

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 550600-, Liberty County **OFFICE** Preconstruction
STP-2610(4)
Frank Cochran Drive Widening **DATE** January 31, 2007

FROM *Genetha Rice*
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
Angela Alexander (file copy)
Paul Liles
Babs Abubakari
Brent Story
Glenn Durrence
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: P. I. No. 550600-, Liberty County **OFFICE:** Preconstruction
STP-2610(4)
Frank Cochran Drive Widening **DATE:** January 22, 2007

FROM: *Genetha Rice*
Genetha Rice-Singleton, Assistant Director of Preconstruction

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

SUBJECT: PROJECT CONCEPT REPORT

This project is the widening and reconstruction of Frank Cochran Drive from north of SR 119/E.G. Miles Parkway to north of SR 119/Hero Road, for a total of 2.70 miles. At the beginning, the project connects to improvements currently under construction under GDOT project STP-2610(1), Frank Cochran Drive Extension from SR 119 to US 84. Frank Cochran Drive is a two lane urban collector street, which serves primarily to facilitate the movement of local traffic from adjacent residential neighborhoods to SR 119/E.G. Miles Parkway and also provides access to a secondary point of access onto the Fort Stewart Army Base. The current two lane configuration is insufficient to handle the anticipated increase in traffic. Projected volumes are 20,365 VPD by the design year 2028. The proposed capacity improvements will substantially improve the design year level of service (LOS). Frank Cochran Drive will operate at LOS "B" in the design year with the proposed improvements and will operate at LOS "E" in the design year without the improvements.

The proposed construction consists of widening Frank Cochran Drive from its existing two lane configuration to a four lane urban section with 20' raised median from E.G. Miles Parkway to a point to the north at the Frank Cochran Drive/Wilson Avenue intersection on Fort Stewart. The proposed project then changes to a five lane urban section for the short distance to the intersection of Frank Cochran Drive and Hero Drive. Beyond Hero Drive, relocated McNeeley Road consists of a two lane rural section with a left turn lane at Hero Drive. The four lane urban section consists of four, 12' lanes, two in each direction with a 20' raised median. The five lane urban section consists of four, 12' lanes, two in each direction, with a 14' flush median which will be used as a two-way left center turn lane.

The proposed widening is symmetric about the existing centerline from the beginning of the job to Italy Street. From Italy Street, the widening transitions to the east side until the intersection with Wilson Avenue. Beyond Wilson Avenue, the existing roadway will be obliterated and reconstructed on new alignment to the intersection with SR 119/Hero Road. The new intersection will be approximately 100' north of the existing intersection and aligns with relocated McNeeley Road on the east side of Hero Road. From Frank Cochran/Hero Road/relocated McNeeley Road intersection, relocated McNeeley Road will extend on new location 500' to the point where it ties back into existing McNeeley Road. The relocation of the Frank Cochran Drive/Hero Road

I. No. 550600-, Liberty
January 22, 2007

intersection mandates the closure of Bunker road between Wilson Avenue and Hero road. It also required the closing of the existing median opening at existing McNeeley Road and the construction of a new median opening at the new intersection point.

Environmental concerns include requiring a Categorical Exclusion will be prepared; a public hearing open house was held 8-24-06; time saving procedures are not appropriate.

The estimated costs for this project are:

	PROPOSED	APPROVED	FUNDING	PROG DATE
Construction (includes E&C and inflation)	\$7,757,000	\$8.852,000	L200	2012
Right-of-Way & Utilities*	Local	Local	Local	

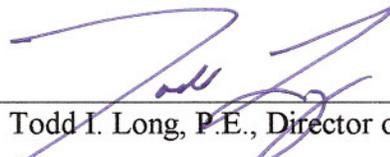
*Hinesville signed PMA on 10-17-01 for PE, right-of-way, and utilities.

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: STP-2610(4) Liberty **OFFICE:** Engineering Services
P.I. No. 550600
Frank Cochran Drive Widening/Reconstruction

DATE: January 17, 2007

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

TO: Genetha Rice Singleton, Assistant Director of Preconstruction

SUBJECT: CONCEPT REPORT

We have reviewed the Concept Report submitted December 20, 2006 and have no comments:

The costs for this project are:

Construction	\$7,051,485
Inflation	\$0.00
E & C	\$705,149
Reimbursable Utilities	\$200,000 (Locals)
Right of Way	\$3,141,552 (Locals)

NOTE: Inflation should not be included in the cost estimate.

REW

c: Brent Story, Attn.: Eugene Hopkins

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Office of Road and Airport Design

Project Concept Report

Project Number: STP-2610(4)

County: Liberty

P. I. Number: 550600

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Frank Cochran Drive
From north at SR119 (E.G. Miles Parkway)
to north of SR119 (Hero Road)



Recommendation for approval:

DATE 12-19-2006

Michael Paul McManis
Project Manager

DATE 1-2-2007

Burt A. [Signature]
State Road & Airport Design Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE 1/17/07

Brian K. Summers REW
Project Review Engineer

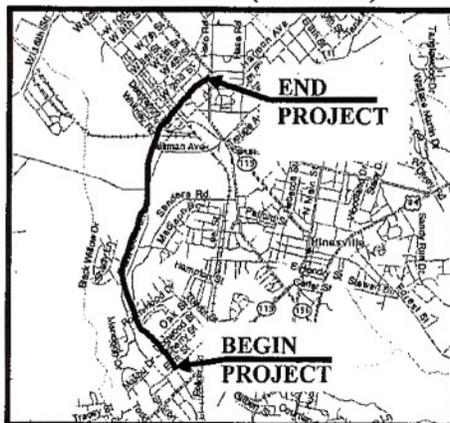
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
Office of Road and Airport Design

Project Concept Report

Project Number: STP-2610(4)
County: Liberty
P. I. Number: 550600

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

Widening and Reconstruction of Frank Cochran Drive
From north at SR119 (E.G. Miles Parkway)
to north of SR119 (Hero Road)



Recommendation for approval:

DATE 12-19-2006

Michael Paul M. Mason
Project Manager

DATE 1-2-2007

Burt A. [Signature]
State Road & Airport Design Engineer

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

DATE 1-12-2007

Angela S. Alexander
State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

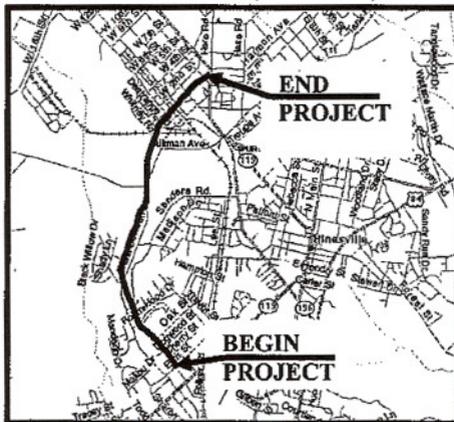
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
Office of Road and Airport Design

Project Concept Report

Project Number: STP-2610(4)
County: Liberty
P. I. Number: 550600

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

Widening and Reconstruction of Frank Cochran Drive
From north at SR119 (E.G. Miles Parkway)
to north of SR119 (Hero Road)



Recommendation for approval:

DATE 12-19-2006

Michael D. M. Mamm
Project Manager

DATE 1-2-2007

Burt A. [Signature]
State Road & Airport Design Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE 1/5/07

Michael [Signature]
State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: P.I. No. 550600

OFFICE: Environment/Location

DATE: January 24, 2007



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

TO: Genetha Rice-Singleton, Assistant Director of Preconstruction

**SUBJECT: PROJECT CONCEPT REPORT
STP-2610(4) / Liberty County
Widening and Reconstruction of Frank Cochran Drive from
north at S.R. 119 (e.g. Miles Parkway) to north of S.R. 119 (Hero Road)**

The above subject concept report has been reviewed. The CSX RR is eligible for the N.R.. There appear to be two to three stream crossings and one potential wetland. This will require a 404 permit. We need to add \$50,000 to ROW estimate for wetland and stream mitigation.

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

HDK/lc

Attachment

cc: Brian Summers
Keith Golden
Brent Story
Angela Alexander
Jamie Simpson
Paul Liles
Glenn Durrence

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
Office of Road and Airport Design

Project Concept Report

Project Number: STP-2610(4)

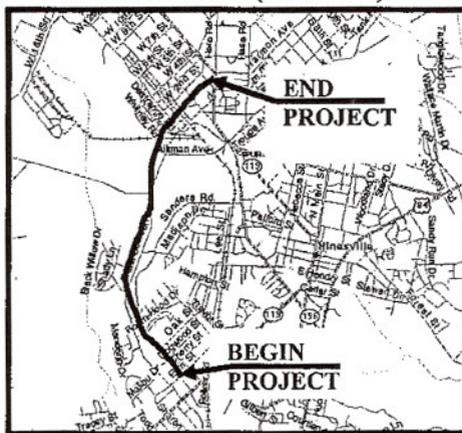
County: Liberty

P. I. Number: 550600

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Frank Cochran Drive
From north at SR119 (E.G. Miles Parkway)
to north of SR119 (Hero Road)



Recommendation for approval:

DATE 12-19-2006

Michael D. McManis
Project Manager

DATE 1-2-2007

Burt A. [Signature]
State Road & Airport Design Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE 1-24-07

[Signature]
State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

SCORING RESULTS AS PER MOG 2440-2

Project Number: STP-2610(4)		County: Liberty		PI No.: 550600	
Report Date: January 2, 2007		Concept By: DOT Office: Road Design			
<input checked="" type="checkbox"/> Concept Stage		Consultant: Hussey, Gay, Bell & DeYoung, Inc.			
Project Type: Choose One From Each Column		<input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor	<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input type="checkbox"/> Bridge Replacement <input type="checkbox"/> Building <input type="checkbox"/> Interchange Reconstruction <input type="checkbox"/> Intersection Improvement <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input checked="" type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> 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**

Office of Road and Airport Design

Project Concept Report

Project Number: STP-2610(4)

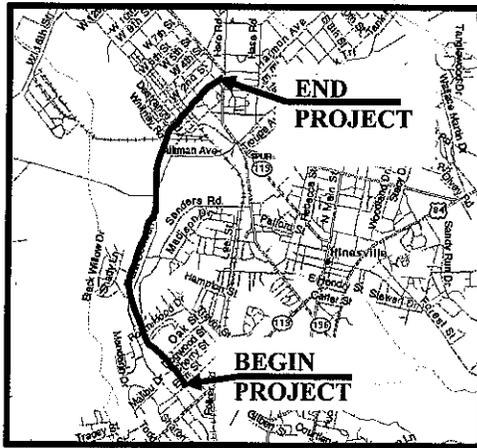
County: Liberty

P. I. Number: 550600

Federal Route Number: N/A

State Route Number: N/A

**Widening and Reconstruction of Frank Cochran Drive
From north at SR119 (E.G. Miles Parkway)
to north of SR119 (Hero Road)**



Recommendation for approval:

DATE 12-19-2006

Michael Paul McMane
Project Manager

DATE 1-2-2007

Burt A. [Signature]
State Road & Airport Design Engineer

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

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

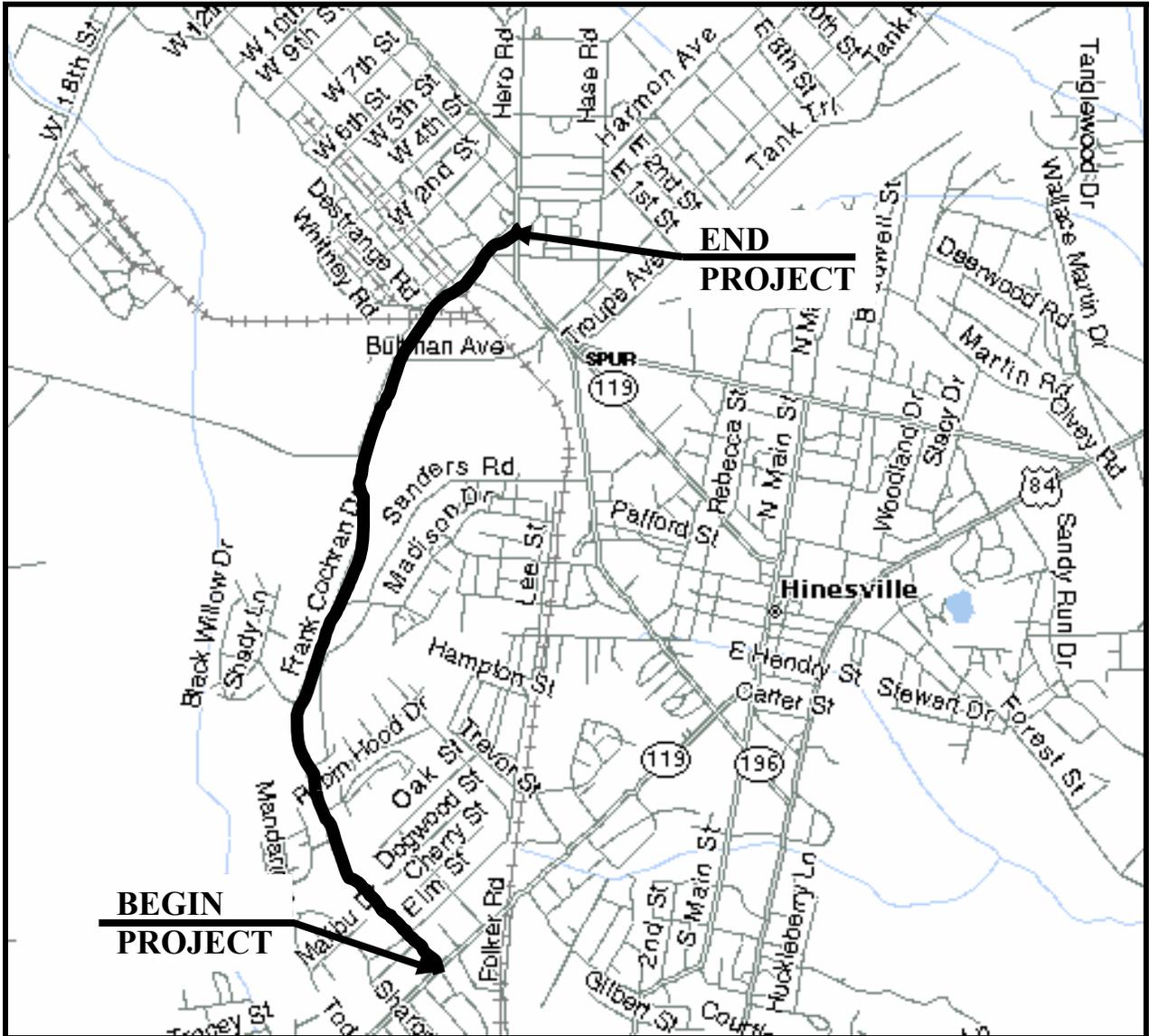
DATE _____

District Engineer

DATE _____

Project Review Engineer

PROJECT LOCATION MAP
NTS



Need and Purpose:

Frank Cochran Drive is an Urban Collector Street , which serves primarily to facilitate the movement of local traffic from adjacent residential neighborhoods to S.R. 119 / E.G. Miles Parkway and also provides access to a secondary point of access onto the Fort Stewart Army Base.

Currently project STP-2610(1) is under construction. STP-2610(1), Frank Cochran Drive Extension from S.R.196 at C.S. 823 to U.S. 84, involves the extension of Frank Cochran Drive from E.G. Miles Parkway to U.S.84. This project along with improvements to this roadway’s entrance onto Fort Stewart is expected to greatly increase the amount of traffic on Frank Cochran Drive. The current two-lane rural configuration is insufficient to handle the anticipated increase in traffic. The purpose of this project is to increase the roadway capacity and to improve connectivity to and from Fort Stewart and within the City of Hinesville..

Level of Service (LOS) is used as a general qualitative measure of how adequate a particular roadway or intersection configuration performs in handling a given traffic load. An in-depth discussion of the concept and its potential impacts on the project is included in the traffic study included in this report. With the proposed improvements, Frank Cochran Drive will operate at a LOS B in the base year 2008 The LOS for the roadway and for the two major project intersections for various conditions is as shown below:

LOS ROADWAY				
ROADWAY	2008 LOS WITH NO IMPROVEMENTS (NO BUILD ALTERNATIVE)	2008 LOS WITH IMPROVEMENS	2028 LOS WITH NO IMPROVEMENTS (NO BUILD ALTERNATIVE)	2028 LOS WITH IMPROVEMENTS
FRANK COCHRAN DRIVE	E	B	E	B
LOS MAJOR INTERSECTIONS				
INTERSECTION	2008 LOS WITH NO IMPROVEMENTS (NO BUILD ALTERNATIVE)	2008 LOS WITH IMPROVEMENTS	2028 LOS WITH NO IMPROVEMENTS (NO BUILD ALTERNATIVE)	2028 LOS WITH IMPROVEMENTS
WILSON AVENUE	E	C	F	C
GULICK AVENUE	E	C	F	D

As noted above, the amount of traffic on this roadway will increase substantially in the design year of 2028. The proposed capacity improvements will substantially improve the design year LOS. Frank Cochran Drive will operate at an LOS B in the design year with the proposed improvements and will operate at a LOS E in the design year without the improvements.

