ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 110610-, Gwinnett/Barrow Counties
NH-IM-85-2(165)
I-85 Widening- CR 134/Hamilton Mill Road
to just north of SR 211

OFFICE Preconstruction

DATE January 8, 2007

FROM Genetha Rice-Singleton, Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT **APPROVED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Brian Summers
Harvey Keepler
Ken Thompson
Michael Henry
Keith Golden
Angela Alexander
Paul Liles
Russell McMurry
Babs Abubakari
BOARD MEMBER

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. 110610-, Gwinnett-Barrow Counties
NH-IM-85-2(165)
I-85 Widening

OFFICE Preconstruction

DATE February 8, 2006

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

TO David E. Studstill, Jr., P.E., Chief Engineer

SUBJECT PROJECT CONCEPT REPORT

This project is the widening and reconstruction of I-85 beginning just north of CR 134/Hamilton Mill Road to just north of SR 211 for a total project length of 6.30 miles. The existing I-85 consists of two lanes in each direction separated by a 64' depressed grassed median. The existing major structures are:

LOCATION	DIMENSIONS	SUFFICIENCY RATING
CR 146/Spout Springs Road Overpass	311' x 30' bridge	75.7
CR 893/Flowery Branch Road Overpass	204' x 32' bridge	92.8
I-85 over Wheeler Creek	Double 10' x 10' culvert	83.0
SR 211/Farm Market Road Overpass	230' x 66' bridge	N/A

I-85/SR 403, a rural principal arterial, is a primary corridor in northeast Georgia. The level of service (LOS) for this section of I-85 is presently at LOS "D." With a projected 70% increase in traffic by the year 2025, the LOS will decrease to "F" if the additional lanes are not constructed. The base year traffic (2009) is 73,150 VPD and the design year traffic (2029) is 122,700 VPD. The posted speed and the design speed are 70 MPH.

The construction proposes to widen I-85 to a six lane facility for the entire project length. The typical section will consist of three, 12' lanes in each direction with a 28' median with barrier and 16' outside paved shoulders. The existing asphalt pavement will be removed and replaced with a full section of concrete pavement. The existing bridges on Spouts Springs Road over I-85 and Flowery Branch Road over I-85 have a vertical clearance of 16.42' and 16.18' respectively. To provide a minimum clearance of 17', the vertical profile of 1-85 will be lowered to provide the minimum vertical clearance. The typical section for this project allows for the future conversion of the inside shoulder to a barrier separated HOV lane as recommended in the "HOV Strategic Implementation Plan for the Atlanta Region" report. Vegetation removal will occur on both sides of the roadway a minimum of 32' from the edge of pavement. All existing guardrail on the outside shoulders is to either be replaced or slopes flattened to provide clear zone where possible within the existing right-of-way. Additional right-of-way will not be required for the proposed project.

P. I. No. 110610-, Gwinnett-Barrow
February 8, 2006

Environmental concerns include requiring a COE 404 Permit; a Categorical Exclusion will be prepared; a public hearing open house is not required; time saving procedures are appropriate.

The estimated costs for this project are:

	PROPOSED	APPROVED	FUNDING	PROG DATE
Construction (includes E&C and inflation)	$66,514,000	$30,341,000	GRVA/L050	2008
Right-of-Way & Utilities*	-0-	-0-		

This project will increase capacity, enhance safety and reduce congestion along this portion of I-85. I recommend this project concept be approved.

MBP:JDQ/cj

Attachment

CONCUR _____
Buddy Gratton, P.E., Director of Preconstruction

APPROVE _____
For: Robert M. Callan, Administrator, FHWA

APPROVE _____
David E. Studstill, Jr., P.E., Chief Engineer

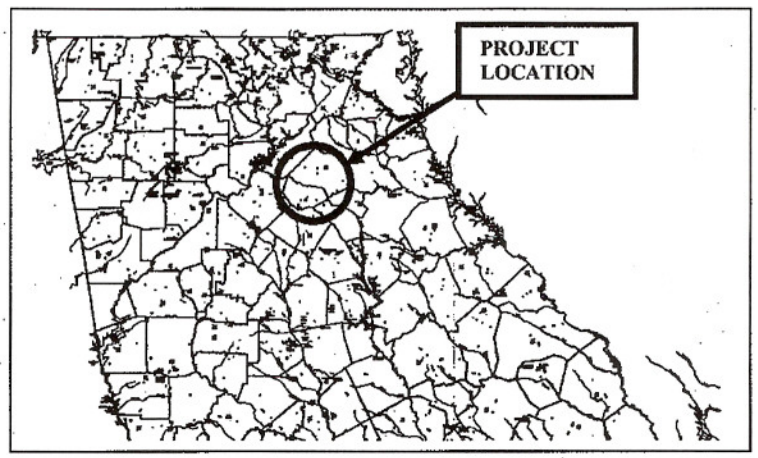
#: See attached email Comments from Stanley Hill 12-14-06

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF PROGRAM DELIVERY AND CONSULTANT DESIGN

PROJECT CONCEPT REPORT

I-85 Widening and Improvements from north of
CR 134/Hamilton Mill Road to north of SR 211/Farm Market Road
Project Number: NH-IM-85-2(165)
Counties: Gwinnett/Barrow
P. I. Number: 110610

Federal Route Number: I-85
State Route Number: SR 403



Recommendation for approval:

DATE 1-17-06 Stanley Hall
Project Manager

DATE 1-17-06 M. Beth Ambrose
Office Head/District Engineer

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

DATE _____
State Transportation Planning Administrator

DATE _____
State Transportation Financial Management Administrator

DATE _____
State Environmental/Location Engineer

DATE 1-23-06 Frank Bell
State Traffic Safety and Design Engineer

DATE _____
District Engineer

DATE _____
Project Review Engineer

DATE _____
Office of Bridge and Structural Design

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: **P.I. No. 110610** **OFFICE:** Environment/Location

DATE: February 3, 2006

FROM: Harvey D. Keepler, State Environmental/Location Engineer

TO: Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

SUBJECT: **PROJECT CONCEPT REPORT**
NH-IM-85-2(165) / Barrow/Gwinnett Counties

The above subject concept report has been reviewed. Page 5 states that the Project will be processed as an EA. This will more likely be a CE. Page 5 states that a public information meeting is not required; however, a PIOH will be required if noise barriers are proposed.

If you have any questions, please contact me at (404) 699-4401.

HDK:lc

Attachment

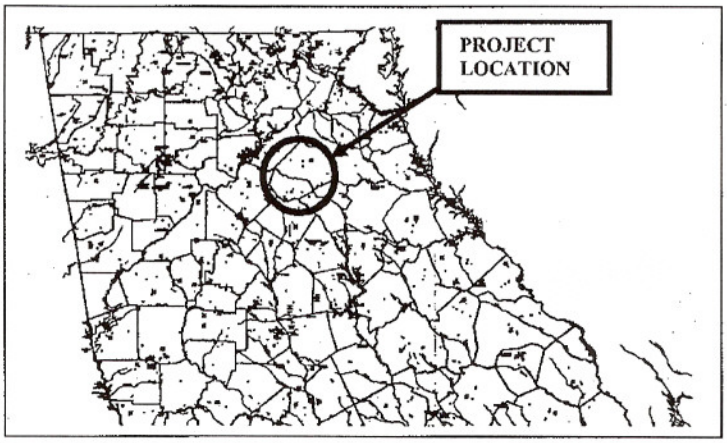
cc: Brian Summers
Babs Abubakari
Keith Golden
Joe Palladi
Jamie Simpson
Russell McMurry
Randall Davis
Paul Liles

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF PROGRAM DELIVERY AND CONSULTANT DESIGN

PROJECT CONCEPT REPORT

I-85 Widening and Improvements from north of
CR 134/Hamilton Mill Road to north of SR 211/Farm Market Road
Project Number: NH-IM-85-2(165)
Counties: Gwinnett/Barrow
P. I. Number: 110610

Federal Route Number: I-85
State Route Number: SR 403



Recommendation for approval:

DATE 1-17-06 Stanley Hall
Project Manager

DATE 1-17-06 M. Beth Thompson
Office Head/District Engineer

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

DATE _____
State Transportation Planning Administrator

DATE _____
State Transportation Financial Management Administrator

DATE 02.2.06 Johnny Singleton
State Environmental/Location Engineer

DATE _____
State Traffic Safety and Design Engineer

DATE _____
District Engineer

DATE _____
Project Review Engineer

DATE _____
Office of Bridge and Structural Design

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF PROGRAM DELIVERY AND CONSULTANT DESIGN

PROJECT CONCEPT REPORT

I-85 Widening and Improvements from north of
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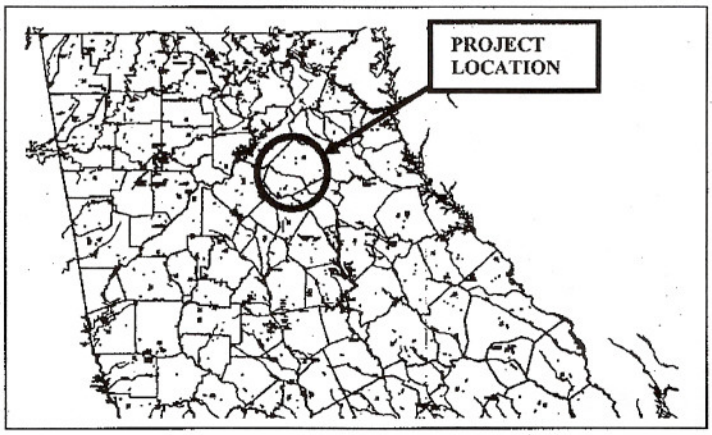
Project Number: NH-IM-85-2(165)
Counties: Gwinnett/Barrow
P. I. Number: 110610

Federal Route Number: I-85
State Route Number: SR 403



Recommendation for approval:

DATE 1-17-06 Stanley Hill
Project Manager

DATE 1-17-06 M. Burke Ambrosiano
Office Head/District Engineer

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

DATE _____ _____
State Transportation Planning Administrator

DATE _____ _____
State Transportation Financial Management Administrator

DATE _____ _____
State Environmental/Location Engineer

DATE _____ _____
State Traffic Safety and Design Engineer

DATE _____ _____
District Engineer

DATE _____ _____
Project Review Engineer

DATE 2/5/06 Paul V. Liles Jr.
Office of Bridge and Structural Design

Merritt, George

From: Hill, Stanley [Stanley.Hill@dot.state.ga.us]
Sent: Thursday, December 14, 2006 9:57 AM
To: Merritt, George
Cc: Reid, Robert Lee Jr.; Wheeler, Joe; Abubakari, Babs; Merritt, George; Pegram, Vinesha C.; Tehrani, Mohsen
Subject: RE: I-85 Reconstruction and added lanes concept reports

George,

The Department will address all comments and concerns as discussed during the summer and all Revised Concepts Reports submitted for approval will include these changes.

Thank You,

Stanley Hill
Georgia Department of Transportation
Transportation Engineer Assistant Administrator
Office of Program Delivery and Consultant Design
Phone: (404)656-6109
Fax: (404)657-0653
Email: stanley.hill@dot.state.ga.us

From: Merritt, George [mailto:George.Merritt@fhwa.dot.gov]
Sent: Thursday, December 14, 2006 9:10 AM
To: Hill, Stanley
Cc: Reid, Robert Lee Jr.; Wheeler, Joe; Abubakari, Babs; Merritt_George
Subject: I-85 Reconstruction and added lanes concept reports
Importance: High

Stanley,
In an effort to resolve the issues regarding the concept reports for the various projects from Gwinnett County north to the SC state line, would you please respond to this email and indicate if the Department is committed to address the various issues and resolutions we have worked on this summer per the typical section discussions? We expect that any concept revisions (as necessary) will reflect our discussions and all plan development for construction will reflect the agreed typicals barring as much as possible. Thanks for your assistance, and once I receive a response I will attach it to the concept reports so that we can process them.

