636-1020	SF	HWY SGN, TPW MAT, REFL SH TP 3	10	\$15.00	\$150
636-2070	LF	GALV STEEL POSTS, TP 7	15	\$8.00	\$120
647-1000	LS	TRAF SIGNAL INSTALLATION - MODIFICATION	1	\$50,000.00	\$50,000
647-0200	LS	TRAFFIC DETECTION LOOP SYSTEM, NO. 1	1	\$6,500.00	\$6,500
647-0200	LS	TRAFFIC DETECTION LOOP SYSTEM, NO. 2	1	\$6,500.00	\$6,500
647-0200	LS	TRAFFIC DETECTION LOOP SYSTEM, NO. 3	1	\$1,500.00	\$1,500
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 1	1	\$21,000.00	\$21,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 2	1	\$40,000.00	\$40,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 3	1	\$21,000.00	\$21,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 4	1	\$14,000.00	\$14,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 5	1	\$10,000.00	\$10,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 6	1	\$15,000.00	\$15,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 7	1	\$30,000.00	\$30,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 8	1	\$35,000.00	\$35,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 9	1	\$21,000.00	\$21,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 10	1	\$14,000.00	\$14,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 11	1	\$42,000.00	\$42,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 12	1	\$42,000.00	\$42,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 13	1	\$14,000.00	\$14,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 14	1	\$42,000.00	\$42,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 15	1	\$14,000.00	\$14,000
647-1000	LS	TRAFFIC SIGNAL INSTALLATION NO. 16	1	\$1,000.00	\$1,000
647-2140	EA	PULL BOX, PB-4	10	\$1,250.00	\$12,500
647-2150	EA	PULL BOX, PB-5	6	\$1,500.00	\$9,000
653-0110	EA	THERM PVMT MARK, ARROW, TP 1	10	\$600.00	\$6,000
653-1501	LF	THERMO SOLID TRAF ST 5 IN, WHITE	870	\$0.50	\$435
653-1502	LF	THERMO SOLID TRAF ST 5 IN, YELLOW	1000	\$0.50	\$500
653-1704	LF	THERMO SOLID TRAF ST, 24 IN, WHITE	60	\$4.00	\$240
653-3501	GLF	THERMO SKIP TRAF ST, 5 IN, WHITE	1750	\$0.50	\$875
654-1001	EA	RAISED PVMT MARKERS TP 1	8	\$5.00	\$40
654-1003	EA	RAISED PVMT MARKERS TP 3	64	\$5.00	\$320
682-6233	LF	CONDUIT, NM, TP 3, 2 IN	16300	\$9.00	\$146,700
682-9030	LB	BAR REINF STEEL	400	\$1.50	\$600
682-9030	LS	LIGHTING SYSTEM - 4 LIGHTS	1	\$50,000.00	\$50,000
682-9950	LF	DIRECTIONAL BORE - 5 IN	10300	\$18.00	\$185,400
702-0559	EA	LIRIOPE MUSCARI - BIG BLUE	1350	\$5.00	\$6,750
702-9025	SY	LANDSCAPE MULCH	250	\$5.00	\$1,250
708-1000	CY	PLANT TOPSOIL	25	\$375.00	\$9,375
926-0000	EA	WIRELESS COMMUNICATION EQUIPMENT	32	\$3,250.00	\$104,000
935-1118	LF	OSP FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 48 FIBER	2500	\$2.50	\$6,250
935-1118	LF	OSP FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 144 FIBER	7500	\$2.75	\$20,625
935-1512	LF	OSP FIBER OPTIC CABLE, DROP, SINGLE MODE, 12 FIBER	200	\$2.00	\$400
935-3105	EA	FIBER OPTIC CLOSURE, UNDERGROUND, 48 FIBER	1	\$750.00	\$750
935-3108	EA	FIBER OPTIC CLOSURE, UNDERGROUND, 144 FIBER	1	\$800.00	\$800
935-3408	EA	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 144 FIBER	1	\$960.00	\$960
935-4010	EA	FIBER OPTIC SPLICE, FUSION	100	\$45.00	\$4,500
936-1002	EA	CCTV SYSTEM, TYPE C	24	\$8,370.00	\$200,880
937-4200	EA	WIRELESS MAGNETOMETER SENSOR, TP A	2	\$3,500.00	\$7,000
				TOTAL	\$1,454,255