The termini for the project are the intersections of Frank Cochran Drive and E.G. Miles Parkway (SR 196) and the tie in point of relocated McNeeley Road with existing McNeeley Road. The beginning terminus is the logical choice because it is the ending terminus for the Frank Cochran Drive extension project. The ending terminus was chosen because the relocated McNeeley Road is an important part of the Fort Stewart traffic circulation plan and is the point where Frank Cochran Drive traffic will connect to the existing road.

Accident data was not analyzed for this project because safety problems did not form the basis of need. However, the proposed left and right turn lanes and proposed signals at major intersections will provide an enhanced level of safety.

Description of the proposed project:

This proposed roadway project involves widening 2.70 miles of existing Frank Cochran Drive from SR119/E.G. Miles Parkway to SR119 / Hero Road in Hinesville, Georgia. The proposed project begins just north of the intersection of Frank Cochran Drive and E.G. Miles Parkway where the project ties to Georgia Department of Transportation project STP-2610(1). This part of the project consists of widening Frank Cochran Drive from its existing 2-lane configuration to a 4-lane urban section with twenty foot raised median from E.G. Miles Parkway to a point to the north at the Frank Cochran Drive/Wilson Avenue intersection on Fort Stewart.. The proposed project then changes to a five lane urban section for the short distance to the intersection of Frank Cochran Drive and Hero Drive. Beyond Hero Drive, relocated McNeeley Road consists of a two lane rural section with a left turn lane at Hero Road. The four lane urban section consists of four twelve foot lanes, two in each direction with a 20' raised median. The five lane urban section consists of four twelve foot lanes, two in each direction with a fourteen foot flush median which will be used as a two-way left center turn lane.

The proposed widening is symmetric about the existing centerline from the beginning of the job to Italy Street. From Italy Street the widening transitions to the east side until the intersection with Wilson Avenue. Beyond Wilson Avenue, the existing roadway will be obliterated and reconstructed on a new alignment to the intersection with SR119/Hero Road. The new intersection will be approximately 100 feet north of the existing intersection and aligns with relocated McNeeley Road on the east side of Hero Road. From Frank Cochran/Hero Road/relocated McNeeley intersection, relocated McNeeley Road will extend on new location 500' to the point where it ties back into existing McNeeley Road. The relocation of the Frank Cochran Drive/Hero Road intersection mandates the closure of Bunker Road between Wilson Avenue and Hero Road. It also requires the closing of the existing median opening at existing McNeeley Road and the construction of a new median opening at the new intersection point.

Two signals are proposed for this project. The first signal is at the intersection of Frank Cochran Drive and Wilson Avenue and the second is at the intersection of Frank Cochran Drive and Hero Road.

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

PDP Classification: Major X Minor _____

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

Functional Classification: Urban Collector Street

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

Traffic (AADT):
Current Year: (2008) 16,850 Design Year: (2028) 20,365

Existing design features:

- Typical Section: Two twelve-foot lanes, one in each direction with grassed shoulders and roadside drainage ditches.
- Posted speed: 35 mph Maximum degree of curvature: 8°30'00"
- Maximum grade Mainline: 5 % Maximum grade driveway: 5%
- Maximum grade Side Street: 5 %
- Width of right of way: 100 ft.
- Major structures: None
- Major interchanges or intersections along the project: Frank Cochran Drive and Wilson Avenue, Frank Cochran Drive and Bunker Road.
- Existing length of roadway segment and the beginning mile logs for each county segment: 2.70 miles located entirely in Liberty County

Proposed Design Features:

- Proposed typical section: 1.) Four twelve-foot lanes, two in each direction with a twenty-foot raised grassed median, and 16' urban shoulders in Hinesville section will have 10' wide multiuse path in lieu of one sidewalk. 2.) Four twelve-foot lanes, two in each direction with a fourteen foot center dual left lane, and urban shoulders. 3.) Two twelve foot lanes, one in each direction, with a rural section (McNeeley Road tie-in).
- Proposed Design Speed Mainline 45 mph in City of Hinesville
- 35 mph on Fort Stewart.
- Proposed Maximum grade Mainline 5 % Maximum grade allowable 5 %
- Proposed Maximum grade Side Street 5 % Maximum grade allowable 5 %
- Proposed Maximum grade driveway 10 %
- Proposed Maximum degree of curve 13°30' Maximum degree allowable:
- Maximum superelevation 4% 35 mph 15° 30'
45 mph 8° 00'

- Right of way
 - Width 130 ft. (min)
 - Easements: Temporary (X), Permanent (X), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (X), Other ().
 - Number of parcels: 15 Number of displacements:

Business:	<u>0</u>
Residences:	<u>0</u>
Mobile homes:	<u>0</u>
Other:	<u>0</u>
- Railroads: Two crossings at Fort Stewart Railroad, each with multiple tracks. Crossings are currently un gated. Project will include installation of crossing gates, along with cantilevers, bells and whistles.
- Structures: New box culvert to replace Double 60" CMP cross drains. Concrete crossing required at location where tracks cross roadway.
- Major intersections and interchanges: Frank Cochran Drive and Wilson Avenue, Frank Cochran Drive and Gulick Avenue.
- Traffic control during construction: Maintain traffic on Existing Roadway
- 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: Variance for median opening spacing between Wilson Avenue and End of Project.
- Environmental concerns: Probable UST location at the gas station located in the north-west quadrant of the Frank Cochran Drive and Wilson Avenue intersection.
- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (), No (X),
 - Categorical exclusion (X),
 - Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
 - Environmental Impact Statement (EIS) ().
- Utility involvements: Known utilities in the area include City of Hinesville (water and sewer), Georgia Natural Gas (gas main), Georgia Power (power), Coastal Communications (telephone), and Comcast (cable television), Canoochee EMC (Fort Stewart power), Fort Stewart (all other on-post utilities).

Project responsibilities:

- Design – City of Hinesville
- Right of Way Acquisition – City of Hinesville
- Relocation of Utilities – City of Hinesville / Utility Companies / Fort Stewart
- Letting to contract – GDOT
- Supervision of construction - GDOT
- Providing material pits – Contractor
- Providing detours – N/A

Coordination:

- Initial Concept Meeting date and brief summary: Meeting held 12/13/05. Minutes of meeting are attached.
- Concept meeting date and brief summary: Concept meeting held 6-23-06. Minutes of meeting are attached.
- P. A. R. meetings, dates and results: N/A
- FEMA, USCG, and/or TVA: N/A
- Public involvement: Public information open house held on 8-24-06. A total of 21 citizens attended. The meeting two written comments were received, both supporting the project. No areas of particular concern were discerned.
- Local government comments: Liberty County, the City of Hinesville, and Ft. Stewart support the project. City of Hinesville signed LPGA 10/17/01 for PE,ROW, & Utilities
- Other projects in the area: 541940 – Frank Cochran Drive Extension from SR 196 @ CS 823 to US 84
532600 – SR 144 Passing Lanes Through Ft. Stewart / Bryan - Liberty
- Railroads All railroads are property of Ft. Stewart.
- Other coordination to date: _____
- Future Passenger Rail Corridor? _____ Yes No

Scheduling:

- Time to complete the environmental process: 12 Months.
- Time to complete preliminary construction plans: 3 Months.
- Time to complete right of way plans: 2 Months.
- Time to complete the Section 404 Permit: N/A Months.
- Time to complete final construction plans: 4 Months.
- Time to complete to purchase right of way: 12 Months.
- List other major items that will affect the project schedule: None Months.
- **Other alternates considered:** The alternate considered involved replacing the raised median on Fort Stewart from a point 1730 feet north of the guardhouse and replacing it with a four lane section with a flushed median. The alignment was also more to the west, impacting the gas station. This alternate was not chosen due to opposition from Fort Stewart.

Comments: A conceptual layout of the proposed project has been developed and is included as part of this report.

Attachments:

- Minutes of Initial Concept Meeting
- Minutes of Second Concept Meeting
- Preliminary Cost Estimate
- Right-of-Way Cost Estimate
- Typical section
- Capacity Analysis
- Concept Layout

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

Project Number: STP-2610(4)

P.I. Number: 550600

County: Liberty

Subject: Minutes of Concept Meeting

On December 13, 2005 a Concept Meeting was held for the above referenced project. The meeting was held in the conference room of the GDOT District 5 office in Jesup. Those in attendance were as listed below:

Teresa Scott	GDOT
James Thomas, Jr.	Fort Stewart Department of Public Works/ Liberty County Planning Commission
Gary Gilliard	OMI-HCM
Harold Nolan	OMI-Public Works
Charles L. Butler, Sr.	City of Hinesville
Paul Simonton	P.C. Simonton Associates/City of Hinesville
Rob Mikell	Comcast
Cynthia Phillips	GDOT District 5
Stephen Thomas	GDOT District 5
Jerome Sheffield	GDOT District 5
Bill Nicholson	Hussey, Gay, Bell & DeYoung

The meeting was opened by Teresa Scott, who gave a brief introduction and requested that attendees introduce themselves. Following this Bill Nicholson provided an in-depth project description, summarized as follows:

STP-2610(4) involves the widening and reconstruction of approximately 2.7 miles of existing Frank Cochran Drive in Liberty County. The project begins just to the north of the intersection of Frank Cochran Drive with SR 196 (E.G. Miles Parkway). At this point the project connects to improvements currently under construction under GDOT project STP-2610(1). The project then proceeds in a generally northerly direction to the intersection of Frank Cochran Drive with Wilson Avenue. From there, the route goes on new location to a proposed new intersection with SR 119 (Gulick Avenue).

The project consists of widening and reconstructing the existing two lane rural roadway to a four lane urban section to a point approximately 1,730' east of the existing guardhouse on Fort Stewart. This section would consist of two 12' lanes in each direction separated by a 20' wide raised median. The roadway would have curb and

gutter with 12' shoulders on each side featuring a 5' sidewalk. From the point 1730' east of the guardhouse the proposed project then switches to a four lane urban section with a 14' wide flush median. This section would also have curb and gutter and sidewalk.

The proposed widening is symmetric about the existing centerline from the beginning of the job to Italy Street on Fort Stewart. From Italy Street the widening transitions to the east side until just before the U.S. Army Museum, where the widening transitions to the west side of the existing roadway to Wilson Avenue. The remainder of the route is new construction on new location to the intersection with Gulick Avenue.

The project would accommodate the traffic pattern at the Fort Stewart guardhouse. The project requires the closure of existing Bunker Road. The project involves two traffic signal installations and two crossings of the Fort Stewart Railroad, each with 2 tracks.

The listed design speed is 35 mph. The existing right-of-way outside the post is 100', with a proposed right-of-way of 130'. Inside Fort Stewart all work, existing and proposed, is on permanent easement and remains under the control of Fort Stewart.

The description also included discussion of construction cost, displacements, constructability, and environmental concerns as found in the draft Concept Report.

Following the description and the presentation of the project conceptual layout, the floor was opened to general discussion and comment. The following issues were raised and discussed:

Rob Mikell noted that the telephone provider for the area is Coastal Communications, not Bell South as shown in the Concept Report. It was noted to change this in the document.

Jim Thomas verified that the existing roadway on Fort Stewart is on permanent easement and that Fort Stewart would provide the required additional easement needed to construct the improvements. Documents required to accomplish this would be provided by GDOT or the City of Hinesville.

Jim Thomas wanted input regarding the scheduling of the construction of the project. He had particular concerns about the reworking of the railroad crossings and their impacts on future equipment movement associated with troop deployments. Teresa Scott noted that the project was currently scheduled for construction in fiscal year 2008. It was noted that this was a tight schedule given the current status, although it could be met. Bill Nicholson stated that the process involved obtaining final approval of the concept, preparation and approval of the environmental document, preparation of preliminary plans, preparation of right-of-way plans and acquisition of right-of-way, and completion of final plans and documents. Teresa Scott added that it might be necessary to hold a second concept meeting, as this meeting was the initial concept meeting.

It was noted that Indigo Street shown on the concept layout was actually Inwood Street. It was further noted that this would be corrected on the concept layout.

Stephen Thomas questioned the 130' of right-of-way proposed for the project. He wanted to be sure that there was adequate room in the right-of-way for relocation of utilities. Bill Nicholson stated that the right-of-way shown on the concept layout was an estimate and that the actual required right-of-way would be determined after completion of preliminary plans. It was noted that the final plans would include sufficient right-of-way for utility relocation.

Jim Thomas asked if it were possible to install another median opening between Inwood (Indigo) Street and the Fort Stewart guardhouse for turnaround purposes. Bill Nicholson stated that he would look at this. If the spacing criteria were met, an additional median opening would be added.

Jim Thomas expressed concern about access to existing streets and drives during construction. Bill Nicholson stated that access to all streets and drives would be maintained during the construction period. He noted that he expected the final pavement grades to be close to the existing and that this would make it easier for the construction contractor to maintain access.

Cynthia Phillips expressed concern over the design speed of 35 miles per hour. It was noted that the extension project currently under construction will have a posted speed of 45. Cynthia stated that even if the project is to be posted as 35 it is good to have a higher design speed. Bill Nicholson stated that he would look at this and incorporate it into the concept report. It was also stated during this discussion the maximum superelevation would be 4% due to the urban section and that Fort Stewart would retain the right to set lower speeds on post due to the presence of personnel and equipment crossings.

Jim Thomas noted that he expected that the increase in traffic on the roadway over the design life might be higher than shown in the report due to the stationing of additional personnel at Fort Stewart. Bill Nicholson stated that HGBD would look further into this and adjust the traffic numbers as necessary.

Jim Thomas asked who would be responsible for coordination with CSX regarding the railroad crossings. Bill Nicholson stated that HGBD would do this during the design phase, with the contractor taking over this responsibility during the construction phase.

Paul Simonton asked about when all conflicts with existing utility facilities would be known. He further stated that most City of Hinesville facilities are in the back of the existing right-of-way and that the City has a sanitary sewer pump station near Mallard Way which appears to be impacted. Bill Nicholson stated that utility conflicts would be evident when the preliminary plans were completed, which needs to occur during the summer of 2006 if the project schedule is to be met.

Stephen Thomas and Paul Simonton both stated that no utility lines should be allowed to remain under the pavement.

Paul Simonton asked about when the plans would be sent to the utility companies for mark-up of existing facilities. Bill Nicholson stated that this would be done by District Utilities as soon as the plans were complete enough to show the planimetric features.

Cynthia Phillips asked about access to Wilson Street east of the Frank Cochran intersection, where Wilson is shown to be one way. Jim Thomas stated that access in the area was not needed. He further noted that Fort Stewart has plans for new facilities in this area which would involve a rerouting of the terminal curve and shift in the final tie-in point. Bill Nicholson agreed to further discuss these issues with Fort Stewart personnel and to revise the concept accordingly.

It was noted that Fort Stewart should be added to the utility owners list for on-post utilities.

The meeting was adjourned at 11:15 A.M.

Concept Team Meeting Minutes
For STP-2610(4) Liberty County
PI Number: 550600

Friday June 23rd 2006 10:00 a.m. District 5, Jesup Georgia

Attendees:

Brad McManus	GDOT, Project Manager
Tony Collins	GDOT, District Preconstruction Engineer
Brandon Wesentt	LCPC
Sam D. Alexander Jr.	Canoochee EMC, Post Supervisor
Robert Norby	OMI, City of Hinesville
Sonny Timmerman	LCPC, Director
Paul Simonton	P.C. Simonton, City of Hinesville, Engineer
Cynthia Phillips	GDOT, District Access Management
Sally Dowlen	LCPC
Vic Maulden	Department of Public Works (Ft Stewart), Chief Engineer
David Clark	Coastal Communications, Engineering
Stephen Thomas	GDOT, Assistant District Utilities Engineer
Jerome Sheffield	GDOT, District Construction
Billy Smith	Hussey Gay Bell DeYoung
Billy Edwards	City of Hinesville, City Manager
Bill Nicholson	Hussey Gay Bell DeYoung, Project Manager

Tony Collins called the meeting to order and handed it over to Brad McManus. Brad introduced himself and spoke a little about the reason for the meeting then had everyone introduce themselves. After this the meeting was turned over to Bill Nicholson.

Bill Nicholson started by giving everyone a handout and then gave an overview of the project.

Bill Nicholson stated that the City of Hinesville wanted a 10' multiuse path on the left side of the road and a 6' sidewalk on the right side. Brad McManus said that he would check on the requirements and policies of such a path.

It was mentioned that a new cost estimate was needed.

Brad McManus was asked to check on the schedule of a public information open house and how soon we could schedule this. Brad did say that there were some time constraints based on the news paper add and the signs that need to be place along the corridor to notify the public. Below is an excerpt from GDOT's Plan Development Process document.

- **Public Open House Notices**

- Informal meetings

- It is generally the responsibility of the requesting party to invite and notify interested parties of the date, time, and place of this type of meeting.

- Public Information Open Houses

- The District Planning and Programming Engineer and the Office of Environment/Location will determine the appropriate date for the Public Information Open House.

The Office of Environment/Location will prepare the public information open house notice and it will be the responsibility of the appropriate District Office to have the public information open house notice published. Where a portion of a project is in more than one District, the District with the greatest length of project will be responsible for the publishing duties.

The District Office will coordinate with the Office of Environment/Location, the Project Manager, and the Office of Planning concerning the transmittal of letters of notification of the Public Information Open House to GDOT Board members, elected officials whose jurisdictions are partially or totally in the area of the project, utility and railroad owners, Metropolitan Planning Organizations (MPO), Regional Development Centers (RDC), and individuals, neighborhoods, and groups that have expressed an interest in the project.

