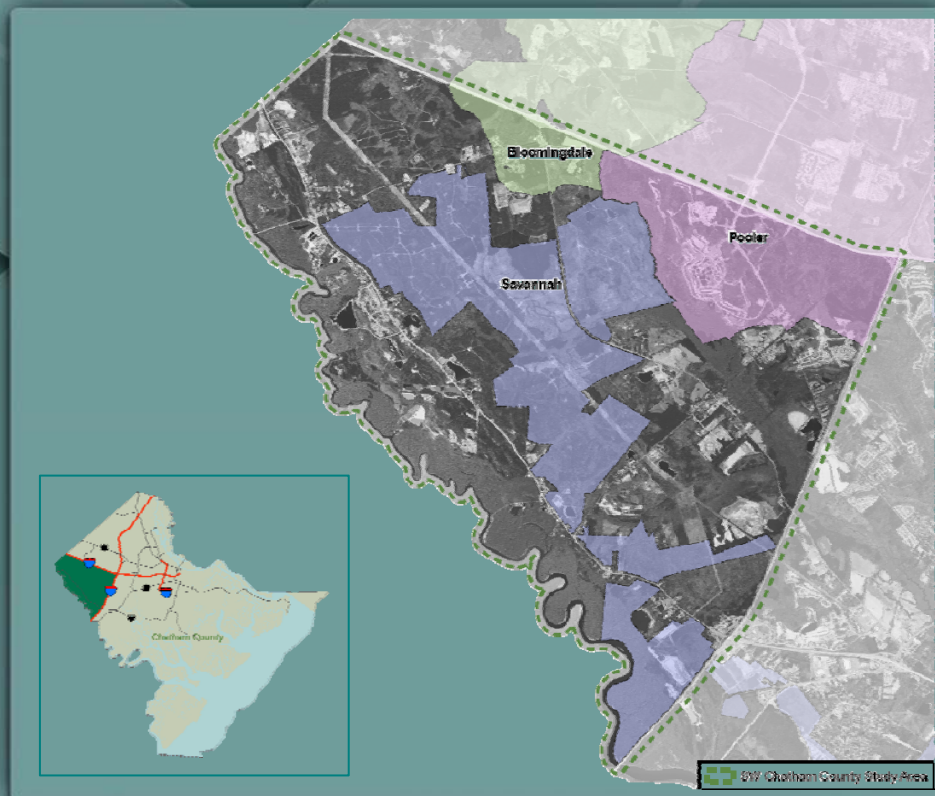


METROPOLITAN PLANNING ORGANIZATION

Southwestern Chatham County Sector Plan



PREPARED BY THE CHATHAM COUNTY – SAVANNAH METROPOLITAN PLANNING COMMISSION

CUTS is the Metropolitan Planning Organization (MPO) responsible for Chatham County transportation planning. The MPO is comprised of representatives of local, state and federal government and transportation authorities and ensures federal spending on transportation for urbanized areas of over 50,000 people occurs through a comprehensive, cooperative and continuing process involving both the public and policy-makers. The MPC provides staff services to the CUTS/MPO Policy Committee, which is chaired by the chairman of the Chatham County Board of County Commissioners.

Submitted
November 5, 2007



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i

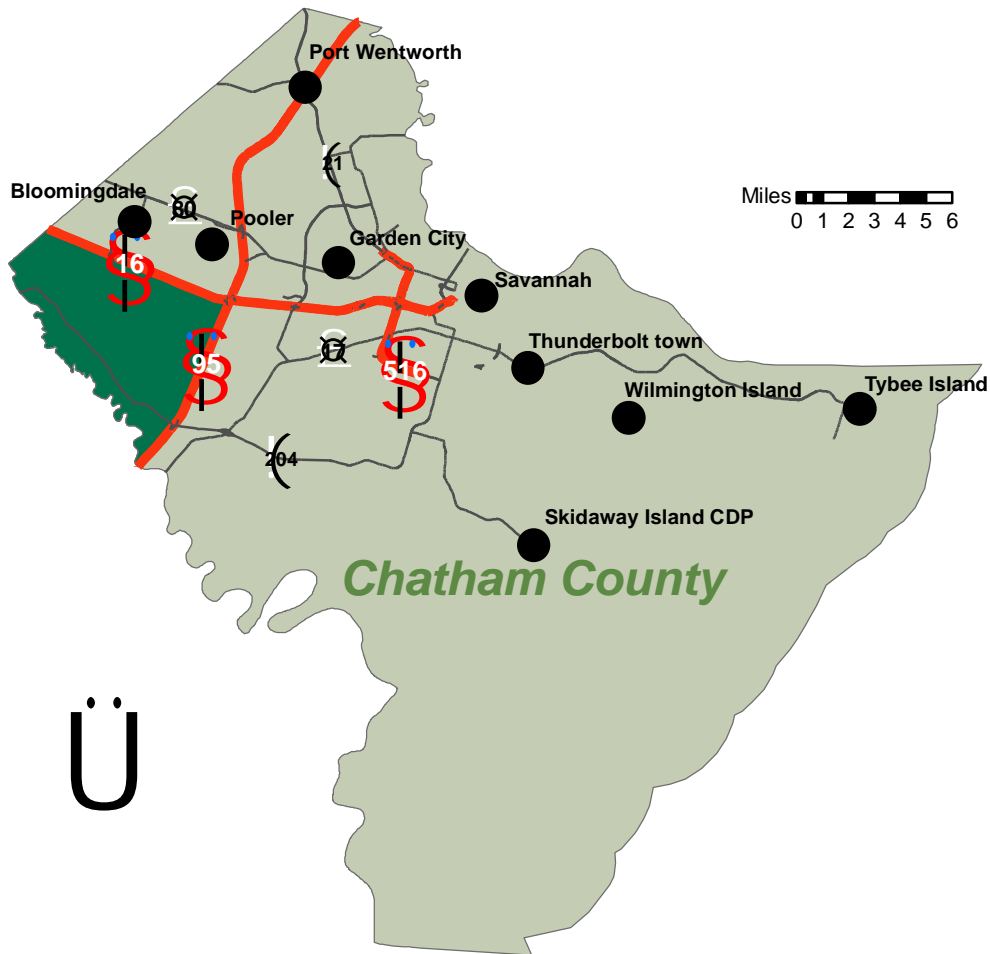
Introduction

The sector planning process is one of the tools available to develop a detailed future plan for specific areas. A sector plan will provide a conceptual, long term build-out scenario designed to identify impacts on both a regional and local scale. The infrastructure needed to accommodate the growth and development at build-out is also identified in this process. While the sector plan is focused on a specific area, it is developed within the context of the comprehensive plan. The Chatham County – Savannah Metropolitan Planning Commission (MPC) initiated an update of their comprehensive plan in 2005. The “Tricentennial Plan” was adopted in October, 2006 and includes a Unified Comprehensive Plan consisting of a Community Participation Plan, Community Assessment, and Community Agenda. In addition, a Unified Zoning Ordinance and Service Delivery Strategy will be updated and is scheduled for completion in 2008.

