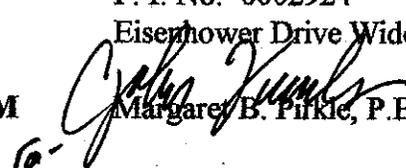


D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE STP-0002-00(924) Chatham County **OFFICE** Preconstruction
P. I. No. 0002924
Eisenhower Drive Widening **DATE** June 22, 2004

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

TO SEE DISTRIBUTION

SUBJECT PROJECT CONCEPT REPORT APPROVAL

Attached for your files is the approval for subject project.

MBP/cj

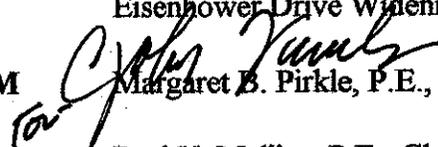
Attachment

DISTRIBUTION:

David Mulling
Harvey Keepler
Jerry Hobbs
Jamie Simpson
Michael Henry
Phillip Allen
Joe Palladi (file copy)
Paul Liles
Brent Story
Ben Buchan
Gary Priester
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE	STP-0002-00(924) Chatham County P.I. No. 0002924 Eisenhower Drive Widening	OFFICE	Preconstruction
		DATE	June 8, 2004
FROM	 Margaret B. Pirkle, P.E., Assistant Director of Preconstruction		
TO	Paul V. Mullins, P.E., Chief Engineer		

SUBJECT PROJECT CONCEPT REPORT

This project is the widening and reconstruction of Eisenhower Drive from 300± east of the intersection with SR 204/Abercorn Street to the Harry S. Truman Parkway, Phase III, which is currently under construction. The project length is 1.75 miles. The existing roadway consists of four lanes, two in each direction, from the point of beginning to Waters Avenue. Beyond Waters Avenue, the existing roadway has two lanes in each direction with a flush center median/turn lane. The existing roadway is served by a longitudinal drainage system, including curb and gutter and catch basins. The Hodgson Memorial Drive, Waters Avenue, Sea Wright Drive, and Sallie Mood Drive intersections have traffic signals. Eisenhower Drive is a major urban arterial facilitating the movement of east-west traffic between Skidaway Road and the residential area to the east of it and Abercorn Street (SR 204) in the central business district in Savannah. The purpose of this project is to improve the management of traffic within the corridor and improve safety conditions by eliminating left turns from through streets and by eliminating the possible head-on conflicts resulting from the two-way center lane. Additionally, this project will serve as an improved connector between the Truman Parkway and Abercorn Street. Eisenhower Drive has an AADT in 2008 of 28,050. It is anticipated that the AADT will increase to 38,120 by the design year 2028. These traffic volumes factor in the expected traffic pattern shifts associated with the opening of Phase III of the Truman Parkway.

The proposed construction will provide four, 12' lanes with a 20' raised median and occasional left turn/right turn lanes, and twelve foot shoulders which include 30" curb and gutter and 5' sidewalks back of the curb. From east of Sallie Mood Drive to the end of the project, the width of the median will be reduced to 14' with the through lanes being the same as the rest of the project. By reducing the median width, the raised median can take the place of the flush median, eliminating the need for roadway widening. Traffic will be maintained during construction.

Environmental concerns include requiring a Categorical Exclusion be prepared; a public information open house will be held; time saving procedures are not appropriate.

Paul V. Mullins

Page 2

STP-0002-00(924) Chatham

June 8, 2004

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C and inflation)	\$3,887,000	\$3,811,000	Q23	2008
Right-of-Way & Utilities*	Local	Local		

*Chatham County signed PMA on 9-11-01 for PE, right-of-way and utilities.

I recommend this project concept be approved.

MBP:JDQ/cj

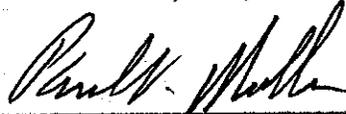
Attachment

CONCUR



Thomas L. Turner, P.E., Director of Preconstruction

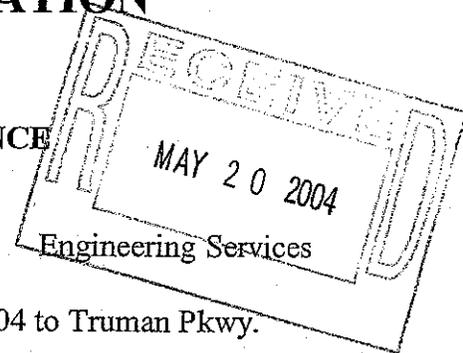
APPROVE



Paul V. Mullins, P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE



FILE: STP-0002-00(924) Chatham
P.I. No.: 0002924
Eisenhower Drive Widening/Reconstruction from S.R. 204 to Truman Pkwy.

OFFICE: Engineering Services

DATE: May 20, 2004

FROM: David Mulling, Project Review Engineer *REW*

TO: Meg Pirkle, Assistant Director of Preconstruction

SUBJECT: CONCEPT REPORT

We have reviewed the Concept Report submitted May 7 2004 by the letter from Ben Buchan, dated April 27, 2004, and have the following comments.

- Consideration should be given to utilizing 16 foot shoulders on this project which is the "preferred" shoulder width in urban areas. This will better accommodate pedestrians at driveway locations.
- Quantities and unit costs used to justify the costs for bridge widening should be included in the Cost Estimate.

The costs for the project are:

Construction	\$2,906,500
Inflation	\$626,370
E&C	\$353,287
Reimbursable Utilities	\$820,000
Right of Way	\$22,139,435

REW

c: Ben Buchan, Attn.: Darryl VanMeter

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
Office of Urban Design

Project Concept Report

Project Number: STP-0002-00(924)

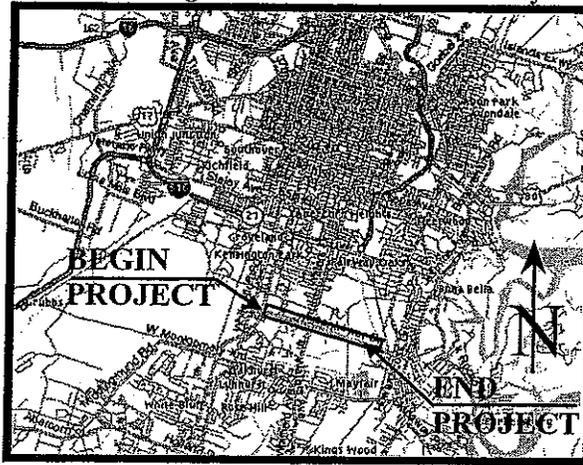
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway



Recommendation for approval:

DATE 5/3/2004

Carol O. Van Meter
Project Manager

DATE 5/4/2004

James B. Bunker
State Urban 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 5/20/04

David J. Mallin *DCW*
Project Review Engineer

SCORING RESULTS AS PER MOG 2440-2

Project Number: STP-0002-00(924)		County: Chatham		PI No.: 0002924	
Report Date: May 4, 2004		Concept By: DOT Office: Urban 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	90	Quantity and unit cost for bridge widening should be included in the Cost Estimate.			
Judgement	100				
Environmental	100				
Right of Way	100				
Utility	100				
Constructability	100				
Schedule	100				

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE STP-0002-00(924), Chatham
PI 0002924

OFFICE Urban Design

Widening & Reconstruction of Eisenhower Drive

From: SR 204/Abercorn Street To: Truman Parkway

DATE April 27, 2004

James B. Buchan
FROM James B. Buchan, P.E., State Urban Design Engineer

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

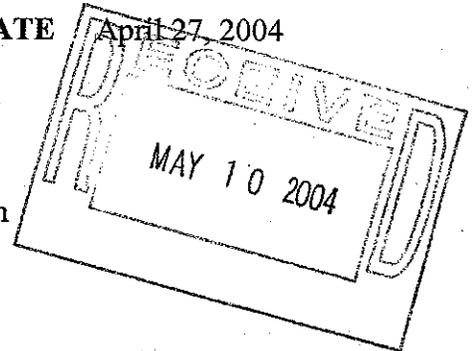
SUBJECT Project Concept Report

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

If you have any questions concerning this matter, please call Darryl VanMeter or Marcela Coll at (404) 656-5447.