Please let me know if there are any questions.
George

George W. Merritt
Federal Highway Administration
U.S. Department of Transportation
61 Forsyth St., S.W. Suite 17T100
Atlanta, GA 30303

Phone: (404) 562-3655
Fax: (404) 562-3703
Email: george.merritt@fhwa.dot.gov

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE NH-IM-85-2(165), Barrow/Gwinnett Counties
P. I. Number 110610

OFFICE Consultant Design

DATE January 17, 2006

FROM Mohammed Abubakari, P.E., State Program Delivery and Consultant Design Engineer

TO Margaret Pirkle, P.E., Assistant Director of Preconstruction

SUBJECT **Project Concept Report Approval**

Attached is the original copy of the Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

cc: Brian Summers, P.E. Project Review Engineer
Harvey Keepler, State Environmental/Location Engineer
Keith Golden, State Traffic Operations Engineer
Joe Palladi, P.E. State Transportation Planning Administrator
Jamie Simpson, State Transportation Financial Management Administrator
Russell McMurry, P.E., District 1 Engineer
Randall Davis, Area 5 Engineer
Paul Liles, P.E., State Bridge Design Engineer

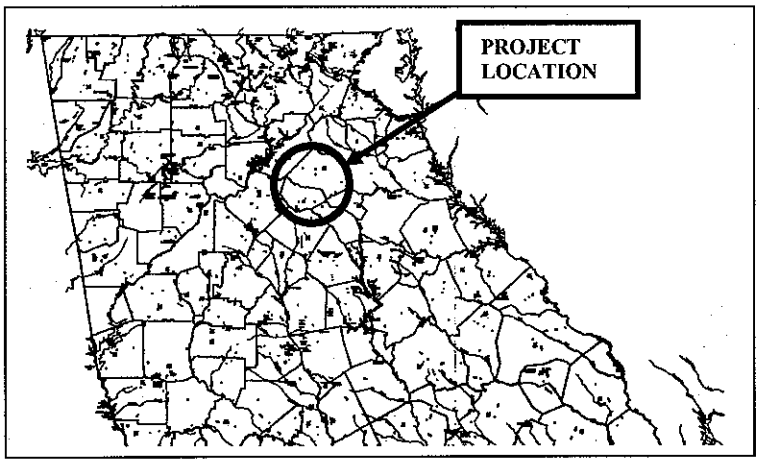
MBA:SH:VCP

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF PROGRAM DELIVERY AND CONSULTANT DESIGN

PROJECT CONCEPT REPORT

I-85 Widening and Improvements from north of
CR 134/Hamilton Mill Road to north of SR 211/Farm Market Road
Project Number: NH-IM-85-2(165)
Counties: Gwinnett/Barrow
P. I. Number: 110610

Federal Route Number: I-85
State Route Number: SR 403



Recommendation for approval:

DATE 1-17-06 _____ Project Manager

DATE 1-17-06 _____ Office Head/District Engineer

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

DATE _____ _____ State Transportation Planning Administrator

DATE _____ _____ State Transportation Financial Management Administrator

DATE _____ _____ State Environmental/Location Engineer

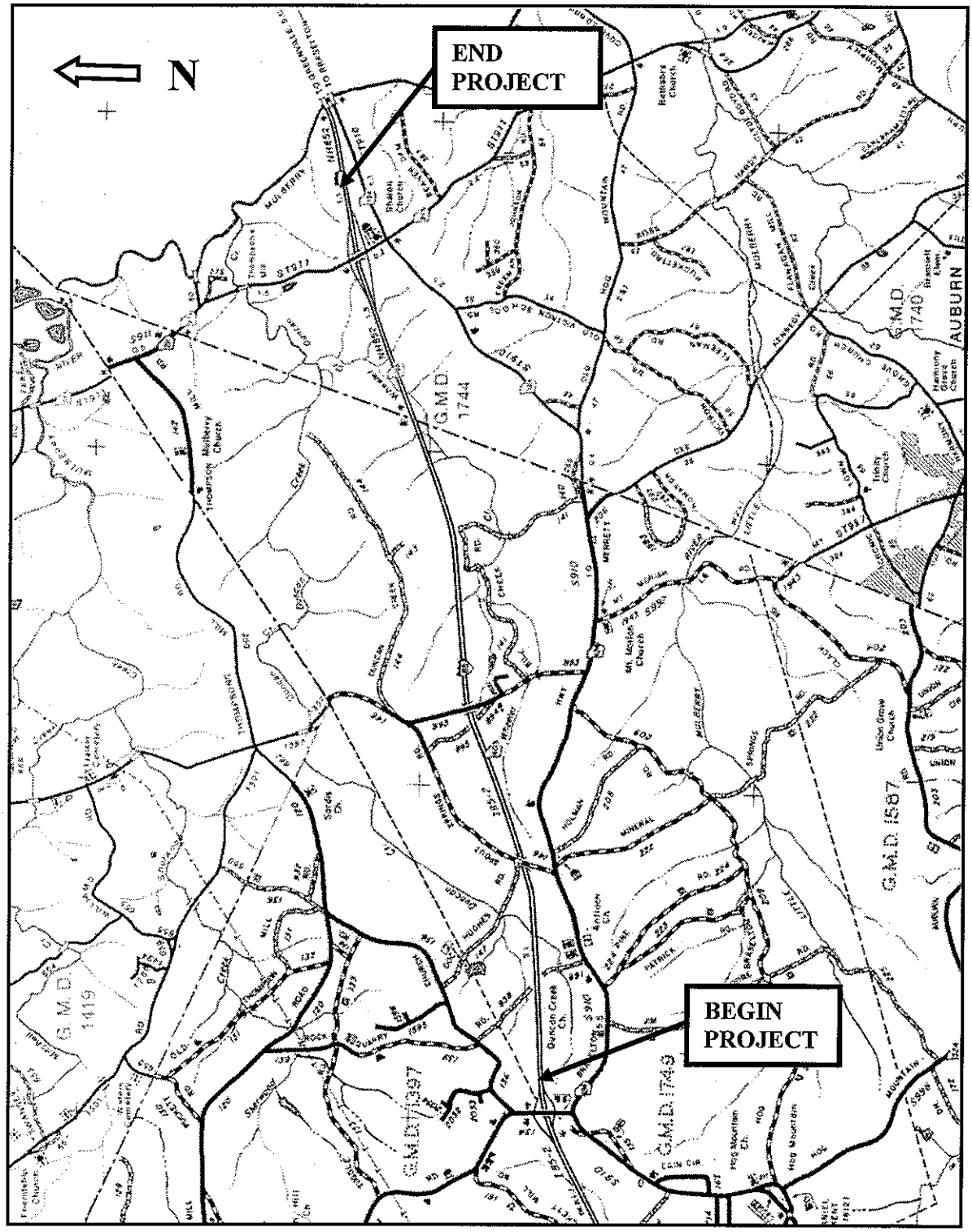
DATE _____ _____ State Traffic Safety and Design Engineer

DATE _____ _____ District Engineer

DATE _____ _____ Project Review Engineer

DATE _____ _____ Office of Bridge and Structural Design

PROJECT MAP-Project No. : NH-IM-85-2(165), Gwinnett/Barrow Counties



Need and Purpose: *See attached Need & Purpose Statement*

Description of the proposed project:
This project is located in northeastern Gwinnett County and northern Barrow County, beginning just north of CR134/Hamilton Mill Road and ending just north of SR211/Farm Market Road. The existing four-lane mainline of I-85 will be widened to six lanes by widening to the inside of the existing lanes.

Is the project located in a Non-attainment area? __X__ Yes _____ No

PDP Classification: *Minor, Existing Location*

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

Functional Classification: *Rural Interstate Principal Arterial*

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

Traffic (AADT):
Current Year (2009): *73,150* Design Year (2029): *122,700*

Existing design features:
- Typical Section:
  - *Four 12' lanes, two in each direction*
  - *64' depressed median*
  - *4' paved inside shoulder*
  - *10' paved outside shoulder*
- Posted speed: *70 mph* Minimum curve radius: *5,730'*
- Maximum grade: *3.22%*
- Width of right of way: *300' minimum*
- Major structures:
  - *311'x30' Two-lane bridge on CR146/Spout Springs Road over I-85*
    Struct. ID 135-0036-0 Suff. Rating 75.7
  - *204'x32' Two-lane bridge on CR893/Flowery Branch Road over I-85*
    Struct. ID 135-0070-0 Suff. Rating 92.8
  - *285'x20' Reinforced Concrete Bridge Culvert-Double 10'x10' on Wheeler Creek*
    Struct. ID 135-0059-0 Suff. Rating 83.0
  - *230'x66' Three-lane bridge on SR211/Farm Market Road over I-85*
    Struct. ID 013-0010-0 Suff. Rating (Not Available-New Bridge)

- Major interchanges or intersections along the project: *SR211/Farm Market Road*
- Existing length of roadway segment and the beginning mile logs for each county segment: *6.3 miles; mile log 120.8 to 125.3 (Gwinnett) – 125.3 to 127.1 (Barrow)*

Proposed Design Features:

- Proposed typical section(s):
  - *Six 12' lanes, three in each direction*
  - *Median barrier*
  - *12'-9" paved inside shoulder*
  - *16' paved outside shoulder*

- Proposed Design Speed Mainline: *70 mph* Maximum Super Elevation: *8%*
- Proposed Maximum grade Mainline: *3.22%* Maximum grade: *4.0%*
- Proposed Maximum grade Side Street: *N/A* Maximum grade: *N/A*
- Proposed Maximum grade driveway: *N/A*
- Proposed Minimum curve radius: *5,730'* Minimum curve radius: *1,810'*
- Right of way
  - Width: 300' (Minimum)
  - Easements: Temporary ( ), Permanent ( ), Utility ( ), Other ( ).
  - Type of access control: Full (X), Partial ( ), By Permit ( ), Other ( ).
  - Number of parcels: *0* Number of displacements:
    - Business: *0*
    - Residences: *0*
    - Mobile homes: *0*
    - Other: *0*
- Structures: *No structure improvements expected.*
- Major intersections and interchanges: *No interchange improvements expected.*
- Traffic control during construction:
  Traffic to be maintained on existing roadways during construction
- 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)

- Design Variances: *None anticipated*
- Environmental concerns: *None anticipated*
- Level of environmental analysis:
  - Are Time Savings Procedures appropriate? Yes (X), No ( ),

- Categorical exclusion ( ),
- Environmental Assessment/Finding of No Significant Impact (FONSI) (X), or
- Environmental Impact Statement (EIS) ( ).

- Utility involvements: *None*

Project responsibilities:

- Design: *Georgia DOT*
- Right of Way Acquisition: *N/A*
- Relocation of Utilities: *N/A*
- Letting to contract: *Georgia DOT*
- Supervision of construction: *Georgia DOT*
- Providing material pits: *not determined*
- Providing detours: *N/A*

Coordination

- Concept meeting date: *April 16, 2003*
- P. A. R. meetings, dates and results: *None required*
- FEMA, USCG, and/or TVA: *None to date*
- Public involvement: *A public information meeting will not be required*
- Local government comments:
- Other projects in the area:
  - *NHS-M001-00(027), Gwinnett, Barrow, Jackson and Banks Counties; Resurfacing of I-85 south of SR 211 in Gwinnett County to south of SR 15/US 441 in Banks County.*
  - *NH-IM-85-2(164), Gwinnett County, I-85 Widening from north of CR 14/Old Peachtree Road to just north of CR 134/Hamilton Mill Road.*
  - *NH-IM-85-2(166), Barrow/Jackson Counties, I-85 Widening from north of SR 211/Farm Market Road to north of SR 60.*
  - *MSL-0003-00(164), Gwinnett County, I-85 HOV lanes from SR 316 to CR 134/Hamilton Mill Road.*

- Other coordination to date
- Future Passenger Rail Corridor Yes ____ No X

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: *6* Months
- Time to complete preliminary construction plans: *6* Months
- Time to complete right of way plans: *0* Months
- Time to complete the Section 404 Permit: *6* Months
- Time to complete final construction plans: *3* Months
- Time to complete to purchase right of way: *0* Months

Other alternates considered:

- ***No Build:*** *This alternative does not meet the capacity and operational needs of the project.*
- ***Widen I-85 to six lanes while maintaining the existing 64' depressed median:*** *This alternative would provide the same traffic capacity as widening to the inside, but would have required additional right-of-way acquisitions.*

Comments:

- *The section of I-85 between CR 134/Hamilton Mill Road and SR 211/Farm Market Road will operate at LOS F for the design year 2029. It is the intent of the Department to program future projects to bring the level-of-service up to an acceptable level.*
- *The existing asphalt pavement shall be removed and replaced with a full section of concrete pavement.*
- *The existing two-lane bridge on Spout Springs Road (CR 146) over I-85 is estimated to have a vertical clearance of 16.42'. To provide a minimum clearance of 17.00', the vertical profile of I-85 will be lowered to provide the minimum vertical clearance.*
- *The existing two-lane bridge on Flowery Branch Road (CR 893) over 1-85 is estimated to have a vertical clearance of 16.18'. To provide a minimum clearance of 17.00', the vertical profile of I-85 will be lowered to provide the minimum vertical clearance.*
- *The existing cross slope is 1.0% on I-85 within the project limits. The normal cross slope should be raised to 2.0% in the new design.*
- *The typical section for this project allows for the future conversion of the inside shoulder to a barrier separated HOV lane as recommended in the report "HOV Strategic Implementation Plan for the Atlanta Region" dated March 2003. HOV lanes from Hamilton Mill Road to SR 211 still need to be evaluated for inclusion into the 2030 RTP.*
- *The District One Maintenance Office requests the removal of the B-Mod pavement in the northbound inside lane between MP 120.8 MP 124.8. This will be addressed by replacing the existing pavement with full section concrete pavement.*
- *The District One Maintenance Office requests that vegetation be removed on the shoulders to a minimum of 32' from the edge of pavement using Special Provision Section 202 – Random Clearing and Grubbing.*
- *All existing guardrail on the outside shoulders is to either be replaced or slopes flattened to provide clear zone where possible within existing right of way.*