Chatham County, like other coastal areas, has experienced a rapid growth rate over the last decades. In recent years, the growth in the County has occurred in the southern and eastern areas including the coastal islands. As the islands have been developed, the growth areas have shifted to the western portion of the County, where there is an abundance of developable land owned by International Paper Corporation. The recently approved master planned development of New Hampstead has brought the need for a proactive planning effort to the forefront. This development is planned to encompass approximately 6,000 acres and about 11,000 dwelling units. The infrastructure found within the southwestern Chatham County area will not be adequate to support this, and other, future developments. In addition, existing communities will need to coexist with these new, planned developments.

This Southwestern Chatham County Sector (referred to as the SW Sector) planning area is bounded by I-95, I-16 and the Ogeechee River as presented on **Figure I.1**. Portions of three municipalities are located within the SW Sector planning area, as presented on **Figure I.2**. These jurisdictions include the City of Savannah, the City of Pooler, and the City of Bloomingdale.

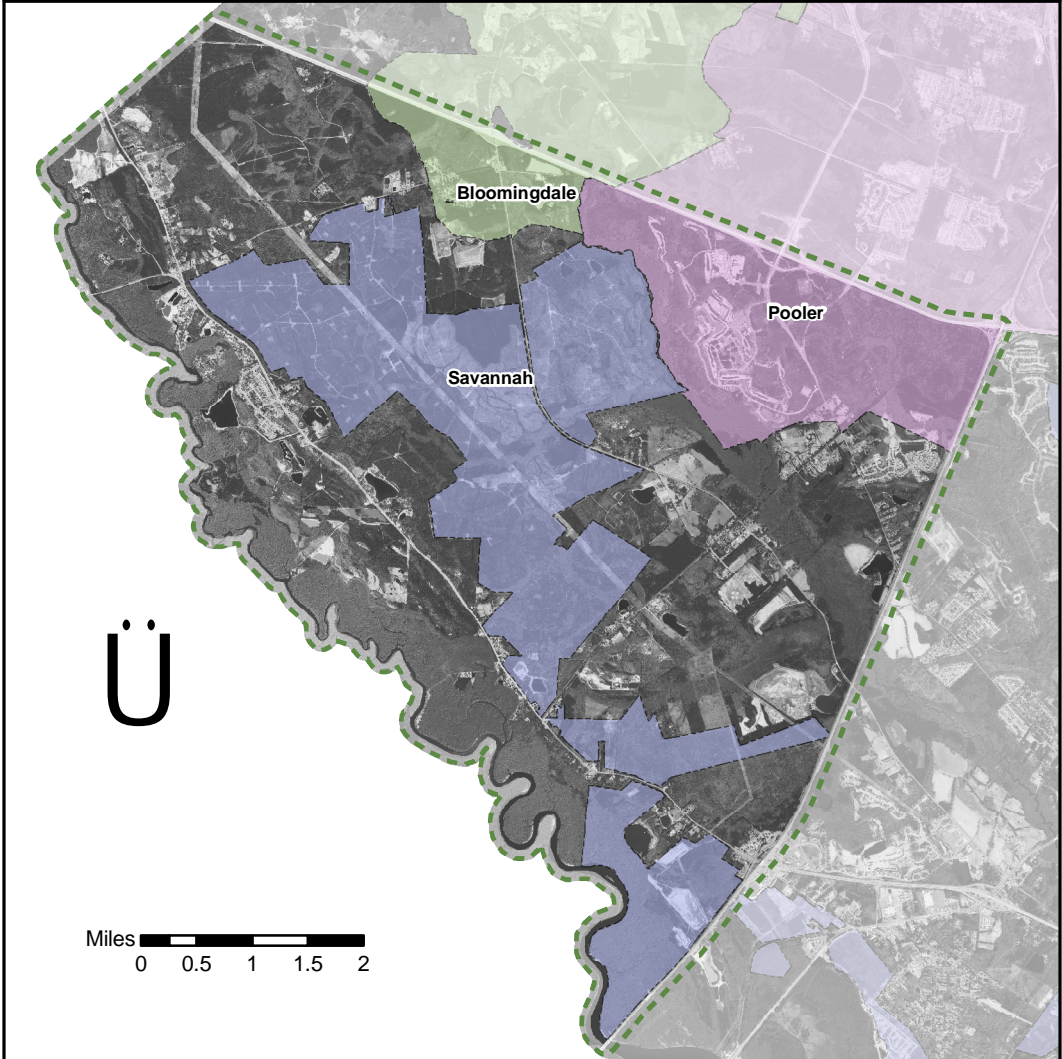
The resulting SW Sector plan provides a strategic template for decision-makers in their day-to-day activities in dealing with other high growth areas, and focuses on sustainable growth and development integrated with an efficient and effective transportation system and supporting infrastructure.



Sector Area

- Major Roads
- Interstates
- Notable Cities
- Study Area
- Chatham County





Municipalities

- Bloomingdale
- Pooler
- Savannah

SW Chatham County Study Area



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The sector planning process for the southwestern portion of Chatham County includes the following activities:

- *Section 1 – Inventory of Baseline Conditions*

The inventory presents a summary of the existing conditions and characteristics of the SW Sector Area and lays the framework for the detailed analysis completed as part of the subsequent major elements of the study, including the Assessment and Evaluation and development of the Recommended Plan.

- *Section 2 - Assessment and Evaluation*

The assessment and evaluation incorporates a strategic and comprehensive evaluation of elements unique to the area, focusing on transportation, land use; and cultural resources and assets. Based on the available data presented in the Inventory of Baseline Conditions, future conditions have been determined based on the anticipated growth. Future scenarios have been developed and analyzed to determine future needs; the expected impacts from the build-out scenario on the surrounding area and region have also been determined.

- *Section 3 - Coordination and Participation*

The participation and involvement of community members and stakeholders, including members of the development community and current residents, in the planning process is critical to its success. In addition to the participation of the stakeholders, coordination with existing plans, such as the Comprehensive Plan, is a critical element in the development of a viable and implementable plan.

- *Section 4 - Recommended Plan*

This component provides the strategic map for the community's future based on the build-out scenario or concept. Strategies and recommendations have been developed to meet the future needs of the SW Sector and incorporate policy guidance for land use, transportation access, and infrastructure implementation.

1

Inventory of Baseline Conditions

The following section presents an overview of SW Sector Area, including the following detailed information: demographic data, land use assessment, transportation and infrastructure, and a summary of other existing and recently completed planning studies.

Population

The population of the SW Sector area has grown approximately 18% from 1990 to 2000.^{1,2} The majority of residents are white; the black population has slightly decreased between 1990 and 2000.^{3,4} There has been an influx of older residents; adults age 40 to 64 comprised 25% of the population in 1990, and increased by 62% to comprise 35% of the population in 2000. Similarly, the population of those age 65 and over has increased by 186% between 1990 and 2000.^{5,6} It is assumed that the addition of residential communities including amenities for retirees within the SW Sector Area has fueled much of this growth.

