

ORIGINAL TO GENERAL FILES

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

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## OFFICE OF DESIGN POLICY & SUPPORT INTERDEPARTMENTAL CORRESPONDENCE

**FILE** P.I. #0010232  
GDOT District 5 - Jesup  
Chatham County  
SR 204 from CR 975/Veterans Pkwy to  
CS 1201/Rio Rd

**OFFICE** Design Policy & Support

**DATE** December 14, 2011

**FROM**  Brent Story, State Design Policy Engineer

**TO** SEE DISTRIBUTION

**SUBJECT** APPROVED CONCEPT REPORT

Attached is the approved Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Genetha Rice-Singleton, Program Control Administrator  
Bobby Hilliard, State Program Delivery Engineer  
Cindy VanDyke, State Transportation Planning Administrator  
Angela Robinson, Financial Management Administrator  
Glenn Bowman, State Environmental Administrator  
Ben Rabun, State Bridge Engineer  
Kathy Zahul, State Traffic Engineer  
Georgene Geary, State Materials & Research Engineer  
Ron Wishon, State Project Review Engineer  
Jeff Baker, State Utilities Engineer  
Ken Thompson, Statewide Location Bureau Chief  
Michael Henry, Systems & Classification Branch Chief  
Karon Ivery, District Engineer  
Bradford Saxon, District Preconstruction Engineer  
Stephen Thomas, Asst. District Utilities Engineer  
Robert Murphy, Project Manager  
BOARD MEMBER - 1st Congressional District  
BOARD MEMBER - 12th Congressional District

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**PROJECT CONCEPT REPORT**

P. I. Number: 0010232  
County: Chatham  
Federal Route Number: N/A  
State Route Number: SR 204

SR 204/Abercorn Street Extension Improvements  
from Veterans Parkway (CR 975) to Rio Road (CS 1201)

**Submitted for approval**

DATE <u>8/15/2011</u>	<u>Thomas M. Crochet, PE, PTOE</u> Design Consultant - McGee Partners, Inc.
DATE <u>8/18/2011</u>	<u>A. G. Bungard, PE</u> Chatham County Engineer
DATE <u>8/23/2011</u>	<u>Bobby Hilliard, PE</u> State Program Delivery Engineer
DATE <u>8/22/2011</u>	<u>Robert P. Murphy</u> Project Manager

**Recommendation for approval:**

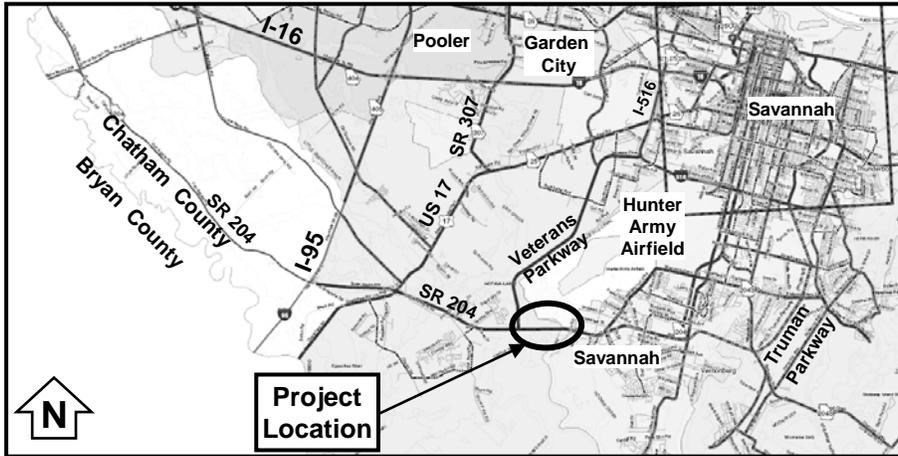
DATE _____	Program Control Administrator
DATE <u>10/7/11</u>	<u>GLENN BOWMAN *</u>
DATE <u>10/2/11</u>	State Environmental Administrator <u>KATHY ZAHUL *</u>
DATE <u>9/29/11</u>	State Traffic Engineer <u>RON WISHAW *</u>
DATE <u>10/6/11</u>	Project Review Engineer <u>STEPHEN THOMAS *</u>
DATE _____	State Utilities Engineer
DATE _____	District Engineer / District Utilities Engineer
DATE <u>10/12/11</u>	<u>BEN KABUN *</u>
DATE _____	State Bridge Design Engineer
DATE _____	State Transportation Financial Management Administrator

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

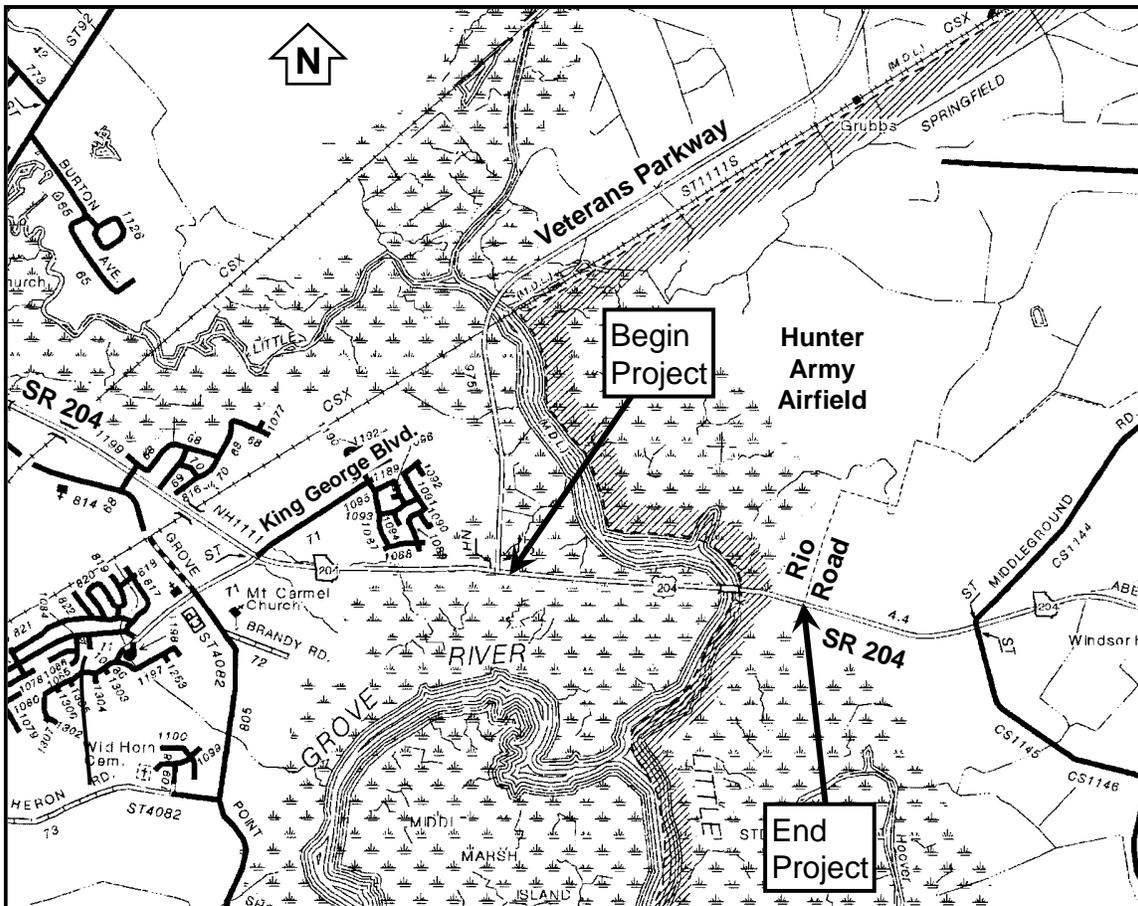
DATE <u>10/4/11</u>	<u>CYNTHIA L. VANDUYKE *</u> State Transportation Planning Administrator
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**\* RECOMMENDATION ON FILE**  
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## Project Location Map



## Project Limits Map



## **Need and Purpose:**

The purpose of Project PI 0010232 is to reduce travel delays and reduce crash frequency along SR 204/Abercorn Extension (SR 204) from Veterans Parkway to Rio Road. The signalized intersection of SR 204 and Rio Road is currently operating at an overall LOS E. The intersection is expected to operate at LOS F by 2016. The basic lanes of SR 204 between Veterans Parkway and Rio Road are currently operating at LOS D and are expected to operate at LOS E by 2036. The crash rates for the section of SR 204 from Veterans Parkway through Rio Road (a distance of approximately 1.2 miles) slightly exceed the statewide crash rates for similar facilities, while injury rates are slightly below statewide rates. However, 84% of the crashes occurred in the section from the Forest River bridge through the Rio Road intersection (a distance of approximately 0.3 mile). Analysis of the existing and future No Build conditions shows that conditions are expected to worsen over time as traffic volume is predicted to grow. Today, traffic traveling through the corridor experiences significant delay and congestion at the intersection of SR 204 and Rio Road during the AM and PM peak periods. This demonstrates the need to reduce travel delays along SR 204, reduce crash frequency, and ultimately improve east-west connectivity in this region.

*A detailed Need and Purpose Statement as approved by GDOT Office of Planning is attached.*

## **Description of the Proposed Project:**

The proposed project would improve SR 204/Abercorn Street Extension from east of Veterans Parkway (CR 975) in unincorporated Chatham County to east of Rio Road (CS 1201) in the City of Savannah. The proposed project length is 1.17 miles, with the project beginning 1300 feet east of Veterans Parkway (Mile Log 13.82) and ending 500 feet east of Rio Road (Mile Log 14.99). SR 204 currently consists of four lanes, a 20-foot median with concrete barrier, and paved shoulders between Veterans Parkway and Rio Road. SR 204 widens to six lanes 200 feet west of Rio Road. East of Rio Road, SR 204 consists of six lanes, a 20-foot raised median and outside curb and gutter shoulders without sidewalks.

The proposed project would improve operations of the Rio Road intersection by extending the eastbound auxiliary lane along SR 204 from east of Veterans Parkway to Rio Road, providing a westbound auxiliary lane from the Veterans Parkway exit ramp to Rio Road, adding a second eastbound to northbound left turn lane, extending the eastbound left turn and right turn lanes and providing a westbound acceleration lane, thereby reducing travel delays along SR 204. The proposed project would also improve the operations of the merge and diverge at the Veterans Parkway ramps. The Forest River bridge will accommodate the additional auxiliary lane in each direction without the need for widening. A reduction in crash frequency is expected as a result of reduced queuing, by providing appropriate length turn lanes at the Rio Road intersection and by eliminating the eastbound lane drop before the Forest River bridge. The project termini were established so as to provide for construction of the auxiliary lanes between the Veterans Parkway ramps and Rio Road and to facilitate the construction of the turn lane improvements at Rio Road.

**Is the project located in a PM 2.5 Non-attainment area?** \_\_\_\_\_Yes  X No

**Is this project located in an Ozone Non-attainment area?** \_\_\_\_\_Yes  X No

**PDP Classification:** Major  X  Minor \_\_\_\_\_

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

**Functional Classification:** Urban Principal Arterial

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

**State Route Number(s):** SR 204

**Traffic (AADT):**

Existing (2010): 46,600 Open Year (2016): 52,200 Design Year (2036): 62,700

**Existing design features:**

- Typical Section:
  - West of Rio Road
    - Four 12-foot lanes (two in each direction)
    - 20-foot median with concrete barrier
    - Outside shoulders: 12-foot overall, 10-foot paved
  - East of Rio Road
    - Six lanes (three in each direction, 2 12-foot, 1 11-foot)
    - 20-foot raised median
    - Outside shoulders: curb and gutter, no sidewalks
- Posted speed:
  - West of Forest River Bridge: 55 mph
  - East of Forest River, including bridge: 45 mph
- Minimum radius for curve: 2292 ft
- Maximum superelevation rate for curve: 6%
- Maximum grade: 1.7%
- Width of right of way: 170-400 ft
- Major structures:

	<b>Structure ID</b>	<b>Length x Width (feet)</b>	<b>Sufficiency Rating</b>	<b>Minimum Vertical Clearance</b>	<b>Design Load</b>
Four-lane bridge on SR 204 (MP 14.50) over Forest River	051-0076-0	854 x 90	78.00	n/a	HS-20+

- Major interchanges or intersections along the project:
  - SR 204 Grade Separated Interchange at Veterans Parkway (CR 975)
  - SR 204 At-Grade, Signalized Intersection at Rio Road (CS 1201)
- **ITS System:** ITS components currently within the project limits consist of signal communications from Rio Road towards the east along SR 204. Beyond the project limits, there is a changeable message sign (CMS) on WB SR 204 west of Pine Grove Road with communications via modem.

- Existing length of roadway segment and the beginning mile logs: 1.17 miles in Chatham County; Beginning Mile Log 13.82; Ending Mile Log 14.99

**Proposed Design Features:**

- Proposed typical section:
  - West of Forest River Bridge:
    - Six 12-foot lanes (three in each direction)
    - 20-foot median with concrete barrier (8.83-foot inside shoulders)
    - Outside shoulders: 14-foot overall, 12-foot paved (full-depth to allow future conversion to travel lane)
  - Forest River Bridge
    - Six 11-foot lanes (three in each direction)
    - Concrete median barrier with 4-foot inside shoulders
    - 5-foot outside shoulders
  - East of Forest River:
    - Six 11-foot lanes (three in each direction)
    - 11-foot turn lanes
    - 20-foot median with integral concrete median
    - Outside shoulders: 10-foot overall, 8-foot paved (partial-depth)
- Proposed design speed mainline:
  - West of Forest River Bridge: 60 mph
  - East of Forest River, including bridge: 45 mph
- Proposed maximum grade Mainline:
  - West of Forest River Bridge: 1.2%
  - East of Forest River, including bridge: 1.7%
- Maximum grade allowable:
  - West of Forest River Bridge: 3% (Urban Freeway)
  - East of Forest River, including bridge: 6% (Urban Arterial)
- Proposed maximum grade side street: 2%
- Maximum side street grade allowable: 15%
- Proposed maximum grade driveway: N/A
- Proposed minimum radius of curve:
  - West of Forest River Bridge: N/A
  - East of Forest River, including bridge: 1500 ft
- Minimum radius allowable:
  - West of Forest River Bridge: 1330 ft
  - East of Forest River, including bridge: 643 ft
- Maximum allowable superelevation rate: 6%
- Proposed maximum superelevation rate: 6%

- Right of Way
  - Width: 170-400 ft
  - Easements: Temporary ( ), Permanent (X), Utility ( ), Other ( ).
  - Type of access control: Full (X), Partial ( ), By Permit (X), Other ( ).  
(West of Forest River: Full, East of Forest River: By Permit)
  - Number of parcels: none                      Number of displacements: none
    - Businesses: 0
    - Residences: 0
    - Mobile homes: 0
    - Other: 0

• Structures – Bridges:

	Length (feet)	Width (feet)	Sufficiency Rating
SR 204 (MP 14.50) over Forest River Existing four-lane, twelve-span bridge to be restriped to accommodate six lanes with reduced shoulders	854	90	78.00

• Structures – Retaining Walls:

	Type	Length (feet)	Height (feet)
EB SR 204 just west of Rio Road	Side Barrier	250	2-4
WB SR 204 just west of Rio Road	Side Barrier	150	2-4

- Major intersections and interchanges:
  - SR 204 Grade Separated Interchange at Veterans Parkway (CR 975)
  - SR 204 At-Grade, Signalized Intersection at Rio Road (CS 1201)
- ITS System: No additional ITS components proposed
- Traffic control during construction: Existing traffic will be maintained on existing roadways during construction.
- Transportation Management Plan anticipated:     Yes ( )   No ( X )
- Design Exceptions to controlling criteria anticipated:

	<u>YES</u>	<u>NO</u>	<u>UNDETERMINED</u>
1. DESIGN SPEED:	( )	(X)	( )
2. LANE WIDTH:	( )	(X)	( )
3. SHOULDER WIDTH:	( )	(X)	( )
4. BRIDGE WIDTH:	(X)	( )	( )
5. HORIZONTAL ALIGNMENT:	( )	(X)	( )
6. SUPERELEVATION:	( )	(X)	( )
7. VERTICAL ALIGNMENT:	( )	(X)	( )
8. GRADE:	( )	(X)	( )
9. STOPPING SIGHT DISTANCE:	( )	(X)	( )
10. CROSS SLOPE:	( )	(X)	( )
11. VERTICAL CLEARANCE:	( )	(X)	( )
12. LATERAL OFFSET TO OBSTRUCTION:	( )	(X)	( )
13. BRIDGE STRUCTURAL CAPACITY:	( )	(X)	( )

- Bridge Width: Design Exception would be required for outside shoulder width along SR 204 on the bridge over the Forest River. The required outside usable shoulder width is 8 feet for an urban arterial roadway. The proposed project would not widen or replace this bridge. Restriping the bridge to provide three 11-foot lanes in each direction would result in 5-foot outside shoulder widths and 4-foot inside shoulder

widths. Widening the existing bridge to provide 8-foot outside shoulders would add substantial cost to the project and would require construction in the Forest River.

- Design Variances anticipated:
  - Minimum Profile Elevation above High Water (Design Policy Manual 4.3.7): Portions of the existing SR 204 roadway from Veterans Parkway to 300 feet east of Rio Road, along with the Veterans Parkway ramps, are below the 100-year flood elevation. The 100-year flood elevation as published by FEMA in this area varies from 11 feet to 13 feet (1988 NAVD). While the SR 204 roadway profile is generally at or above the flood elevation, portions of the roadway and shoulders fall beneath the flood elevation at depths of less than one foot west of the Forest River. Portions of the roadway at the SR 204 intersection with Rio Road are up to 2.0 feet below the flood elevation. Raising the elevation of the roadway would require the reconstruction of the median barrier, extend the limits of the project east of Rio Road and would have a substantial cost.
- Environmental concerns:
  - Archaeology: N/A
  - History: N/A
  - UST: N/A
  - Wetlands & Streams: PCN anticipated for Section 404 wetland impacts, stream buffer variance will likely be required.
  - Coastal Zone: Stream and saltwater marsh will be minimally impacted.
  - Noise: Several residential properties along the south side of SR 204 between the Forest River and Rio Road are being evaluated to determine impacted areas and warrants for inclusion of sound barriers.
- Anticipated level of environmental analysis:
  - Are Time Savings Procedures appropriate? Yes (X) No ( )
  - Categorical Exclusion (CE) (X)
  - Environmental Assessment/Finding of No Significant Impact (EA/FONSI) ( )
  - Environmental Impact Statement (EIS) ( )
- Utility involvements:
  - Gas: Atlanta Gas Light
  - Communications: AT&T, Qwest, Coastal Communications, Comcast
  - Electric: Georgia Power
  - Water: City of Savannah
  - Sewer: City of Savannah
  - Railroad: n/a
  - ITS: GDOT
  - Traffic Signals: GDOT, City of Savannah
- VE Study anticipated: Yes ( ) No (X)

**Project Cost Estimates and Funding Responsibilities:**

	PE	ROW	UTILITY	CST	MITIGATION
By Whom	Chatham County	GDOT	GDOT	GDOT	Chatham County
\$ Amount	\$ 600,000	0	0	\$ 3,285,000	\$ 82,000

\* CST Cost includes: Construction, Engineering and Inspection, and Asphalt Cement Cost Adjustment.

