ORIGINAL TO GENERAL FILES

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0006892, DeKalb County
CMQ-0006-00(892)
Memorial Drive at East Ponce de Leon Avenue
Intersection Improvements

OFFICE Preconstruction

DATE September 1, 2006

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.

GRS/cj

Attachment

DISTRIBUTION:

Brian Summers
Harvey Keepler
Ken Thompson
Jamie Simpson
Michael Henry
Keith Golden
Joe Palladi (file copy)
Paul Liles
Babs Abubakari
Bryant Poole
BOARD MEMBER

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: P. I. No. 0006892, DeKalb County
CMQ-0006-00(892)
Memorial Drive at East Ponce de Leon Avenue
Intersection Improvements

OFFICE Preconstruction

DATE August 29, 2006

FROM Geneth[illegible] Rice-Singleton, Assistant Director of Preconstruction

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

SUBJECT PROJECT CONCEPT REPORT

This project is the intersection improvement on Memorial Drive at East Ponce de Leon Avenue/Main Street in Stone Mountain. The existing "five points" intersection experiences severe traffic congestion due to inadequate intersection capacity. The volume of traffic in the Main Street/East Ponce de Leon Avenue corridor was measured to be 20,000 VPD in 2003, due largely to residential developments in unincorporated areas of DeKalb County south of the city. This is primarily through traffic. Severe traffic delays are experienced on weekdays during morning and evening drive times. All intersection approach roadways are two lane roads and there are no turn lanes at the five points intersection except for a right turn lane on eastbound Memorial Drive. Because of the lengthy delays at the five points intersection, many drivers use local residential streets as cut-throughs. The existing intersection is currently operating at a Level of Service (LOS) "F" with intersection delays of up to 12 minutes in the a.m. peak hours and up to 9 minutes during the p.m. peak hours.

The intersection improvements will realign Silver Hill Road to Third Street to create a conventional four-legged intersection. Exclusive left turn lanes will be constructed on the East Ponce de Leon Avenue, Main Street, and Memorial Drive approaches. Additionally, traffic signals at this intersection and the Main Street intersections with West Mountain Street and Mimosa Drive will be coordinated. This project will be coordinated with a related bicycle/pedestrian project to build sidewalks to link to the PATH multi-use trail that runs along East Ponce de Leon Avenue into Stone Mountain Village and Stone Mountain Park. Another project, a streetscaping on Main Street, may also require coordination.

The existing horizontal curve on East Ponce de Leon Avenue at the intersection with Memorial Drive has a 150' radius and will require a design exception. The reconstructed curve will have approximately the same radius as the existing curve. With the constraints that are present and the requirement to minimize right-of-way impacts, it is not feasible to increase the radius enough to meet the 25 MPH design (and posted) speed.

Environmental concerns include requiring a Categorical Exclusion be prepared; this project is within the boundaries of the Stone Mountain National Register Historic District; a section 106 worksheet will be prepared; time saving procedures are not appropriate.

The estimated costs for this project are:

	PROPOSED	APPROVED	FUNDING	PROG DATE
Construction (includes E&C and inflation)	$800,000	$750,000	L400	2008
Right-of-Way	$800,000	$700,000	L400	2007
Utilities*	Local	Local		

*City of Stone Mountain signed PMA on 8-2-05 for PE and utilities; right-of-way and construction to be done by future agreeements.

I recommend this project concept be approved.

GRS:JDQ/cj

Attachment

CONCUR _____
Todd I. Long, P.E., Director of Preconstruction

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

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE: CMQ-0006-00(892) DeKalb
P.I. No. 0006892
Memorial Drive at East Ponce de Leon Ave.

OFFICE: Engineering Services

DATE: August 15, 2006

FROM: Brian K. Summers, P.E., Project Review Engineer

TO: Meg Pirkle, P.E., Assistant Director of Preconstruction

SUBJECT: **CONCEPT REPORT**

We have reviewed the Concept Report submitted August 15, 2006, and have no comments.

The costs for this project are:

Construction	$692,000
Inflation	$34,600
E & C	$72,660
Reimbursable Utilities	$0.00
Right of Way	$800,000 (Locals)

REW

c: Bryant Poole, Attn.: Mike Lobdell

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
DISTRICT 7

PROJECT CONCEPT REPORT

PROJECT NUMBER: CMQ-0006-00(892)
County: DeKalb
Project P.I. Number: 0006892

Federal Route Number: N/A
State Route Number: N/A

Memorial Drive at East Ponce de Leon Avenue/Main Street

Recommendation for Approval:

Date: 8/15/06 _____ Project Manager

Date: 8/15/06 _____ District Engineer

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

Date: _____ State Transportation Planning Administrator

Date: _____ Office of Financial Management Administrator

Date: _____ State Environmental/Location Engineer

Date: _____ State Traffic Safety and Design Engineer

Date: 8/15/06 _____ RCW
State Project Review Engineer

SCORING RESULTS AS PER MOG 2440-2

Project Number:	County:	PI No.:
CMQ-0006-00(892)	DeKalb	0006892

Report Date:	Concept By:
August 15, 2006	DOT Office: District 7
☒ Concept Stage	Consultant: Street Smarts

Project Type: Choose One From Each Column			
	☐ Major ☒ Minor	☒ Urban ☐ Rural	☐ ATMS ☐ Bridge Replacement ☐ Building ☐ Interchange Reconstruction ☒ Intersection Improvement ☐ Interstate ☐ New Location ☐ Widening & Reconstruction ☐ Miscellaneous

FOCUS AREAS	SCORE	RESULTS
Presentation	100	
Judgement	100	
Environmental	100	
Right of Way	100	
Utility	100	
Constructability	100	
Schedule	100	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
DISTRICT 7

PROJECT CONCEPT REPORT

PROJECT NUMBER: CMQ-0006-00(892)
County: DeKalb
Project P.I. Number: 0006892

Federal Route Number: N/A
State Route Number: N/A

Memorial Drive at East Ponce de Leon Avenue/Main Street

Recommendation for Approval:

Date: 8/15/06 _____ _____
Project Manager

Date: 8/15/06 _____ _____
District Engineer

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

Date: _____ _____
State Transportation Planning Administrator

Date: _____ _____
Office of Financial Management Administrator

Date: _____ _____
State Environmental/Location Engineer

Date: 8-21-06 _____
State Traffic Safety and Design Engineer

Date: _____ _____
State Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
DISTRICT 7

AUG 2 1 2006

PROJECT CONCEPT REPORT

PROJECT NUMBER: CMQ-0006-00(892)
County: DeKalb
Project P.I. Number: 0006892

Federal Route Number: N/A
State Route Number: N/A

Memorial Drive at East Ponce de Leon Avenue/Main Street

Recommendation for Approval:

Date: 8/15/06 _____ Project Manager

Date: 8/15/06 _____ District Engineer

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

Date: 8/21/06 _____ State Transportation Planning Administrator

Date: _____ Office of Financial Management Administrator

Date: _____ State Environmental/Location Engineer

Date: _____ State Traffic Safety and Design Engineer

Date: _____ State Project Review Engineer

ATTACHMENT # 6
NOTICE OF LOCATION AND DESIGN

NOTICE OF LOCATION AND DESIGN APPROVAL

CMQ-0006-00(892), Dekalb County
P.I. No. 0006892

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 and Design Approval: SEPTEMBER 1, 2006.

Project Description: This project is located in DeKalb County in the 4th U.S. Congressional District, in Land Lots 89, 90, 125, and 125 of the 18th Land District of DeKalb County. The proposed Five Points intersection improvements and related signal coordination on Main Street in the City of Stone Mountain will reduce congestion at the Five Points intersection by improving traffic flow with coordinated signals and with geometric improvements to the Five Points intersection. The intersection improvements will realign Silver Hill Road to Third Street to create a conventional four-legged intersection. Left-turn lanes will be constructed on East Ponce de Leon Avenue, Main Street, and Memorial Drive. Additionally, traffic signals at this intersection and the Main Street intersections with West Mountain Street and Mimosa Drive will be coordinated.

