ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. #0009295, 0009296, & 0009297
CSMSL000900295,
CSMSL000900296,
CSMSL000900297
DeKalb & Gwinnett Counties
I-85 HOV to HOT Conversion

OFFICE Design Policy & Support

DATE March 15, 2010

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED CONCEPT REPORT**

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

Attachment

DISTRIBUTION:

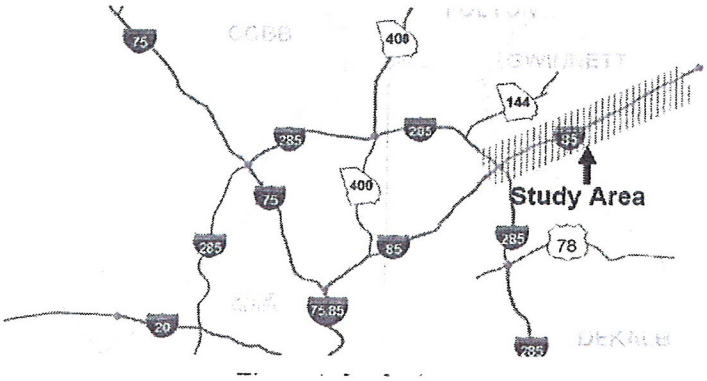
Ron Wishon, State Project Review Engineer
Glenn Bowman, State Environmental Administrator
Ken Thompson, Statewide Location Bureau Chief
Michael Henry, Systems & Classification Branch Chief
Keith Golden, State Traffic Operations Engineer
Angela Alexander, State Transportation Planning Administrator
Paul Liles, State Bridge Engineer
Bobby Hilliard, State Program Delivery Engineer
Angela Robinson, Financial Management Administrator
Mike Lobdell, Chamblee District Preconstruction Engineer
Robert Mahoney, Gainesville District Preconstruction Engineer
Bryant Poole, Chamblee District Engineer
Todd McDuffie, Interim Gainesville District Engineer
Ben Rabun, Project Manager
BOARD MEMBER

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Districts One and Seven

PROJECT CONCEPT REPORT

Project Number: CSMSL-0009-00(295)/CSMSL-0009-00(296)/CSMSL-0009-00(297)
P.I. Number: 0009295/0009296/0009297
County: DeKalb/Gwinnett Counties
Interstate 85 – HOV to HOT Conversion Project
Federal Route Number: I-85
State Route Number: S.R. 403



Recommendation for approval:

DATE 11/16/2009 _____ Project Manager

DATE _____ _____ Office Head/District Engineer

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

DATE 2/8/2010 _____ State Transportation Planning Administrator *

DATE _____ _____ State Transportation Financial Management Administrator

DATE 02/02/2010 Glenn Bowman/ORP** State Environment/Location Engineer

DATE 01/19/2010 Keith Golden/ORP** State Traffic Safety and Design Engineer

DATE _____ _____ District Engineer

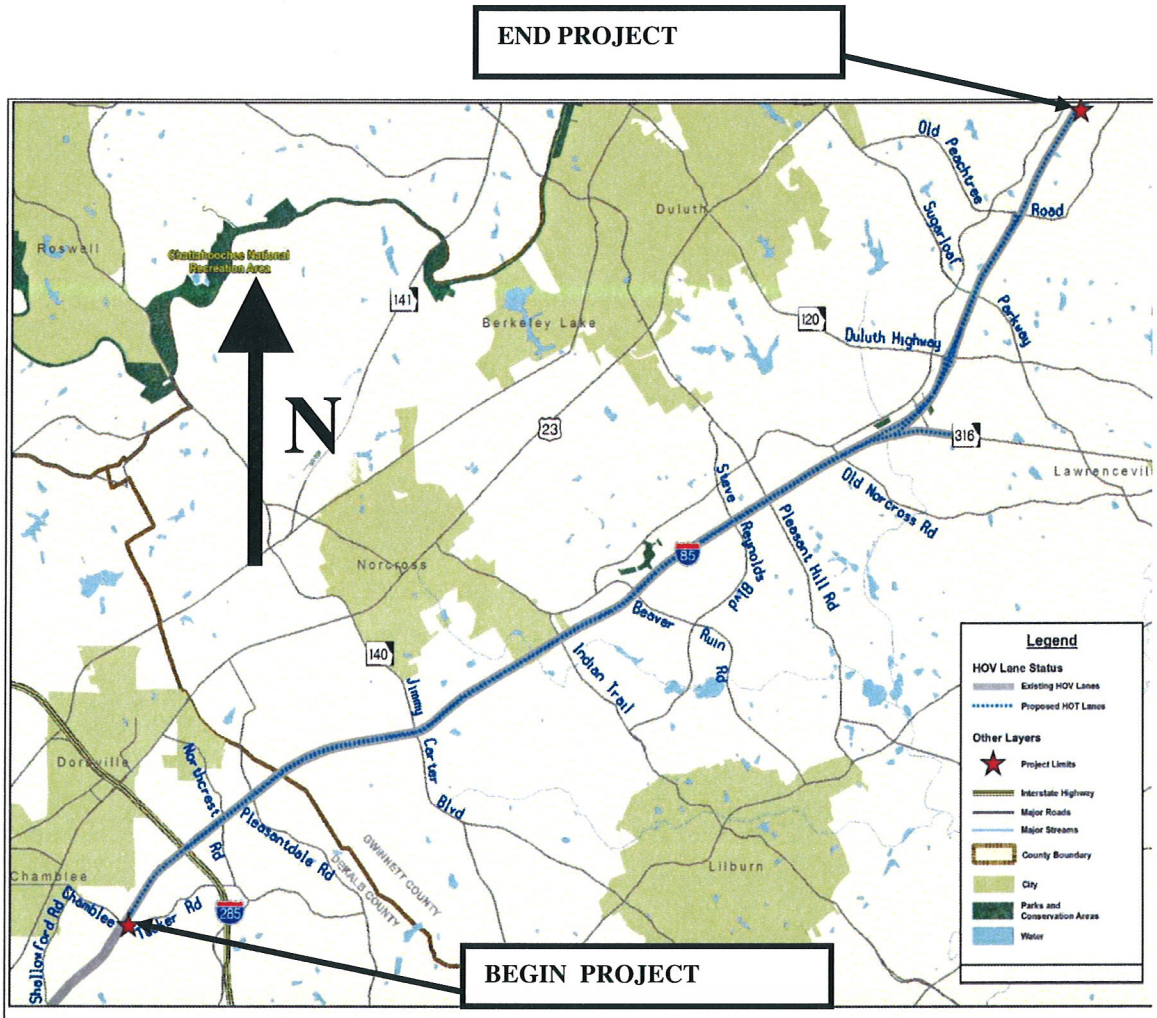
DATE 01/14/2010 Ron Wishon/ORP** Project Review Engineer

DATE _____ _____ State Bridge & Structural Design Engineer

**-Approval on File

* AS PER THE ATTACHED E-MAIL, THIS CONCEPT REPORT IS SIGNED WITH THE UNDERSTANDING THAT PI 0009297 IS NOT INCLUDED WITHIN THE ARC TIP. THE OFFICE OF PLANNING WILL WORK TO GET PI # 0009297 INTO THE ARC TIP DURING THE 2011 PLAN 2040 UPDATE DEVELOPMENT.

PROJECT LOCATION MAP



LOCATION MAP: I-85 HOV to HOT Conversion Project

Need and Purpose: The project need is identified in the steadily increasing traffic volumes in both the general purpose and HOV lanes over the past 15 years, resulting in a 30 percent overall growth in demand. This growing demand on the travel corridor has begun to reduce the travel time reliability of the existing HOV lanes. In response, travelers must allow an additional 33 to 47 percent of their normal travel time as a buffer to ensure on-time arrival during peak travel periods.

The purpose of this project is to provide the most effective use of the managed lanes along portions of I-85 north of Atlanta in order to provide reliable travel times along the corridor.