**Project Activities Responsibilities:**

- Design: Chatham County/McGee Partners
- Right of Way Acquisition: N/A (GDOT)
- Right of Way Funding (real property): N/A (GDOT)
- Relocation of Utilities: Utility Companies (Coordination by GDOT)
- Letting to contract: GDOT
- Supervision of construction: GDOT
- Providing material pits: N/A
- Providing detours: N/A
- Environmental Studies/Documents/Permits: Chatham County/McGee Partners/Edwards-Pitman
- Environmental Mitigation: Chatham County

**Coordination:**

- Initial Concept Meeting: Held on February 24, 2011, *minutes attached*
- Concept meeting date and brief summary: Held on July 28, 2011, *minutes attached*
- P. A. R. meetings, dates and results: Not anticipated to be required
- FEMA: Coordination not anticipated to be required
- USCG and/or TVA: Not required
- Public involvement: PIOH held on July 28, 2011
- Local government comments: none
- Other projects in the area:

<u>Project No.</u>	<u>PI No.</u>	<u>Description</u>
○ NHS00-0002-00(922)	0002922	SR 204/Abercorn St. from Rio Road to Harry S Truman Parkway, Phase V
○ NH000-0111-01(024)	522870	SR 204/Abercorn St. Improvements at King George Boulevard
○ NHS00-0002-00(921)	0002921	Harry S Truman Parkway from Abercorn St to Whitfield Ave - Phase V
○ n/a	0009314	SR 204 Elevated Lanes Engineering
- Railroads: n/a
- Other coordination to date:

**Scheduling – Responsible Parties’ Estimate:**

	<u>Begin</u>	<u>End</u>
• Time to complete the environmental process:	3/2011	5/2012
• Time to complete preliminary construction plans:	10/2011	7/2012
• Time to complete right of way plans:	N/A	N/A
• Time to complete the Section 404 Permit:	9/2012	1/2013
• Time to complete final construction plans:	8/2012	6/2013
• Time to complete the purchase of right of way:	N/A	N/A

**Other alternates considered:**

- No Build

**Comments:**

- While not a state bicycle route, SR 204 is included as a bicycle corridor in the Chatham County MPO’s “Chatham County Bikeways Plan.” The SR 204 corridor was developed as a limited access roadway from I-95 to the Forest River and has been evolving into an urban freeway, including existing interchanges at US 17 and Veterans Parkway (system-to-system) and a proposed interchange at King George Boulevard. Section 9.4.3 of GDOT’s Design Policy Manual indicates that bicycle accommodations are to be excluded from “Full Access Control” routes such as freeways. Bicycle lanes, shoulders or paths along SR 204 will not be included in the project.

**Attachments:**

1. Need and Purpose Statement
2. Detailed Cost Estimates:
  - a. Construction including Contingencies, Engineering and Inspection, Fuel/Asphalt Price Adjustments
  - b. Utilities
  - c. Mitigation
3. Typical Sections
4. Traffic Volume Diagrams
5. Traffic Study Report
6. Bridge Inventory
7. Minutes of Initial Concept Team Meeting
8. Minutes of Concept Team Meeting
9. Public Information Open House Summary
10. Concept Layouts



**PI 0010232, Chatham County  
SR 204/Abercorn Street Extension  
Improvements from Veterans Parkway to Rio Road**

**Need and Purpose**

**Background**

SR 204 is an existing principal arterial that provides east-west connectivity between the City of Savannah and Interstate 95 (I-95) to the west. From SR 25/US 17 to Rio Road/CS 1201 (Rio Road), SR 204 is a partially limited access facility providing four travel lanes divided by a concrete median barrier and paved shoulders. East of Rio Road, SR 204 provides six travel lanes divided by a 20-foot raised median, outside curb and gutter, and intermittent sidewalks.

Within the project area, SR 204 consists of four 12-foot travel lanes with a 20-foot median with concrete barrier and 12-foot outside shoulders, 10-foot paved. Turn lanes are provided at the signalized intersection with Rio Road. An eastbound auxiliary lane is dropped between the entrance ramp from Veterans Parkway/CR 975 (Veterans Parkway) and the Forest River bridge. SR 204 is functionally classified as an Urban Principal Arterial and is one of four designated hurricane evacuation routes in Chatham County.

**Land Use**

The primary land uses along SR 204 in the project area are residential and commercial land uses. The section of SR 204 east of the Forest River is within the city limits of Savannah. West of the Forest River, the land is unincorporated Chatham County. Most of the undeveloped land along the east and west sides of the Forest River is tidal marsh. Noteworthy destinations along SR 204 east of Veterans Parkway include the Savannah Mall, Armstrong Atlantic State University, St. Joseph's Hospital, and Hunter Army Air Field. Hunter Army Air Field and the Savannah Mall are located at the intersection of SR 204 and Rio Road.

**Existing and Projected Traffic Conditions**

Existing daily traffic volumes were generated utilizing data from the Georgia Department of Transportation (GDOT) Office of Transportation Data<sup>1</sup>. Existing (year 2010) average annual daily traffic (AADT) traffic volumes along SR 204 in the project area are of 46,600 vehicles. Traffic volume is predicted to be 51,465 AADT in the opening year (2016) and 61,760 AADT in the design year (2036). The future traffic volumes are based on an analysis of historic traffic volume trends and travel demand

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<sup>1</sup> The traffic used for this analysis has been reviewed and approved by the GDOT Office of Planning (May 2011).

model projections from the *Coastal Region Metropolitan Planning Organization (CORE MPO) Connections 2035 Framework Mobility Plan (Long Range Transportation Plan)* to determine future annual growth rates. The traffic projections reflect an annual growth rate of 2.0% from 2010 to 2016 and 1.0% from 2016 to 2036.

### **Other Projects Planned in the Area**

The GDOT and Chatham County officials have been evaluating the need for transportation improvements along SR 204 for some time. Georgia DOT has a long range project to widen SR 204 between Rio Road and Truman Parkway Phase V. Preliminary engineering studies for Project NHS00-0002-00(922) have been conducted and concluded that capacity improvements to SR 204 are needed. This project remains a long range project in the Regional Transportation Plan (RTP). Right-of-way and construction funds have not been allocated at this time. In addition, the Coastal Region Metropolitan Planning Organization (CORE MPO) has undertaken a SR 204 Corridor Study to further refine alternatives for moving traffic along SR 204. American Recovery and Reinvestment Act of 2009 (ARRA) funds to study alternatives have been allocated by the CORE MPO. However, right-of-way and construction funds have not been allocated at this time.

Projects in the area include the following:

- NHS00-0002-00(921), Chatham Co., PI 0002921; Truman Parkway from Abercorn St. to Whitfield Ave. – Phase V (construction began in March 2010, expected completion in 2013).
- NHS00-0002-00(922), Chatham Co., PI 0002922; SR 204/Abercorn St. from Rio Road to Harry S. Truman Parkway/Phase V.
- CSSTP-0009-00(314), Chatham Co., PI 0009314; SR 204/Abercorn St. from I-95 to Harry S. Truman Parkway/Phase V (study only).
- NH0000-0111-01(024), Chatham Co., PI 522870; SR 204/Abercorn St. Improvements at King George Boulevard.

### **Safety and Roadway Deficiencies**

Traffic crash data was collected from the GDOT Office of Traffic Safety and Design for the years 2005 through 2009. Table 1 presents crash rates for SR 204 from Veterans Parkway to Rio Road, a distance of approximately 1.2 miles. As shown, the crash rates for this segment of the SR 204 corridor slightly exceed the statewide crash rates for similar facilities.

<b>Table 1. Crash History</b>						
SR 204 from Veterans Parkway through Rio Road (Mile Log 13.82 to 14.99)						
<b>Year</b>	<b>Crashes</b>	<b>Crash Rate</b>	<b>Injuries</b>	<b>Injury Rate</b>	<b>Fatalities</b>	<b>Fatality Rate</b>
2005	93	576 (573)	36	223 (225)	0	0.00 (1.63)
2006	141	680 (545)	53	256 (207)	1	4.82 (1.69)
2007	102	488 (549)	29	139 (201)	0	0.00 (1.59)
2008	94	584 (524)	27	168 (191)	0	0.00 (1.33)
2009	90	663 (536)	31	228 (200)	0	0.00 (1.29)

Note: All rates are per 100 million miles of travel. Numbers in parentheses are **statewide average rates** for **Urban Principal Arterials, Non-Freeway**.

Note: Data for 2009 does not include November and December. Rates are based on 10-month period.

An analysis of the data reveals that most of the crashes occur between the Forest River bridge and Rio Road. Approximately 84 percent of the crashes and 75 percent of the injuries occur within this section of SR 204, a distance of approximately 0.3 mile. A segmental analysis of crash history by type of crash was conducted to further examine conditions along the project corridor. This analysis showed that between the years 2005 and 2009, rear end crashes were the most common type of crash, comprising 78 percent of total crashes within the project area. Table 2 presents a directional summary of the rear end crashes that occurred in the eastbound and westbound directions. This data also shows that the vast majority of the crashes are occurring at the westbound queue at Rio Road, followed by the eastbound queue at Rio Road.

<b>Table 2. Summary of Rear-End Crashes by Direction</b>		
SR 204 from Forest River through Rio Road (Mile Log 14.65 to 14.99)		
<b>Direction/Location</b>	<b>Crashes</b>	<b>Injuries</b>
<b>SR 204 Eastbound</b>		
Lane Drop	10	8
Rio Road Queue	113	33
East of Rio Road	8	2
<b>SR 204 Westbound</b>		
Rio Road Queue	217	66
King George Blvd. Queue	61	23

### **Traffic Operations and Level of Service**

Level of service (LOS) is defined as a qualitative measure describing operational conditions within traffic streams. There are six defined LOS tiers at which a roadway can operate. Each of the six tiers is identified by a letter; LOS A represents the best operating conditions and LOS F represents the worst. The existing (2010), opening year (2016) and future (2036) No Build roadway level of service (LOS) for the signalized intersection of SR 204 and Rio Road are presented in Table 3.

<b>Table 3. HCS Signalized Intersection Operations Analysis</b>					
<b>Location</b>		<b>MOE</b>	<b>2010 Existing</b>	<b>2016 No Build</b>	<b>2036 No Build</b>
<b>SR 204 and Rio Road</b>	<b>AM</b>	LOS	<b>C</b>	<b>D</b>	<b>F</b>
		Delay	29	41	91
		EB Queue	1,760	2,600	3,850
	<b>PM</b>	LOS	<b>E</b>	<b>F</b>	<b>F</b>
		Delay	59	87	160
		WB Queue	2,255	2,725	3,950

MOE: Measure of Effectiveness

Note: Delay in seconds/vehicle; queue is 95<sup>th</sup> Percentile in feet

The predominate travel patterns in the project area are the eastbound commute into Savannah from the western Chatham County residential suburbs in the morning and the returning westbound commute in the evening. The intersection of SR 204 and Rio Road is currently operating at LOS E in the PM peak hour. The data shows that conditions at this intersection will worsen in the future and will be failing by the year 2016 under the No Build condition.

Table 4 presents the existing (2010), opening year (2016) and future (2036) No Build roadway level of service (LOS) , AADT, number of travel lanes provided for SR 204 west and east of Rio Road.

<b>Table 4. HCS Multilane Planning Analysis</b>					
<b>Location</b>		<b>MOE</b>	<b>2010 Existing</b>	<b>2016 No Build</b>	<b>2036 No Build</b>
<b>SR 204 West of Rio Road</b>	LOS	<b>D</b>	<b>D</b>	<b>E</b>	
	AADT	46,600	51,465	61,760	
	Lanes	4	4	4	
<b>SR 204 East of Rio Road</b>	LOS	<b>B</b>	<b>C</b>	<b>C</b>	
	AADT	35,870	40,085	48,110	
	Lanes	6	6	6	

MOE: Measure of Effectiveness

Note: AADT is two-way vehicles/day

Four travel lanes are provided west of Rio Road. The corridor is currently operating at LOS D. The data shows that LOS will worsen in the future and will be failing by the year 2036 under the No Build condition. East of Rio Road, six travel lanes are provided and LOS is improved. The corridor is currently operating at LOS B. Level of service along SR 204 east of Rio Road is expected to decrease to LOS C in the future; however, this is an acceptable level of service.

Table 5 presents the existing (2010), opening year (2016), and future (2036) No Build roadway LOS for generalized freeway segments between the study intersections along the corridor. As shown in Table 5,

LOS B and C conditions are experienced in the eastbound direction along the segment of SR 204 from west of the Veterans Parkway merge to the approach of Forest River under existing conditions and future No Build conditions. As the number of travel lanes drops from three to two west of the Forest River, LOS deteriorates to D. The LOS is predicted to decline to E in the future No Build condition.

<b>Table 5. HCS Basic Freeway Segment Operations Analysis</b>					
<b>Location</b>		<b>MOE</b>	<b>2010 Existing</b>	<b>2016 No Build</b>	<b>2036 No Build</b>
<b>Eastbound SR 204 (AM Peak)</b>	West of Veterans Merge	Lanes	3	3	3
		AADT	37,900	42,245	50,690
		DHV	2,280	2,550	3,060
		LOS	<b>B</b>	<b>B</b>	<b>C</b>
		Density	16	17	21
	East of Veterans Merge	Lanes	3	3	3
		AADT	46,600	51,465	61,760
		DHV	2,600	2,890	3,465
		LOS	<b>B</b>	<b>C</b>	<b>C</b>
		Density	18	20	24
	West of Forest River	Lanes	2	2	2
		AADT	46,600	51,465	61,760
		DHV	2,600	2,890	3,465
		LOS	<b>D</b>	<b>D</b>	<b>E</b>
		Density	27	29	36
<b>Westbound SR 204 (PM Peak)</b>	West of Veterans Diverge	Lanes	2	2	2
		AADT	37,900	42,245	50,690
		DHV	2,195	2,430	2,915
		LOS	<b>C</b>	<b>C</b>	<b>D</b>
		Density	22	25	30
	East of Veterans Diverge	Lanes	2	2	2
		AADT	46,600	51,465	61,760
		DHV	2,620	2,880	3,345
		LOS	<b>D</b>	<b>D</b>	<b>E</b>
		Density	27	29	35

Note: DHV in vehicles/hour; Density in pc/mi/ln.

Similar conditions are experienced along SR 204 in the westbound direction during the PM peak hour of travel. For the westbound direction, LOS E conditions are predicted in the future (2036) No Build condition along SR 204 between the Veterans Parkway merge with SR 204 and the Forest River. The LOS worsens presumably because the number of travel lanes decreases from three lanes to two lanes.

## **Logical Termini**

The FHWA defines logical termini for project development as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts. The termini of a proposed project will be of sufficient length to address the problems of congestion and safety along SR 204 between Veterans Parkway and Rio Road.

The logical terminus on the western end can be defined by the location at which level of service degrades from acceptable (LOS C) to approaching failing (LOS E) based on the future No Build conditions. As shown in Table 5, in the eastbound direction this point occurs west of the Forest where the third travel lane is dropped and only two lanes are provided. In the westbound direction, this point occurs along SR 204 at the Veterans Parkway diverge.

The logical terminus at the eastern end can be defined at the intersection at Rio Road. As shown in Table 3, an unacceptable level of service (LOS F) in the westbound and eastbound directions is anticipated at the intersection in the future No Build condition. Approximately 500 feet east of the Rio Road intersection, the third westbound travel lane is striped for right turn only on to Rio Road northbound. In the eastbound direction the basic travel lanes transition from two to three only 250 feet west of the Rio Road intersection. This condition reduces the effectiveness of the third lane. Further east of the intersection, three basic travel lanes in each direction are provided. The lack of a third westbound travel lane and an effective third eastbound travel lane at Rio Road results in increased travel delay and reduced level of service.

## **Modal Interrelationships**

There are currently no existing bikeways on SR 204, and SR 204 is not designated as a state bicycle route. The CORE MPO designates SR 204 as a Bicycle Corridor (Chatham County Bikeway Plan 2000). The project should be designed to not preclude the construction of separate bicycle/pedestrian facilities adjacent to SR 204.

The Chatham Area Transit Authority (CAT) is the responsible agency for providing bus service throughout the county. Currently, there is one bus route that services SR 204 within the project area. Bus Route 6 (Crosstown) services stops along SR 204 between King George Boulevard and Middleground Road, including the Savannah Mall.

## **Need and Purpose**

The purpose of Project PI 0010232 is to reduce travel delays and reduce crash frequency along SR 204/Abercorn Extension (SR 204) from Veterans Parkway to Rio Road. The signalized intersection

of SR 204 and Rio Road is currently operating at an overall LOS E. The intersection is expected to operate at LOS F by 2016. The basic lanes of SR 204 between Veterans Parkway and Rio Road are currently operating at LOS D and are expected to operate at LOS E by 2036. The crash rates for the section of SR 204 from Veterans Parkway through Rio Road (a distance of approximately 1.2 miles) slightly exceed the statewide crash rates for similar facilities, while injury rates are slightly below statewide rates. However, 84% of the crashes occurred in the section from the Forest River bridge through the Rio Road intersection (a distance of approximately 0.3 mile. Analysis of the existing and future No Build conditions shows that conditions are expected to worsen over time as traffic volume is predicted to grow. Today, traffic traveling through the corridor experiences significant delay and congestion at the intersection of SR 204 and Rio Road during the AM and PM peak periods. This demonstrates the need to reduce travel delays along SR 204, reduce crash frequency, and ultimately improve east-west connectivity in this region.

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

-----  
INTERDEPARTMENT CORRESPONDENCE

**FILE**      Project No.    N/A  
                 SR 204, Veterans Pkwy to Rio Road  
                 Chatham County  
                 P.I. No.        0010232

**OFFICE**    Program Delivery  
**DATE**        September 1, 2011

**FROM**      Bobby Hilliard, P.E., State Program Delivery Engineer

**TO**         Ronald E. Wishon, Project Review Engineer

**SUBJECT REVISIONS TO PROGRAMMED COSTS**

PROJECT MANAGER            Robert Murphy

MNGT LET DATE    

MNGT R/W DATE    

**PROGRAMMED COST (Tpro W/OUT INFLATION)**

**LAST ESTIMATE UPDATE**

CONSTRUCTION                \$3,600,000.00

DATE    8/24/2010

RIGHT OF WAY                

DATE    

UTILITIES

DATE    

**REVISED COST ESTIMATES**

CONSTRUCTION\*                \$3,285,000.00

RIGHT OF WAY                N/A

UTILITIES                        N/A

\* Costs contain                5 % Engineering and Inspection

**REASON FOR COST INCREASE**



**CONTINGENCY SUMMARY**

Construction Cost Estimate:	\$2,833,000.00	(Base Estimate)
Engineering and Inspection:	\$141,700.00	(Base Estimate x 5 %)
Total Fuel Adjustment:	\$0.00	(From attached worksheet)
Total Liquid AC Adjustment:	\$310,641.20	(From attached worksheet)
<b>Construction Total</b>	<b>\$3,285,000.00</b>	

**REIMBURSABLE UTILITY COST**

Utility Owner

Reimbursable Costs

Attachments

**Summary of Costs**

Project Name: **SR 204, Veterans Pkwy to Rio Road**  
 Project No.: **N/A**  
 Alt: **E1e**

PI No.: **0010232**  
 County **Chatham**  
 Date: **1-Sep-11**

**A. RIGHT OF WAY**

- 1. Property (Land & Easement)
- 2. Displacements
- 3. Other Costs (Scheduling/Administration)

**SUBTOTAL: A. RIGHT OF WAY \$ -**

**B. UTILITIES**

- 1. Railroad (Trackwork Etc.)
- 2. Transmission Lines
- 3. Other Services (Gas, Telephone, Water, Sewer)

Utilities Contingency: 0%

**SUBTOTAL \$ -**  
**\$ -**  
**SUBTOTAL: B. UTILITIES \$ -**

**C. CONSTRUCTION**

- 1. Traffic Control & Staging (Incl. Temp. Pavement, Bridges, Barriers) \$ 254,600
- 2. Miscellaneous (Field Office, Training, R/W Markers) \$ 67,600
- 3. Temporary Erosion Control & Grassing \$ 162,100
- 4. Clearing & Grubbing \$ 108,000
- 5. Earthwork \$ 99,100
- 6. Base & Paving \$ 1,710,200
- 7. Sidewalk, Curb & Gutter, Concrete Median \$ 28,200
- 8. Driveways \$ -
- 9. Bridges (Incl. Approach Slabs, Slope Paving) \$ -
- 10. Retaining Walls \$ -
- 11. Box Culverts \$ -
- 12. Drainage \$ 39,100
- 13. Permanent Erosion Control & Grassing \$ 19,600
- 14. Removal \$ -
- 15. Permanent Concrete Barrier \$ 234,500
- 16. Sound Barriers \$ -
- 17. Signing \$ 6,400
- 18. Guardrail \$ 41,500
- 19. Fencing \$ 20,200
- 20. Traffic Signals \$ 30,000
- 21. Marking \$ 11,400
- 22. Sanitary Sewer \$ -
- 23. Water Distribution \$ -
- 24. Lighting \$ -
- 25. Landscaping \$ -
- 26. ATMS \$ -

**SUBTOTAL \$ 2,833,000**  
**\$ 141,700**

Engineering & Inspection: 5%  
~~Construction Contingency:~~  
~~Fuel Adjustment:~~  
 Liquid AC Adjustment (60 % cap) \$ 310,600  
 INFLATION: @ 0% PER YEAR \$ -  
 NUMBER OF YEARS: 0

**SUBTOTAL: C. CONSTRUCTION \$ 3,285,000**

**D. MITIGATION**

- 1. Wetlands & Streams (742 Buffer Credits, 9 Marsh Credits) \$ 82,100
- 2. Other \$ -