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

Thomas Parker, Area 1 Engineer
Georgia Department of Transportation
District 7 Area 1 Office
805 George Luther Drive
Decatur, GA 30032
Telephone: 404-299-4386 / 4389
Facsimile: 404-299-4387
Email: thom.parker@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 Road
Chamblee, GA 30341
Telephone: 770 986-1050
Facsimile: 770-986-1022
Email: 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
DISTRICT 7

PROJECT CONCEPT REPORT

PROJECT NUMBER: CMQ-0006-00(892)
County: DeKalb
Project P.I. Number: 0006892

Federal Route Number: N/A
State Route Number: N/A

Memorial Drive at East Ponce de Leon Avenue/Main Street

Recommendation for Approval:

Date: 8/15/06 _____ _____
Project Manager

Date: 8/15/06 _____ _____
District Engineer

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

Date: _____ _____
State Transportation Planning Administrator

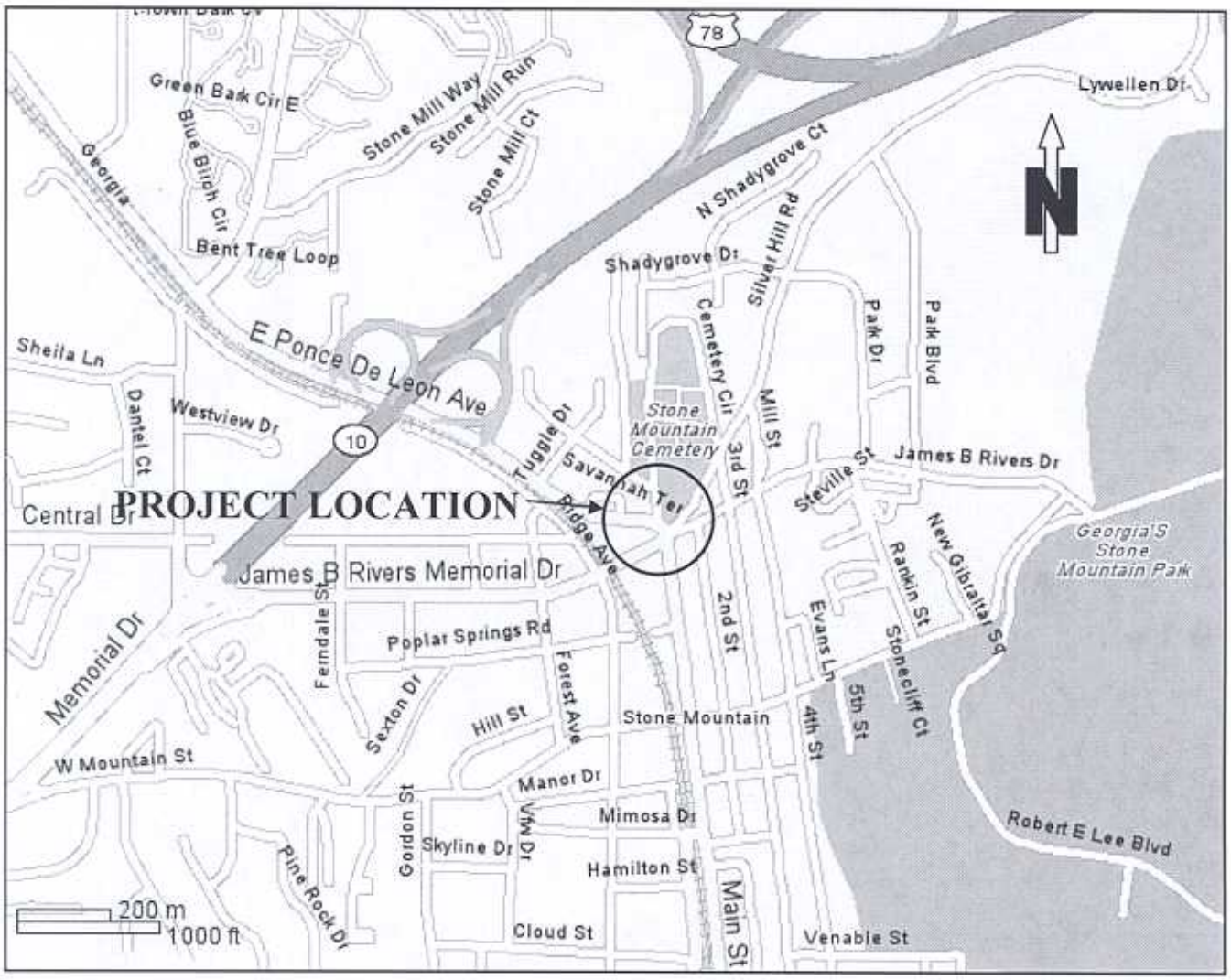
Date: _____ _____
Office of Financial Management Administrator

Date: _____ _____
State Environmental/Location Engineer

Date: _____ _____
State Traffic Safety and Design Engineer

Date: _____ _____
State Project Review Engineer

SITE LOCATION MAP



Need and Purpose: The Main Street/East Ponce de Leon Avenue corridor and the "Five Points" intersection in the City of Stone Mountain experience severe traffic congestion due to inadequate intersection capacity. This congestion contributes to air pollution in the region. The volume of traffic in the Main Street/East Ponce de Leon Avenue corridor was measured as approximately 20,000 vehicles per day in 2003, due largely to residential developments in unincorporated areas of DeKalb County south of the city. This is primarily through traffic. Severe traffic delays are experienced on weekdays during morning and evening drive times. The Five Points intersection is also a gateway to Stone Mountain Park. Although the park's east entrance from US 78 is the more heavily used, the west gate, located on Memorial Drive approximately one-half mile east of the Five Points intersection, contributes to the congestion. Traffic traveling east on East Ponce de Leon Avenue must turn left at the intersection to reach the park, creating a major bottleneck during evening drive times.

All intersection approach roadways are two-lane roads, and there are no turn lanes at the Five Points intersection except for a right-turn lane on eastbound Memorial Drive. Because of the lengthy delays at the Five Points intersection, many drivers use local residential streets as cut-throughs. These streets, particularly Ridge Avenue, West Mountain Street, and Mimosa Drive, are residential streets not intended or suitable for large volumes of through traffic.

The Five Points intersection is currently operating at a Level of Service "F," with intersection delays of up to twelve minutes during the AM peak hour and up to nine minutes during the PM peak hour. The proposed improvements will result in a significantly improved Level of Service, although the intersection will continue to operate as an "F."

LEVELS OF SERVICE - NO BUILD				
YEAR	AM PEAK		PM PEAK	
	DELAY (SECONDS)	LOS	DELAY (SECONDS)	LOS
2008	799	F	604	F
2028	1244	F	1087	F

LEVELS OF SERVICE - BUILD				
YEAR	AM PEAK		PM PEAK	
	DELAY (SECONDS)	LOS	DELAY (SECONDS)	LOS
2008	281	F	164	F
2028	428	F	288	F

The primary purpose of a CMQ project is to reduce harmful emissions. This project will significantly reduce emissions, as shown in the following tables:

EMISSIONS - NO BUILD		
YEAR	AM PEAK	PM PEAK
	CO/NOx/VOC (KG/HOUR)	CO/NOx/VOC (KG/HOUR)
2008	48/9/11	33/6/8
2028	90/18/21	71/14/16

EMISSIONS - BUILD		
YEAR	AM PEAK	PM PEAK
	CO/NOx/VOC (KG/HOUR)	CO/NOx/VOC (KG/HOUR)
2008	35/7/8	31/6/7
2028	67/13/16	65/13/15

Description of the proposed project: The proposed Five Points intersection improvements and a related signal coordination on Main Street will reduce congestion at the Five Points intersection by improving traffic flow with coordinated signals and with geometric improvements to the Five Points intersection. The intersection improvements will realign Silver Hill Road to Third Street to create a conventional four-legged intersection. Exclusive left-turn lanes will be constructed on the East Ponce de Leon Avenue, Main Street, and Memorial Drive approaches. Additionally, traffic signals at this intersection and the Main Street intersections with West Mountain Street and Mimosa Drive will be coordinated.

