

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## OFFICE OF DESIGN POLICY & SUPPORT INTERDEPARTMENTAL CORRESPONDENCE

**FILE** P.I. # 0013139 **OFFICE** Design Policy & Support  
DeKalb County  
GDOT District 7 - Metro Atlanta **DATE** January 4, 2016  
Dunwoody Signal Communications Network  
Citywide Signal Upgrades

**FROM**  *Kim Phillips*  
*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/State Environmental Administrator  
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  
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  
Kathy Zahul, District Engineer  
Scott Lee, District Preconstruction Engineer  
Nicholas Fields, District Utilities Engineer  
Carleton Fisher, Project Manager  
BOARD MEMBER - 6th Congressional District

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

Project Type: ITS Upgrades and System Expansion P.I. Number: 0013139  
 GDOT District: District 7 County: DeKalb  
 Federal Route Number: N/A State Route Number: N/A  
 Project Number: N/A

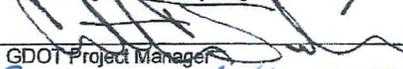
**DUNWOODY CITYWIDE SIGNAL COMMUNICATIONS NETWORK**

Submitted for approval:

  
 Alvin James, PE, Kimley-Horn \_\_\_\_\_ Date 10/27/15

  
 Local Government Sponsor \_\_\_\_\_ Date 10/28/15

  
 State Program Delivery Engineer \_\_\_\_\_ Date 10/30/2015

  
 GDOT Project Manager \_\_\_\_\_ Date 10-29-15

*Recommendations on file*

Recommendation for approval:  
 \*   
 State Environmental Administrator \_\_\_\_\_ Date 11-15-2015

FOR \*   
 State Traffic Engineer \_\_\_\_\_ Date 11-30-2015

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).

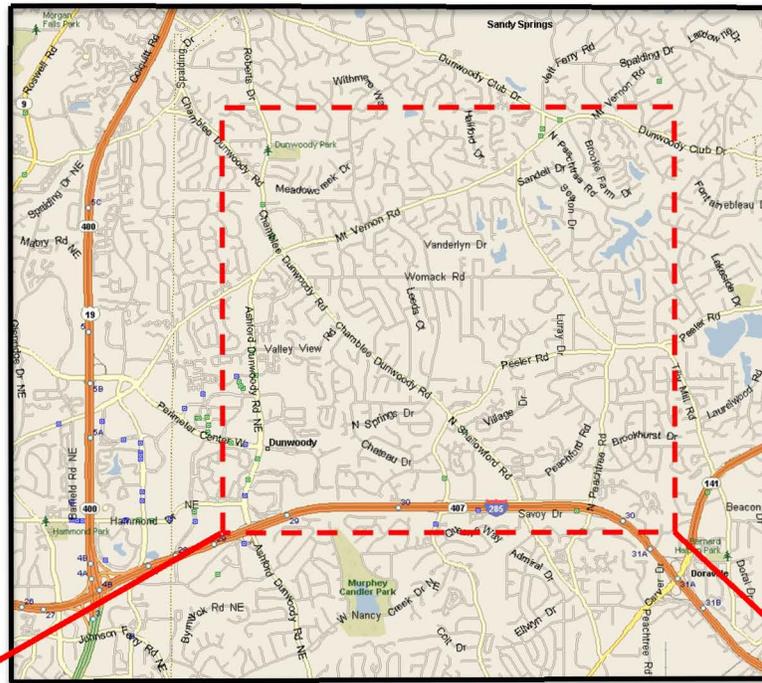
  
 State Transportation Planning Administrator \_\_\_\_\_ Date 11-13-15

Approval:

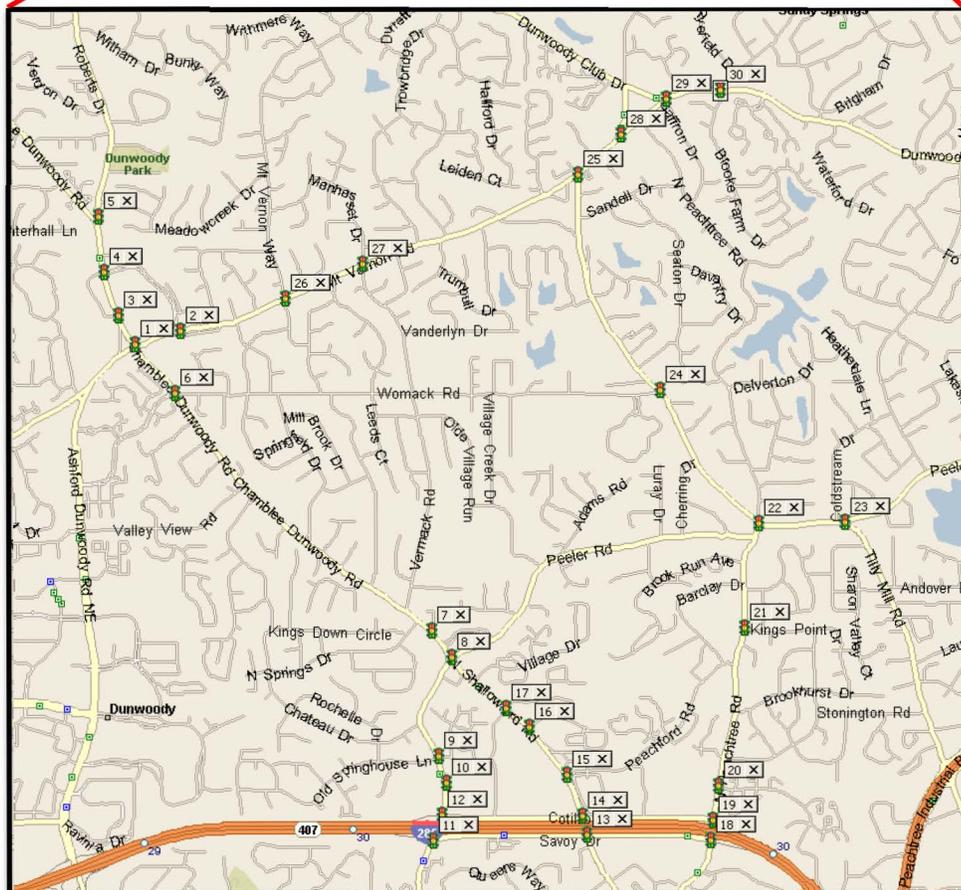
Concur:   
 GDOT Director of Engineering \_\_\_\_\_ Date 12/22/2015