Attachments:

1. Need and Purpose Statement
2. Cost Estimates:
    a. Construction including E&C(10) and Inflation, $66,513,272
    b. Right of Way, $0
    c. Utilities, $0
3. Typical section
4. Accident summaries
5. Capacity analysis
6. Minutes of Concept meeting
7. Traffic Diagrams

ATTACHMENT 1

NEED AND PURPOSE STATEMENT

Need and Purpose
Project NH-IM-85-2(165), Gwinnett and Barrow Counties
PI No. 110610
I-85 Widening from Hamilton Mill Rd to
SR 211/Farm Market Rd in Barrow County

Background

The Atlanta Regional Commission (ARC) adopted the 2025 Regional Transportation Plan for the 13-county Atlanta Metropolitan area in April 2000. The Plan addresses travel needs through the year 2025. The Regional Transportation Plan (RTP) is the direct result of a comprehensive, cooperative, and continuous planning process conducted by ARC, local governments and the Georgia Department of Transportation in cooperation with the Federal Highway and Federal Transit Administrations. **The proposed project is recommended in the TIP/RTP (GW-AR-192).** The proposed project is scheduled for both right of way acquisition and construction in 2007.

Interstate 85 in this section of Gwinnett and Barrow Counties is a major route functionally classified as a rural interstate principal arterial. Currently there are two 12' lanes with 10' paved shoulders in each direction. The existing median is 64 feet wide and grassed. The posted speed limit along the existing four-lane facility is 70 MPH. The landscape is classified as "rolling terrain". This section of roadway is not along a designated school bus route.

Project Improvement

Interstate 85 is to be widened from Hamilton Mill Road to just north of State Route 211. The proposed improvement will consist of three 12-foot lanes with 16-foot outside paved shoulders in each direction. The existing grassed median will be replaced with a median barrier and 14-foot inside shoulders. Total project length is approximately 6.30 miles.

Major structures within the project limits include the following bridges.

Bridge I.D. Number	Location	Vertical Clearance	Horizontal Clearance	Sufficiency Rating	Date Constructed
013-5051-A	SR 211	17' 07	65.00	100.00	2001
135-0006-A	CR 146	16' 05	23.90	75.56	1964
135-0070-A	CR 893	16' 02	26.00	92.76	1964

Bridge Inventory Data Report 9/18/03

Projects in the area include:

- NH-IM-85-2(164), PI 110600, I-85 from I-985 to CR 134/Hamilton Mill Road, widening from 4 to 6 lanes, Gwinnett County
- MSL-0003-00(164), PI 0003164, I-85 from SR 316 North to Hamilton Mill Road, HOV lanes, Gwinnett County
- IM-00MS(371), PI 110753, I-85 Safety Upgrades at Hamilton Mill Rd/CR 134, Interchange upgrade, Gwinnett County

- BRST-0998(1), PI 142285, SR 324/Gravel Spring Rd @ I-85 4.5 Miles SE of Buford, Bridge Replacement, Gwinnett County
- EDS-500(8), PI 162018, Northern Arc from Old Suwanee Road to Alcovy Road, New Roadway Construction, Gwinnett County
- NH-IM-85-2(166), PI 110620, I-85 from SR 211 to SR 60, widening from 4 to 6 lanes, Barrow /Jackson Counties
- IM-00MS(266), PI 110750, I-85 Safety Upgrade @ SR 211 (Barrow) and SR 53/82/98 (Jackson), Interchange Safety, Barrow/Jackson Counties
- IM-0000-00(270), PI 0000270, I-85 Safety Upgrade at SR 211, Interchange Safety, Barrow County

Other projects in area (in RTP, but not in CWP)

- GW-254, SR 324 – Gravel Springs Road from SR 20/Buford Drive to I-85 North, Widening from 2 to 4 lanes, Gwinnett County Project
- GW-255, SR 324 – Gravel Springs Road from I-85 North to SR 124/Braseltown Highway, Widening from 2 to 4 lanes, Gwinnett County Project

Logical Termini

The project termini are logical because they coincide with programmed projects on both ends of the proposed site. South of this project there is a project to widen the existing four lanes to six lanes along I-85 from I-985 to Hamilton Mill Road. Similarly, at the north end of this project there is also a project that would widen the existing four lanes to six lanes along I-85 from SR 211 to SR 60. With these two adjacent projects, the proposed improvement will form a new 14.38-mile stretch of six-lane roadway (three lanes in each direction) along Interstate 85.

Travel Demand and Operational Characteristics

The estimated time of completion (ETC) for Interstate 85 along the project length is 2009, and the annual growth rate is 2.5 percent. According to projected traffic counts, Interstate 85 will operate with an annual average daily traffic (AADT) volume of approximately 73,150 by 2009. Under the No-Build Alternative, the mainline will operate at a level of service (LOS) F for the ETC peak hour. Under the three-lane single occupancy vehicle (SOV) Build Alternative, the mainline LOS improves to C for the ETC peak hour. By ETC+20 (2029), the AADT for Interstate 85 within the project limits increases to 122,700. The increase in volume leads to a LOS of F for the three-lane SOV Build Alternative by 2021. Through the addition of a fourth SOV lane in each direction, the LOS for the mainline peak hour in 2021 is D, and E for ETC+20. The three-lane SOV and four-lane SOV Build Alternatives have similar LOS impacts to the ramps, as with the mainline. Refer to the tables on the next page for further information.

Level of Service (LOS) for Mainline Interstate 85 Single Occupancy Vehicle Lanes									
Location	**ETC (2009)**			**Failing Year for 3-Lane I-85 (2021)**			**ETC+20 (2029)**		
	Two-Lane I-85	**Three-Lane I-85**	**Four-Lane I-85**	**Two-Lane I-85**	**Three-Lane I-85**	**Four-Lane I-85**	**Two-Lane I-85**	**Three-Lane I-85**	**Four-Lane I-85**
I-85 NB (AM Peak)	D	B	B	F	C	B	F	D	C
I-85 NB (PM Peak)	F	C	C	F	F	D	F	F	E
I-85 SB (AM Peak)	F	C	C	F	F	D	F	F	E
I-85 SB (PM Peak)	D	B	B	F	C	B	F	D	C

Level of Service (LOS) for Interstate 85 On and Off-Ramps at SR 211													
Location	**ETC (2009)**			**ETC+20 (2029)**				**Failing Year (as noted)**					
					Three-Lane I-85		**Four-Lane I-85**		**Three-Lane I-85**				**Four-Lane I-85**
	Two-Lane I-85	**Three-Lane I-85**	**Four-Lane I-85**	**Two-Lane I-85**	**One Lane for Ramp**	**Two Lanes for Ramp**	**One Lane for Ramp**	**Two Lanes for Ramp**	**One Lane for Ramp (2018)**	**One Lane for Ramp (2028)**	**One Lane for Ramp (2029)**	**One Lane for Ramp (2020)**	**One Lane for Ramp (2024)**
NB Off-Ramp (PM Peak)	F	D	C	F	F	F	F	D	-	-	-	F	F
SB Off-Ramp (AM Peak)	E	C	C	F	F	F	D	-	-	-	F	-	-
NB On-Ramp (PM Peak)	E	C	B	F	F	F	C	-	-	F	-	-	-
SB On-Ramp (PM Peak)	F	D	B	F	F	F	C	-	F	-	-	-	-

Safety

In 1995, 1996, 1997, 2001, 2002, 2003 and 2004 there were 317 accidents reported along this section of I-85 in Gwinnett and Barrow County. In the last four years of recorded data accident rates have increased significantly. These figures may be indicative of future accident rates if no improvements are implemented. In 1995 there were 28 total accidents with 19 injuries. In 1996 there were 28 total accidents with 19 injuries. In 1997 there were 26 total accidents with 11 injuries. In 2001 there were 53 total accidents with 18 injuries. In 2002 there were 57 total accidents with 23 injuries. In 2003 there were 56 total accidents with 20 injuries. In 2004 there were 69 accidents with 26 injuries. Below are accident data and comparable statewide averages:

Total project length is 6.3 miles

	1995	1996	1997	2001	2002	2003	2004
Total Accidents	28	28	26	53	57	56	69
Accidents Per 100 MVMT	33	32	20	51	54	40	44
Statewide Accidents Per 100 MVMT	47	50	49	65	73	74	NA

Over the period of recorded data there are a variety of accident types including same direction side swipes, rear end collisions, angled collisions, and collisions with objects other than motor vehicles. The addition of lanes and increase of outside shoulder widths, as proposed in the widening project, should decrease the likelihood of all incidents.

Community Issues

Gwinnett County is part of the Atlanta metropolitan region and is a rapidly growing residential area. The 2000 Census lists the population in Gwinnett County as 588,448. During the 1990 Census year, Gwinnett County had a population of 352,910. Therefore, between 1990 and 2000, Gwinnett County gained 235,538 residents. This 67% increase was the highest rate of increase among Georgia counties during the 1990 to 2000 period. In the area of the proposed project, less than 4% of the population lives below the poverty level and less than 23% are minority. These factors should not impact the proposed project.

Need and Purpose

This project is justified in anticipation of a tremendous traffic increase while at the same time providing a safer driving environment. I-85 is a major transportation facility both to metropolitan Atlanta and the southeastern United States. This facility is used for numerous reasons including commercial goods movement, professional commutes, and interstate travel. Traffic projections indicate that future roadway demand will exceed existing carrying capacity. The tremendous population growth and recent development trends in Gwinnett and Barrow counties also suggest the need for improvement of this facility. Current congestion in the area resulting in rear end collisions, same direction sideswipes, and collisions with objects other than motor vehicles can potentially escalate without the proposed improvements. The widening of I-85 north from Hamilton Mill Road to SR 211 will serve current and future travel demand and provide a safer driving environment along this segment of roadway.

ATTACHMENT 2

COST ESTIMATE

Estimate Report for file "110610"

Section ROADWAY ITEMS

Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	266664.00	TRAFFIC CONTROL -	266664.00
153-1300	1	EA	54576.18	FIELD ENGINEERS OFFICE TP 3	54576.18
201-1500	1	LS	386663.00	CLEARING & GRUBBING -	386663.00
205-0001	269827	CY	5.50	UNCLASS EXCAV	1484048.50
208-0100	91121	CY	6.56	IN PLACE EMBANKMENT	597753.76
310-5120	477423	SY	13.19	GR AGGR BASE CRS, 12 INCH, INCL MATL	6297209.37
402-1811	1300	TN	66.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL	85800.00
402-3121	1060	TN	74.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	78440.00
430-0220	363321	SY	58.00	PLAIN PC CONC PVMT, CL 1 CONC, 12 INCH THK	21072618.00
430-1220	40369	SY	58.41	CONT REINF CONC PVMT, CL HES CONC, 12 INCH THK	2357953.29
440-0110	18434	CY	130.27	ROLLER COMPACTED CONCRETE SHOULDERS	2401397.18
446-1002	4500	LF	2.62	PVMT REINF FABRIC STRIPS, TP 2, INCL BITUM BINDER	11790.00
609-1001	206980	SY	22.00	DEMO EXISTING PAVEMENT, 16 IN.	4553560.00
610-1055	22568	LF	1.38	REM GUARDRAIL	31143.84
610-1075	62	EA	106.52	REM GUARDRAIL ANCH, ALL TYPES	6604.24
620-0100	66666	LF	44.94	TEMPORARY BARRIER, METHOD NO. 1	2995970.04
621-4021	250	LF	311.95	CONCRETE SIDE BARRIER, TYPE 2A	77987.50
621-4022	2100	LF	532.40	CONCRETE SIDE BARRIER, TYPE 2B	1118040.00
621-4023	1550	LF	588.23	CONCRETE SIDE BARRIER, TYPE 2C	911756.50
621-6001	22400	LF	49.07	CONCRETE BARRIER, TP S-1	1099168.00
621-6002	6000	LF	70.23	CONCRETE BARRIER, TP S-2	421380.00
621-6003	4050	LF	160.45	CONCRETE BARRIER, TP S-3	649822.50
641-1100	427	LF	31.00	GUARDRAIL, TP T	13237.00
641-1200	24115	LF	12.94	GUARDRAIL, TP W	312048.10
641-5001	39	EA	459.66	GUARDRAIL ANCHORAGE, TP 1	17926.74
641-5012	39	EA	1525.25	GUARDRAIL ANCHORAGE, TP 12	59484.75
643-4000	70000	LF	4.16	WOVEN WIRE FENCE	291200.00
649-0027	33333	LF	17.23	CONCRETE GLARE SCREEN, 27 INCH	574327.59
				Section Sub Total:	**$48,228,570.08**