The open house will be advertised in a local newspaper that has general circulation in the project area and the use of other means of notification are encouraged to increase public participation and public input. The newspaper notice will be published two times and at least two (2) weeks prior to the time of the open house. A second publication will be made closer to the open house date.

It is desirable to have signs announcing the Public Information Open House in the project area. If provided, the signs will include the project identification, date, time, and place of open house and shall be erected at least two (2) weeks prior to the meeting. It is recommended for the District to request open house signs 60 calendar days in advance due to fabrication times.

Billy Edwards asked about the schedule. Brad McManus said that the R/W plans need to be approved by January 2007 and that the let date is scheduled for June 2008.

Vic Maulden and Sam said that Canoochee EMC should be added to the utility companies. They operate within Ft. Stewart.

Vic Maulden handed out a list of comments that he had prepared. These comments are attached. One of the comments that Vic made was to move the alignment off of the shoppette towards the museum. Later conversation indicated that the museum is moving in the future. Vic also stated and Bill Nicholson, and Billy Edwards agreed that they would like to see the 5 lane section replaced with a median. Vic stated that the intersection of Wilson and Hero Road will need to be reworked. Also a left turn lane from Frank Cochran onto McFarland Ave should be considered. There needs to be some form of provisions for security issues since the base may have different levels of security during different times.

Vic mentioned that we needed 2 4" PVC at the railroad crossings.

Bill Nicholson mentioned that the environmental document was going to be a C.E.

Tony Collins asked about the 5 lane section and said that a median is preferred. Bill Nicholson said that if we shift off of the shoppette then the museum will have to be taken. Billy Edwards stated that the museum is in the process of moving.

Brad McManus asked about the congestion at the gate and could it be a problem for Inwood and Grove Point Roads. Bill Nicholson said that it should not be a problem.

Sonny Timmerman said that the traffic for Grove Point Road has potential for growth.

Brad asked about the survey, Bill Nicholson said that the survey has been done.

Billy Edwards asked about the plans development process, Bill Nicholson and Brad McManus gave an overview of the concept, preliminary, final plans phases of development.

David Clark asked how soon the utility process could start. There should be a first submission as soon as centerline, edge of pavement, profile, and cross section sheets have been created.

The environmental document should be sent to Vic before it is approved.

Cynthia Phillips stated that the project should be designed with 45 mph and could be signed with 35mph. Bill said that it will be designed for 45 mph and that the handout contained an error. Cynthia also said that we need to have 45 mph clearzone and Bill said that 16' was the clearzone needed.

Tony asked if any new signals are proposed for this project. Bill Nicholson said yes, the Hero Road intersection is proposed to be signalized.

Jerome Sheffield asked if the railroad has bells, gates, and whistles. Tony said that they need them, and Vic Maulden agreed.

Vic stated that we need two lanes leaving Ft. Stewart and that there was a canal crossing on the project which may need consideration

David Clark commented on the transmission lines with Vic Maulden.

Jerome Sheffield spoke after the meeting concerning the need for something to cover the time delays which will be likely from working on a military base. He said that once the contractor was on base he was under the control of Ft. Stewart. We need protection against a delay claim. Jerome also said that we need to coordinate with Ft. Stewart about closing one or both of the railroad crossings while under construction.

Another meeting with Vic, Jerome, Tony Collins, and Brad McManus after the Team Meeting concerned the railroad crossing with STP-2610(1). This meeting highlighted the fact that the crossing should be included in the contract for STP-2610(4) the work should be done by a contractor who is qualified to work on US Army railroad crossings.

Attachments:

Fort Stewart Comments via Vic Maulden:

1. No "suicide lane" on Ft. Stewart. Needs to be a raised median with turnouts at intersections.
2. Proposed widening comes very close to Bldg 1101. Need to look at shifting to the east.
3. Existing conditions depicted at the intersection of Frank Cochran/Wilson Avenue and Frank Cochran/Hero Rd. are inaccurate. Need to reflect the changes already made to those intersections.

On Sheet 4 of 5, it appears that the road widening will bring Frank Cochran 35' to 40' from the Environmental Building, and 35' from the Mr. Biering's Building. Since the plan is to tear down 1101, and the other WWII ONE DAY, the road should be shifted to the west to meet the force protection setbacks for the semi permanent Environmental building. The entrance to Building 1101 could then be changed and a fence put up to block view from the road until such time as it is torn down.

Do we really need sidewalks on both sides of the street?

I am not in favor of the 'shared' turning lane, especially at the intersection of Bultman and Frank Cochran.

On sheet 5 of 5, to the west of Frank Cochran and north of Wilson, the parking lot depicted is not correct.

On Whitney Street, will this continue to be 'no right turn' or are we going to straighten this out?

I can't tell how close the new Frank Cochran (to replace McNeely) comes to the DOIM building, bldg 3, but if it comes too close, suggest realigning a little to the north to avoid.

Mrs. Anne de la Sierra
 Chief, Master Planning Division
 Building 1113, Frank Cochran Drive
 Fort Stewart, Georgia 31314
 (912) 767 - 1074

**Environmental Division Comments
 Frank Cochran Expansion**

Program	Status	Comments
Fish and Wildlife	Approved w/ Comments	There are no TES concerns with this project.
Forestry	Approved w/ Comments	Forestry would need the footprint clearly marked on the site. Any trees not to be harvested must be clearly marked. Forestry would need 30 to 45 days from the NOI date to remove the timber if there is enough merchantable timber to sell. Forestry will not be responsible for unmerchantable timber, logging debris, stumps, etc
Wetlands / Fill Dirt	Approved	
E + S/Water/Restoration	Approved w/ Comments	<p>Wellhead Protection:</p> <p>Monitoring wells are located near the intersection of Wilson and Frank Cochran and they will need to be replaced if damaged (they are needed to continue monitoring remedial action for the USTs at Victory Shopette).</p> <p>Stormwater Pollution Prevention Plan:</p> <p>Necessary precautions in the E&SCP will need to be taken to ensure that there are no impacts to the affected stream or stormwater collection system during the construction phase and/or Post Construction. There should be considerations of Post Construction design to control stormwater runoff from this site to ensure that there are no impacts to the stream that the stormwater system discharges to.</p> <p>Project includes modification to stormwater collection system at this particular site. The open drainage system is going to be filled in by paving which will cause concentrated sheet flows to the existing stormwater system due to the impervious surface where natural soil, drainage ditch and grass was previously. Calculations will be needed to ensure that the concentrated runoff flows from rain events will not impact the existing stream or systems down</p> <p>Site is greater than 1 acre, but less than 5 acres:</p>

		<p>Regulatory Requirement: A Land Disturbing Activity Permit is required to be obtained from local permitting authority (GA EPD) to be submitted with a site specific Erosion and Sedimentation Control Plan (as recommended in the Manual for Erosion & Sedimentation Control for the State of Georgia from Georgia Soil & Water Conservation Commission, also see Regulatory Requirement of Georgia's in-Stream water quality standards as provided by the Rules and Regulations for Water Quality Control Chapter 391-3-6-.03 and E&S 391-3-7), and including a Comprehensive Monitoring Plan for Construction Activities, Notice Of Intent (NOI) and fees in the amount of \$80.00/disturbed acre is required. A cashiers check to cover fees made payable to Georgia Environmental Protection Division must be submitted to the address noted on the GA EPD Fee Form and the Erosion & Sedimentation Control Plan (E&SCP), the initialed and signed NOI and copy of Fee Form and check must be submitted to Environmental Division to obtain DPW signature and then will be forwarded together to the Georgia Environmental Protection Division a minimum of 14 days prior to any ground disturbance by contractor for compliance records. If the project is a common development project of 50 acres or more it is also required that Comprehensive Monitoring Plan is submitted with NRCS form, E&SCP, NOI and fees.</p> <p>Streams in all watersheds within FSGA / HAAF require a minimum 25 foot undisturbed buffer on each side of the stream as measured from the top of the bank; therefore, ensure the footprint for the proposed project is 25 feet from the stream. However, if any construction or any other land disturbing activity will disturb the 25 foot vegetative buffer along a stream bank (“waters of the state”), a Steam Buffer Variance application request to GA EPD in accordance with the Erosion & Sedimentation Control Act of 1975- as amended O.C.G.A. 12-7-6 (b) (15) is required. This process can take up to 90 days and does not ensure that a variance will be granted by GA EPD.</p> <p>All broken/relocated waterlines must be disinfected in accordance with GA EPD Rules and Regulations.</p> <p>Disclaimer: Although the proposed location is in an area not known to have soil and/ or groundwater contamination, this does not mean that it does not exist at the site. There are no guarantees that this site is clean. Therefore, for worker safety and to minimize the potential for project shut down should contamination be encountered, it is advisable that sampling be performed of the site for VOCs and SVOCs (as a minimum) prior to finalizing the construction location and/design.</p>
Cultural Resources	Approved w/ Comments	Location has been surveyed for cultural resources and no protected sites w/in APE. No historic buildings affected. The closest area of concern would be Zoucks Cemetery located approximately 100m west of the APE. Any ground disturbing activities w/in 200' must be coordinated with CRM.

Estimate Report for file "STP-2610(4)"

Section Grading and Drainage					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-6222	50000	LF	20.00	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	1000000.00
550-1180	7700	LF	36.00	STORM DRAIN PIPE, 18 IN, H 1-10	277200.00
550-1240	3600	LF	46.00	STORM DRAIN PIPE, 24 IN, H 1-10	165600.00
550-1300	3000	LF	58.00	STORM DRAIN PIPE, 30 IN, H 1-10	174000.00
550-1360	2500	LF	85.00	STORM DRAIN PIPE, 36 IN, H 1-10	212500.00
550-1480	1100	LF	115.00	STORM DRAIN PIPE, 48 IN, H 1-10	126500.00
668-1100	180	EA	1900.00	CATCH BASIN, GP 1	342000.00
Section Sub Total:					\$2,297,800.00

Section Base and Paving					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
310-5100	60000	SY	14.00	GR AGGR BASE CRS, 10 INCH, INCL MATL	840000.00
402-1812	2200	TN	58.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	127600.00
402-3121	13200	TN	58.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	765600.00
402-3130	7500	TN	58.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM	435000.00
402-3190	9900	TN	58.00	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	574200.00
439-0052	700	SY	100.00	PLAIN PC CONC PVMT, CL HES CONC, 10 INCH THK	70000.00
441-0748	1000	SY	42.00	CONCRETE MEDIAN, 6 IN	42000.00
Section Sub Total:					\$2,854,400.00

Section Lump Items					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	250000.00	TRAFFIC CONTROL - STP-2610(4)	250000.00
210-0100	1	LS	375000.00	GRADING COMPLETE - STP-2610(4)	375000.00
Section Sub Total:					\$625,000.00

Section Miscellaneous					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
441-0018	800	SY	45.00	DRIVEWAY CONCRETE, 8 IN TK	36000.00
441-0104	15000	SY	35.00	CONC SIDEWALK, 4 IN	525000.00
636-1020	800	SF	16.00	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	12800.00
636-1031	500	SF	18.00	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	9000.00
636-2020	500	LF	5.00	GALV STEEL POSTS, TP 7	2500.00
636-2030	1200	LF	6.00	GALV STEEL POSTS, TP 8	7200.00
639-3004	8	EA	13000.00	STEEL STRAIN POLE, TP IV	104000.00
641-1200	1000	LF	17.50	GUARDRAIL, TP W	17500.00
641-5001	4	EA	600.00	GUARDRAIL ANCHORAGE, TP 1	2400.00
641-5012	4	EA	1750.00	GUARDRAIL ANCHORAGE, TP 12	7000.00
647-1000	1	LS	65000.00	TRAFFIC SIGNAL INSTALLATION NO 1, WILSON AVENUE	65000.00
647-1000	1	LS	65000.00	TRAFFIC SIGNAL INSTALLATION NO 2, GULICK AVENUE	65000.00
653-1501	28000	LF	0.35	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	9800.00
653-1502	26000	LF	0.35	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	9100.00
653-1704	300	LF	4.50	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	1350.00
653-3501	33000	GLF	0.25	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	8250.00
653-6004	5000	SY	3.25	THERMOPLASTIC TRAF STRIPING, WHITE	16250.00
653-6006	1000	SY	3.50	THERMOPLASTIC TRAF STRIPING, YELLOW	3500.00
Section Sub Total:					\$901,650.00

Section Temporary Erosion Control					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	16	AC	600.00	TEMPORARY GRASSING	9600.00

163-0240	50	TN	250.00	MULCH	12500.00
163-0520	300	LF	14.50	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	4350.00
163-0530	400	LF	3.50	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	1400.00
163-0550	180	EA	275.00	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	49500.00
165-0010	12000	LF	1.30	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	15600.00
165-0030	1500	LF	1.25	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	1875.00
165-0070	200	LF	1.80	MAINTENANCE OF BALED STRAW EROSION CHECK	360.00
165-0105	180	EA	100.00	MAINTENANCE OF INLET SEDIMENT TRAP	18000.00
171-0010	24000	LF	2.25	TEMPORARY SILT FENCE, TYPE A	54000.00
171-0030	3000	LF	3.25	TEMPORARY SILT FENCE, TYPE C	9750.00
Section Sub Total:					\$176,935.00

Section Major Structures					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
500-3101	220	CY	550.00	CLASS A CONCRETE	121000.00
511-1000	22000	LB	1.75	BAR REINF STEEL	38500.00
Section Sub Total:					\$159,500.00

Section Permanent Erosion Control					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
603-2180	100	SY	45.00	STN DUMPED RIP RAP, TP 3, 12 IN	4500.00
603-7000	100	SY	5.00	PLASTIC FILTER FABRIC	500.00
700-6910	16	AC	900.00	PERMANENT GRASSING	14400.00
700-7000	45	TN	65.00	AGRICULTURAL LIME	2925.00
700-8000	25	TN	300.00	FERTILIZER MIXED GRADE	7500.00
700-8100	2000	LB	2.00	FERTILIZER NITROGEN CONTENT	4000.00
710-9000	500	SY	4.75	PERMANENT SOIL REINFORCING MAT	2375.00
Section Sub Total:					\$36,200.00

Total Estimated Cost: \$7,051,485.00

Subtotal Construction Cost	\$7,051,485.00
E&C Rate 10.0 %	\$705,148.50
Inflation Rate 5.0 % @ 3.0 Years	\$1,222,639.36
<hr/>	
Total Construction Cost	\$8,979,272.86
Right Of Way	\$3,141,552.00
ReImb. Utilities	\$200,000.00
<hr/>	
Grand Total Project Cost	\$12,320,824.86

CONCEPT REPORT RIGHT OF WAY COST ESTIMATE

Date: October 7, 2003
Project: STP-2610 (4) **P.I. Number:** 550600
Existing/Required R/W: ± 100' / ± 130' **No. Parcels:** 15
Project Termini: Pacific Place to Fort Stewart Base Entrance
Project Description: Widening and enhancement of Frank Cochran Drive north of E.G. Miles Parkway. Road goes from two lanes to four lanes with additional dedicated turn lanes at intersections and a divided median.

Land:

(Commercial): 99,750 SF @ \$5.00/SF =	\$498,750
(Residential Lots): 13,050 SF @ \$1.00/SF =	\$ 13,050
(Low Residential Acreage): 4,500 SF @ \$0.25/SF =	\$ 1,125
(High Residential/MF Acreage): 35,250 SF @ \$1.00/SF =	<u>\$ 35,250</u>
TOTAL:	\$548,175

Improvements:

Buildings:	\$ 0
Minor site improvements (paving, signs, etc.):	<u>\$76,650</u>
TOTAL:	\$ 76,650

Relocation:

No definitive relocation situations created by the project.

Damages:

Proximity-7 Parcels	\$ 80,000
Consequential-1 Parcel	\$200,000
Cost to Cure	<u>\$ N/A</u>

TOTAL:	<u>\$280,000</u>
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Net Cost:	\$ 904,825
Plus Scheduling Contingency (55%):	\$ 497,654
Plus Admin./Court Cost (60% of 2 lines above):	\$ 841,487
Plus Inflation Factor (40% of 3 lines above):	<u>\$ 897,586</u>
	\$3,141,552

TOTAL COST: \$3,150,000 (R)

Notes: There are no displacees on this project based on the plans furnished to the appraiser. Proximity damages were estimated based on the price range of the affected residences confirmed by the appraiser (\$86,000-\$97,000). Note that 701 Robin Hood Drive, one of the affected residences, was included in the file data collected on recent home sales within these neighborhoods.

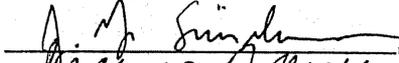
Most of the commercial properties in the area demonstrated insufficient parking during peak morning, noon and afternoon hours. This was especially true of "The Village" daycare. From two to seven cars were routinely parked on the adjacent commercial lot due to overflow peak parking needs. The daycare will decline from 25 to 15 parking spaces. Parking requirements are based on staffing levels and are thus directly tied to the number of children that can be handled by the center. The 40% reduction in available parking may very well significantly reduce the permitted number of children based on Georgia DHR requirements. The appraiser could not assume that the adjacent lot can be utilized for a cure since it is obviously laid out for future separate commercial use. No cost to cure effort appears feasible for the actual daycare lot. All of these aspects of the acquisition and the relatively new and high quality nature of the structure led the appraiser to assign a high "worst-case scenario" damage estimate to the daycare.