The project termini are defined as Old Peachtree Road on the north and the I-285 Interchange on the south. These locations were identified because north and south of these locations respectively, traffic levels of service are acceptable (LOS D or better). On the northern end, the project terminates where the current HOV lane ends. The southern terminus was extended to the weave section south of Chamblee Tucker Road so that the I-285 Interchange would be included in the proposed HOT system.

Also see the GDOT approved N&P Statement, Attachment 1.

Description of the proposed project: The Georgia Department of Transportation and regional partners are engaged in a project to convert approximately 16 miles from Chamblee Tucker Road (Exit 94) to North of Old Peachtree Road (Exit 109) of HOV lanes into a High Occupancy Toll or HOT Lanes. The proposed system will be called HOT+3 which will allow vehicles with three or more passengers to travel without paying a toll. Although the HOT lanes would not extend along SR 316, some signage and IT infrastructure may be placed along the corridor. This allows use of the lanes by high occupancy vehicles or others who choose to pay a toll. Existing HOV signs will be replaced, upgraded, and supplemented to support the HOT system. Electronic tolling equipment will be added to support toll collection and enforcement.

Is the project located in a Non-attainment area? .....**X**.....**Yes** .....**No.**
The proposed project concept matches the conforming plan's model description. The project limits are from Chamblee Tucker Road to Old Peachtree Road. The proposed changes are scheduled to be open to traffic in 2011

PDP Classification: Major__X___ Minor_____

Federal Oversight: Full Oversight (X), Exempt ( ), State Funded( ), or Other ( )

Functional Classification: Urban Interstate

U. S. Route Number(s): I-85 **State Route Number(s):** SR 403

Traffic (AADT):

Current Year: (2011) 301,465 Design Year: (2031) 340,625

Existing design features:

- Typical Section:

I-85, South of Pleasant Hill Road:

I-85 Northbound consists of a concrete median barrier with a 2 to 10 ft. inside paved shoulder, 11 to 13 ft. HOV lane, five 12 ft. general use lanes and a 10 ft. outside paved shoulder.

I-85 Southbound: Concrete median barrier with 2 to 10 ft. inside paved shoulder, 13 ft. HOV lane, five to six general use lanes (three 11 ft. inside, two to three 12 ft. outside) and a 12 ft. outside paved shoulder.

I-85, North of Pleasant Hill Road:

I-85 Southbound (Old Norcross Road to Pleasant Hill Road) 11 ft. inside paved shoulders separated by a concrete median barrier, 13 ft. HOV lane and three 11 ft. general use lanes, three 12 ft. general use lanes, and a 12 ft. outside paved shoulder.

I-85 Southbound (SR 316 to Old Norcross Road) Varying inside paved shoulder width,12 ft. to 14 ft. HOV lane, five general purpose lanes with varying widths, auxiliary lanes and a varying outside paved shoulder width.

I-85 Southbound (Old Peachtree Road to SR 316) 9 ft.-3 in. inside paved inside shoulder separated by a concrete median barrier, 13 ft. HOV lanes, two 11 ft. general use lanes, two 12 ft. general use lanes, and a 10 ft. outside paved shoulder.

I-85 Northbound (Pleasant Hill Road to SR 316) Varying inside paved shoulder width separated by a concrete median barrier, varying HOV lane width, three varying width general use lanes, two 12 ft. lanes, auxiliary lanes, and a 12 ft. paved shoulder.

I-85 Northbound (SR 316 to Boggs Road) Varying inside paved shoulder width, 12 ft. to 15 ft. HOV lane, two varying width general use lanes, two 12 ft. lanes, auxiliary lanes, and varying width paved shoulder.

I-85 Northbound (Boggs Road to Old Peachtree Road) Varying inside paved shoulder width separated by a concrete median barrier, 13 ft. HOV lane, two 11 ft. general use lanes, two 12 ft. general use lanes, auxiliary lanes, and a varying outside paved shoulder width.

SR 316, East of I-85:

SR 316 Eastbound (I-85 to Herrington Road overpass) 5 ft. wide paved inside shoulders separated by concrete median barrier, 13 ft. HOV and two 12 ft. general use lanes, and a 12 ft. outside paved shoulder.