Approve:   
 GDOT Chief Engineer \_\_\_\_\_ Date 12-22-15

# PROJECT LOCATION



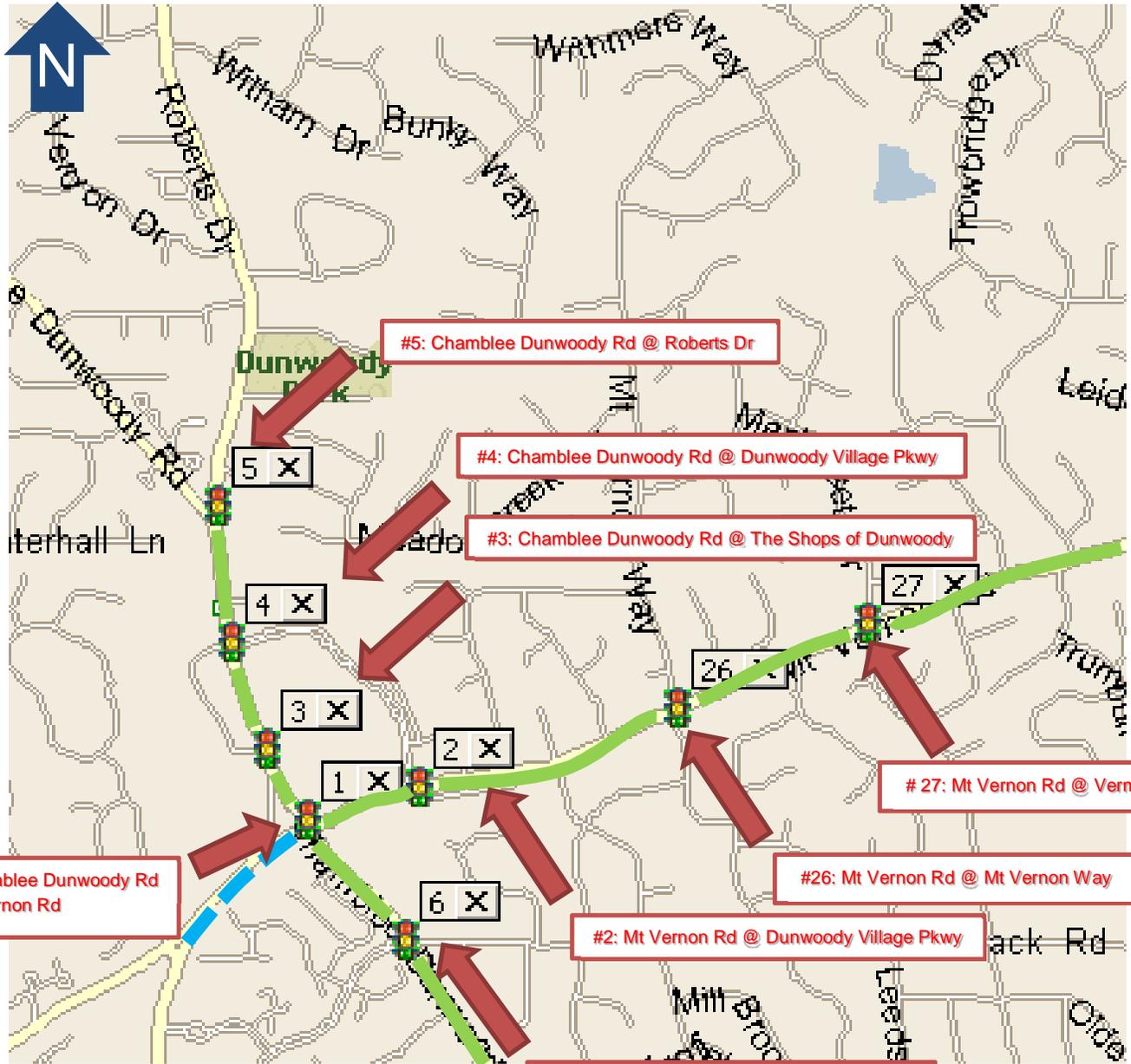
NOT TO  
SCALE

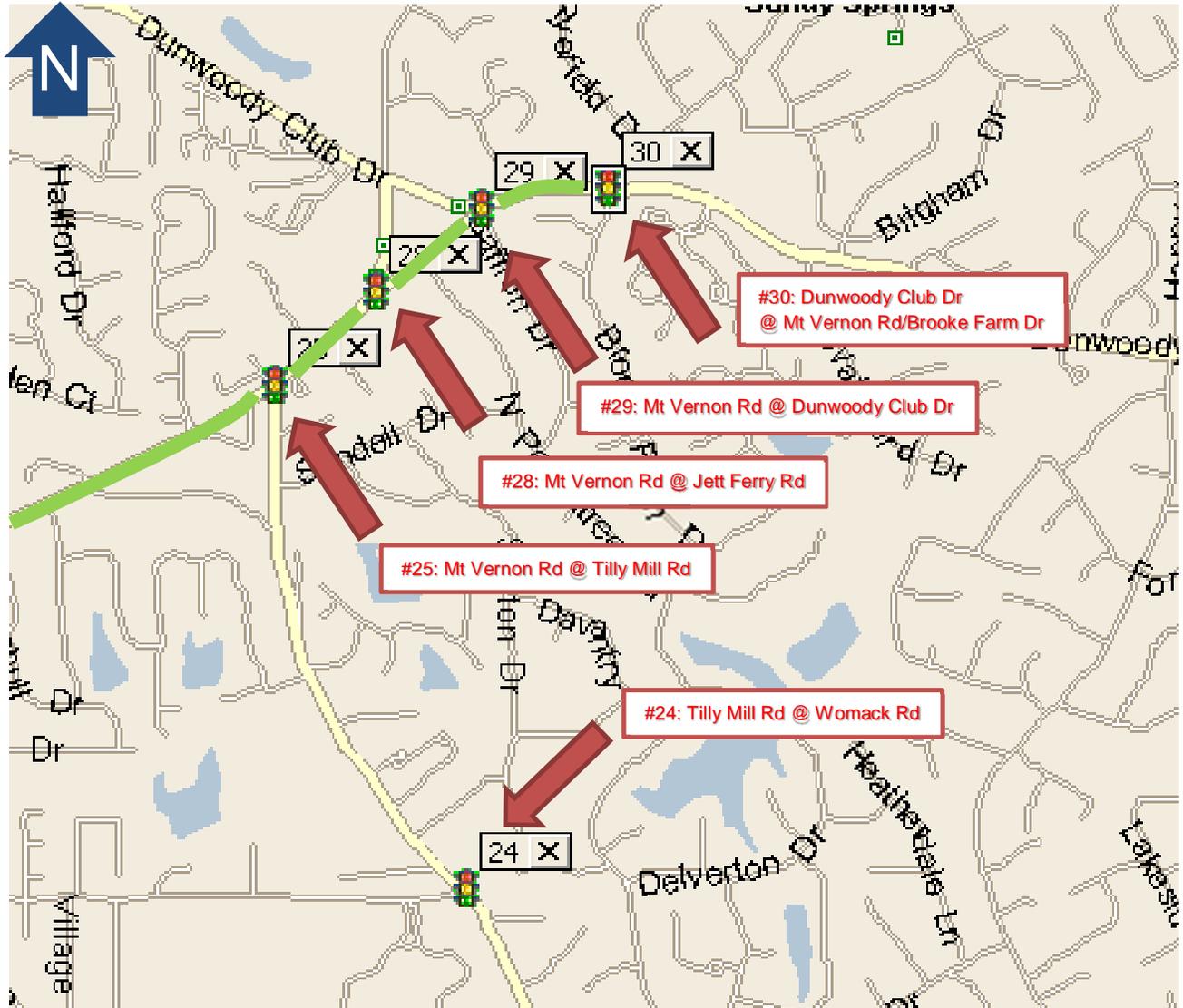


### ITS Fiber Routing (Map Not to Scale)

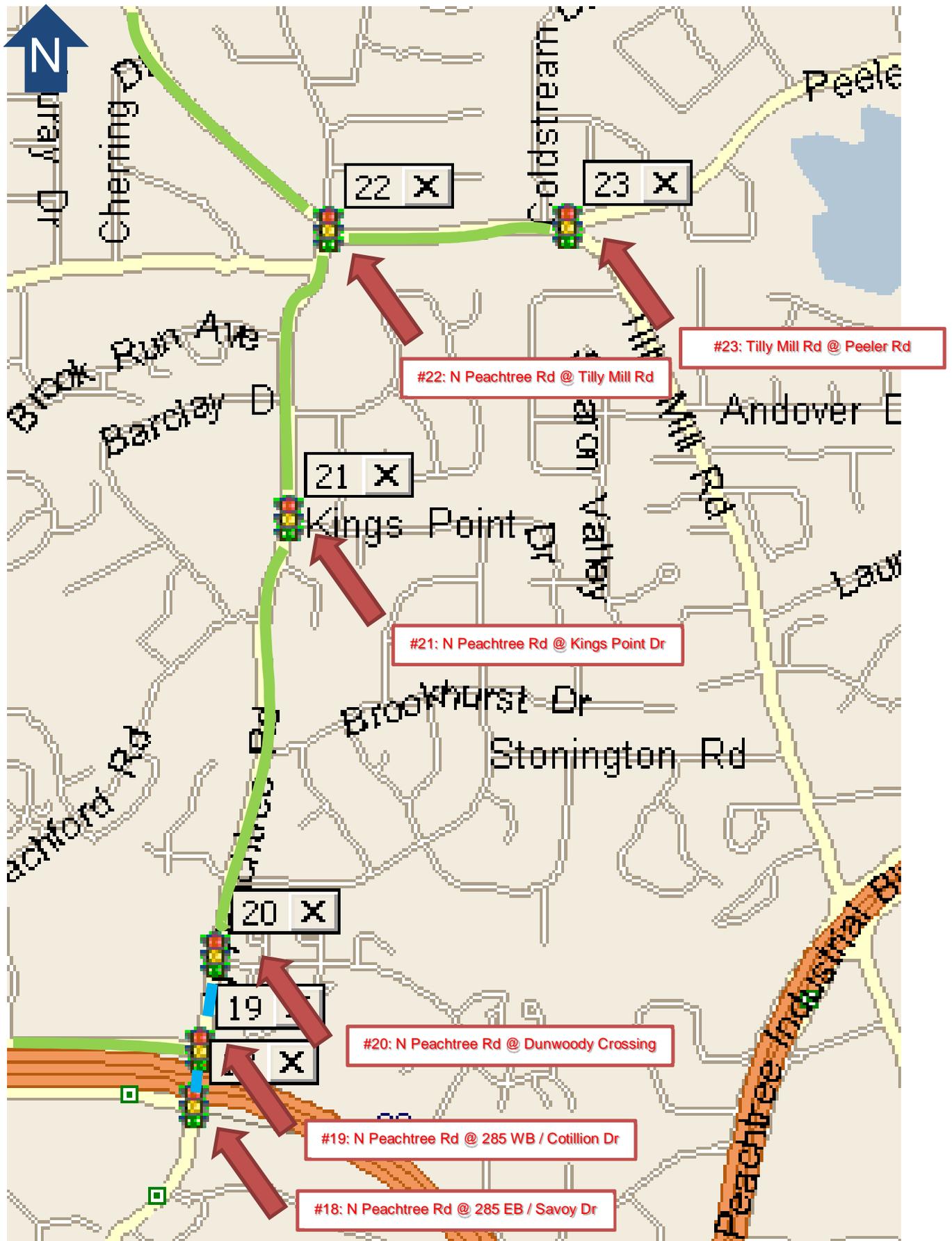
**Legend**

- Proposed Fiber
- Existing Fiber









## PLANNING & BACKGROUND DATA

**Project Justification Statement:** There are 30 signalized intersections in City of Dunwoody in need of improvement to expand the current signal communications network by installing fiber optic communication devices in Dunwoody along 6 miles of roadway including Mount Vernon Road, Chamblee Dunwoody Road, North Shallowford Road, North Peachtree Road and Tilly Mill Road. The proposed network will enhance communication between the PTO signals and TMC for the majority of the present traffic signals by providing communication upgrades to existing traffic signal cabinets and installing fiber-optic communications. The Intelligent Transportation Systems (ITS) upgrades within the project area will tie into the Perimeter Community Improvement Districts (PCID) and Perimeter Traffic Operations Program (PTOP) systems to reduce delays and increase efficiency for the entire network.

The intersections listed in Table 1 are located in the City of Dunwoody and have been identified by the City as a high priority and will establish and expand the current signal communications network. Table 1 lists the upgrades to be included at the identified intersections.