DVM
JBB:DVM:mgc
Attachment

cc: David Mulling, P.E., Project Review Engineer, w/attachment
Harvey Keeper, State Environmental/Location Engineer, w/attachment
Phillip Allen, P.E., State Traffic Safety and Design Engineer, w/attachment
Joseph P. Palladi, P.E., State Transportation Planning Administrator, w/attachment
Jamie Simpson, Financial Management Administrator, w/attachment
Gary Priester, P.E., District 5 Engineer, w/attachment
Paul Liles, P.E., State Bridge and Structural Design Engineer, w/attachment



**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
Office of Urban Design**

Project Concept Report

Project Number: STP-0002-00(924)

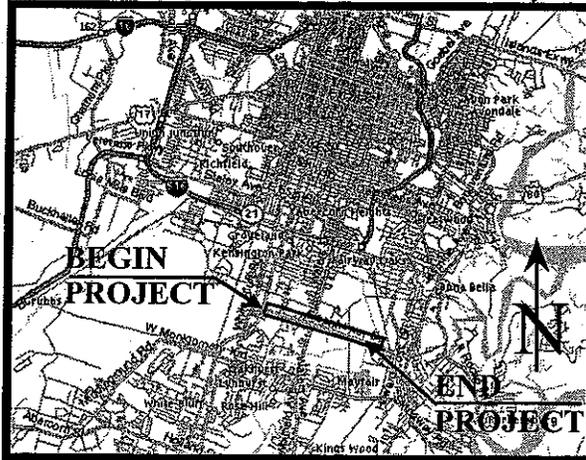
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

**Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway**



Recommendation for approval:

DATE 5/3/2004

Darryl D. Van Meter
Project Manager

DATE 5/4/2004

James B. Bunker
State Urban 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

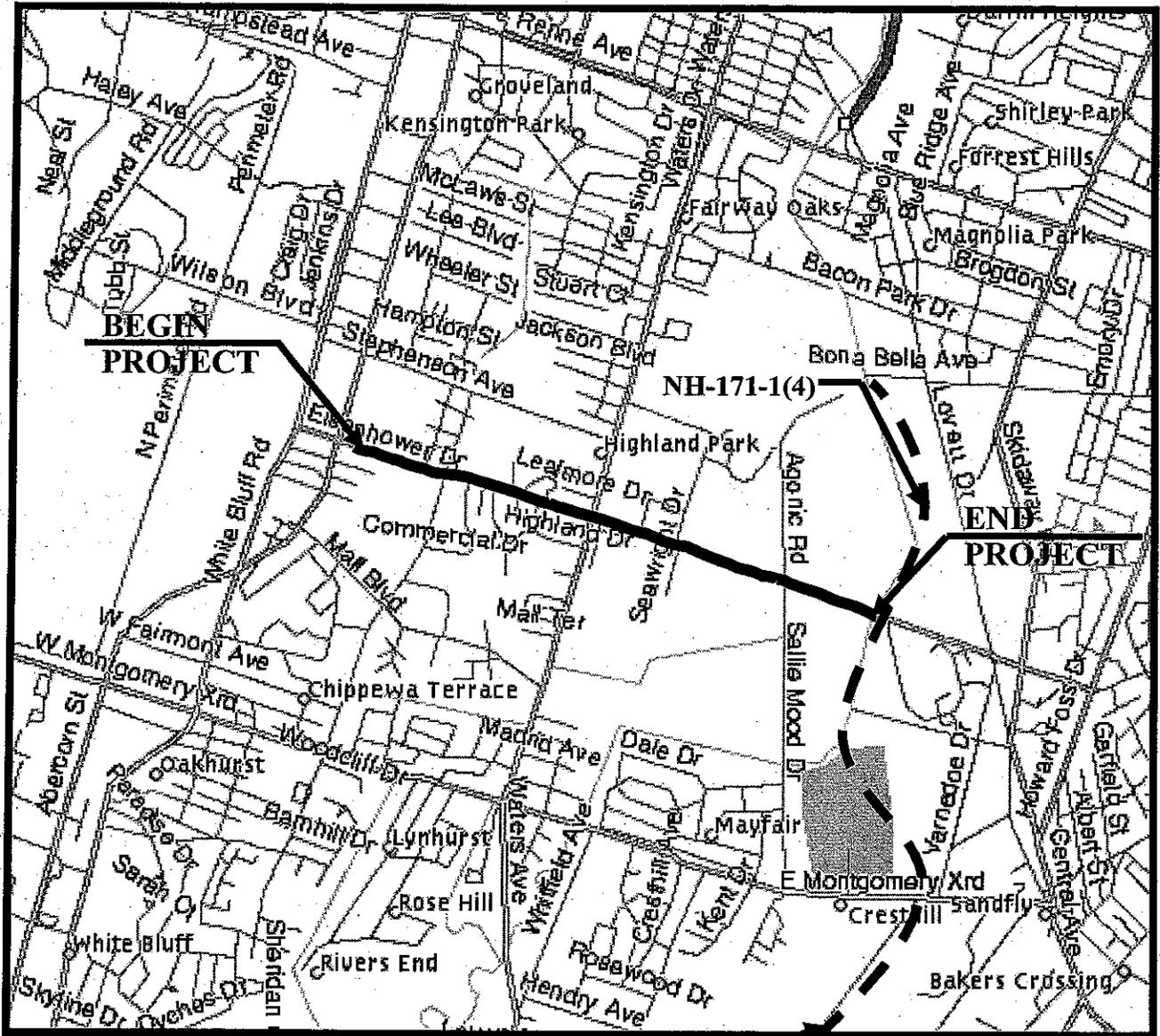
DATE _____

District Engineer

DATE _____

Project Review Engineer

PROJECT LOCATION MAP
NTS



HPP-NH-171-1(3)

Purpose and Need:

Eisenhower Drive is a major urban arterial facilitating the movement of east-west traffic between Skidaway Road and the residential area to the east of it and Abercorn Street (SR 204) in the central business district of the City of Savannah in Chatham County. There are currently two Department of Transportation / Chatham County projects underway in the corridor, these being the following:

- A.) NH-171-1 (4), Harry S. Truman Parkway, Phase III – This project involves the extension of the Truman Parkway from just north of DeRenne Avenue to just south of Montgomery Cross Road. It includes an elevated crossing of Eisenhower Drive with an interchange and the realignment and relocation of access roads to public facilities on the north and south. This project is currently under construction, with the portion from Derenne Avenue to Eisenhower Drive now being open to traffic.
- B.) HPP-NH-171-1(3), Harry S. Truman Parkway, Phase IV – This project involves the extension of the Truman Parkway from the end of Phase III at Montgomery Cross Road to Whitfield Avenue. This project is currently under construction.

Between the beginning of the proposed project and the Harry S. Truman Parkway, Eisenhower Drive currently consists of two through lanes in each direction. From Abercorn Street to Waters Avenue, there are four lanes total with additional turning lanes provided at Hodgson Memorial Drive, Commercial Drive, and Waters Avenue. From Waters Avenue to the eastern terminus the roadway is four through lanes with a center flush median, which acts a two-way turn lane. The roadway is an urban section with curb and gutter and a longitudinal storm drainage system.

The purpose of the project is to improve the management of traffic within the corridor to the point that the current Level of Service can be maintained or bettered in the design year. Signal timing will also be optimized to make the most efficient use of available cycle time. The project will also improve safety conditions in the corridor by eliminating left turns from through streets and by eliminating the possible head on conflicts resulting from the two-way center lane. This will be done by constructing a raised median for the full length of the project and by placing all turning movements in protected lanes out of conflict with on-coming or adjacent lanes.

As has been previously stated, the proposed project will serve as an improved connector between the recently improved other Department of Transportation projects in the corridor. Both the Truman Parkway and Eisenhower Drive / SR 204 intersection will serve as a primary traffic source / destination for the east-west traffic on Eisenhower Drive. The proposed cross section on Eisenhower Drive also matches the sections for the other projects. While there are other traffic sources / destinations along the route, there are no other points which provides for corridor continuity as will as these two. Therefore, the logical termini for the proposed project are the tie points with Abercorn Street/Eisenhower Drive intersection and Harry S. Truman Parkway.

According to Georgia Department data from 1999, average daily traffic volumes on Eisenhower Drive varied between a high of 21,910 on the segment between Hodgson Memorial

Drive and Waters Avenue and 15,840 between Sallie Mood Drive and Skidaway Road. Factoring in expected traffic pattern shifts associated with the opening of Phase III of the Truman Parkway, the estimated ADT for Eisenhower Drive in the year 2008 is 25,050 vehicles per day. Utilizing the methodology outlined in the traffic study contained in this report, the projected traffic in the design year of 2028 is 38,120 vehicles per day.

The Eisenhower Corridor is primarily used for purpose of moving passenger vehicles from residential areas to work and commerce sectors. There is only a minimal truck presence; most of these are the smaller panel and delivery type trucks, not full size over the road trucks. The percentage of trucks on this project for both current and future years is 2% of ADT.

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. Under current conditions, Eisenhower Drive currently operates at an arterial LOS B. The intersection LOS of the major intersections is as shown below:

CURRENT YEAR LOS MAJOR INTERSECTIONS	
Intersection	2008 LOS
Hodgson Memorial Drive	E
Waters Avenue	E
Seawright Drive	C
Sallie Mood Drive	C

As noted above, the amount of traffic on this roadway will increase substantially in the design year of 2028. From an arterial view, the improvements will not make a substantial difference, as the roadway will retain two through lanes in each direction for the length of the project corridor. The traffic analysis has shown that the arterial capacity for the design year will remain at LOS B for both existing and proposed conditions.

It is in intersection capacity that the proposed improvements have the greatest impact. The design year LOS for each major intersection for the improved/ unimproved cases is shown below:

DESIGN YEAR LOS – MAJOR INTERSECTIONS		
Intersection	2028 LOS With improvements	2028 LOS Without Improvements
Hodgson Memorial Drive	E	F
Waters Avenue	E	F
Seawright Drive	E	E
Sallie Mood Drive	E	F

As can be seen, the proposed improvements are needed to prevent the majority of the intersections from failing, with average delay times up to 187 seconds.

There are no existing bicycle facilities (other than the roadway itself) located on the existing corridor and there are no plans to include bike facilities in this project. Currently there are sidewalks in place on the south side of the road from Waters Avenue to Skidaway Road. The proposed project will expand this to provide sidewalks on both sides for the full length of the corridor.