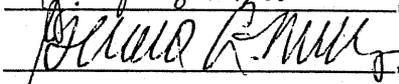
55% adjustment for scheduling contingencies between date of estimate and project implementation. There are additional adjustments for unforeseen management and condemnation costs as well as for inflation.

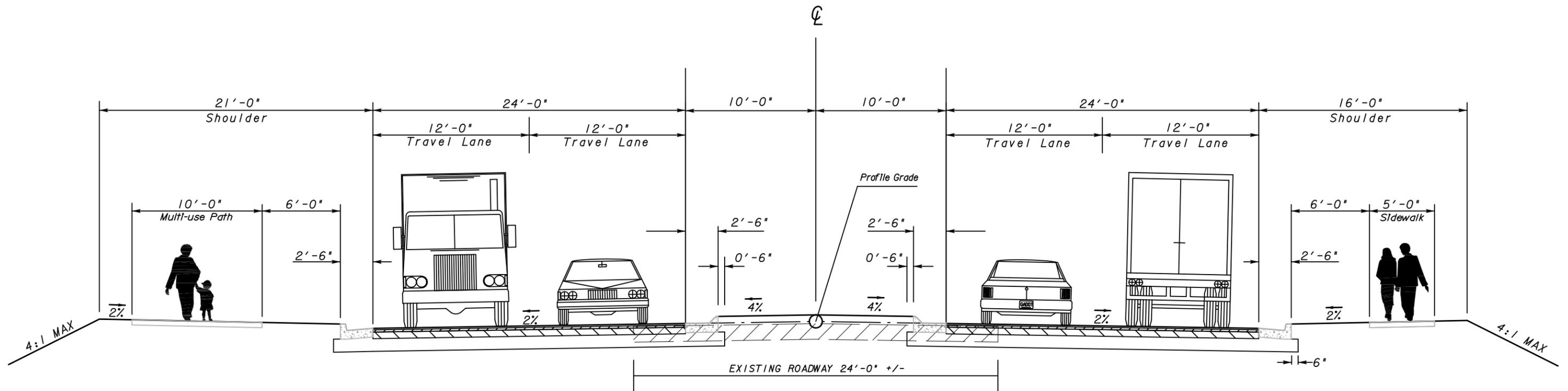
Note that 1 parcel is included in the count that is owned by the City of Hinesville. It is anticipated that this utility station will be relocated as part of utility relocation and no compensation is considered in this cost estimate.

A "buffer" exists between Frank Cochran Drive and the back of Mallard Village Subdivision. This area has no Tax Identification information and is shown as public land on various maps and plats reviewed by the appraiser. No specific dedication for this land could be found, however. No value is placed in the cost estimate for this buffer land. In the unlikely event that it proved to be privately held it would have only nominal value. It is too long and shallow to offer stand-alone utility. It is also unlikely that lot buyers would pay extra for being adjacent to the surplus land.

The minor site improvements portion of the estimate had \$25,000 added beyond the basic values shown on the spreadsheet to cover minor paving and other miscellaneous items not covered by a parcel by parcel review.

Prepared by:  The Simshauser Company

Approved by:  GDOT R/W

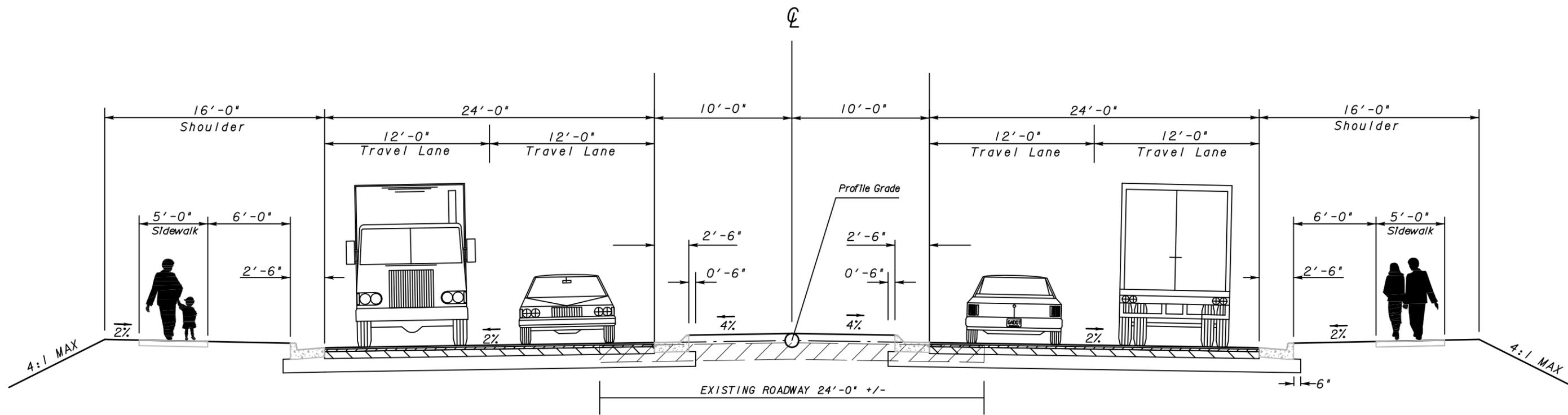


FRANK COCHRAN DRIVE
 ALTERNATE 1, TYPICAL SECTION A
 (CITY OF HINESVILLE SECTION)

PREPARED BY



HUSSEY, GAY, BELL & DEYOUNG, INC.
 CONSULTING ENGINEERS
 SAVANNAH, GEORGIA



FRANK COCHRAN DRIVE
 ALTERNATE 1, TYPICAL SECTION B
 (FORT STEWART SECTION)

PREPARED BY



HUSSEY, GAY, BELL & DEYOUNG, INC.
 CONSULTING ENGINEERS
 SAVANNAH, GEORGIA

**Frank Cochran Drive Widening
Traffic Study
(E.G. Miles Parkway to Gulick Avenue)**

**Project Number: STP-2610(4)
P.I. Number: 550600**

PREPARED FOR

City of Hinesville

PREPARED BY

**Hussey, Gay, Bell & DeYoung, Inc.
Consulting Engineers
Savannah, Georgia**

September, 2003

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Introduction

Frank Cochran Drive is an urban minor collector street in the City of Hinesville that functions primarily to facilitate the movement of local traffic from adjacent residential neighborhoods to S.R. 119 / E.G. Miles Parkway and also provides a secondary point of access onto the Fort Stewart Army Base. Frank Cochran Drive currently extends between S.R. 119 / E.G. Miles Parkway and Gulick Avenue. Georgia Department of Transportation (GDOT) project STP-2610(1), an extension of Frank Cochran Drive from E.G. Miles Parkway to U.S.84, is currently under construction. This extension project along with planned improvements to the Frank Cochran Drive entrance onto Fort Stewart is expected to greatly increase the traffic volumes on existing Frank Cochran Drive. It is therefore necessary to study the existing and predicted future traffic system along Frank Cochran Drive in the vicinity of the proposed project in order to determine what particular improvements will be required to adequately serve the anticipated increase in traffic.

This study intends to provide City of Hinesville authorities and design engineers with recommendations for an optimal improvement scenario with regard to lane configuration and other traffic improvements along the proposed project corridor.

Existing Conditions

The Frank Cochran Drive Widening Project, STP-2610(4), involves 2.7 miles of roadway beginning at the roadway's intersection with E.G. Miles Parkway to the west and ending at its intersection with Gulick Avenue / S.R. 119 to the east. The existing roadway is comprised of two 12-foot through lanes, one in each direction with rural shoulder treatments and right-hand turn lanes for both eastbound and westbound traffic at various locations. The project corridor does not include any signalized intersections and the posted speed limit is 45 mph throughout the project length. Currently eastbound traffic on Frank Cochran Drive approaching the intersection of Frank Cochran Drive and Gulick Avenue can only turn right. Exhibit 1 presents an overview of the study area.

As stated in the Introduction, Frank Cochran drive currently serves a dual function both as an urban collector and also as a secondary access point onto Fort Stewart. Heightened security measures at the entrances to Fort Stewart have increased traffic congestion on many of the roadways serving as access points to the base. Project STP-2610(1) is a new location project that extends current Frank Cochran Drive to U.S. 84. When this new roadway opens it is expected to act mainly as an arterial diverting a portion of the traffic bound for S.R. 119 and the main entrance onto Fort Stewart to the secondary access point on Frank Cochran Drive thus reducing the congestion thru the commercial area of the City of Hinesville. The current two lane configuration of existing Frank Cochran Drive is not adequate to meet the anticipated traffic demands. The Frank Cochran Drive extension involves four through lanes, two in each direction, with a raised 20-foot median. Existing Frank Cochran Drive would need to be improved to at least the same configuration to handle the increase in traffic.

Traffic Analysis Methodology

In order to best assess both the existing traffic situation and the predicted future traffic patterns and to recommend solutions with respect to lane configuration along the project corridor and at each intersection, procedures and methodologies outlined in the Transportation Research Board's 2000 Edition of the *Highway Capacity Manual* (HCM 2000) were employed. Application of the HCM 2000 methodologies in devising a solution to a traffic problem typically requires an analyst to iteratively perform lengthy series of calculations. In an effort to save time in obtaining these solutions, the analyses performed for this study were completed using several modules of the McTrans Highway Capacity Software 2000 (HCS 2000), which automates many of HCM 2000's methodologies.

One of the key evaluation parameters established in HCM 2000, as in all previous editions, is the "level of service" (LOS). Level of service is used as a general qualitative measure of how adequate a particular roadway or intersection configuration performs in handling a given traffic load. The particular criterion used to measure level of service varies depending upon which aspect of traffic flow is being assessed. Since Frank Cochran Drive has both characteristics of an arterial and a multi-lane highway and does not exactly meet the criterion of either as defined by HCM 2000, both analyses were performed and compared to reach the results presented in this report. In this study, two-lane two way capacity, multi-lane highway capacity, arterial capacity and intersection capacity are examined.

Two- Lane Level of Service

Two lane level of service is dependent on the functional classification of the roadway. Existing Frank Cochran Drive is classified as a *Type II* two-lane roadway because of its characteristics as a collector, but with the proposed improvements Frank Cochran Drive is expected to function as an arterial which are mainly classified as *Type I* roadways. Level of service is defined in terms of the average travel speed and percent time-spent-following. Each Two-lane Level of Service is generally defined below (with the minimum average travel speed for a *Type I* two-lane roadway appearing in parentheses after each):

1. **LOS A:** Motorists are able to travel at their desired speed. Platoons of 3 or more vehicles are rare. Drivers are delayed no more than 35% of the time by slow moving vehicles. (≥ 55 mph)
2. **LOS B:** Slow moving vehicles begin to cause delays. Occurrence of platoons increases. Vehicles are delayed approximately 50% of the time. (≥ 50 mph)
3. **LOS C:** Platoons begin to chain causing reduction in speed. Flow is still stable, but percent time passing increases to 65%. (≥ 45 mph)
4. **LOS D:** Traffic flow becomes unstable and passing becomes extremely difficult. Vehicles are delayed in platoons nearly 80% of the time. (≥ 40 mph)

5. LOS E: Passing becomes impossible and platooning is intense. Vehicles are delayed in platoons more than 80% of the time. The roadway has reached capacity. (< 40 mph)
6. LOS F: Demand exceeds capacity. Traffic is heavily congested. Speeds are highly variable.

Multi-Lane Level of Service

Multi-Lane level of service is defined in terms of three primary characteristics: density, speed and volume to capacity ratio. Each Multi-Lane Level of Service is generally defined below (with the minimum average travel speed, maximum density, and maximum volume to capacity ratio appearing in parentheses after each):

1. LOS A: Primarily free-flow operations. Speed is primarily restricted by roadway geometry. Vehicles are seldom impeded in their ability to maneuver. (≥ 45 mph, ≤ 11 pc/mi/ln, ≤ 0.26)
2. LOS B: Primarily free-flow operations continue. Maneuverability decreases with the increase in density. Travel speeds remain the same as characterized for LOS A. (≥ 45 mph, ≤ 18 pc/mi/ln, ≤ 0.43)
3. LOS C: Free-flow operations become minimal. Density starts to affect maneuverability and the average travel speed reduces. Disruptions along roadway start to cause queuing. (≥ 45 mph, ≤ 26 pc/mi/ln, ≤ 0.62)
4. LOS D: Travel speed is greatly reduced by increased volume of vehicles. Maneuverability is minimal. (≥ 44.4 mph, ≤ 35 pc/mi/ln, ≤ 0.82)
5. LOS E: Roadway is at capacity. Vehicles are traveling with the minimum spacing for maintaining uniform flow. Maneuverability is minimal and travel speed is reduced. (≥ 42.2 mph, ≤ 45 pc/mi/ln, ≤ 1.00)
6. LOS F: Roadway is at breakdown flow. Long queues develop. Travel speeds are minimal.

Arterial Level of Service

Arterial level of service is defined in terms of the *average travel speed* of all through vehicles using the arterial. The average running speed is compared to the free-flow speed. The free-flow speed for any specific arterial depends upon its functional classification. Frank Cochran Drive is functionally classified as *Type II*, which is defined as having a free-flow speed in the range of 35 to 45 mph, typically 40 mph. Each arterial level of service is generally defined below (with the minimum average travel speed for a *Type II* arterial appearing in parentheses after each):

1. LOS A: Primarily free-flow operations at average travel speeds, typically 90% of the free-flow speed for a particular arterial classification. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Any delay at a signalized intersection is minimal. (≥ 35 mph)
2. LOS B: Reasonably unimpeded operations at average travel speeds, typically 70% of the free-flow speed for the arterial classification. A vehicles ability to

- maneuver in the traffic stream is slightly restricted and signal delays are generally short. (≥ 28 mph)
3. LOS C: Stable operations. Ability to maneuver is intermittently restricted. Average travel speeds are roughly 50% of free-flow speed. Signal delays are increasingly common. (≥ 22 mph)
 4. LOS D: Borders on a range wherein small increases in flow can cause substantial increases in approach delay. Delays at signals are to be expected. Average travel speed is 40% of free-flow speed. (≥ 17 mph)
 5. LOS E: Characterized by significant delays and average travel speeds around 33% of free-flow speeds. Long delays can be expected at signals with stop-and-go travel between intersections common. (≥ 13 mph)
 6. LOS F: Extremely slow progression along arterials. Frequent very long delays at signals with extensive queuing. Average travel speeds are approximately 25% of free-flow speed or less. (< 13 mph)

Signalized Intersection Level of Service

Signalized intersection level of service is defined in terms of the *control delay* (also referred to as *signal delay*) measured in seconds and defined as the portion of delay caused by the existence of the traffic signal in absence of any geometric delay associated with the connecting roadway. Each service level is uniquely considered for a signalized intersection as follows (with the control delay per vehicle following in parentheses):

1. LOS A: Operations with very low control delay, occurring when progression is extremely favorable to a particular movement and most vehicles arrive during a green phase and do not stop at all. (≤ 10 seconds)
2. LOS B: Operations with generally good progression with short cycle lengths and vehicles experiencing a higher likelihood of stopping briefly. (≤ 20 seconds)
3. LOS C: Operations with fair progression, longer cycle lengths and significant numbers of vehicles required to stop, though many others still pass through unimpeded. Individual cycle failures may begin to appear. (≤ 35 seconds)
4. LOS D: Influence of congestion becomes more pronounced. Longer delays may result from some combination of unfavorable progression. The number of vehicles stopping is significant, though a few may occasionally pass through unimpeded. (≤ 55 seconds)
5. LOS E: Many agencies consider this level the limit of acceptable delay. Typified by poor progression, long cycle lengths and high volume-to-capacity (v/c) ratios. Individual cycle failures are frequent occurrences. (≤ 80 seconds)
6. LOS F: Considered unacceptable to most drivers, these intersections experience frequent oversaturation with arrival flow rates exceeding the intersection capacity. Very poor progression, long cycle lengths and frequently long delays. (> 80 seconds)

Development of Projected Traffic Conditions

Projected Traffic Conditions were devised from information from several sources. Average Annual Daily Traffic (AADT) data was obtained from GDOT at several counting stations in the vicinity of the project for the years 1997 through 2002. These counting stations include one on Frank Cochran Drive between Robin Hood Drive and Windhaven Drive, one on S.R.119 near Bultman Avenue, one on Wilson Drive north of the project and another on Gulick Avenue also north of the project. GDOT also provided predicted ADT's for the extension of Frank Cochran Drive for the years 2005 and 2025 and the 1997 ADT's from the recent Gulick Avenue widening job. Fort Stewart provided the results of a previously performed traffic study on Wilson Avenue that included approach volumes and turning movement data acquired in May of 2001 at the intersection of Frank Cochran Drive and Wilson Avenue. HGBD obtained traffic counts and approach volumes for the intersection of Gulick Avenue and Frank Cochran Drive in June of 2003. Summaries of this data are provided in Appendix B. This data was compiled and utilized in developing existing roadway and turning movement volumes.