**Table 1: Communication Equipment Upgrade Needs**

Int. No.	County	City	Primary Route	Intersecting Road	Existing Communication	Reason for Upgrade
1	DeKalb	Dunwoody	Chamblee Dunwoody Road	Mt Vernon Road	MMFO, cell modem	Communication Upgrade
2	DeKalb	Dunwoody	Mt Vernon Road	Dunwoody Village Parkway	MMFO, cell modem	Communication Upgrade
3	DeKalb	Dunwoody	Chamblee Dunwoody Road	The Shops of Dunwoody	MMFO, cell modem	Communication Upgrade
4	DeKalb	Dunwoody	Chamblee Dunwoody Road	Dunwoody Village Parkway	MMFO, cell modem	Communication Upgrade
5	DeKalb	Dunwoody	Chamblee Dunwoody Road	Roberts Drive	MMFO, cell modem	Communication Upgrade
6	DeKalb	Dunwoody	Chamblee Dunwoody Road	Womack Road	MMFO, cell modem	Communication Upgrade
7	DeKalb	Dunwoody	Chamblee Dunwoody Road	Vermack Road	SMFO, switch	Communication Upgrade
8	DeKalb	Dunwoody	Chamblee Dunwoody Road	N Shallowford Rd	SMFO, switch	Communication Upgrade
9	DeKalb	Dunwoody	Chamblee Dunwoody Road	Dunwoody Park	SMFO, switch	Communication Upgrade
10	DeKalb	Dunwoody	Chamblee Dunwoody Road	Kroger Driveway	SMFO, switch	Communication Upgrade
11	DeKalb	Dunwoody	Chamblee Dunwoody Road	285 EB/Savoy Drive	SMFO, switch	Communication Upgrade
12	DeKalb	Dunwoody	Chamblee Dunwoody Road	285 WB/Cotillion Drive	SMFO, switch	Communication Upgrade

County: DeKalb

13	DeKalb	Dunwoody	N Shallowford Road	Savoy Drive	SMFO, switch, CCTV	Communication Upgrade
14	DeKalb	Dunwoody	N Shallowford Road	Catillion Drive	SMFO, switch	Communication Upgrade
15	DeKalb	Dunwoody	N Shallowford Road	Peachford Rd	SMFO, switch	Communication Upgrade
16	DeKalb	Dunwoody	N Shallowford Road	Pernoshal Court	SMFO, switch	Communication Upgrade
17	DeKalb	Dunwoody	N Shallowford Road	Dunwoody Park	SMFO, switch	Communication Upgrade
18	DeKalb	Dunwoody	N Peachtree Road	285 EB/Savoy Drive	SMFO, switch	Communication Upgrade
19	DeKalb	Dunwoody	N Peachtree Road	285 WB/Cotillion Drive	SMFO, switch	Communication Upgrade
20	DeKalb	Dunwoody	N Peachtree Road	Dunwoody Crossing	SMFO, switch	Communication Upgrade
21	DeKalb	Dunwoody	N Peachtree Road	Kings Point Drive	N/A	Communication Upgrade
22	DeKalb	Dunwoody	N Peachtree Road	Tilly Mill Road	N/A	Communication Upgrade
23	DeKalb	Dunwoody	Tilly Mill Road	Peeler Road	N/A	Communication Upgrade
24	DeKalb	Dunwoody	Tilly Mill Road	Womack Road	N/A	Communication Upgrade
25	DeKalb	Dunwoody	Mt Vernon Road	Tilly Mill Road	N/A	Communication Upgrade
26	DeKalb	Dunwoody	Mt Vernon Road	Mt Vernon Way	N/A	Communication Upgrade
27	DeKalb	Dunwoody	Mt Vernon Road	Vermack Road	N/A	Communication Upgrade
28	DeKalb	Dunwoody	Mt Vernon Road	Jett Ferry Road	N/A	Communication Upgrade
29	DeKalb	Dunwoody	Mt Vernon Road	Dunwoody Club Drive	N/A	Communication Upgrade
30	DeKalb	Dunwoody	Dunwoody Club Drive	Mt Vernon Road/ Brooke Farm Drive	N/A	Communication Upgrade

**Existing conditions:**

- Chamblee Dunwoody Road at Mt Vernon is a four-lane roadway with 12-foot lanes including a left-turn lane and a right-turn lane in the NB direction, and a two-lane roadway with 10-foot lanes and a left-turn lane in the SB direction.