This project will be coordinated with a related bicycle/pedestrian project to build sidewalks to link to the PATH multi-use trail that runs along East Ponce de Leon Avenue into Stone Mountain Village and Stone Mountain Park. Another project, a streetscaping on Main Street, may also require coordination.

Is the project located in a Non-Attainment area? Yes.
This project is intended to improve traffic operations at the intersection. It will not increase the basic capacity of the approach roadways. The proposed concept conforms to the project description in the Regional Transportation Program (project DK-332) and the State Transportation Improvement Program (project CMQ-0006-00(892).

PDP Classification: Major Project ( ) Minor Project (X)

Project Designation: Full Oversight ( ) Exempt (X) State Funded ( ) Other ( )
Functional Classification: Main Street/East Ponce de Leon Avenue - Urban Minor Arterial
Memorial Drive - Urban Collector

U.S. Route Number: N/A **State Route Number**: N/A

Traffic (AADT – 2003 counts)
East Ponce de Leon Avenue: 18,628 vpd
Memorial Drive (east of Main Street): 3,582 vpd
Memorial Drive (west of Main Street): 3,110 vpd
Main Street: 19,741 vpd

Traffic Projections (AADT) - Base Year 2008
East Ponce de Leon Avenue: 21,422 vpd
Memorial Drive (east of Main Street): 4,119 vpd
Memorial Drive (west of Main Street): 3,577 vpd
Main Street: 22,702 vpd

Traffic Projections (AADT) - Design Year 2028
East Ponce de Leon Avenue: 25,706 vpd
Memorial Drive (east of Main Street): 4,943 vpd
Memorial Drive (west of Main Street): 4,292 vpd
Main Street: 27,242 vpd

Accident Data

Year	Number of Accidents	Number of Vehicles Involved	Number of Injuries	Number of Fatalities
2002	27	55	9	0
2003	16	33	3	0
2004	19	19	19	0
TOTALS	**62**	**128**	**31**	**0**

Accident Analysis

GDOT provided data on accident locations and types for the three years. A brief tabular breakdown is as follows:

Accidents by time of day:

Day (or dawn or dusk)	47 accidents
Night	15 accidents
	62 accidents

Accidents by road surface condition:

Dry conditions	46 accidents
Wet (or icy) conditions	16 accidents
	62 accidents

Accidents by type:

Rear end collisions	27 accidents
Head on collisions	4 accidents
Sideswipe collisions (same direction)	12 accidents
Sideswipe collisions (opposite direction)	0 accidents
Angle collisions	19 accidents
	62 accidents

Accidents by approach:

Northbound	23 accidents
Southbound	22 accidents
Eastbound	10 accidents
Westbound	7 accidents
	62 accidents

The data shows that 73% of all accidents occur on the northbound (Main Street) and southbound (East Ponce de Leon Avenue) approaches. For the northbound approach, in 74% of the accidents, both vehicles were traveling north, and 71% of these north-north accidents were rear end collisions and 24% were sideswipes. For the southbound approach, in 86% of the accidents, both vehicles were traveling south, and 42% of these south-south accidents were rear end collisions and 42% were sideswipes.

Neither the northbound or southbound approaches have turn lanes. These are low-speed approaches, and sight distance is good. The types and frequencies of accidents on these approaches are typical for intersections where turn lanes are not provided. The addition of left-turn lanes, wider lanes, and increased turn radii is expected to significantly reduce the accident and injury rates.

Existing Design Features:

- **East Ponce de Leon Avenue** is a two-lane roadway with a 25 mph speed limit that is a continuation of Ponce de Leon Avenue east of Decatur. East Ponce de Leon Avenue becomes Main Street beyond the Five Points intersection. Between Mountain Industrial Boulevard and the Five Points intersection, the adjacent land use is mainly industrial parks and residential apartments.
  - Typical Section: 24-foot roadway with curb and gutter. A multi-use path is located along the south side of East Ponce de Leon Avenue; however, the path ends just west of the Five Points intersection.
  - Posted Speed: 25 mph
  - Maximum Radius: 153 feet (at intersection)
  - Maximum Grade: 1.1%
  - Width of Right-Of-Way: Approximately 34 feet
  - Major Structures: None
  - Major interchanges or intersections along the project: none
  - Existing length of roadway segment and the beginning logs for each county segment: N/A
- **Main Street** is a two-lane road that runs from the Five Points intersection to the city limits of Stone Mountain, where it becomes Stone Mountain-Lithonia Road. The speed limit on Main Street is 25 mph. The adjacent land use is commercial.
  - Typical Section: 24-foot roadway with granite curb and sidewalks.
  - Posted Speed: 25 mph
  - Maximum Radius: No curves
  - Maximum Grade: 2.4%

- Width of Right-Of-Way: Approximately 40 feet
- Major Structures: None
- Major interchanges or intersections along the project: none
- Existing length of roadway segment and the beginning logs for each county segment: N/A

➢ **Memorial Drive** is a two-lane road with curb and gutter and sidewalk (one side). The speed limit on Memorial Drive is 25 mph. The adjacent land use is a mix of commercial and residential. Prior to construction of the Stone Mountain Freeway (US 78) in the 1970s, this section of Memorial Drive was the main highway.

- Typical Section: 24-foot roadway with curb and gutter and sidewalk.
- Posted Speed: 25 mph
- Maximum Radius: No curves
- Maximum Grade: 2.5%
- Width of Right-Of-Way: Approximately 60 ft.
- Major Structures: N/A
- Major interchanges or intersections along the project: none
- Existing length of roadway segment and the beginning logs for each county segment: N/A

Proposed Design Features:

- Proposed Typical Sections:
  - **East Ponce de Leon Avenue** - One 12-foot through lane in each direction, with a 12-foot left-turn lane added. Right turns will share the eastbound/southbound through lane. Urban (curb and gutter) shoulder.
  - **Main Street** - One 12-foot through lane in each direction, with a 12-foot left-turn lane added. Right turns will share the northbound through lane. Urban (curb and gutter) shoulder.
  - **Memorial Drive (Eastbound)** - One 12-foot through lane in each direction, with 12-foot left-turn lane added. Right turns will share the eastbound through lane. Urban (curb and gutter) shoulder.
  - **Memorial Drive (Westbound)** - One 12-foot through lane in each direction, with a 12-foot left-turn lane added. Right turns will share the westbound through lane. Urban (curb and gutter) shoulder.
- Proposed Design Speed: 25 mph (all intersection roadways)
- Proposed Maximum Grade (East Ponce de Leon Avenue): 1.5%
- Maximum Grade Allowable (East Ponce de Leon Avenue): 9%
- Proposed Maximum Grade (Main Street): 2.5%
- Maximum Grade Allowable (Main Street): 9%
- Proposed Maximum Grade (Memorial Drive): 2.5%

- Maximum Grade Allowable (Memorial Drive): 12%
- Proposed Maximum Grade (Driveway): 10%
- Proposed Minimum Radius: 150' (East Ponce de Leon Avenue)
- Minimum Radius Allowable: 154' (e = 4.0%), 167' (e = 2.0%)
- Right of Way
    - Width: 60 feet (all intersection roadways)
    - Easements: Temporary (X) Permanent (X) Utility ( ) Other ( )
    - Type of access Control: Full ( ) Partial ( ) By Permit (X) Other ( )
    - Number of Parcels: 14
    - Number of Displacements:
        Business: 0
        Residences: 0
        Mobile Homes: 0
        Other: 0
- Structures: No major structures, but small gravity retaining walls may be required.
- Major intersections and interchanges: N/A
- Traffic control during construction: This project will be constructed under traffic. No offsite detours are necessary, and all driveway access will be maintained 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 Site Distance			X
Super Elevation Rates			X
Horizontal Clearance			X
Speed Design			X
Vertical Clearance			N/A
Bridge Width			N/A
Bridge Structural Capacity			N/A

* The existing horizontal curve on East Ponce de Leon Avenue at the intersection with Memorial Drive has a 150-foot radius. The reconstructed curve will have approximately the same radius as the existing curve. With the constraints that are present and the requirement to minimize right of way impacts, it is not feasible to increase the radius enough to meet the 25 mph design (and posted) speed. This will require a design exception. For a low-speed urban roadway with good intersection sight distance and intersection lighting, a design exception is warranted, and on approval of the concept, the request for a design exception will be submitted.