Analyses of the accident reports for the project corridor for the years 1998-2000 showed that the accident rates while below the statewide average are steadily increasing. The majority of these accidents were rear-end collisions. There were also a significant number of angle collisions resulting from vehicles turning onto Eisenhower Drive from sideroads. The proposed improvements will help to reduce the occurrence of both types of accidents. The turn-lanes will help to lessen the number of rear-end collisions by providing a refuge area turning vehicles. The raised median will help to reduce the number of angle collisions by eliminating left-turns from driveways and non-signalized sideroads. The accident rates are summarized below:

Accident Rates Summary (1998-2000)		
Year	Accident Rate Along Corridor	Statewide Accident Rate
1998	7.19	9.65
1999	7.27	9.60
2000	7.61	9.58

Description of the proposed project:

The proposed project involves widening 1.75 miles of Eisenhower Drive in Chatham County, Georgia. The project begins approximately 300' east of the intersection of Eisenhower Drive with State Route 204 (Abercorn Street). At this point the project connects to and matches the recently completed project STP-111-1 (21), SR 204/ Eisenhower Drive Intersection Improvements. The project then proceeds in an easterly direction for approximately 1.75 miles where it connects to project NH-171-1 (4), Harry S. Truman Parkway, Phase III, which is currently under construction.

The existing roadway consists of four lanes; two in each direction, from the point of beginning to Waters Avenue, with additional left/right turn lanes at the Hodgson Memorial Drive and Waters Avenue intersections. Beyond Waters Avenue the existing roadway has two lanes in each direction with a flush center median / turn lane. The existing roadway is served by a longitudinal drainage system, including curb and gutter and catch basins. The Hodgson Memorial Drive, Waters Avenue, Sea Wright Drive and Sallie Mood Drive intersections have traffic signals.

The improvements consist of adding a 20' raised median, adding additional pavement to one or both sides of the existing roadway sufficient to provide for two lanes in each direction, and constructing additional right / left turn lanes to improve traffic flow conditions. Widening begins on the north side of the project at the intersection of Eisenhower Drive and S.R. 204. The alignment then shifts to the south. From Hodgson Memorial Drive to Waters Avenue all roadway widening is to the south. At Waters Avenue the alignment shifts to the north. Widening continues on the north side of the roadway until 500' east of the intersection of Eisenhower Drive and Sallie Mood Drive. The median then tapers to 14'. No widening is required from this point until the intersection with Truman Parkway at the end of the project (approximately 990'). A plan view of the proposed improvements can be found on the exhibits accompanying this report and include the following:

- Construction of 20-foot raised median.
- Left-turn lanes at all intersections and median openings.
- Dual left-turn lanes for the left-turn movement from westbound Eisenhower Drive to southbound Hodgson Memorial Drive
- Dual left-turn lanes for the left-turn movement from northbound Hodgson Memorial Drive to westbound Eisenhower Drive
- Dual left-turn lanes for both left-turn movements from Eisenhower Drive onto Waters Avenue.
- Dual left-turn lanes for the left-turn movement from northbound Waters Avenue to westbound Eisenhower Drive with addition of a 2-foot raised median between the turn lane and the southbound lane
- Addition of a 2-foot raised median on the southbound Waters Avenue to eastbound Eisenhower Drive movement between the turning lane and northbound traffic
- Addition of an exclusive right turn bay for eastbound Eisenhower Drive traffic at Hodgson Memorial Drive
- Addition of an exclusive right turn bay for northbound Hodgson Memorial Drive traffic at Eisenhower Drive

Project Concept Report, page 7
Project Number: STP-0002-00(924)
P. I. Number: 0002924
County: Chatham

- Addition of an exclusive right turn bay for northbound Waters Avenue traffic at Eisenhower Drive
- Addition of an exclusive right turn bay for southbound Waters Avenue traffic at Eisenhower Drive
- Addition of an exclusive right turn bay for westbound Eisenhower Drive traffic at Sea Wright Drive
- Addition of an exclusive right turn bay for eastbound Eisenhower Drive traffic at Sallie Mood Drive
- Addition of an exclusive right turn bay for northbound Sallie Mood Drive traffic at Eisenhower Drive
- Additional u-turn pavement at all intersections and median openings

Project Concept Report, page 8
Project Number: STP-0002-00(924)
P. I. Number: 0002924
County: Chatham

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

PDP Classification: Major X Minor _____

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

Functional Classification: Urban Major Arterial

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

State Route Number(s): N/A

Traffic (AADT):

Current Year: (2008) 25,050 Design Year: (2028) 38,120

Existing design features:

- Typical Section: From Abercorn Street to Waters Avenue - four twelve-foot lanes with thirty-inch curb and gutter. Additional left/right turn lanes are provided at major intersections.

From Waters Avenue to the future intersection with the Truman Parkway - four twelve-foot lanes with a fourteen-foot center dual left turn lane and thirty-inch curb and gutter.

- Posted speed 40 mph Maximum degree of curvature: 0°45'

- Maximum super-elevation rate for curve: N/A

- Maximum grade Mainline: 2.5% Maximum grade Side Street: 3%

- Width of right of way: 80 to 110 ft. (80' primary width)

- Major structures: Casey Canal Bridge; 60 ft length and 81 ft wide.

- Major interchanges or intersections along the project: Hodgson Memorial Drive, Waters Avenue, Sea Wright Drive, Sallie Mood Drive

- Existing length of roadway segment and the beginning mile logs for each county segment: 1.75 miles of Eisenhower Drive located entirely in Chatham County

Proposed Design Features:

- Proposed typical section: Four twelve-foot lanes with twenty-foot raised median and occasional left turn / right turn lanes. Twelve foot shoulders which include thirty-inch curb and gutter and five foot sidewalks back of the curb. From east of Sallie Mood Drive to the end of the project the width of the median will be reduced to 14', with the through lanes being the same as the rest of the project. By reducing the median width, the raised median can take the place of the existing flush median, eliminating the need for roadway widening.
- Proposed Design Speed Mainline 45 mph
- Proposed Maximum grade Mainline 3 % Maximum grade allowable 5 %
- Proposed Maximum grade Side Street 3 % Maximum grade allowable 5 %
- Proposed Minimum radius for curve 730 ft
- Proposed Maximum super-elevation rate for curve: 4%
- Right of way
 - Width 105 to 144 ft.
 - Easements: Temporary (X), Permanent (X), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (X), Other ().
 - Number of parcels: 52 Number of displacements:
 - Business: 1
 - Residences: 0
 - Mobile homes: 0
 - Other: 0
- Structures: Widening of existing bridge over Casey Canal
- Major intersections and interchanges: Hodgson Memorial Drive, Waters Avenue, Seawright Drive, Sallie Mood Drive, Truman Parkway Phase III
- Traffic control during construction: Maintain traffic on existing roadway.

- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
ROADWAY WIDTH:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
SHOULDER WIDTH:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
VERTICAL GRADES:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
CROSS SLOPES:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
STOPPING SIGHT DISTANCE:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
SUPERELEVATION RATES:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
HORIZONTAL CLEARANCE:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
SPEED DESIGN:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
VERTICAL CLEARANCE:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
BRIDGE WIDTH:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
BRIDGE STRUCTURAL CAPACITY:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

- Design Variances: A variance will be needed for the proposed 14' wide median east of Sallie Mood Drive.
- Environmental concerns:
 There are three possible locations for UST's within the project area. These are the northwest corner at the Eisenhower - Waters intersection, the southeast corner of the Hodgson Memorial - Eisenhower intersection, and a Jiffy Lube store on the north side of Eisenhower.
- 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 Savannah (water and sewer), Atlanta Gas Light (gas main), Savannah Electric (powerlines), Bell South (communication lines), and Comcast (cable television).

Project responsibilities:

- Design – Chatham County
- Right of Way Acquisition – Chatham County
- Relocation of Utilities – Chatham County
- Letting to contract – GDOT
- Supervision of construction - GDOT
- Providing material pits – Contractor
- Providing detours – N/A

Coordination

- Initial Concept Meeting date and brief summary: An initial concept meeting was not required for this project.

- Concept Meeting held in Jesup on September 16, 2002

The Concept Meeting was held in the conference room of the GDOT District Five Office in Jesup. Representatives from GDOT, Chatham County, the City of Savannah, Savannah-Chatham MPC, Savannah Electric, Comcast, BellSouth, and Hussey, Gay, Bell & DeYoung were in attendance. Complete minutes for this meeting are attached.

Comments made at this meeting included the following:

1. The project should be designed to maximize greenspace along the project corridor, including grassing and landscaping in the median.
2. HGBD should investigate the accident history at the Waters Avenue intersection and provide for a narrow raised median if sufficient space is available.
3. Turn lanes should be long enough to accommodate the 95th percentile volume for their associated movements.
4. There should be 5-foot sidewalks on both sides of the road with a 2-foot grass strip between the sidewalk and the back of curb, and that the ramps at each intersection would need to comply with current ADA requirements.
5. All available measures should be taken to minimize right-of-way requirements due to the developed nature of the corridor.
6. All practical steps should be taken to avoid needless removal of potential specimen trees along the project corridor.