EINSTEIN BROS BAGELS

PEACHTREE DUNWOODY RD NE

HAMMOND DRIVE NE



TIE TO EXISTING CROSSWALK

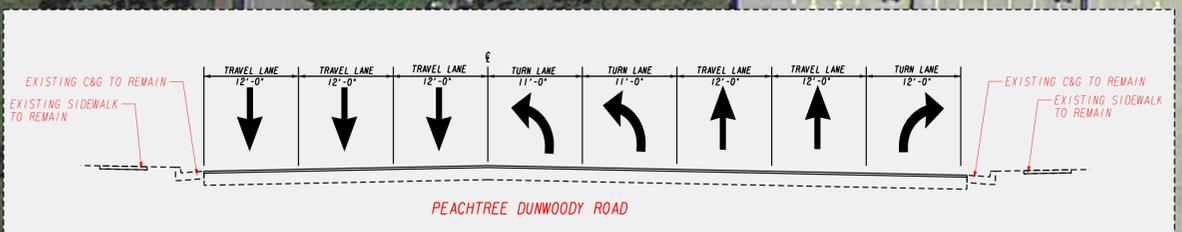
EXISTING CURB AND GUTTER TO REMAIN

EXISTING CURB AND GUTTER TO REMAIN

TIE TO EXISTING MEDIAN

Kimley»Horn

SCALE IN FEET
0 30 60 120





PERIMETER COMMUNITY
IMPROVEMENT DISTRICTS

WWW.PERIMETERCID.ORG

Concept of Operations

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Document Control Panel	
File Name:	PCID Concept of Operations
Version No.:	Version 2.0
Created By:	Ashlyn Morgan, PE
Date of First Submission:	October 15, 2014
Date of Final Submission	November 4, 2015

Revision History Control Panel		
CREATED BY:	Ashlyn Morgan, PE	October 6, 2014
REVIEWED BY:	Alvin James, Jr.	October 8, 2014
	City of Dunwoody	October 29, 2014
	Karen England	November 4, 2014
MODIFIED BY:	Ashlyn Morgan, PE	October 14, 2015
	Ashlyn Morgan, PE	November 4, 2015

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List of Acronyms

AMBERAmerica's Missing: Broadcast Emergency Response

AVLAutomatic Vehicle Location

CCTVClosed-Circuit Television

CMAQ..... Congestion Mitigation and Air Quality

DMS..... Dynamic Message Signs

FHWA Federal Highway Administration

GDOTGeorgia Department of Transportation

ITS..... Intelligent Transportation Systems

MARTAMetro Atlanta Rapid Transit Authority

PCID.....Perimeter Community Improvement District

PTOP..... Perimeter Traffic Operations Program

TCC Traffic Control Center

Concept of Operations

Introduction

The Perimeter Community Improvement Districts (PCID), comprised of the cities of Dunwoody, Sandy Springs, and Brookhaven, located in Fulton County, are part of the ever-growing metropolitan Atlanta, Georgia. The PCID exists among many neighboring cities and counties and within a state framework of other intelligent transportation systems (ITS) deployments and plans. These agencies will be stakeholders in the future deployment and operation of the PCID's ITS. The PCID is expanding their existing ITS for traffic and incident management purposes, which will be referred to from this point on as the "system." The system can include:

- Traffic control center (TCC),
- Traffic signals,
- Fiber optic and wireless backbone,
- Closed-circuit television (CCTV) cameras,
- Video detection cameras,
- Arterial travel time systems, and
- Dynamic message signs (DMS).

This Concept of Operations will define the goals and objectives of the system and the overall concept of how the system will operate. It will also verify that the system conforms to the regional ITS architecture and other ITS activities in the area.

Goals and Objectives of the System

The overall goals of the system are to:

1. Provide remote monitoring capabilities;
2. Enable more efficient operational improvements, reduce congestion, and decrease travel times;
3. Decrease response times for locating/diagnosing traffic signal malfunctions;
4. Provide incident management;
5. Provide traveler information to the public; and
6. Provide a seamless transportation network.

