

D.O.T. 66

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE** P. I. No. 0006902, Douglas County **OFFICE** Preconstruction  
CSSTP-0006-00(902)  
Chapel Hill Road at Douglas Boulevard/  
Timber Ridge Drive Intersection Improvements **DATE** March 6, 2006

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

**TO** *MBP* SEE DISTRIBUTION

**SUBJECT** **APPROVED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

MBP/cj

Attachment

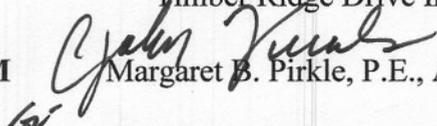
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Bryant Poole  
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE** P.I. No. 0004902, Douglas County **OFFICE** Preconstruction  
 CSSTP-0006-00(902)  
 Chapel Hill Road at Douglas Boulevard/  
 Timber Ridge Drive Intersection Improvements **DATE** March 1, 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 consists of intersection improvements for Chapel Hill Road at Douglas Boulevard/Timber Ridge Drive and signal upgrades for Chapel Hill Road at I-20 eastbound ramps, Chapel Hill Road at Arbor Place Boulevard, Chapel Hill Road at Stewart Mill Road/Forest Trail. The west side of Atlanta has experienced significant growth over the past ten years. New residential communities developed throughout Douglas, Paulding, South Fulton, and Carroll counties create the need and demand for commercial development. Arbor Place is a 1.8 million square foot regional mall located in the City of Douglasville just south of I-20. Due to the significant traffic generated by the commercial and residential growth, the existing network is experiencing increasing levels of congestion. This interim project will improve level of service and operational characteristics until the long range widening of Chapel Hill Road can be developed and funded.

The proposed construction consists of adding a northbound right turn lane and restriping to create dual right turn lanes controlled by signalization on Chapel Hill Road. The improvements on Douglas Boulevard include the addition of a median and changing the affected driveways to right in/right out entrances. The improvements on Timber Ridge Drive include an addition of a second westbound left turn lane, changing affected driveways to right in/right out entrances and changing one of the existing right turn lanes to a second westbound through lane.

Environmental concerns include requiring a Categorical Exclusion be prepared; a public information open house will be held; time saving procedures are appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C and inflation)	\$976,000	\$850,000	L230	2007
Right-of-Way	\$384,000	\$200,000	L230	2007
Utilities*	Local	Local		

David Studstill

Page 2

P. I. No. 0006902, Douglas

March 1, 2006

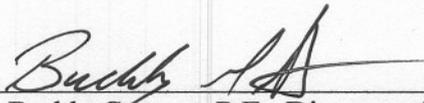
\*PMA sent 12-18-05 requesting Douglas County do PE and utilities; right-of-way and construction to be done by future agreement.

I recommend this project concept be approved.

MBP:JDQ/cj

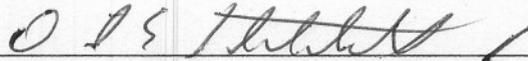
Attachment

CONCUR



Buddy Gratton, P.E., Director of Preconstruction

APPROVE



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

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Chapel Hill Road at Douglas Boulevard/Timber Ridge Road  
Intersection Improvements

Project Number: CSSTP-0006-00(902)

County: Douglas County

P. I. Number: 0006902

Federal Route Number: N/A

State Route Number: N/A

Recommendation for approval:

DATE 2/14/06

Mat Lowry  
Project Manager

DATE 2/16/06

Ray Hill  
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 2/24/06

Joseph Hill  
State Transportation Planning Administrator

DATE \_\_\_\_\_

Office of Financial Management Administrator

DATE \_\_\_\_\_

State Environmental/Location Engineer

DATE \_\_\_\_\_

State Traffic Safety & Design Engineer

DATE \_\_\_\_\_

Project Review Engineer

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Chapel Hill Road at Douglas Boulevard/Timber Ridge Road  
Intersection Improvements

Project Number: CSSTP-0006-00(902)

County: Douglas County

P. I. Number: 0006902

Federal Route Number: N/A

State Route Number: N/A

Recommendation for approval:

DATE 2/16/06

DATE 2/16/06

Mat Long  
Project Manager  
Ben Hood  
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 \_\_\_\_\_

\_\_\_\_\_  
Office of Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

DATE 2-28-06

Neil Gold  
State Traffic Safety & Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
Project Review Engineer

## NOTICE OF LOCATION AND DESIGN APPROVAL

SSTP-0006-00(902) DOUGLAS COUNTY  
P. I. No. 006902

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of the above project.

Date of Location Design Approval: MARCH 6, 2006

The purpose of this project is to improve safety, operations, and mobility for local and through traffic in Douglas County to accommodate its growing population. A February 2005 study of the Chapel Hill Road and Stewarts Mill Road corridors identified interim and long range roadway improvements to key intersections along both corridors. The Chapel Hill Road at Douglas Boulevard / Timber Ridge Road intersection was identified in the study for turn lane additions as an interim improvements project. In addition signal upgrades were identified for the intersections of Chapel Hill Road at I-20 Eastbound Ramps, Chapel Hill Road at Arbor Place Boulevard, and Chapel Hill Road at Stewarts Mill / Forest Trail as interim improvements. The project lies entirely within Douglas County and within Land Districts 1 and Land Lots 23 and 48.

The intersection improvement portion of the project consist of adding a northbound right turn lane and restriping to create dual right turn lanes controlled by signalization on Chapel Hill. The improvements on Douglas Boulevard include the addition of a median and changing the affected driveways to right in / right out entrances. The improvements on Timber Ridge Drive include an addition of a second westbound left turn lane, changing affected driveways to right in / right out entrances and changing one of the existing right turn lanes to a second westbound through lane.

Drawings of maps or plats of the proposed project as approved are on file and are available for public inspection at the Georgia Department of Transportation:

Mr. Mike Lankford, District 7 Area Three Engineer  
Georgia Department of Transportation  
940 Virginia Avenue  
Hapeville, GA 30354  
Phone (404) 559-6655  
[Michael.lankford@dot.state.ga.us](mailto:Michael.lankford@dot.state.ga.us)

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to

Mike Lobdell, P.E., District 7 Preconstruction Engineer  
Georgia Department of Transportation  
5025 New Peachtree Rd.  
Chamblee, GA 30341  
Phone (770) 986-1050  
Facsimile: (770) 986-1022  
[mike.lobdell@dot.state.ga.us](mailto:mike.lobdell@dot.state.ga.us)

Any written request or communication in reference to this project or notice SHOULD include the Project and P.I. Numbers as noted at the top of this notice.