Section DRAINAGE

Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0204	6759	SY	27.36	PLAIN CONC DITCH PAVING, 4 IN	184926.24
500-3800	5	CY	657.38	CLASS A CONCRETE, INCL REINF STEEL	3286.90
550-1180	7029	LF	31.29	STORM DRAIN PIPE, 18 IN, H 1-10	219937.41
550-1182	11	LF	30.90	STORM DRAIN PIPE, 18 IN, H 15-20	339.90
550-1240	15	LF	37.62	STORM DRAIN PIPE, 24 IN, H 1-10	564.30
550-1242	128	LF	44.78	STORM DRAIN PIPE, 24 IN, H 15-20	5731.84
550-1302	127	LF	103.74	STORM DRAIN PIPE, 30 IN, H 15-20	13174.98
550-1422	98	LF	104.50	STORM DRAIN PIPE, 42 IN, H 15-20	10241.00
550-1486	10	LF	165.47	STORM DRAIN PIPE, 48 IN, H 35-40	1654.70
550-4218	65	EA	475.83	FLARED END SECTION 18 IN, STORM DRAIN	30928.95
550-4224	7	EA	519.61	FLARED END SECTION 24 IN, STORM DRAIN	3637.27
550-4230	6	EA	658.78	FLARED END SECTION 30 IN, STORM DRAIN	3952.68
550-4242	5	EA	1089.26	FLARED END SECTION 42 IN, STORM DRAIN	5446.30
550-4418	13	EA	385.88	FLARED END SECTION, 18 IN, SLOPE DRAIN	5016.44
576-1018	808	LF	26.37	SLOPE DRAIN PIPE, 18 IN	21306.96
603-2181	740	SY	36.73	STN DUMPED RIP RAP, TP 3, 18 IN	27180.20
603-2182	75	SY	43.32	STN DUMPED RIP RAP, TP 3, 24 IN	3249.00
603-7000	815	SY	3.99	PLASTIC FILTER FABRIC	3251.85
610-6155	22	EA	600.00	REM FLARED END SECTION	13200.00
610-6512	1	EA	750.00	REM HEADWALL -	750.00
668-2110	60	LF	247.74	DROP INLET, GP 1, ADDL DEPTH	14864.40
668-2231	21	EA	3000.00	DROP INLET, GP 1, MODIFIED TP M-1	63000.00
668-2232	53	EA	5800.00	DROP INLET, GP 1, MODIFIED TP M-2	307400.00
				Section Sub Total:	**$943,041.32**

Section TEMPORARY EROSION CONTROL

Item Number	Quantity	Units	Unit Price	Item Description	Cost
162-1300	13	EA	343.33	EROSION CONTROL CHECK DAM, TP -	4463.29
163-0232	54	AC	473.25	TEMPORARY GRASSING	25555.50
163-0240	354	TN	197.09	MULCH	69769.86
163-0300	7	EA	1228.63	CONSTRUCTION EXIT	8600.41
163-0501	10	EA	824.27	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 1	8242.70
163-0503	26	EA	484.32	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	12592.32
163-0520	5797	LF	12.65	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	73332.05
163-0521	253	EA	166.64	CONSTRUCT AND REMOVE TEMPORARY DITCH CHECKS	42159.92
163-0530	253	LF	2.57	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	650.21
163-0531	33	EA	7611.49	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	251179.17
163-0550	74	EA	235.03	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	17392.22
165-0010	19450	LF	1.06	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	20617.00
165-0030	17217	LF	1.15	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	19799.55
165-0040	266	EA	69.66	MAINTENANCE OF EROSION CONTROL CHECKDAMS/DITCH CHECKS	18529.56
165-0060	297	EA	1010.89	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	300234.33
165-0070	253	LF	1.41	MAINTENANCE OF BALED STRAW EROSION CHECK	356.73
165-0085	10	EA	315.80	MAINTENANCE OF SILT CONTROL GATE, TP 1	3158.00
165-0087	26	EA	175.19	MAINTENANCE OF SILT CONTROL GATE, TP 3	4554.94
165-0101	7	EA	404.97	MAINTENANCE OF CONSTRUCTION EXIT	2834.79
167-0100	36	MO	955.65	WATER QUALITY MONITORING	34403.40
167-0200	72	EA	58.24	WATER QUALITY SAMPLING	4193.28
171-0010	38900	LF	1.83	TEMPORARY SILT FENCE, TYPE A	71187.00
171-0030	34433	LF	3.20	TEMPORARY SILT FENCE, TYPE C	110185.60
				Section Sub Total:	**$1,103,991.83**

Section PERMANENT EROSION CONTROL

Item Number	Quantity	Units	Unit Price	Item Description	Cost
700-6910	128	AC	768.58	PERMANENT GRASSING	98378.24
700-7000	128	TN	57.75	AGRICULTURAL LIME	7392.00
700-7010	320	GL	18.75	LIQUID LIME	6000.00
700-8000	77	TN	261.59	FERTILIZER MIXED GRADE	20142.43
700-8100	6400	LB	1.51	FERTILIZER NITROGEN CONTENT	9664.00
710-9000	211554	SY	4.40	PERMANENT SOIL REINFORCING MAT	930837.60
713-3012	14815	SY	0.57	WOOD FIBER BLANKET, TP II, SHOULDERS	8444.55
715-2100	205332	SY	1.74	BITUMINOUS TREATED ROVING, SLOPES	357277.68
715-2200	13060	SY	2.00	BITUMINOUS TREATED ROVING, WATERWAYS	26120.00
716-2000	205336	SY	1.06	EROSION CONTROL MATS, SLOPES	217656.16
				Section Sub Total:	**$1,681,912.66**

Section SIGNING AND MARKING

Item Number	Quantity	Units	Unit Price	Item Description	Cost
610-6510	2	EA	265.82	REM HWY SIGN, OVHD	531.64
610-6515	50	EA	62.45	REM HIGHWAY SIGN, STD	3122.50
610-9310	1	LS	3689.81	REM STR SUPPORT, TP - III, I-85 NB @SR 211	3689.81
610-9310	1	LS	3689.81	REM STR SUPPORT, TP - III, I-85 SB @SR 211	3689.81
632-0003	8	EA	10196.36	CHANGEABLE MESSAGE SIGN, PORTABLE, TYPE 3	81570.88
636-1029	400	SF	21.52	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 3	8608.00
636-1032	400	SF	31.26	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING TP 6	12504.00
636-1072	448	SF	18.20	HIGHWAY SIGNS, ALUM EXTRUDED PANELS,	8153.60

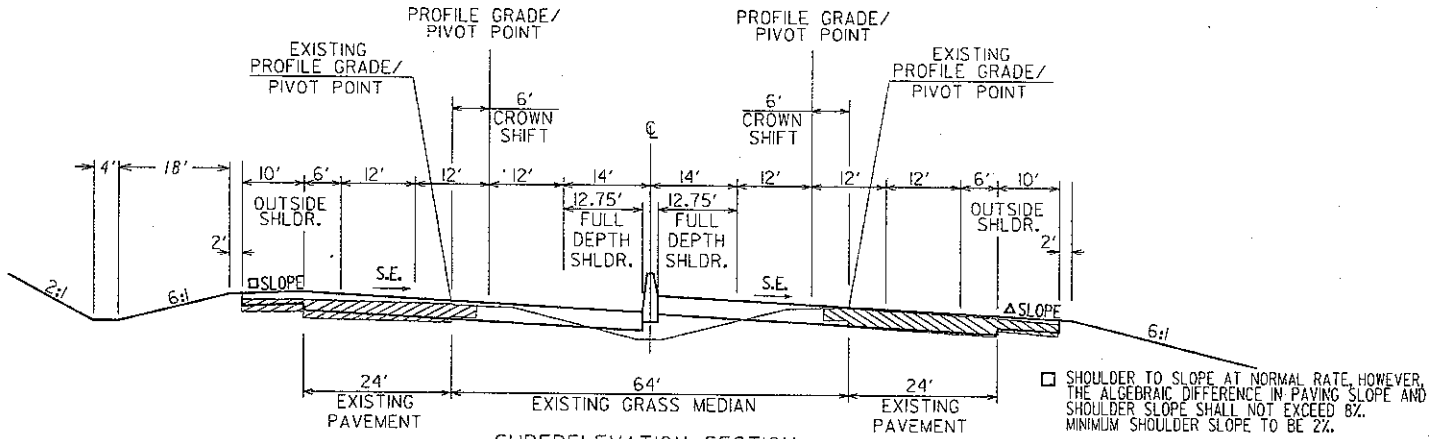
				REFL SHEETING, TP 3	
636-2070	1131	LF	6.96	GALV STEEL POSTS, TP 7	7871.76
636-5010	160	EA	37.70	DELINEATOR, TP 1	6032.00
636-5020	40	EA	46.95	DELINEATOR, TP 2	1878.00
636-5100	12	EA	95.97	MILEPOST SIGNS	1151.64
638-1003	1	LS	33672.25	STR SUPPORT FOR OVERHEAD SIGN, TP III, I-85 NB @ SR 211	33672.25
638-1003	1	LS	33672.25	STR SUPPORT FOR OVERHEAD SIGN, TP III, I-85 SB @ SR 211	33672.25
653-1501	69760	LF	0.27	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	18835.20
653-1502	69760	LF	0.26	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	18137.60
653-1810	1600	LF	0.86	THERMOPLASTIC SOLID TRAF STRIPE, 10 IN, WHITE	1376.00
653-3501	133055	GLF	0.17	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	22619.35
653-6004	780	SY	2.55	THERMOPLASTIC TRAF STRIPING, WHITE	1989.00
654-1003	1780	EA	3.77	RAISED PVMT MARKERS TP 3	6710.60
				Section Sub Total:	**$275,815.89**

Total Estimated Cost: $52,233,331.78

Subtotal Construction Cost	**$52,233,331.78**
E&C Rate 10.0 %	$5,223,333.18
Inflation Rate 5.0 % @ 3.0 Years	$9,056,606.81
Total Construction Cost	**$66,513,271.77**
Right Of Way	$0.00
ReImb. Utilities	$0.00
Grand Total Project Cost	**$66,513,271.77**

ATTACHMENT 3

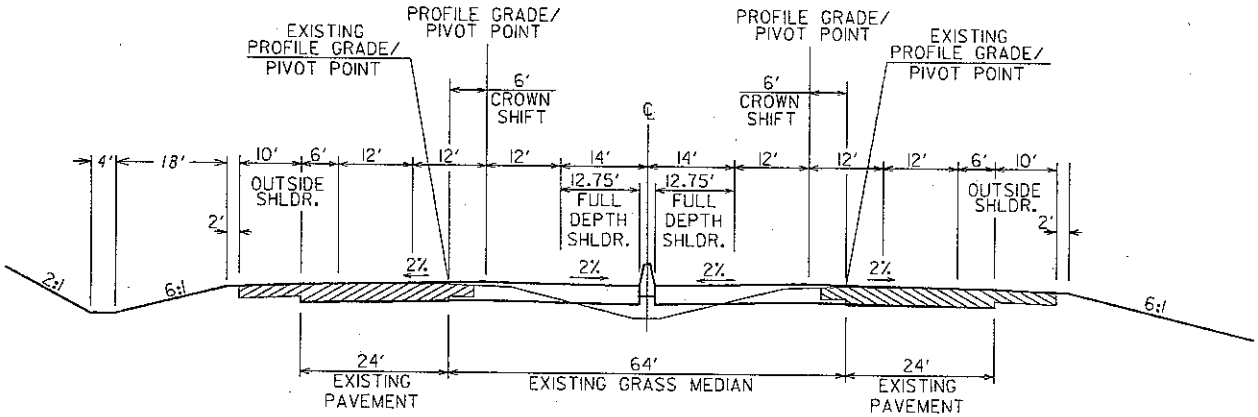
TYPICAL SECTION



SUPERELEVATION SECTION

□ SHOULDER TO SLOPE AT NORMAL RATE, HOWEVER, THE ALGEBRAIC DIFFERENCE IN PAVING SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 8%. MINIMUM SHOULDER SLOPE TO BE 2%.