Figure 1.1 presents a comparison of the 1990 and 2000 population in Chatham County by Census Tract. As depicted on **Figure 1.2**, the most populated tracts are located immediately to the east and west of downtown Savannah. **Figure 1.2** also indicates high increases in population growth within the tracts within south-central Chatham County to the east of I-95, west of downtown and south of I-16.

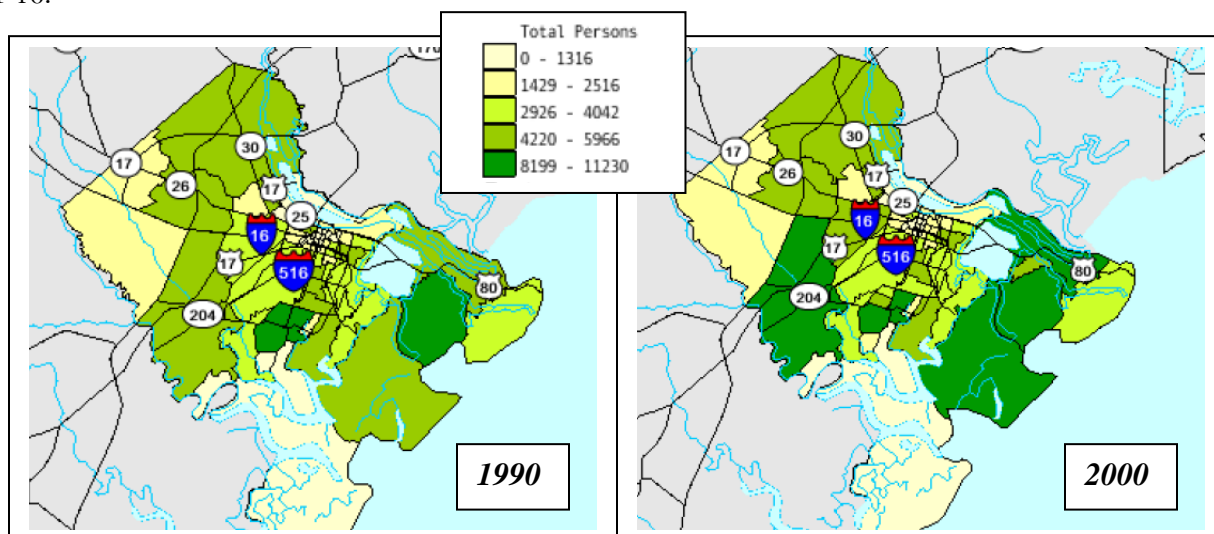


Figure 1.1 - Chatham County Population by Census Tract (1990 and 2000)

These population increases within Central Chatham County have now shifted even further west to the SW Chatham Sector area, which is also evident based upon 2030 projections (discussed later in this report). According to MPC projections, the study area will add almost 12,000 people between 2004 and 2033, producing a 317% increase in population^{7,8} as presented in **Figure 1.2**.

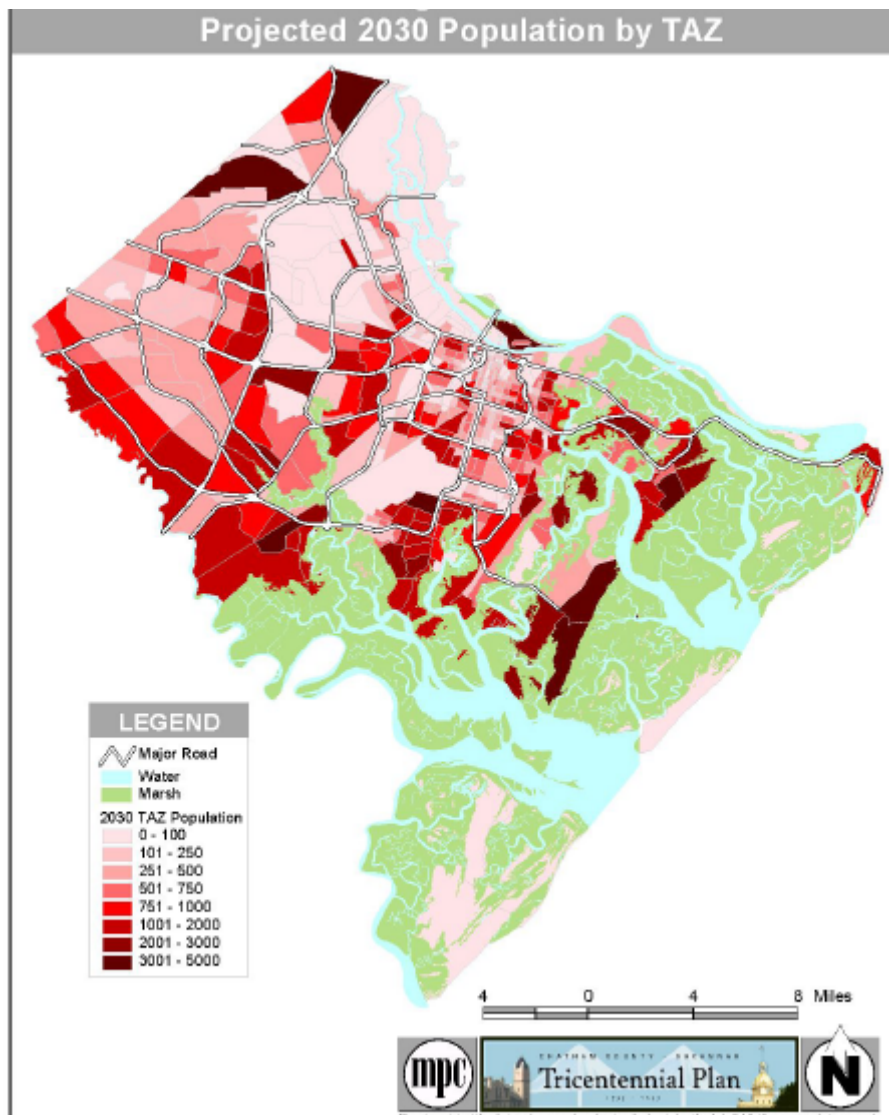


Figure 1.2 – Projected 2030 Population by Traffic Analysis Zone (TAZ)

Employment

There are a variety of employment opportunities surrounding the SW Sector area. The nearby town of Pooler has grown into a commercial and business hub within Chatham County. The Savannah-Hilton Head International Airport is nearby and is surrounded by a number of light and heavy industries. There are numerous jobs in Savannah and surrounding the ports as well. According to the 2000 decennial Census, 50% of residents in the study area travel 30 to 34 minutes to work⁹; this indicates that study area residents commute to all parts of Chatham County as well as the adjacent counties. Within the study area, the MPC is projecting a 585% increase in jobs, representing 4250 new employment opportunities. These are retail and service jobs, which will be supported by the

additional new population within in the SW Sector Area.^{7,8} According to the MPC, over 1400 retail jobs will emerge in the sector area by 2033.