- P. A. R. meetings, dates and results: N/A
- FEMA, USCG, and/or TVA: Not Required.
- Public involvement: Public meeting to be scheduled.
- Local government comments: Chatham County and the City of Savannah support the project.
- Other projects in the area: NH-171-1 (4), Harry S. Truman Parkway, Phase III
HPP-NH-171-1(3) Harry S. Truman Parkway, Phase IV
- Other coordination to date: None
- Future Passenger Rail Corridor? Yes No

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 12 Months.
- Time to complete preliminary construction plans: 6 Months.
- Time to complete right of way plans: 6 Months.
- Time to complete the Section 404 Permit: N/A Months.
- Time to complete final construction plans: 6 Months.
- Time to complete to purchase right of way: 18 Months.
- List other major items that will affect the project schedule: None Months.

Project Concept Report, page 12
Project Number: STP-0002-00(924)
P. I. Number: 0002924
County: Chatham

Other alternates considered:

Alternate "A"

This alternate included widening Eisenhower Drive to provide for a 20 foot raised median from the point of beginning to Waters Avenue. This alternate is a shorter version of the recommended alternate. Extending the project to the Truman Parkway provided the project with a more logical terminus.

Alternate "B"

This alternate included widening the existing pavement to provide for a 14' wide flush center median with two lanes in each direction and construction of additional right/left turn lanes to improve traffic flow conditions. This alternate has less right-of-way impacts and utilized more of the existing pavement, but was not chosen because of safety concerns. With the increased traffic expected on Eisenhower with the connection of the Truman Parkway it was decided that the raised median would provide a safer driving environment.

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

Attachments:

1. Preliminary Cost Estimate
2. Right-of-Way Cost Estimate
3. Typical Section
4. Accident Summaries
5. Capacity Analysis
6. Concept Meeting Minutes
7. Concept Layout

PRELIMINARY COST ESTIMATE

PROJECT NUMBER: STP-0002-00 (924)	COUNTY: CHATHAM
DATE: 7/25/2003	ESTIMATED LETTING DATE: 2004
PREPARED BY: HGBD, Inc.	PROJECT LENGTH: 1.75 MILES
() PROGRAMMING PROCESS	(X) CONCEPT DEVELOPMENT () DURING PROJ DEV.

PROJECT COST

A. RIGHT-OF-WAY: (See Right-of-Way Cost Estimate for Details)

1. PROPERTY (LAND & EASEMENT)	\$1,976,565
2. DISPLACEMENTS; RES:0, BUS:1, M.H.:0 / 52 PARCELS	\$20,000
3. OTHER COST (ADM./COST, INFLATION)	\$20,142,870
SUBTOTAL A:	\$22,139,435

B. REIMBURSABLE UTILITIES:

1. RAILROAD	\$0
2. TRANSMISSION LINES	\$700,000
3. SERVICES	\$120,000
SUBTOTAL B:	\$820,000

C. CONSTRUCTION:

1. MAJOR STRUCTURES

a. RETAINING WALLS	\$0
b. BRIDGES - Extend Bridge over Casey Canal	\$150,000
c. DETOUR BRIDGES	\$0
d. BOX CULVERTS	\$0
SUBTOTAL C-1:	\$150,000

2. GRADING AND DRAINAGE:

a. EARTHWORK - 14,000 CUBIC YARDS	\$110,000
b. DRAINAGE:	
1. CROSS DRAIN PIPE	\$50,000
2. CURB AND GUTTER 33,000 LINEAR FEET	\$330,000
3. LONGITUDINAL SYSTEM	\$250,000
SUBTOTAL C-2:	\$740,000

3. BASE AND PAVING

a. AGGREGATE BASE - GRADED AGGREGATE (50000 SY)	\$500,000
b. ASPHALT PAVING	
1. SURFACE - 12.5mm SUPERPAVE (4200 TON)	\$189,000
2. BINDER - 19.0mm SUPERPAVE (5500 TON)	\$236,500
3. BASE - 25.0mm SUPERPAVE (11000 TON)	\$451,000
SUBTOTAL C-3b:	\$876,500
c. CONCRETE PAVING	\$0
d. OTHER	\$0
SUBTOTAL C-3:	\$1,376,500

4. LUMP ITEMS	
a. TRAFFIC CONTROL	\$100,000
b. CLEARING AND GRUBBING	\$50,000
c. LANDSCAPING	\$0
d. EROSION CONTROL	\$50,000
e. DETOURS	\$0
SUBTOTAL C-4:	\$200,000
5. MISCELLANEOUS	
a. LIGHTING	\$0
b. SIGNING AND STRIPING	\$30,000
c. SIGNALS	\$240,000
d. GUARDRAIL	\$0
e. SIDEWALK - MEDIAN BARRIER - DRIVEWAYS	\$170,000
SUBTOTAL C-5:	\$440,000
6. SPECIAL FEATURES	
SUBTOTAL C-6:	\$0

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY:		\$22,139,435
B. REIMBURSABLE UTILITIES:		\$820,000
C. CONSTRUCTION:		
1. MAJOR STRUCTURES		\$150,000
2. GRADING AND DRAINAGE:		\$740,000
3. BASE AND PAVING		\$1,376,500
4. LUMP ITEMS		\$200,000
5. MISCELLANEOUS		\$440,000
6. SPECIAL FEATURES		\$0
SUBTOTAL CONSTRUCTION COSTS		\$2,906,500
E. & C. (10%)		\$290,650
INFLATION (PER YEAR)	5%	\$689,000
YEARS	4	
TOTAL CONSTRUCTION COST		\$3,886,150
GRAND TOTAL PROJECT COSTS		\$26,845,585

CONCEPT REPORT RIGHT OF WAY COST ESTIMATE

Date:	May 8, 2002	P.I. Number:	N/A
Project:	Eisenhower Drive Widening	No. Parcels:	52
Existing/Required R/W:	Varies/Varies		
Project Termini:	Just east of Abercorn St. to relocated Shorty Cooper Dr.		
Project Description:	Widening with intersection improvements		

Land:

(High Commercial): 77,440 SF @ \$12.00/SF = \$929,280

(Low Commercial): 47,720 SF @ \$8.00/SF = \$381,760

(Office): 128,965 SF @ \$5.00/SF = \$644,825

(Multi-family): 13,800 SF @ \$1.50/SF = \$ 20,700

TOTAL:	\$1,976,565
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Improvements:

Minor site improvements (paving, curbing, signs, walls, etc.)	\$ 150,000
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Relocation:

(1 definite displacee – see below)	\$ 20,000
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Damages:

Proximity – 0 Parcels	\$	0	
Consequential – 23 Parcels	\$4,205,000		
Cost to Cure – 1 Parcel	<u>\$ 25,000</u>		
			<u>\$4,230,000</u>

Net Cost:	\$ 6,376,565
Plus Scheduling Contingency (55%):	\$ 3,507,111
Plus Admin./Court Cost (60% of 2 lines above):	\$ 5,930,206
Plus Inflation Factor (40% of three lines above):	<u>\$ 6,325,553</u>
	\$22,139,435

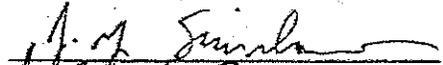
TOTAL COST:	\$22,000,000 (R)
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(See following page for notes and signatures)

Notes: The one definite displacee is the nursery business located on the southeast corner of Waters Avenue and Eisenhower Drive. Relocation benefits and moving expenses estimated. The multiple office buildings on the south side of Eisenhower Drive and located between Commercial Drive and Waters Avenue could not be definitively assigned relocation status based on the preliminary plan. They are damaged due to parking losses and due to access impairment but more detailed plans will be necessary before displacee status can be assigned to the various buildings and tenants.

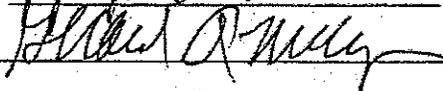
55% adjustment for scheduling contingencies between date of estimate and project implementation. Additional adjustments for unforeseen management and condemnation costs as well as for inflation. Also note that an additional 6 parcels exist on the project but are not counted or valued as they are owned by either Chatham County or the City of Savannah and are not expected to be acquired.

Prepared by:

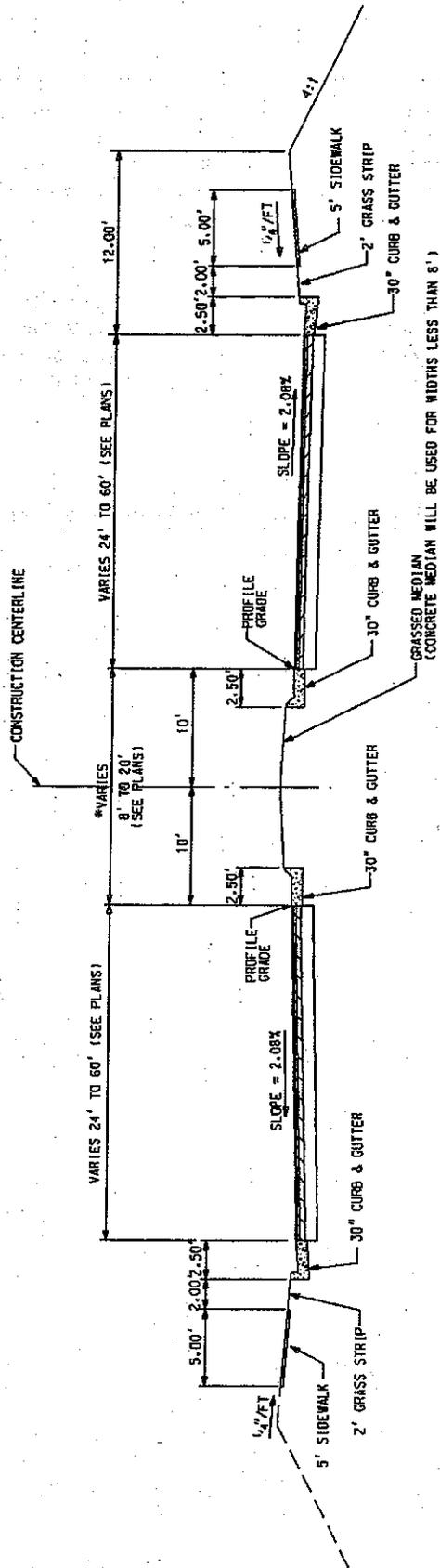


Moreland Altobelli Associates, Inc.