The historical data indicates that traffic has remained relatively stable over the last six years and no dramatic changes in the general rate of growth are anticipated. For the purposes of these analyses, a 1.0% growth rate, applied to the adjusted 2003 traffic volumes, was used in determining AADT volumes along the project corridor for both 2008 (the base year) and 2028 (the design year). The existing traffic patterns were modified for 2008 and 2028 based on assumptions of how traffic would flow once Frank Cochran Drive was completed. Using the layout described in the concept report Frank Cochran Drive and Gulick Avenue would no longer be a "T" intersection. The intersection of Frank Cochran Drive and Gulick Avenue would be relocated to the north to line up with the existing intersection of Hall Place with Gulick Avenue. This relocation of the Frank Cochran Drive and Gulick Avenue intersection will result in the closing of the Bunker Road and Gulick Avenue intersection. The Bunker Road intersection with Gulick Avenue will become a "T" intersection with Bunker Road being closed between Wilson Avenue and Gulick Avenue. Wilson Avenue will be converted to a one-way road between Frank Cochran Drive and Gulick Avenue, allowing only a southbound movement. It has been assumed that approximately 40% of the left turning and through movements currently made at Bunker Road would shift to the intersection of Gulick Avenue and Hall Place / Frank Cochran Drive, and that a large percentage of the expected increase in traffic would continue to the end of Frank Cochran Drive and turn left onto Gulick Avenue. The adjusted volumes for both the base and design years are summarized in Table 1 and presented in detail in Appendix A.

<u>Segment</u>	<u>Segment Description</u>	<u>2008 AADT</u>	<u>2028 AADT</u>
A	E.G. Miles Parkway to Wilson Ave.	16,490	20,130
B	Wilson Ave. to Gulick Ave.	11,460	13,985

Table 1 – Projected Average Annual Daily Traffic on Frank Cochran Drive

Analysis of Projected Traffic Conditions

All improvements recommended by this study focus on devising a system with sufficient capacity to handle projected traffic volumes at LOS E or better for the design year.

Capacity Analysis

The improvement concept along the proposed project corridor involves widening Frank Cochran Drive from E.G. Miles Parkway to Gulick Avenue and adding or extending left and right turn lanes as required to meet future traffic demands. HCS 2000 provides for either an arterial analysis, a multi-lane highway analysis or a two-way two lane analysis. The conditions of the proposed project are such that it does not directly match the criterion of any category. An arterial operational analysis can not be performed because the distance between E.G. Miles Parkway and Wilson Avenue is greater than the maximum allowed distance between signalized intersections of 2 miles. A multi-lane highway analysis is not completely correct either because it does not work properly for free-flow speeds of less than 45 mph. While the posted speed is 45mph it does not take into account factors such as entry points and horizontal clearance widths that can affect the free flow speed. For this comparison the projected volumes were run on a two-way two-lane model to illustrate unimproved conditions and run on both a multi-lane highway analysis and an arterial analysis to illustrate the improved condition. The results are summarized in Table 2. The complete analysis reports for all four scenarios are included in Appendix C.

		Unimproved (2-Lanes) Two-Lane Analysis	Improved (4-Lanes) Multi-Lane Analysis	Improved (4-Lanes) Arterial Analysis
Number of Through Lanes Provided in Each Direction		1	2	2
2008	Level of Service	E	A	B
	Average Running Speed	29.8 mph	45 mph	33.2 mph
2028	Level of Service	E	B	B
	Average Running Speed	26.9 mph	45 mph	32.2 mph

Table 2 –Capacity Analysis Results for Frank Cochran Drive

Signalized Intersection Capacity Analysis

Various lane configurations and signal cycle lengths were devised and analyzed at both the Wilson Avenue and Gulick Avenue intersections. All analyses were performed using HCS 2000's Signalized Intersection Capacity Module. Peak Hour Volumes were assumed to be 10% of the ADT and a Peak Hour Factor of 0.92 was used. The results indicate the need for exclusive right and left turn lanes queues at both intersections. A capacity analysis was not performed using the existing lane configurations at each intersection. The traffic study previously performed on Wilson Avenue proposed a signal at Wilson Avenue and Frank Cochran Drive. This study did not account for the increase in traffic projected along Frank Cochran as presented in this report. Table 3 provides a summary of the analysis results at each intersection. Auxiliary turn lane lengths were determined based on the capacity required to store the number of vehicles expected to arrive during one complete signal cycle (less the associated movement's allotted "green time") during the peak hour assuming 25-feet of storage per vehicle in the queue.

Intersection 1: Frank Cochran Drive at Wilson Avenue

Analysis results indicate no need for dual lefts on any approach to the intersection. Exclusive left and right turn lanes are proposed on both the eastbound and westbound approaches. An exclusive right turn lane is proposed on the southbound approach. The intersection experienced a LOS C in 2008 with an average delay per vehicle of 22 seconds and an LOS C in 2028 with an average delay of 26 seconds.

Intersection 2: Frank Cochran Drive at Gulick Avenue

Analysis results indicate no need for dual lefts on any approach to the intersection. Exclusive left and right turn lanes are proposed on the northbound, southbound and eastbound approaches. An exclusive left turn lane is proposed on the westbound approach. The intersection experienced a LOS C in 2008 with an average delay per vehicle of 28 seconds and an LOS D in 2028 with an average delay of 38 seconds.

	2008 LOS	2028 LOS
Int. 1 (Frank Cochran Drive @ Wilson Ave.)	C	C
Int. 2 (Frank Cochran Drive @ Gulick Ave.)	C	D

Table 3 – Signalized Intersection Capacity Analysis Summary

Analysis results are included in Appendix C.

Unsignalized Intersections

In addition to the signalized intersections already discussed, several median openings are proposed along the project. No formal intersection capacity analyses were performed at these locations and no modifications to the intersection configuration are recommended at this time.

Conclusion and Recommendations

Based on the assumptions and analysis laid out in this report, the following improvements are recommended in order to increase Frank Cochran Drive's capacity, enhance its safety, and improve its ability to function as an arterial:

1. Provide Additional Through Lanes. Add a continuous second through lane, both eastbound and westbound, between E.G. Miles Parkway and Gulick Avenue.
2. Signalize intersection with Wilson Ave. Install a traffic signal at the Wilson Avenue and Frank Cochran Drive intersection. Provide exclusive left and right turn lanes on both the eastbound and westbound approach. Provide an exclusive right turn lane on the southbound approach.
3. Signalize intersection with Gulick Ave. Install traffic signal at the intersection of Gulick Avenue and Frank Cochran Drive / Hall Place. Provide exclusive left and right turn lanes on eastbound, northbound, and southbound approaches. Provide an exclusive left turn lane on the westbound approach.
4. Prohibited Movement. Reconfigure roadway geometry, signing, and striping as necessary to prohibit left hand turns onto Frank Cochran Drive between MacFarland Drive and Gulick Avenue. The proposed two-way center turn lane in this area will need to be used as left turn queuing.
5. Close median opening on Gulick Ave. at Bunker Road. The proposed improvements to the intersection of Frank Cochran Drive and Gulick Avenue necessitate the closure of the Gulick Avenue and Bunker Road median opening. The two intersections would be approximately 275' apart.
6. Convert Wilson Ave to a one-way street south of Frank Cochran Drive. With the closure of Bunker Road west of Gulick Avenue the need for northbound traffic at the Frank Cochran Drive and Wilson Avenue intersection would be minimal.

Appendix A

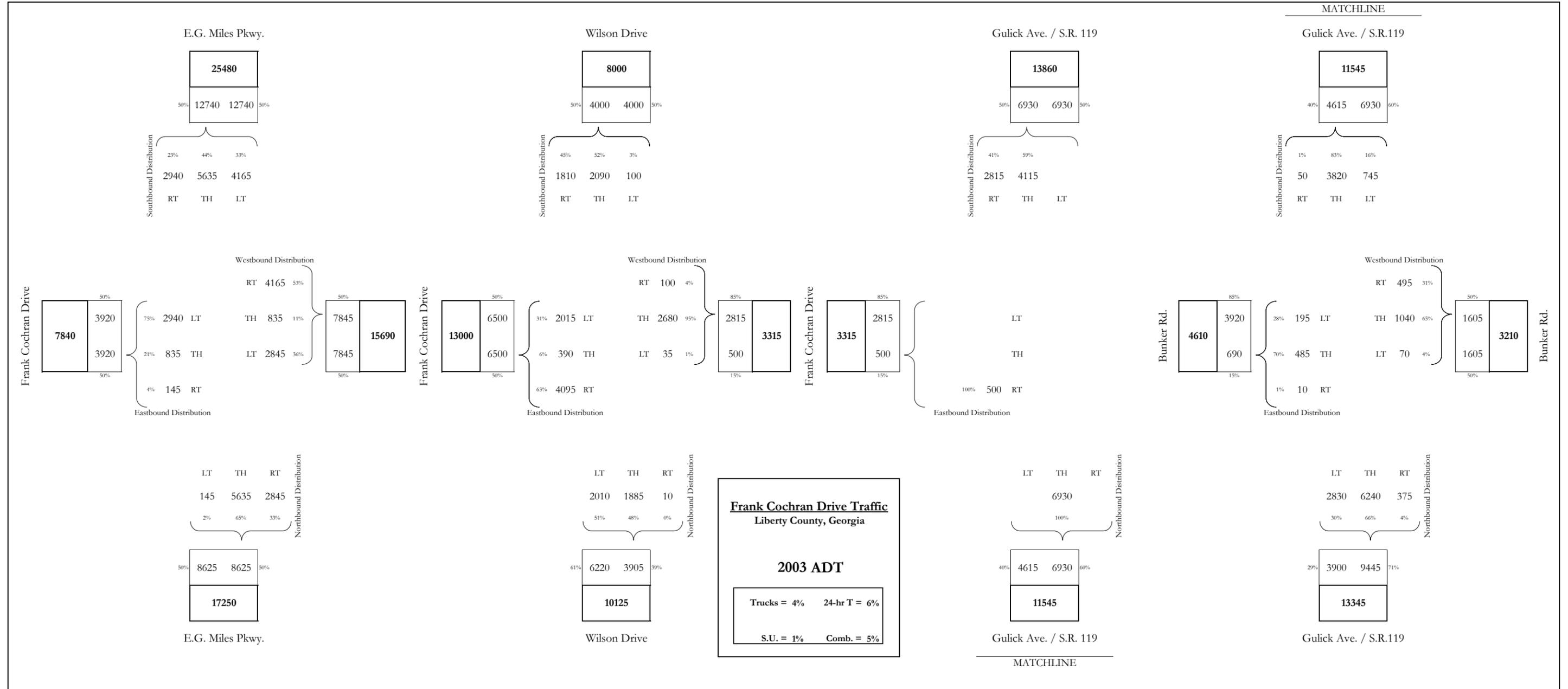
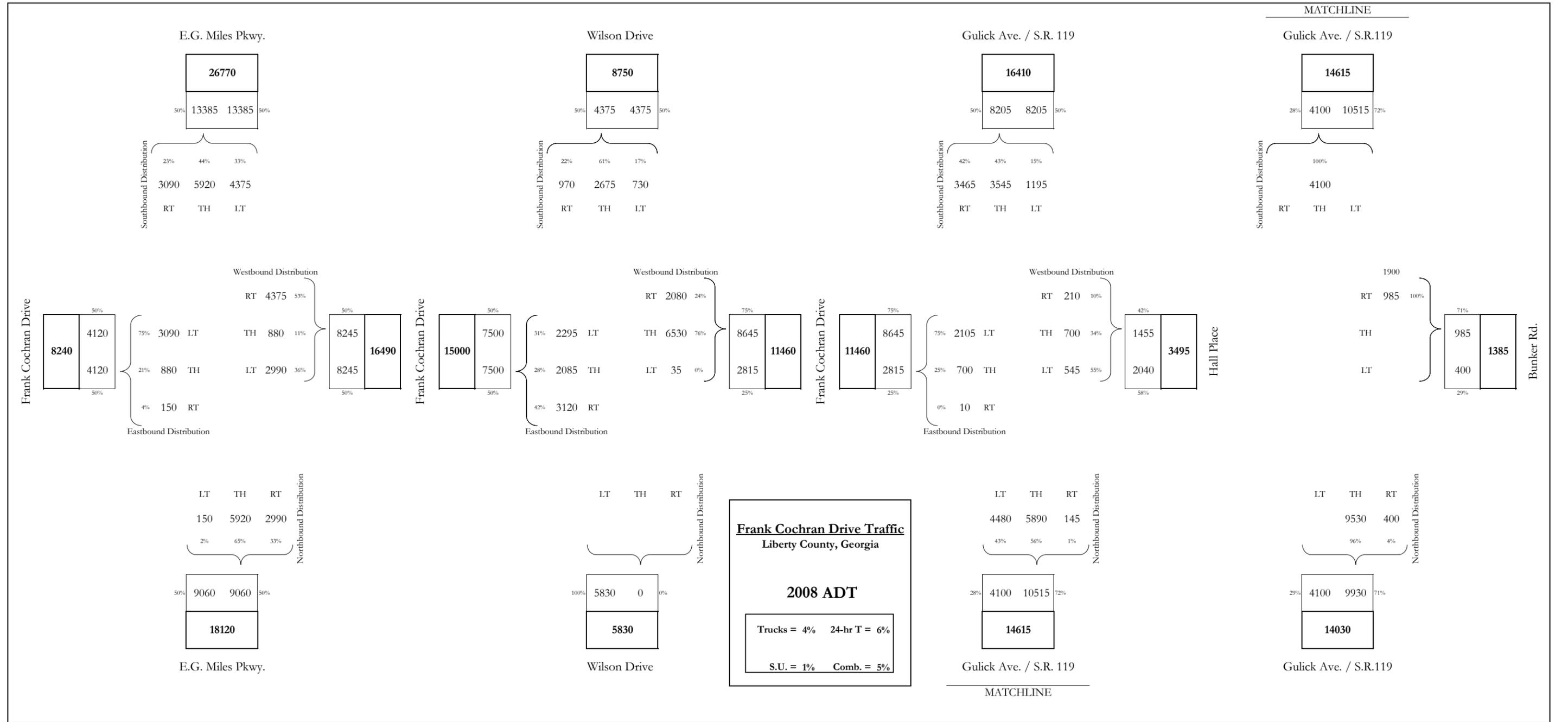


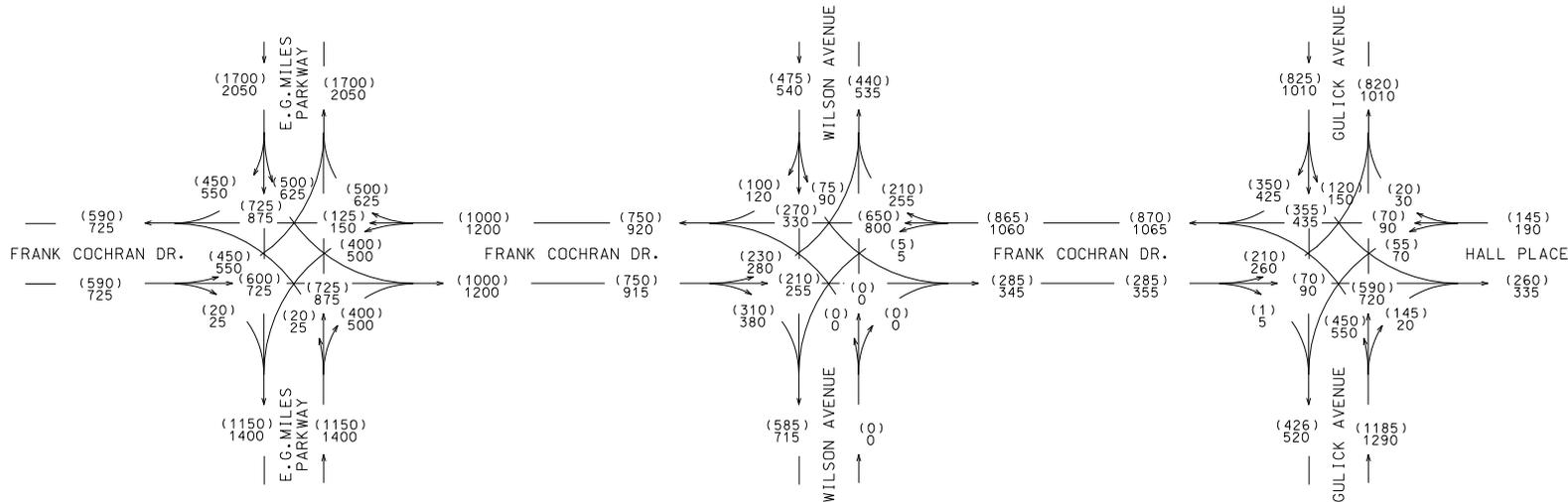
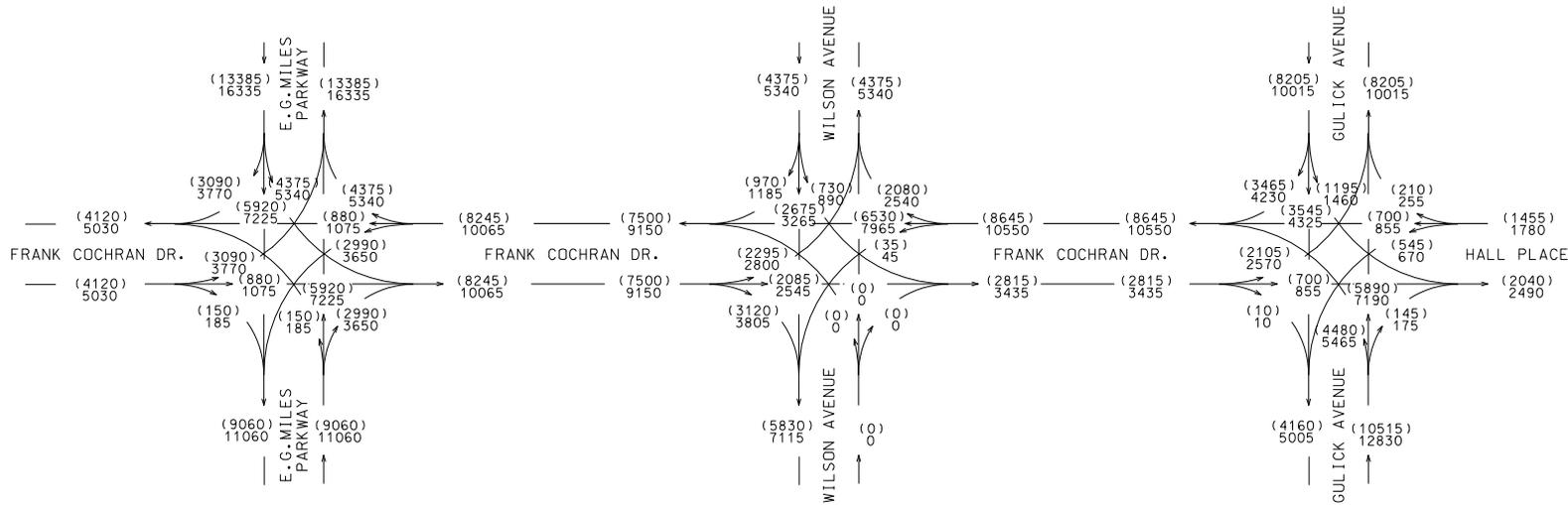
Exhibit A2 - Base Year Average Daily Traffic Volumes