Environmental Justice Communities

According to the US Department of Transportation (USDOT) Federal Highways Administration (FHWA), there are three fundamental environmental justice principles associated with the expenditure of federal funds for construction of transportation improvement projects¹⁰:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The MPC has developed a map of EJ planning areas, shown in **Figure 1.3** below. The SW Sector Area is designated as a “Non-EJ Area” based upon criteria established by the MPC. This is consistent with US Census information for the SW Sector Area for which 10-20% of residents live below poverty level, but less than 10% of the population is classified as a minority,

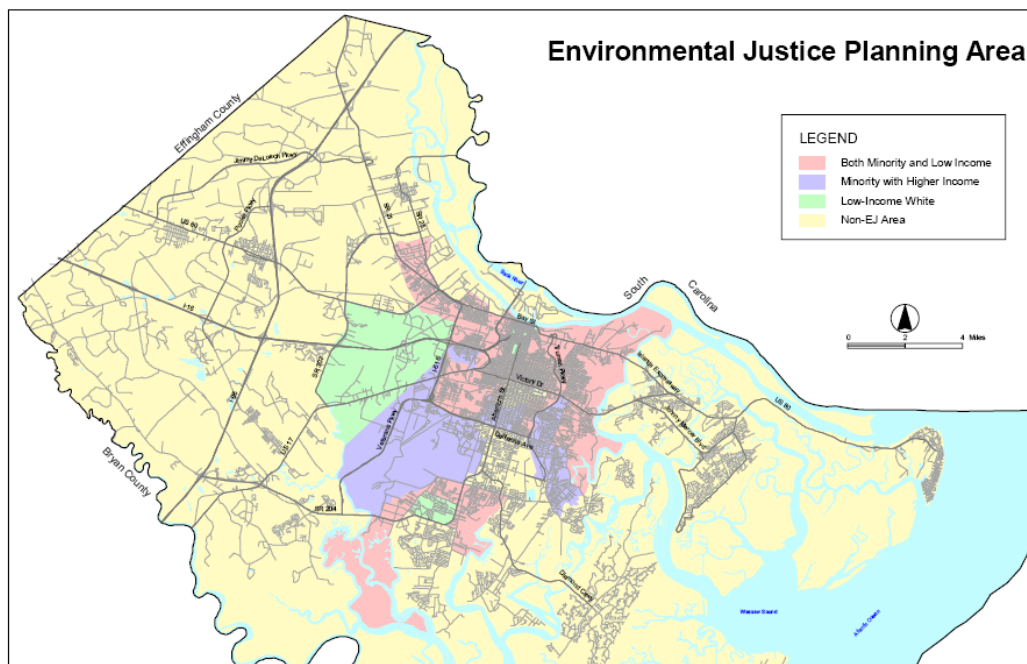


Figure 1.3 – Chatham County Environmental Justice Planning Area

Ongoing Planning Efforts

There are a number of planning studies currently underway that are in or include Chatham County. These include:

- Chatham County Interstate Needs Analysis & Prioritization Plan (GDOT, Jordan, Jones and Goulding, Carter-Burgess, et al)
- Georgia Department of Transportation (GDOT) Statewide Truck Lanes Needs Identification Study (GDOT, Cambridge Systematics)
- Presidents Street Corridor Study (MPC, RS&H)
- Northwest Tollway Value Pricing Study (State Road and Tollway Authority, Cambridge Systematics)
- SR 204 Combined Environmental & Related Studies (GDOT, McGee Partners, et al.)
- Effingham Pkwy Study (MAAI) (MPC studying portion in Chatham County and adjacent to Benton Blvd)
- Connecting Savannah (MPC)

Economic Development

Chatham County has advantages that serve to expand existing business opportunities and attract new companies to the area. The first advantage is the location of the Port of Savannah. The Port has seen continued increase in shipment activity and has plans for ongoing expansion. In FY06, the Port handled 15.9% more TEUs¹¹ than in the previous year. Target and IKEA are adding approximately 3.7 million square feet of warehouse space to the Port, which will create hundreds of additional jobs in the Chatham County area.¹² Chatham County also benefits from the interstate system. The SW Sector Area is served by I-16 on the north and I-95 to the east. This proximity to the interstate encourages the establishment of logistics-dependent facilities including light and heavy manufacturing.

Savannah's Special Purpose Local Options Sales Tax (SPLOST) program has supported the improvement of area infrastructure, including the Harry Truman Parkway and Pooler Parkway. The success of the program is indicative of the taxpayers' support for projects that will benefit the local economy.

The SW Sector Area in particular is adjacent to two large headquarters: Gulfstream Aerospace and JCB, Inc. These companies employ area residents and spur a growing agglomeration of economies that have the potential to support many additional residents. These corporations, along with other companies in Chatham County, have the opportunity to benefit from a variety of financial incentives, including job tax credits, port activity job tax / investment tax credit, and special headquarters tax credit.