**SUBTOTAL: D. MITIGATION \$ 82,000**

**TOTAL PROJECT COST \$ 3,367,000**

## STATE HIGHWAY AGENCY

DATE : 09/01/2011  
PAGE : 1

## JOB ESTIMATE REPORT

=====

JOB NUMBER : 0010232                      SPEC YEAR: 01  
DESCRIPTION: SR204 FM CR 975/VETERANS PKWY. TO CS 120/RIO ROAD

## ITEMS FOR JOB 0010232

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0010	150-1000		LS	TRAFFIC CONTROL - COMPLETE	1.000	210000.00	210000.00
0020	150-5010		EA	TRAF CTRL, PORTABLE IMPACT ATTN	2.000	7632.34	15264.68
0025	153-1300		EA	FIELD ENGINEERS OFFICE TP 3	1.000	63571.33	63571.34
0030	158-1000		HR	TRAINING HOURS	5000.000	0.80	4000.00
0035	163-0232		AC	TEMPORARY GRASSING	4.000	397.81	1591.25
0040	163-0240		TN	MULCH	30.000	318.34	9550.48
0045	163-0300		EA	CONSTRUCTION EXIT	5.000	1080.99	5404.99
0050	163-0531		EA	CONSTR & REM SEDIMENT BASIN, TP 1, STA NO- 3 LOCATIONS	3.000	3413.10	10239.30
0055	165-0010		LF	MAINT OF TEMP SILT FENCE, TP A	3775.000	0.87	3313.81
0060	165-0030		LF	MAINT OF TEMP SILT FENCE, TP C	14725.000	1.01	14918.78
0065	165-0060		EA	MAINT OF TEMP SEDIMENT BASIN, STA NO - 3 LOCATIONS	3.000	839.16	2517.49
0070	165-0101		EA	MAINT OF CONST EXIT	5.000	355.75	1778.77
0075	167-1000		EA	WATER QUALITY MONITORING AND SAMPLING	5.000	216.43	1082.16
0080	167-1500		MO	WATER QUALITY INSPECTIONS	30.000	980.21	29406.41
0085	171-0010		LF	TEMPORARY SILT FENCE, TYPE A	3775.000	2.74	10376.30
0090	171-0030		LF	TEMPORARY SILT FENCE, TYPE C	14725.000	2.81	41507.57
0120	201-1500		LS	CLEARING & GRUBBING - 12 ACRES	1.000	108000.00	108000.00
0125	205-0001		CY	UNCLASS EXCAV	9090.000	5.00	45450.00
0130	206-0002		CY	BORROW EXCAV, INCL MATL	4470.000	12.00	53640.00
0135	310-1101		TN	GR AGGR BASE CRS, INCL MATL	11560.000	28.00	323680.00
0145	402-1812		TN	RECYL AC LEVELING, INC BM&HL	4730.000	78.00	368940.00
0146	402-3103		TN	REC AC 9.5 MM SP, TPII, GP2, INCL BM & H L	45.000	82.00	3690.00
0150	402-3121		TN	RECYL AC 25MM SP, GP1/2, BM&HL	5740.000	72.00	413280.00
0155	402-3130		TN	RECYL AC 12.5MM SP, GP2, BM&HL	3650.000	76.00	277400.00
0160	402-3190		TN	RECYL AC 19 MM SP, GP 1 OR 2 , INC BM&HL	3322.000	81.00	269082.00
0165	413-1000		GL	BITUM TACK COAT	4260.000	3.00	12780.00
0170	432-5010		SY	MILL ASPH CONC PVMT, VARB DEPTH	27720.000	1.53	42644.45
0175	436-1000		LF	ASPH CONC CURB - UNDER GUARDRAIL	508.000	10.52	5345.26
0180	441-0754		SY	CONC MEDIAN, 7 1/2 IN	430.000	50.66	21784.52
0185	441-6222		LF	CONC CURB & GUTTER/ 8"X30"TP2	300.000	21.38	6416.45
0186	456-2012		GLM	INTENT. RUMB. STRIPS - GRND-IN-PL (CONT)	10.000	844.43	8444.37
0190	550-1180		LF	STM DR PIPE 18", H 1-10	418.000	29.51	12337.60
0195	550-1240		LF	STM DR PIPE 24", H 1-10	110.000	38.22	4204.65
0200	550-4218		EA	FLARED END SECT 18 IN, ST DR	5.000	447.46	2237.30
0205	550-4224		EA	FLARED END SECT 24 IN, ST DR	2.000	673.26	1346.54
0225	576-1010		LF	SLOPE DRAIN PIPE, 10 IN	48.000	22.46	1078.42
0230	576-1018		LF	SLOPE DRAIN PIPE, 18 IN	36.000	31.51	1134.52
0235	620-0100		LF	TEMP BARRIER, METHOD NO. 1	400.000	29.39	11758.25
0265	621-6001		LF	CONC BARRIER, TP S-1	234.000	76.78	17966.55
0270	621-6201		LF	CONC SIDE BARRIER, TP 2-SA	481.000	450.00	216450.00

STATE HIGHWAY AGENCY

DATE : 09/01/2011  
PAGE : 2

JOB ESTIMATE REPORT

0271	632-0003	EA	CHANGEABLE MESS SIGN, PORT, TP 3	2.000	8789.00	17578.00
0275	636-1020	SF	HWY SGN, TP1MAT, REFL SH TP3	72.000	14.00	1008.32
0280	636-1029	SF	HWY SGN, TP2 MATL, REFL SH TP 3	47.000	16.47	774.41
0285	636-1033	SF	HWY SIGNS, TP1MAT, REFL SH TP 9	55.000	19.79	1088.69
0290	636-1041	SF	HWY SIGNS, TP 2MAT, REFL SH TP 9	15.000	34.71	520.75
0295	636-2070	LF	GALV STEEL POSTS, TP 7	201.000	7.43	1493.56
0300	636-2080	LF	GALV STEEL POSTS, TP 8	140.000	10.15	1421.90
0320	641-1100	LF	GUARDRAIL, TP T	47.000	68.43	3216.29
0325	641-1200	LF	GUARDRAIL, TP W	1015.000	15.99	16236.42
0330	641-5012	EA	GUARDRAIL ANCHORAGE, TP 12	4.000	1889.89	7559.56
0335	643-0010	LF	FIELD FENCE WOVEN WIRE	4070.000	4.95	20159.52
0336	643-8200	LF	BARRIER FENCE (ORANGE), 4 FT	15000.000	2.21	33251.55
0340	647-1000	LS	TRAF SIGNAL INSTALLATION NO - 1 LOCATION SIGNAL UPGRADE	1.000	30000.00	30000.00
0345	653-0120	EA	THERM PVMT MARK, ARROW, TP 2	7.000	69.52	486.69
0350	653-1501	LF	THERMO SOLID TRAF ST 5 IN, WHI	11374.000	0.30	3473.85
0355	653-1502	LF	THERMO SOLID TRAF ST, 5 IN YEL	10494.000	0.29	3128.05
0360	653-1704	LF	THERM SOLID TRAF STRIPE, 24", WH	66.000	3.48	230.18
0365	653-1804	LF	THERM SOLID TRAF STRIPE, 8", WH	396.000	1.72	681.97
0370	653-3501	GLF	THERMO SKIP TRAF ST, 5 IN, WHI	10494.000	0.22	2345.62
0375	653-6004	SY	THERM TRAF STRIPING, WHITE	36.000	3.24	116.82
0380	653-6006	SY	THERM TRAF STRIPING, YELLOW	91.000	3.25	295.88
0385	654-1003	EA	RAISED PVMT MARKERS TP 3	198.000	3.72	737.44
0390	668-2105	EA	DROP INLET, GP 1, SPCL DES	6.000	2994.37	17966.24
0395	668-2110	LF	DROP INLET, GP 1, ADDL DEPTH	6.000	163.15	978.96
0400	700-6910	AC	PERMANENT GRASSING	6.000	475.82	2854.93
0405	700-7000	TN	AGRICULTURAL LIME	30.000	83.26	2497.86
0410	700-7010	GL	LIQUID LIME	25.000	20.50	512.52
0415	700-8000	TN	FERTILIZER MIXED GRADE	7.000	478.74	3351.20
0420	700-8100	LB	FERTILIZER NITROGEN CONTENT	488.000	2.93	1430.90
0425	716-2000	SY	EROSION CONTROL MATS, SLOPES	2557.000	1.61	4120.78

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ITEM TOTAL 2833133.06  
INFLATED ITEM TOTAL 2833133.07

TOTALS FOR JOB 0010232

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ESTIMATED COST: 2833133.07  
CONTINGENCY PERCENT ( 0.0 ): 0.00  
ESTIMATED TOTAL: 2833133.07  
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PROJ. NO. 0  
P.I. NO. 0010232  
DATE 9/1/2011

CALL NO.

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	Aug-11	\$ 3.714
DIESEL		\$ 3.959
LIQUID AC		\$ 580.00

Link to Fuel and AC Index:  
<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

**LIQUID AC ADJUSTMENTS**

PA=[((APM-APL)/APL)]xTMTxAPL

**Asphalt**

Price Adjustment (PA)				<b>304273.8</b>		<b>\$ 304,273.80</b>
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	928.00		
Monthly Asphalt Cement Price month project let (APL)			\$	580.00		
<b>Total Monthly Tonnage of asphalt cement (TMT)</b>				<b>874.35</b>		

ASPHALT	Tons	%AC	AC ton
Leveling	4730	5.0%	236.5
12.5 OGFC	0	5.0%	0
12.5 mm	3650	5.0%	182.5
9.5 mm SP	45	5.0%	2.25
25 mm SP	5740	5.0%	287
19 mm SP	3322	5.0%	166.1
<b>17487</b>			<b>874.35</b>

**BITUMINOUS TACK COAT**

Price Adjustment (PA)				<b>\$ 6,367.40</b>		<b>\$ 6,367.40</b>
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	928.00		
Monthly Asphalt Cement Price month project let (APL)			\$	580.00		
<b>Total Monthly Tonnage of asphalt cement (TMT)</b>				<b>18.29712993</b>		

Bitum Tack

Gals	gals/ton	tons
4260	232.8234	18.2971299

**BITUMINOUS TACK COAT (surface treatment)**

Price Adjustment (PA)				<b>0</b>		<b>\$ -</b>
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	928.00		
Monthly Asphalt Cement Price month project let (APL)			\$	580.00		
<b>Total Monthly Tonnage of asphalt cement (TMT)</b>				<b>0</b>		

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0

**TOTAL LIQUID AC ADJUSTMENT \$ 310,641.20**

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## INTERDEPARTMENT CORRESPONDENCE

FILE

P.I. #0010232 Chatham

SR# 204/Abercorn St. from Veterans Parkway(CR 975) to Rio Road (CS 1201)

OFFICE Jesup

DATE 6/22/2011

FROM Stephen Thomas, Asst. District Utilities Engineer

TO Tommy Crochet/Jenny Jenkins, McGee Partners

SUBJECT PRELIMINARY UTILITY COST (ESTIMATE)

As requested by your office, we are furnishing you with a Preliminary Utility Cost estimate of each utility with facilities potentially located within the above project limits.

Facility Owner	Non-Reimbursable	Reimbursable	Comments
Atlanta Gas Light (AGL)	\$ 598,000.00	\$ 0.00	*
ATT/Bellsouth	\$ 403,000.00	\$ 0.00	*
City of Savannah	\$ 88,000.00	\$ 0.00	*
Georgia Power Distribution	\$ 50,000.00	\$ 0.00	*
Comcast	\$ 19,500.00	\$ 0.00	*
Century Tel	\$13,000.00	\$ 0.00	*
<b>Totals</b>	\$ 1,171,500.00	\$ 0.00	*
<b>Total Reimbursement</b>		\$ 0.00	

- This is a worst case scenario assuming that the ATT duct requires relocating. The AGL gas line will require relocating but will be relocated at AGL' s expense. None of the relocations appear to be reimbursable by GDOT.

CC: Angie Robinson, Office of Financial Management;

Terry Brigman, Assistant State Utilities Engineer

District Office File

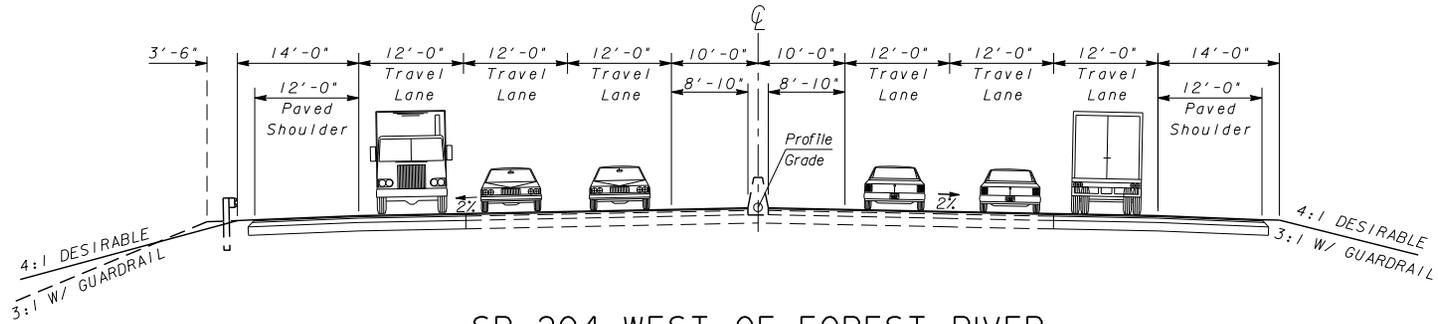
Utilities Office File

Project Name: **SR 204, Veterans Pkwy to Rio Road**  
Project No.:  
Firm: **McGee Partners**

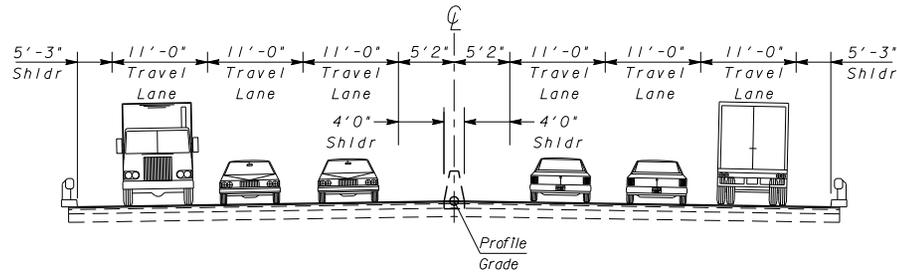
PI No.: **0010232**  
County: **Chatham**  
Date: **15-Aug-11**

## MITIGATION COST ESTIMATE

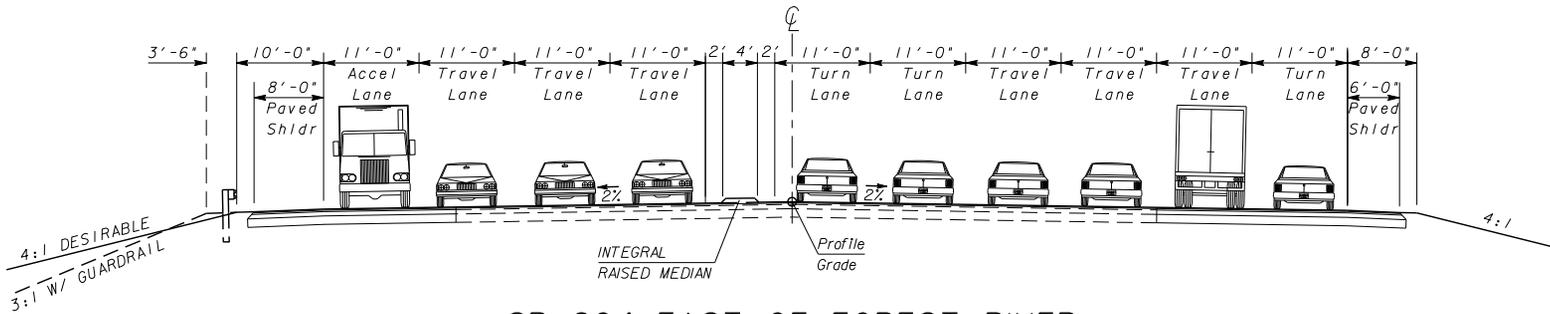
	<u>Credits</u>	<u>Cost/Credit</u>	<u>Cost</u>
Stream Buffer Encroachment	742	\$ 50	\$ 37,100
Estuarine Marsh Impacts	9	\$ 5,000	\$ 45,000
			<hr/>
	TOTAL COST	\$	82,100



SR 204 WEST OF FOREST RIVER



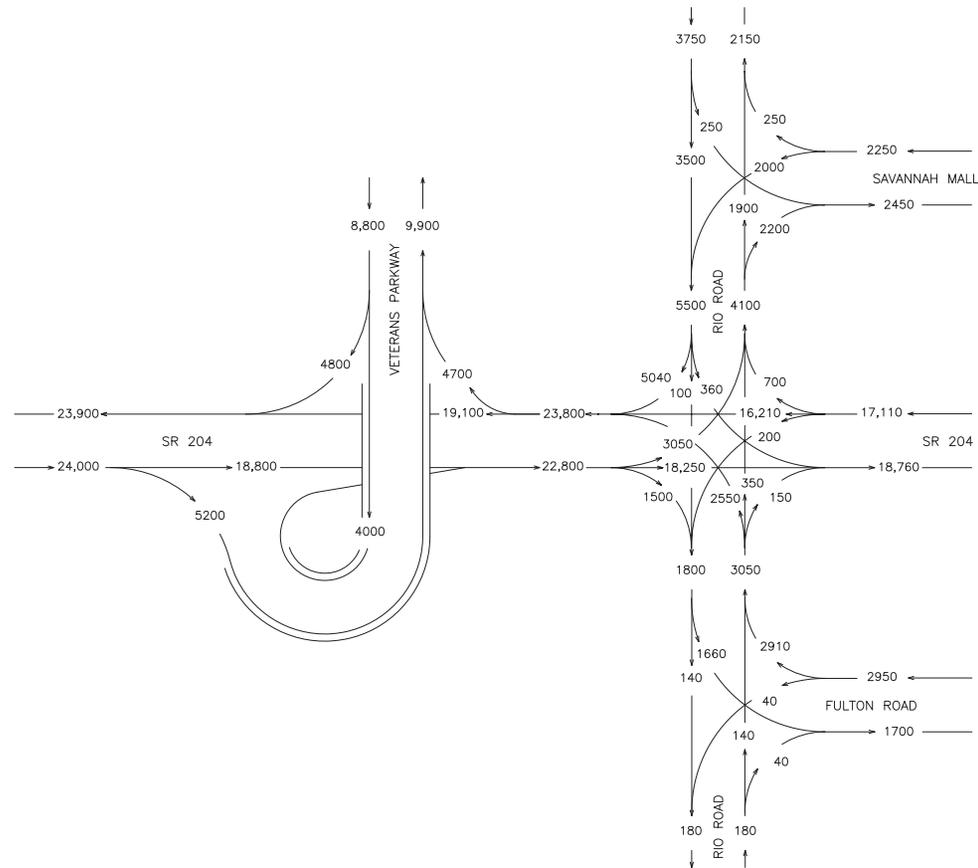
SR 204 OVER FOREST RIVER



SR 204 EAST OF FOREST RIVER

**CONCEPTUAL TYPICAL SECTIONS**  
**SR 204**  
**VETERANS PARKWAY TO RIO ROAD**  
 P.I. NUMBER 0010232  
**McGee Partners, Inc.**  
 CHATHAM COUNTY  
 JULY 2011

N.T.S.