2008 ADT





STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	STP-2610(4)	1	1



2008 DHV = (000)
2028 DHV = 000

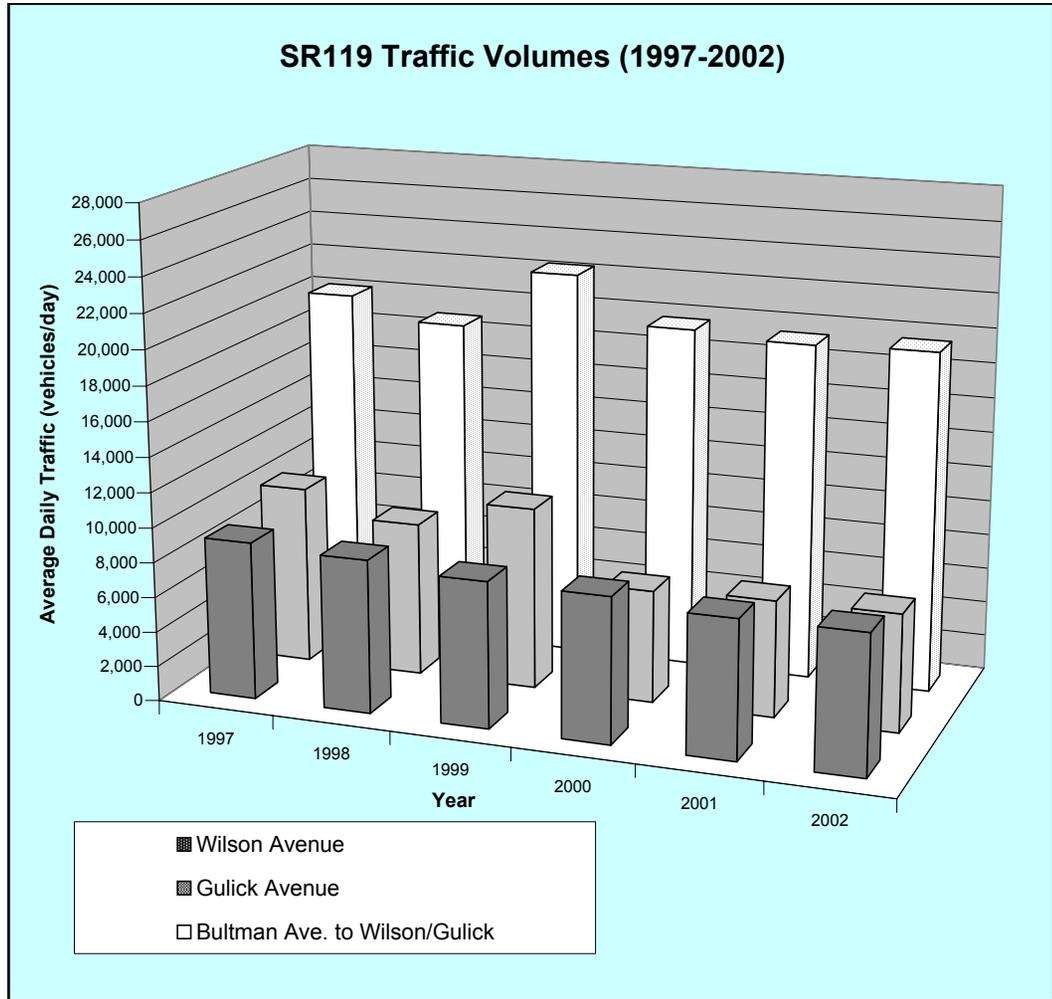
STP-2610(4)
P.I. # 550600
LIBERTY COUNTY
FRANK COCHRAN DRIVE WIDENING.

T = 2%
24 HR. T = 2%
S.U. = 0%
COMB. = 2%

Appendix B

Exhibit B1 - Historical SR119 Average Daily Traffic Volumes

Year	Bultman Ave. to Wilson/Gulick	Gulick Avenue	Wilson Avenue
1997	20101	10219	9042
1998	18853	8839	8801
1999	22309	10459	8365
2000	19683	6454	8314
2001	19361	6700	7896
2002	19510	6752	7957



* Wilson Ave. and Gulick Ave. formerly formed a one-way pair.

Exhibit B2 - Historical Frank Cochran Drive Average Daily Traffic Volumes

1997-2002 (Georgia DOT)

Historical Average Daily Traffic on Frank Cochran Drive

Year	Robin Hood Dr. to Windhaven Dr.
1997	15132
1998	14950
1999	15324
2000	15840
2001	15489
2002	15258

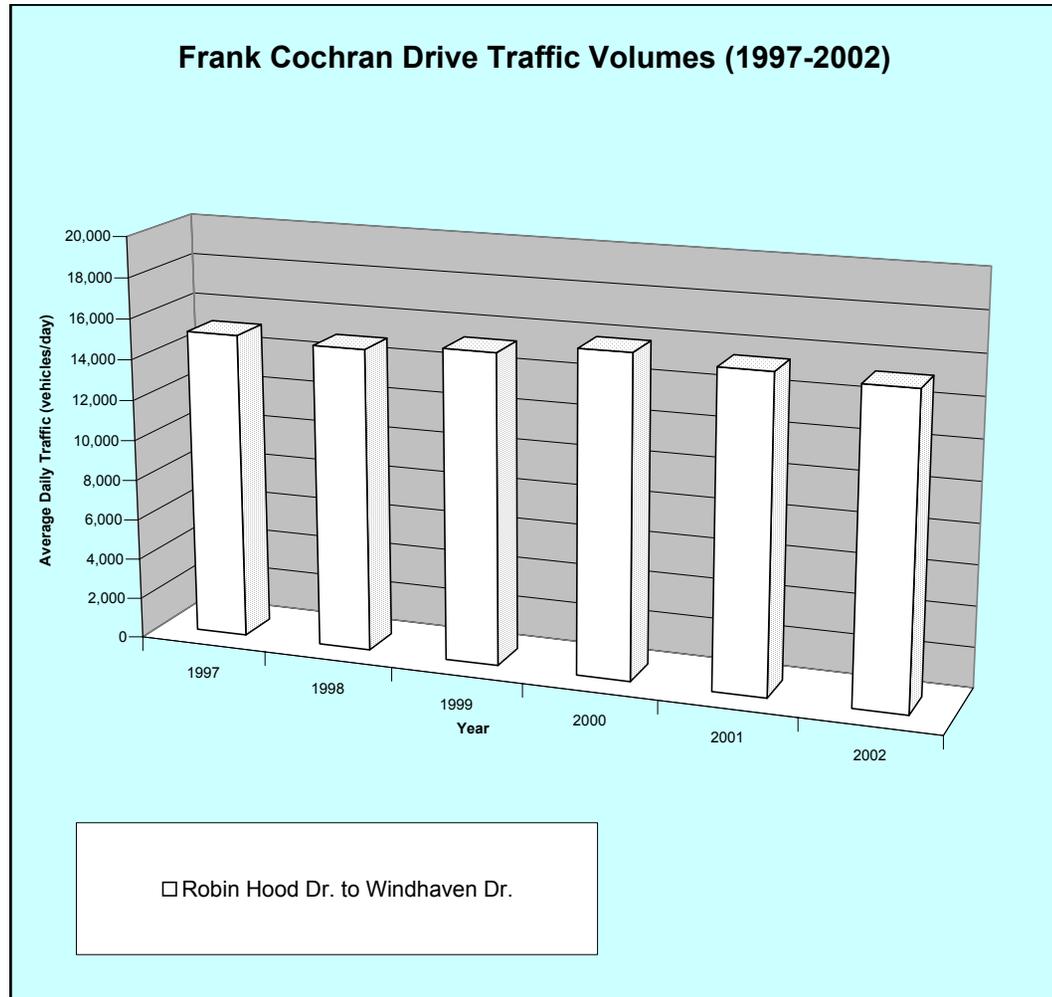
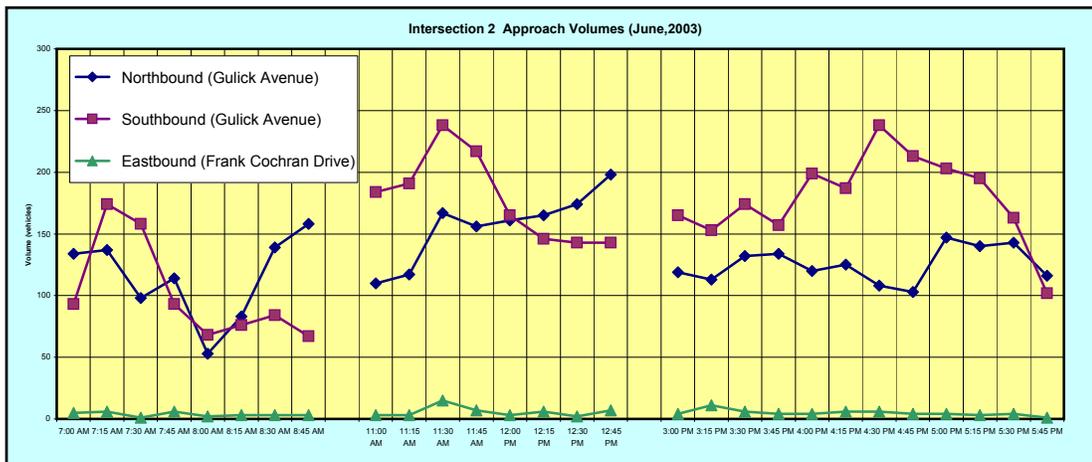


Exhibit B3 - Frank Cochran/Gulick Approach Volumes

June, 2003 (HGBD)

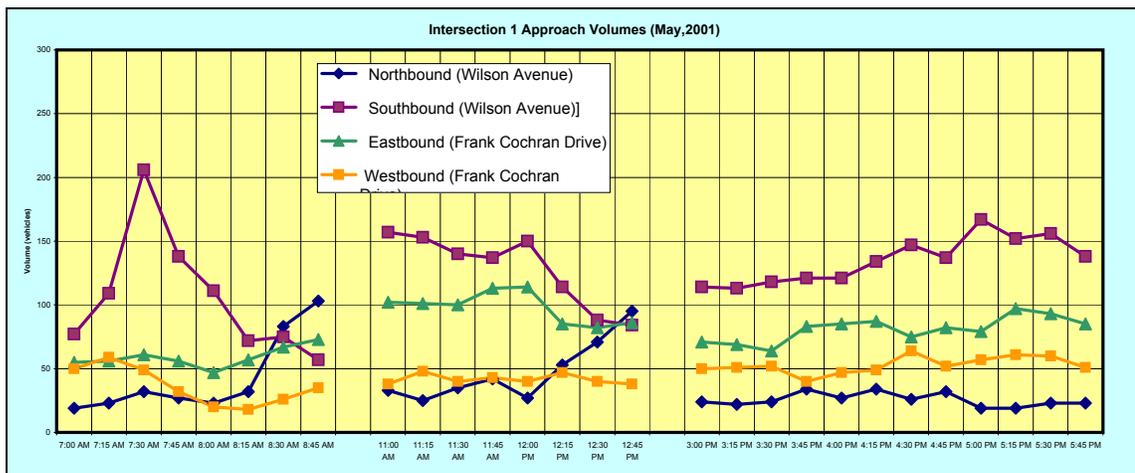
Approach Volumes for Intersection of Frank Cochran Drive and Gulick Avenue

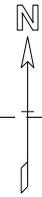
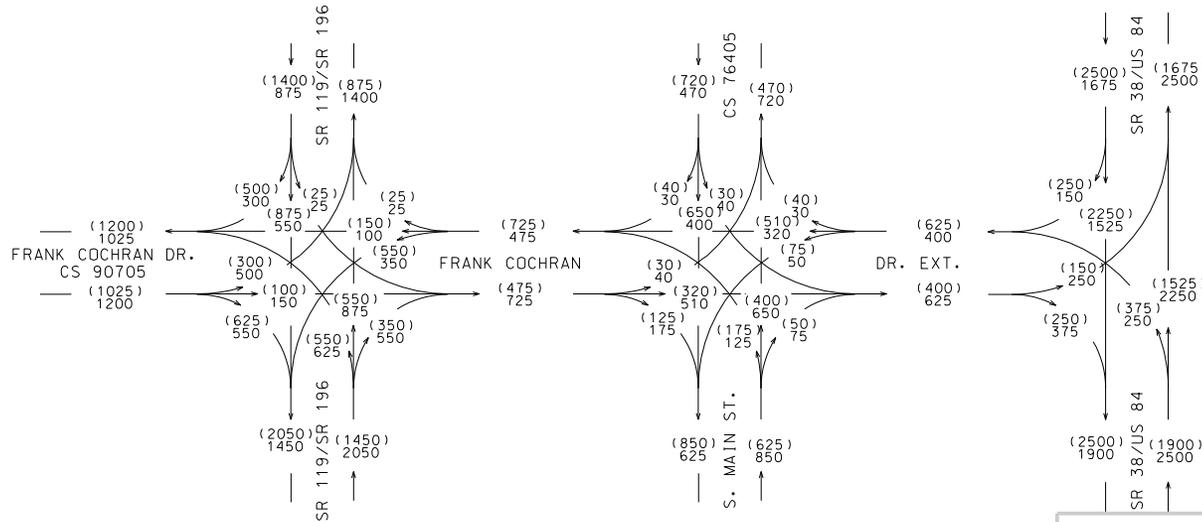
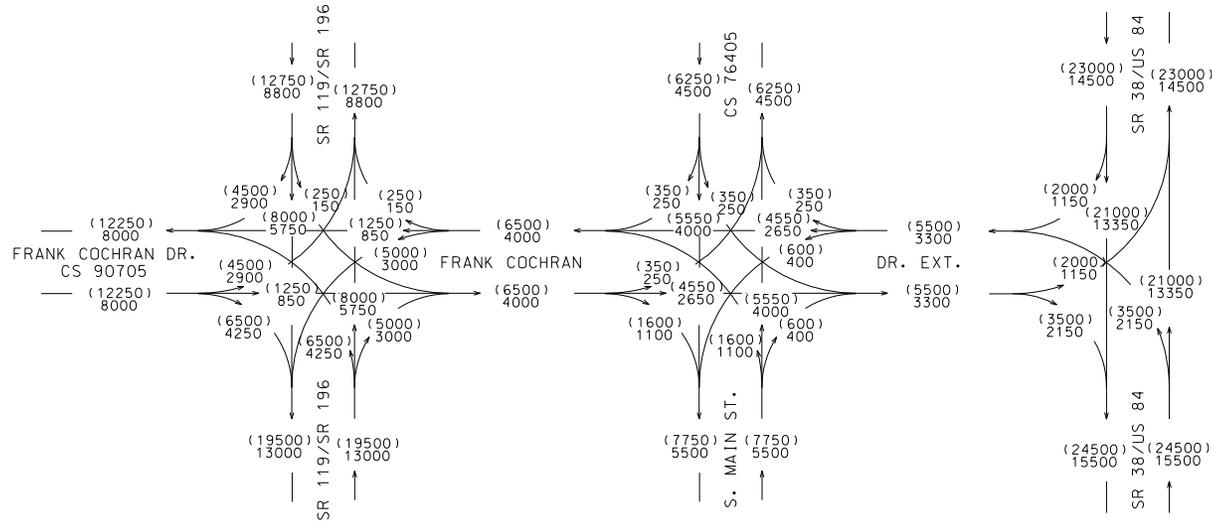
Intersection 2 of 2	Gulick Avenue		Frank Cochran		Hour Total for Intersection
	Northbound	Southbound	Eastbound	Westbound	
7:00 AM to 7:15 AM	134	93	5		232
7:15 AM to 7:30 AM	137	174	6		317
7:30 AM to 7:45 AM	98	158	1		257
7:45 AM to 8:00 AM	114	93	6		213
8:00 AM to 8:15 AM	53	68	2		123
8:15 AM to 8:30 AM	83	76	3		162
8:30 AM to 8:45 AM	139	84	3		226
8:45 AM to 9:00 AM	158	67	3		228
11:00 AM to 11:15 AM	110	184	3		297
11:15 AM to 11:30 AM	117	191	3		311
11:30 AM to 11:45 AM	167	238	15		420
11:45 AM to 12:00 PM	156	217	7		380
12:00 PM to 12:15 PM	161	165	3		329
12:15 PM to 12:30 PM	165	146	6		317
12:30 PM to 12:45 PM	174	143	2		319
12:45 PM to 1:00 PM	198	143	7		348
3:00 PM to 3:15 PM	119	165	4		288
3:15 PM to 3:30 PM	113	153	11		277
3:30 PM to 3:45 PM	132	174	6		312
3:45 PM to 4:00 PM	134	157	4		295
4:00 PM to 4:15 PM	120	199	4		323
4:15 PM to 4:30 PM	125	187	6		318
4:30 PM to 4:45 PM	108	238	6		352
4:45 PM to 5:00 PM	103	213	4		320
5:00 PM to 5:15 PM	147	203	4		354
5:15 PM to 5:30 PM	140	195	3		338
5:30 PM to 5:45 PM	143	163	4		310
5:45 PM to 6:00 PM	116	102	1		219
Total	3664	4389	132		8185
Peak Hour					
Peak Hour	12:00 PM to 1:00 PM	4:30 PM to 5:30 PM	11:30 PM to 12:30 PM		11:30 PM to 12:30 PM
Volume	698	849	31		1446