Approved by:



GDOT RW



EISENHOWER DRIVE
TYPICAL SECTION

*FOR PEDESTRIAN CROSSING ALLOW 6' MINIMUM RAISED CONCRETE FOR "REFUGE".

**Chatham County
Eisenhower Road Widening**

Summary of Accident Data (January 1998 - December 2000)

2002 ADT:	24700
Total Project Length (miles):	2.24
Million Vehicle Miles of Travel / Year Along Corridor (2002)	20.19
Million Vehicle Miles of Travel for 1998	19.48
Million Vehicle Miles of Travel for 1999	19.66
Million Vehicle Miles of Travel for 2000	19.84
Total Number of Accidents Along Corridor in 1998:	140
Total Number of Accidents Along Corridor in 1999:	143
Total Number of Accidents Along Corridor in 2000:	151
Accident Rate Along Corridor for 1998:	7.19
Accident Rate Along Corridor for 1999:	7.27
Accident Rate Along Corridor for 2000:	7.61

Accident Rates for Urban Principal Arterials (Non-Freeway, Non-NHS)*

Year	Statewide Average
1996	9.65
1997	9.60
1998	9.58

Eisenhower Drive Widening Traffic Study

PREPARED FOR

Chatham County

PREPARED BY

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

March, 2002

Introduction

Eisenhower Drive is a major urban arterial facilitating the movement of east-west traffic in the City of Savannah's Central Business District. Ongoing development in the area has strained the ability of this 4-lane roadway to adequately meet current traffic demands. Chatham County has therefore undertaken an effort to widen and otherwise improve a significant portion of this roadway between Abercorn Street and Truman Parkway (currently under construction) to enhance its safety and increase its overall capacity. In order to determine what particular improvements will be required to accomplish this, it is necessary to study the existing and predicted future traffic system along Eisenhower in the vicinity of the proposed project.

This study intends to provide Chatham County 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

Eisenhower Drive is one of three major arterials that serve as the principal routes for the movement of east-west traffic in the central portion of the City of Savannah. Situated roughly midway between the other two east-west arterials, namely Derenne Avenue to the north and Montgomery Cross Road to the south, Eisenhower Drive is 2.4 miles long, running between White Bluff Road to the west and Skidaway Road to the east. The roadway intersects with several major north-south arterials including in order from west to east: White Bluff Road, Abercorn Street, Hodgson Memorial Drive, Waters Avenue and Skidaway Road. Eisenhower Drive in the vicinity of the widening project under consideration serves as a central point of access for numerous businesses, both retail and professional, including several shopping centers and the nearby Oglethorpe Mall. Traffic on this road is heavy throughout the day and typical of such an arterial in the heart of an urban central business district.

Eisenhower Drive is comprised of two distinct roadway sections. The first begins at White Bluff Road and ends at Waters Avenue while the second continues from Waters to the road's terminus at Skidaway Road. The limits of the project under consideration running between Abercorn Street to the west and Truman Parkway to the east include a portion of each of these roadway sections.

The first 1.0-mile roadway section between White Bluff Road and Waters Avenue is comprised of four 12-foot lanes, two eastbound and two westbound combined with intermittent development of left and right hand turn lanes. This section

includes numerous points of driveway access to commercial properties on both sides and is undivided throughout its length. The posted speed limit is 40 mph and average running speeds throughout the section range from 35-45 mph. Intersections with White Bluff Road, Abercorn Street, Hodgson Memorial Drive, and Waters Avenue are signalized while intersections with Douglas Street, Forest Park Drive, and Commercial Drive are not.

The second 1.4-mile roadway section between Waters Avenue and Skidaway Road includes two eastbound and two westbound 12-foot lanes separated by a continuous flush 14-foot median turn lane. The frequency of driveway access points along this section is much lower than that of the first section. The posted speed limit is 45 mph and average running speeds vary between 40 and 50 mph. In addition to the intersection with Waters Avenue, intersections with Sea Wright Drive, Sallie Mood Drive and Skidaway Road are signalized while intersections with MacArthur Drive, Pinetree Drive and Varnedoe Drive are not. In addition to these, an interchange with the proposed extension of Truman Parkway (Phase III) currently under construction includes the addition of a signalized intersection between Sallie Mood Drive and Skidaway Road. This project is expected to be complete by the end of 2004.

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. In this study, both arterial capacity and intersection capacity are examined.

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. Eisenhower 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 over-saturation with arrival flow rates exceeding the intersection capacity. Very poor progression, long cycle lengths and frequently long delays. (> 80 seconds)

Due to the urban, arterial nature of the improvement project's scope, this study focuses on analysis of the capacity of each of the four signalized intersections in 2028, the design year, established as 20 years from the date of the project's expected completion.

Analysis of Existing Traffic Conditions

According to Georgia Department of Transportation (GDOT) data for 1999, traffic volumes along Eisenhower Drive varied from an Average Daily Traffic (ADT) volume of 12,060 vehicles per day between White Bluff Road and Abercorn Street to 21,910 between Hodgson Memorial Drive and Waters Avenue to 15,840 between Sallie Mood Drive and Skidaway Road. *Exhibit A6* in Appendix A presents historical data for ADT along Eisenhower Drive between 1989 and 1999.

The project scope includes two major intersections with north-south arterials. The first is the intersection with Hodgson Memorial Drive. The 1999 ADT volume on Hodgson Memorial Drive ranges from 12,380 vehicles per day just north of the Eisenhower Drive intersection to 22,300 just to its south. At the second intersection, with Waters Avenue, the 1999 ADT volume ranges from 17,850 between Derenne and Stevenson Avenues on Waters to 18,080 just to the intersection's south. Both of these intersections are signalized and both provide at least one left turn bay at each of the four approaches. In addition a dual left is provided for the southbound Waters Avenue to eastbound Eisenhower Drive movement. Dedicated right-turn bays are provided along Eisenhower Drive for the eastbound-to-southbound movement at each intersection and another is provided for the westbound-to-northbound movement from Eisenhower Drive onto Waters Avenue.

The project also includes two intersections with major collector/distributor roads. No current ADT volumes were available for either of these intersecting roadways, so approach volume data provided by the City of Savannah was used as

a basis for establishing the existing traffic volumes. The first is the intersection with Sea Wright Drive. In 1997, the southbound approach to Eisenhower included 1,560 vehicles while the northbound approach included 400 vehicles. Combining these numbers and adjusting them to the 1999 base year allowed for calculating an approximate ADT volume for each leg by using both intersection turning movement counts and ADT volumes for the mainline. These results indicate that the 1999 ADT volume on Sea Wright Drive is 3,200 to the north of Eisenhower and 860 to the south. At the second intersection, a similar strategy was used to calculate 1999 ADT volumes for Sallie Mood Drive. Here, the 1994 southbound approach volume was 710 while the northbound approach was 3,520. The 1999 ADT volumes calculated are 1,170 vehicles to the north of Eisenhower and 6,950 vehicles to the south. The Sea Wright Drive intersection includes a single northbound and approach lane while the southbound approach included both a shared through/left and a dedicated right-turn lane. The Sallie Mood Road intersection includes a single approach in from both the north and the south. The side roads at both intersections feature a single receiving lane both northbound and southbound. Eisenhower Drive includes two through lanes and a dedicated left-turn lane in either direction at both intersections. No additional dedicated right-turn lanes are currently provided at either intersection.

Approach volumes and turning movement counts for each of the four intersections provided by the City of Savannah were examined into order to complete a preliminary investigation of the flow of traffic in the existing system. Approach volumes for each intersection are presented as *Exhibits A7 through A10* in Appendix A. An inspection of these volumes reveals a traffic pattern common to similar arterials in other urban central business districts wherein traffic volume builds continuously throughout the day, experiencing slight peaks during the A.M. and noon rush hours with an overall peak during the P.M. rush hour. Westbound traffic tends to dominate eastbound traffic throughout the day along Eisenhower Drive between Hodgson Memorial and Waters Avenue yielding an overall directional distribution of 53%. This dominance is less pronounced over the remainder of the project length to the east of Waters. The percentage of Average Daily Traffic using the arterial during the peak hour was also determined through analysis of the approach volume data. This peak hour percentage value has been established as 9.0% and is used throughout the study to convert ADTs to Peak Hour Volumes. An arterial analysis of the existing system based upon both the ADT and the Peak Hour Volume using HCS 2000's Arterial Capacity Module shows it to be operating at LOS B with an average travel speed of 28 mph during the P.M. peak hour.