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## INTERDEPARTMENTAL CORRESPONDENCE

**FILE:** CSSTP-0006-00(902)  
Chapel Hill Rd @ Douglas Blvd / Timber Ridge Rd  
PI NO. 0006902

**OFFICE:** District Seven  
Chamblee

**DATE:** 2/15/2006

  
**FROM:** Bryant Poole, District Engineer

**TO:** Meg Pirkle, Assistant Director of Preconstruction

**SUBJECT:** Concept Report Review

Attached please find the concept report with attachments for the above referenced project.  
This is for your review and further handling.

If you have any questions please call Mike Lobdell at (404) 463-4947.

Attachments

Concept Report

cc: Brian Summers, Project Review Engineer  
Harvey Keepler, State Environmental / Location Engineer  
Keith Golden, State Traffic Safety & Design Engineer  
Joseph Palladi, State Transportation Planning Administrator  
Jamie Simpson, Office of Financial Management Administrator  
File

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Chapel Hill Road at Douglas Boulevard/Timber Ridge Road  
Intersection Improvements

Project Number: CSSTP-0006-00(902)

County: Douglas County

P. I. Number: 0006902

Federal Route Number: N/A

State Route Number: N/A

Recommendation for approval:

DATE 2/16/06

DATE 2/16/06

Mat Long  
Project Manager  
Ray Hood  
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 \_\_\_\_\_

\_\_\_\_\_  
Office of Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

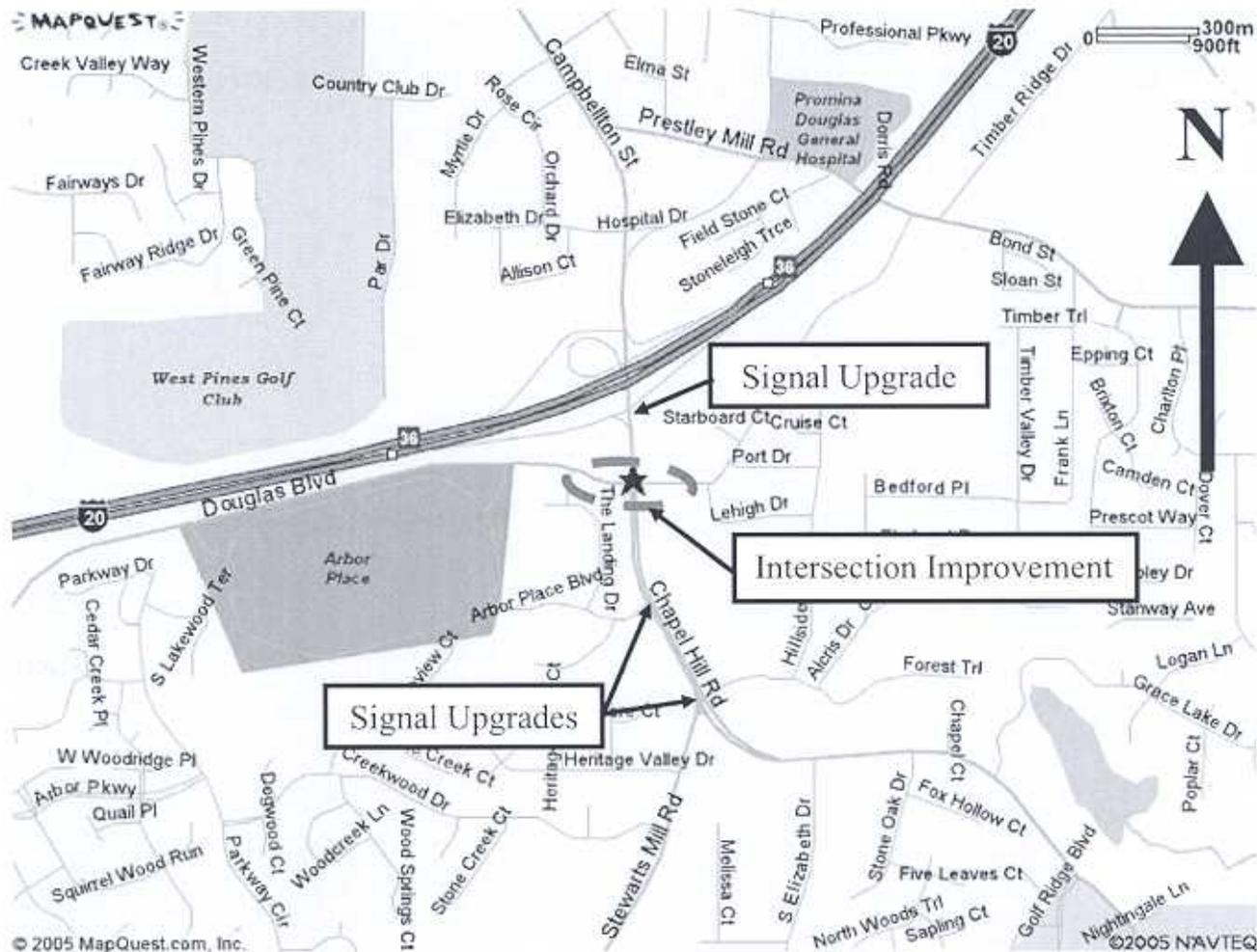
DATE \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety & Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
Project Review Engineer

### Project Location Map



The project consists of intersection improvements for Chapel Hill Road at Douglas Boulevard/Timber Ridge Drive and signal upgrades for Chapel Hill Road at I-20 Eastbound Ramps, Chapel Hill at Arbor Place Boulevard, Chapel Hill Road at Stewarts Mill Road / Forest Trail.

**Need and Purpose:**

The west side of Atlanta has experienced significant growth over the past ten years. New residential communities developed throughout Douglas, Paulding, south Fulton, and Carroll counties create the need and demand for commercial development. Arbor Place is a 1.18 million square foot regional mall located in the City of Douglasville just south of I-20. As the only regional mall serving the west side of Atlanta, Arbor Place attracts customers from as far away as Carroll County and neighboring Alabama counties to the east, Paulding County to the north, and Peachtree City and Coweta County to the south. In addition to the mall, numerous commercial centers have developed near the mall along Chapel Hill Road, Douglas Boulevard and SR-5. Due to the significant traffic generated by the commercial and residential growth, the existing roadway network is experiencing increasing levels of congestion.