- Design Variances: None
- Environmental Concerns: None
- Level of Environmental Analysis:
    - Are Time Saving Procedures appropriate? Yes ( ) No (X)

- Categorical Exclusion? Yes (X) No ( )
- Environmental Assessment/Finding of No Significant Impact – N/A
- Environmental Impact Statement – N/A

Note: This project is located within the boundaries of the Stone Mountain National Register Historic District. As part of the required environmental studies, a Section 106 Worksheet particular to CMAQ projects will be prepared according to GDOT/State Historic Preservation Office/FHWA standards.

- Utility Involvements:
  - ATLANTA GAS LIGHT
  - AMERICAN TELEPHONE AND TELEGRAPH CO.
  - COMCAST COMMUNICATIONS
  - BELLSOUTH
  - GEORGIA POWER
  - DEKALB COUNTY WATER & SEWER

Project Responsibilities:

- Design – City of Stone Mountain/Consultant
- Right-of-Way Acquisition – GDOT
- Relocation of Utilities – GDOT
- Letting to Contract – City of Stone Mountain
- Supervision of Construction – City of Stone Mountain/Consultant
- Providing Material Pits – Contractor
- Providing Detours – City of Stone Mountain/Contractor

PMA: In a PMA signed on August 2, 2005, the City of Stone Mountain agreed to fund portions of the preconstruction engineering, utility relocations, right of way acquisitions, and construction.

Coordination

- Concept meeting date: June 26, 2006
- P.A.R meetings, dates and results: N/A
- FEMA, USCG and/or TVA: N/A
- UST: Possible UST involvement with gasoline station in northwest quadrant
- Public Involvement: PIOH and a property owners meeting
- Local Government Comments: City of Stone Mountain prefers a roundabout but acknowledges that a conventional four-legged intersection will better accomplish project goals.
- Other Projects in the area:
  - Project CSHPP-0007-00(621)/P.I. no. 0007621/DeKalb. This is a bicycle/pedestrian project to build sidewalks to link to the PATH multi-use trail that runs along East Ponce de Leon Avenue into Stone Mountain Village and Stone Mountain Park.
  - Project CSTEE-0006-00(569)/P.I. no. 0006569/DeKalb. This is a streetscaping on Main Street in downtown area.
- Other Coordination to date: None

Scheduling – Responsible Party's Estimate (times include reviews by GDOT and other stakeholders):

- Time to complete environmental process: 4 months
- Time to complete preliminary construction plans: 3 months
- Time to complete right-of-way plans: 4 months
- Time to complete the Section 404 permit: N/A
- Time to complete final construction plans: 4 months
- Time to complete the purchase of right-of-way: 12 months
- List other major items that will affect the project schedule: Assume a single field plan review will be held

Note: Current scheduled let date is July 2007. Based on the estimated schedule, a let date of July 2008 is more realistic.

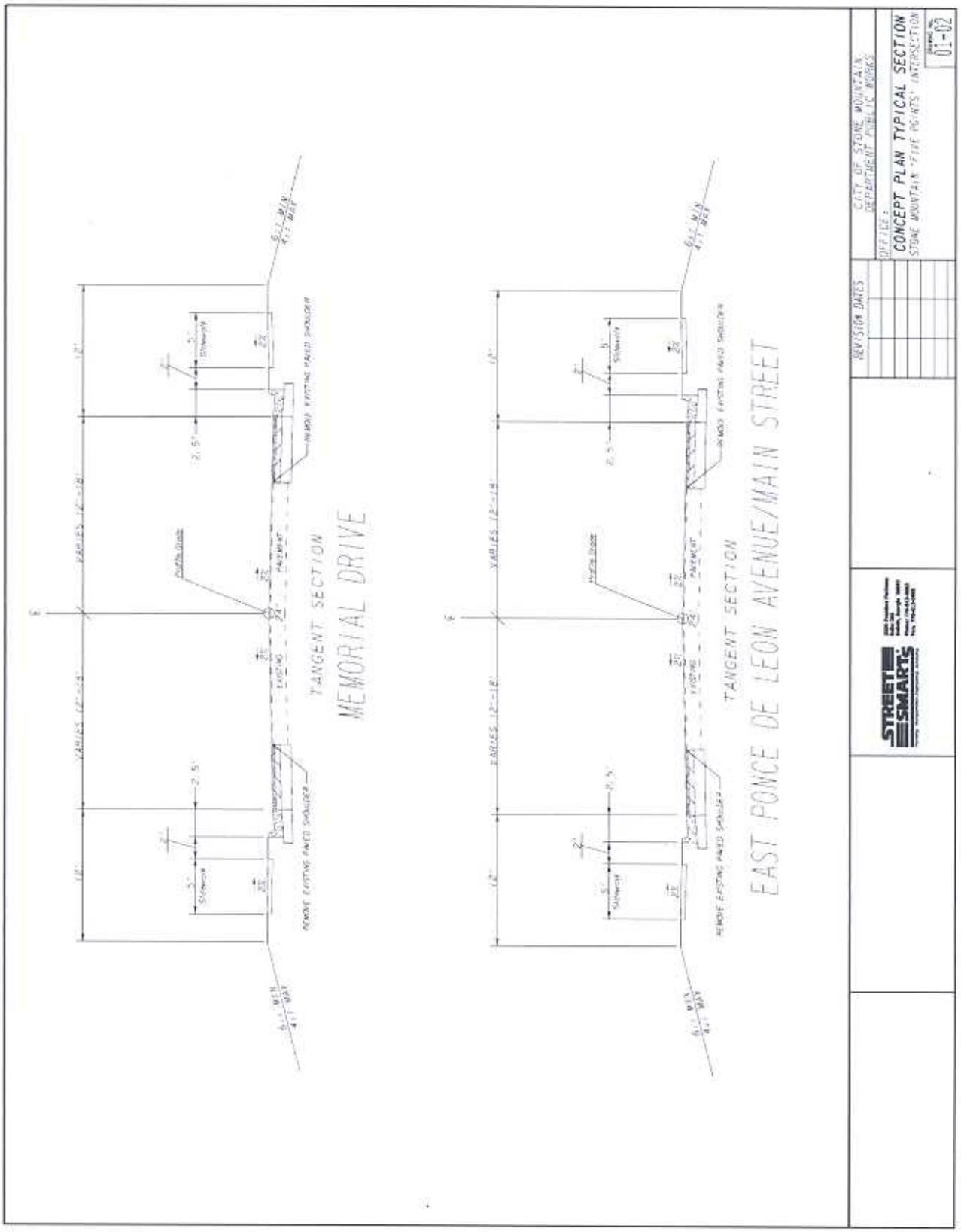
Other Alternates Considered:

1. **(No Build)** The No Build option is not a viable one since it does not improve the operation of the intersection or reduce the congestion that contributes to air pollution.
2. **Construct a modern roundabout.** A roundabout was considered; however, geometric constraints and very high traffic volumes were not suitable for a roundabout, and the Level of Service (LOS) was significantly lower than the LOS for an improved four-leg intersection.