An analysis of the turning movement counts shows the heaviest, non-through movements along the project corridor involve eastbound and westbound Eisenhower Drive to southbound Hodgson Memorial Drive, westbound Eisenhower Drive to southbound Water Avenue, and southbound Waters Avenue to both eastbound and westbound Eisenhower Drive. The City's turning movement counts were used as a basis for determining the percentage of

vehicular traffic associated with each movement. These percentages were then applied to the 1999 ADT volumes and the data adjusted until a consistent schematic representation of current traffic operations was completed. Based on this schematic, an analysis of each signalized intersection was then undertaken. Analysis results indicate that Eisenhower Drive's intersection with Hodgson Memorial Drive is currently operating at LOS E with an average delay per vehicle of 71 seconds during the P.M. peak hour while its intersection with Waters Avenue is operating at LOS E with an average delay of 60 seconds per vehicle.

Development of Projected Traffic Conditions

In order to establish volumes and volume distributions for predicted future conditions, it was necessary to extrapolate existing traffic volumes based on anticipated growth. In addition to accounting for growth, the projected volumes must also be adjusted to reflect anticipated changes in the current traffic pattern associated with the opening of Truman Parkway, Phase III, which is currently under construction.

The growth rate used for extrapolation of the current traffic volumes was established by examining both the historical data for Eisenhower Drive (*Exhibit A6*) and the traffic projections presented in the Truman Parkway, Phase III Construction Plans. Comparison and correlation of these two data sources yielded an overall growth rate of 2.0%. However, a simple extrapolation of the current volumes using this growth rate fails to account for the significant changes in traffic patterns expected when Truman Parkway's extension is complete.

Truman Parkway currently provides Savannah's East Side with a high-speed, limited-access route between President Street, near the Savannah River, and Derenne Avenue, near the City's geographic center. This facility serves East Savannah, Thunderbolt and island residents by providing them with convenient access to downtown, Central Savannah and points in between. Phase III will connect these locations to the City's Central Business District and South Side by extending the Parkway's southern terminus to Montgomery Cross Road, including an interchange with Eisenhower Drive near the Casey Canal. The availability of this high-speed, high capacity route is expected to alleviate much of the substantial traffic burden currently carried by Waters Avenue and Skidaway Road. At present these 2-lane roads represent the only north-south arterials on Savannah's East Side and are substantially over-utilized. Waters Avenue traffic is therefore expected to experience a significant decrease in its current volumes as a majority of the traffic currently using the Truman/Derenne/Waters Corridor to access Eisenhower and the Central Business District will be provided with a much safer, faster, and more convenient alternate. An examination of GDOT's traffic counts along this corridor and the traffic volume projections presented in the Truman Parkway, Phase III Construction Plans was undertaken in order to best estimate the magnitude of the anticipated volume shift. As a result, roughly 30% of the traffic currently using Waters Avenue north of Eisenhower has been shifted

to appear on Eisenhower on the eastern leg of the Sallie Mood/Eisenhower intersection for the purposes of the study.

Two key years have been established upon which to focus the analysis. 2008 was selected as the anticipated year of the proposed project's completion. 2028 was then established as the design year. This study assumes that the Truman Parkway extension will be complete by the end of 2004. Volumes were determined for these key years by application of the 2.0% growth rate to the adjusted 1999 volumes. The projected ADT along Eisenhower is 25,050 vehicles for 2008 and 38,120 for 2028 along the segment between the Waters Avenue and Sea Wright Drive intersections. These ADT volumes along the project corridor for 2008 and 2028 are presented as *Exhibits A2* and *A3* respectively in Appendix A. Summaries of the Peak Hour Volumes for 2008 and 2028, using a peak hour percentage of 9.0%, appear in Appendix A as Exhibits A4 and A5, respectively.

Analysis of Projected Traffic Conditions

All improvements recommended by this study focus on devising a system with sufficient capacity to handle projected traffic volumes in the 2028 design year at LOS E or better.

Arterial Capacity Analysis

The improvement concept along the proposed project corridor involves widening the existing roadway between Abercorn Street and Truman Parkway to a continuous 4-lane section comprised of 2 eastbound and 2 westbound lanes separated by a raised 20-foot median accommodating left turn bays as required at each intersection. An analysis using HCS 2000's Arterial Capacity Module shows the roadway will continue to operate at LOS B with an average travel speed of 31 mph during the P.M. peak hour if these improvements are completed. The arterial analysis results for both the existing and proposed systems are included in Appendix B.

Signalized Intersection Capacity Analysis

Various lane configurations and signal cycle lengths were devised and analyzed for each currently signalized intersection. All analyses were performed using HCS 2000's Signalized Intersection Capacity Module. At each intersection, the existing configuration was initially analyzed both for use as a baseline for comparison of proposed improvement scenarios and for validating that the existing configuration was inadequate to handle the projected volumes. The results indicate a need for additional turn lanes at each of the four intersections.

Intersection 1: Eisenhower Drive at Hodgson Memorial Drive

At this intersection the heaviest movements are the through movements along both Eisenhower and Hodgson Memorial. The largest non-through movements are (1) westbound Eisenhower to southbound Hodgson Memorial, (2) eastbound Eisenhower to southbound Hodgson Memorial, (3) northbound Hodgson Memorial to eastbound Eisenhower, and (4) northbound Hodgson Memorial to westbound Eisenhower. Movements 1 and 4 warranted the addition of a second left-turn bay while movement 3 warranted the addition of a right-turn lane. Movement 2 is already served by a dedicated right-turn lane. The additions of any other auxiliary lanes have only marginally positive affects. With these improvements, the intersection operates at an overall LOS E for 2028 with an average vehicle delay of 77 seconds. If no improvements are made, the intersection fails with an LOS F and an average vehicle delay of 166 seconds. Complete analysis results for both the improved and unimproved conditions for 2028 appear in Appendix B.

Intersection 2: Eisenhower Drive at Waters Avenue

At this intersection the heaviest movements are the through movements along both Eisenhower and Waters. The largest non-through movements are (1) westbound Eisenhower to southbound Waters, (2) northbound Waters to eastbound Eisenhower, (3) eastbound Eisenhower to southbound Waters, (4) eastbound Eisenhower to northbound Waters, (5) southbound Waters to eastbound Eisenhower, and (6) southbound Waters to westbound Eisenhower. The remaining movements, (7) northbound Waters to westbound Eisenhower and (8) westbound Eisenhower to northbound Waters are also significant. Movements 1, 4 and 7 warranted the addition of second left-turn bays while movements 2 and 6 warranted the addition of dedicated right-turn lanes. Movement 5 is presently served by a dual-left turn bay that should be maintained. Similarly, movements 3 and 8 are served by right-turn lanes that should also be maintained. With these improvements, the intersection operates at an overall LOS E using 2028 volumes with an average delay of 73 seconds per vehicle. If no improvements are made, the intersection fails with an LOS F and an average vehicle delay of 187 seconds. Complete analysis results for both the improved and unimproved conditions for 2028 appear in Appendix B.

Intersection 3: Eisenhower Drive at Sea Wright Drive

At this intersection the heaviest movements are the through movements along Eisenhower. The largest non-through movements are (1) westbound Eisenhower to northbound Sea Wright, (2) eastbound Eisenhower to northbound Sea Wright, and (3) southbound Sea Wright to westbound Eisenhower. Movement 1 warrants the addition of a dedicated right-turn lane. Movement 2 is presently served by a left-turn bay that adequately serves projected traffic volumes. Movement 3 is presently served by a dedicated right-turn lane that also adequately meets projected traffic demands. The additions of any other auxiliary lanes have only marginally positive affects. With these improvements, the intersection operates at an overall LOS E for 2028 with an average vehicle delay of 66 seconds. If no

improvements are made, the intersection nearly fails with an LOS E and an average vehicle delay of 79 seconds. Complete analysis results for both the improved and unimproved conditions for 2028 appear in Appendix B.

Intersection 4: Eisenhower Drive at Sallie Mood Drive

At this intersection the heaviest movements are the through movements along Eisenhower. The largest non-through movements are (1) westbound Eisenhower to southbound Sallie Mood, (2) eastbound Eisenhower to southbound Sallie Mood, (3) northbound Sallie Mood to westbound Eisenhower and (4) northbound Sallie Mood to eastbound Eisenhower. Movement 4 warrants the addition of a dedicated right-turn lane. Movement 1 is presently served by a left-turn bay that adequately serves the projected traffic volumes. Projected traffic volumes that would have degraded Sallie Mood's ability to adequately serve movement 3 are alleviated by adding the dedicated right-turn lane serving movement 4. The additions of any other auxiliary lanes have only marginally positive affects, although the addition of a dedicated right-turn lane to serve movement 2 should be considered, as it comprises 23% of the eastbound traffic entering the intersection. With these improvements, the intersection operates at an overall LOS E for 2028 with an average vehicle delay of 65 seconds. If no improvements are made, the intersection fails with an LOS F and an average vehicle delay of 82 seconds. Complete analysis results for both the improved and unimproved conditions for 2028 appear in Appendix B.