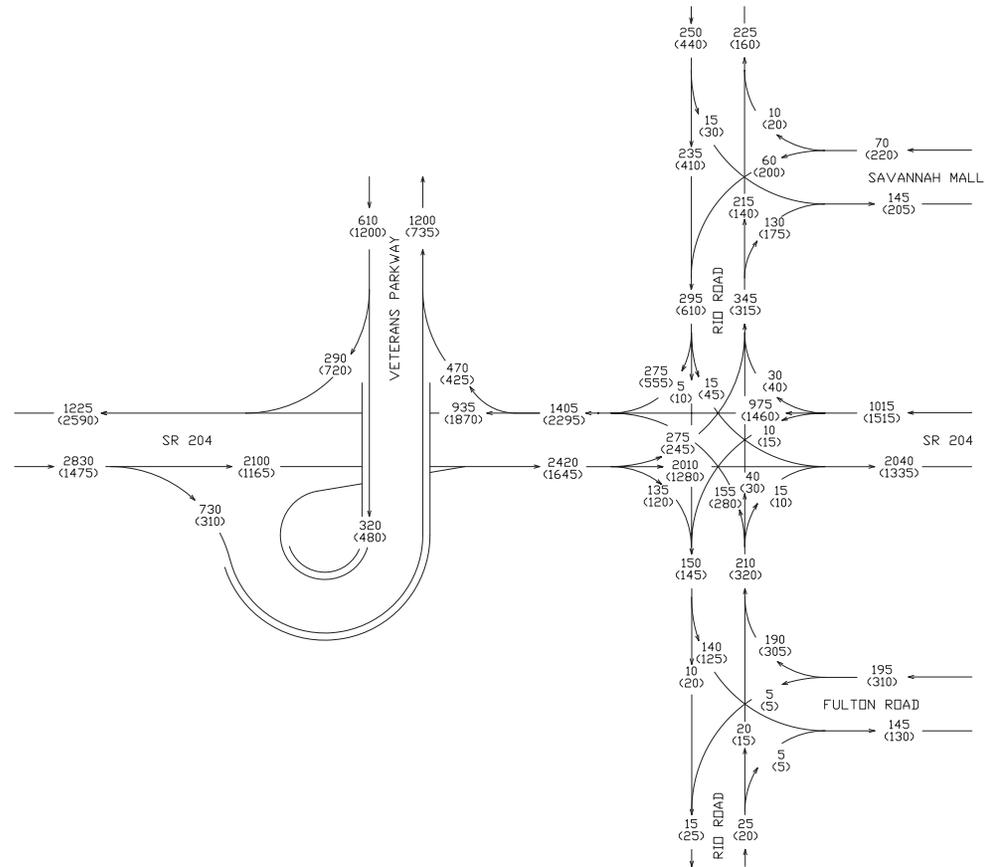


LEGEND  
2010 AADT 000

PI 0010232  
CHATHAM COUNTY  
SR 204  
EXISTING  
ANNUAL AVG. DAILY TRAFFIC (AADT)

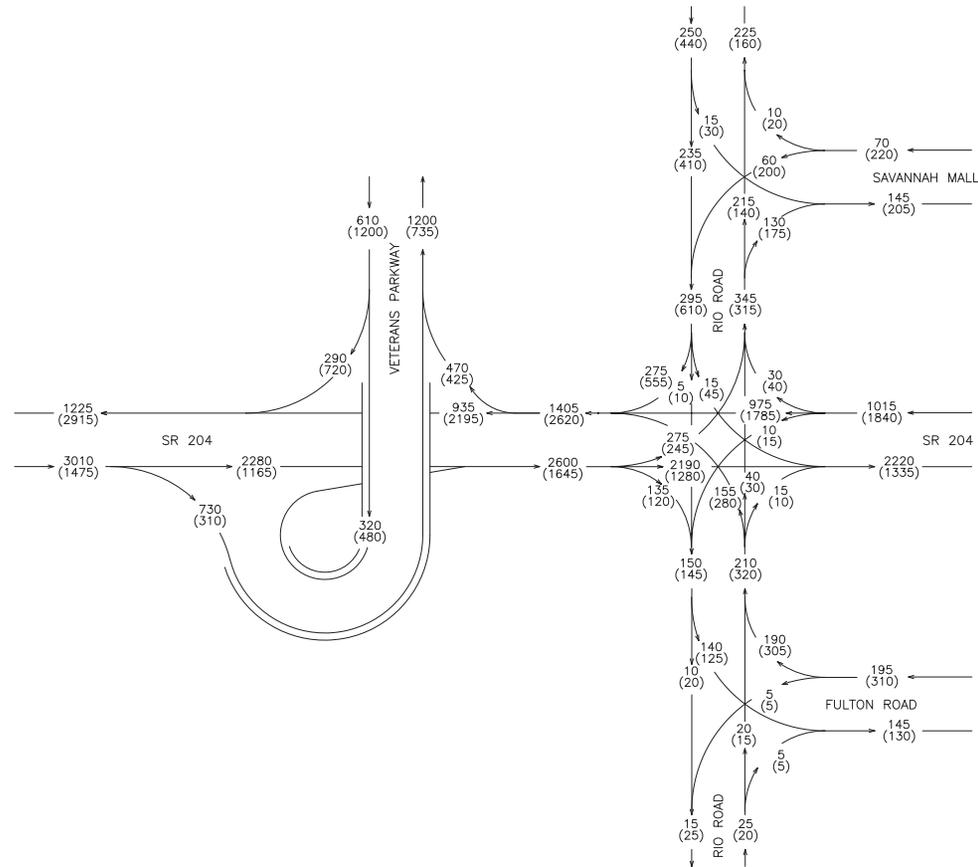
24-HOUR TRUCKS = 6%  
SU TRUCKS = 5%  
MU TRUCKS = 1%

2/16/2011



LEGEND  
 2010 AM VOLUMES 000  
 2010 PM VOLUMES (000)

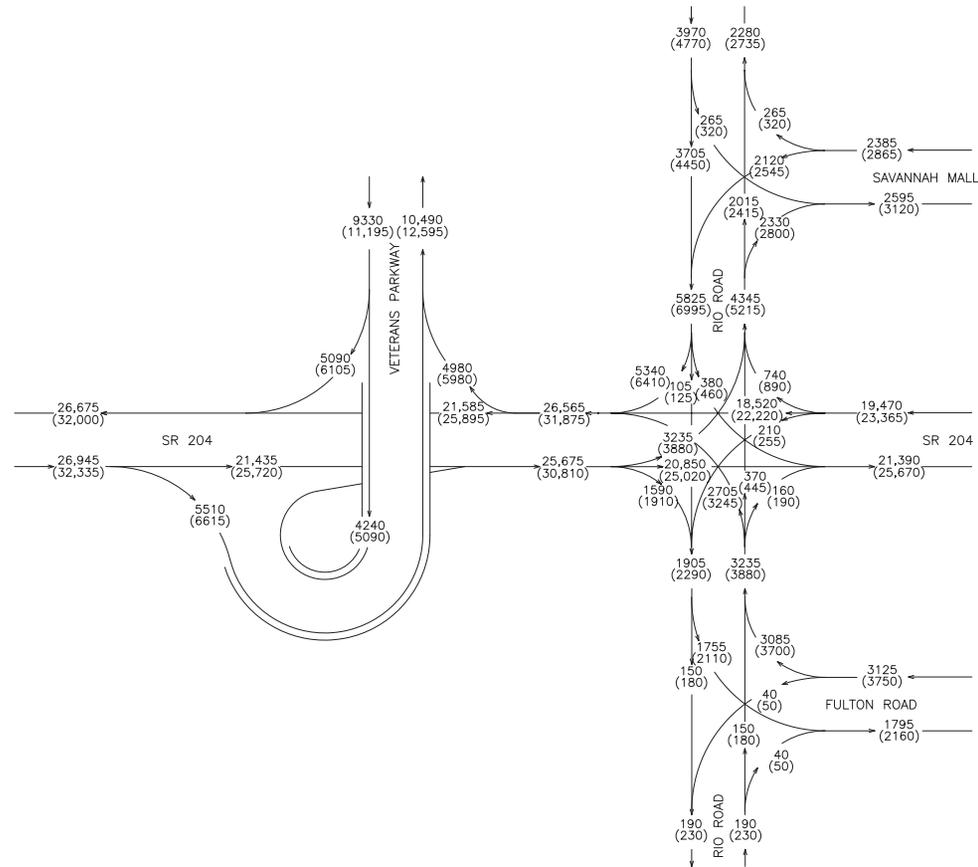
PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 EXISTING  
 PEAK HOUR VOLUMES (PHV)  
 PEAK TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%



**NOTE**  
 PEAK HOUR VOLUMES HAVE BEEN ADJUSTED TO ACCOUNT FOR EXISTING CONSTRAINED CAPACITY ALONG SR 204

**LEGEND**  
 2010 AM VOLUMES 000  
 2010 PM VOLUMES (000)

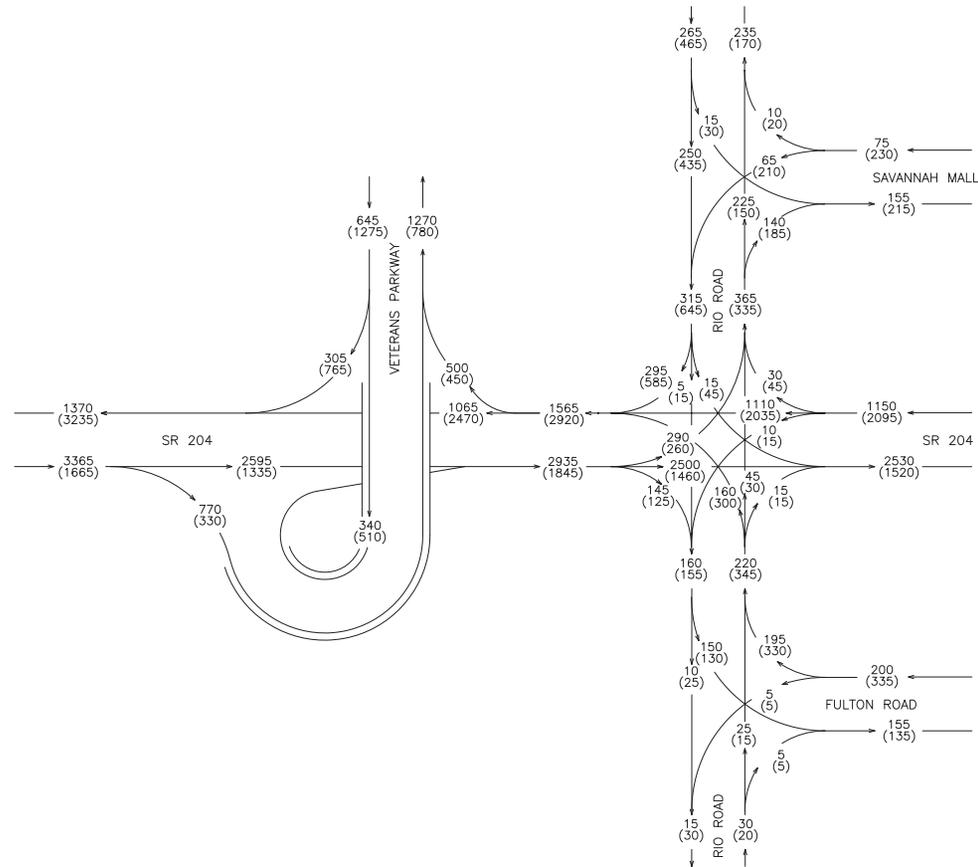
PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 EXISTING  
 PEAK HOUR VOLUMES (PHV)  
 (ADJUSTED)  
 PEAK TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%



LEGEND  
 2016 AADT 000  
 2036 AADT (000)

PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 BUILD  
 ANNUAL AVG. DAILY TRAFFIC (AADT)

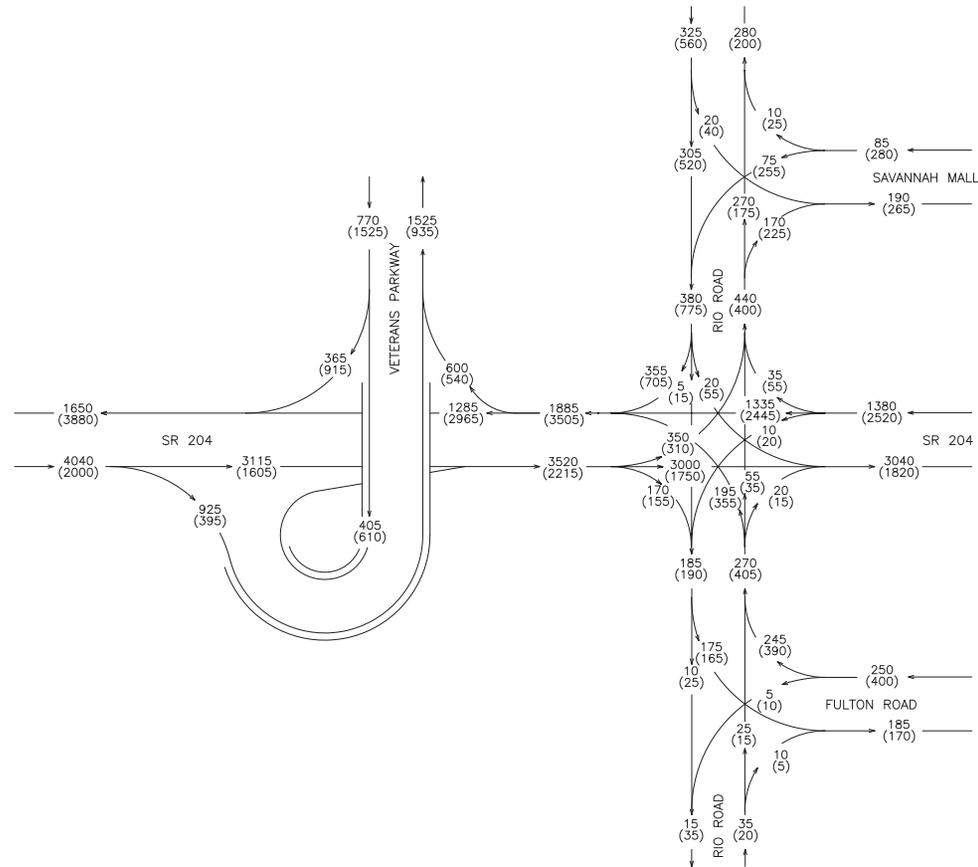
24-HOUR TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%



LEGEND  
 2016 AM VOLUMES 000  
 2016 PM VOLUMES (000)

PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 BUILD  
 DESIGN HOUR VOLUMES (DHV)

PEAK TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%

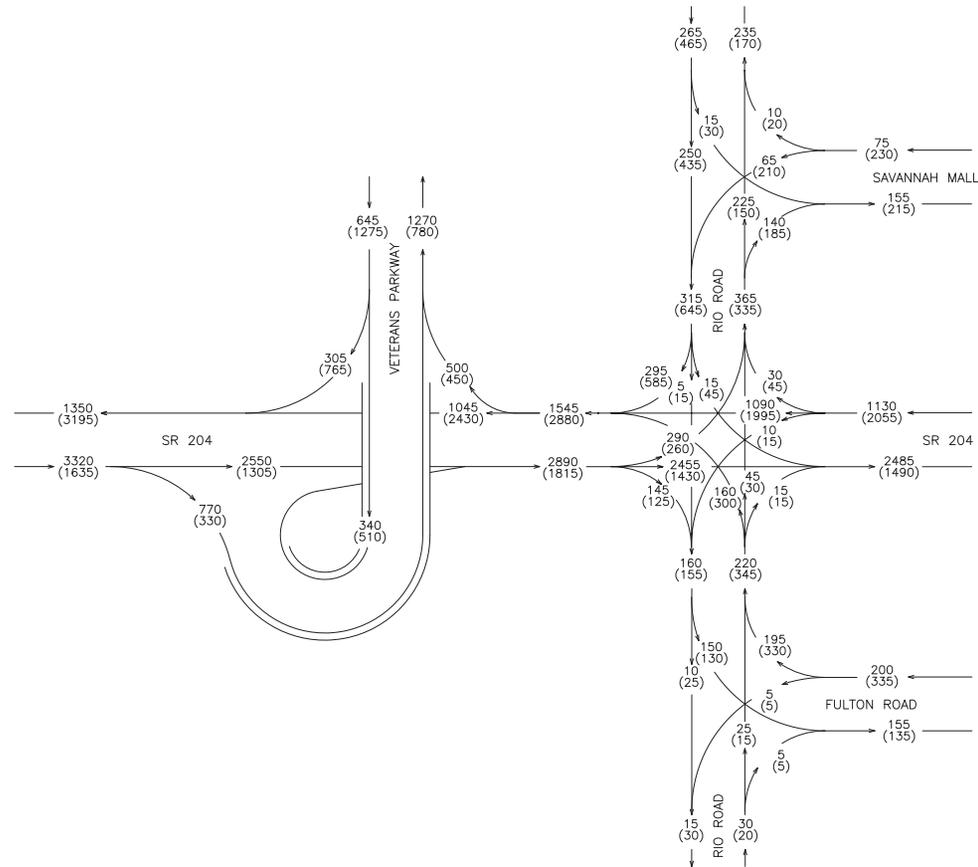


LEGEND  
 2036 AM VOLUMES 000  
 2036 PM VOLUMES (000)

PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 BUILD  
 DESIGN HOUR VOLUMES (DHV)

PEAK TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%

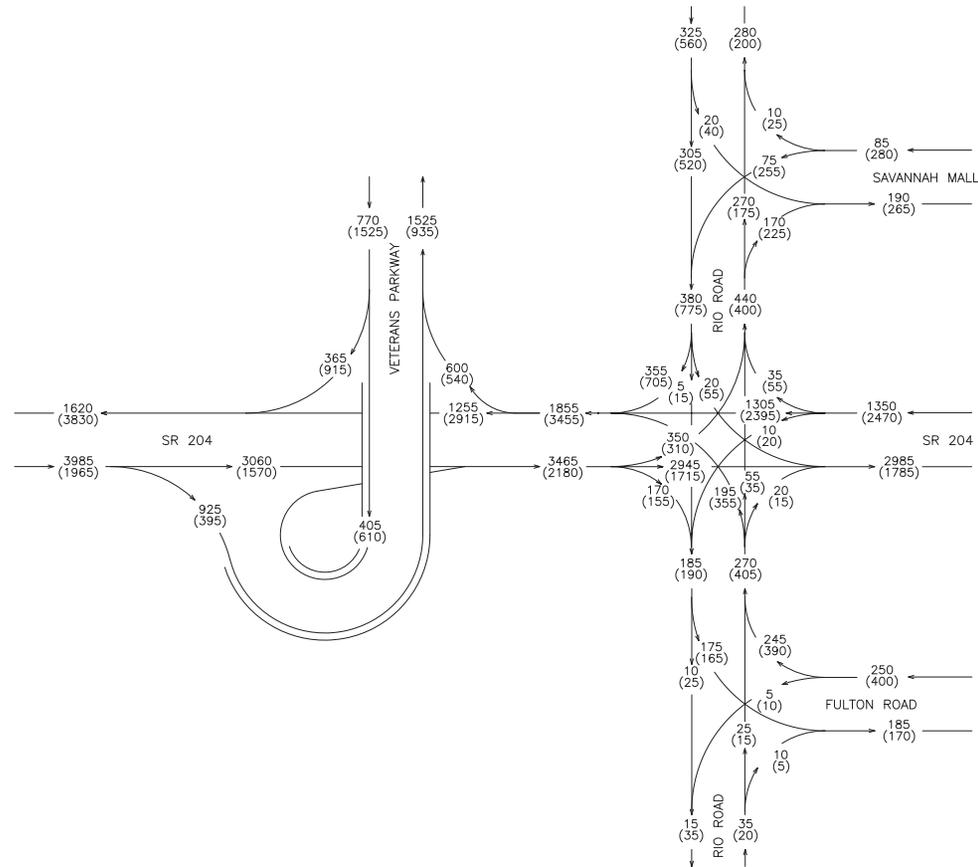




LEGEND  
 2016 AM VOLUMES 000  
 2016 PM VOLUMES (000)

PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 NO BUILD  
 DESIGN HOUR VOLUMES (DHV)

PEAK TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%



LEGEND  
 2036 AM VOLUMES 000  
 2036 PM VOLUMES (000)

PI 0010232  
 CHATHAM COUNTY  
 SR 204  
 NO BUILD  
 DESIGN HOUR VOLUMES (DHV)

PEAK TRUCKS = 6%  
 SU TRUCKS = 5%  
 MU TRUCKS = 1%

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# **TRAFFIC STUDY REPORT**

## **SR 204/Abercorn Street Extension Improvements Veterans Parkway to Rio Road**

**Georgia Department of Transportation  
P.I. No. 0010232  
Chatham County, Georgia**

**March 2011**

Prepared by:

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Appendix

A	Traffic Counts
B	Traffic Projections Diagram
C	HCS Analysis Results
D	Traffic Projections Memo

Chatham County contracted with McGee Partners, Inc. to design improvements to SR 204 from Veterans Parkway to Rio Road for the Georgia Department of Transportation (GDOT) project P.I. No. 0010232. Maps illustrating the project location and the project corridor are included on the following page in Figure 1. This report summarizes the methodology followed in the collection and analysis of traffic data along with the results of the analysis and recommendations on proposed improvements.