△ SHOULDER TO SLOPE AT NORMAL RATE OR SUPERELEVATION RATE, WHICHEVER IS GREATER.



TANGENT SECTION

I-85
WIDEN TO INSIDE
6 LANES TOTAL

ATTACHMENT 4

ACCIDENT SUMMARIES

I-85 from Hamilton Mill Road (CR 134) in Gwinnett County to SR 211 in Barrow County (Mainline only)

Accident No	Date	Time	County	Route Type	Route	Milelog	Ramp Section	Injuries	Fatalities	Collision	Location of Impact	Harmful Event	Light	Surface	DirVeh1	DirVeh2	MnvrVeh1	MnvrVeh2
21420566	5/29/2002	1:25 PM	Barrow	State Route	040300	0.01		1	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Daylight	Dry	S		Straight	
21970878	7/7/2002	6:04 PM	Barrow	State Route	040300	0.01		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
22470673	8/7/2002	3:14 PM	Barrow	State Route	040300	0.01		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Other Fixed Object	Daylight	Dry	N		Changing Lanes	
22650247	1/11/2002	7:32 AM	Barrow	State Route	040300	0.65		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Daylight	Dry	S	S	Straight	Straight
21740332	6/29/2002	8:39 PM	Barrow	State Route	040300	0.91		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	N		Straight	
21550310	5/14/2002	2:45 AM	Barrow	State Route	040300	1.19		1	0	Sideswipe - Same Direction	On Shoulder	Motor Vehicle in Motion	Dark-Lighted	Dry	N	N	Straight	Parked
22800590	9/29/2002	2:39 PM	Barrow	State Route	040300	1.2		3	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Stopped
22490218	8/31/2002	8:20 PM	Gwinnett	State Route	040300	22.69		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Wet	N	N	Changing Lanes	Straight
20120888	1/2/2002	5:32 PM	Gwinnett	State Route	040300	22.69	1	0	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Dusk	Icy	N		Straight	
23860023	12/23/2002	9:00 AM	Gwinnett	State Route	040300	22.69	1	0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	N	N	Straight	Straight
23850002	12/12/2002	7:30 AM	Gwinnett	State Route	040300	22.69		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Ditch	Daylight	Dry	N		Straight	
21710524	6/17/2002	3:41 PM	Gwinnett	State Route	040300	22.8		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Changing Lanes
21710469	6/15/2002	11:25 AM	Gwinnett	State Route	040300	22.82		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
23380793	11/3/2002	5:07 PM	Gwinnett	State Route	040300	22.82		2	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Wet	N		Straight	
22760582	9/2/2002	12:20 AM	Gwinnett	State Route	040300	22.82		0	0	Sideswipe - Same Direction	On Shoulder	Motor Vehicle in Motion	Dark-Not Lighted	Dry	N	N	Straight	Parked
23490266	11/4/2002	2:53 AM	Gwinnett	State Route	040300	22.82		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Wet	S		Straight	
21990264	7/27/2002	4:33 PM	Gwinnett	State Route	040300	22.82		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	N	N	Straight	Straight
22190425	9/18/2002	7:26 AM	Gwinnett	State Route	040300	22.82		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Straight	Stopped
21710516	6/16/2002	6:41 PM	Gwinnett	State Route	040300	22.84		0	0	Angle	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Stopped
23420353	11/6/2002	1:40 AM	Gwinnett	State Route	040300	22.85		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Dry	S		Straight	
22360594	9/8/2002	7:23 PM	Gwinnett	State Route	040300	22.86		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Ditch	Daylight	Dry	S	N	Straight	Straight
20400271	1/26/2002	8:13 PM	Gwinnett	State Route	040300	22.88		1	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	N	N	Passing	Turning Left
21120581	4/9/2002	3:49 PM	Gwinnett	State Route	040300	22.93		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Wet	N		Straight	
23990195	12/30/2002	10:17 PM	Gwinnett	State Route	040300	22.94		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
22210712	6/15/2002	2:50 PM	Gwinnett	State Route	040300	23.06	1	0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Stopped
23850553	12/19/2002	6:34 PM	Gwinnett	State Route	040300	23.06	1	0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dark-Lighted	Dry	N	N	Passing	Straight
23860100	12/24/2002	2:50 PM	Gwinnett	State Route	040300	23.06		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	N	N	Changing Lanes	Straight
21410478	5/11/2002	1:19 AM	Gwinnett	State Route	040300	23.14		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Culvert	Dark-Not Lighted	Dry	S		Changing Lanes	
21690844	6/6/2002	7:27 AM	Gwinnett	State Route	040300	23.64		1	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Wet	S		Straight	
20480681	2/24/2002	6:30 PM	Gwinnett	State Route	040300	23.84		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
20410605	4/26/2002	12:02 AM	Gwinnett	State Route	040300	23.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Dark-Not Lighted	Dry	S	S	Straight	Straight
20140579	1/31/2002	7:31 AM	Gwinnett	State Route	040300	23.84		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	N	N	Changing Lanes	Straight
20380127	3/10/2002	4:02 PM	Gwinnett	State Route	040300	24.15		2	3	Angle	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	N	Straight	Straight
23060348	10/1/2002	10:43 AM	Gwinnett	State Route	040300	24.44		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
22480106	8/13/2002	6:52 AM	Gwinnett	State Route	040300	24.44		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
23310093	4/3/2002	1:14 PM	Gwinnett	State Route	040300	24.62		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
22200508	8/1/2002	1:47 PM	Gwinnett	State Route	040300	24.64		2	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
23810350	8/30/2002	11:15 AM	Gwinnett	State Route	040300	24.72		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Daylight	Dry	N		Straight	
23470796	8/15/2002	12:31 AM	Gwinnett	State Route	040300	24.82		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Other Non-Collision	Dark-Not Lighted	Dry	N		Straight	
23310483	8/26/2002	9:08 PM	Gwinnett	State Route	040300	24.82		2	0	Angle	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Wet	N	N	Changing Lanes	Changing Lanes
20420100	4/3/2002	3:30 PM	Gwinnett	State Route	040300	24.82		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
20490714	2/25/2002	11:30 PM	Gwinnett	State Route	040300	24.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Guardrail Face	Dark-Not Lighted	Dry	N		Straight	
23430088	11/15/2002	4:29 AM	Gwinnett	State Route	040300	24.84		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	N		Straight	
20840668	3/31/2002	1:15 PM	Gwinnett	State Route	040300	24.84		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Guardrail End	Daylight	Dry	N		Changing Lanes	
23080399	10/2/2002	4:01 AM	Gwinnett	State Route	040300	24.94		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
23100354	10/30/2002	11:48 AM	Gwinnett	State Route	040300	24.94		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Changing Lanes	Changing Lanes
23090456	10/18/2002	9:35 AM	Gwinnett	State Route	040300	24.94		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Stopped
23840599	12/7/2002	5:07 AM	Gwinnett	State Route	040300	25.27		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Dry	S		Straight	
20830307	3/10/2002	6:00 PM	Gwinnett	State Route	040300	25.73		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Stopped
21710074	6/7/2002	8:29 AM	Gwinnett	State Route	040300	25.77		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
23260254	6/7/2002	8:29 AM	Gwinnett	State Route	040300	25.77		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
23430750	11/25/2002	6:20 AM	Gwinnett	State Route	040300	25.94		2	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Dry	S		Straight	
22790522	9/16/2002	2:11 PM	Gwinnett	State Route	040300	26.27		2	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	N		Straight	
21130663	4/26/2002	11:37 PM	Gwinnett	State Route	040300	26.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Dry	N		Straight	
23470366	12/7/2002	12:07 AM	Gwinnett	State Route	040300	26.94		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Fire/Explosion	Dark-Not Lighted	Dry	S		Straight	
21120447	4/6/2002	9:00 PM	Gwinnett	State Route	040300	26.94		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	N	N	Changing Lanes	Straight
23850495	12/19/2002	8:00 AM	Gwinnett	State Route	040300	27.04		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Daylight	Dry	S		Straight	
22800082	9/22/2002	9:10 PM	Gwinnett	State Route	040300	27.93		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
32990553	8/3/2003	5:20 PM	Barrow	State Route	040300	0.01		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Stopped
32210527	6/22/2003	5:30 AM	Barrow	State Route	040300	0.01		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dawn	Dry	S		Straight	
30440675	2/26/2003	12:33 PM	Barrow	State Route	040300	0.01		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Other Non-Collision	Daylight	Wet	N		Straight	
31640054	10/1/2003	3:16 PM	Barrow	State Route	040300	0.78		0	1	Angle	On Shoulder	Motor Vehicle in Motion	Daylight	Dry	S	S	Passing	Straight
30440602	2/24/2003	9:25 AM	Gwinnett	State Route	040300	22.6		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
30740610	5/15/2003	8:25 AM	Gwinnett	State Route	040300	22.6	1	0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Changing Lanes	Straight
33330367	9/17/2003	5:48 PM	Gwinnett	State Route	040300	22.69		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
31760241	5/15/2003	8:30 AM	Gwinnett	State Route	040300	22.69	1	2	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Changing Lanes	Straight
33010457	8/29/2003	4:50 PM	Gwinnett	State Route	040300	22.69		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Stopped
30740609	5/15/2003	8:32 AM	Gwinnett	State Route	040300	22.69		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	N	Straight	Straight
30740216	6/9/2003	11:06 AM	Gwinnett	State Route	040300	22.69	1	0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	N	N	Straight	Straight
33330608	9/21/2003	3:34 PM	Gwinnett	State Route	040300	22.82		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
30810219	3/31/2003	6:56 PM	Gwinnett	State Route	040300	22.82		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Embankment	Dusk	Dry	S		Straight	

I-85 from Hamilton Mill Road (CR 134) in Gwinnett County to SR 211 in Barrow County (Mainline only)