County: DeKalb

- Mt Vernon at Dunwoody Village is a four-lane roadway with 10-foot lanes including a center two-way left turn lane in the WB direction, and a five-lane roadway with 10-foot lanes including a center two-way left turn lane in the EB direction.
- Chamblee Dunwoody Road at the Shops of Dunwoody is a two-lane roadway with 11-foot lanes and a left-turn lane in the NB direction, and a two-lane roadway with 12-foot lanes and a left-turn lane in the SB direction.
- Chamblee Dunwoody Road at Dunwoody Village is a two-lane roadway with 12-foot lanes and a left-turn lane in the NB direction, and a two-lane roadway with 12-foot lanes and a left-turn lane in the SB direction.
- Chamblee Dunwoody Road at Roberts is a two-lane roadway with 12-foot lanes and a left-turn lane in the NB direction, and a two-lane roadway with 10-foot lane in the SB direction.
- Chamblee Dunwoody Road at Womack is a two-lane roadway with 11-foot lanes and a left-turn lane in the NB direction, and a two-lane roadway with 10-foot lanes including a channelized right-turn lane and a left-turn lane in the SB direction.
- Chamblee Dunwoody Road at Vermack is a two-lane roadway with 11-foot lanes.
- Chamblee Dunwoody Road at N Shallowford is a two-lane roadway with 11-foot lanes and a two-way left-turn lane and channelized right in the NB direction, and a two-lane roadway with 11-foot lanes including a two-way left-turn lane and a channelized right-turn lane in the SB direction.
- Chamblee Dunwoody Road at Dunwoody Park is a three-lane roadway with 11-foot lanes including a dedicated left-turn lane in the NB direction, and a three-lane roadway with 11-foot lanes and a left-turn lane in the SB direction.
- Chamblee Dunwoody Road at Kroger is a four-lane roadway with 10-foot lanes including a two-way left-turn lane in the NB direction, and a four-lane roadway with 10-foot lanes and a right-turn lane in the SB direction.
- Chamblee Dunwoody Road at 285 WB/Cotillion is a four-lane roadway with 12-foot lanes including a right turn lane in the NB direction, and a three-lane roadway with 11-foot lanes including a left-turn and right-turn lane in the SB direction.
- Chamblee Dunwoody Road at 285 EB/Savoy is a four-lane roadway with 10-foot lanes including a two-way turn lane ending with a median in the NB direction, and a three-lane roadway with 11-foot lanes including a left-turn lane in the SB direction.
- N Shallowford Road at Savoy is a two-lane roadway with 10-foot lanes and a left-turn lane and a channelized right in the NB direction, and a two-lane roadway with 10-foot lanes including a left-turn lane in the SB direction.
- N Shallowford Road at Cotillion is a two-lane roadway with 10-foot lanes including a left-turn lane in the NB direction, and a two-lane roadway with 10-foot lanes and a left-turn lane and a bike lane in the SB direction.
- N Shallowford Road at Peachford is a two-lane roadway with 11-foot lanes and left and channelized right-turn lanes and a bike lane in the NB direction, and a two-lane roadway with 11-foot lanes including a two-way left-turn lane and a bike lane in the SB direction.
- N Shallowford Road at Pernoshal is a two-lane roadway with 10-foot lanes including a two-way left-turn lane and a bike lane.
- N Shallowford Road at Dunwoody Park is a two-lane roadway with 10-foot lanes including a two-way left-turn lane and a bike lane.
- N Peachtree Road at 285 EB/Savoy is a two-lane roadway with 11-foot lanes and a left-turn lane and a shared through/right-turn lane in the NB direction, and a two-lane roadway with 10-foot lanes including a left-turn lane in the SB direction.
- N Peachtree Road at 285 WB/Cotillion is a two-lane roadway with 11-foot lanes and including a left-turn lane in the NB direction, and a four-lane roadway with 11-foot lanes in the SB direction.
- N Peachtree Road at Dunwoody Crossing is a four-lane roadway with 9-foot lanes and a left-turn lane in the NB direction, and a four-lane roadway with 10-foot lanes and right-turn and left-turn lanes in the SB direction.
- N Peachtree Road at Kings Point is a two-lane roadway with 10-foot lanes and a left-turn lane and a bike lane in the NB direction, and a two-lane roadway with 11-foot lanes and left-turn and right-turn lanes and a bike lane in the SB direction.

County: DeKalb

- N Peachtree Road at Tilly Mill is a two-lane roadway with 12-foot lanes including a channelized right-turn lane and a left-turn lane in the NB direction, and a two-lane roadway with 10-foot lanes and a left-turn lane and a channelized right-turn lane in the SB direction.
- Tilly Mill at Peeler is a two-lane roadway with 12-foot lanes and a left-turn lane in the SB direction, and a two-lane roadway with 12-foot lanes and a channelized right-turn lane in the NB direction.
- Tilly Mill at Womack is a two-lane roadway with 10-foot lanes including a two-way left-turn lane in the NB direction, and a two-lane roadway with 10-foot lanes in the SB direction.
- Mt Vernon at Tilly Mill is a two-lane roadway with 11-foot lanes in the EB direction, and a two-lane roadway with 11-foot lanes and a right-turn lane in the WB direction. In the WB departure, there is a 150 foot storage lane.
- Mt Vernon at Mt Vernon Way is a two-lane roadway with 10-foot lanes and a left-turn lane and a channelized right-turn lane in the EB direction, and a two-lane roadway with 12-foot lanes in the WB direction.
- Mt Vernon at Vermack is a two-lane roadway with 12-foot lanes.
- Mt Vernon at Jett Ferry is a two-lane roadway with 12-foot lanes and a left-turn lane in the EB direction, and a two-lane roadway with 12-foot lanes in the WB direction.
- Mt Vernon at Dunwoody Club is a two-lane roadway with 11-foot lanes in the EB direction, and a three-lane roadway with 10-foot lanes and a channelized right-turn lane in the WB direction.
- Dunwoody Club at Mt Vernon/Brooke Farm is a two-lane roadway with 10-foot lanes including a left-turn lane in the EB direction, and a two-lane roadway with 12-foot lanes and a left-turn lane in the WB direction.

#### Other projects in the area:

- **0012875 – GEORGETOWN AREA MULTIMODAL IMPROVEMENTS / Status: Programmed** – This project seeks to improve traffic flow and create a more welcoming environment for bicycle, pedestrian, and non-motorized users by improving the general traffic operations at its intersections as well as providing enhancements to the visual appeal, walkability, and safety of the corridor
- **0012631 – PERIMETER ACTIVITY CENTER – ITS UPGRADES AND SYSTEM EXPANSION/CONGESTION REDUCTION AND TRAFFIC FLOW IMPROVEMENTS / Status: Programmed** – This project will provide infrastructure to enhance the capabilities of the Perimeter Traffic Operations Program (PTOP). The project consists of plan and design upgrades such as CCTV cameras, fiber optic infrastructure, arterial travel time systems, wireless detection and count station devices, and related ITS communications equipment to connect the existing fiber optic network that exists within the PCIDs to a future Traffic Control Center (TCC).
- **MOUNT VERNON ROAD INFRASTRUCTURE IMPROVEMENTS / Status: Active** – This project will address the aging water pipelines within Dunwoody and throughout the county. A portion of the essential water main infrastructure improvements made by DeKalb County will take place on Mount Vernon Road between Ashford Dunwoody Road and Vernon Oaks Drive. Subsequent to the installation of the new water main, the city will resurface this entire section of Mount Vernon Road and also construct new sidewalks on the south side of Mount Vernon Road between Dunwoody Village Parkway and Vernon Oaks Drive.
- **MOUNT VERNON ROAD AT VERMACK ROAD/MANHASSET DRIVE / Status: Active** – This project aims to provide a solution for the traffic congestion and to accommodate mobility and safety for vehicles, pedestrians, and bicyclists. The City is currently in the process of acquiring the needed right-of-way to complete the intersection improvements and anticipates this phase to be completed by the end of 2015.
- **CHAMBLEE DUNWOODY ROAD INFRASTRUCTURE IMPROVEMENTS / Status: Active** – This project will remedy infrastructure deficiencies by widening the road to accommodate bicycle lanes in both directions and a sidewalk on the east side of the road. Existing stormwater ditches will be replaced with stormwater pipes, curb, and gutter.
- **TILLY MILL ROAD AT NORTH PEACHTREE ROAD / Status: Active** – This project will make improvements to this intersection. Design elements such as new sidewalks and bike lanes, additional turn lanes, and pedestrian refuge islands will all improve the safety and flow of these two related intersections.
- **PROJECT RENAISSANCE / Status: Active** – The City of Dunwoody is working to design four new City parks and a multi-purpose trail that links the parks together. The four parks are being developed as part of the City's Project Renaissance, a new mixed-use residential infill project.