Land Use

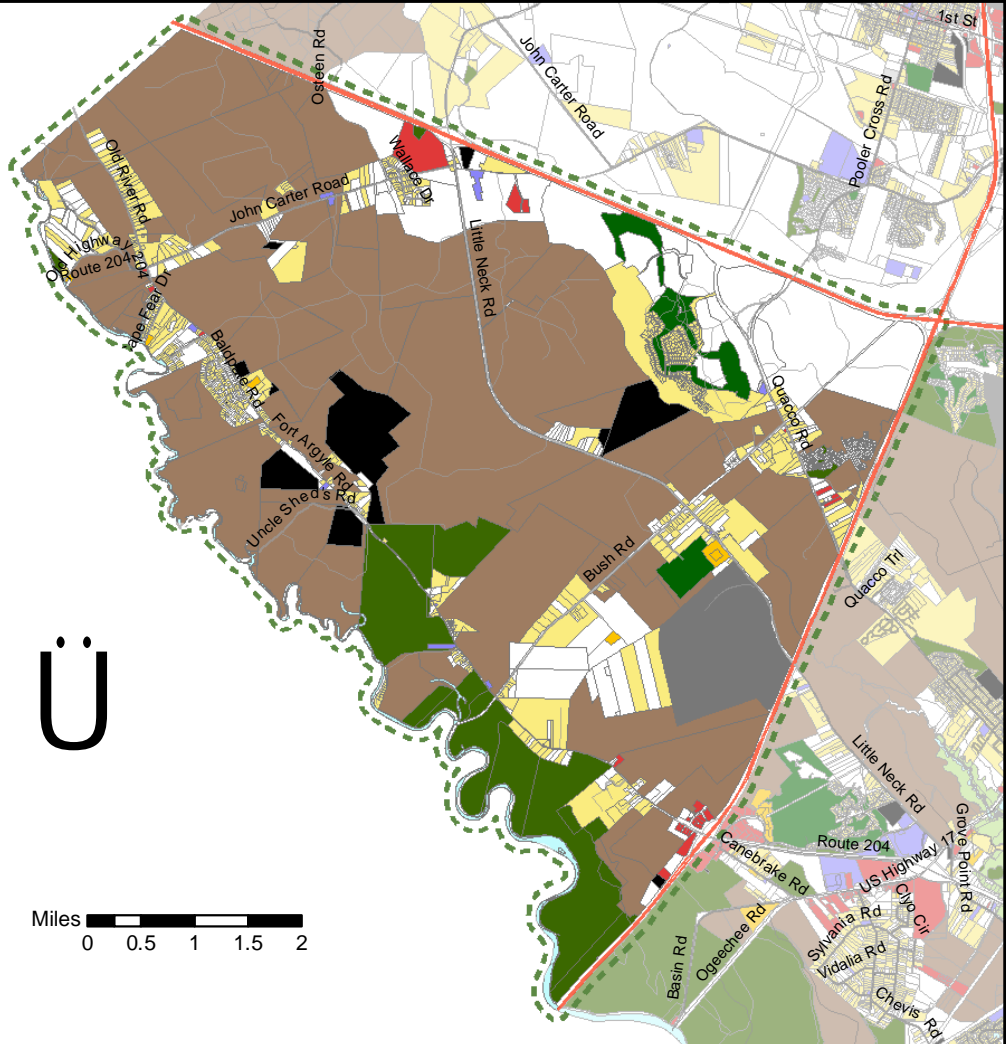
Existing Land Use

Table 1.1 summarizes the existing land use in the SW Sector Area; the existing land use map for the SW Sector Area is presented as **Figure 1.4**.

Table 1.1 – Existing Land Use by Area

Land Use	Bloomingdale		Pooler		Savannah		Unincorporated		SW Chatham		Entire County	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Residential-Single Family	72.7	9.0%	458.5	16.1%	140.8	2.2%	1,544.0	11.2%	2,216.0	9.3%	29,757	8.9
Residential-Multi-Family	-	-	-	-	-	-	40.7	0.3%	40.7	0.2%	2,673	0.8
Public/Institutional	13.4	1.7%	3.8	0.1%	-	-	20.9	0.2%	38.1	0.2%	12,626	3.8
Commercial-Office	-	-	-	-	-	-	-	-	-	-	599	0.2
Commercial-Retail	116.7	14.5%	-	-	8.8	0.1%	51.6	0.4%	177.1	0.7%	4,604	1.4
Trans/Com/Utilities	12.6	1.6%	164.9	5.8%	57.2	0.9%	462.3	3.3%	697.0	2.9%	3,283	1.0
Agriculture/Forestry	16.8	2.1%	266.4	9.3%	5,366.0	82.9%	7,610.1	55.1%	13,259.3	55.4%	24,987	7.5
Industry-Light	-	-	-	-	-	-	-	-	-	-	3,022	0.9
Industry-Heavy	-	-	-	-	19.9	0.3%	756.5	5.5%	776.4	3.2%	6,734	2.0
Park/Recreation	-	-	261.7	9.2%	-	-	99.8	0.7%	361.5	1.5%	5,517	1.7
Conservation	6.5	0.8%	-	-	777.5	12.0%	1,062.8	7.7%	1,846.8	7.7%	42,530	12.7
Right-of-Way (est.)	67.3	8.3%	66.5	2.3%	17.2	0.3%	408.4	3.0%	559.4	2.3%	13,692	4.1
Tidal Marsh	-	-	-	-	-	-	-	-	-	-	92,705	27.7
Open Water	-	-	-	-	7.8	0.1%	373.6	2.7%	381.4	1.6%	50,448	15.1
Undeveloped Land/Other	501.3	62.1%	1,633.1	57.2%	80.0	1.2%	1,370.0	9.9%	3,584.4	15.0%	40,996	12.3
TOTAL	807.3	100.0%	2,854.9	100.0%	6,475.1	100.0%	13,800.8	100.0%	23,938.1	100.0%	334,173	100
Remaining Developable	518.1	64.2%	1,899.5	66.5%	5,446.0	84.1%	8,980.1	65.1%	16,843.7	70.4%	65,983	19.7
(Undeveloped/Agriculture)	% of sector	3.1%	% of sector	11.3%	% of sector	32.3%	% of sector	53.3%	% of county	25.5%		

The continued transition in market conditions for timber and paper product companies is reflected in the conversion of silviculture lands within the sector area to Planned Unit Development (or PUD). PUDs are master-planned communities intended to incorporate a mix of uses that serve the community residents. The most dominant land uses in the sector area are Agriculture/Forestry and Undeveloped, comprising over 53% of the entire study area. Residential use comprises less than 10% of the total SW Sector Area. The average single family residence is located on about 1.4 acres, excluding those single family parcels of over 20 acres. This will likely change; however, with a number of large planned communities and smaller residential developments planned or under construction. Conservation areas comprise almost 8% of the SW Sector Area, with the largest portion located along the Ogeechee River and the remaining smaller areas are parks and a private golf course. While commercial uses currently comprise less than 1% of the land use in the SW Sector Area, it will consume significantly more space in the near and long-term future with the completion of the PUDs.



Existing Land Use (Categorized)

Residential- Single Family	Trans/Com/Utility	Conservation
Residential- Multi-Family	Agriculture/Forestry	Tidal Marsh
Public/Institutional	Industry- Light	Open Water
Commercial- Office	Industry- Heavy	Undeveloped Land/Other
Commercial- Retail/Services	Parks/Recreation	SW Chatham County Study Area