Accident No	Date	Time	County	Route Type	Route	Mileleg	Ramp Section	Injuries	Fatalities	Collision	Location of Impact	Harmful Event	Light	Surface	DirVeh1	DirVeh2	MnvrVeh1	MnvrVeh2
'32990550	8/3/2003	6:48 PM	Gwinnett	State Route	040300	22.82		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Daylight	Dry	N		Straight	
'32580155	7/6/2003	11:21 AM	Gwinnett	State Route	040300	22.82		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	S		Straight	
'31780279	5/15/2003	1:45 PM	Gwinnett	State Route	040300	22.82		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle In Motion	Daylight	Dry	N	N	Straight	Stopped
'32200713	6/13/2003	11:19 PM	Gwinnett	State Route	040300	22.82		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Wet	S	S	Backing	Stopped
'32210117	6/16/2003	2:56 AM	Gwinnett	State Route	040300	22.82		1	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle In Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
'30430633	2/10/2003	7:52 AM	Gwinnett	State Route	040300	22.82		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dawn	Wet	S	S	Changing Lanes	Straight
'31780237	5/15/2003	8:50 AM	Gwinnett	State Route	040300	22.84		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Straight	Stopped
'31780236	5/15/2003	8:50 AM	Gwinnett	State Route	040300	22.86		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Straight	Stopped
'32580549	7/17/2003	2:14 PM	Gwinnett	State Route	040300	22.94		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Ditch	Daylight	Dry	S		Straight	
'30130689	1/22/2003	9:06 PM	Gwinnett	State Route	040300	23.34		0	0	Not A Collision With A Motor Vehicle	On Roadway	Median Barrier	Dark-Lighted	Dry	S	S	Stopped	Straight
'34400840	12/21/2003	1:03 PM	Gwinnett	State Route	040300	23.34		1	0	Rear End	On Shoulder	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Stopped
'31340542	7/30/2003	5:30 AM	Gwinnett	State Route	040300	23.64		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
'33340035	9/27/2003	3:17 AM	Gwinnett	State Route	040300	23.74		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Other Non-Collision	Dark-Not Lighted	Dry	S		Straight	
'34010558	11/16/2003	9:19 PM	Gwinnett	State Route	040300	23.74		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Dry	S		Straight	
'30740048	6/16/2003	6:45 AM	Gwinnett	State Route	040300	23.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	S	S	Straight	Straight
'32200167	6/4/2003	9:57 AM	Gwinnett	State Route	040300	23.84		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	N		Straight	
'33320683	9/1/2003	10:08 PM	Gwinnett	State Route	040300	24.14		4	0	Not A Collision With A Motor Vehicle	On Roadway	Overturn	Dark-Not Lighted	Dry	N		Straight	
'31330200	8/3/2003	12:19 PM	Gwinnett	State Route	040300	24.14		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	S	N	Straight	Straight
'33000552	8/17/2003	6:30 PM	Gwinnett	State Route	040300	24.64		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
'32590280	7/27/2003	5:31 PM	Gwinnett	State Route	040300	24.64		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
'31390169	4/4/2003	8:30 PM	Gwinnett	State Route	040300	24.73		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Lighted	Dry	N	N	Straight	Straight
'33000314	8/11/2003	9:59 AM	Gwinnett	State Route	040300	24.84		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Dry	N		Changing Lanes	
'30670675	2/18/2003	5:22 PM	Gwinnett	State Route	040300	24.84		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Ditch	Daylight	Dry	N		Straight	
'31780054	5/18/2003	9:45 AM	Gwinnett	State Route	040300	24.84		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	N	N	Straight	Stopped
'32580605	7/18/2003	8:34 AM	Gwinnett	State Route	040300	24.94		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Non-Collision	Daylight	Dry	N	N	Straight	Straight
'31410093	4/28/2003	2:57 PM	Gwinnett	State Route	040300	25.14		1	0	Not A Collision With A Motor Vehicle	On Roadway	Tree	Daylight	Dry	N		Changing Lanes	
'31780235	5/15/2003	12:40 PM	Gwinnett	State Route	040300	25.57		0	0	Not A Collision With A Motor Vehicle	On Roadway	Overturn	Daylight	Wet	N		Straight	
'31350286	4/28/2003	3:41 PM	Gwinnett	State Route	040300	25.71		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Straight
'32200421	6/7/2003	1:42 PM	Gwinnett	State Route	040300	25.77		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Daylight	Wet	S		Straight	
'32220049	6/27/2003	6:03 PM	Gwinnett	State Route	040300	25.81		0	0	Angle	On Roadway	Motor Vehicle In Motion	Daylight	Dry	N	N	Straight	Straight
'31780483	5/18/2003	12:05 AM	Gwinnett	State Route	040300	25.82		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Culvert	Dark-Not Lighted	Wet	N		Straight	
'33330586	9/21/2003	12:24 PM	Gwinnett	State Route	040300	25.87		2	0	Angle	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
'33670516	10/18/2003	4:20 AM	Gwinnett	State Route	040300	26.27		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Non-Collision	Dark-Not Lighted	Dry	S		Straight	
'34030631	11/28/2003	6:37 PM	Gwinnett	State Route	040300	26.27		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
'34030602	11/28/2003	6:37 PM	Gwinnett	State Route	040300	26.27		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
'32210477	6/21/2003	3:27 PM	Gwinnett	State Route	040300	26.94		0	0	Sideswipe - Same Direction	Median	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'32590294	7/28/2003	9:10 AM	Gwinnett	State Route	040300	26.94		3	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Daylight	Dry	S		Straight	
'34260197	12/10/2003	10:37 AM	Gwinnett	State Route	040300	26.94		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Wet	S	S	Straight	Straight
'34020160	11/3/2003	10:41 AM	Gwinnett	State Route	040300	26.94		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Making U-Turn	Straight
'34400580	12/18/2003	1:56 PM	Gwinnett	State Route	040300	26.94		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	S		Straight	
'33330611	9/21/2003	3:10 PM	Gwinnett	State Route	040300	27.44		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Straight
'32210545	6/22/2003	9:00 PM	Gwinnett	State Route	040300	27.69		0	0	Not A Collision With A Motor Vehicle	On Shoulder	Guardrail Face	Dark-Not Lighted	Dry	S		Straight	
'30440068	2/15/2003	12:30 AM	Gwinnett	State Route	040300	27.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Animal	Dark-Not Lighted	Dry	N		Straight	
'40490567	1/21/2004	2:04 PM	Barrow	State Route	040300	0.01		2	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Entering/Leaving Parking	Straight
'44740634	12/19/2004	11:15 AM	Barrow	State Route	040300	0.01		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	S	S	Straight	Straight
'43810428	10/29/2004	1:50 AM	Barrow	State Route	040300	0.01		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Wet	N		Straight	
'44360180	11/27/2004	4:59 PM	Barrow	State Route	040300	0.59		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
'45160176	7/22/2004	1:07 AM	Barrow	State Route	040300	0.69		0	0	Sideswipe - Same Direction	On Roadway	Tree	Dark-Not Lighted	Dry	S	S	Straight	Straight
'42360113	6/25/2004	1:56 PM	Barrow	State Route	040300	0.72		2	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	N	N	Straight	Straight
'42630011	8/14/2004	7:56 PM	Barrow	State Route	040300	0.97		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Dry	S		Straight	
'43420244	7/24/2004	11:30 PM	Barrow	State Route	040300	0.98		3	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	N	N	Straight	Straight
'44870045	12/31/2004	3:00 PM	Gwinnett	State Route	040300	22.6		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Daylight	Dry	N		Straight	
'40150235	1/19/2004	9:33 AM	Gwinnett	State Route	040300	22.6	1	0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'44740587	12/18/2004	6:39 PM	Gwinnett	State Route	040300	22.6		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
'42610338	8/10/2004	6:40 AM	Gwinnett	State Route	040300	22.69		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Stopped
'43300304	9/27/2004	7:11 AM	Gwinnett	State Route	040300	22.8		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dawn	Wet	S	S	Straight	Straight
'41240156	4/18/2004	2:15 PM	Gwinnett	State Route	040300	22.82		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Dry	S		Straight	
'41880409	6/13/2004	1:30 PM	Gwinnett	State Route	040300	22.82		0	0	Angle	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
'40830501	3/13/2004	12:47 AM	Gwinnett	State Route	040300	22.82		1	0	Angle	On Roadway	Overturn	Dark-Not Lighted	Dry	S	S	Straight	Straight
'43640086	10/5/2004	10:50 PM	Gwinnett	State Route	040300	22.82		0	0	Not A Collision With A Motor Vehicle	On Roadway	Deer	Dark-Not Lighted	Dry	S		Straight	
'40150610	1/26/2004	10:08 AM	Gwinnett	State Route	040300	22.94		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Icy	N	N	Changing Lanes	Straight
'43340366	9/30/2004	4:19 PM	Gwinnett	State Route	040300	23.06	1	0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'41900573	6/16/2004	4:48 PM	Gwinnett	State Route	040300	23.06	1	0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Stopped	Turning Right
'42620510	8/12/2004	7:27 AM	Gwinnett	State Route	040300	23.06		0	0	Angle	On Roadway	Motor Vehicle in Motion	Dawn	Wet	N	S	Straight	Straight
'40500076	2/15/2004	7:45 PM	Gwinnett	State Route	040300	23.06	1	0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Wet	N	N	Passing	Negotiating a Curve
'40840537	3/28/2004	3:00 PM	Gwinnett	State Route	040300	23.06	1	0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Stopped
'41230253	4/7/2004	5:25 PM	Gwinnett	State Route	040300	23.34		1	0	Angle	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	S	Changing Lanes	Straight
'40500681	2/26/2004	5:26 AM	Gwinnett	State Route	040300	23.34		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Snowy	N	N	Passing	Straight
'43250377	9/25/2004	2:32 PM	Gwinnett	State Route	040300	23.34		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	N		Changing Lanes	
'43930337	11/6/2004	12:55 PM	Gwinnett	State Route	040300	23.34		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Dry	N		Straight	
'44500410	11/22/2004	2:00 AM	Gwinnett	State Route	040300	23.57		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Dark-Not Lighted	Wet	N		Changing Lanes	

I-85 from Hamilton Mill Road (CR 134) in Gwinnett County to SR 211 in Barrow County (Mainline only)																			
Accident No	Date	Time	County	Route Type	Route	Milelog	Ramp Section	Injuries	Fatalities	Collision	Location of Impact	Harmful Event	Light	Surface	DirVeh1	DirVeh2	MnvrVeh1	MnvrVeh2
'43740356	10/24/2004	6:15 PM	Gwinnett	State Route	040300	23.74		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Median Barrier	Daylight	Dry	S		Straight	
'40140471	1/10/2004	12:43 PM	Gwinnett	State Route	040300	23.84		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Guardrail Face	Daylight	Wet	S		Straight	
'42110028	7/1/2004	5:57 PM	Gwinnett	State Route	040300	23.84		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Straight	Straight
'41540472	5/18/2004	11:47 AM	Gwinnett	State Route	040300	23.84		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	N	N	Changing Lanes	Straight
'40480429	2/8/2004	2:46 PM	Gwinnett	State Route	040300	23.84		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Ditch	Daylight	Dry	S	S	Changing Lanes	Straight
'40140363	1/8/2004	2:07 PM	Gwinnett	State Route	040300	23.84		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Straight	Straight
'40140364	1/8/2004	2:07 PM	Gwinnett	State Route	040300	23.84		1	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
'43790777	10/27/2004	3:54 PM	Gwinnett	State Route	040300	23.84		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'41220417	4/7/2004	9:35 PM	Gwinnett	State Route	040300	23.84		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	N	N	Changing Lanes	Straight
'42590035	7/4/2004	3:02 AM	Gwinnett	State Route	040300	23.94		0	1	Not A Collision With A Motor Vehicle	On Roadway	Overturn	Dark-Not Lighted	Dry	S		Straight	
'40830064	3/6/2004	9:16 AM	Gwinnett	State Route	040300	24.03		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Other Non-Collision	Daylight	Wet	S		Straight	
'40500266	2/18/2004	7:03 PM	Gwinnett	State Route	040300	24.45		0	0	Sideswipe - Opposite Direction	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Changing Lanes	Straight
'42360118	6/25/2004	1:56 PM	Gwinnett	State Route	040300	24.6		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	N	N	Straight	Straight
'41240532	4/25/2004	5:17 PM	Gwinnett	State Route	040300	24.62		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Non-Collision	Daylight	Dry	S	S	Straight	Straight
'42990407	9/5/2004	1:15 PM	Gwinnett	State Route	040300	24.64		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	N		Straight	
'41990419	6/21/2004	6:43 AM	Gwinnett	State Route	040300	24.64		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Dawn	Dry	S	S	Straight	Straight
'42510212	8/4/2004	11:28 PM	Gwinnett	State Route	040300	24.73		3	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
'41230215	4/6/2004	9:24 AM	Gwinnett	State Route	040300	24.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	S		Straight	
'43610315	10/28/2004	8:33 PM	Gwinnett	State Route	040300	24.84		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Wet	S	S	Changing Lanes	Straight
'41820617	5/20/2004	6:37 PM	Gwinnett	State Route	040300	24.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	N	N	Straight	Straight
'43090546	8/28/2004	7:04 AM	Gwinnett	State Route	040300	24.89		0	0	Angle	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'42950216	9/3/2004	2:09 PM	Gwinnett	State Route	040300	25.77		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Non-Collision	Daylight	Dry	S	S	Straight	Straight
'43610254	10/12/2004	7:49 PM	Gwinnett	State Route	040300	25.81		2	0	Not A Collision With A Motor Vehicle	Off Roadway	Guardrail Face	Dark-Not Lighted	Wet	N		Straight	
'40840510	3/28/2004	9:30 AM	Gwinnett	State Route	040300	25.84		0	0	Not A Collision With A Motor Vehicle	On Roadway	Other Object (Not Fixed)	Daylight	Dry	N	N	Straight	Straight
'41540181	5/9/2004	8:15 PM	Gwinnett	State Route	040300	25.94		2	0	Not A Collision With A Motor Vehicle	On Shoulder	Tree	Dawn	Wet	N		Straight	
'44360054	11/28/2004	7:45 AM	Gwinnett	State Route	040300	25.96		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Wet	S		Straight	
'43360410	9/18/2004	2:43 AM	Gwinnett	State Route	040300	26.84		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Other Non-Collision	Dark-Not Lighted	Dry	N		Passing	
'40500733	2/26/2004	11:19 AM	Gwinnett	State Route	040300	26.84		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Straight	Straight
'40500267	2/18/2004	7:53 PM	Gwinnett	State Route	040300	26.84		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Dark-Not Lighted	Dry	S	S	Straight	Straight
'42840617	8/28/2004	7:30 AM	Gwinnett	State Route	040300	26.94		1	0	Not A Collision With A Motor Vehicle	Off Roadway	Overturn	Daylight	Dry	S		Straight	
'40810800	3/4/2004	2:22 PM	Gwinnett	State Route	040300	26.94		1	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'42000640	6/27/2004	4:10 PM	Gwinnett	State Route	040300	27.44		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Wet	S	S	Straight	Straight
'43340257	9/28/2004	8:25 AM	Gwinnett	State Route	040300	27.69		1	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Passing	Straight
'41780356	6/5/2004	6:33 AM	Gwinnett	State Route	040300	27.69		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Deer	Dawn	Dry	S		Straight	
'40810810	3/1/2004	6:32 AM	Gwinnett	State Route	040300	27.74		1	0	Angle	On Roadway	Motor Vehicle in Motion	Dawn	Dry	S	S	Straight	Straight
'41900706	6/18/2004	4:35 PM	Gwinnett	State Route	040300	27.77		0	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Straight
'41960207	6/23/2004	6:41 AM	Gwinnett	State Route	040300	27.81		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Changing Lanes	Straight
'41220411	4/6/2004	8:32 AM	Gwinnett	State Route	040300	27.84		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Changing Lanes
'41240169	4/19/2004	3:50 PM	Gwinnett	State Route	040300	27.84		1	0	Rear End	On Roadway	Motor Vehicle in Motion	Daylight	Dry	S	S	Straight	Stopped
'41220408	4/5/2004	4:55 PM	Gwinnett	State Route	040300	27.9		0	0	Sideswipe - Same Direction	On Roadway	Motor Vehicle in Motion	Daylight	Dry	N	N	Changing Lanes	Straight
'44810103	12/25/2004	4:58 PM	Gwinnett	State Route	040300	27.93		0	0	Not A Collision With A Motor Vehicle	Off Roadway	Tree	Daylight	Dry	N		Straight	