System Mission

PCID's mission is:

Provide a safe and efficient roadway system for the Perimeter Community Improvement Districts

Purpose of the System

ITS deployments in the PCID are crucial for the overall operation and management of the PCID's transportation system. The PCID will work in partnership with the Cities of Brookhaven, Dunwoody, and Sandy Springs, and the Perimeter Traffic Operations Program (PTOP) to implement ITS solutions that support the overall goal of the system. Through the use of traffic signals, CCTV cameras, DMSs, and other components, the PCID can meet the ultimate goal of safely and efficiently moving the traveling public through the districts. The purpose of ITS deployments is for traffic management, incident management, vehicle detection, verification, emergency management, and traveler information dissemination. Traffic management includes monitoring traffic and making operational improvements based on current and foreseeable future conditions for events and day-to-day traffic. Incident management includes the coordinated effort to manage response, reduce congestion, and improve safety for the traveling public and first responders. The system also detects vehicles on the roadway for occupancy and speed data, verifies incidents called in by citizens or other public agencies, and disseminates traveler information to the traveling public.

Intended Audience

The PCID ITS stakeholders are comprised of public and private partners, including:

- Georgia Department of Transportation (GDOT),
- City of Dunwoody,
- City of Brookhaven,
- City of Sandy Springs,
- Atlanta Regional Commission,
- Federal Highway Administration (FHWA),
- Metro Atlanta Rapid Transit Authority (MARTA), and
- Commercial property owners.

Operational Needs

PCID determined that the following capabilities are needed for the existing and future components of their ITS.

Traffic Signals

Traffic signals control the flow of traffic on arterials throughout the districts and assign right-of-way at intersections. PCID's vision is to remotely control traffic signals to maintain operations from the TCC located at the City of Dunwoody's City Hall, and for all traffic signals to be connected back to the TCC by fiber optic cable. This will allow PCID staff to verify that traffic signals are functioning in coordination, running the correct time-of-day plans, and allow new timing plans to be downloaded or commanded to the controller remotely. These capabilities can also be used for special event traffic management to move traffic before and after events.

Closed-Circuit Television Cameras

CCTV cameras provide real-time surveillance video and are used for traffic and incident management. PCID's vision is to deploy CCTV cameras at strategic locations to actively monitor traffic on the arterials for traffic operations and improve incident detection and response times. All end users of the system will be able to view camera feeds; however, each agency will assign levels of operability to different stakeholders to operate and change camera feeds.

Dynamic Message Signs

DMSs disseminate travel condition information to the traveling public. The vision for DMSs is to inform the public of traveling conditions on arterials by providing roadway traffic conditions, such as lane closures, incidents, and travel times. DMSs can also be used to display America's Missing: Broadcast Emergency Response (AMBER) alert messages as well as parking or route information related to special events. Messages will be uploaded to DMSs via fiber optic cable that connects the signs to the TCC.

Fiber Optic Cable

Creating a redundant path for PCID's ITS will provide multiple routes for communications to get back to the TCC in the event of a communications break at a particular location. This will allow the system to

stay online if a particular section is disrupted for maintenance or construction reasons. As an alternative, wireless communications equipment could be deployed to achieve some of the redundancy.

Traffic Control Center

The TCC will be the center of the PCID's ITS and will be located in Dunwoody's City Hall. ITS devices will be connected to the TCC by fiber optic cable providing field data, such as real-time surveillance video, traffic volumes, and speed/occupancy data. The city's vision for the TCC is to provide a central location where all field equipment can be monitored and controlled remotely by designated staff such as city staff or public safety. TCCs located at GDOT and the Cities of Brookhaven, Dunwoody, and Sandy Springs will be connected to allow for data sharing and system operability assistance in case of events and emergencies.

Emergency Pre-emption

Emergency pre-emption provides preferential treatment to emergency vehicles at signalized intersections. The vision for emergency pre-emption is to deploy this technology at key intersections to reduce incident response time for emergency vehicles and increase efficiency of emergency resources and investments. Once a call is received in the system, the controller will safely end the current movement, drop out of coordination, and serve the approach of the emergency vehicle. After the vehicle has completed its passage through the intersection, the controller will return the intersection to coordination. Staff at the TCC will be able to remotely monitor traffic signals at these locations to verify that they return to coordination.

Priority Control

Priority control provides preferential treatment to transit vehicles at signalized intersections. The vision for priority control is to decrease travel times and lower fuel consumption and emissions for transit buses. Priority control utilizes the same equipment used for emergency pre-emption. Once the call is received, the controller will service all of the approaches with calls for the minimum time, skip those without, and service the approach of the direction the transit buses are traveling. The operators will be able to monitor intersections activated by transit priority and ensure they return back to coordination. Coordinating with MARTA or commercial shuttle services to install this technology should help move buses along the routes throughout the PCID.