Sensitive Natural Resources

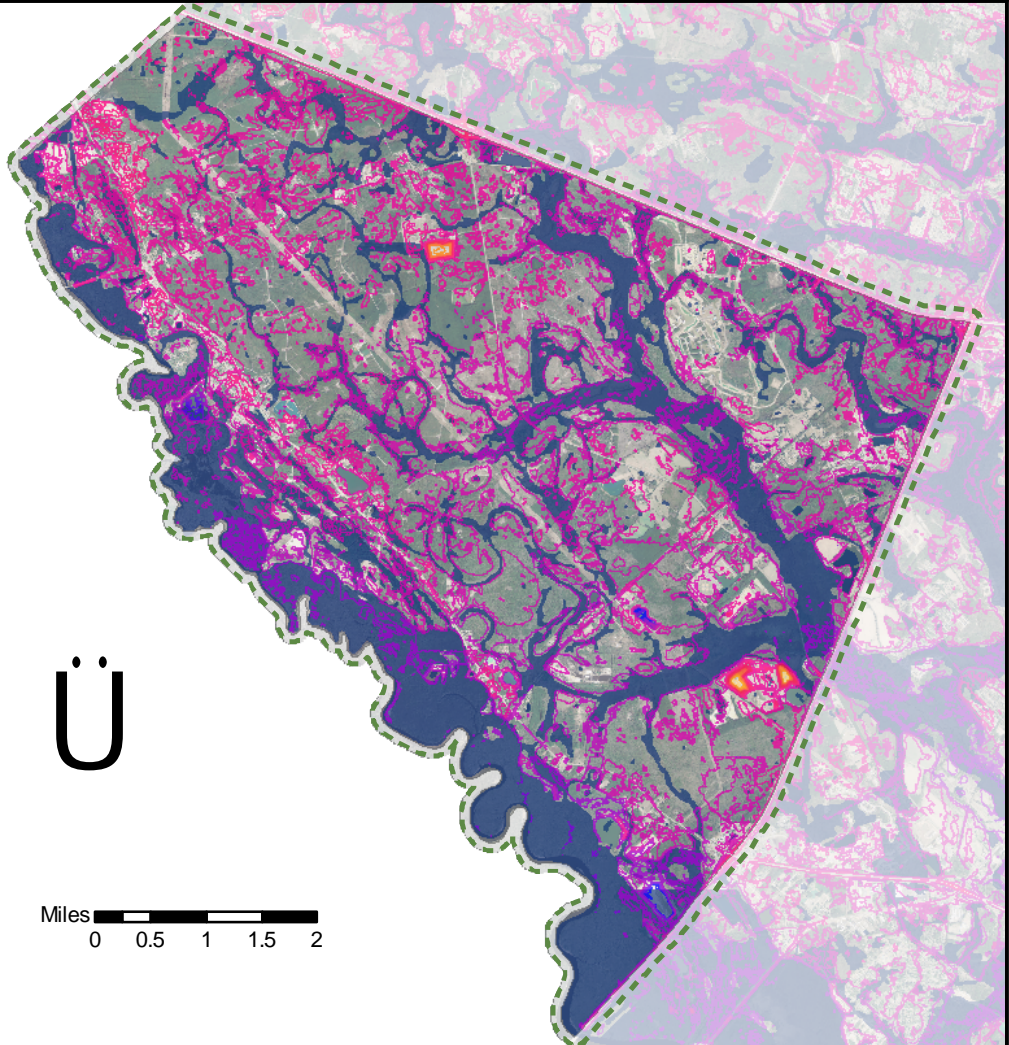
As noted above, approximately 8% of the SW Sector Area is dedicated as conservation area, with an additional 1.6% covered by open water. As presented on **Figures 1.5 and 1.6**, almost 8,000 acres, or 32% of the sector area is identified as wetlands. A large portion of these wetlands is located adjacent to the Ogeechee River and along the Ogeechee River tributaries. Palustrine wetlands represent about 6% of the total land area (97% of total wetlands), 0.2% Riverine wetlands represent about 0.2% of the total land area (2.7% of total wetlands) and Lacustrine wetlands represent about 0.02% of the total land area (0.033% total wetlands). Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5%¹³. Generally, Palustrine wetlands are those lands often called marsh, swamp, bog, fen, and prairies as well as certain permanent or intermittent ponds.

Zoning

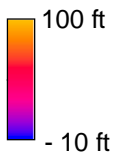
Zoning within the SW Sector area has undergone a rapid transformation over the previous 5-10 years. Of the 16,843 acres of land within the SW Sector area, 4,045 acres are located in the New Hampstead PUD and 736 acres are located in the Belford PUD. Within the PUD are tracts with separate land classifications and corresponding zoning districts. The homes in a PUD often incorporate more traditional design and features, such as smaller lots, enhanced aesthetics and back alleys. PUDs are required to set aside at least 20% of the land area for open space. In addition, the development must provide pedestrian leisure trails and sidewalks. The New Hampstead PUD is the most prominent new development in the SW Sector Area. New Hampstead's site plan includes the following zoning districts: Residential (R-1 through R-14), Highway 204 Commercial (C-1 through C-2), New Hampstead Village (VIL-1 through VIL-3), Multifamily (MF-1 through MF-3), Institutional (I-1 through I-5), School (SC), Public Park (P), and Municipal Service (MS-1 through MS-5).

Most of the forestry and agricultural land uses in the area are zoned as Residential Agriculture, as presented on **Figure 1.7**. This district is designed to protect rural areas adjacent to urbanized areas from future urban development, and to protect highway roadsides from strip development.

Given the expected growth of retail and service jobs over the next 30 years, there is little land zoned for commercial use. At the edge of the study area, at the intersection of SR 204 and I-95, there is land zoned for Planned Community Business. This zone is designed to provide community shopping facilities for a market of 35,000 to 70,000 people. At Bloomingdale Rd and I-16, there is another small commercial center, which is likely outgrowth from Bloomingdale. It is likely to expand as the SW Sector Area gains in population. The county has also zoned two parcels of the Neighborhood Business district in the northwest portion of the SW Sector Area. This district is to provide "convenient non-nuisance producing commercial facilities" for a market of 3,000-5,000 people. These two parcels contain commercial uses and serve the local population. The expected growth in population and employment, however, necessitates re-zoning portions of the SW Sector Area for additional commercial uses. An additional three parcels of commercial use are located near Quacco Road and I-95.



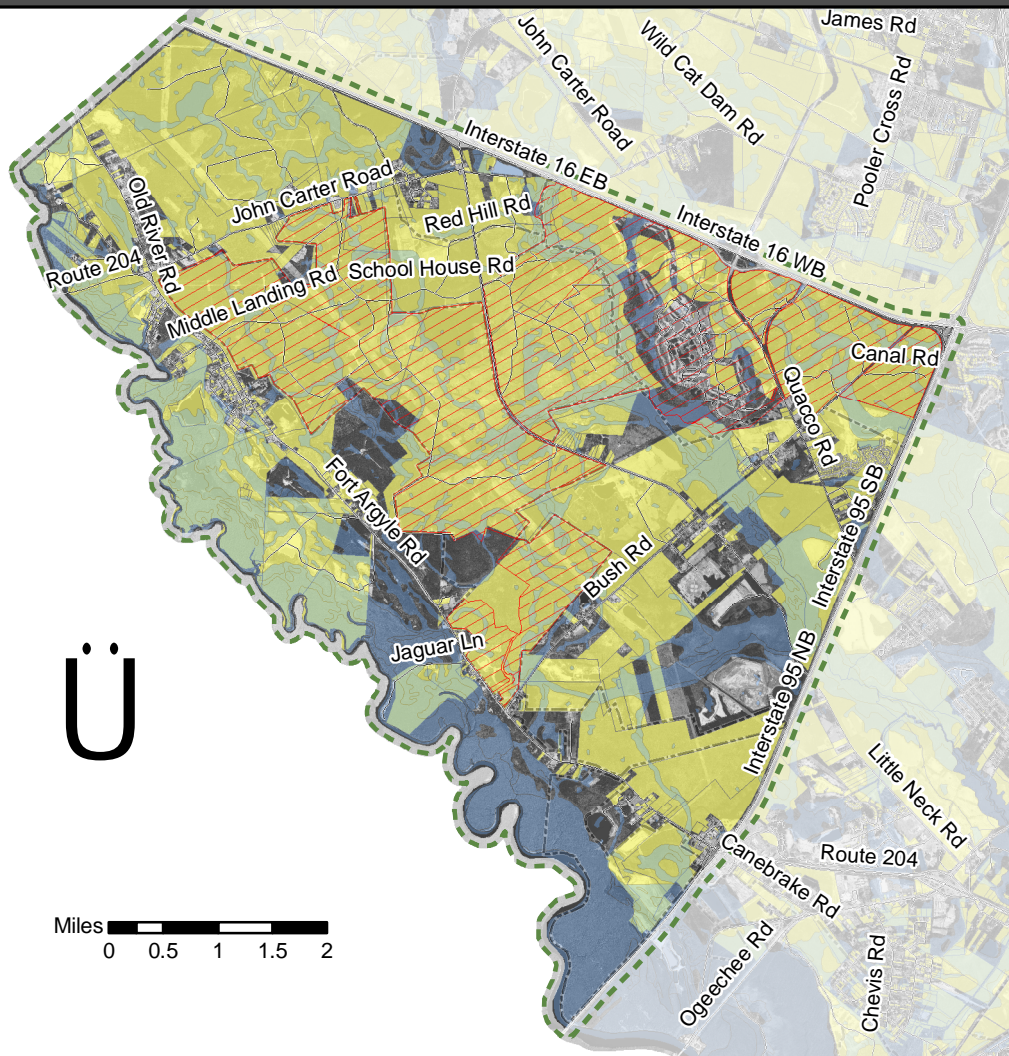
Elevation (Above Mean Sea Level)