ATTACHMENT 5

CAPACITY ANALYSIS

HCS+: Basic Freeway Segments Release 5.2

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	A.M. Peak Hour
Freeway/Direction:	SB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2009
Description:	NH-IM 85-2(165) - No Build

Flow Inputs and Adjustments

Volume, V	4319	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1174	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	2629	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2629	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	P.M. Peak Hour
Freeway/Direction:	NB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2009
Description:	NH-IM 85-2(165) - No Build

Flow Inputs and Adjustments

Volume, V	4319	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1174	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	2629	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2629	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	A.M. Peak Hour
Freeway/Direction:	SB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2009
Description:	NH-IM 85-2(165) - 3 Lane

Flow Inputs and Adjustments

Volume, V	4319	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1174	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1753	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1753	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.3	mi/h
Number of lanes, N	3	
Density, D	25.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	P.M. Peak Hour
Freeway/Direction:	NB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2009
Description:	NH-IM 85-2(165) - 3 Lane

Flow Inputs and Adjustments

Volume, V	4319	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1174	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1753	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1753	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.3	mi/h
Number of lanes, N	3	
Density, D	25.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	A.M. Peak Hour
Freeway/Direction:	SB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2029
Description:	NH-IM 85-2(165) - No Build

Flow Inputs and Adjustments

Volume, V	7245	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1969	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.889	
Driver population factor, fp	1.00	
Flow rate, vp	4430	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	4430	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	P.M. Peak Hour
Freeway/Direction:	NB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2029
Description:	NH-IM 85-2(165) - No Build

Flow Inputs and Adjustments

Volume, V	7245	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1969	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.889	
Driver population factor, fp	1.00	
Flow rate, vp	4430	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	4430	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	A.M. Peak Hour
Freeway/Direction:	SB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2029
Description:	NH-IM 85-2(165) - 3 Lane

Flow Inputs and Adjustments

Volume, V	7245	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1969	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.889	
Driver population factor, fp	1.00	
Flow rate, vp	2953	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2953	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	JLM
Agency or Company:	GDOT
Date Performed:	12/13/05
Analysis Time Period:	P.M. Peak Hour
Freeway/Direction:	NB I-85
From/To:	Hamilton Mill Rd to SR 211
Jurisdiction:	Gwinnett/Barrow Counties
Analysis Year:	2029
Description:	NH-IM 85-2(165) - 3 Lane

Flow Inputs and Adjustments

Volume, V	7245	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1969	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.889	
Driver population factor, fp	1.00	
Flow rate, vp	2953	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	70.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2953	pc/h/ln

Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Ramps and Ramp Junctions Release 5.2

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3254	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	1068	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3254	1068		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	884	290		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade		%	%	%
Length		mi	mi	mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.893	0.893		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3961	1300		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3961 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5261	4800	Yes
v_{R12}	5261	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 41.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.995	
Space mean speed in ramp influence area,	S_R = 42.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 42.1	mph

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3254	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	337	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3254	337		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	884	92		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.893	0.893		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3961	410		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3961 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4371	4800	No
v_{R12}	4371	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 35.0- pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.553	
Space mean speed in ramp influence area,	S_R = 54.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.5	mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/14/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3590	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	337	vph
Length of first accel/decel lane	265	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3590	337		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	976	92		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%	%
Length	0.00	mi	0.00	mi	mi
Trucks and buses PCE, ET	1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		
Heavy vehicle adjustment, fHV	0.893		0.893		
Driver population factor, fP	1.00		1.00		
Flow rate, vp	4370		410		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4370 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4370	4800	No
v_{12}	4370	4400	No
$v_{FO} = v_F - v_R$	3960	4800	No
v_R	410	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 39.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.335	
Space mean speed in ramp influence area,	S_R = 60.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 60.6	mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	4319	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	55.0	mph
Volume on ramp	1068	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4319	1068		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1174	290		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.893		0.893			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	5258		1300			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5258 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5258	4800	Yes
v_{12}	5258	4400	Yes
$v_{FO} = v_F - v_R$	3958	4800	No
v_R	1300	2200	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 46.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.285

Space mean speed in ramp influence area, S_R = 62.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 62.0 mph

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane Ramp

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3254	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	1068	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3254	1068		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	884	290		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.893	0.893		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3961	1300		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.597 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2365 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5261	7200	No
v_{R12}	3665	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.396

Space mean speed in ramp influence area, S_R = 58.9 mph

Space mean speed in outer lanes, S_O = 66.1 mph

Space mean speed for all vehicles, S = 60.9 mph

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane On-Ramp

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3254	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	337	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3254	337		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	884	92		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade		%	%	%
Length		mi	mi	mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.893	0.893		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3961	410		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.597 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2365 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4371	7200	No
v_{R12}	2775	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.307

Space mean speed in ramp influence area, S_R = 61.4 mph

Space mean speed in outer lanes, S_O = 66.1 mph

Space mean speed for all vehicles, S = 63.0 mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/14/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009
Description:	NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane Off-Ramp

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	3590	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	337	vph
Length of first accel/decel lane	265	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3590	337		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	976	92		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.893		0.893			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	4370		410			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.632 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2912 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4370	7200	No
v_{12}	2912	4400	No
$v_{FO} = v_F - v_R$	3960	7200	No
v_R	410	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.335

Space mean speed in ramp influence area, S_R = 60.6 mph

Space mean speed in outer lanes, S_O = 75.0 mph

Space mean speed for all vehicles, S = 64.8 mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2009

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane Ramp

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	4319	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	55.0	mph
Volume on ramp	1068	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4319	1068		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1174	290		v
Trucks and buses	24	24		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.893		0.893			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	5258		1300			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.569 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3551 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5258	7200	No
v_{12}	3551	4400	No
$v_{FO} = v_F - v_R$	3958	7200	No
v_R	1300	2200	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.285

Space mean speed in ramp influence area, S_R = 62.0 mph

Space mean speed in outer lanes, S_O = 74.0 mph

Space mean speed for all vehicles, S = 65.5 mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	7245	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	55.0	mph
Volume on ramp	1875	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	7245	1875		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1969	510		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%	%
Length	0.00	mi	0.00	mi	mi
Trucks and buses PCE, ET	1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		
Heavy vehicle adjustment, fHV	0.889		0.889		
Driver population factor, fP	1.00		1.00		
Flow rate, vp	8859		2293		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 8859 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8859	4800	Yes
v_{12}	8859	4400	Yes
$v_{FO} = v_F - v_R$	6566	4800	Yes
v_R	2293	2200	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 77.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.374

Space mean speed in ramp influence area, S_R = 59.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 59.5 mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/14/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	5930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	560	vph
Length of first accel/decel lane	265	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5930	560		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1611	152		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	1.5		1.5			
Recreational vehicle PCE, ER	1.2		1.2			
Heavy vehicle adjustment, fHV	0.889		0.889			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	7251		685			pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 7251 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7251	4800	Yes
v_{12}	7251	4400	Yes
$v_{FO} = v_F - v_R$	6566	4800	Yes
v_R	685	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 64.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.360

Space mean speed in ramp influence area, S_R = 59.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 59.9 mph

HCS+: Ramps and Ramp Junctions Release 5.2

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	5370	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	560	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5370	560		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1459	152		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade		%	%	%
Length		mi	mi	mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.889	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6567	685		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6567 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	7252	4800	Yes
v_{R12}	7252	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 57.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 5.747

Space mean speed in ramp influence area, S_R = -90.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = mph

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029
Description:	NH-IM 85-2(165) - No Build

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.0	mph
Volume on freeway	5370	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	1875	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5370	1875		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1459	510		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade		%	%	%
Length		mi	mi	mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.889	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6567	2293		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{.F} (P_{FM})$ = 6567 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	8860	4800	Yes
v_{R12}	8860	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 69.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 27.717	
Space mean speed in ramp influence area,	S_R = -706.1	mph
Space mean speed in outer lanes,	S_0 = N/A	mph
Space mean speed for all vehicles,	S =	mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane Off-Ramp

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	7245	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	55.0	mph
Volume on ramp	1875	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	7245	1875		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1969	510		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%	%
Length	0.00	mi	0.00	mi	mi
Trucks and buses PCE, ET	1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		
Heavy vehicle adjustment, fHV	0.889		0.889		
Driver population factor, fP	1.00		1.00		
Flow rate, vp	8859		2293		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.433 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5136 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	8859	7200	Yes
v_{12}	5136	4400	Yes
$v_{FO} = v_F - v_R$	6566	7200	No
v_R	2293	2200	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 45.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.374	
Space mean speed in ramp influence area,	S_R = 59.5	mph
Space mean speed in outer lanes,	S_O = 66.2	mph
Space mean speed for all vehicles,	S = 62.1	mph

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Diverge Analysis

Analyst:	JLM
Agency/Co.:	GA DOT
Date performed:	12/14/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 Off-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane Off-Ramp

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	5930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	560	vph
Length of first accel/decel lane	265	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5930	560		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1611	152		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade	0.00	%	0.00	%	%
Length	0.00	mi	0.00	mi	mi
Trucks and buses PCE, E_T	1.5		1.5		
Recreational vehicle PCE, E_R	1.2		1.2		
Heavy vehicle adjustment, f_{HV}	0.889		0.889		
Driver population factor, f_P	1.00		1.00		
Flow rate, v_p	7251		685		pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.547 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4278 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7251	7200	Yes
v_{12}	4278	4400	No
$v_{FO} = v_F - v_R$	6566	7200	No
v_R	685	2100	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 38.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.360

Space mean speed in ramp influence area, S_R = 59.9 mph

Space mean speed in outer lanes, S_O = 69.1 mph

Space mean speed for all vehicles, S = 63.4 mph

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	P.M. Peak Hour
Freeway/Dir of Travel:	NB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane On-Ramp

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	5370	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	560	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5370	560		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1459	152		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade		%	%	%
Length		mi	mi	mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.889	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6567	685		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.597 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3921 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	7252	7200	Yes
v_{R12}	4606	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 36.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.634	
Space mean speed in ramp influence area,	S_R = 52.2	mph
Space mean speed in outer lanes,	S_O = 61.4	mph
Space mean speed for all vehicles,	S = 55.2	mph

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Merge Analysis

Analyst:	JLM
Agency/Co.:	GDOT
Date performed:	12/15/05
Analysis time period:	A.M. Peak Hour
Freeway/Dir of Travel:	SB I-85
Junction:	SR 211 On-Ramp
Jurisdiction:	Barrow County
Analysis Year:	2029

Description: NH-IM 85-2(165) - 3 Lane I-85 with 1 Lane On-Ramp

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	70.0	mph
Volume on freeway	5370	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	55.0	mph
Volume on ramp	1875	vph
Length of first accel/decel lane	700	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	5370	1875		vph
Peak-hour factor, PHF	0.92	0.92		
Peak 15-min volume, v15	1459	510		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		

Grade		%	%	%
Length		mi	mi	mi
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		
Heavy vehicle adjustment, fHV	0.889	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6567	2293		pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.597 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3921 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	8860	7200	Yes
v_{R12}	6214	4600	Yes

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 48.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.193	
Space mean speed in ramp influence area,	S_R = 8.6	mph
Space mean speed in outer lanes,	S_O = 61.4	mph
Space mean speed for all vehicles,	S = 11.6	mph

ATTACHMENT 6

MINUTES OF CONCEPT MEETING

MEETING MINUTES
CONCEPT TEAM MEETING

I-85 Widening and Improvements from north of CR 134 to north of SR 211
Project Number: NH-IM-85-2(165)
Counties: Gwinnett/Barrow
P. I. Number: 110610

Wednesday, April 16, 2003 @ 11:00 a.m.
Meeting at GDOT Office of Road Design

Brent Story began by welcoming everyone to the concept team meeting and briefly described the project. The concept for project NH-IM-85-2(165) Gwinnett/Barrow includes the widening of I-85 from two to three lanes in each direction from north of CR 134/Hamilton Mill Road to north of SR 211/Farm Market Road.