Automatic Vehicle Location

Automatic vehicle location (AVL), a transit strategy, is used for next bus real-time data. The shuttle service for the commercial property owners throughout the PCID is used to transport people between businesses, hotels, restaurants, and retailers to encourage transit and mitigate congestion. The vision for AVL is to provide real-time arrival and departure times for the traveling public and improve shuttle schedules.

Arterial Travel Time System

Count stations are points of detection that can be used to collect data such as speed, volume, or other performance measures. Data from multiple count stations could be paired to determine travel times for

arterials that may be of the most interest to the traveling public. The vision for the count stations is to collect data to provide information to the public as well as quickly evaluate the performance of the signal system.

Traveler Information

Traveler information, which includes roadway traffic conditions, such as lane closures, incidents, and travel times, can be provided to the traveling public by means other than DMSs. Information can be disseminated using social media outlets, GDOT's NaviGator, agency websites, dedicated television channels, televisions in agency and commercial building lobbies, and cellular telephone applications. The vision for traveler information is to provide as much information to the public using the ITS infrastructure to allow the public to make informed decisions on commutes and routes.

Operational and Support Environment

Facilities

System components are housed in the TCC located at the Dunwoody City Hall and all field equipment is connected back to this location where it is used for traffic and incident management. In addition, a remote access connection outside of city hall will be required to provide access for staff to support system operations and maintenance.

Police Officer Program

PCID will work in coordination with the Cities of Brookhaven, Dunwoody, and Sandy Springs to implement the traffic signal police officer program. Police officers will be utilized during the afternoon peak periods to work in conjunction with the traffic signals. The city and PCID will identify the intersections of greatest need throughout the business districts for police officer interaction. Their responsibilities will include:

- Maintaining traffic flow,
- Keeping the intersections clear,
- Allowing advanced movement of vehicles,
- Working in coordination with the signals, and
- Assisting with the safe movement of vehicles and pedestrians.

Equipment

The following field equipment is necessary for the system to be operational:

- Traffic signals control traffic flow on the arterials throughout the districts. Traffic signals will be controlled remotely from the TCC to maintain operations.
- CCTV cameras monitor traffic conditions and verify traffic incidents.
- DMSs disseminate roadway information and alerts to the traveling public.
- Detection provides real-time traffic data for arterials and aids in incident detection, system performance monitoring, signal timing analysis, and arterial travel time dissemination.

Hardware

Hardware for PCID's ITS may include:

- Workstations, comprised of a computer, monitor, and keyboard,
- Phones,
- Servers,
- Traffic signal controllers,
- Media access control address travel time detection devices,
- Field switches,
- CCTV cameras,
- DMSs, and
- Video wall equipment.

Workstations will be located at the TCC and field network switches at each device responsible for transmitting data from the devices onto the fiber optic cable and back to the TCC.

Software

Each system component has its own software enabling it to operate. The PCID can decide to operate each component with the manufacturer software or integrate it into the state or agency selected traffic, video, and arterial management software. The primary purpose of the TCC and communications system is to provide central software control of field devices and support center-to-center sharing with partner agencies.

Personnel

The TCC will include two workstations to be used for monitoring the system during peak hours. The City of Dunwoody Traffic Engineer currently coordinates with the PCID, PTOP project manager, and PTOP system managers to monitor and optimize operations during the morning and afternoon peak hours. Additional engineering staff may use the system for analysis and design as needed. TCC staff responsibilities could include:

- Recommending solutions to potential future traffic problems;
- Monitoring and updating components of the system using the traffic management software;
- Disseminating traveler information to the public on DMSs and/or media outlets;
- Implementing citywide traffic signal coordination plans based on real-time traffic patterns;
- Coordinating with other agencies for traffic management during special events;
- Developing and updating traffic signal timing plans for remote downloading; and
- Researching and responding to inquiries and complaints from the public; and
- System maintenance.

Funding Sources

The PCID can use the following funding sources, aside from local agency funding, to complete ITS projects.

PCID Tax

The PCID are self-taxing districts that utilize additional commercial property taxes to help accelerate needed transportation and infrastructure improvement projects. The PCID has a strong track record of successfully leveraging these funds as additional funding that can help expedite transportation infrastructure projects within the business district. It is anticipated that these funds will continue to be used to complete transportation-related projects.