Wetlands

SW Chatham County Study Area



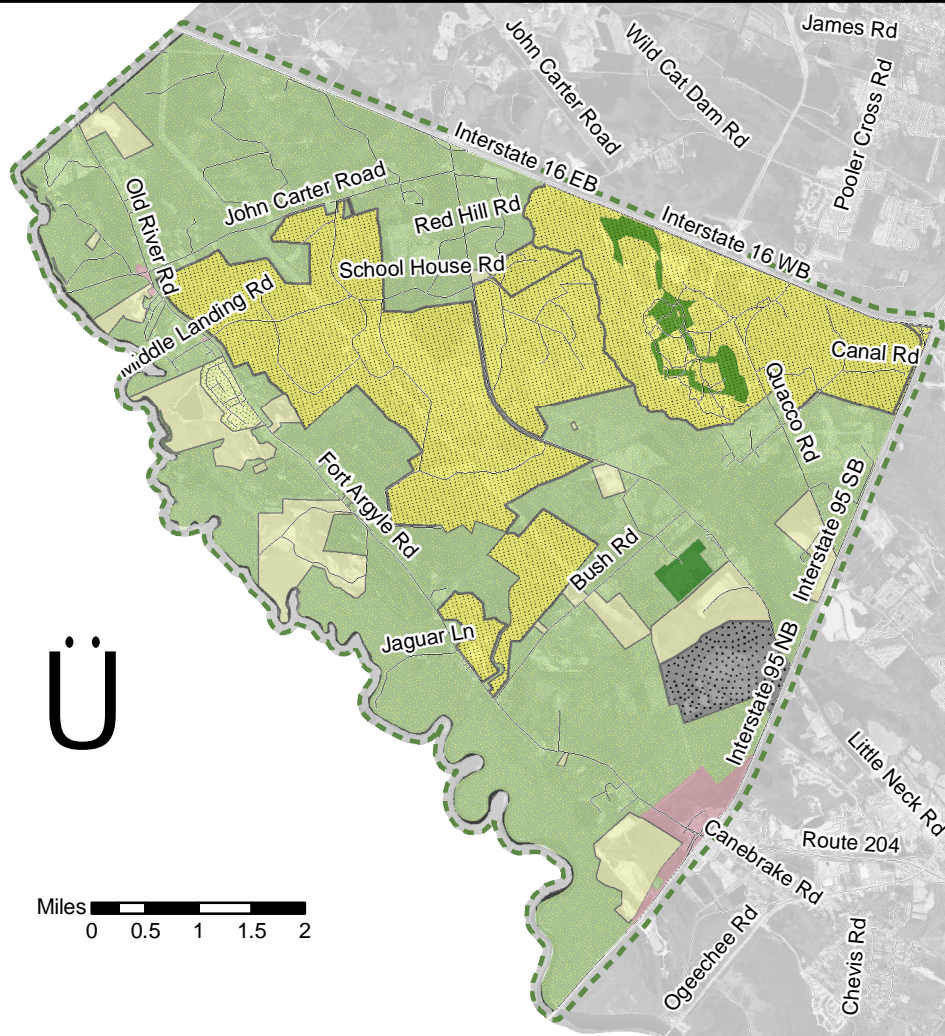


Developable Land

- Developable Land (Agriculture/Undeveloped)
- Planned Unit Developments
- Wetlands
- Municipal Boundaries
- Roads



SW Chatham County Study Area



Existing Zoning

- | | | | |
|--|---|--|--------------------|
| | Neighborhood / Planned Community Business | | Surface Mining |
| | Planned Unit Development | | Landfill |
| | Residential (Mobile Home) | | Parks/Conservation |
| | Residential/Agriculture | | |

SW Chatham County Study Area



Cultural Locations

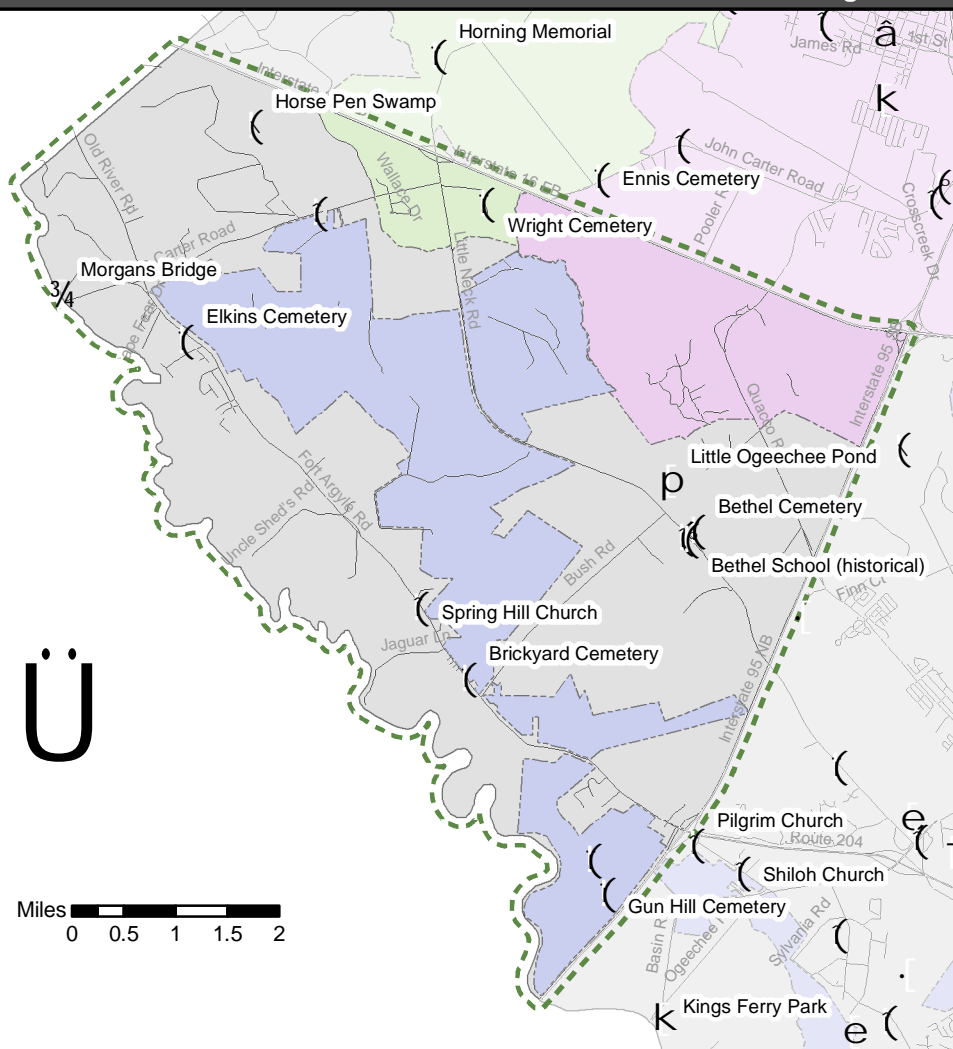
Cultural locations include both manmade resources (including airports, bridges, campgrounds, cemeteries, churches, government complexes, parks and schools), as well as natural resources (including water resources such as ponds, swamps and reservoirs). There are several cultural locations located within the SW Sector Area, as listed below and presented on **Figure 1.8**.