The City, County, and State have begun several projects to help meet the area’s existing and future needs. A February 2005 study of the Chapel Hill Road and Stewarts Mill Road corridors identified interim and long range roadway improvements to key intersections along both corridors. The Chapel Hill Road at Douglas Boulevard / Timber Ridge Road intersection was identified in the study for turn lane additions as an interim improvement project. The intersection currently operates at an unacceptable level of service as noted in the Level of Service Table for Existing Conditions below. Signal upgrades were also identified for the intersections of Chapel Hill Road at I-20 Eastbound Ramps, Chapel Hill Road at Arbor Place Boulevard, and Chapel Hill Road at Stewarts Mill / Forest Trail as interim improvements to be included with the turn lane additions for Chapel Hill Road at Douglas Boulevard / Timber Ridge Road.

These interim projects are to improve level of service and operational characteristics until the long range widening of Chapel Hill Road project can be developed and funded. In general, the interim improvements will have a beneficial impact on traffic safety and operations by improving the Level of Service for several years (noted below), directing turning movements at signalized intersections, providing additional turn lanes at Chapel Hill Road and Douglas Boulevard / Timber Ridge Road, and providing cross-walks at intersections.

**Level of Service and Vehicle Delay Summary (Existing Conditions)**

<b>Time of Day</b>	<b>2007 LOS/Delay*</b>	<b>2012 LOS/Delay*</b>	<b>2027 LOS/Delay*</b>
AM Peak Hour	C/29	C/33	F/96
Midday Peak Hour	D/39	D/51	F/148
PM Peak Hour	D/43	E/60	F/192
SAT Peak Hour	E/63	F/89	F/235

\*Delay – seconds per vehicle

**Level of Service and Vehicle Delay Summary (Proposed Improvements)**

<b>Time of Day</b>	<b>2007 LOS/Delay*</b>	<b>2012 LOS/Delay*</b>	<b>2027 LOS/Delay*</b>
AM Peak Hour	C/24	C/27	E/72
Midday Peak Hour	C/30	C/35	F/98
PM Peak Hour	C/32	D/44	F/139
SAT Peak Hour	D/40	D/54	F/148

\*Delay – seconds per vehicle

**Description of the proposed project:**

The project consists of intersection improvements for Chapel Hill Road at Douglas Boulevard/Timber Ridge Drive and signal upgrades for Chapel Hill Road at I-20 Eastbound Ramps, Chapel Hill at Arbor Place Boulevard, Chapel Hill Road at Stewarts Mill Road / Forest Trail. The project length is 0.36 miles.

The intersection improvement portion of the project consist of adding a northbound right turn lane and restriping to create dual right turn lanes controlled by signalization on Chapel Hill. The improvements on Douglas Boulevard include the addition of a median and changing the affected driveways to right in / right out entrances. The improvements on Timber Ridge Drive include an addition of a second westbound left turn lane, changing affected driveways to right in / right out entrances and changing one of the existing right turn lanes to a second westbound through lane.

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

Conforming Plan Description: Roadway operational upgrades (June 22, 2005 Amended TIP)  
Exempt from Air Quality Analysis (40 CFR 93)

STIP Description: Intersection Improvements

**PDP Classification:** Major  Minor

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

**Functional Classification:**

Chapel Hill Rd & Douglas Blvd: Urban Minor Arterial  
Timber Ridge Dr: Urban Local

**U. S. Route Number(s):** N/A

**State Route Number(s):** N/A

**Traffic (AADT):**

Current Year: (2007) 38,000

Design Year: (2027) 59,900

**Existing design features:**

- Typical Section:  
Chapel Hill Road: 4 -12' lanes with concrete median, urban shoulders with minimal sidewalks.  
Douglas Boulevard: 4 -12' lanes including center two way left turn lane, urban shoulders with sidewalk.  
Timber Ridge Road: 2 -12' lanes with urban shoulders and variable grass shoulders, minimal sidewalk.

- Posted speed & Maximum degree of curvature:  
 Chapel Hill Road: 45mph, 00°57'18"  
 Douglas Boulevard: 45mph, 09°59'17"  
 Timber Ridge Drive: 35mph, N/A
- Maximum grade:  
 Chapel Hill Road: 2%  
 Douglas Boulevard: 6%  
 Timber Ridge Drive: 5%  
 Driveway: <10%
- Width of right of way:  
 Chapel Hill Road: 100' to 175'  
 Douglas Boulevard/Timber Ridge Road: 60' to 100'
- Major structures: N/A
- Major interchanges or intersections along the project: N/A
- Existing Crash Data

Location	Year	Total	Number of Accidents by Type					# of Injuries	# of Fatalities
			Angle	Head On	Rear End	Sideswipe	Off Roadway - Collision with Fixed Object		
Chapel Hill Road at Timber Ridge Road	2001	47	15	0	26	5	1	5	0
	2002	55	23	0	24	8	0	13	0
	2003	60	22	1	29	7	1	14	0
	2004	60	27	0	26	7	0	11	0

**Proposed Design Features:**

- Proposed typical section(s):  
 Chapel Hill Road: 4 -12' lanes with concrete median, urban shoulders with minimal sidewalks.  
 Douglas Boulevard: 4 -11' lanes including center two way left turn lane, sidewalk. Raised median added approaching Chapel Hill Road intersection.  
 Timber Ridge Road: 2 -11' lanes with variable grass, sidewalk.
- Proposed Design Speed  
 Chapel Hill Road: 45mph  
 Douglas Boulevard: 45mph  
 Timber Ridge Drive: 35mph

- Proposed Maximum grade:
 

Chapel Hill Road: 2%	Maximum grade allowable: 6%
Douglas Boulevard: 6%	Maximum grade allowable: 6%
Timber Ridge Drive: 5%	Maximum grade allowable: 8%
  
- Proposed Maximum grade driveway: < 25%
  
- Proposed Maximum degree of curve:
 

Chapel Hill Road: 00°57'18"	Maximum degree allowable: 08°03'30"
Douglas Boulevard: 09°59'57"	Maximum degree allowable: 08°03'30"
Timber Ridge Drive: 01°08'45"	Maximum degree allowable: 15°26'37"
  
- Right of way
  - Chapel Hill Road: 100' to 175'
  - Douglas Boulevard/Timber Ridge Road: 60' to 100'
  - Easements: Temporary (x), Permanent ( ), Utility ( ), Other ( ).
  - Type of access control: Full ( ), Partial ( ), By Permit (x), Other ( ).
  - Number of parcels: 8                      Number of displacements:
    - Business: 0
    - Residences: 0
    - Mobile homes: 0
    - Other: 0
  
- Structures:
  - Bridges: N/A
  - Retaining walls: N/A
  
- Major intersections and interchanges: N/A
  
- Traffic control during construction:  
 Temporary lane closures and on-site detours may be required.
  
- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
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)

A design exception is anticipated on Douglas Boulevard for the two horizontal curves just west of Chapel Hill, due to existing radius of the both curves not meeting the AASHTO minimum for the speed design. Flattening both curves to achieve the minimum radius would result in

large impacts to five commercial properties. The impacts are magnified due to the topography of the commercial properties being higher than the roadway. Impacts would consist of the loss or reconfiguring of parking at the commercial businesses and relocation of two to three high tension electrical utility poles. The existing substandard curves do not appear to adversely affect the operations or safety of the intersection approach.

- Design Variances:  
11' lane width on Douglas Boulevard and Timber Ridge Drive.  
Median opening spacing, Douglas Boulevard – Left only opening to commercial property on northwest quadrant is approximately 610' from Chapel Hill/Douglas Boulevard intersection.
- Environmental concerns: None
- Level of environmental analysis:
  - Are Time Savings Procedures appropriate? Yes (x), No ( ),
  - Categorical exclusion (x),
  - Environmental Assessment/Finding of No Significant Impact (FONSI) ( ), or
  - Environmental Impact Statement (EIS) ( ).
- Utility involvements:  
Power – Greystone EMC  
Communication – Bell South  
Cable TV – Comcast  
Gas – Austell Gas  
Water & Sewer – Douglasville-Douglas County Water & Sewer Authority  
Petroleum – N/A  
Railroads – N/A

**Project responsibilities:**

- Design – City of Douglasville
- Right of Way Acquisition – City of Douglasville
- Relocation of Utilities – City of Douglasville (Reimbursable)
- Letting to contract – City of Douglasville
- Supervision of construction – City of Douglasville
- Providing material pits – Contractor
- Providing detours – Contractor

**Coordination:**

- Initial Concept Meeting date: N/A
- Concept meeting date and brief summary: 12-07-05
- P. A. R. meeting: N/A
- FEMA, USCG, and/or TVA: N/A
- Public involvement: Public Information Open House planned. The PIOH will be held in conjunction with the other interim intersection improvement projects.

- Local government comments: N/A
- Other projects in the area: The project does not require coordination with other projects in the area. However, HOV lanes are programmed on I-20 West from SR 6-Thornton Road to SR-5-Bill Arp Road (AR-H-201, PI# 0003165).
- Other coordination to date: N/A
- Railroads: N/A

**Scheduling – Responsible Parties’ Estimate:**

- Time to complete the environmental process: 4 Months.
- Time to complete preliminary construction plans: 2 Months.
- Time to complete right of way plans: 1 Month.
- Time to complete the Section 404 Permit: N/A.
- Time to complete final construction plans: 2 Months.
- Time to complete to purchase right of way: 3 Months.

**Other alternates considered:**

- No Build
- Chapel Hill Rd northbound double left turn lane not pursued due to significant right of way costs.
- Chapel Hill Rd southbound free flowing right turn lane not pursued due to significant right of way costs and weaving to Arbor Place Mall entrance.
- Chapel Hill Rd at Douglas Blvd – convert northbound right turn lane to through lane and extend to I-20 eastbound on ramp. This option would require widening of I-20 on ramp and was not pursued.

**Attachments:**

1. Cost Estimates:
  - a. Right of Way
  - b. Reimbursable Utilities
  - c. Construction
2. Typical sections
3. Traffic Study
4. Concept Team Meeting Minutes
5. Notice of Location and Design Approval

## PRELIMINARY COST ESTIMATE

PREPARED BY:

PROJECT LENGTH: 0.36 Miles

ESTIMATED LETTING DATE: 2007

PROGRAMMING PROCESS  CONCEPT DEVELOPMENT  DURING PROJECT DEV.

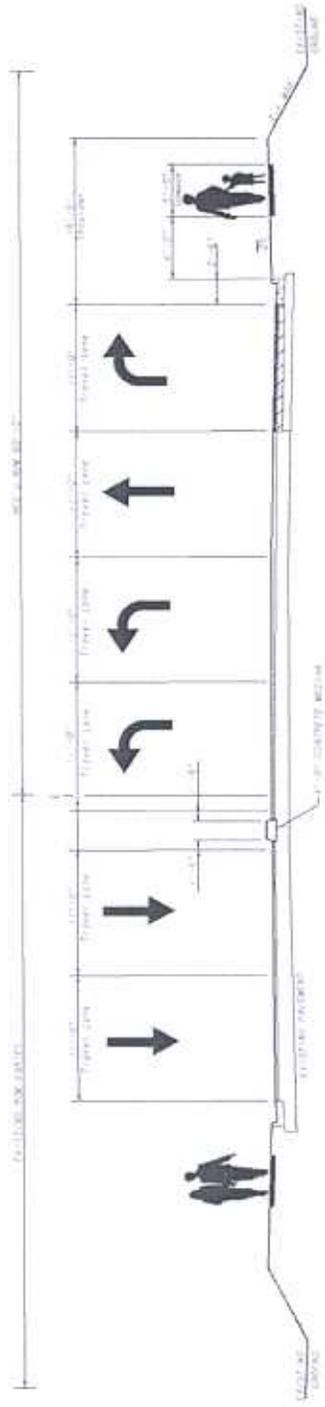
PROJECT COST	
<b>A. RIGHT-TO-WAY:</b>	
1. PROPERTY (R/W @ \$5.00/sf commercial and Easement @ \$4.00/sf commercial)	\$ 98,400.00
2. DISPLACEMENTS: RES: 0, BUS: 0, M.H.: 0	\$ 0.00
3. OTHER COST (ADM./COST, INFLATION)	\$ 285,500.00
SUBTOTAL:A	\$ 383,900.00
<b>B. REIMBURSABLE UTILITIES:</b>	
To be determined.	\$ 50,000.00
	\$ 0.00
	\$ 0.00
SUBTOTAL:B	\$ 50,000.00
<b>C. CONSTRUCTION:</b>	
<b>1. MAJOR STRUCTURES</b>	
	\$ 0.00
	\$ 0.00
SUBTOTAL:C-1	\$ 0.00
<b>2. GRADING AND DRAINAGE:</b>	
a. EARTHWORK ( 1000 cy @ \$11.00/cy)	\$ 11,000.00
<b>b. DRAINAGE:</b>	
1) 18" Storm Drain ( 50 ft @ \$30.00/ft )	\$ 1,500.00
2) 24" Storm Drain ( 50 ft @ \$35.00/ft )	\$ 1,750.00
3) Curb and Gutter ( 1,600 ft @ \$15.00/ft)	\$ 24,000.00
4) Catch Basins ( 5 @ \$1,700.00 )	\$ 8,500.00
5) Drop Inlets ( 2 @ \$2,300.00 )	\$ 4,600.00
	\$ 0.00
	\$ 0.00