**Description of the proposed project:** The project is to upgrade communication equipment at signalized intersections and expand the current signal communications network at the following intersections:

- Chamblee Dunwoody Road @ Mt Vernon Road
- Mt Vernon Road @ Dunwoody Village Parkway
- Chamblee Dunwoody Road @ The Shops of Dunwoody
- Chamblee Dunwoody Road @ Dunwoody Village Parkway
- Chamblee Dunwoody Road @ Roberts Drive
- Chamblee Dunwoody Road @ Womack Road
- Chamblee Dunwoody Road @ Vermack Road
- Chamblee Dunwoody Road @ N Shallowford Rd
- Chamblee Dunwoody Road @ Dunwoody Park
- Chamblee Dunwoody Road @ Kroger Driveway
- Chamblee Dunwoody Road @ 285 EB/Savoy Drive
- Chamblee Dunwoody Road @ 285 WB/Cotillion Drive
- N Shallowford Road @ Savoy Drive
- N Shallowford Road @ Catillion Drive
- N Shallowford Road @ Peachford Rd
- N Shallowford Road @ Pernoshal Court
- N Shallowford Road @ Dunwoody Park
- N Peachtree Road @ 285 EB/Savoy Drive
- N Peachtree Road @ 285 WB/Cotillion Drive
- N Peachtree Road @ Dunwoody Crossing
- N Peachtree Road @ Tilly Mill Road
- N Peachtree Road @ Kings Point Drive
- Tilly Mill Road @ Peeler Road
- Tilly Mill Road @ Womack Road
- Mt Vernon Road @ Tilly Mill Road
- Mt Vernon Road @ Mt Vernon Way
- Mt Vernon Road @ Vermack Road
- Mt Vernon Road @ Jett Ferry Road
- Mt Vernon Road @ Dunwoody Club Drive
- Dunwoody Club Drive @ Mt Vernon Road/Brooke Farm Drive

The City has given the following reasons for these intersections to be upgraded:

- Traffic signal communication
- Signal and communication equipment upgrades including cabinets and CCTV cameras
- Fiber and device routing
- Coordination between signals in Brookhaven, Dunwoody, and Sandy Springs
- TMC build out at Dunwoody City Hall

The project limits will include Mount Vernon Road, Chamblee Dunwoody Road, North Shallowford Road, North Peachtree Road, and Tilly Mill Road. With this being a minor ITS improvement, traffic studies were not needed for this project. The scope of this project will be limited to equipment upgrades and establishing communication between signals and the TMC. The project is funded from the Surface Transportation Program (STP) and Congestion Mitigation/Air Quality (CMAQ) program.

**MPO:** Atlanta Regional Commission (ARC)

TIP #: DK-420

**TIA Regional Commission:** Not a TIA Project

RC Project ID: N/A

**Congressional District(s):** 6

**Federal Oversight:**    Exempt        State Funded        Other

**Projected Traffic:** N/A      24 HR T: N/A %  
Current Year (20WW): N/A    Open Year (20XX): N/A      Design Year (20YY): N/A  
Traffic Projections Performed by: Traffic projections were not performed since this is an ATMS/ITS project that does not impact the existing roadway capacity.

**Functional Classification (Mainline):**

- Chamblee Dunwoody Road – Minor Arterial (FC-4)
- Mt Vernon Road - Minor Arterial (FC-4)
- N Shallowford Road – Major Collector (FC-5)
- N Peachtree Road - Major Collector (FC-5)
- Tilly Mill Road - Minor Arterial (FC-4)
- Dunwoody Club Drive - Minor Arterial (FC-4)

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

Warrants met:      None      Bicycle      Pedestrian      Transit

**Pavement Evaluation and Recommendations**

Preliminary Pavement Evaluation Summary Report Required? No      Yes  
Preliminary Pavement Type Selection Report Required?      No      Yes  
Feasible Pavement Alternatives:      HMA      PCC      HMA & PCC

**DESIGN AND STRUCTURAL**

**Description of Proposed Project:**

**Major Structures:** N/A

**Mainline Design Features:**

The existing roadway conditions will not be changed and the proposed work will not preclude future improvements.

**Major Interchanges/Intersections:**

- Chamblee Dunwoody Road @ Mt Vernon Road
- Chamblee Dunwoody Road @ N Shallowford Rd
- Chamblee Dunwoody Road @ 285 EB/Savoy Drive
- Chamblee Dunwoody Road @ 285 WB/Cotillion Drive
- N Peachtree Road @ 285 EB/Savoy Drive
- N Peachtree Road @ 285 WB/Cotillion Drive
- N Peachtree Road @ Tilly Mill Road

**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:

- Atlanta Gas Light – Natural Gas
- AT&T – Telecom
- TW Telecom – Telecom
- Comcast – Cable TV/Internet
- DeKalb County – Water and Sewer
- Georgia Power – Electric Distribution / Transmission
- Level 3 – Communications
- Windstream – Communications
- XO Communications - Communications
- Zayo – Communications

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 total number of impacted parcels: N/A  
Displacements anticipated: Businesses: N/A  
Residences: N/A  
Other: N/A  
Total Displacements: 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  
Carbon Monoxide hotspot analysis:  Required  Not Required  TBD

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:** Project Kick-Off/Concept Team Meeting 04/01/2015. Meeting minutes attached.

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Kimley-Horn
Design	Kimley-Horn
Right-of-Way Acquisition	N/A
Utility Relocation	N/A
Letting to Contract	City of Dunwoody
Construction Supervision	City of Dunwoody
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

**Other coordination to date:** Kick-Off/Concept Team Meeting 01/28/2015

### 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	N/A	
\$ Amount	\$156,286.62	\$0.00	\$0.00	\$1,151,096.10	N/A	\$1,307,382.17
Date of Estimate	3/16/2015			12/11/2015		

\*CST Cost includes: Construction, Engineering and Inspection, and Contingencies.