The proposed project (Build Condition) would widen SR 204 from its existing four lanes to six lanes between the Veterans Parkway ramps through Rio Road. Turn lane improvements at the SR 204 and Rio Road intersection would include adding an additional eastbound left turn lane and doubling the length of the eastbound right and left turn bays. An acceleration lane would be provided for westbound vehicles that have turned right from Rio Road.

The tapering of SR 204 to a four-lane roadway east of Veterans Parkway creates a bottleneck that greatly restricts the capacity of the corridor causing the signalized intersection at Rio Road to operate at an unacceptable level of service (LOS). As congestion builds during the peak periods, substantial queuing forms eastbound during the AM and westbound during the PM approaching the intersection. Existing turn-lane storage bays are not sufficient to handle the volumes creating spillback problems. The purpose of this project is to reduce travel delays and reduce crash frequency along SR 204 from Veterans Parkway through the Rio Road intersection.

The methodology used to analyze the traffic operations is based on the Transportation Research Board's (TRB) *Highway Capacity Manual, 2000 Edition (HCM)*. The basic steps followed to collect data and perform the analysis were:

- Collect existing data, including development plans, roadway characteristics and historic traffic count data
- Prepare traffic volume projections
- Analyze existing and future traffic volumes, utilizing Highway Capacity Software (HCS) and FHWA's Corridor-microscopic Simulation (CORSIM) traffic analysis software to determine operational level of service (LOS) of various alternatives and conditions



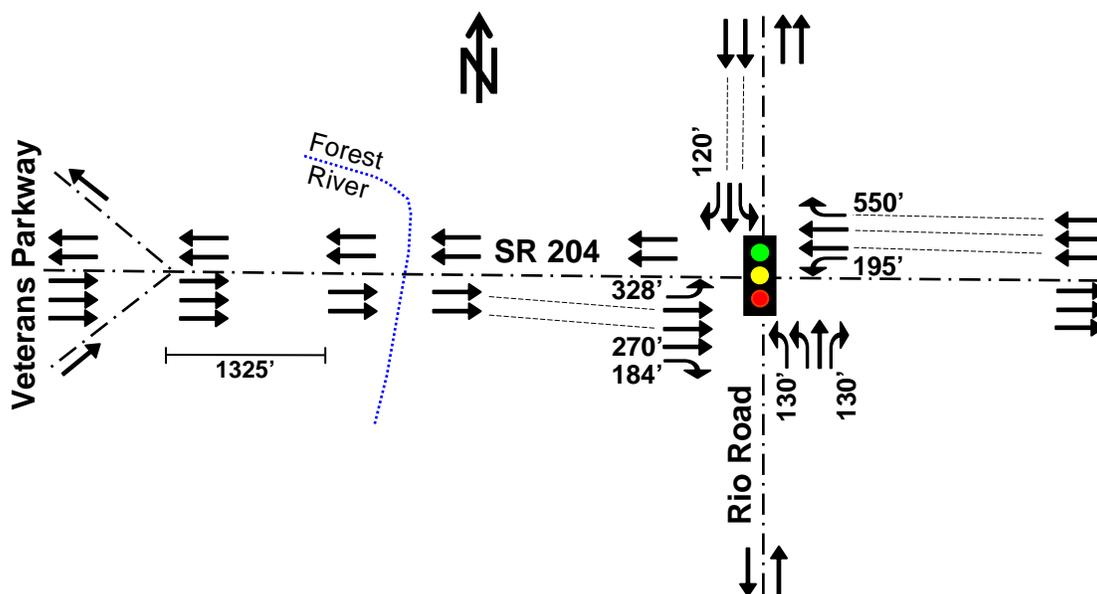
**Roadway Inventory**

An inventory of the existing roadways within the project site was made for reference during the analysis. The following summarizes the pertinent aspects of the roadways:

- **SR 204/Abercorn Street Extension** is a four-lane roadway west of Rio Road and a six-lane roadway east of Rio Road. The posted speed limit is 55 mph west of the Forest River and 45 mph east of the Forest River. The land uses along SR 204 are a mixture of undeveloped, single-family residential, and commercial. SR 204 is functionally classified as an Urban Principal Arterial. The SR 204 corridor was developed as a limited access roadway west of the Forest River and has been evolving into an urban freeway, including existing interchanges at US 17 and Veterans Parkway and a proposed interchange at King George Boulevard.
- **Rio Road** is a two-lane roadway south of SR 204 and a four-lane roadway north of SR 204 with a posted speed limit of 30 mph. Rio Road is functionally classified as an Urban Local Street. The intersection with SR 204 is under traffic signal control. The land uses along Rio Road are a mixture of commercial, undeveloped, and single-family residential.

Hunter Army Airfield is located on the northwest corner of the intersection of SR 204 and Rio Road as shown previously in Figure 1. The existing laneage of the intersection is illustrated in the figure below. In the westbound direction the outer-most lane approaching the intersection converts to a right-turn-only lane, while on the eastbound approach a through lane is added just before the intersection.

**Figure 2: Existing Laneage & Intersection Configuration**



The project limits were evaluated for compliance with standards published by the American Association of State Highway and Transportation Officials’ *A Policy on Geometric Design of Highways and Streets, 2004 Edition*. Adequate sight distance is provided along SR 204 and at all approaches to the Rio Road intersection.

**Existing Traffic Volumes**

Traffic counts for the project were collected in March 2010. Existing average annual daily traffic volumes (AADT) on SR 204/Abercorn Street is 46,600 west of Rio Road. Existing AADT on Rio Road is 9,600 north of SR 204 and 4,850 south of SR 204. The traffic counts are included as Appendix A and the existing daily and peak hour volume diagrams are included as part of Appendix B.

**Existing Traffic Operating Conditions**

Utilizing the methodology set forth in the *HCM*, the existing traffic volumes were analyzed utilizing the Signals, Freeways, and Ramps Modules of the Highway Capacity Software (HCS). Due to extensive queuing, the existing volumes were adjusted to reflect actual demand and the constrained capacity in the peak directions. This resulted in minor adjustments to the SR 204 through movements at Rio Road.

An HCS Signalized Operations Analysis of the existing signalized intersection of SR 204 and Rio Road was conducted utilizing the AM and PM peak hour turning movement volumes for existing (2010) conditions. Results of this analysis are summarized in the following table. Reports from the HCS Analysis are included in Appendix C.

**Table 1  
Summary of HCS Signalized Intersection Analysis – Existing Conditions**

<b>SR 204 and Rio Road</b>	AM	LOS	C
		Delay	29
		EB Queue	1,760
	PM	LOS	E
		Delay	59
		WB Queue	2,255

**Note: Delay in sec/veh, Queue is 95th Percentile in feet**

The results show that the existing intersection of SR 204 and Rio Road currently operates at an unacceptable LOS during the PM peak. Also, extremely long queue lengths exist during both the AM and PM peak.

An HCS Freeways Operations Analysis was conducted at selected segments along SR 204 west of Rio Road. Due to a directional distribution over 60%, the peak hour volumes were analyzed only for the peak directions, eastbound in the AM and westbound in the PM. Results of this

analysis are summarized in the table below. The density and LOS reported uses *HCM* Exhibit 23-2 to determine the LOS for basic freeways segments. Reports from the HCS analysis are included in Appendix C.

**Table 2  
Summary of HCS Freeways Analysis – Existing Conditions**

<b>Eastbound SR 204 (AM Peak)</b>	West of Veterans Merge	Lanes	3
		DHV	2,280
		LOS	B
		Density	16
	East of Veterans Merge	Lanes	3
		DHV	2,600
		LOS	B
		Density	18
	West of Forest River	Lanes	2
		DHV	2,600
		LOS	D
		Density	27
<b>Westbound SR 204 (PM Peak)</b>	West of Veterans Diverge	Lanes	2
		DHV	2,195
		LOS	C
		Density	22
	East of Veterans Diverge	Lanes	2
		DHV	2,620
		LOS	D
		Density	27

**Note: DHV in veh/hr, Density in pc/mi/ln**

The analysis above shows that in the eastbound direction, SR 204 is fairly congested with an LOS D corresponding to where the roadway merges from three to two lanes. During the PM peak, the most congested segment is westbound just east of the Veterans Parkway diverge, operating at an LOS D.

### **Crash History**

Crash data was obtained from the DOT Office of Traffic Operations for the time period covering 2005 to 2009. The crashes reported along the project were summarized by crash type, surface conditions, light conditions, and pedestrian or bike related. A summary of the crash history is shown in the table on the following page comparing crash and injury rates to the statewide averages.

**Table 3**  
**Summary of Crash History: SR 204 from Veterans Parkway through Rio Road**  
**(Mile Log 13.72 to 14.99)**

Year	Crashes	Crash Rate	Injuries	Injury Rate	Fatalities	Fatality Rate
2005	93	576 (573)	36	223 (225)	0	0.00 (1.63)
2006	141	680 (545)	53	256 (207)	1	4.82 (1.69)
2007	102	488 (549)	29	139 (201)	0	0.00 (1.59)
2008	94	584 (524)	27	168 (191)	0	0.00 (1.33)
2009	90	663 (536)	31	228 (200)	0	0.00 (1.29)

Note: All rates are per 100 million miles of travel. Numbers in parentheses are statewide average rates for **Urban Principal Arterial, Non-Freeway**.

Note: Data for 2009 does not include November and December. Rates are based on 10-month period.

The results reveal that over the past five years the crash rates for this corridor slightly exceed the statewide average for an urban principal arterial. However, the crash rates for SR 204 from the Forest River Bridge through Rio Road are about three times the statewide rates as shown in the table below.

**Table 4**  
**Summary of Crash History: SR 204 from Forest River Bridge through Rio Road**  
**(Mile Log 14.65 to 14.99)**

Year	Crashes	Crash Rate	Injuries	Injury Rate	Fatalities	Fatality Rate
2005	76	1594 (573)	27	566 (225)	0	0.00 (1.63)
2006	117	2016 (545)	40	689 (207)	0	0.00 (1.69)
2007	88	1512 (549)	21	361 (201)	0	0.00 (1.59)
2008	78	1663 (524)	19	405 (191)	0	0.00 (1.33)
2009	77	1968 (536)	26	665 (200)	0	0.00 (1.29)

Note: All rates are per 100 million miles of travel. Numbers in parentheses are statewide average rates for **Urban Principal Arterial, Non-Freeway**.

Note: Data for 2009 does not include November and December. Rates are based on 10-month period.

**Bike Routes**

While SR 204 is not a state bicycle route, it is included as a bicycle corridor in the Chatham County MPO’s “Chatham County Bikeways Plan.” However, the SR 204 corridor was developed as a limited access roadway from I-95 to Rio Road and has been evolving into an urban freeway, including existing and proposed interchanges. AASHTO’s “Guide for the Development of Bicycle Facilities” indicates that “normally, freeways in urban areas will have characteristics making them highly undesirable to permit bicycle use.” With high volumes at high-speed ramp entrances and exits, inclusion of bike lanes in the roadway shoulder would not provide a suitable route for bicycle travel and will not be included in this project. Chapter 9 of GDOT’s Design

Policy Manual states “bicycle and pedestrian accommodation are excluded from routes that have been designated as “Full Access Control” such as freeways and interstate highways.”

### **Traffic Projections**

Appendix B includes future traffic volumes approved by GDOT for the expected build year 2016 and design year 2036. The methodology used in the development of these volumes is documented in the technical memorandum attached as Appendix D. These projections were analyzed to determine anticipated traffic operations in the future and to evaluate improvements that will be required to provide acceptable traffic operations. The peak-hour factor (PHF) for this project was determined to be 0.92 through an analysis of the current traffic counts.

### **Alternatives Considered**

The following alternatives were considered as part of this analysis:

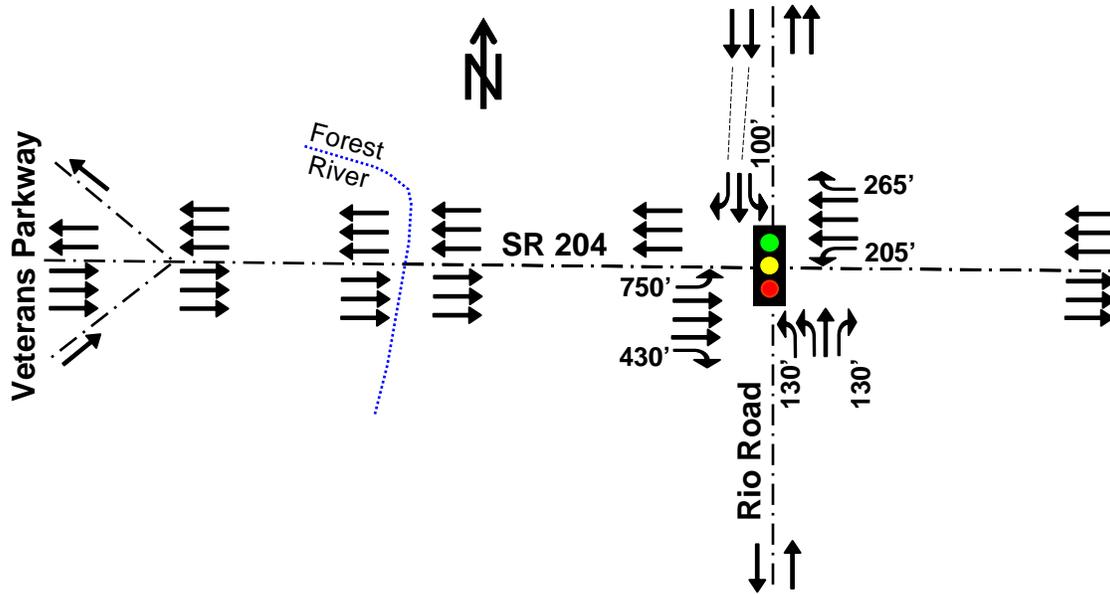
- **No Build:** The existing laneage is depicted previously in Figure 2.
- **Build Alternative A – Six lanes with extended turn lanes at Rio Road:** Consists of widening SR 204 from its existing four lanes to six lanes between the Veterans Parkway ramps and Rio Road. Turn lane improvements would include significantly extending the length of the eastbound left and right turn lanes. The laneage for this alternative is illustrated in Figure 3 on the following page.
- **Build Alternative B – Six lanes with extended turn lanes at Rio Road, including dual eastbound left turn lanes:** Consists of widening SR 204 from its existing four lanes to six lanes between the Veterans Parkway ramps and Rio Road. Turn lane improvements would include adding eastbound dual left turn lanes and extending the length of the eastbound left and right turn lanes. Additionally, an acceleration lane will be added for southbound right-turning vehicles merging onto westbound SR 204. The proposed laneage of this alternative is shown in Figure 4 on the following page.

### **HCS Analysis for Comparison of Alternatives**

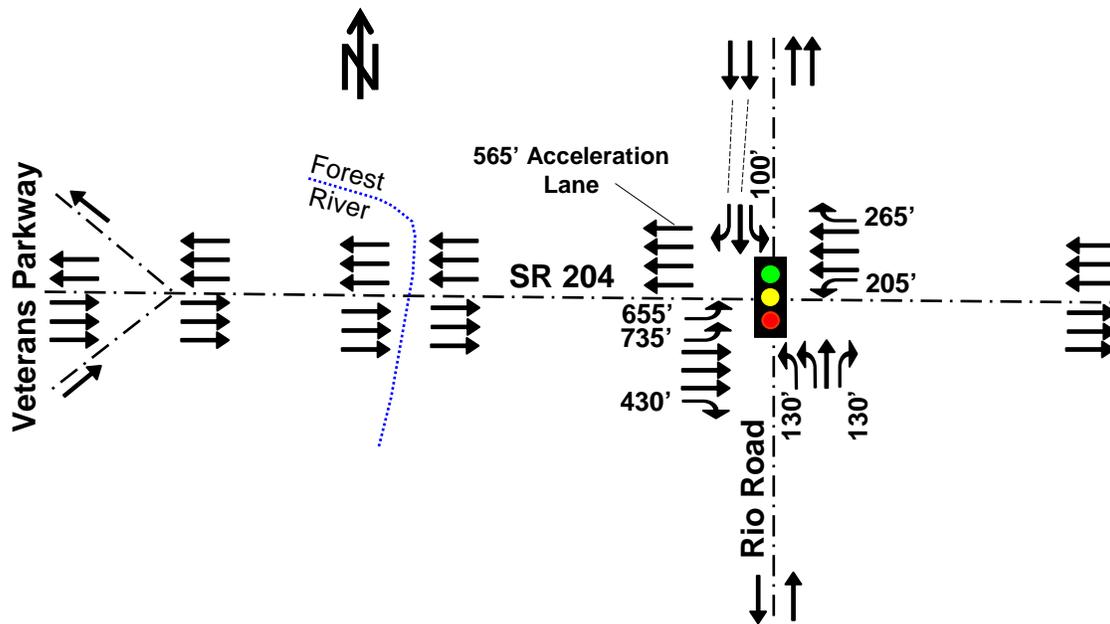
An HCS Signals Operations Analysis was performed for the design year for each of the three alternatives to determine the anticipated LOS and control delay for the intersection. The existing phasing and cycle length were kept constant for coordination purposes with adjacent traffic signals.

The results including LOS and average delay per vehicle during the AM and PM peak hours are summarized in Table 5. Reports from the HCS analysis are included in Appendix C.

**Figure 3: Build Alternative A**



**Figure 4: Build Alternative B – Eastbound Dual Lefts**



**Table 5**  
**HCS Signalized Intersection Analysis for Selection of Alternatives**

Intersection		MOE	2036 No Build	2036 Build Alt. A	2036 Build Alt. B
SR 204 and Rio Road	AM	LOS	F	D	C
		Delay	91	36	34
		EB Queue	3,850	2,095	2,095
	PM	LOS	F	E	D
		Delay	160	79	53
		WB Queue	3,950	2,088	2,003

**Note: Delay in sec/veh, Queue is 95th Percentile in feet**

The results of the analysis indicate that Build Alternative B is the only choice that provides an acceptable LOS from the given alternatives. By the design year, 2036, the No Build alternative will be failing with an LOS F and queue lengths exceeding 3,850 feet. When comparing the two build alternatives, Alternative B has significantly less delay than Alternative A during the PM period. Based on the relative performance, Alternative B was selected. All further analysis of the Build condition is based on Alternative B.

**Detailed Capacity Analysis of the No Build and Build Alternatives**

In addition to performing an HCS Signalized Analysis, HCS Freeways and HCS Ramps Analyses were performed on SR 204 to determine the impact of widening SR 204. Lastly, a CORSIM Analysis was conducted to determine the total vehicle-hours and vehicle-miles travelled. For each analysis, No Build and Build conditions were examined for both the build (2016) and design year (2036).

**Adjustment for right turn on red (RTOR)**

The *HCM* indicates “when right turn on red (RTOR) is permitted, the right-turn volume for analysis may be reduced by the volume of right turning vehicles moving on the red phase”. Additionally, “if the analysis is dealing with future conditions or if the RTOR volume is not known, it is necessary to estimate the number of RTOR vehicles”. The southbound right turn from Rio Road to SR 204 is a special case needing an RTOR adjustment as it comprises 90% of the AADT for that approach.

To estimate the number of RTOR vehicles for each build condition, it was necessary to analyze the factors affecting the ability for vehicles to perform a RTOR. The degree of saturation of the conflicting through movement, demand for the right-turn movement, and green-to-cycle length ratio were the factors selected for this calculation.

**Adjustment for eastbound through lanes**

SR 204 eastbound at Rio Road has two through lanes on the approach to the intersection which then widens to include a third through lane. The storage of this lane is estimated to be 270 feet. From field observation, once the queue from the third through lane clears, the capacity of the through movement is restricted to the equivalence of two lanes. It is important to make adjustments to the HCS analysis to reflect this behavior.

This was accomplished by assigning the eastbound movement two through lanes and reducing the DHV of the through movement by the number of vehicles that use the third lane. From field observation, approximately 6 vehicles store in this third lane per cycle. This resulted in reducing the DHV by 150 for the existing and No Build conditions.

The HCS Signalized Operations Analysis of SR 204 and Rio Road was performed after applying the adjusted RTOR volumes and the adjustment for the eastbound through lanes. The complete results of the Signalized Operations Analysis including LOS and average delay per vehicle during the AM and PM peak hours are summarized in the table below. Reports from the HCS analysis are included in Appendix C.