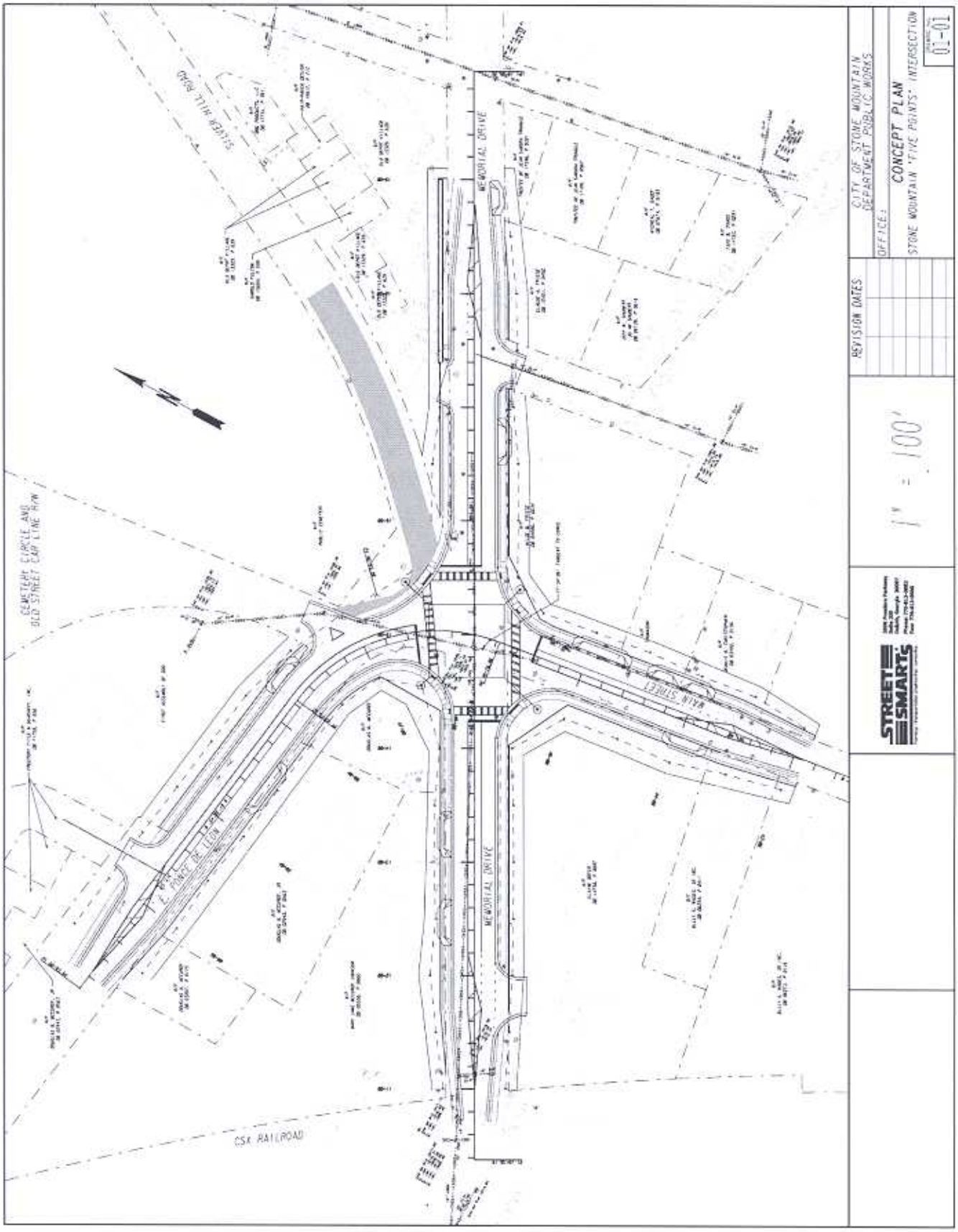
Attachments:

1. Typical Section
2. Concept Drawing
3. Capacity Analyses (conventional 4-leg intersection and roundabout)
4. Construction Cost Estimate (4-leg intersection)
5. Concept Team Meeting Minutes
6. Notice of Location and Design Approval
7. Request for Design Exception

ATTACHMENT # 1
TYPICAL SECTION



ATTACHMENT # 2
CONCEPT DRAWING



ATTACHMENT # 3
CAPACITY ANALYSES

DISCUSSION OF CAPACITY ANALYSES

MEMORANDUM

To: Andy Anderson, PE, Streets Smarts

From: Larry Overn, PE, PTOE, Street Smarts

RE: Five Points Traffic Analysis

Date: 28 March 2006

Introduction

This memorandum is written to inform you of the results of the traffic analysis for the intersection known as Five Points in the City of Stone Mountain. The intersection of Memorial Drive at East Pnce de Leon Avenue/Silver Hill Road/North Main Street consists of 5 approaches.

The concept is to cul-de-sac Silver Hill Road and create a standard four-legged intersection. Traffic from Silver Hill Road will be diverted to Memorial Drive via Cemetery Circle. The analysis presented the results of standard intersection improvements and a roundabout.

Traffic Volumes

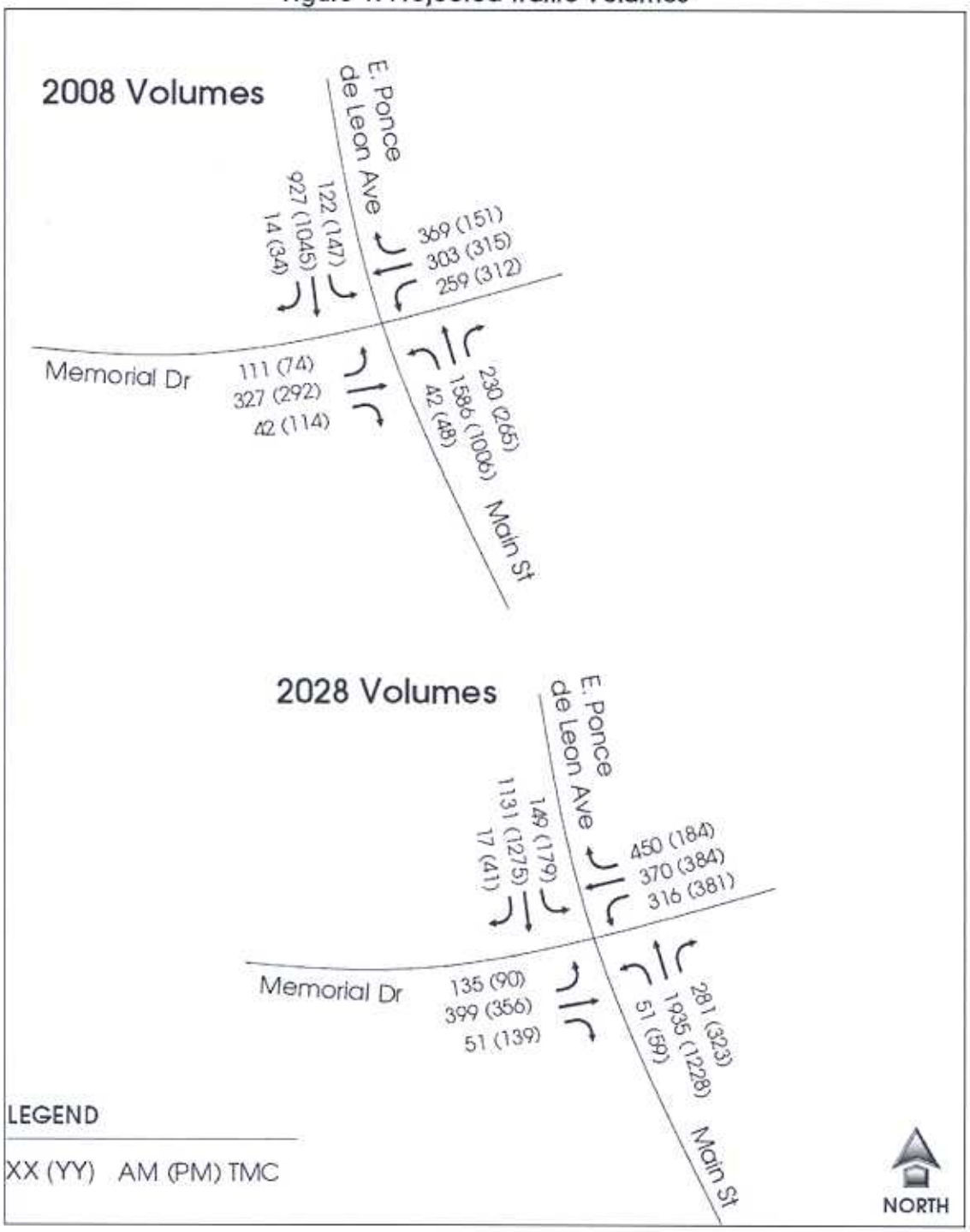
Traffic volumes were acquired from a report entitled *Stone Mountain Liviable Centers Initiative, Stone Mountain Village LCI Plan, Final Draft* completed by Robert and Company in November 2003. Traffic counts were collected for the intersection in September of 2003. These volumes were used to determine the baseline.