Congestion Mitigation and Air Quality Program

The Atlanta Regional Committee has many funding programs for the Atlanta area, including Congestion Mitigation and Air Quality (CMAQ), which applies to most ITS projects. To qualify for CMAQ funding, projects have to include potential ways to mitigate congestion, improve air quality, and reduce emissions in the air quality non-attainment areas.

Performance Measures

Through the FHWA's Moving Ahead for Progress in the 21st Century Act, performance goals for transportation infrastructure have been developed and agencies are required to transition their programs to meet these goals. The goals that are applicable to the PCID include:

- Safety,
- Infrastructure condition,
- Congestion reduction, and
- System reliability.¹

Performance measures allow agencies to evaluate how their ITS and signal systems are functioning during a specified time frame – daily, bimonthly, monthly, biannually, or annually. Agencies can use the results to determine what areas in the system need more attention. Outcomes can range from tweaking signal timings on a corridor to improving the throughput, to identifying continuous communication or detection failures that need to be addressed. The following subsections describe the different performance measures the PCID could use to measure and evaluate their system operations. When the system is fully operational, specific goals should be added to each measure.

Citizen Requests/Complaints

The different agencies within the PCID will generate a report to track the amount of requests and complaints received from the public. Only comments that are received and verified by staff should be included in the report. The report should compare the issues identified by the public versus those identified by agency staff. When the TCC is fully functioning and the system has expanded, the amount

¹ Transportation Performance Management <http://www.fhwa.dot.gov/tpm/about/goals.cfm>

of public-reported issues should decrease. This report will inform the city of how well it is using the existing system for active roadway monitoring and how well they are performing on customer service.

Operational Detectors

Agencies will monitor the amount of operational detectors – vehicle and pedestrian – and compare them to the overall amount of detectors throughout the PCID. An operational detector means the controller is receiving a call when the detector is being used. This report will help the agency identify and prioritize maintenance issues.

DMS Usage

The agencies will track DMS usage throughout each city in the PCID monthly. The performance report for DMSs will include how many times a sign was used and why it was used – event, incident, AMBER alert, travel time, etc. The number of operational DMSs versus total DMSs installed will also be included in this performance measures report. This report will inform the agency if DMSs are being under- or over-utilized and used correctly.

Functional CCTV Cameras

Agencies will track the number of functional CCTV cameras quarterly and compare it to the total number of CCTV cameras installed throughout the PCID. This report will help the agency identify maintenance issues and failure trends.

Malfunctioning Equipment

The agencies will track the amount of malfunctioning equipment on a monthly basis, whether identified in the public complaints or by agency staff. This report will help the agency determine if there is an appropriate level of staff to handle the amount of maintenance calls for the system.

Network Availability

Agency staff will monitor signals throughout their jurisdiction and record the number of signals that are online and can be remotely accessed from the TCC. The agencies use central traffic management software to monitor signal operations in real-time, send alerts when communication to a signal is lost, and store a history of each occurrence. Agencies will generate a monthly report outlining the amount of signals that lost communications and the reason, if determined, and the measures taken to restore communications. This report will help the agency identify and prioritize maintenance issues. Furthermore, the agency can develop goals for network availability and mean time between failures on a per client basis, and measure performance against these goals.

Travel Times

Agencies will collect travel time data on significant corridors through the use of an arterial travel time system to determine the overall travel time from point A to point B, speed, delay, and number of stops. This information will allow the agency to determine where possible signal timing changes could or should be implemented. The travel time data would also inform the agency if the revised implemented

timing changes were effective. This report will help the PCID improve overall traffic operations on the significant corridors as well as verify the reliability of the travel time detectors.

Benefits

Standard benefit-to-cost ratios do not exist for ITS implementations; however the United States Department of Transportation has identified four categories of benefits for ITS: mobility, environmental, safety, and fuel consumption. The following table outlines some of the benefits that can be linked to various ITS implementations.

ITS Implementation	Benefit
Traffic signal coordination	Increase throughput
	Decrease congestion
	Decrease emissions
	Decrease delay
	Decrease fuel consumption
Communications to traffic signals	Remote monitoring
	Remote signal timing changes
	Decrease city expenses for staff resources
	Remote troubleshooting
	Decrease fuel consumption
CCTV cameras	Remote monitoring
	Remote verification
	Decrease city expenses for staff resources
	Decrease fuel consumption
DMS	Allow motorists to make informed decisions on their trips