<b>PROJECT COST</b>		
		\$ 0.00
SUBTOTAL:C-2		\$ 51,350.00
3. BASE AND PAVING:		
a. AGGREGATE BASE ( 700 Ton @ \$18.00/ Ton)		\$ 12,600.00
b. ASPHALT PAVING:		
Surface (1,200 Ton @ \$60.00/ Ton)	\$ 72,000.00	
Binder ( 140 Ton @ \$60.00/ Ton)	\$ 8,400.00	
Base ( 280 Ton @ \$50.00/ Ton)	\$ 14,000.00	
SUBTOTAL:C-3.b		\$ 94,400.00
c. CONCRETE MEDIAN (360 sy @ \$40.00/sy)		\$ 14,400.00
d. OTHER (Bituminous Tack: 800 Gal @ \$1.50/ Gal)		\$ 1,200.00
SUBTOTAL:C-3		\$ 122,600.00
4. LUMP ITEMS:		
a. CLEARING AND GRUBBING		\$ 5,000.00
b. LANDSCAPING		\$ 0.00
c. TRAFFIC CONTROL		\$ 25,000.00
SUBTOTAL:C-4		\$ 30,000.00
4A. EROSION CONTROL		
a. PERMANENT		\$ 5,000.00
b. TEMPORARY		\$ 15,000.00
SUBTOTAL: C-4A		\$ 20,000.00
5. MISCELLANEOUS:		
a. LIGHTING ( )		\$ 0.00
b. SIGNING ( 180 ft <sup>2</sup> signing material @ \$17.00/ ft <sup>2</sup> )		\$ 3,060.00

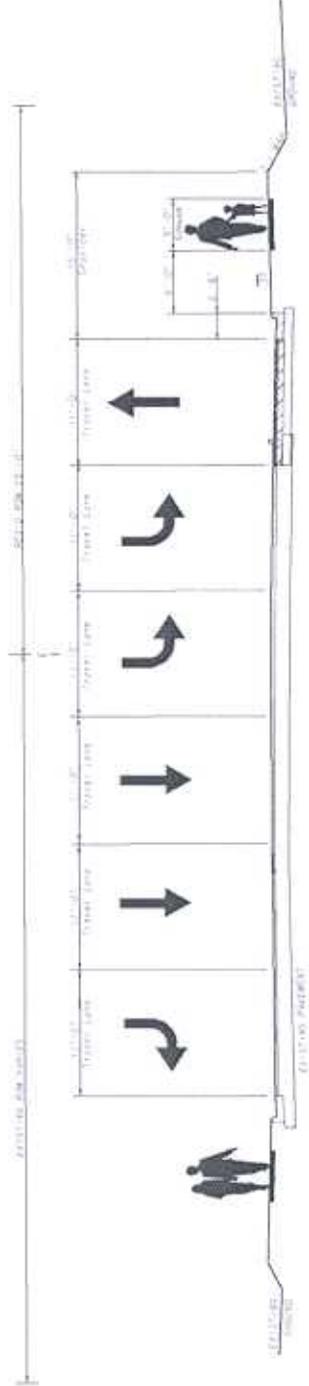
<b>PROJECT COST</b>	
c. MARKING (5,000 ft @ \$0.30/ft and 2,700 ft @ \$0.25/ft and 1,300 ft @ \$0.20/ft and 420 yd <sup>2</sup> @ \$2.50/yd <sup>2</sup> )	\$ 3,485.00
d. SIGNALS ( 0 @ \$50,000.00 ea)	\$ 0.00
e. NEW SIGNALS (4 @ \$125,000.00 ea)	\$ 500,000.00
f. OVERHEAD SIGNING (0 sets of 2 strain poles @ \$20,000.00 ea)	\$ 0.00
g. INTERCONNECT	\$ 100,000.00
h. SIDEWALK ( 500 yd <sup>2</sup> @ \$45.00/ yd <sup>2</sup> )	\$ 22,500.00
i. ITS CONDUIT ( 0 ft @ \$4.00/ ft)	\$ 0.00
SUBTOTAL:C-5	\$ 629,045.00
6. SPECIAL FEATURES: NONE	
SUBTOTAL:C-6	\$ 0.00

<b>ESTIMATE SUMMARY</b>	
A. RIGHT-OF-WAY ( )	\$ 383,900.00
B. REIMBURSABLE UTILITIES	\$ 50,000.00
C. CONSTRUCTION	
1. MAJOR STRUCTURES	\$ 0.00
2. GRADING AND DRAINAGE	\$ 51,350.00
3. BASE AND PAVING	\$ 122,600.00
4. LUMP ITEMS	\$ 30,000.00
4A. EROSION CONTROL	\$ 20,000.00
5. MISCELLANEOUS	\$ 629,045.00
6. SPECIAL FEATURES	\$ 0.00
SUBTOTAL CONSTRUCTION COST	\$ 852,995.00
E. & C. (10%)	\$ 85,300.00
INFLATION (4% PER YEAR)	\$ 37,600.00
NUMBER OF YEARS	1
TOTAL CONSTRUCTION COST	<b>\$ 975,895.00</b>
<b>GRAND TOTAL PROJECT COST</b>	<b>\$ 1,409,795.00</b>

This project is 100 percent in congressional district 13.



TYPICAL SECTION - DOUGLAS BOULEVARD  
NOT TO SCALE



TYPICAL SECTION - TIMBER RIDGE ROAD  
NOT TO SCALE

TECHNICAL MEMORANDUM

**Chapel Hill Rd. at Douglas Blvd./Timber Ridge Rd.**  
Traffic Analysis and Recommended Improvements

*Douglasville, Georgia*

Prepared for:  
**City of Douglasville**



Prepared by:

**DWA**

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## INTRODUCTION

This technical memo summarizes the traffic analysis and the recommended improvements proposed for the intersection of Chapel Hill Road and Douglas Boulevard/Timber Ridge Road. The analysis and recommended improvements are based on the results from the *“Chapel Hill Road and Stewart Mill Road Transportation Corridor Study* prepared by Kimley Horn Associates, Inc. (KHA) and the Arbor Place Mall Area Traffic Study prepared by Day Wilburn Associates, Inc. (DWA). This technical memorandum reflects the existing and future traffic conditions and recommendations outlined in the previous studies.