Historic traffic counts were researched to determine a growth rate by which to grow the baseline traffic volumes. The historic counts in the area of the intersection fluctuated greatly from 1999 to 2004.

A growth rate of 3% was used to grow the traffic to the build year of 2008. A growth rate of 1% was used to develop the design year (2028) traffic volumes. These growth rates were used based on knowledge of the area and engineering judgement. The build and design year AM and PM peak hour traffic counts are shown in Figure 1.

STREET SMARTS
3090 Premiere Parkway • Suite 200 • Duluth, GA 30097 • (770) 813-0882 • FAX (770) 813-0688
streetsmarts@streetsmarts.us • www.streetsmarts.us

Figure 1. Projected Traffic Volumes



Existing Configurations

The existing Five Points intersection configuration was analyzed with existing traffic, build year traffic and design year traffic. Table 1 shows the Highway Capacity Manual (HCM) Level of Service, HCM Delay per Vehicle, and HCM Volume to Capacity (v/c) Ratio for the intersection in each analysis period.

The Level of Service is a "grade" based on the Average Control Delay at the intersection. There are 6 grades for intersection levels of service. A through D are generally considered adequate. E is generally an intersection that is operating at its capacity and F is a considered inadequate operations.

The v/c ratio is a measure of the existing volume using the intersection to the available capacity based on the Highway Capacity Manual. A v/c ratio of less than 1 means that the intersection has excess capacity. A v/c ratio of 1 means that the intersection is at capacity and a v/c ratio of more than 1 means that there is more volume at the intersection than available capacity.

The results are shown in Table 1.

Table 1. Existing Intersection Configuration Analysis

Year	AM Peak Hour			PM Peak Hour		
	LOS	Delay	v/c Ratio	LOS	Delay	v/c Ratio
2005	F	748.9	2.84	F	522.8	2.27
2008	F	798.7	2.83	F	604.3	2.47
2028	F	1244.0	3.74	F	1087.2	3.39

As can be seen from Table 1, the Five Points intersection is currently operating at inadequate levels of service with excessive delays experienced by drivers. In addition, the intersection has more than 2 times the volume of traffic that can effectively be handled by the intersection. This trend is expected to worsen by the build year and the design year with the existing configurations.

Proposed Intersection Improvements

The concept for the improvements is to cul-de-sac Silver Hill Road and provide turn lanes on the remaining approaches. However, this will not bring the intersection to adequate levels of service during the AM and PM peak hours. It will reduce the delay and v/c ratios.

Initially left and right turn lanes were added to all approaches. This is not feasible as there are right-of-way constraints at the intersection. Therefore, left turn lanes were implemented on all approaches with protected + permitted left turn phasing. Table 2 shows the results of the improvements.

Table 2. Improved Intersection Configuration Analysis

Year	AM Peak Hour			PM Peak Hour		
	LOS	Delay	v/c Ratio	LOS	Delay	v/c Ratio
2008	F	281.3	1.79	F	164.1	1.37
2028	F	427.9	2.16	F	288.1	1.68

As can be seen in Table 2, the proposed improvements will help to reduce the delay experienced by drivers as well as lower the v/c ratio. While the intersection still has an overall inadequate level of service, the operations have been greatly improved.

The volume of traffic expected is excessive for a two-lane roadway. However, there are no other feasible improvements to improve the operations.

Roundabout Analysis

In addition Streets Smarts investigated the implementation of a roundabout at the Five Points intersection. The effectiveness and operations analysis of a roundabout is measured differently. The following information is based on the Federal Highway Administration's (FHWA) publication entitled *Roundabouts, An Informational Guide* (Guide).

Based upon the report the maximum daily traffic volumes accommodated by a single-lane roundabout at the Five Points intersection would be 22,000 vehicles per day. The current AADT's on the approaches currently exceed this maximum with a total of 47,805 vehicles per day. Beyond approximately 25,000 vehicles per day a two-lane roundabout should be considered.

In addition the capacities for each approach were investigated. Table 3 shows the capacities for each approach as well as the volumes using the give approach for both 2008 and 2028.

Table 3. Roundabout Configuration Analysis

Year	Approach	AM Peak Hour			PM Peak Hour		
		Volume	Capacity	v/c Ratio	Volume	Capacity	v/c Ratio
2008	NB	1,858	800	2.32	1,319	850	1.55
	SB	1,063	700	1.52	1,226	650	1.89
	EB	480	250	1.92	480	100	4.80
	WB	931	0	Infinity	778	375	2.07
2028	NB	2,267	700	3.24	1,610	750	2.15
	SB	1,297	650	1.99	1,495	800	1.87
	EB	585	40	14.63	585	0	Infinity
	WB	1,136	0	Infinity	949	200	4.75

It is important to note that as the circulating flow within the roundabout reaches 1,600 vehicles per hour that the capacity is greatly reduced. Based on the FHWA Guide, for an urban compact single-lane roundabout the capacity is 0 when the circulatory volume is 1,600 vehicles or greater. The maximum entering flow capacity for any approach is 1,200 vehicles per hour.

As can be seen the v/c ratio for all intersection approaches exceed 1. This is because of the high conflicting volumes within the roundabout which are directly impacted by the high north and south volumes through the intersection. The FHWA Guide states that at v/c ratios over 1, the operational benefits of a roundabout begin to diminish.

Queuing Analysis

In addition Streets Smarts investigated the expected queue lengths for the signalized intersection and the roundabout.

Table 4. Queue Length Comparison

Year	Approach	AM Peak Hour		PM Peak Hour	
		Signalized	Roundabout	Signalized	Roundabout
2008	NB	559	Infinity	563	Infinity
	SB	1,543	Infinity	1,382	Infinity
	EB	1,027	Infinity	526	Infinity
	WB	819	Infinity	730	Infinity
2028	NB	552	Infinity	565	Infinity
	SB	1,379	Infinity	1,275	Infinity
	EB	1,097	Infinity	907	Infinity
	WB	735	Infinity	731	Infinity

As can be seen from Table 4, the queue lengths for the signalized intersection are less than those for the roundabout. The queue length for the roundabout is, in reality, not infinity. However, the queue lengths can not be calculated using the standard methods. The standard methods will only calculate up to the maximum entering and circulating volumes. Since the entering and circulating volumes exceed the maximums that can be accommodated within a single lane roundabout, the queue lengths could not be accurately estimated.

Conclusion

Based upon the results detailed above, the traditional improvements would serve the public better than the roundabout.