**Table 6  
Summary of HCS Signalized Intersection Analysis for SR 204 and Rio Road**

Intersection		MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
<b>SR 204 and Rio Road</b>	AM	LOS	C	D	C	F	C
		Delay	29	41	22	91	34
		EB Queue	1,760	2,600	1,265	3,850	2,095
	PM	LOS	E	F	C	F	D
		Delay	59	87	28	160	53
		WB Queue	2,255	2,725	975	3,950	2,003

**Note: Delay in sec/veh, Queue is 95th Percentile in feet**

The results indicate that SR 204 and Rio Road will be failing with an LOS F in the 2016 PM period and during both the AM and PM period in 2036 if no changes are made to the intersection. However, in 2016 the delay can be reduced 67% providing an LOS C and in 2036 the delay can be reduced by over 60% in both the AM and PM period by implementing Build Alternative B. As a result, the queue lengths in the design year can be reduced over 1,600 feet.

An HCS Freeways Analysis was conducted at segments along SR 204 for the peak directions. The results of this analysis including LOS and density are summarized in the table on the following page. Reports from the HCS analysis are included in Appendix C.

The LOS and density for the eastbound freeway are shown to improve for the 2036 build alternative west of the Forest River from LOS E to C. For the westbound direction, the LOS was shown to decrease from LOS E to C as well.

**Table 7  
Summary of HCS Freeway Operations Analysis for SR 204**

Location		MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
<b>Eastbound SR 204 (AM Peak)</b>	West of Veterans Merge	Lanes	3	3	3	3	3
		DHV	2,280	2,550	2,595	3,060	3,115
		LOS	B	B	B	C	C
		Density	16	17	18	21	21
	East of Veterans Merge	Lanes	3	3	3	3	3
		DHV	2,600	2,890	2,935	3,465	3,520
		LOS	B	C	C	C	C
		Density	18	20	20	24	24
	West of Forest River	Lanes	2	2	3	2	3
		DHV	2,600	2,890	2,935	3,465	3,520
		LOS	D	D	C	E	C
		Density	27	29	20	36	24
<b>Westbound SR 204 (PM Peak)</b>	West of Veterans Diverge	Lanes	2	2	2	2	2
		DHV	2,195	2,430	2,470	2,915	2,965
		LOS	C	C	C	D	D
		Density	22	25	25	30	30
	East of Veterans Diverge	Lanes	2	2	3	2	3
		DHV	2,620	2,880	2,920	3,455	3,505
		LOS	D	D	C	E	C
		Density	27	29	20	35	24

**Note: DHV in veh/hr, Density in pc/mi/ln**

An HCS Ramps Operations Analysis was conducted for the existing, build, and design year conditions. The table on the following page summarizes the results and reports the density and LOS of the ramps connecting SR 204 to Veterans Parkway. The full HCS Ramps Analysis reports can be seen in Appendix C.

The results indicate the operations of the ramps will improve for the westbound diverge from LOS C to B, due to the full auxiliary lane added in that direction between the ramp and Rio Road. This analysis was not able to account for the condition in which eastbound queuing from Rio Road causes delay at the Veterans Parkway merge, which could be expected as the eastbound queue increases under No Build conditions.

**Table 8**  
**Summary of HCS Ramps Operations Analysis for SR 204**

Location/ Direction	MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
<b>EB SR 204 Merge</b>	LOS	B	B	B	B	B
	Density	11	13	13	16	16
<b>WB SR 204 Diverge</b>	LOS	B	C	B	C	B
	Density	19	21	15	26	18

Note: Density in pc/mi/ln

**CORSIM Network Analysis**

FHWA’s Corridor-microscopic Simulation (CORSIM) traffic analysis software was utilized to construct models of the No Build and selected Build alternatives after being calibrated to existing conditions. 10 simulation runs were performed for each model and the network statistics were extracted and averaged over these runs.

A comparison of the network-wide statistics derived from the CORSIM analysis is shown in the following table. This provides an overall comparison of operations between the No Build and Build networks as opposed to operations at an individual intersection or segment.

**Table 9**  
**Summary of CORSIM Analysis Network-Wide Statistics**

	2010		2016				2036			
	Existing		No Build		Build		No Build		Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Total Vehicle-Miles	10,479	9,902	11,533	10,700	11,905	12,179	13,207	11,513	14,264	13,876
Total Vehicle-Hours	296	521	340	617	310	351	507	918	395	589
Vehicle-Hours of Delay Time	74	310	95	389	58	93	226	672	94	294
Average Speed (mph)	35.6	19.0	34.3	17.4	38.5	34.7	26.5	12.6	36.2	23.7
Average Delay (sec/veh)	37	123	43	144	26	30	85	229	35	86

The results show that during the design year, the selected build alternative generates a 58% reduction in average delay per vehicle for the AM peak, and a 62% reduction in delay for the PM peak. The total vehicle-hours of delay and total vehicle-hours driven are reduced significantly in the design year under build conditions. In the design year, the average speed was shown to increase by 10 mph in both the AM and PM period.

This report summarizes the analysis conducted to identify operational needs in the project area, compare alternatives, and determine appropriate improvements to meet future operational needs. The HCS Analysis demonstrated a definite need for operational improvements on the SR 204 corridor from Veterans Parkway through Rio Road. Existing queue lengths are extremely long and will continue to grow as the volume increases. The intersection SR 204 at Rio Road currently operates at an unacceptable LOS and was shown to be failing with an LOS F under future conditions.

The construction of a six-lane roadway between Veterans Parkway and Rio Road with turn lane improvements at Rio Road will provide for an acceptable level of service for the forecasted traffic volumes through 2036. The proposed design was found to significantly decrease the total VHT, reduce the control delay by over 60%, provide improvements to the queue lengths at Rio Road, and increase the average travel speed through the corridor. By reducing travel delays, providing appropriate turn lane lengths and eliminating the lane drops, a reduction of crash frequency can be expected.

The recommendations developed as part of this study take into account the operational needs, safety, environmental and community impacts, and feasibility. In addition, ADA compliant crosswalks and ramps will be provided at the Rio Road intersection.

# Bridge Inventory Data Listing



Parameters: Bridge Serial Num

Structure ID:051-0076-0

Chatham

SUFF. RATING: 78.00

Location & Geography				Signs & Attachments	
<b>Structure ID:</b>	051-0076-0	*104 Highway System:	0		
200 Bridge Information:	07	*26 Functional Classification:	14	225 Expansion Joint Type:	05
*6A Feature Int:	FOREST RIVER	*204 Federal Route Type:	F No: 01111	242 Deck Drains:	1
*6B Critical Bridge:	0	105 Federal Lands Highway:	0	243 Parapet Location:	0
*7A Route No Carried:	SR00204	*110 Truck Route:	0	Height:	0
*7B Facility Carried:	SR 204	2006 School Bus Route:	1	Width:	0
9 Location:	2 MI E OF INT I-95	217 Benchmark Elevation:	0027.61	238 Curb Height:	1
2 Dot District:	5	218 Datum:	2	Curb Material:	1
207 Year Photo:	2008	*19 Bypass Length:	12	239 Handrail	11
*91 Inspection Frequency:	24 Date: 10/08/2008	*20 Toll:	3	*240 Medium Barrier Rail:	1
92A Fract Crit Insp Freq:	0 Date: 02/01/1901	*21 Maintanance:	01	241 Bridge Median Height:	3
92B Underwater Insp Freq:	2 Date: 04/03/2007	*22 Owner:	01	* Bridge Median Width:	2
92C Other Spc. Insp Freq:	0 Date: 02/01/1901	*31 Design Load:	6	230 Guardrail Loc. Dir. Rear:	8
* 4 Place Code:	69000	37 Historical Significance:	5	FwrD:	4
*5 Inventory Route(O/U):	1	205 Congressional District:	12	Oppo. Dir. Rear:	8
Type:	3	27 Year Constructed:	1971	Oppo. FwrD:	4
Designation:	1	106 Year Reconstructed:	0000	244 Aproach Slab	3
Number:	00204	33 Bridge Medium:	3	224 Retaining Wall:	0
Direction:	0	34 Skew:	00	233Posted Speed Limit:	45
*16 Latitude:	31 59.0210 HMMS Prefix:SR	35 Structure Flared:	0	236 Warning Sign:	0.00
*17 Longtitude:	81 -11.0400 HMMS Suffix:00 MP:14.90	38 Navigation Control:	1	234 Delineator:	1.00
98 Border Bridge:	000%Shared:00	213 Special Steel Design:	0	235 Hazzard Boards:	0
99 ID Number:	0000000000000000	267 Type of Paint:	2	237 Utilities Gas:	21
*100 STRAHNET:	2	*42 Type of Service On:	1	Water:	00
12 Base Highway Network:	1	Type of Service Under:	5	Electric:	00
13A LRS Inventory Route:	511020400	214 Movable Bridge:	0	Telephone:	22
13B Sub Inventory Route:	2	203 Type Bridge:	0	Sewer:	00
101 parallel Structure:	N	259 Pile Encasement	3	247 Lighting Street:	0
*102 Direction of Traffic:	2	*43 Structure Type Main:	4 02	Navigation:	1
*264 Road Inventory Mile Post:	014.56	45 No.Spans Main:	003	Aerial:	0
*208 Inspection Area:	5 Initials: EFP	44 Structure Type Appr:	5 02	*248 County Continuity No.:	00
Engineer's Initials:	sgm	46 No Spans Appr:	0009		
* Location ID No:	051-00204D-014.90E	226 Bridge Curve Horz	0 Vert: 1		
		111 pier Protection	5		
		107 Deck Structure Type:	1		
		108 Wearing Structure Type:	1		
		Membrane Type:	8		
		Deck Protection:	8		

# Bridge Inventory Data Listing



Parameters: Bridge Serial Num

Structure ID:051-0076-0

Programming Data		Measurements:				
201 Project No:	FU-111-1 (6) CT.1	*29ADT	049830	Year:2007	65 Inventory Rating Method:	1
202 Plans Available:	4	109%Trucks:	0		63 Operating Rating Method:	1
249 Prop Proj No:	00000000000000000000000000000000	* 28 Lanes On:	04	Under:00	66 Inventory Type:	2 Rating: 39
250 Approval Status:	0000	210 No. Tracks On:	00	Under:00	64 Operating Type:	2 Rating: 39
251 PI Number:	0000000	* 48 Max. Span Length	0130		231 Calculated Loads:	
252 Contract Date:	02/01/1901	* 49 Structure Length:	854		H-Modified:	20 0
260 Seismic No:	00000	51 Br. Rwdy. Width	84.60		HS-Modified:	25 0
75 Type Work:	00 0	52 Deck Width:	90.00		Type 3:	28 0
94 Bridge Imp. Cost:	\$5	* 47 Tot. Horiz. Cl:	42		Type 3s2:	40 0
95 Roadway Imp. Cost:	10	50 Curb / Sidewalk Width	0.00 / 0.00		Timber:	36 0
96 Total Imp Cost:	0	32 Approach Rdwy. Width	087		Piggyback:	40 0
76 Imp Length:	000000	*229 Shoulder Width:			261 H Inventory Rating:	23
97 Imp Year:	0000	Rear Lt:	9.90	Type:2 Rt:9.80	262 H Operating Rating	52
114 Future ADT:	074745 Year:2027	Fwd. Lt:	9.90	Type:2 Rt:10.00	67 Structural Evaluation:	6
<b>Hydraulic Data</b>		Permanent Width:			58 Deck Condition:	6
215 Waterway Data:		Rear:	23.30	Type:2	59 Superstructure Condition:	7
High Water Elev:	0006.5 Year:1900		23.70	Type:2	* 227 Collision Damage:	0
Flood Elev:	0000.0 Freq:00	Intersection Rear:	0	Fwd: 1	60A Substructure Condition:	6
Avg Streambed Elev:	0017.9	36 Safety Features Br. Rail:	2		60B Scour Condition:	7
Drainage Area:	00000	Transition:	2		60C Underwater Condition	6
Area of Opening:	000000	App. G. Rail:	1		71 Waterway Adequacy:	8
113 Scour Critical	U	App. Rail End:	2		61 Channel Protection Cond.:	8
216 Water Depth:	35.2 Br.Height:30.8	53 Minimum Cl. Over:	99' 99"		68 Deck Geometry:	9
222 Slope Protection:	1	Under:			69 UnderClr. Horz/Vert:	N
221 Slope Protection	0 Fwd:0	*228 Minimum Vertical Cl			72 Appr. Alignment:	8
219 Fender System	0	Act. Odm Dir.:	99' 99"		62 Culvert:	N
220 Dolphin:	0	Oppo. Dir:	99' 99"		<b>Posting Data</b>	
223 Current Cover:	000	Posted Odm. Dir:	00' 00"		70 Bridge Posting Required	5
Type:	0	Oppo. Dir:	00' 00"		41 Struct Open, Posted, CL:	A
No. Barrels:	0	55 Lateral Undercl. Rt:	N 0 0		* 103 Temporary Structure:	0
* Width:	0.00 Height:0.00	56 Lateral Undercl. Lt:	0.00		232 Posted Loads	
* Length:	0 Apron:0	*10 Max Min Vert Cl:	99' 99" Dir:0		H-Modified:	00
265 U/W Insp. Area	2 Diver:RMO	39 Nav Vert Cl:	020 Horiz:0100		HS-Modified:	00
Location ID No:	051-00204D-014.90E	116 Nav Vert Cl Closed:	020		Type 3:	00
		245 Deck Thickness Main Deck Thick Approach:	8.00		Type 3s2:	00
		246 Overlay Thickness:	8.00		Timber:	00
		212 Year Last Painted:	Sup:1994Sub:0000		Piggyback	00
					253 Notification Date:	02/01/1901
					258 Fed Notify Date:	2/1/1901 12:00:00AM

# GEORGIA DEPARTMENT OF TRANSPORTATION

## Bridge Inspection Report

**District:** 5  
**Bridge Inspector:** Gene Palmer  
**Location ID:** 051-00204D-014.90E  
**Structure ID:** 051-0076-0

**Inspection Date:** 10/8/2008  
**Over:** FOREST RIVER  
**County:** Chatham  
**Road Name:** SR 204

**Inspection Area:** 05  
**Bridge Status:** 07

### EVALUATION & DEFICIENCIES

---

**SubStructure:**

**Year Painted:** 0000

13 Concrete caps with 12 - 24" Concrete pile each bent on approach spans, and 4 Conc. columns per bent on main spans, (Off plans). Design load=HS-20+.

04/03/2007 RMO Concrete shows moderate scale/abrasion from high water line down with moderate to heavy scale at bent 9. Bents 6 through 9 are two, two column bents on footings. Bent 10 is a 12 concrete pile bent. Bent 9, column 1 has vertical cracks on the back and right faces that have been sealed with epoxy. These cracks were hairline up to 1/32" in width and ran from the high water line down approximately 4'. The concrete of column 1 also shows some deterioration and honey combing in the splash zone. Bent 10, piles 1, 2, 4, 7, 8, 9 & 11 have vertical cracks that have been sealed with epoxy. These were hairline up to 1/16" wide and ran from high water line down approximately 4'.

**Deficiencies noted:**

- 1) Piles 7,8, & 10 at bent 4, pile 11 @ bt.10, piles 6 & 8 @ bt.11, need sealing.
- 2) Bt. 4 cap spalled,
- 3) Caps at bts. 6 and 9 need cleaning of debris left from construction repair.

**SuperStructure:**

**Year Painted:** 1994

12 Spans ,Approach spans have 12 PSC, I-beams (48"DX 18"W),per span, Main spans have 12 Steel continuous beams per span 50" deep X 18" wide X 1 " flange. Design load=HS-20+.

**Deficiencies noted:**

- 1) Minor spalling in PSC beams, some with cables exposed on end of beams.
- 2) Span 6 has some beams with 100% section loss on the base of web stiffeners.
- 3) Span 8 also has some active corrosion on beams.

**Deck:**

8" Concrete deck. Design load=HS-20+.

**Deficiencies noted:**

- 1) Minor cracking throughout deck, moderate cracking over Main Spans , with efflorescence present on bottom .(No repair).

**General:**

Built in 1971.

2 Approach slabs ,both have minor map cracking.

Design load=HS-20+.

The bridge has 1 XJS joint at bent 9 ,and 1 Finger joint at bent 6, the remaining joints are silicone filled.

Need boat to complete inspection, (Used boat).

NOTE----Spans 2 thru 11 is under contract for snooper inspection.

NOTE TO REVIEWER: SANDY 4 DUMMY JOINTS ON P-1, I COULDN'T INPUT THEM, THE SCREEN KEPT SCREWING UP. THE EDGE BEAMS WENT IN FINE BUT THE SCREEN WOULD GO AWAY WHEN I HIT ADD THE NEXT TIME. EEP. 08.

**Recommended repairs:**

- 1-) Minor spalling in PSC beams, some with cables exposed on end of beams. ( Need sealing)
- 2) Span 6 has some beams with 100% section loss on the base of web stiffeners.
- 3) Span 8 also has some active corrosion on beams.
- 4) Piles 7,8, & 10 at bent 4, pile 11 @ bt.10, piles 6 & 8 @ bt.11, need sealing.
- 5) Caps at bts. 6 and 9 need cleaning of debris left from construction repair.

# GEORGIA DEPARTMENT OF TRANSPORTATION

## Bridge Inspection Report

**District:** 5  
**Bridge Inspector:** Gene Palmer  
**Location ID:** 051-00204D-014.90E  
**Structure ID:** 051-0076-0

**Inspection Date:** 10/8/2008  
**Over:** FOREST RIVER  
**County:** Chatham  
**Road Name:** SR 204

**Inspection Area:** 05  
**Bridge Status:** 07

### EVALUATION & DEFICIENCIES

---

#### Condition Rating

Temp Shored: No

Component	Material	Rating
Substructure	Concrete	6
Superstructure	Concrete-Steel	7
Deck	Concrete	6

Truck Type	Gross/H-Mod	HSMOD	Tand	3-S-2	Log	Piggy
Calculated Posting	20	25	28	40	36	40
Posting Required	No	No	No	No	No	No
Existing Posting	00	00	00	00	00	00

\*\*\*School Bus Route.\*\*\*

Structure Does Not Require Posting

## McGee Partners, Inc.

1990 Lakeside Parkway  
Suite 240  
Tucker, Georgia 30084  
T 770.938.6400  
F 770.938.6333

## Meeting Minutes

Date: February 24, 2011 Time: 10:00 am  
Location: Chatham County Department of Engineering  
SR 204 Abercorn Street Extension Improvements from Veterans Parkway  
Subject: (CR975) to Rio Road (CS 1201) – Initial Concept Team Meeting  
Project No: PI No. 0010232, Chatham County MPI: 3003032  
Recorded By: Chris Marsengill  
Attendees: (See Attached)

Robert Murphy of GDOT began the meeting by asking everyone to introduce themselves (see list of attendees). Following introductions, Robert gave a brief overview of the need and purpose of the project, and then handed the meeting over to Tommy Crochet of McGee Partners. The meeting followed the attached presentation given by Tommy. The following comments were made and discussed:

### **Purpose & Need**

Mr. Murphy explained that the proposed project is an operational improvement project (not a capacity project) along SR 204 from Veterans Parkway to Rio Road. It is intended to improve the corridor current level of service and reduce crashes. The project will be designed through a PFA with Chatham County.

### **Bicycle Facilities**

No provisions for bicycle facilities are included in the current concept since SR204 west of Rio Road is a freeway with limited access and high speed interchanges. Frank McIntosh stated that the Savannah Bike Campaign would like GDOT to consider including provisions for bicycle facilities in the concept. Mr. Crochet explained that due to the geographical restrictions and transportation demands of this corridor, bicycle facilities are not a reasonable addition to this project. A practical bicycle facility should be planned and constructed as a separate, standalone project. The cost of such a facility, an estimated \$10-15 million from King George Boulevard to Rio Road, would be much greater than the cost of the proposed project. Mr. McIntosh stated that Georgetown residents cannot legally leave their community by any means other than motorized conveyance. Mr. Crochet stated that although there may be a need or a desire for a bicycle facility between King George and Rio, this need is independent of and beyond the scope of the proposed project.

Initial Concept Team Meeting

February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County

## Traffic

Mike Weiner requested the inclusion of dual left turn lanes from eastbound SR204 to northbound Rio Road. The design team will study the additional cost and environmental impacts required to develop dual lefts. Operational benefits would be realized, but they must be weighed against the additional impacts.

Mike Weiner and Rob McCall stated that the third westbound through lane was initially removed from the Rio Road intersection because the short merge beyond the intersection and lack of gaps for entering right turns from Rio Road was resulting in a high frequency of side-swipe crashes. Mr. Crochet explained that this project would extend this third lane from Rio Road to Veterans Parkway thereby eliminating the merge and increasing the length and frequency of suitable gaps.