Approach Volumes for Intersection of Frank Cochran Drive and Wilson Avenue

Intersection 1 of 2	Wilson Avenue		Frank Cochran		Hour Total for Intersection
	Northbound	Southbound	Eastbound	Westbound	
7:00 AM to 7:15 AM	19	77	55	50	201
7:15 AM to 7:30 AM	23	109	56	59	247
7:30 AM to 7:45 AM	32	206	61	49	348
7:45 AM to 8:00 AM	27	138	56	32	253
8:00 AM to 8:15 AM	23	111	47	20	201
8:15 AM to 8:30 AM	32	72	57	18	179
8:30 AM to 8:45 AM	83	75	67	26	251
8:45 AM to 9:00 AM	103	57	73	35	268
11:00 AM to 11:15 AM	33	157	102	38	330
11:15 AM to 11:30 AM	25	153	101	48	327
11:30 AM to 11:45 AM	35	140	100	40	315
11:45 AM to 12:00 PM	42	137	113	43	335
12:00 PM to 12:15 PM	27	150	114	40	331
12:15 PM to 12:30 PM	53	114	85	47	299
12:30 PM to 12:45 PM	71	88	82	40	281
12:45 PM to 1:00 PM	95	84	86	38	303
3:00 PM to 3:15 PM	24	114	71	50	259
3:15 PM to 3:30 PM	22	113	69	51	255
3:30 PM to 3:45 PM	24	118	64	52	258
3:45 PM to 4:00 PM	34	121	83	40	278
4:00 PM to 4:15 PM	27	121	85	47	280
4:15 PM to 4:30 PM	34	134	87	49	304
4:30 PM to 4:45 PM	26	147	75	64	312
4:45 PM to 5:00 PM	32	137	82	52	303
5:00 PM to 5:15 PM	19	167	79	57	322
5:15 PM to 5:30 PM	19	152	97	61	329
5:30 PM to 5:45 PM	23	156	93	60	332
5:45 PM to 6:00 PM	23	138	85	51	297
Total	1030	3486	2225	1257	7998
Peak Hour					
Peak Hour	12:00 PM to 1:00 PM	5:00 PM to 6:00 PM	11:15 PM to 12:15 PM	4:30 PM TO 5:30 PM	11:15 PM to 12:15 PM
Volume	246	613	428	234	1308

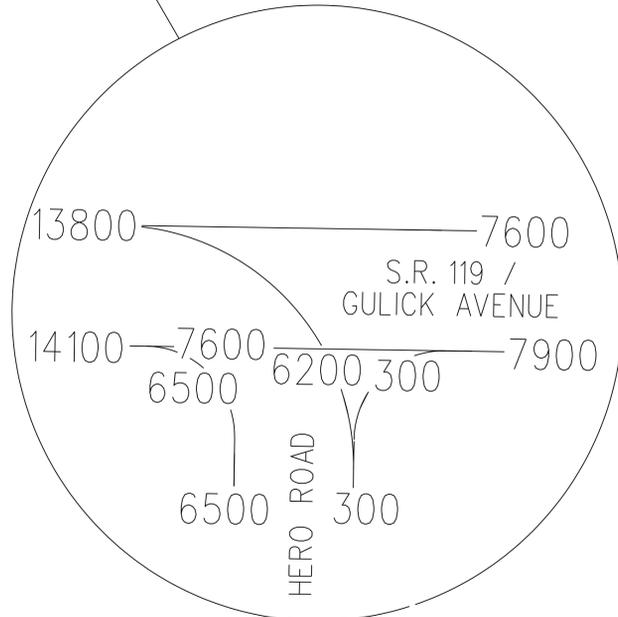
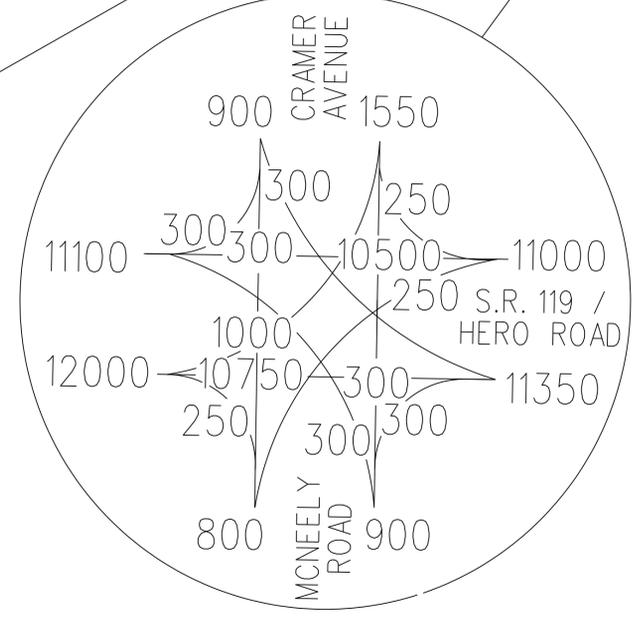
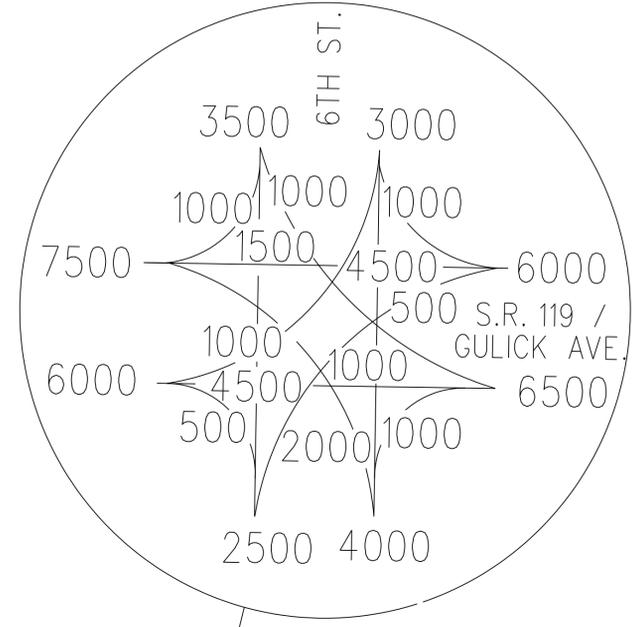
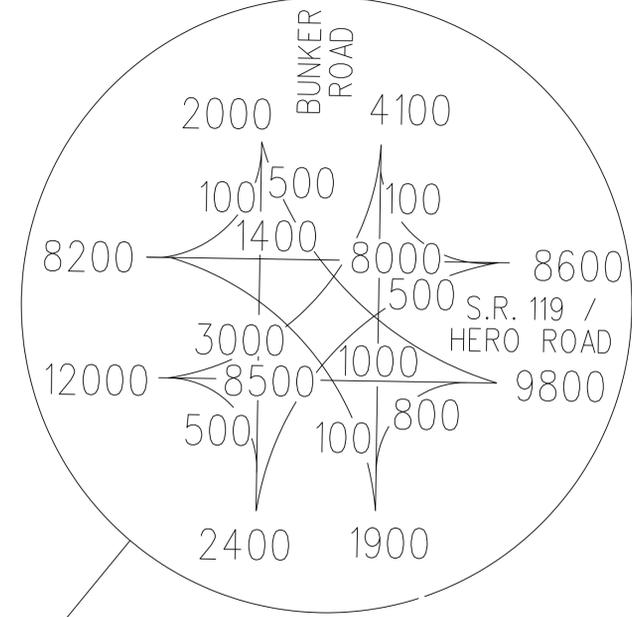
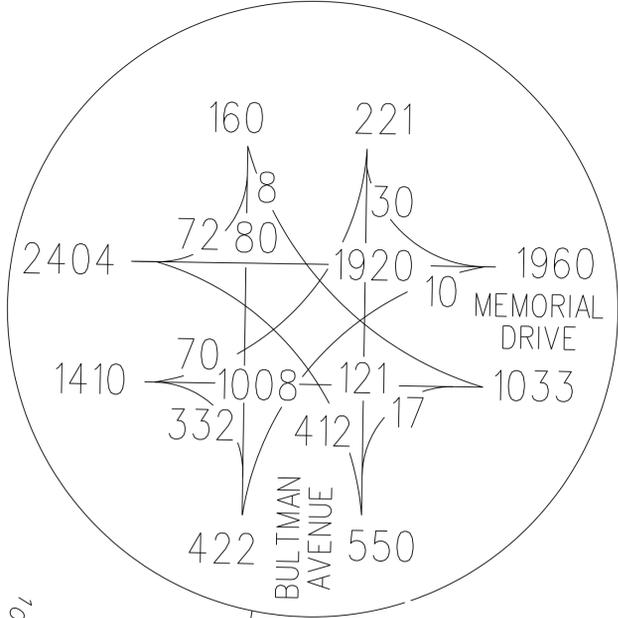
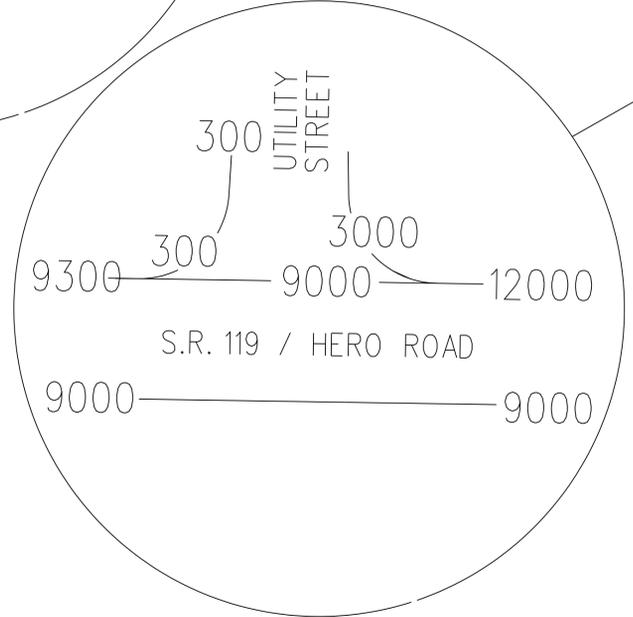
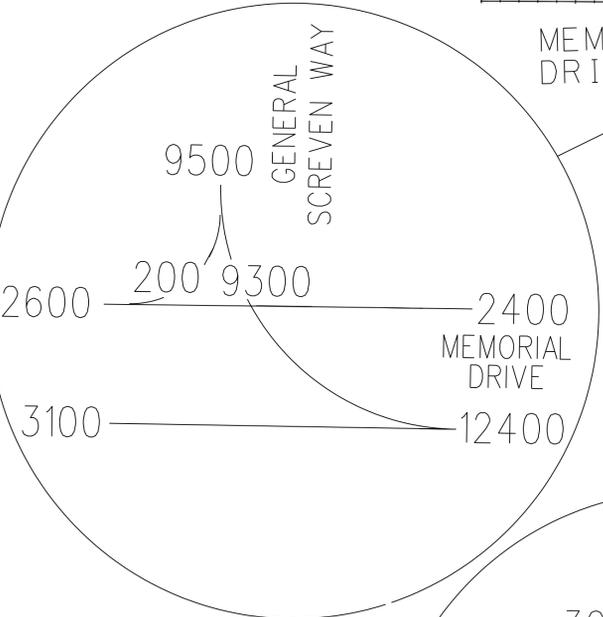
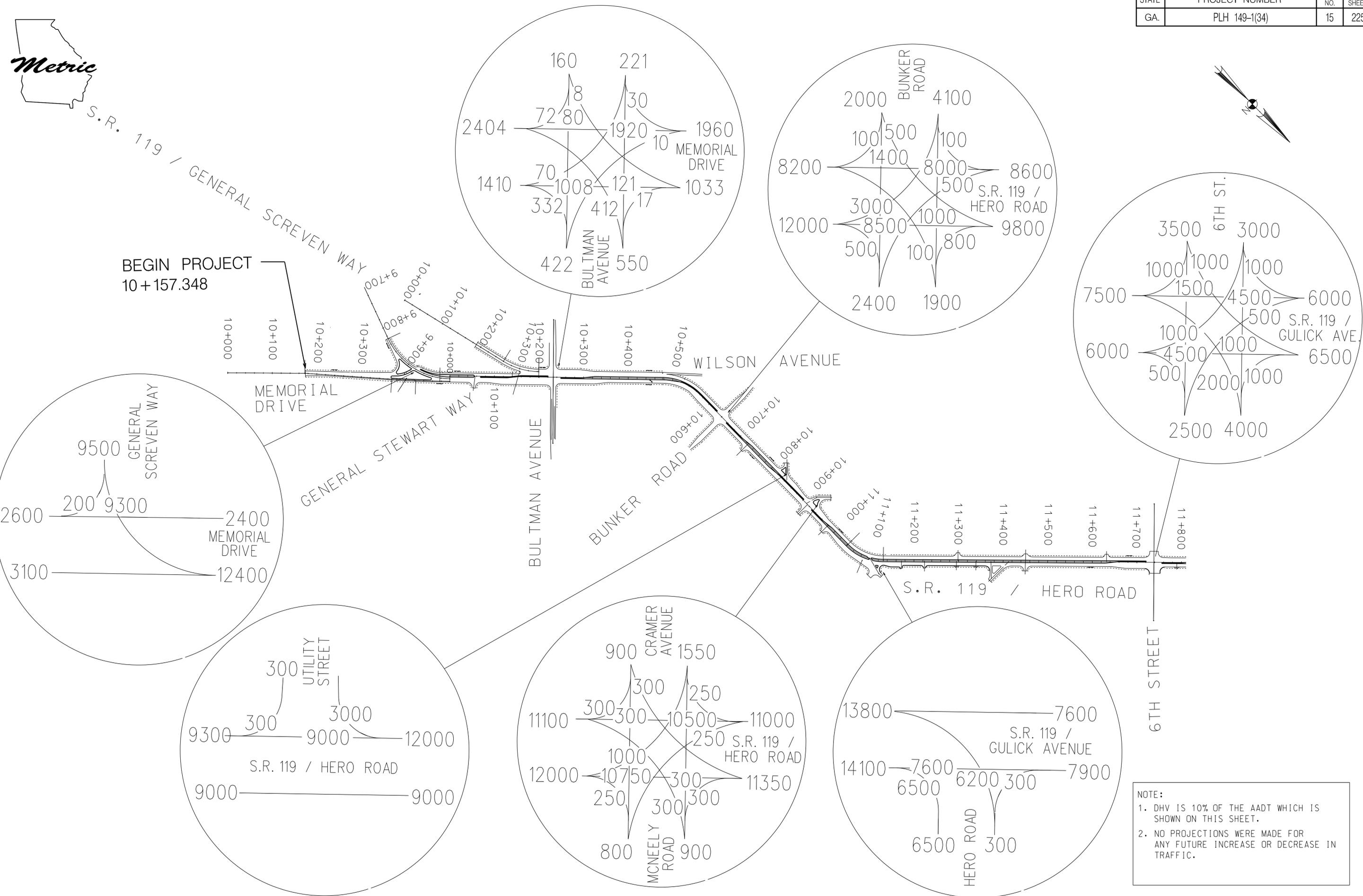
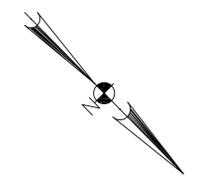




STP-2610(1)
P.I. # 541940
LIBERTY COUNTY
FRANK COCHRAN DR. EXT.

T = 6%
24 HR. T = 8%
S.U. = 2%
COMB. = 6%

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION



NOTE:

- DHV IS 10% OF THE AADT WHICH IS SHOWN ON THIS SHEET.
- NO PROJECTIONS WERE MADE FOR ANY FUTURE INCREASE OR DECREASE IN TRAFFIC.