ATTACHMENT # 4
CONSTRUCTION COST ESTIMATE

COST ESTIMATE SUMMARY

A. Right-of-Way	$800,000.00
B. Reimbursable Utilities	$0.00
C. Construction	
1. Major Structures	$0.00
2. Grading and Drainage	$93,000.00
3. Base and Paving	$245,400.00
4. Lump Items	$51,000.00
5. Miscellaneous	$302,500.00
6. Special Features	$0.00
Subtotal Construction Cost	$691,900.00
E & C (10%)	$69,190.00
Inflation (1 year @ 5% per year)	$34,195.00
Total Construction Cost	**$795,285.00**
Grand Total Project Cost	**$1,595,285.00**

DETAILED CONCEPT COST ESTIMATE

A. Right-of-Way	
1. Property	$800,000
2. Displacements: Res: 0, Bus: 0, M.H.: 0	$0.00
Subtotal A	$0.00
B. Reimbursable Utilities	
Local government	
Subtotal B	$0.00
C. Construction	
1. Major Structures: None	$0.00
Subtotal C-1	$0.00
2. Grading and Drainage	
a. Earthwork (1000 cy @ $8.00/cy)	$8,000.00
b. Drainage	$55,000.00
c. Clearing & Grubbing (3 acres @ $10,000/acre)	$30,000.00
Subtotal C-2	$93,000.00
3.Base and Paving	
a. Aggregate Base (1,300 tons @ $20.00/ton)	$26,000.00
b. Asphalt Paving	
Surface (900 tons @ $100/ton)	$90,000.00
Milling	$2,500.00
c. 30" Curb and Gutter (3,000 lf @ $25.00/lf)	$75,000.00
d. Sidewalk (1,500 sy @ $30/sy)	$45,000.00
e. Concrete Median (230 sy @ $30/sy)	$6,900.00
Subtotal C-3	$245,400.00
4. Lump Items	
a. Grassing (1 acre @ $1000/acre)	$1,000.00
c. Erosion Control	$25,000.00
d. Traffic Control	$25,000.00
Subtotal C-4	$51,000.00
5. Miscellaneous	
a. Signing & Marking	$2,500.00
b. Signal Upgrades	$300,000.00
Subtotal C-5	$302,500.00
6. Special Features:	$0.00
Subtotal C-6	$0.00

ATTACHMENT # 5
CONCEPT TEAM MEETING MINUTES

CONCEPT TEAM MEETING MINUTES

PROJECT NUMBER CMQ-0006-00(892), P.I. number 0006892, DeKalb County

Memorial Drive at East Ponce de Leon Avenue/Main Street

The concept team meeting was held in the District Seven office at 10:30 AM on June 26, 2006. See the attached sign-in sheet for the names of those present.

Street Smarts is doing the design of this project under contract with the City of Stone Mountain.

After introductions, Andy Anderson made a brief presentation. He described the project and showed two displays, which included each alternate design that was considered. A conventional four-leg intersection was the first alternate, and a modern roundabout was the second alternate. The conventional intersection was selected as the preferred design since it provided a higher level of service. It was noted that the reasons for the poor performance of the roundabout were the unbalanced movements and the high traffic volumes.

The most critical issue is the impact of project construction to adjacent businesses. The most severe impact appears to be a gasoline service island in the northwest quadrant. A bakery/restaurant in the southeast quadrant will also be impacted. The designers will have to minimize impacts to parking for these and other adjacent businesses. Avoidance of a cemetery in the northeast quadrant will also be an issue.

The draft concept report was then reviewed. The following comments were received:

Page 1/Cover Sheet

1. Delete the words "[see page 2 for location sketch]".
2. Change the signature block for "District 7 Engineer" to "District Engineer."
3. "Regional Transportation Program" should be "Regional Transportation Plan."
4. Remove the periods from the end of the "Date:" blocks.

Page 2/Site Location Map

Add a north arrow.

Page 3

1. In "Need and Purpose," add text about reducing emissions and quantify the reduction.
2. Under "Description of the proposed project," change "Second Avenue" to "Third Street."

3. Move the paragraph beginning with "The Five Points intersection..." to the Need and Purpose, and show how much improvement in delays will be attained with the reconstruction. Also show how much reduction in emissions will be obtained.

4. With the paragraph that discusses the Level of Service, include the overall delays. It is important to show a tangible improvement.

Page 4

Describe the type of accidents and relate the accident types to design deficiencies of the existing intersection.

Page 5

1. Remove State Route 10 from the existing design features for Memorial Drive.

2. For proposed typical sections, add "with curb and gutter."

Page 6

1. For proposed typical sections, add "with curb and gutter."

2. Show the estimated number of right of way parcels.

3. Show the estimated number of businesses to be displaced as "0."

4. Verify the minimum allowable radius.

Page 7

1. If a design exception is required, include the text of the request for design exception.

2. Delete "Initial Concept Meeting Date."

Page 8

1. For Public Involvement, add "PIOH."

2. Add "UST Investigation."

3. Several changes in Scheduling were recommended:
   - Time to Complete Environmental - 4 months
   - Preliminary Construction Plans - 3 months
   - Right of Way Plans - 4 months
   - Final Construction Plans - 4 months
   - Time to Purchase Right of way - 12 months

Attachments:

The attachments should not have page numbers. Label each as Attachment #1 and so on.

Typical Sections:

Remove the typical section for Roundabout.

Capacity Analysis:
Remove the peak hour analysis sheets.

Cost Estimate:
1. Update the Cost Estimate using the latest Item Mean Summary.
2. Change the Unit Price for Asphalt to $100/ton.
3. Change the Description for Curb and Gutter to 30".

L&D Notice:
Include an L&D Notice. See attached example.

General Comments:
Remove the PMA and Scoring Sheet.

Street Smarts was requested to send the meeting minutes to GDOT for review before including them in the finished concept report.

JRC
7-19-06

Name	Organization	Telephone	E-mail
Mike Lobdell	GDOT District 7	404-463-4947	mike.lobdell@dot.state.ga.us
Scott Lee	GDOT District 7	404-463-4947	scott.lee@dot.state.ga.us
Zanda Montgomery	GDOT Environ.	404-463-4947	zanda.montgomery@dot.state.ga.us
Gary Swafford	AGL Networks	770-713-6451	N/A
LaCresha Johnson	DeKalb W&S	770-621-7256	ladjohnson@co.dekalb.ga.us
Sharon Witherspoon	GDOT-Utilities	404-463-4953	sharon.witherspoon@dot.state.ga.us
Seth Collins	GA Power	770-716-9500	scollins@southernco.com
Tanisha Georges	GDOT Trainee	N/A	tanisha.georges@dot.state.ga.us
Ted Crabtree	GDOT District 7	404-463-4947	ted.crabtree@dot.state.ga.us
Zach Stire	GDOT District 7	248-310-3861	zachary.stire@dot.state.ga.us
Andy Anderson	Street Smarts	770-813-0882	andya@streetsmarts.us
Larry Overn	Street Smarts	770-813-0882	larryo@streetsmarts.us
Jim Chambers	Street Smarts	770-813-0882	jimc@streetsmarts.us

ATTACHMENT # 7
REQUEST FOR DESIGN EXCEPTION

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CMQ-0006-00(892) DeKalb
P.I. 0006892
Memorial Drive at East Ponce de Leon Avenue/Main Street Intersection

OFFICE District 7
DATE August 10, 2006

FROM Bryant Poole, District Engineer

TO Bryan Summers, Project Review Engineer

SUBJECT Request for Design Exception

Approval of a Design Exception is requested for this project. The project is located in the City of Stone Mountain. The proposed "Five Points" intersection improvements and related signal coordination on Main Street will reduce congestion at the Five Points intersection by improving traffic flow with coordinated signals and with geometric improvements to the Five Points intersection. The intersection improvements will realign Silver Hill Road to Third Street to create a conventional four-legged intersection. Exclusive left-turn lanes will be constructed on the East Ponce de Leon Avenue, Main Street, and Memorial Drive approaches. Additionally, traffic signals at this intersection and the Main Street intersections with West Mountain Street and Mimosa Drive will be coordinated. Improving the flow of traffic through this intersection is expected to contribute measurably to improving the Atlanta region's air quality.