Dual right turn lanes from Rio Road were discussed, and it was concluded that dual rights would not be implemented, but an acceleration lane for the right turns would be added and signed as a yield condition. Mike Weiner also added that 11' lanes may be acceptable since they currently exist east of Rio Road. McGee Partners will investigate inclusion of 11' lanes across the Forest River bridge and between the bridge and Rio Road.

## Constructability Review

Layouts will be forwarded to Will Murphy to assess the need for a formal Constructability Review. Most attendees agreed that a Constructability Review would not be necessary.

## Anticipated Schedule

PIOH:	May 2011
Concept Team Meeting:	July 2011*
Approved Concept Report:	November 2011
Submit Draft CE:	December 2011
Approved CE:	May 2012
PFPR:	July 2012 (Corrected)
FFPR:	March 2013

\*Note: Although most meeting attendees did not think an additional CTM would be necessary, this need will be assessed following the PIOH.

# Meeting Minutes

Initial Concept Team Meeting

February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County

INITIAL CONCEPT TEAM MEETING  
PI # 0010232

SIGN IN SHEET

ROBERT MURPHY	GDOT	R0MURPHY@DOT.GA.GOV
Tommy Crochet	McGee Partners	tcrochet@mcgeepartners.com
Susan Thomas	EPEI	ssthenas@edwards-pitman.com
Josh Earhart	EPEI	jeearhart@edwards-pitman.com
Teresa Scott	GDOT	tscott@dot.ga.gov
STEPHEN THOMAS	GDOT	Sthomas@dot.ga.gov
BRAD SAXON	GDOT	bsaxon@dot.ga.gov
Steve Price	GDOT	stprice@dot.ga.gov
Pamela Bernard	Chatham Co	pbernard@ChathamCounty.org
Stade Cole	GDOT	gcole@dot.ga.gov
Michael Adams	CORE MAP/MPL	adamsm@hempco.org
FRANK MCINTOSH	<sup>MPA/TECH</sup> SAVH. BLUE CAMP.	frank@bicyclecampaign.org
Mike Weiner	City	mike_weiner@seaworldga.com
Leon Davenport	CCED	ldavenport@chathamcounty.org
Robert McCall	GDOT	rmccall@dot.ga.gov
CHRIS MARSENGILL	McGEE PARTNERS	CMARSENGILL@MCGEEPARTNERS.COM

Initial Concept Team Meeting

February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County

SR 204 Improvements  
Chatham County, Georgia

**INITIAL CONCEPT MEETING**  
**SR 204 Improvements**  
**Veterans Parkway to Rio Road**  
**PI 0010232, Chatham County**

February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



**Agenda**

- Introductions
- Project Background
- Purpose & Need
- Planning Issues
- Environmental Resources
- Public Involvement
- Alternatives Considered
- Design Issues
- Accommodations for Other Modes
- Environmental Requirements
- Geotechnical Issues
- Utility Issues
- Maintenance Issues
- Signals & ITS Issues
- Construction Staging
- Cost Estimates
- Management Issues
- Comments

PI 0010232 Initial Concept Meeting – February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



**Project Background**

PI 0010232 Initial Concept Meeting – February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



**Project Background**

- Project need identified during project development of PI 522870, SR 204 at King George Boulevard
- December 2009: Directed by Chief Engineer to present project need to Director of Planning
- August 2010: Programmed with Lump L240 funds



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SR 204, Veterans to Rio  
Chatham County, Georgia



**Purpose & Need Issues**

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SR 204, Veterans to Rio  
Chatham County, Georgia



**Purpose & Need**

- Operational
  - AADT: 46,600 (2010); 52,240 (2016); 62,685 (2036)
  - Rio Road Signalized Intersection:
    - Existing:
      - AM LOS – C; Delay – 33 minutes/vehicle
      - PM LOS – E; Delay – 59 minutes/vehicle
    - 2016 No Build:
      - AM LOS – D; Delay – 47 minutes/vehicle
      - PM LOS – F; Delay – 96 minutes/vehicle
    - 2036 No Build:
      - AM LOS – F; Delay – 147 minutes/vehicle
      - PM LOS – F; Delay – 97 minutes/vehicle

PI 0010232 Initial Concept Meeting – February 24, 2011



Initial Concept Team Meeting  
February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia

### Purpose & Need

- Safety (Crash/Injury Rates, 2005-2009)

	Veterans thru Rio	Forest R. thru Rio	Statewide Principal Arterial (Non-Freeway)
Crash Rate	530	1685	545
Injury Rate	180	515	205

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Chatham County, Georgia

### Functional Classification

LEGEND

- Urban Principal Arterial
- Urban Minor Arterial
- Urban Collector
- Urban Local

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### Logical Termini

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### How Does Project Address Purpose & Need

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### Proposed Project

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### Addressing Purpose & Need

- Operational Issues to be Addressed by Project
  - Rio Road Signalized Intersection:
    - Add Third Westbound Through Lane
    - Fully Utilize Third Eastbound Through Lane
    - Lengthen Eastbound Left and Right Turn Lanes
  - Eliminate Eastbound Lane Drop West of Forest River
  - Provide Westbound Auxiliary Lane from Rio Road, Dropped at Veterans Parkway Exit Ramp

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Initial Concept Team Meeting

February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia

### Signalized Intersection Operations SR 204 at Rio Road

	MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
AM	LOS	C	D	C	F	C
	Delay	33	47	23	97	24
	EB Queue	1603	2108	1220	3125	1965
PM	LOS	E	F	D	F	E
	Delay	59	86	42	147	76
	WB Queue	2235	2650	1478	3850	2058

Note: Delay in sec/veh, Queue is 95th Percentile in feet

Cut Delay per Vehicle in Half

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Chatham County, Georgia

### SR 204 Basic Freeway Operations

Location	MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
West of Veterans Merge	Lanes	3	3	3	3	3
	LOS	B	B	B	C	C
	Density	16	17	18	21	21
Eastbound SR 204	Lanes	3	3	3	3	3
	LOS	B	C	C	C	C
	Density	18	20	20	24	24
West of Forest River	Lanes	2	2	3	2	3
	LOS	D	D	C	E	C
	Density	27	29	20	36	24

Note: Density in pc/mi/ln

Avoids Undesirable LOS

SR 204, Veterans to Rio  
Chatham County, Georgia

### SR 204 Basic Freeway Operations

Location	MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
Westbound SR 204	Lanes	2	2	3	2	3
	LOS	D	D	C	E	C
	Density	27	29	20	35	24
West of Veterans Diverge	Lanes	2	2	2	2	2
	LOS	C	C	C	D	D
	Density	22	25	25	30	30

Note: Density in pc/mi/ln

Avoids Undesirable LOS  
Acceptable LOS Supports Logical Termini

SR 204, Veterans to Rio  
Chatham County, Georgia

### Freeway Ramp Operations SR 204 - Veterans Parkway Ramps

Location/Direction	MOE	2010 Existing	2016 No Build	2016 Build	2036 No Build	2036 Build
EB SR 204 Merge	LOS	B	B	B	B	B
	Density	11	13	13	16	16
WB SR 204 Diverge	LOS	B	C	B	C	B
	Density	19	21	15	26	18

Note: Density in pc/mi/ln

Improves LOS of WB Exit to Veterans Parkway

- SR 204, Veterans to Rio  
Chatham County, Georgia
- ### Addressing Purpose & Need
- Crash Issues to be Addressed by Project
    - Add WB/Extend EB Thru Lanes at Rio Intersection->
      - Reduce Queue Lengths-> Reduce Rear End Crashes
      - Reduce Intersection Delay-> Reduce Right Angle Crashes
    - Extend EB Turn Lanes->
      - Reduce EB Turning Vehicles Blocking Thru Lanes-> Reduce Rear End Crashes
      - Reduce Lane Changes-> Reduce Sideswipe Crashes
    - Eliminate EB Lane Drop Before Forest River->
      - Reduce Lane Changes-> Reduce Sideswipe and Rear End Crashes

SR 204, Veterans to Rio  
Chatham County, Georgia

### Planning Issues

Initial Concept Team Meeting  
February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia

### Planning Issues

- Benefit to Cost Analysis to be Prepared by Office of Planning (McGee Partners to Provide Cost Estimate and CORSIM Analysis)
- Project Must be Added to the TIP
- Project Development Should Consider Future Additional Capacity Improvements Along SR 204

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SR 204, Veterans to Rio  
Chatham County, Georgia

### Other Projects in the Area

PI No. 0007148 SR 204 Intersection Improvements at I-95  
PI No. 0009314 SR 204 Corridor Study  
PI No. 532780 SR 204 @ Largo  
PI No. 0002921 Truman Phase V  
PI No. 522870 SR 204 at King George  
PI No. 0010232 SR 204, Veterans to Rio  
PI No. 0002922 SR 204, Rio to Truman

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### Environmental Resources

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### Environmental Resources

- Wetlands, Open Waters, Coastal Zone

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### Environmental Resources

- Potential Sound Barriers

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### Environmental Resources

- Not Applicable:
  - Historic Resources
  - Archaeological Resources
  - UST Sites

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Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

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## Public Involvement

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Chatham County, Georgia



### Planned Public Involvement

- Public Information Open House (PIOH)
  - Planned for April/May 2011
- Key Stakeholder Coordination (as required)

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Chatham County, Georgia



## Alternatives Considered

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### Alternatives Considered

- No Build
- Build

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Chatham County, Georgia



## Design Issues

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SR 204, Veterans to Rio  
Chatham County, Georgia



### Design Criteria

	Design Class		Design Speed (mph)	Min. Curve Radius	Max. SE	Max. Grade
SR 204 West of Forest R.	Urban Freeway	Existing	55 *	n/a	n/a	1.2%
		Proposed	60	n/a	n/a	1.2%
		Allowable		1330'	6%	3%
SR 204 East of Forest R.	Urban Arterial	Existing	45 *	2292'	6%	1.7%
		Proposed	45	1500'	6%	1.7%
		Allowable		643'	6%	6%

\* Posted Speed Limit

Reduce WB Curve Radius to Provide Minimum AASHTO Superelevation Transitions

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## Initial Concept Team Meeting

February 24, 2011

## Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia

### Typical Sections

SIX-LANE WITH MEDIAN BARRIER

- Basic Section West of Forest River:
  - Travel Lanes: Six 12' Lanes
  - Outside Shoulders: 12' Paved (Full Depth for Future Widening)
  - Median: 20' with Concrete Barrier

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Chatham County, Georgia

### Typical Sections

Existing: 9'-5" Shoulder, 12' Lane, 12' Lane, 8'-10" Shoulder, 2'-4" Median

Proposed: 2'-3" Shoulder, 12' Lane, 12' Lane, 12' Lane, 4' Median

Replace with Jersey Barrier

- Basic Section - Forest River Bridge:
  - Travel Lanes: Six 12' Lanes
  - Outside Shoulders: 2'-3"
  - Median: 10'-4" with Barrier (4' Inside Shoulder)

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Chatham County, Georgia

### Typical Sections

APPROACH TO RIO ROAD

- Basic Section East of Forest River:
  - Travel Lanes: Six 12' Lanes
  - Outside Shoulders: 12' Paved (Partial Depth) or Curb & Gutter
  - Median: 20' (With Raised Integral Concrete)

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Chatham County, Georgia

### Design Issues

- Right of Way:
  - No Additional Right of Way or Easements Required
  - Existing Right of Way Width: 170 to 400 feet
  - Full Limit of Access West of Rio Road
- Major Structures:
  - Forest River Bridge, 78 Sufficiency Rating, HS-20+
  - No Retaining Walls Anticipated
- No VE Study Required
- No Transportation Management Plan Required

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Chatham County, Georgia

### Design Exceptions

- Bridge Width
  - Existing Bridge to Accommodate Third Lanes
  - 2'-3" Outside Shoulder Width on Bridge Without Widening
  - 12' Roadway Shoulder Width
  - Replace Existing Bridge Rails with Jersey Barriers
  - 4' Inside Shoulder Width Meets AASHTO

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Chatham County, Georgia

### Design Variances

- Minimum Profile Elevation Above High Water

Colored Areas Indicate Inundation of Ground by Flood

FEMA Map

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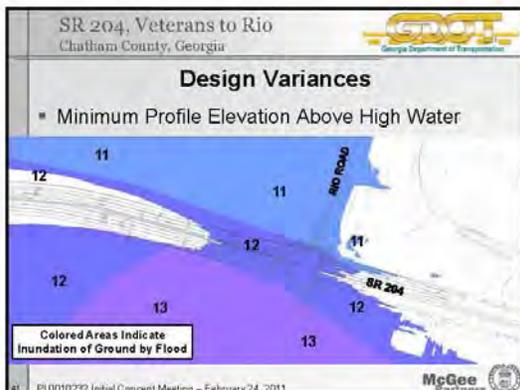
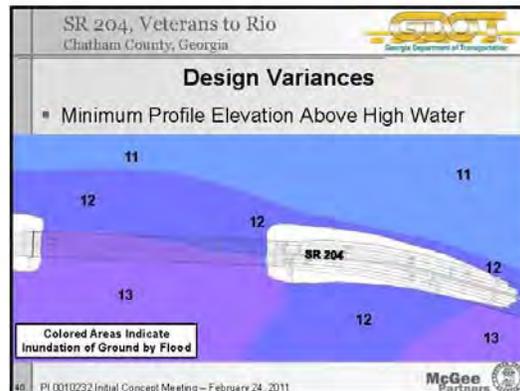
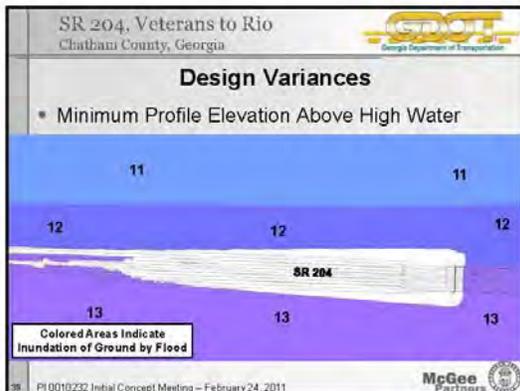
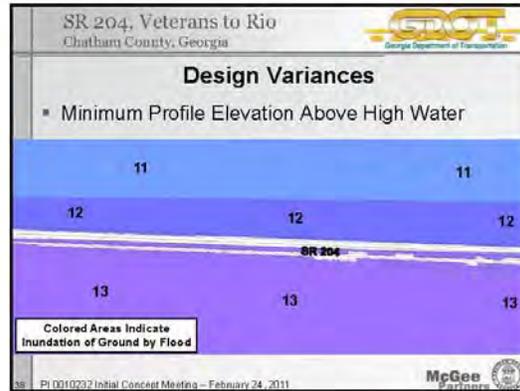
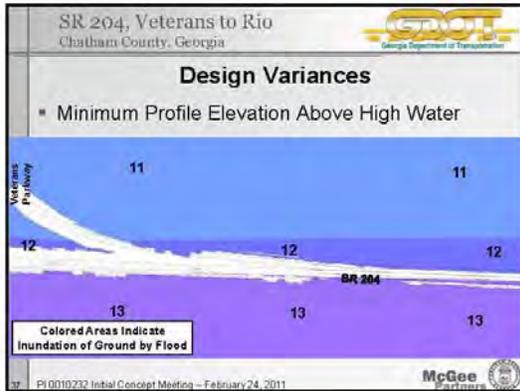
# Meeting Minutes

Initial Concept Team Meeting

February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County



Initial Concept Team Meeting  
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Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
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SR 204, Veterans to Rio  
Chatham County, Georgia

## Accommodations for Other Modes

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SR 204, Veterans to Rio  
Chatham County, Georgia

### Pedestrian Accommodations

- Existing Crosswalks and Curb Ramps at SR 204/ Rio Road Intersection Meet ADA as of Recent Intersection Improvements by WalMart
- No Sidewalks or Additional Pedestrian Facilities to be Included in Project



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SR 204, Veterans to Rio  
Chatham County, Georgia

### Bicycle Accommodation

- No Existing Bicycle Facilities in Project Corridor
- SR 204 Not a GDOT designated bicycle corridor
- Chatham County Bikeway Plan (2000) indicates the SR 204 Bikeway Corridor as "Least Suitable"
- AASHTO Indicates "Freeways in Urban Areas will have Characteristics Making them Highly Undersirable to Permit Bicycle Use"
- Concern with Vehicle-Bike Conflict at Ramps
- No Bicycle Facilities to be Included in Project**

PI 0010232 Initial Concept Meeting – February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia

### Transit

- Chatham Area Transit (CAT) Bus Routes



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SR 204, Veterans to Rio  
Chatham County, Georgia

## Environmental Requirements

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SR 204, Veterans to Rio  
Chatham County, Georgia

### Environmental Requirements

- NEPA Categorical Exclusion (CE) Anticipated
- No PAR required
- Permits
  - Section 404 PCN Anticipated (NWP 23)
  - Stream Buffer Variance Anticipated
  - No Coast Guard Permit Anticipated
  - Coastal Zone Requirements??
- Mitigation Required
  - Wetland Impacts Less Than 0.1 Acre, No Mitigation
  - Possible Sound Barriers

PI 0010232 Initial Concept Meeting – February 24, 2011



Initial Concept Team Meeting  
February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia



## Geotechnical Issues

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SR 204, Veterans to Rio  
Chatham County, Georgia



## Geotechnical Issues

- Soil Survey *(To Be Performed)*
  - Maximum 3:1 slopes Anticipated
  - Removal or Wasting Anticipated at Marsh/Wetland Impacts
- Pavement Analysis *(To Be Performed)*
  - Pavement Appears to be in Good to Very Good Shape

PI 0010232 Initial Concept Meeting - February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



## Utility Issues

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SR 204, Veterans to Rio  
Chatham County, Georgia



## Utility Issues

- Utility Involvements
  - Atlanta Gas Light
  - AT&T, Qwest, Coastal Communications, Comcast
  - Georgia Power
  - City of Savannah (Water & Sewer)
  - GDOT (ITS & Signals)
- SUE QL-B to be Conducted
- Major Facilities
  - Fiber Bank in SR 204 Eastbound Shoulder
  - 8" Gas Line Along North Side of SR 204
  - Proposed Georgia Power Transmission Line

PI 0010232 Initial Concept Meeting - February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



## Railroad/Airport Involvement

- No Railroad Involvement
- Closest airport: Hunter Army Airfield (no impact)



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SR 204, Veterans to Rio  
Chatham County, Georgia



## Maintenance Issues

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## Initial Concept Team Meeting

February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road

PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia



**Maintenance Issues**

- Maintenance Problems Along the Project?
  - Drainage?
  - Pavement?
  - Other?