## 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
<b>Rationale:</b> Does not fulfill the objectives of the Project Justification Statement			

**Comments/Additional Information:** None

## LIST OF ATTACHMENTS/SUPPORTING DATA

1. Revisions to Program Costs
2. Cost Estimate
3. Kick-Off Meeting Minutes
4. Concept of Operations

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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INTERDEPARTMENT CORRESPONDENCE

**FILE** P.I. No. 0013139

**OFFICE** Program Delivery

**PROJECT DESCRIPTION**

DUNWOODY CITYWIDE SIGNAL COMMUNICATIONS NETWORK

**DATE** October 26, 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** Carleton Fisher

**MGMT LET DATE**

**MGMT ROW DATE**

**PROGRAMMED COSTS (TPro W/OUT INFLATION)**

**LAST ESTIMATE UPDATE**

CONSTRUCTION \$ 1,155,000.00

DATE Oct-14

RIGHT OF WAY \$

DATE

UTILITIES \$ 125,000.00

DATE Oct-14

**REVISED COST ESTIMATES**

CONSTRUCTION\* \$ 1,151,096.10

RIGHT OF WAY \$

UTILITIES \$

\*Cost Contains 10 % Contingency

**REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:**

# CONTINGENCY SUMMARY

<b>A. CONSTRUCTION COST ESTIMATE:</b>	\$	996,620.00	Base Estimate From CES
<b>B. ENGINEERING AND INSPECTION (E &amp; I):</b>	\$	49,831.00	Base Estimate (A) x <span style="border: 1px solid black; padding: 2px 5px;">5</span> %
<b>C. CONTINGENCY:</b>	\$	104,645.10	Base Estimate (A) + E & I (B) x <span style="border: 1px solid black; padding: 2px 5px;">10</span> % <a href="#">See % Table in "Risk Based Cost Estimation" Memo</a>
<b>D. TOTAL LIQUID AC ADJUSTMENT:</b>	\$		Total From Liquid AC Spreadsheet
<b>E. CONSTRUCTION TOTAL:</b>	\$	1,151,096.10	(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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Untitled  
STATE HIGHWAY AGENCY

DATE : 10/26/2015  
PAGE : 1

JOB DETAIL ESTIMATE

JOB NUMBER : 0013139                      SPEC YEAR: 13  
DESCRIPTION: DUNWOODY CITYWIDE SIGNAL COMMUNICATIONS NETWORK

ITEMS FOR JOB 0013139

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	647-1000		LS	TRAF SIGNAL INSTALLATION NO - 1	1.000	13500.00	13500.00
0010	647-1000		LS	TRAF SIGNAL INSTALLATION NO - 2	1.000	13500.00	13500.00
0015	647-1000		LS	TRAF SIGNAL INSTALLATION NO - 3	1.000	13500.00	13500.00
0020	647-1000		LS	TRAF SIGNAL INSTALLATION NO - 4	1.000	13500.00	13500.00
0025	647-2140		EA	PULL BOX, PB-4	60.000	350.00	21000.00
0030	647-2150		EA	PULL BOX, PB-5	16.000	450.00	7200.00
0035	682-6233		LF	CONDUIT, NONMETL, TP 3, 2 IN	39000.000	1.50	58500.00
0040	682-9950		LF	DIRECTIONAL BORE - 3 INCH	39000.000	17.00	663000.00
0045	935-1116		LF	OUT PLNT FBR OPT CBL, LOOSE TB, SM, 72 FBR	54000.000	1.00	54000.00
0050	935-1512		LF	OUT PLNT FBR OPT CBL, DROP, SM, 12 FBR	1960.000	0.75	1470.00
0055	935-3106		EA	FIBER OPTIC CLOSURE, UNDRGRD, 72 FIBER	16.000	250.00	4000.00
0060	935-3402		EA	FBR OPTIC CLOSURE, FDC(RACK MTD), 12 FBR	16.000	750.00	12000.00
0065	935-4010		EA	FIBER OPTIC SPLICE, FUSION	1000.000	8.25	8250.00
0070	936-1000		EA	CCTV SYSTEM	15.000	5200.00	78000.00
0075	939-2237		EA	GBIC, TYPE D	32.000	350.00	11200.00
0080	939-2300		EA	FIELD SWITCH, TYPE A	16.000	1500.00	24000.00
ITEM TOTAL							996620.00
INFLATED ITEM TOTAL							996620.00
TOTALS FOR JOB 0013139							
ESTIMATED COST:							996620.00
CONTINGENCY PERCENT ( 10.0 ):							99662.00
ESTIMATED TOTAL:							1096282.00

To: Attendees

From: Alvin James Jr.  
Kimley-Horn and Associates, Inc.

Subject: 0013139 Dunwoody ITS  
Kick-off / Initial Concept Meeting

Date: April 6, 2015

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The Dunwoody ITS Kick-off Meeting was held on Wednesday, April 1, 2015 at 10:00 AM in the City of Dunwoody's (COD) conference room.

**Attendees:**

Michael Smith	City of Dunwoody
Mindy Sanders	City of Dunwoody
Carleton Fisher	Georgia Department of Transportation (GDOT)
Eli Veith	Veith Traffic
Kenn Fink	Kimley-Horn
Alvin James Jr.	Kimley-Horn
Sean Coleman	Kimley-Horn

The kick-off meeting was held as the official initial concept meeting for the Dunwoody ITS project. Kimley-Horn is the design consultant for the COD and is teamed with GT Hill and Southeastern Engineers (SEI) on this project.

**Introduction:**

- Kimley-Horn began the meeting with introductions of everyone in attendance. Kimley-Horn also stated that their team consists of GT Hill Planners for environmental services and SEI for surveying services (if needed).
- Kimley-Horn introduced the agenda for the meeting.

**Discussion of Project:**

**Existing Conditions**

- The COD discussed the existing fiber optic cabling and switches previously installed by a GDOT project (approximately 4 years ago). Those areas include:
  - Chamblee Dunwoody Road from Roberts Drive to Womack Road
  - Mt. Vernon Road from Chamblee Dunwoody Road to Dunwoody Village Parkway
  - Chamblee Dunwoody Road from Dunwoody Park to I-285 EB Off Ramp / Savoy Drive
  - North Shallowford Road from Peeler to Savoy Drive
  - North Peachtree Road from Dunwoody Crossing to Savoy Drive / I-285 EB On Ramp

- Existing cell modems are currently installed at several locations throughout the City. These locations are currently being monitored by Veith Traffic. It is anticipated that these locations will be upgraded as part of the Dunwoody ITS project.
- Existing multi-mode fiber was installed as part of the previous GDOT project in the Dunwoody Village area. It is anticipated that the multi-mode fiber will be upgraded to single-mode as part of the Dunwoody ITS project.
- Existing cabinet inventory is available for non-PTOP signals and will be provided to the Kimley-Horn team by the COD.