The existing horizontal curve on East Ponce de Leon Avenue at the intersection with Memorial Drive has a 150-foot radius. The reconstructed curve will have approximately the same radius as the existing curve. From the 2004 AASHTO Green Book, the minimum allowable curve radius with 2% superelevation (reverse crown) is 167 feet. With the constraints that are present and the requirement to minimize right of way impacts, it is not feasible to increase the radius enough to meet the 25 mph design (and posted) speed. This will require a design exception.

AADT traffic volumes are as follows:

Traffic Projections (AADT) - Base Year 2008
East Ponce de Leon Avenue: 21,422 vpd
Memorial Drive (east of Main Street): 4,119 vpd
Memorial Drive (west of Main Street): 3,577 vpd
Main Street: 22,702 vpd

Traffic Projections (AADT) - Design Year 2028
East Ponce de Leon Avenue: 25,706 vpd
Memorial Drive (east of Main Street): 4,943 vpd
Memorial Drive (west of Main Street): 4,292 vpd
Main Street: 27,242 vpd

Accident data for recent years indicates that the majority of accidents and injuries occur on East Ponce de Leon Avenue and Main Street at or very close to the intersection. The majority of accidents are rear-end or sideswipes. None of the roadway approaches have turn lanes, except eastbound Memorial Drive, which has a right-turn lane. Intersection sight distance is good, and the intersection receives lighting at night from adjacent commercial developments. The types of accidents occurring at this intersection are typical for intersections where turn lanes are not provided. There is no indication that the horizontal curvature of East Ponce de Leon Avenue is a significant contributing factor to the accident and injury rate. Adding left-turn lanes and widening the approaches to include 12-foot lanes is expected to have a beneficial effect on the accident and injury rate, primarily by removing left-turning vehicles from through and right-turning vehicles' paths.

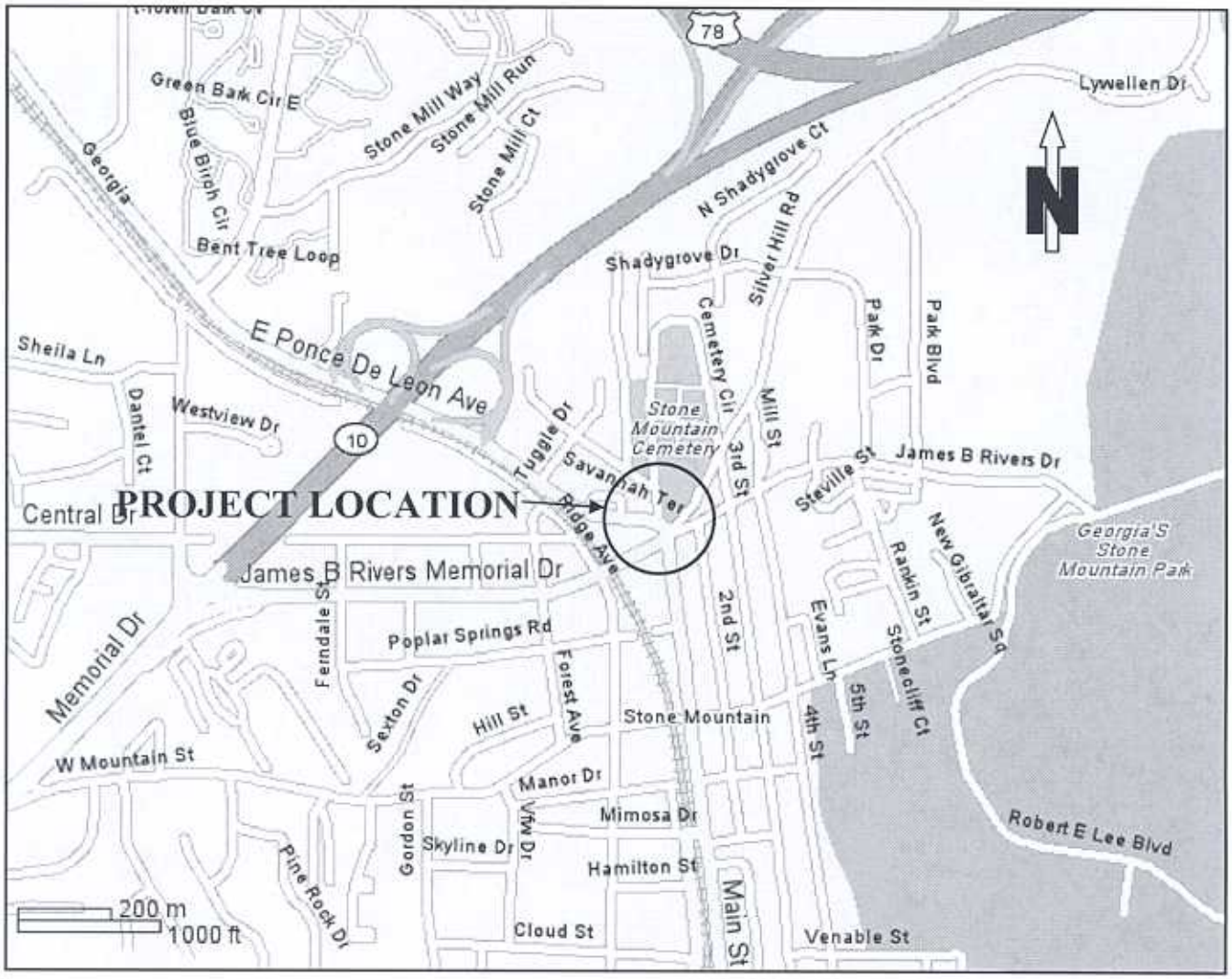
Although the substandard curve radius is only slightly less than the allowable minimum, increasing the radius would cause an inordinate impact to adjacent developed property in the northwest and southwest quadrants. Using a high rate of superelevation is not a viable option, since this would make it more difficult to tie-in driveways and to set profile grades on Memorial Drive.

For the reasons discussed above, we request approval of a design exception for substandard horizontal curve radius.

Approved: _____ _____

Chief Engineer Date

SITE LOCATION MAP



✓ BUCHAN 1
BOWMAN 2 DHL
RICHARDSON 3
VanMETER 4
OTHER
GROUPS
FILE

RECEIVED
SEP 13 2005
URBAN DESIGN

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Georgia Division
61 Forsyth Street, S.W., Suite 17T100
Atlanta, Georgia 30303

September 9, 2005

cc: Larry Dent, David Studstill, Buddy Gratton, Harvey Keepler, Meg Pirkle, Johnny Quarles, Brent Story, Ben Buchan, Paul Liles, Babs Abubakari, Don Brown

ORIGINAL TO GENERAL FILES

FOR ACTION BY: IN REPLY REFER TO: HTM-GA

Brian Summers

Harold E. Linnenkohl

HAROLD E. LINNENKOHL
COMMISSIONER

Mr. Harold Linnenkohl, Commissioner
Georgia Department of Transportation
No. 2 Capitol Square, S. W.
Atlanta, Georgia 30334-1002

Attention: Mr. David Studstill, P.E., Chief Engineer

Subject: Design Exception Requests on Federal Oversight Projects

Dear Mr. Linnenkohl:

After recent discussions with your staff regarding the design exceptions identified during the concept phase of project development, we have determined that all design exception requests will require our review and approval prior to our approval of the project concept. In all other cases where a design exception is identified after our office approves a project concept, we request that any need for a design exception be communicated to our office as early as possible. Our intention is to work with you to resolve any and all related issues as quickly as possible to assure that we are preventing or minimizing any delays to the project.

If you would like to discuss this further, please contact me at 404-562-3630.

Sincerely,

Sharon Shandue.

For: Robert M. Callan, P.E.
Division Administrator