SR 316 Eastbound (Herrington Road overpass to Sugarloaf Pkwy.) 4 ft. wide paved inside shoulders separated by 38 ft. median, two 12 ft. lanes and an 8 ft. wide paved shoulder.

SR 316 Westbound (Sugarloaf Pkwy to Herrington Road overpass) 4 ft. wide paved inside shoulder separated by 38 ft. median, two 12 ft. wide lanes and a 12 ft. paved shoulder.

- Posted speed 55/65 mph Minimum radius for curve: 2864.789 ft.
- Maximum super-elevation rate for curve: 8%
- Maximum grade: 3%
- Width of right-of-way: Varies from 300 ft. mainline to1200 ft. at Interchanges
- Major structures:
  - Bridge over I-85 at Chamblee Tucker Road
  - Bridge over I-85, Sweet Water Creek (north and south bound)
  - Bridge over I-85, Northcrest Road at Station 408+50
  - Bridge over I-85, Pleasantdale Road
  - Bridge over I-85, SR/140 Jimmy Carter Blvd.
  - Bridge and Retaining Wall I-85 at Station 592+90
  - Plantation Pipeline, Station 583+20
  - Bridge over I-85, Indian Trail/Liburn Road
  - Bridge over I-85, SR 378/Beaver Ruin Road at Station 726+50
  - Bridge over I-85, Steve Reynolds Blvd. at Station 806+50
  - Bridge over I-85, Pleasant Hill Road at Station 833+50
  - Bridge over I-85, Old Norcross Road at Station 898+50
  - Bridge over I-85, SR 316 Westbound at Station 745+00
  - Bridge over I-85 Northbound, SR 316 Westbound
  - Bridge I-85 Southbound at Station 741+00
  - Bridge I-85 Northbound at Station 745+45
  - Bridge I-85 SR 120/Duluth Hwy at Station 757+50
  - Bridge I-85 Sugarloaf Pkwy at Station 799+50
  - Bridge over I-85, Old Peachtree Road at Station 841+00
  - Box Culvert, Double 6'X6' at Station 392+20
  - Box Culvert, Double 6'X7' at Station 428+00
  - Box Culvert, 7'X5' at Station 443+60
  - Box Culvert, Double 10'X9' at Station 456+40
  - Box Culvert, 7'X5' at Station 501+40
  - Box Culvert, 5'X6' at Station 543+85

  - Box Culvert, Double 10'X12' at Station 646+40
  - Box Culvert 5'X4' at Station 660+00
  - Box Culvert 6'X6' at Station 744+00
  - Box Culvert, Triple10'X10' at Station 777+35
  - Box Culvert 5'X5' at Station 793+50
  - Box Culvert 8'X8' at Station 815+00
  - Box Culvert, I-85 10'X9' Station 852+70
  - Box Culvert, 6'X5'at Station 856+70
  - Box Culvert, 10'X10' at Station 925+50
- Major interchanges or intersections along the project:
  - Chamblee Tucker Road
  - Interstate 285
  - Northcrest Road
  - Pleasantdale Road
  - SR 140/Jimmy Carter Blvd
  - Indian Trail/Lilburn Road
  - SR 378/Beaver Ruin Road
  - Steve Reynolds Blvd.
  - Pleasant Hill Road
  - SR 316
  - SR 120/Duluth Hwy
  - Sugarloaf Pkwy
  - Old Peachtree Road
- Existing length of roadway segment:
  - The proposed project is located along approximately 16 miles of I-85 and extends northeast from Chamblee Tucker Road (Exit 94) to Old Peachtree road (Exit 109) where the existing HOV system terminates and transitions into a general purpose lane.