DATE	REVISIONS	DATE	REVISIONS

Appendix C

Two-Lane Analysis 1: 2008 Volumes, Unimproved Conditions

HCS2000: Two-Lane Highways Release 4.1c

Courtney Lane
HGBD
329 Commercial Drive
Savannah, Georgia 31416

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Two-Way Two-Lane Highway Segment Analysis

Analyst Courtney Lane
Agency/Co. Hussey, Gay, Bell & DeYoung
Date Performed 8/13/2003
Analysis Time Period Peak Hour
Highway Frank Cochran Drive
From/To E.G.Miles Pkwy to Wilson Ave.
Jurisdiction City of Hinesville
Analysis Year 2008
Description Frank Cochran Drive

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.0	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			
Two-way hourly volume, V	1650	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate, (note-1) vp	1797	pc/h
Highest directional split proportion (note-2)	899	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATS	29.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate, (note-1) vp	1793	pc/h
Highest directional split proportion (note-2)	897	
Base percent time-spent-following, BPTSF	79.3	%
Adj. for directional distribution and no-passing zones, fd/np	5.6	
Percent time-spent-following, PTSF	84.9	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.56	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Two-Lane Analysis 2: 2028 Volumes, Unimproved Conditions

HCS2000: Two-Lane Highways Release 4.1c

Courtney Lane
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Two-Way Two-Lane Highway Segment Analysis

Analyst	Courtney Lane
Agency/Co.	Hussey, Gay, Bell & DeYoung
Date Performed	8/13/2003
Analysis Time Period	Peak Hour
Highway	Frank Cochran Drive
From/To	E.G.Miles Pkwy to Wilson Ave.
Jurisdiction	City of Hinesville
Analysis Year	2028
Description	Frank Cochran Drive

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.0	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			
Two-way hourly volume, V	2015	veh/h			
Directional split	50 / 50	%			

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate, (note-1) vp	2195	pc/h
Highest directional split proportion (note-2)	1098	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, VF	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	26.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate, (note-1) vp	2190	pc/h
Highest directional split proportion (note-2)	1095	
Base percent time-spent-following, BPTSF	85.4	%
Adj. for directional distribution and no-passing zones, fd/np	3.8	
Percent time-spent-following, PTSF	89.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.69	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Multilane Highway Analysis 1: 2008 Volumes, Improved Conditions

HCS2000: Multilane Highways Release 4.1c

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OPERATIONAL ANALYSIS

Analyst: Courtney Lane
 Agency/Co: Hussey, Gay, Bell & DeYoung
 Date: 8/13/2003
 Analysis Period: Peak Hour
 Highway: Frank Cochran Drive
 From/To: E.G. Miles Pkwy to Wilson Ave
 Jurisdiction: City of Hinesville
 Analysis Year: 2008
 Project ID: Frank Cochran Drive Widening

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Divided		Divided	
Free-flow speed:		Base		Base	
FFS or BFFS		45.0	mph	45.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		45.0	mph	45.0	mph

VOLUME

	Direction	1		2	
Volume, V		825	vph	825	vph
Peak-hour factor, PHF		0.92		0.92	
Peak 15-minute volume, v15		224		224	
Trucks and buses		2	%	2	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.990		0.990	
Flow rate, vp		452	pcphpl	452	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		452	pcphpl	452	pcphpl
Free-flow speed, FFS		45.0	mph	45.0	mph
Avg. passenger-car travel speed, S		45.0	mph	45.0	mph
Level of service, LOS		A		A	
Density, D		10.0	pc/mi/ln	10.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Multilane Highway Analysis 2: 2028 Volumes, Improved Conditions

HCS2000: Multilane Highways Release 4.1c

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OPERATIONAL ANALYSIS

Analyst: Courtney Lane
Agency/Co: Hussey, Gay, Bell & DeYoung
Date: 8/13/2003
Analysis Period: Peak Hour
Highway: Frank Cochran Drive
From/To: E.G. Miles Pkwy to Wilson Ave
Jurisdiction: City of Hinesville
Analysis Year: 2028
Project ID: Frank Cochran Drive Widening

FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		6.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		12.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Divided		Divided	
Free-flow speed:		Base		Base	
FFS or BFFS		45.0	mph	45.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.0	mph	0.0	mph
Median type adjustment, FM		0.0	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		45.0	mph	45.0	mph

VOLUME

	Direction	1		2	
Volume, V		1010	vph	1010	vph
Peak-hour factor, PHF		0.92		0.92	
Peak 15-minute volume, v15		274		274	
Trucks and buses		2	%	2	%
Recreational vehicles		0	%	0	%
Terrain type		Level		Level	
Grade		0.00	%	0.00	%
Segment length		0.00	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		1.5		1.5	
Recreational vehicles PCE, ER		1.2		1.2	
Heavy vehicle adjustment, fHV		0.990		0.990	
Flow rate, vp		554	pcphpl	554	pcphpl

RESULTS

	Direction	1		2	
Flow rate, vp		554	pcphpl	554	pcphpl
Free-flow speed, FFS		45.0	mph	45.0	mph
Avg. passenger-car travel speed, S		45.0	mph	45.0	mph
Level of service, LOS		B		B	
Density, D		12.3	pc/mi/ln	12.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Arterial Analysis 1: 2008 Volumes, Improved Conditions

HCS2000: Urban Streets Release 4.1c

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PLANNING ANALYSIS

Analyst: Courtney Lane
 Agency/Co.: Hussey, Gay, Bell & DeYoung
 Date Performed: 8/15/2003
 Analysis Time Period: -
 Urban Street: Frank Cochran Drive
 Direction of Travel:
 Jurisdiction: City of Hinesville
 Analysis Year: 2008
 Project ID: Frank Cochran Drive Widening

Traffic Characteristics

Annual average daily traffic, AADT	16490	vpd
Planning analysis hour factor, K	0.100	
Directional distribution factor, D	0.500	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1900	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	2	
Free flow speed, FFS	45	mph
Urban class	2	
Section length	2.70	miles
Median	Yes	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	3	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Pretimed	
Cycle length, C	75.0	sec
Effective green ratio, g/C	0.330	

Results

Annual average daily traffic, AADT	16490	vpd
Two-way hourly volume	1649	vph
Hourly directional volume	824	vph
Through-volume 15-min. flow rate	895	v
Running time	220.3	sec
v/c ratio	0.71	
Through capacity	1254	vph
Progression factor, PF	1.000	
Uniform delay	22.0	sec
Filtering/metering factor, I	0.631	
Incremental delay	2.2	sec
Control delay	24.2	sec/v
Total travel speed, Sa	33.2	mph
Total urban street LOS	B	

Arterial Analysis 2: 2028 Volumes, Improved Conditions

HCS2000: Urban Streets Release 4.1c

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PLANNING ANALYSIS

Analyst: Courtney Lane
 Agency/Co.: Hussey, Gay, Bell & DeYoung
 Date Performed: 8/15/2003
 Analysis Time Period: -
 Urban Street: Frank Cochran Drive
 Direction of Travel:
 Jurisdiction: City of Hinesville
 Analysis Year: 2028
 Project ID: Frank Cochran Drive Widening

Traffic Characteristics

Annual average daily traffic, AADT	20130	vpd
Planning analysis hour factor, K	0.100	
Directional distribution factor, D	0.500	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1900	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	2	
Free flow speed, FFS	45	mph
Urban class	2	
Section length	2.70	miles
Median	Yes	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	3	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Pretimed	
Cycle length, C	75.0	sec
Effective green ratio, g/C	0.330	

Results

Annual average daily traffic, AADT	20130	vpd
Two-way hourly volume	2013	vph
Hourly directional volume	1006	vph
Through-volume 15-min. flow rate	1093	v
Running time	220.3	sec
v/c ratio	0.87	
Through capacity	1254	vph
Progression factor, PF	1.000	
Uniform delay	23.6	sec
Filtering/metering factor, I	0.370	
Incremental delay	3.4	sec
Control delay	27.0	sec/v
Total travel speed, Sa	32.2	mph
Total urban street LOS	B	

Signal Analysis 1: 2008 Volumes– Frank Cochran Dr. / Wilson Ave.

HCS2000: Signalized Intersections Release 4.1c

Analyst: Courtney Lane Inter.: Frank Cochran Dr & Wilson Ave
 Agency: Hussey, Gay, Bell & DeYoung Area Type: All other areas
 Date: 8/12/2003 Jurisd: City of Hinesville
 Period: Peak Hour Year : 2008
 Project ID: Frank Cochran Drive Widening
 E/W St: Frank Cochran Drive N/S St: Wilson Avenue

SIGNALIZED INTERSECTION SUMMARY												
	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	1	1	2	1	0	0	0	0	1	1
LGConfig	L	T	R	L	T	R				LT	R	
Volume	230	210	310	5	650	210				75	270	100
Lane Width	14.0	12.0	12.0	14.0	12.0	12.0					12.0	12.0
RTOR Vol			30			10						2

Duration	0.25	Area Type: All other areas									
Signal Operations											
Phase Combination	1	2	3	4	5	6	7	8			
EB Left		P			NB Left						
EB Thru		P			NB Thru						
EB Right		P			NB Right						
EB Peds					NB Peds						
WB Left			P		SB Left	P					
WB Thru			P		SB Thru	P					
WB Right			P		SB Right	P					
WB Peds					SB Peds						
NB Right					EB Right						
SB Right		P			WB Right	P					
Green		16.0	25.0	0.0	0.0	22.0	0.0	0.0	0.0		
Yellow		4.0	4.0	0.0		4.0		0.0			
All Red		0.0	0.0	0.0		0.0		0.0			
Cycle Length: 75.0 secs											

Intersection Performance Summary									
Appr/Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach		
			v/c	g/C	Delay	LOS	Delay	LOS	
Eastbound									
L	403	1888	0.62	0.21	33.8	C			
T	2123	3539	0.11	0.60	6.5	A	15.9	B	
R	950	1583	0.32	0.60	8.3	A			
Westbound									
L	404	1211	0.01	0.33	22.4	C			
T	1180	3539	0.60	0.33	30.0	C	25.6	C	
R	1076	1583	0.20	0.68	11.2	B			
Northbound									
Southbound									
LT	541	1843	0.69	0.29	30.7	C	25.6	C	
R	886	1583	0.12	0.56	8.1	A			
Intersection Delay = 22.1 (sec/veh)					Intersection LOS = C				

Signal Analysis 2: 2028 Volumes– Frank Cochran Dr. / Wilson Ave.

HCS2000: Signalized Intersections Release 4.1c

Analyst: Courtney Lane Inter.: Frank Cochran Dr & Wilson Ave
 Agency: Hussey, Gay, Bell & DeYoung Area Type: All other areas
 Date: 8/12/2003 Jurisd: City of Hinesville
 Period: Peak Hour Year : 2028
 Project ID: Frank Cochran Drive Widening
 E/W St: Frank Cochran Drive N/S St: Wilson Avenue

SIGNALIZED INTERSECTION SUMMARY												
	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	1	1	2	1	0	0	0	0	1	1
LGConfig	L	T	R	L	T	R				LT	R	
Volume	280	255	380	5	800	255				90	330	120
Lane Width	14.0	12.0	12.0	14.0	12.0	12.0					12.0	12.0
RTOR Vol			30			10						2

Duration	0.25	Area Type: All other areas									
Signal Operations											
Phase Combination	1	2	3	4	5	6	7	8			
EB Left		P			NB Left						
EB Thru		P			NB Thru						
EB Right		P			NB Right						
EB Peds					NB Peds						
WB Left			P		SB Left	P					
WB Thru			P		SB Thru	P					
WB Right			P		SB Right	P					
WB Peds					SB Peds						
NB Right					EB Right						
SB Right		P			WB Right	P					
Green		16.0	25.0	0.0	0.0	22.0	0.0	0.0	0.0		
Yellow		4.0	4.0	0.0		4.0		0.0			
All Red		0.0	0.0	0.0		0.0		0.0			
Cycle Length: 75.0 secs											

Intersection Performance Summary									
Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach		
			v/c	g/C	Delay	LOS	Delay	LOS	
Eastbound									
L	403	1888	0.75	0.21	40.0	D			
T	2123	3539	0.13	0.60	6.6	A	18.2	B	
R	950	1583	0.40	0.60	9.2	A			
Westbound									
L	385	1155	0.01	0.33	22.4	C			
T	1180	3539	0.74	0.33	33.6	C	28.4	C	
R	1076	1583	0.25	0.68	11.7	B			
Northbound									
Southbound									
LT	541	1843	0.84	0.29	39.8	D	32.9	C	
R	886	1583	0.14	0.56	8.2	A			
Intersection Delay = 25.7 (sec/veh) Intersection LOS = C									

Signal Analysis 3: 2008 Volumes– Frank Cochran Dr. / Gulick Ave.

HCS2000: Signalized Intersections Release 4.1c

Analyst: Courtney Lane Inter.: Frank Cochran Dr & Gulick Ave
 Agency: Hussey, Gay, Bell & DeYoung Area Type: All other areas
 Date: 8/12/2003 Jurisd: City of Hinesville
 Period: Peak Hour Year : 2008
 Project ID: Frank Cochran Drive Widening
 E/W St: Frank Cochran Drive N/S St: Gulick Avenue

SIGNALIZED INTERSECTION SUMMARY												
	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	2	1	1	2	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	210	70	1	55	70	20	450	590	145	120	355	350
Lane Width	14.0	12.0	14.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			0			0			15			35

Duration	0.25	Area Type: All other areas									
Signal Operations											
Phase Combination	1	2	3	4	5	6	7	8			
EB Left		P	P		NB Left		P				
EB Thru		P	P		EB Thru		P				
EB Right		P	P		EB Right		P				
EB Peds					EB Peds						
WB Left			P		SB Left	P					
WB Thru			P		SB Thru	P					
WB Right			P		SB Right	P					
WB Peds					WB Peds						
NB Right					EB Right						
SB Right		P			WB Right						
Green		8.0	10.0	0.0	0.0	14.2	25.4	0.0	0.0		
Yellow		4.0	4.0	0.0		4.0	4.0	0.0			
All Red		0.0	0.0	0.0		0.0	0.0	0.0			
Cycle Length: 73.6 secs											

Intersection Performance Summary								
Appr/Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	392	1888	0.58	0.30	32.8	C		
T	557	1863	0.14	0.30	24.7	C	30.7	C
R	505	1689	0.00	0.30	23.3	C		
Westbound								
L	179	1318	0.34	0.14	33.8	C		
TR	245	1800	0.40	0.14	33.9	C	33.8	C
Northbound								
L	611	1770	0.80	0.35	32.4	C		
T	1221	3539	0.52	0.35	20.9	C	25.0	C
R	546	1583	0.26	0.35	18.5	B		
Southbound								
L	341	1770	0.38	0.19	29.1	C		
T	683	3539	0.57	0.19	30.3	C	30.7	C
R	477	1583	0.72	0.30	31.8	C		
Intersection Delay = 28.1 (sec/veh)					Intersection LOS = C			

Signal Analysis 4: 2028 Volumes – Frank Cochran Dr. / Gulick Ave.

HCS2000: Signalized Intersections Release 4.1c

Analyst: Courtney Lane Inter.: Frank Cochran Dr & Gulick Ave
 Agency: Hussey, Gay, Bell & DeYoung Area Type: All other areas
 Date: 8/12/2003 Jurisd: City of Hinesville
 Period: Peak Hour Year : 2028
 Project ID: Frank Cochran Drive Widening
 E/W St: Frank Cochran Drive N/S St: Gulick Avenue

SIGNALIZED INTERSECTION SUMMARY												
	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	0	1	2	1	1	2	1
LGConfig	L	T	R	L	TR		L	T	R	L	T	R
Volume	260	90	1	70	90	30	550	720	20	150	435	425
Lane Width	14.0	12.0	14.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			0			0			15			35

Duration	0.25	Area Type: All other areas									
Signal Operations											
Phase Combination	1	2	3	4	5	6	7	8			
EB Left		P	P		NB Left		P				
EB Thru		P	P		NB Thru		P				
EB Right		P	P		NB Right		P				
EB Peds					NB Peds						
WB Left			P		SB Left	P					
WB Thru			P		SB Thru	P					
WB Right			P		SB Right	P					
WB Peds					SB Peds						
NB Right					EB Right						
SB Right		P			WB Right						
Green		8.0	10.0	0.0	0.0	14.2	25.4	0.0	0.0		
Yellow		4.0	4.0	0.0		4.0	4.0	0.0			
All Red		0.0	0.0	0.0		0.0	0.0	0.0			
Cycle Length: 73.6 secs											

Intersection Performance Summary								
Appr/Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	369	1888	0.77	0.30	44.5	D		
T	557	1863	0.18	0.30	25.2	C	39.5	D
R	505	1689	0.00	0.30	23.3	C		
Westbound								
L	176	1292	0.43	0.14	36.7	D		
TR	243	1792	0.54	0.14	38.0	D	37.5	D
Northbound								
L	611	1770	0.98	0.35	55.4	E		
T	1221	3539	0.64	0.35	22.9	C	36.9	D
R	546	1583	0.01	0.35	15.9	B		
Southbound								
L	341	1770	0.48	0.19	31.1	C		
T	683	3539	0.69	0.19	33.4	C	38.0	D
R	477	1583	0.89	0.30	45.7	D		
Intersection Delay = 37.6 (sec/veh)					Intersection LOS = D			

Exhibit 1

Map of Study Area

NTS