## TRAFFIC ANALYSIS

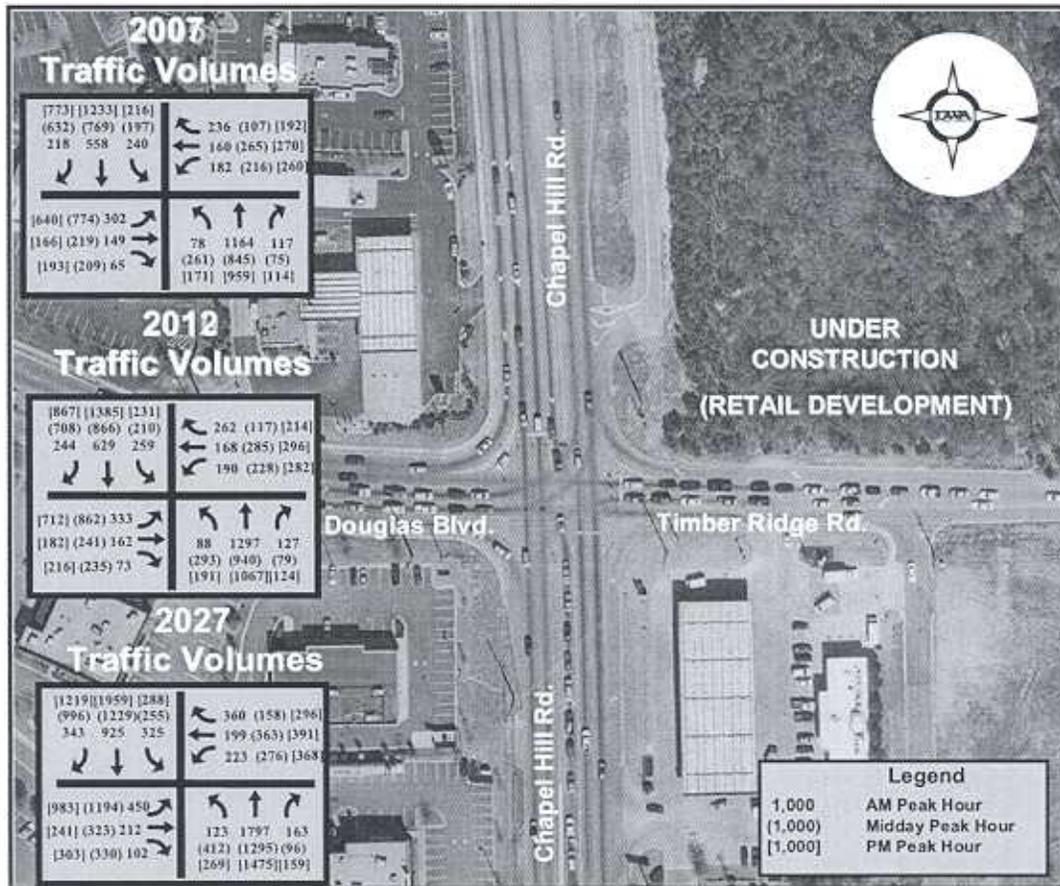
The intersection of Chapel Hill Road and Douglas Boulevard/Timber Ridge Road was analyzed based on opening (2007), interim (2012) and design year (2027) AM and PM peak hour traffic volumes from the KHA corridor study to determine the required improvements at the intersection. Additional weekday midday peak hour and Saturday peak hour counts were also used for analysis. These supplemental counts were obtained from DWA's *Arbor Place Mall Area Traffic Study*.

As recommended in the DWA study, short-term improvement projects are presently underway along the corridor. One project consists of removing the existing split phase signal orientation at Douglas Boulevard/Timber Ridge Drive by converting the eastbound approach to dual left turn lanes and a shared through/right turn lane. The construction project is expected to be completed by November 2005. The traffic analysis took these improvements into consideration when determining needed improvements at the intersection.

A new development is currently being constructed on the northeastern quadrant of the Chapel Hill Road at Douglas Boulevard/Timber Ridge Drive intersection. The development will include retail space and restaurants (opening December 2005). The development will have full access to Timber Ridge Road and right-in, right-out access to Chapel Hill Road. The additional trips generated by this new development were assigned to the roadway network based off the site plan and added to the peak hour traffic volumes from the previous studies. Figure 1 depicts the 2007, 2012, and 2027 peak hour traffic volumes for a typical weekday. Figure 2 depicts 2007, 2012, and 2027 peak hour volumes for a typical Saturday.