Proposed Design Features:

- Proposed typical section(s): Twelve lane urban interstate with two HOT lanes, a 2.5 ft Median Barrier and shoulders that vary between 6 ft. and 14 ft.
- Proposed Design Speed Mainline __70___mph
- Proposed Maximum grade Mainline__3.0_%
- Maximum grade allowable __4_%
- Proposed Maximum grade Side Street _N/A_%
- Maximum grade allowable _N/A_%
- Proposed Maximum grade driveway _N/A_% (Residential)
- Proposed Maximum grade driveway _N/A_% (Commercial)
- Proposed Maximum degree of curve __2.0°_
- Maximum degree allowable ___8°__

- Right-of-Way
  - Width: _Varies from 300 ft. at mainline to 1200 ft. at Intersections_
  - Easements: Temporary ( ), Permanent (), Utility ( ), Other (X).
  - Type of access control: Full (X), Partial (), By Permit ( ), Other ( ).
  - Number of parcels: ____N/A_____ Number of displacements:
    - Business: ___0__
    - Residences: ___0__
    - Mobile homes: ___0__
    - Other: ___N/A__
- Structures: N/A
- Major intersections and interchanges: N/A
- Traffic control during construction: Traffic will be maintained during all phases of construction. Work which requires lanes closures will be limited to nights and weekends.
- Design Exceptions to controlling criteria anticipated:

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

  These design exceptions were applied for and approved in 1998 for the HOV project and in 2007 for the SR316 project.
- Design Variances: - None anticipated.
- Environmental concerns: - None anticipated.
- Level of environmental analysis:
  - Are Time Savings Procedures appropriate? Yes ( ), No (X),
  - Categorical Exclusion ( ),
  - Environmental Assessment/Finding of No Significant Impact (FONSI) (X)
  - Environmental Impact Statement (EIS) ( ).
- Utility involvements: There will be conflicts with drainage within the median and overhead utilities. Efforts will be made to minimize utility conflicts.

VE Study Required: Yes (X) No ( )

Project responsibilities:

- Design – GDOT consultant Jacobs Engineering
- Right-of-Way Acquisition – N/A
- Relocation of Utilities - GDOT

- Letting to contract - GDOT
- Supervision of construction – GDOT

Coordination:

- Initial Concept Team Meeting - 3/23/09 See attached minutes.
- Concept Team Meeting – 5/18/09 See attached minutes.
- Public involvement - PIOH Schedule:

3/26/2009	Gwinnett Center Salons 4 and 5
3/31/2009	Gwinnett Fire Academy
3/31/2009	Senior Connections Community Center
4/02/2009	Ashiana's Banquet Hall inside Global Mall
4/04/2009	Discover Mills Mall
6/23/2009	Ashiana's Banquet Hall inside Global Mall
6/25/2009	Gwinnett Center Salon 4
6/27/09	Mall of Georgia

- Local government comments: None

- Other projects in the area:
  - 0006397, I-85 N ATMS Ramp Meters From Buford Hwy to Pleasant Hill Road
  - 0003164, I-85 from SR 316 North to Hamilton Mill Road for HOV Lanes
  - 0008218, I-85 from Peachtree Rd to SR 20 – ATMS Communication
  - 0007326, Holcomb Bridge Road – Upgrade traffic signal equipment
  - 0006825, SR 13 from DeKalb CL to Sugarloaf Pkwy - ATMS
  - 0000845, SR 8/ US 29 at SR 378
  - 0006829, Sugarloaf Pkwy from SR 20 to Peachtree Industrial Blvd - ATMS
  - 0000844, SR 8/ US 20 at Pleasant Hill/Lester Roads
  - 110600, Construction of a Managed Lane I-85 from I-985 to North of Hampton Mill Road
  - 110720, Navigator, Communication, & Surveillance Expansion, I-85 from Pleasant Hill Road to Old Peachtree Road
  - 0003168, SR 316 from I-85 to West of CR 104 and CR 107 to CR 183 for HOV Lanes
  - 0004644, SR 20/ Loganville Hwy from Ozora Road to Brand Road – GRTA
  - 0004086, SR 316 from West of CR 104/Collins Road to CR 177/Hi-Hope Road

- Other coordination to date:
  - Weekly GDOT GEC/SRTA Standing Team Meeting
  - Bi-Weekly NEPA Coordination Meeting with Federal Agencies
  - Bi-Weekly GDOT/SRTA Project Leadership Team Meeting

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: __12__Months.
- Time to complete preliminary construction plans: __3__Months.
- Time to complete right-of-way plans: __N/A__Months.
- Time to complete the Section 404 Permit: __N/A_Months.
- Time to complete final construction plans: __3__Months.
- Time to complete to purchase right-of-way: __N/A__Months.
- List other major items that will affect the project schedule: __N/A_Months.
- Sign Structure Procurement: __6__ Months.