### Proposed Conditions

- Kimley-Horn discussed the general understanding and scope of the project. This project is funded as part of the CMAQ grant and will follow the GDOT PDP. The purpose of this project is to expand the current signal communications network by installing fiber optic communication devices along five (5) major corridors throughout the City of Dunwoody. These devices include:
  - Fiber optic cabling
  - CCTVs
  - Cabinet equipment upgrades (where necessary)
- The five major corridors include:
  - Mt. Vernon
  - Chamblee Dunwoody
  - North Shallowford
  - North Peachtree
  - Tilly Mill
- The COD discussed the higher priority areas as the following:
  - Chamblee Dunwoody corridor near Dunwoody Village. Do not extend beyond Roberts Drive.
  - Chamblee Dunwoody corridor near Georgetown. Tie to existing fiber.
  - North Shallowford corridor near Dunwoody Park. Tie to existing fiber.
  - North Peachtree and Tilly Mill corridors near Dunwoody North. Include new signalized location at Peeler Road and North Peachtree Road.
- The COD defined their goals as connectivity to as many signals with the COD as funding would allow. They also expressed a desire to have video coverage in the higher priority areas for preventive and responsive management. Ultimately, this project will tie into the PCIDs ATMS project where the COD is building a TMC.
- The COD mentioned the possibility of a new City Hall/TMC. The location has not been finalized, but is expected to be either near Dunwoody Park or the Dunwoody Village area. The ITS project should be designed to accommodate the potential new location.
- Kimley-Horn discussed the concept and design stage that includes approximately 6 miles of fiber and approximately 29 communication upgrades. The location of the proposed fiber will be determined during the field inventory. The COD expressed a desire to install underground fiber where possible. Aerial locations as well as other design constraints will be determined during the field investigation and presented to the COD during the concept stage.

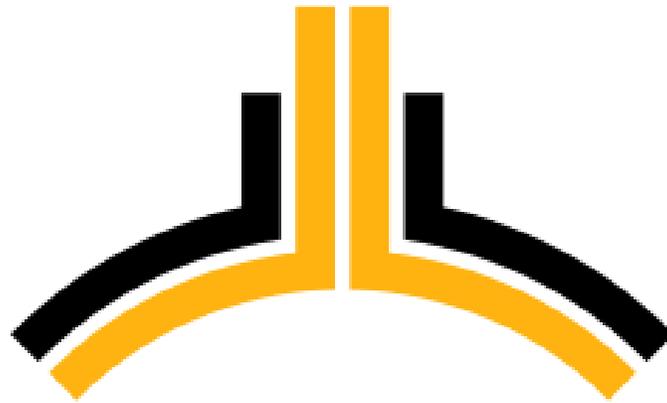
- The COD requested a preliminary evaluation of the existing infrastructure and potential design options. The COD would like to use this information to determine if local on-going projects could potentially install conduit infrastructure that would reduce the overall costs of the ITS project.
- Kimley-Horn inquired about the City's desire to deploy wired versus wireless solutions. The COD is open to both and requested that Kimley-Horn make recommendations to be presented to COD and Veith Traffic.
- The COD discussed the desire to target the priority areas first and expand based on the available funding.
- The ITS project will be designed within the existing right-of-way limits. The COD does not anticipate the need for additional right-of-way. Right-of-way for several of the main corridors should not be an issue.
- Kimley-Horn inquired about the CODs desire to install CCTVs. The COD discussed a desire to install CCTVs at major intersections. If additional funding is available, CCTVs can be added to provide coverage of each signalized intersection within the city limits.
- The COD is currently utilizing GeneTech as their preferred video management software. They anticipate continuing with this service.
- Kimley-Horn discussed the communication network design phase. A communication memo with splicing plans will be provided to document the existing ITS infrastructure, proposed IP schema and network topology. The PCIDs ATMS project started the effort of creating the IP schema and network topology for signals impacting the west side of the City. Kimley-Horn will coordinate between the two projects to provide consistency in the network topology for the remaining signals to be interconnected in the COD. The COD requested that Kimley-Horn coordinate with Eli Veith and Ashley Smith.
- Kimley-Horn mentioned the importance of coordinating with GDOT for center-to-center connectivity. They discussed the desire to utilize GDOT fiber along I-285 to provide redundancy within the COD network. GDOT mentioned that we needed to discuss options with someone from the TMC. Kimley-Horn will coordinate this effort with Alan Davis or Matt Glasser.
- GDOT mentioned the need to invite D7 Utilities and someone from the TMC to the next meeting.
- The team discussed the schedule for the project. Kimley-Horn will coordinate with GDOT – Carleton Fisher to produce the schedule. Kimley-Horn communicated that the schedule presented in the RFP shows an 18-24 month schedule. The COD would like to expedite the schedule where possible.
- The group consensus was that no public involvement would be needed for the ITS project.
- GDOT mentioned the need to coordinate all utilities with District 7 Utilities Office.

**Next Steps:**

- Kimley-Horn communicated next steps:
  - Coordinate with GDOT to finalize schedule
  - Develop Base mapping for field inventories
  - Begin Concept Report
  - Provide Information Request (construction plans, as-builts, and signal equipment inventory).
  - Create sharefile site for project information
  - Submit meeting minutes to COD & GDOT

This document represents Kimley-Horn's interpretation of the meeting. Please contact Alvin James at [alvin.james@kimley-horn.com](mailto:alvin.james@kimley-horn.com) or 404-201-6137 if you have any questions, comments or concerns.

*Attachments:*  
*Sign-in Sheet*



PERIMETER COMMUNITY  
IMPROVEMENT DISTRICTS

[WWW.PERIMETERCID.ORG](http://WWW.PERIMETERCID.ORG)

# Concept of Operations

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# List of Acronyms

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AMBER .....America's Missing: Broadcast Emergency Response

AVL .....Automatic Vehicle Location

CCTV .....Closed-Circuit Television

CMAQ..... Congestion Mitigation and Air Quality

DMS..... Dynamic Message Signs

FHWA ..... Federal Highway Administration

GDOT .....Georgia Department of Transportation

ITS..... Intelligent Transportation Systems

MARTA .....Metro Atlanta Rapid Transit Authority

PCID.....Perimeter Community Improvement District

PTOP..... Perimeter Traffic Operations Program

TCC ..... Traffic Control Center

# Concept of Operations

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## 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.<sup>1</sup>

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

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<sup>1</sup> 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