There was some concern that the existing skew angle for this intersection was excessive and that realignment might be necessary. The skew angle was subsequently measured and determined to be 73°. Any realignment of Sallie Mood Drive would involve substantial right-of-way costs as at least one of two developed properties would be severely impacted. As such, realignment is not recommended.

The cycle lengths used for the recommended improvement scenarios vary between 82 and 137 seconds. Incorporation of signal actuation and operational refinement of the signal timings once installed will be required when the project is complete in order to optimize the recommended geometric configurations.

Conclusion and Recommendations

Based on the assumptions and analysis as described in this report, the following improvements are recommended:

1. In order to enhance the roadway's safety and improve traffic flow along the study corridor, designers should consider a 4-lane section separated by a 20-foot raised median installed throughout the project length.
2. Widening to accommodate the recommended section should maintain the existence of all currently installed auxiliary lanes at each signalized intersection approach.
3. A second left-turn lane should be added to the westbound approach at the Eisenhower/Hodgson Memorial intersection to increase the associated movement's capacity and improve the westbound Eisenhower Drive capacity overall. This reconfigured dual-left bay should provide at least 325 feet of storage per lane.
4. A second left-turn lane should also be added to the northbound approach at the Eisenhower/Hodgson Memorial intersection to increase the associated movement's capacity and improve the northbound Hodgson Memorial Drive capacity overall. This reconfigured dual-left bay should provide at least 175 feet of storage per lane.
5. A 375-foot dedicated right-turn lane should be added at the Eisenhower/Hodgson Memorial intersection along its northbound approach in order to improve the northbound capacity for Hodgson Memorial Drive traffic.
6. A second left-turn lane should be added for both the eastbound and westbound approaches at the Eisenhower/Waters intersection in order to increase the capacity of these movements and improve Eisenhower Drive's overall capacity. The reconfigured eastbound dual-left bay should provide at least 150 feet of storage per lane. The reconfigured westbound dual-left bay should provide at least 200 feet of storage per lane, as this movement is expected to become much larger with the opening of Truman Parkway, Phase III.
7. A second left-turn lane should also be added to the northbound approach at the Eisenhower/Waters intersection to increase the associated movement's capacity and improve the northbound Waters Avenue capacity overall. This reconfigured dual-left bay should provide at least 150 feet of storage per lane.
8. A 350-foot dedicated right-turn lane should be added for the northbound approach at the Eisenhower/Waters intersection in order to increase the

capacity of this movement, which is expected to become much larger with the opening of Truman Parkway, Phase III.

9. A 200-foot dedicated right-turn lane should also be added for the southbound approach at the Eisenhower/Waters intersection in order to increase the capacity of this movement and improve the southbound Waters Avenue capacity overall.
10. A 100-foot dedicated right-turn lane should be added for the westbound approach at the Eisenhower/Sea Wright intersection in order to increase the capacity of this movement and improve the westbound Eisenhower Drive capacity overall.
11. A 150-foot dedicated right-turn lane should be added for the northbound approach at the Eisenhower/Sallie Mood intersection in order to increase the capacity of this movement and improve the northbound Sallie Mood Drive capacity overall.
12. A 200-foot dedicated right-turn lane should be considered for the eastbound approach at the Eisenhower/Sallie Mood intersection in order to increase the capacity of this movement and improve the eastbound Eisenhower Drive capacity overall.

Exhibit A11 in the Study Appendix presents a summary of the recommended improvements as described above.

The Central Business District in the vicinity of the study corridor is expected to continue to thrive and will remain an integral commercial destination point for Savannah area residents. The extension of Truman Parkway will dramatically alter traffic patterns in the area, but it is not expected that this will reduce the utilization of Eisenhower Drive, as it represents the point of access for numerous retail and professional enterprises. Capacity and safety improvements along the study corridor are essential to maintaining the economic vitality of this area.

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

Project Number: STP-0002-00 (924)
P.I. Number: 0002924 – Widening of Eisenhower Drive
County: Chatham
Subject: Minutes of Concept Meeting

On September 16, 2002 a Concept Meeting was held on the above referenced project. The meeting was held in the conference room of the GDOT District Five offices in Jesup. Those in attendance were as listed above:

Angela Alexander	GDOT Office of Urban Design
Darryl Van Meter	GDOT Office of Urban Design
Theresa Holder	GDOT Office of Urban Design
Andrew Aiello	GDOT Office of Environment and Location
Holly Liles	GDOT Office of Planning
Matthew Fowler	GDOT Office of Planning
Tony Collins	GDOT District 5 Preconstruction
Larry Graham	GDOT District 5 Right-of-Way
Cynthia Phillips	GDOT District 5 Traffic Operations
Jerome Sheffield	GDOT District 5 Construction
Howell Clements	GDOT District 5 Utilities
Teresa Scott	GDOT District 5
Stephen Thomas	GDOT District 5
James Brown	GDOT Savannah Area Office
Allan Black	Chatham County
Frank Sweat	Chatham County
Billy Jones	City of Savannah Facilities Maintenance
Mike Weiner	City of Savannah Traffic Engineering
Peter Shonka	City of Savannah Stormwater
Wykoda Wang	Savannah-Chatham County Metropolitan Planning Commission
Margie Blake-Pickett	Savannah Electric
Rob Mikell	Comcast
Ginny Murphy	Bell South
Beverly Hall	Bell South
Bill Nicholson	Hussey, Gay, Bell & DeYoung

The meeting was opened by Darryl Van Meter, who gave a brief welcome and opened a round the room introduction. Theresa Holder then gave a brief project definition and description, after which Bill Nicholson provided an in-depth project description, summarized as follows:

STP-0002-00(924) involves the widening and reconstruction of approximately 1.75 miles of Eisenhower Drive in Chatham County. The project begins approximately 300' east of the intersection of Eisenhower Drive with SR 204 (Abercorn Street). At this point the project connects to and matches project STP-111-1 (21). It then proceeds in an easterly direction for approximately 1.75 miles where it connects to and matches project NH-171-1(4).

The proposed improvements consist of adding a 20' wide raised median, adding additional pavement to one or both sides of the existing roadway sufficient to provide for two through lanes in each direction, and constructing additional right turn and left turn lanes. Widening begins on the north side of the existing roadway and then gradually shifts to the south. From Hodgson Memorial Drive to Waters Avenue, all widening is on the south. At Waters Avenue, the alignment returns to widening on the north side, which continues to a point some 500 feet past at the Sallie Mood Drive intersection. At this point, the raised median is reduced to 14 feet in width and replaces the existing flush median. This section continues until a point some 500 feet from the tie to NH-171-1(4) where the median is gradually widened to match that of the other project. Along the route, right turn lanes and double left turn lanes will be constructed to increase intersection and roadway capacity.

The roadway will have an urban section with curb and gutter and a storm drainage system. Sidewalks will be constructed on both shoulders. The mainline design speed is 45 miles per hour. The existing right-of-way varies from 80 to 110 feet; the proposed right-of-way varies from 105 to 144 feet.

Following the description, the floor was opened to general discussion and comment. The following items were raised and discussed:

The City of Savannah stated that it wanted to maximize the amount of greenspace in the corridor. It was stated that the median would be grassed at all locations where the back of curb to back of curb distance is greater than 3 feet. The roadway will revert to City of Savannah control when construction is completed. The City can then landscape the median with small trees and shrubs (maximum diameter of 4" at maturity) so long as sight distance is not impaired. The City asked whether an irrigation system would be placed in the median. They were told that this would not be done in the project, but that the City could install such a system after transfer. It was determined that the design will incorporate sleeves or capped water lines to each median segment for this future irrigation system.

Savannah Electric stated that it appeared the only conflict with transmission lines might occur at the Sallie Mood Drive intersection. This could be relocated if necessary.

At the Waters Avenue intersection, double left turn lanes are proposed for all four left turn movements. The need for a raised median on the Waters Avenue approaches in order to separate and channelize the turning vehicles was discussed. There is limited space on the southbound approach due to a gas station and McDonald's on opposite

corners. There is no impediment on the northbound approach, but cross lanes must line up. HGBD was instructed to examine the accident history at this intersection and look at the available space to determine if any median (as small as a 2'-4' raised) could be installed.

It was noted that the proposed 14' wide raised median would require a design variance for inadequate width. The reasons in support of the narrow median will need to be documented in the variance request.

It was stated that the turn lanes should be long enough to accommodate the 95th percentile volume of turning traffic.

A discussion took place regarding the proposed sidewalks on both sides of the roadway. Mr. Van Meter stated that the sidewalk would need to comply with ADA requirements and the latest Department of Transportation Standards. It is preferred that the 5' sidewalks be separated from the curb by a 2' strip of grass or different colored concrete. At intersections it will also be necessary to construct extra wide walks to accommodate handicapped access ramps. Savannah Electric was concerned that this could cause conflicts with poles which would not otherwise need to move. It was stated that the sidewalks could be adjusted to go around poles if necessary.

Due to the developed nature of the corridor, Chatham County requested that all available measure be taken to minimize right-of-way requirements. It was stated that this will be done during the design phase.

The City of Savannah expressed concern as to whether any specimen trees might be lost to the project. Exact construction limits are unknown at this time, but it appears that 2 or 3 large live oaks might be lost. HGBD was asked to take all practical steps available to protect trees.

The City of Savannah and Chatham County have recreational facilities on both sides of the final roadway segment. It was noted that this could result in a possible 4F situation.