Alternates Considered:

No Build:

Build
There were three alternatives considered in order to separate the managed lane from the general purpose lanes. Additional information regarding these alternatives is available in the Managed Lane Separation Whitepaper, Attachment 7.

Alternative 1: Barrier Separated Lanes
This system consists of a series of concrete barriers spanning the corridor with designated ingress/egress points. Barrier lanes systems provide good control for managed lane systems; however, separated lanes are expensive to construct and may require additional right-of-way. Implementing barrier separated lanes in the I-85 corridor would require major interstate widening. This widening could dramatically increase environmental and economic impacts. This alternative was not pursued.

Alternative 2: Buffer Separated Lanes
This system separates managed lanes from general purpose lanes utilizing physical markers that are less durable but more flexible than barrier separated lanes. Plastic pylons require less right-of-way; however, debris is usually caught between the barriers and requires maintenance. The use of plastic pylons is cheaper than the barrier separated lanes. Implementing buffer separated lanes in the I-85 corridor would require interstate widening. This widening would increase environmental and economic impacts. This alternative was not pursued.

Alternative 3: Thermoplastic Lane Striping
A striped system is the least expensive form of lane separation between managed lanes and general purpose lanes. The existing HOV system utilizes this method of lane separation therefore implementing this type of HOT lane separation on the I-85 corridor produces the minimum amount of environmental impact and no economic impact. Striped lane separation is the proposed separation method for this project.

Comments: None

Attachments:

1. Need and Purpose Statement
2. Cost Estimates:
   a. Construction including E&C
   b. Utilities
3. Typical sections
4. Accident summaries
5. Draft Traffic Report
6. Previous Design Exceptions
7. Managed Lane Separation Whitepaper
8. Minutes of Initial Team Concept Meeting
9. Conceptual Layout
10. Minutes of Team Concept Meeting

Concur: _____
Director of Engineering

Approve: Richard Wayne Fedora* _____
Division Administrator, FHWA

Approve: _____ Date: 3/11/2010
Chief Engineer

* See letter dated March 8, 2010 from FHWA.

U.S. Department of Transportation
Federal Highway Administration

Georgia Division

61 Forsyth Street S.W.
Atlanta, Georgia 30303
404-562-3630
404-562-3703
GA.fhwa@dot.gov

March 8, 2010

In Reply Refer To:
HPE-GA

Mr. Vance C. Smith, Jr., Commissioner
Georgia Department of Transportation
One Georgia Center
600 West Peachtree
Atlanta, GA 30308

Dear Mr. Smith:

We have reviewed the Concept Report for the Interstate 85 – HOV to HOT Conversion Project in DeKalb and Gwinnett Counties, listed as Federal projects CSMSL-0009-00(295), CSMSL-0009-00(296), and CSMSL-0009-00(297). We are approving the concept for this project with the following comments:

1. Page 8. The Public involvement section did not include the Public Hearing that was held as part of this project. Please ensure the project file includes information regarding the PHOH.
2. The Need and Purpose Statement that was provided appears to be different from the Need and Purpose Statement that is in the current version of the Environmental Assessment (EA). We consider the version contained in the EA to be the most recent version and the version in the Concept Report to be a Draft.
3. The typical section in tab 3 appears to show the incorrect lane stripe width. We do not concur with the lane stripe width provided.
4. Additional correspondence will be required to document the retention of the 1998 design exceptions.

We appreciate your consideration in addressing our comments. Please contact Mindy Roberson at (404) 562-3652.

Sincerely,

Richard Wayne Fedora

for Rodney N. Barry, P.E.
Division Administrator

Cc: Dave Peters, GDOT Office of Design, Policy, and Support