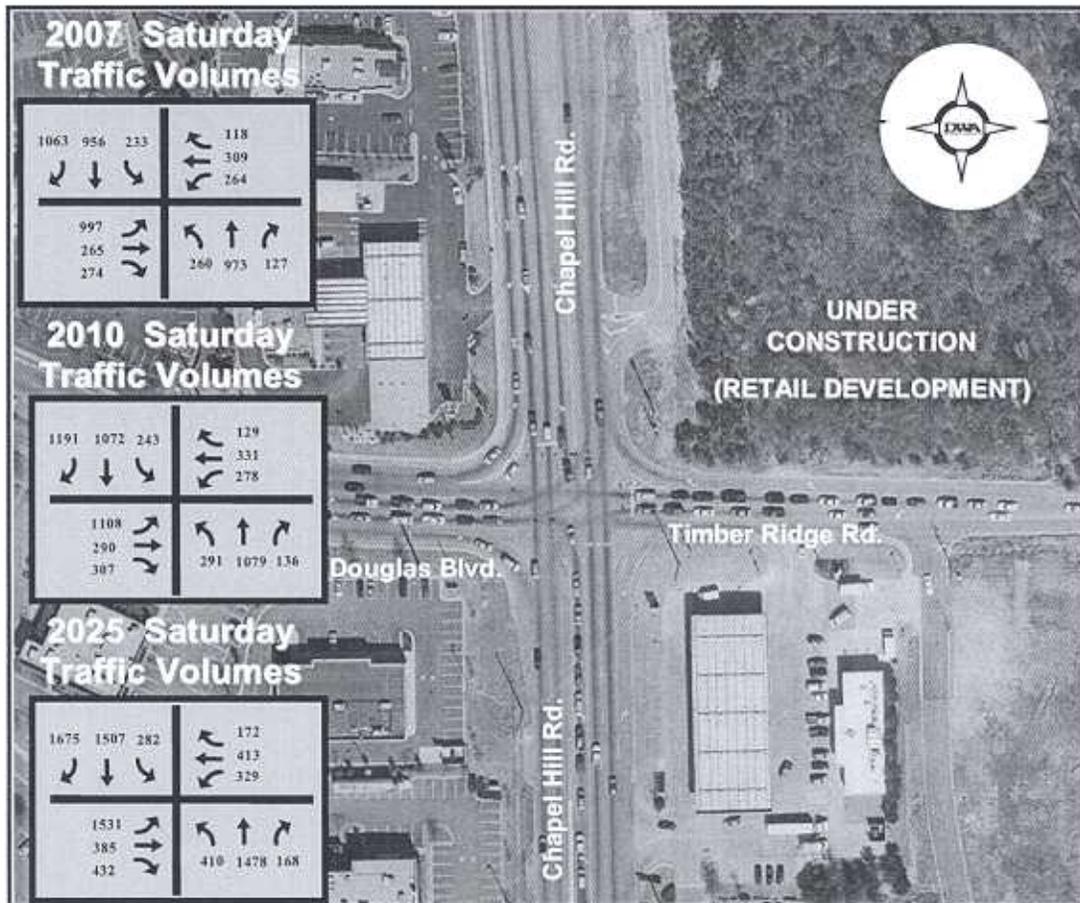
The Timber Ridge Road approach to Chapel Hill Road presently has dedicated through, left and right turn lanes. The development has left room for a fourth lane to be added to the approach to handle the additional traffic created. The most recent site plan indicates this additional lane will be used to allow the intersection to have dual left turn lanes.

**Figure 1**  
**Weekday Peak Hour Traffic Volumes**



The traffic operations of the intersection were analyzed based on the existing lane geometry with the short term improvements in place for the AM, Midday, and PM peak hours of a typical weekday for 2007, 2012, and 2027 traffic conditions. In addition, the intersection was analyzed for a typical Saturday peak hour for the same horizon years as the weekday. The analysis was performed using Synchro 6.0 traffic simulation software based on methodology contained in the *Highway Capacity Manual* to determine the needed improvements at the intersection.

**Figure 2**  
**Saturday Peak Hour Traffic Volumes**



The capacity analysis was performed to determine the level of service (LOS) and vehicle delay at the study intersection. LOS for an intersection is based on total vehicle delay at the intersection and is a typical measure of effectiveness used to evaluate operations. The *Highway Capacity Manual* (HCM) provides ranges of vehicle delay for each LOS definition, spanning from very minimal delays (LOS A) to high delays (LOS F). LOS F is considered unacceptable for most drivers.

The capacity analysis was performed based on the existing lane geometry at the intersection with the short-term improvement projects recommended in the DWA study in place. Table 1 summarizes the results of the capacity analysis based on the existing lane geometry.

**Table 1**  
**Level of Service and Vehicle Delay Summary (Existing Conditions)**

<b>Time of Day</b>	<b>2007 LOS/Delay*</b>	<b>2012 LOS/Delay*</b>	<b>2027 LOS/Delay*</b>
AM Peak Hour	C/29	C/33	F/96
Midday Peak Hour	D/39	D/51	F/148
PM Peak Hour	D/43	E/60	F/192
SAT Peak Hour	E/63	F/89	F/235

\*Delay – seconds per vehicle

As seen in Table 1, the operations during the Saturday peak hour will reach LOS E by the year 2007. In year 2012, the PM peak hour will operate at LOS E and the Saturday peak hour will degrade to LOS F. By the year 2027, the intersection will operate at level of service F during all the peak traffic periods of the day.

### **RECOMMENDED IMPROVEMENTS**

In order to improve traffic operations different lane configurations were evaluated based on the future traffic projections. Based on this evaluation the following improvements were analyzed:

- Added dual westbound left turn lanes on Timber Ridge Road
- Added two westbound through lanes on Timber Ridge Road
- Added dual southbound right turn lanes on Chapel Hill Road
- Added eastbound right turn lane on Douglas Boulevard

Dual southbound right turn lanes were recommended over a single free-flowing right turn lane. A free-flow right turn would require a long acceleration lane to merge traffic into the westbound through lanes on Douglas Boulevard in order to operate safely. There are several driveways on Douglas Boulevard that would complicate the construction of a long acceleration lane. In addition, the majority of this traffic would be weaving to the far inside westbound through lane to turn left into the Arbor Place Mall. Table 2 summarizes the results of the analysis based on the above improvements being implemented.

**Table 2**  
**Level of Service and Vehicle Delay Summary (Proposed Improvements)**

<b>Time of Day</b>	<b>2007 LOS/Delay*</b>	<b>2012 LOS/Delay*</b>	<b>2027 LOS/Delay*</b>
AM Peak Hour	C/24	C/27	E/72
Midday Peak Hour	C/30	C/35	F/98
PM Peak Hour	C/32	D/44	F/139
SAT Peak Hour	D/40	D/54	F/148

\*Delay – seconds per vehicle

Table 2 shows that the intersection will operate at acceptable levels of service through the year 2012 with these improvements in place. However, by 2027 the intersection will operate at a poor level of service during the peak periods. With the added improvements, the intersection will still operate significantly better than the existing lane configuration shown in Table 1.

Ultimately, in order to bring the intersection up to acceptable operating conditions in 2027 the following long-range improvements should be considered:

- Widen Chapel Hill Roads to three through lanes in each direction
- Add dual through lanes on eastbound Douglas Boulevard
- Add dual northbound left turn lanes on Chapel Hill Road
- Add dual southbound left turn lanes on Chapel Hill Road
- Add triple eastbound left turn lanes on Douglas Boulevard

Based on these improvements the intersection will operate at level of service D or better overall during the peak periods of a typical weekday and Saturday.