HGBD was instructed to make sure that the Sallie Mood Drive angle of intersection was 70° or greater. If not, the intersection would need to be realigned.

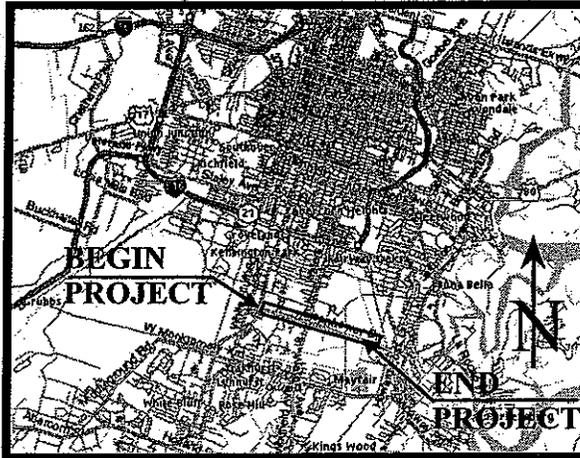
It was noted that the project is currently classified as long range. However, it is possible to expedite the construction if plans are complete and right-of-way is acquired.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
Office of Urban Design
Project Concept Report

Project Number: STP-0002-00(924)
County: Chatham
P. I. Number: 0002924

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

**Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway**



Recommendation for approval:

DATE 5/3/2004

Carol O. Van Meter

Project Manager

DATE 5/4/2004

James B. Burton

State Urban 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 5/12/04

Joseph P. [Signature]

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 Urban Design**

Project Concept Report

Project Number: STP-0002-00(924)

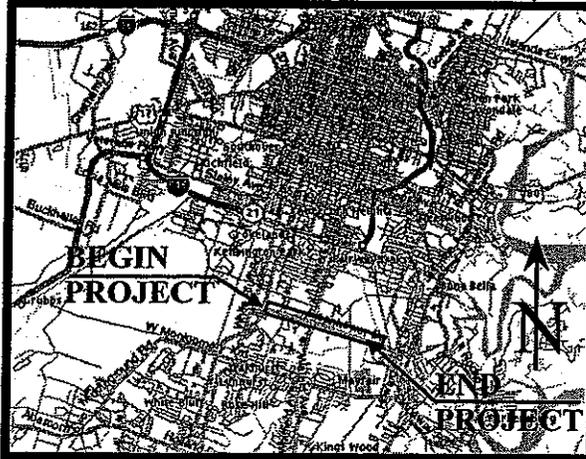
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

**Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway**



Recommendation for approval:

DATE 5/3/2004

Darryl D. Van Meter
Project Manager

DATE 5/4/2004

James B. Burkhardt
State Urban 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 5-7-04

James D. Simpson
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 Urban Design

Project Concept Report

Project Number: STP-0002-00(924)

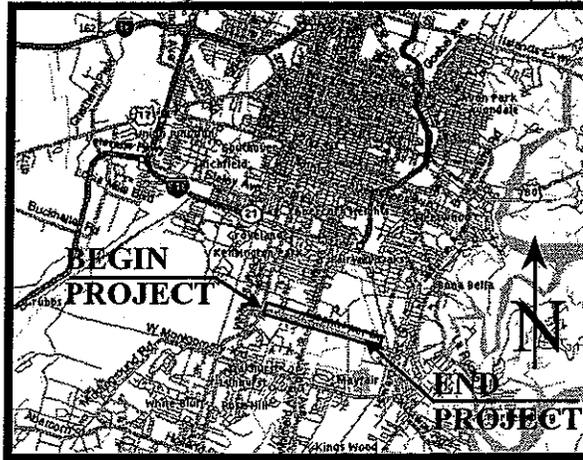
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway



Recommendation for approval:

DATE 5/3/2004

Darryl O. Van Meter
Project Manager

DATE 5/4/2004

James B. Burt
State Urban 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 5.18.2004

Shirley D. Dutton
State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

Department of Transportation
State of Georgia

INTERDEPARTMENTAL CORRESPONDENCE

File: STP-0002-00(924), Chatham County
P.I. No. 0002924

Office: Traffic Safety & Design
Atlanta, Georgia
Date: May 14, 2004

From: *Pmkic* Phillip M. Allen, State Traffic Safety and Design Engineer
To: Meg Pirkle, Assistant Director of Preconstruction
Subject: Project Concept Report Review

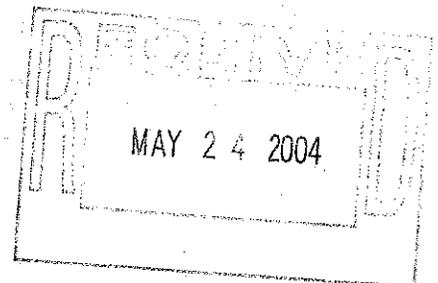
We have reviewed the above referenced concept report for the widening & reconstruction of Eisenhower Drive from SR 204/Abercorn Street to Truman Parkway in Chatham County.

The Office of Traffic Safety & Design finds this report satisfactory for approval because it will improve safety and traffic operations within this area.

PMA/sz

Attachment (signature page)

Cc: Harvey Keepler, State Environment/Location Engineer
James Buchan, State Urban Design Engineer
Attention: Darryl VanMeter
Gary Priester, District Engineer - Jesup
Attention: Dennis Odom, District Design Engineer
David Mulling, State Review Engineer, w/ attachment
Joe Palladi, State Transportation Planning Administrator
Paul Liles, State Bridge & Structural Design Engineer
General Files
Office Files



DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Office of Urban Design

Project Concept Report

Project Number: STP-0002-00(924)

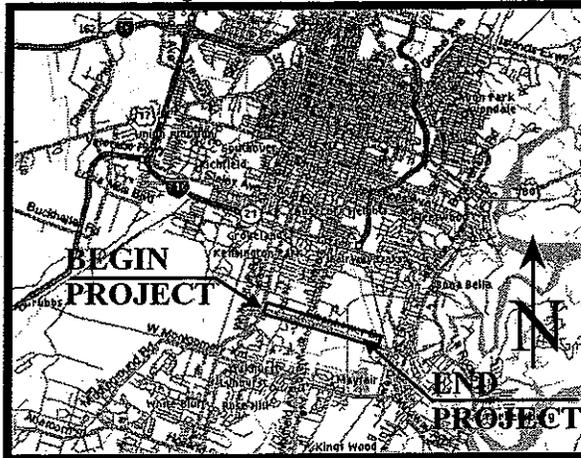
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway



Recommendation for approval:

DATE 5/3/2004

Carol O. Van Meter

Project Manager

DATE 5/4/2004

James B. Banta

State Urban 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 5-14-04

Phillip M. Calhoun

State Traffic Safety and Design Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Office of Urban Design

Project Concept Report

Project Number: STP-0002-00(924)

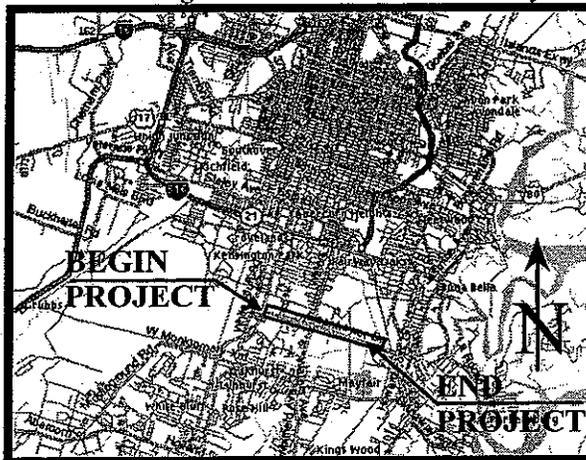
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway



Recommendation for approval:

DATE 5/3/2004

Darryl D. Van Meter

Project Manager

DATE 5/4/2004

James B. Bunker

State Urban 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 5/18/04

Gary D. Bunker

District Engineer

DATE _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Office of Urban Design

Project Concept Report

Project Number: STP-0002-00(924)

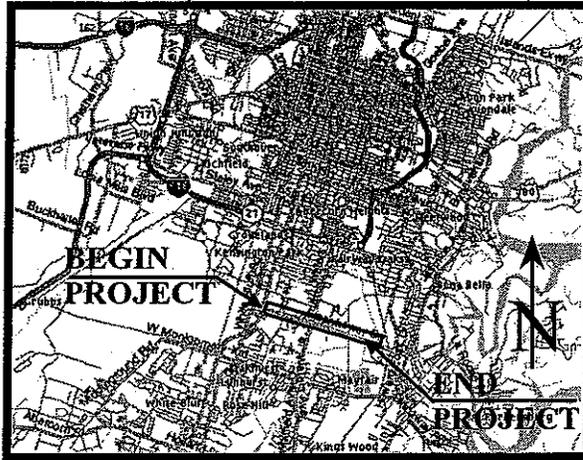
County: Chatham

P. I. Number: 0002924

Federal Route Number: N/A

State Route Number: N/A

Widening and Reconstruction of Eisenhower Drive
From Douglas Street to Truman Parkway



Recommendation for approval:

DATE 5/3/2004

Carol V. Van Meter
Project Manager

DATE 5/4/2004

James B. Banta
State Urban 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

date 5/20/04

Carol V. Van Meter Jr.
State Bridge and Structural Design Engineer