Brett Helsel then read through the concept report and described the project. Several issues prompted discussions to take place during the process. Each discussion is summarized below.

- Gwinnett County has a project currently in the design phase on Spout Springs Road. The design will proceed despite the fact that the bridge needs to be jacked. The roadway will need to be adjusted at a later date.

- Office of the Environment/Location: Environmental documentation required would be an EA, not a CE as shown in the concept report.

- Ron Braziel asked if the two bridges that need to be jacked (Spout Springs Road and Flowery Branch Road) could be rebuilt as part of this project. Gerald Ross stated that cost would be an issue and that unless some other criteria required that modifications be made to the bridge the bridge would not be reconstructed. David Painter asked if the existing bridges provided enough horizontal clearance for a fourth lane in each direction. Gerald stated that if the addition of a fourth lane requires a design exception, GDOT might reconsider and recommend modifications be made to the bridge.

- Brett Helsel stated that the typical section might be modified to accommodate future barrier-separated HOV lanes, if necessary. David Painter stated that FHWA fully supports modifying the typical section. Brent Story agreed that the typical section needed to be changed.

- David Painter emphasized that GDOT should study the possibility of including a fourth lane in each direction. David also emphasized that FHWA supports modifying the typical section to accommodate future barrier-separated HOV lanes.

- Joe Garland asked if the two projects discussed in the meeting would be constructed in the same year. It was stated that both projects should be constructed in the same FY. If not, then project NH-IM-85-2(164) should be constructed first.

Comments received after the meeting:

GDOT - Office of Environment/Location – Keisha Jackson: Wetlands are the only resource that has been surveyed to date. Since the widening for this project is occurring in the median, GDOT expects write-offs for history and archeology. Air and noise studies as well as the social impacts will still be considered.

GDOT – Office of Financial Management: Both concept reports should have this office listed as Financial Management Administrator rather than State Transportation Programming Engineer.

In Attendance:

Name	Organization	Email
Brent Story	GDOT-Office of Road Design	brent.story@dot.state.ga.us
Gerald Ross	GDOT-Office of Road Design	gerald.ross@dot.state.ga.us
Jim Fowler	Williams Gas Pipeline	aaron.j.fowler@williams.com
David Whiteside	Williams Gas Pipeline	david.j.whiteside@williams.com
Gary Langford	GDOT-Office of Environment/ Location	gary.langford@dot.state.ga.us
Keisha Jackson	GDOT-Office of Environment/ Location	keisha.jackson@dot.state.ga.us
Windy Bickers	GDOT-Office of Financial Management	windy.bickers@dot.state.ga.us
Brent Cook	GDOT-District 1	brent.cook@dot.state.ga.us
Ron Wishon	GDOT-Office of Engineering Services	ron.wishon@dot.state.ga.us
Joe Garland	GDOT-District 1	joe.garland@dot.state.ga.us
Ron Braziel	Moreland Altobelli Associates, Inc.	braziero@gwinnett.co.ga.us
James Magnus	GDOT-Office of Construction	james.magnus@dot.state.ga.us
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Jim Tolson	GDOT-Office of Traffic Safety and Design	jim.tolson@dot.state.ga.us
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John Hancock	GDOT-District 1	john.hancock@dot.state.ga.us
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Daryl Cranford	GDOT-Office of Planning	daryl.cranford@dot.state.ga.us
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David Painter	FHWA	david.painter@fhwa.dot.gov
Harris Robinson	Jordan, Jones & Goulding, Inc.	hrobinson@jjg.com
Brett Helsel	Jordan, Jones & Goulding, Inc.	bhelsel@jjg.com
Jenny Criminger	Jordan, Jones & Goulding, Inc.	jcriminger@jjg.com
Alan Hunley	Jordan, Jones & Goulding, Inc.	ahunley@jjg.com
Darrell Church	Jordan, Jones & Goulding, Inc.	dchurch@jjg.com

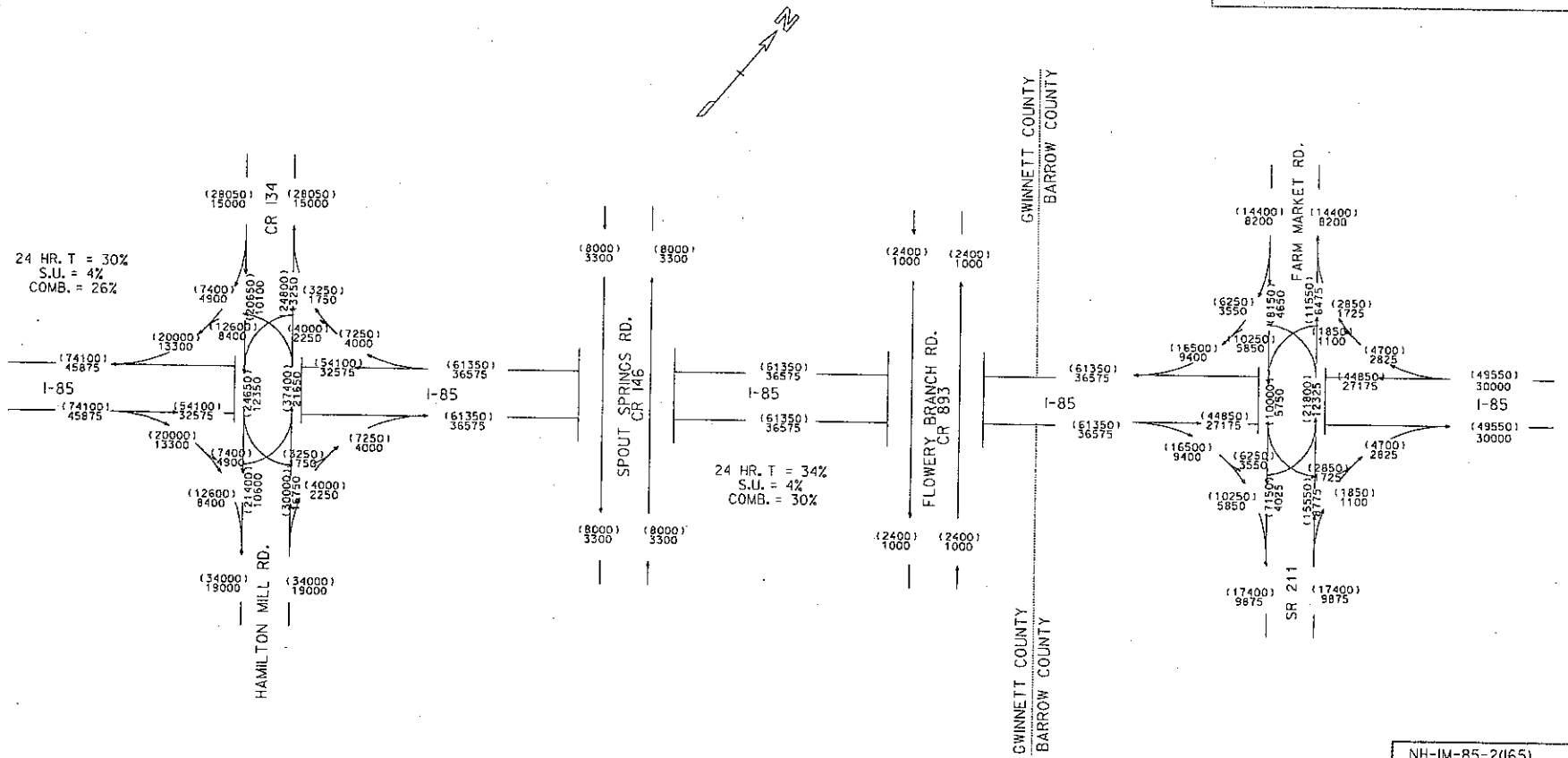
ATTACHMENT 7

TRAFFIC DIAGRAMS

SHEET 1 OF 2

GWINNETT/BARROW COUNTIES

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION



NH-IM-85-2(165)
P.I.# 110610
BARROW &
GWINNETT COUNTY

I-85 FROM CR 134
TO N. OF SR 211

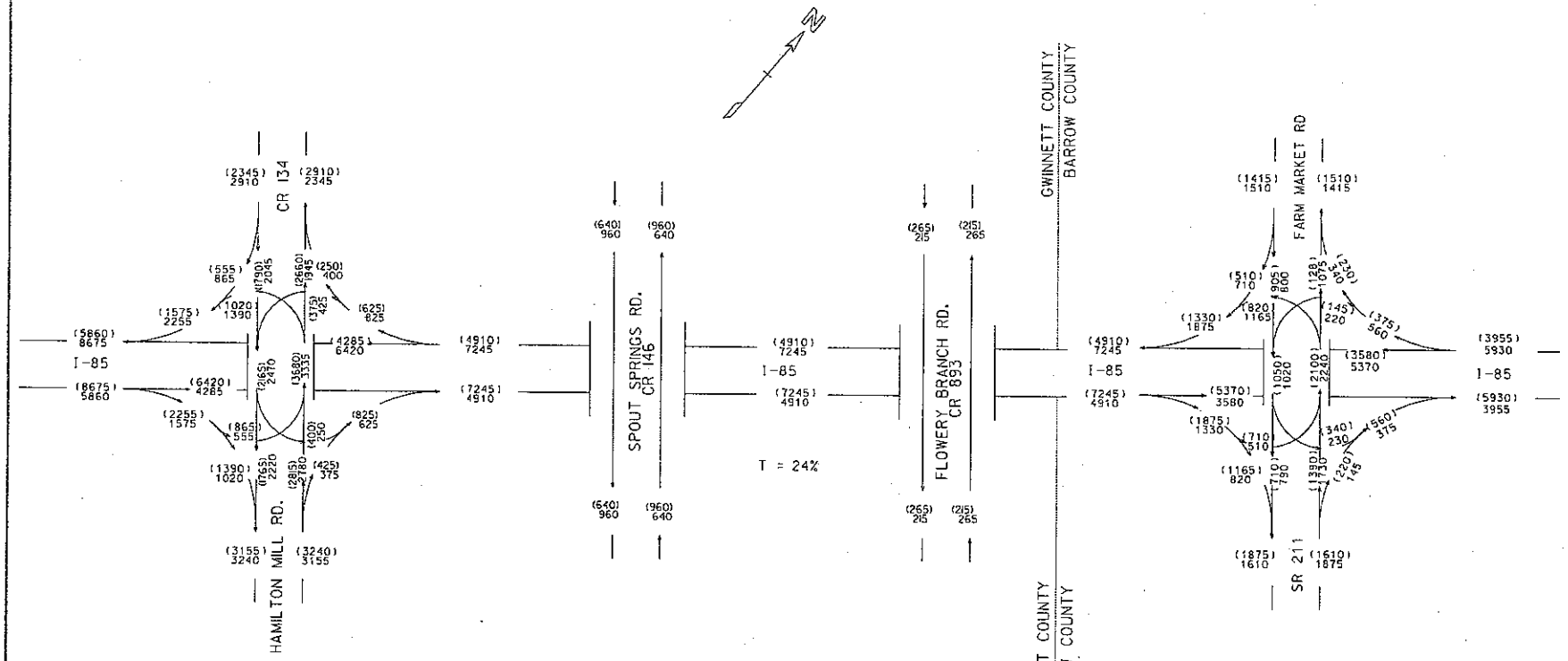
2029 ADT = (000)
2009 ADT = 000

AFE
09/05

SHEET 2 OF 2

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

GWINNETT/BARROW COUNTIES



NH-IM-85-2(165)
P.I.# 110610
BARROW &
GWINNETT COUNTY

I-85 FROM CR 134
TO N. OF SR 211

2029 PM HVT = (000)
2029 AM DHV = 000

AFE
09/05