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SR 204, Veterans to Rio  
Chatham County, Georgia



**Signals & ITS Issues**

PI 0010232 Initial Concept Meeting – February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



**Signals & ITS Facilities**

- Existing



- Proposed
  - Minor Modifications to Rio Road Signal
  - No New ITS Facilities

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Chatham County, Georgia



**Construction Staging**

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SR 204, Veterans to Rio  
Chatham County, Georgia



**Staging/Maintenance of Traffic**

- Traffic to be Maintained During Construction
  - Traffic Lanes Shifted Closer to Median Barrier to Construct Additional Outside Lanes
- Need for Constructability Review?
- Transportation Management Plan (Workzone Safety & Mobility) Not Required

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SR 204, Veterans to Rio  
Chatham County, Georgia



**Cost Estimates**

PI 0010232 Initial Concept Meeting – February 24, 2011



Initial Concept Team Meeting  
February 24, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

SR 204, Veterans to Rio  
Chatham County, Georgia



### Cost Estimates

	Amount	Funded By
Preliminary Engineering	\$ 600,000	Chatham County
Construction incl. E&C:	\$ 3,500,000	GDOT
Right of Way:	Not Required	GDOT
Utilities:	\$ ?	GDOT
Mitigation:	Not Required	Chatham County

**Planning Level Estimate to be Updated**

PI 0010232 Initial Concept Meeting - February 24, 2011



SR 204, Veterans to Rio  
Chatham County, Georgia



## Management Issues

PI 0010232 Initial Concept Meeting - February 24, 2011



- SR 204, Veterans to Rio  
Chatham County, Georgia
- 
- ### Management Issues
- Is Project Framework Agreement Executed?
  - Project Assignments:
    - Design: Chatham County/McGee Partners
    - Right of Way Acquisition: Not Required
    - Relocation of Utilities: Utility Companies (Coordination by GDOT)
    - Letting to contract: GDOT
    - Supervision of construction: GDOT
    - Providing material pits: N/A
    - Providing detours: N/A
    - Environmental Studies/Documents/Permits: Chatham County/McGee Partners/Edwards-Pitman
    - Environmental Mitigation: Not Anticipated (Chatham County)
- PI 0010232 Initial Concept Meeting - February 24, 2011
- 

- SR 204, Veterans to Rio  
Chatham County, Georgia
- 
- ### Schedule
- PIOH: May 2011
  - Concept Team Meeting: July 2011
  - Approved Concept: November 2011
  - Submit Draft CE: December 2011
  - CE Approved: May 2012
  - PFPR: July 2011
  - FFPR: March 2013
- PI 0010232 Initial Concept Meeting - February 24, 2011
- 

SR 204, Veterans to Rio  
Chatham County, Georgia



# COMMENTS

PI 0010232 Initial Concept Meeting - February 24, 2011



## McGee Partners, Inc.

1990 Lakeside Parkway  
Suite 240  
Tucker, Georgia 30084  
T 770.938.6400  
F 770.938.6333

## Meeting Minutes

Date: July 28, 2011 Time: 2:00 pm  
Location: The Armstrong Center, Savannah, GA  
SR 204 Abercorn Street Extension Improvements from Veterans Parkway  
Subject: (CR975) to Rio Road (CS 1201) – **Concept Team Meeting**  
Project No: PI No. 0010232, Chatham County MPI: 3003032  
Recorded By: Tommy Crochet  
Attendees: (See Attached)

Robert Murphy, GDOT project manager, began the meeting by asking everyone to introduce themselves (see list of attendees). Following introductions, Robert gave a brief overview of the need and purpose of the project, and then handed the meeting over to Tommy Crochet of McGee Partners. Tommy described the proposed project, then discussed critical issues from the draft Concept Report, including:

- Funding for construction is programmed with lump operational funds, so the project does not need to be specifically listed in the TIP.
- Environmental resources in the project limits include saltmarsh and streams, and there was one impacted noise receptor but it appears that a barrier will not be warranted. No USTs or eligible cultural resources were found.
- A Categorical Exclusion is anticipated for NEPA documentation, and a Nationwide 404 Permit and a Stream Buffer Variance are required.
- Public involvement will consist of one PIOH (held on the same date immediately following the Concept Team Meeting).
- Design speed for the project is 60 mph west of the Forest River and 45 mph east of the Forest River, including the bridge. 11-foot lanes will be constructed across the bridge and to the east of the river, transitioning to 12-foot lanes west of the bridge.
- The project will provide three through lanes in both directions along SR 204 through the Rio Road intersection, add a second eastbound to northbound Rio Road left turn lane while lengthening the lanes, add a full length acceleration lane along westbound SR 204 from Rio Road, and provide auxiliary lanes in both directions along SR 204 between the Veterans Parkway ramps and Rio Road.
- A Design Exception will be required for bridge width due to a reduced outside shoulder width of about 5 feet remaining once the Forest River Bridge is restriped for three 11-foot lanes in both directions.

## Concept Team Meeting

July 28, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

- A Design Variance will be required to document that portions of the existing roadway are below the 100-year flood elevation set by FEMA.
- The project will not include accommodations for bicycles or pedestrians, but space will remain within the right of way to allow for the construction of a separated path as a future project.
- Major utilities include an AT&T fiber optic duct bank in the south shoulder along SR 204 and an Atlanta Gas Light 8-inch high pressure gas line.
- Soils report did not identify any unsuitable materials, but did state that slopes should not be steeper than 3:1.
- Construction cost is estimated at \$3,600,000. No additional right of way or easement will be required.
- A Value Engineering Study will not be required.
- A formal Constructability Review will not be held, but the design team will coordinate with District construction personnel prior to the PFPR.

The following comments were made and discussed:

Jane Love with the CORE MPO and Ron Sadowski with the Coastal Regional Commission both expressed concern pertaining to bicycle access. They indicated that they understood that it would be best to have a separated facility and not allow cyclists on the shoulders of SR 204. Tommy indicated that a practical bicycle facility should be planned and constructed as a separate, standalone project. The cost of such a facility, an estimated \$10-15 million from King George Boulevard to Rio Road, is much greater than the cost of the proposed project. Inclusion of such a facility in the proposed project is therefore infeasible.

Chris Marsengill with McGee Partners asked if replacement of the signal heads at Rio Road should be included in the project. Rob McCall, GDOT District Traffic Engineer, indicated that he would investigate and he would likely want them replaced. He also indicated the city prefers aluminum heads.

Robert Murphy asked about logical termini on the west end of the project. Tommy indicated that the traffic drop off at the Veterans Ramp was high enough to meet logical termini, and GDOT Office of Planning has concurred. FHWA would review this issue as part of their review of the Categorical Exclusion. Robert asked if a meeting with FHWA to brief them on the project was warranted. Tommy explained that FHWA is aware of this project and that a meeting is not necessary at this time.

# Meeting Minutes

## Concept Team Meeting

July 28, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
PI 0010232, Chatham County

## Concept Team Meeting Sign-In Sheet

Georgia Department of Transportation  
P.I. No. 0010232  
SR 204 Improvements from Veterans Parkway to Rio Road  
July 28, 2011, 2:00 pm, Armstrong Center, Savannah, GA

Name	Affiliation	Phone No.	Email Address
Robert McCall	GDOT	407-5703	r.mccall@dot.ga.gov
Stephen Thomas	GDOT	912-5779	stthomas@dot.ga.gov
Steve Price	GDOT	427-5756	stprice@dot.ga.gov
Teresa Scott	GDOT	427-5788	tscott@dot.ga.gov
Stade Cole	GDOT	912-651-2144	gcole@dot.ga.gov
Susan Thomas	EPEI	678-3339484	stthomas@edwards-pitman.com
Wykoda Way	CORE MPO	912-651-1452	waykw@thempc.org
Jane Love	CORE MPO	912-651-1443	lovej@thempc.org
Pamela Bernard	Chatham Co.	912-652-7800	pbernard@ChathamCounty.org
CHRIS MARSENGILL	McGEE PARTNERS	770-798-6400	CMARSENGILL@MCGEEPARTNERS.COM

# Meeting Minutes

## Concept Team Meeting

July 28, 2011

Abercorn Street Extension Improvements from Veterans Parkway to Rio Road  
 PI 0010232, Chatham County

### Concept Team Meeting Sign-In Sheet

Georgia Department of Transportation

P.I. No. 0010232

SR 204 Improvements from Veterans Parkway to Rio Road

July 28, 2011, 2:00 pm, Armstrong Center, Savannah, GA

Name	Affiliation	Phone No.	Email Address
ROBERT MURPHY	GDOT	(478) 345-5866	RMURPHY@DOT.GA.GOV
Tommy Crochet	McGee Partners	770-938-6400	tcrochet@mcgeepartners.com
Leon Davenport	Chatham County	912-652-7800	ldavenport@chathamcounty.org
Ron Sadonst	CRC	912-262-2883	RSADONSKI@CRC.GA.GOV
Troy Pittman	GDOT	912 651 2144	tpittman@dot.ga.gov
Pam Teague	AGL	(404) 693-5986	pteague@agresources.com

# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

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## INTERDEPARTMENT CORRESPONDENCE

FILE: P. I. No. 0010232 OFFICE: Environmental Services  
DATE: August 1, 2011

FROM Glenn Bowman, P.E., State Environmental Administrator

TO Distribution Below

SUBJECT PUBLIC INFORMATION OPEN HOUSE SYNOPSIS

PROJECT No. 0010232  
COUNTY Chatham

**PROJECT DESCRIPTION:** The proposed project would improve operations of the Rio Road intersection by extending the eastbound auxiliary lane along SR 204 from east of Veterans Parkway to Rio Road, providing a westbound auxiliary lane from the Veterans Parkway exit ramp to Rio Road, adding a second eastbound to northbound left turn lane, extending the eastbound left turn and right turn lanes and providing a westbound acceleration lane, thereby reducing travel delays along SR 204. The proposed project would also improve the operations of the merge and diverge at the Veterans Parkway ramps. The Forest River bridge would not be widened to accommodate the additional auxiliary lane in each direction. A reduction in crash frequency can be expected as a result of reduced queuing, by providing appropriate length turn lanes at the Rio Road intersection and by eliminating the eastbound lane drop before the Forest River bridge. The project termini were established so as to provide for construction of the auxiliary lanes between the Veterans Parkway ramps and Rio Road and to facilitate the construction of the turn lane improvements at Rio Road.

DATE: July 29, 2011

NUMBER IN ATTENDANCE: 32

FOR: 6

CONDITIONAL: 0

UNCOMMITTED: 0

AGAINST: 0

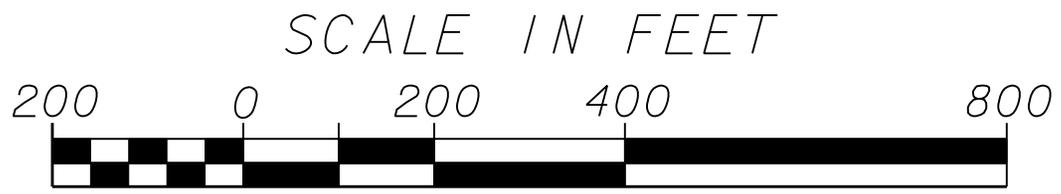
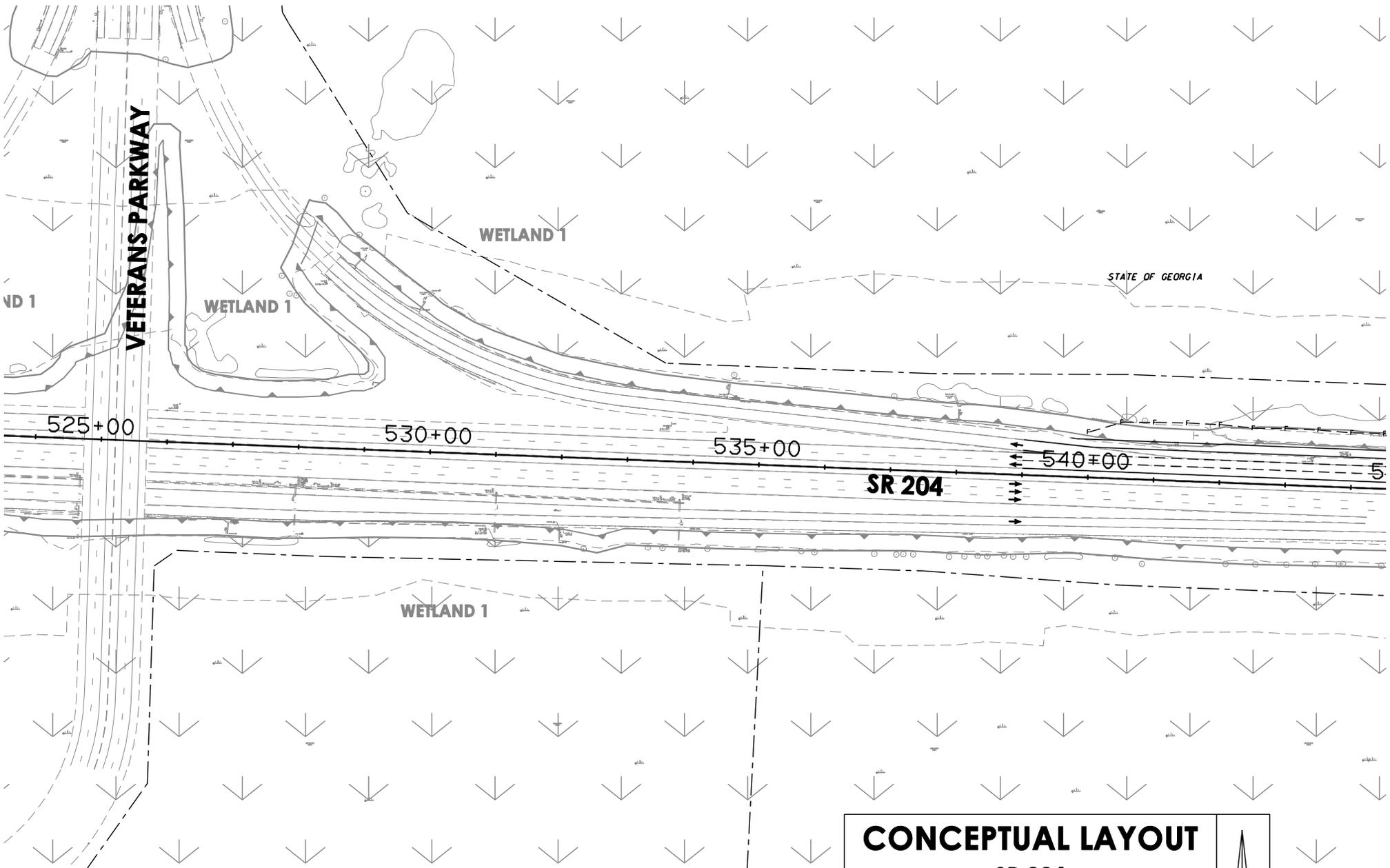
OFFICIALS IN ATTENDANCE: Ron Stephens – Representative for the Georgia State Assembly

ADDITIONAL COMMENTS: 6 written comments were received.

PREPARED BY: Susan Thomas, Edwards-Pitman for Steve Price, GDOT, District 5

TELEPHONE No.: Susan Thomas (770) 333-9484; Steve Price (912) 427-5756

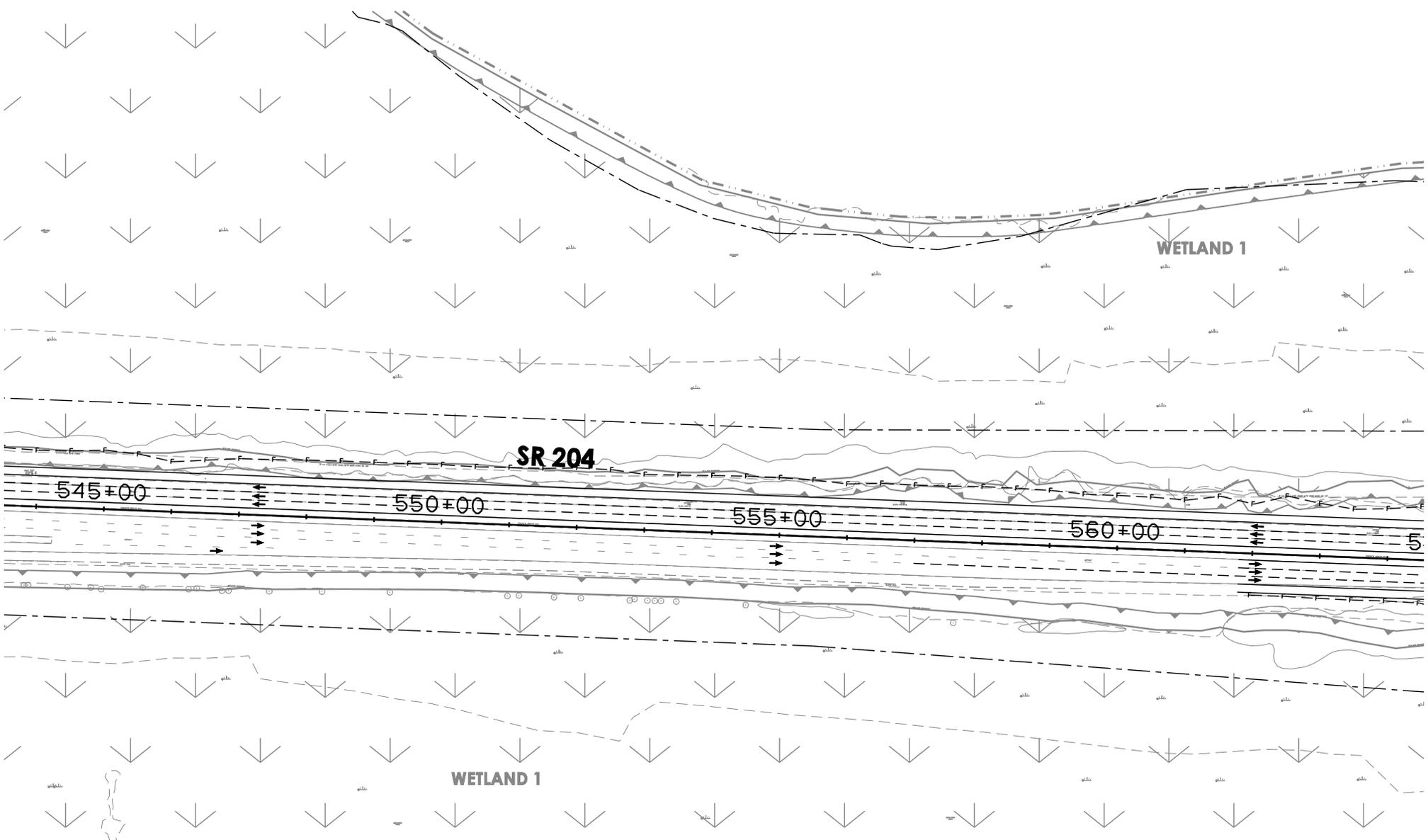
cc: Gerald M. Ross, P.E., Brad Saxon, Keisha Jackson



**CONCEPTUAL LAYOUT**  
**SR 204**  
**VETERANS PKWY TO RIO ROAD**

P.I. NUMBER 0010232  
**McGee Partners, Inc.**  
 CHATHAM COUNTY  
 JULY 2011  
 SHEET 1 OF 4





**SR 204**

**WETLAND 1**

**WETLAND 1**

545+00

550+00

555+00

560+00

5

SCALE IN FEET



**CONCEPTUAL LAYOUT**  
**SR 204**  
**VETERANS PKWY TO RIO ROAD**

P.I. NUMBER 0010232  
**McGee Partners, Inc.**  
**CHATHAM COUNTY**  
**JULY 2011**  
**SHEET 2 OF 4**



**EXISTING CONCRETE  
MEDIAN BARRIER**

**RESTRIPE EXISTING  
BRIDGE TO ACCOMODATE  
THREE LANES IN  
EACH DIRECTION**

**HUNTER ARMY AIRFIELD**

**FOREST RIVER**

**STREAM 2**

**12-FT LANES**  
**11-FT LANES**

**WETLAND 1**

**SR 204**

565+00

570+00

575+00

580+00

**WETLAND 1**

BARBARA W MCCUMBER

WALKER MCCUMBER  
BARBARA W. MCCUMBER

**CONCEPTUAL LAYOUT**

**SR 204  
VETERANS PKWY TO RIO ROAD**

P.I. NUMBER 0010232  
**McGee Partners, Inc.**  
CHATHAM COUNTY  
JULY 2011  
SHEET 3 OF 4

SCALE IN FEET



WETLAND 3

UNITED STATES OF AMERICA

# HUNTER ARMY AIRFIELD

**END CONCRETE  
MEDIAN BARRIER  
WITH IMPACT  
ATTENUATOR**

**RAISED INTEGRAL  
CONCRETE MEDIAN**

**SIDE BARRIER  
WALL**

**RIO ROAD**

BANK OF AMERICA

BANK OF AMERICA

**EXISTING RAISED  
MEDIAN**

TARGET CORPORATION

BRANCH BANKING &  
TRUST CORPORATION

PROVIDENT HEALTH SERVICES, INC.

500+00

**SR 204/ABERCORN ST EXT**

JOAN A DEVAUGHN  
TRUSTEE

WETLAND 7

COLONIAL LAND INVESTMENT COMPANY

S & H PROPERTIES

WAL-MART REALTY COMPA

WETLAND 3

STREAM 4

WALKER MCCUMBER

WALKER MCCUMBER &  
BARBARA W. MCCUMBER

BARBARA W. MCCUMBER

WALKER MCCUMBER

WALKER MCCUMBER

DANNY J. LIVINGSTON  
& JENNIFER L. LIVINGSTON

THOMAS R. COBERNUS

THOMAS R. COBERNUS

WETLAND 5

**SIDE BARRIER  
WALL**

**RIO ROAD**

WETLAND 6

SOUTHSIDE REAL ESTATE

585+00

590+00

595+00

SCALE IN FEET



## CONCEPTUAL LAYOUT

**SR 204  
VETERANS PKWY TO RIO ROAD**

P.I. NUMBER 0010232

**McGee Partners, Inc.**

CHATHAM COUNTY

JULY 2011

SHEET 4 OF 4