## MEETING MINUTES

**SUBJECT:** CSSTP-0006-00(902)-A  
P.I. No. 0006902-A  
Chapel Hill Road at Douglas Boulevard/Timber Ridge Drive  
Concept Team Meeting

**MEETING DATE:** December 7, 2005

**TODAY'S DATE:** December 14, 2005

**PREPARED BY:** Mike Shoup, Day Wilburn Associates, Inc. (DWA)

**ATTENDEES:** Ted Crabtree, GDOT District Seven Preconstruction  
Ralph Merrow, Jr., GDOT District Seven Preconstruction  
Jerrell Thompson, GDOT District Seven Preconstruction  
Lisa Myers, GDOT Engineering Services  
Ronald Nealy, GDOT Traffic Operations  
Scott Lee, GDOT District Seven Preconstruction  
Lisa Favors, GDOT Office of Environmental Location  
Aminul Islam, GDOT District Seven  
Randy Hulsey, Douglas County DOT  
Keary Lord, Douglas County DOT  
Buddy Allison, City of Douglasville  
Lee Maxfield, Moreland Altobelli Associates, Inc. (MAAI)  
Jimmy Brown, (MAAI)  
Ronnie Nix, (MAAI)  
Terri Malone, Edwards-Pitman Environmental, Inc.  
Michael Craton, Greystone Power  
Jeff VanDyke, DWA  
David Kasbo, DWA  
Rob Dell-Ross, DWA  
Mike Shoup, DWA

**LOCATION:** District Seven Preconstruction Conference Room, Atlanta

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### Introduction and Meeting Purpose

Ted Crabtree led the introduction. The purpose of the meeting is to present the proposed concept and discuss the concept report and alternatives. He noted that new project numbers will be assigned to the two Stewarts Mill Road intersection projects.

## **Project Overview**

Jeff VanDyke led the project overview. Jeff described the proposed changes to the Chapel Hill Road and Douglas Boulevard/Timber Ridge Road intersection as shown on the proposed concept display. The signals of the Chapel Hill Road corridor from the I-20 eastbound on/off ramps to Stewarts Mill Road will be re-timed as part of this project.

The group discussed access issues with The Landings shopping center. It was agreed that this would be better suited for another project. It was also decided that DWA should consider extending the proposed concrete median on Douglas Boulevard west to the next intersection to match the current barreled median. This would restrict u-turns to signalized intersections.

## **Project Schedule and Funding**

It was noted that the project is being programmed for Construction October 2007 and let April 2007. GDOT will continue to work on the schedule.

## **Project Issues**

- **Need and Purpose**

The project Need and Purpose was reviewed. A GDOT representative requested that the Need and Purpose reference the Mall, the Long Range Project for Chapel Hill, and any additional information that justifies the project.

- **Project Definition**

The project Definition/Description was reviewed.

- **Project Background**

This project is the result of recommendations from a study done by Kimley-Horn and Associates, Inc.

- **Location of Environmental Resources**

Terri Malone noted that the project area does not appear to have any environmental or historical conflicts.

- **Public Input**

The public information open house (PIOH) is planned, but has not been scheduled. The team discussed holding the PIOH in January or February. It is desirable to hold the open house in conjunction with the two Stewart Mill Road intersection projects.

- **Alternatives Considered**

The group discussed changing the northbound right turn lane on Chapel Hill Road to a shared thru/right which turns into a right turn lane to the eastbound I-20 on ramp after the intersection. This option would require modifying the on ramp to I-20 eastbound to allow two right turning lanes. Another alternative discussed was widening the I-20 eastbound off ramp to add an additional right turn lane which would flow into the Chapel Hill Road right turn lane at the project intersection.

The group concluded that the alternatives should be pursued as part of another project, such as the future Chapel Hill Road widening project.

- **Design Guidelines**

It was noted that the proposed 11' lanes on Douglas Boulevard will require a variance.

- **Horizontal and Vertical Alignments**

The horizontal curve west of the project intersection is substandard and will require a design exception. The vertical alignment needs to be checked for adequate sight distance.

- **Typical Sections**

See concept report.

- **Access Control**

DWA needs to obtain limited access boundaries from surveyor and add to plans.

- **Practical Alternative Report (PAR)**

A PAR is not required for this project.

- **Type of Environmental Document and Permits Required**

A categorical exclusion is planned and no permits are anticipated for this project.

- **Status of LGPA and Project Management Agreements**

GDOT will check the status.

- **Right of Way Requirements**

Right of way miters may be needed at the corners of the intersection to accommodate the signal equipment.

- **Utilities**

The poles along Douglas Boulevard appear to be Georgia Power. DWA will distribute utility plans during the preliminary plans phase.

- **Railroads**

There are no railroads on the project.

- **Bridge Assessments and Structural Needs**

There are no bridge assessments or structural needs for the project.

- **Accident History**

The group reviewed the accident data as shown in the concept report. The group requested expanding of accident data. It was noted that the accidents at this intersection are mostly rear ends and sideswipes.

- **Potential Soil Conditions**

Because this project is Minor, the design will utilize the default soil values for the area.

- **Construction Limits**

The construction limits for the project will be kept at a minimum to limit right of way impacts. A gravity style retaining wall along Chapel Hill Road in front of the BP gas station may be necessary.

- **Maintenance of Traffic**

The project can be built under traffic with routine temporary lane closures.

- **Existing Maintenance Issues**

There are no existing maintenance issues in the project area.

- **Capacity Analysis**

Jeff VanDyke summarized the LOS as noted in the traffic study report attached to the concept report. Although roadway widening is the ultimate solution proposed in the Kimley-Horn study, the proposed project should improve the LOS for 5 to 10 years.

- **Intersection Improvements**

Not applicable to this project.

- **Constructability**

No constructability issues were noted for this project.

- **Construction Cost Estimate**

The group reviewed the cost estimate in the concept report. A correction was noted in the signals category and it was noted that the asphalt and sidewalk unit prices appeared low.

- **Project Assignments**

The DWA team as a consultant to the City is responsible for all design services.

- **Coordination with GDOT and Other Government Agencies**

GDOT will be the reviewing and approval agency for this project.

- **Coordination with GDOT and Other Local Projects**

There are no projects in the area that conflict with this project.

- **Concept Report**

The group reviewed the concept report. Ted Crabtree will furnish DWA with a letter including GDOT comments.

#### **Action Items**

##### **DWA**

- Incorporate review comments into concept report.

##### **GDOT**

- Furnish concept report review comments to DWA.
- Adjust schedule and re-circulate.
- Check status of LGPA and project management agreements.

These meeting minutes reflect the notes and memory of Mike Shoup. If any additions, deletions, or corrections are necessary, please contact Mike Shoup at 404-249-7550 or [mshoup@daywilburn.com](mailto:mshoup@daywilburn.com). If no responses are received within five days, these meeting minutes will be considered final.