Manmade Cultural Locations:

- Wright Cemetery
- South Newington Church
- Elkins Cemetery
- Morgans Bridge
- Spring Hill Church
- Brickyard Cemetery
- Sand Hill Cemetery
- Gun Hill Cemetery
- Bethel Cemetery
- Bethel Church
- Bethel School

Natural Cultural Locations:

- Horse Pen Swamp
- Little Ogeechee Pond



Cultural Locations

•	Airport	{	Cemetery	k	Park	p	Reservoir
3/4	Bridge	{	Church	e	Plantation	(Swamp
t	Campground	â	City Hall	(School		

	Bloomington
	Pooler
	Savannah



Source: Geographic Names Information System, U.S. Geological Survey, 1996

SW Chatham County Study Area

Planned and Proposed Developments

The New Hampstead PUD is approximately 450 acres in area, 40% of which will be set aside for greenspace. It will incorporate a variety of uses, including residential (both single-family and multi-family), commercial, recreational, and public/institutional. This mix of uses is intended to serve residents' daily needs and provide local services and amenities at the community level. Over 9,500 single-family homes and 1,500 multi-family units are planned in New Hampstead.¹⁴

The Belford PUD is approximately 625 acres in area, 32% of which will be set aside for greenspace. The Belford PUD will incorporate a mix of uses including an estimated 270,000 square feet of commercial development coupled with over 1,200 residential units (multi-family, attached and detached single family units)¹⁵.

Both PUD developments will draw considerably more population to the SW Sector Area, and the new residents and patrons to both developments will have a significant impact upon the SW Sector Area's transportation and infrastructure systems. Moreover, the new population will likely require additional services beyond those provided in the community, spurring additional job growth within the SW Sector Area.

Development and Redevelopment Opportunities

The SW Sector Area has a significant store of land available for development opportunities as presented on **Figure 1.9**. There are over 13,000 acres that are used in agriculture or forestry. The majority of this land is zoned for low-density residential development. Residential uses, along with supporting public and commercial uses, are the most likely to be constructed on this land over the next thirty years. There are also a number of reclamation sites in the SW Sector Area, such as landfills and surface mining that may hold future opportunities for brownfield development.

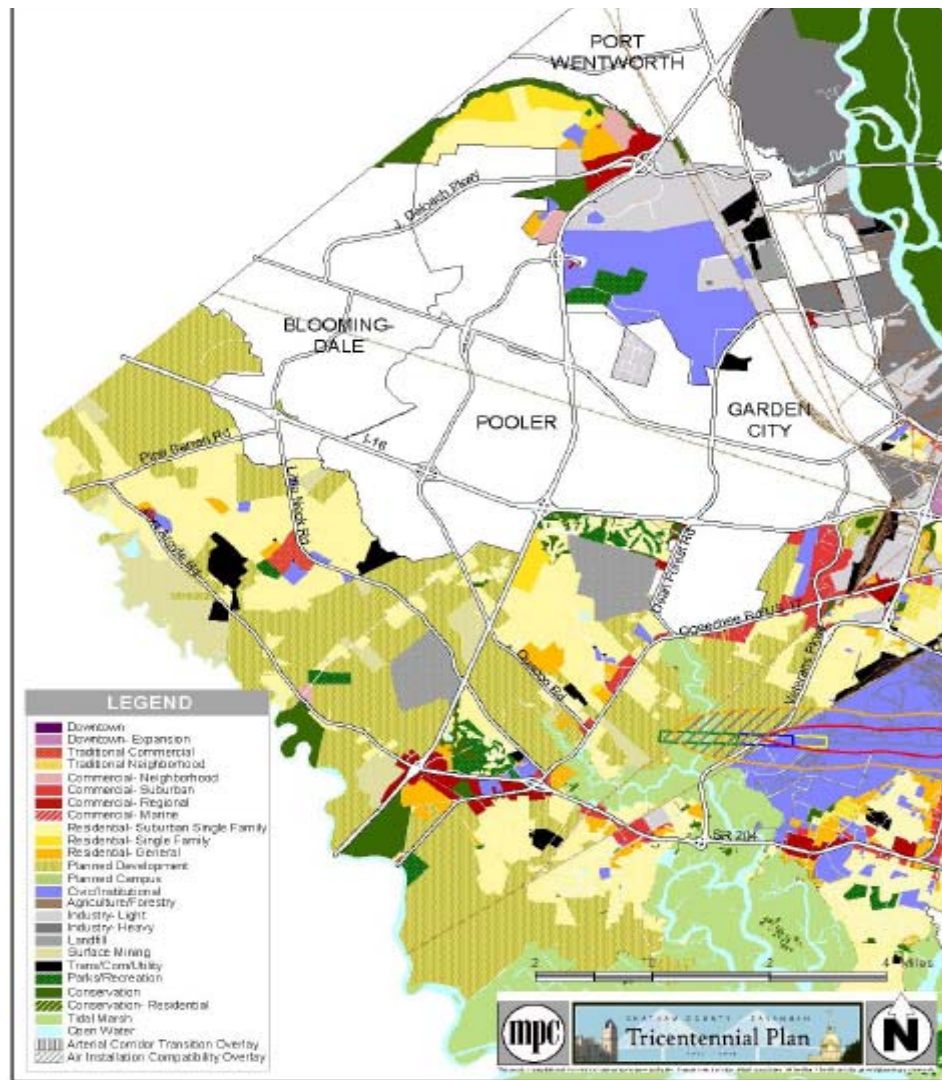
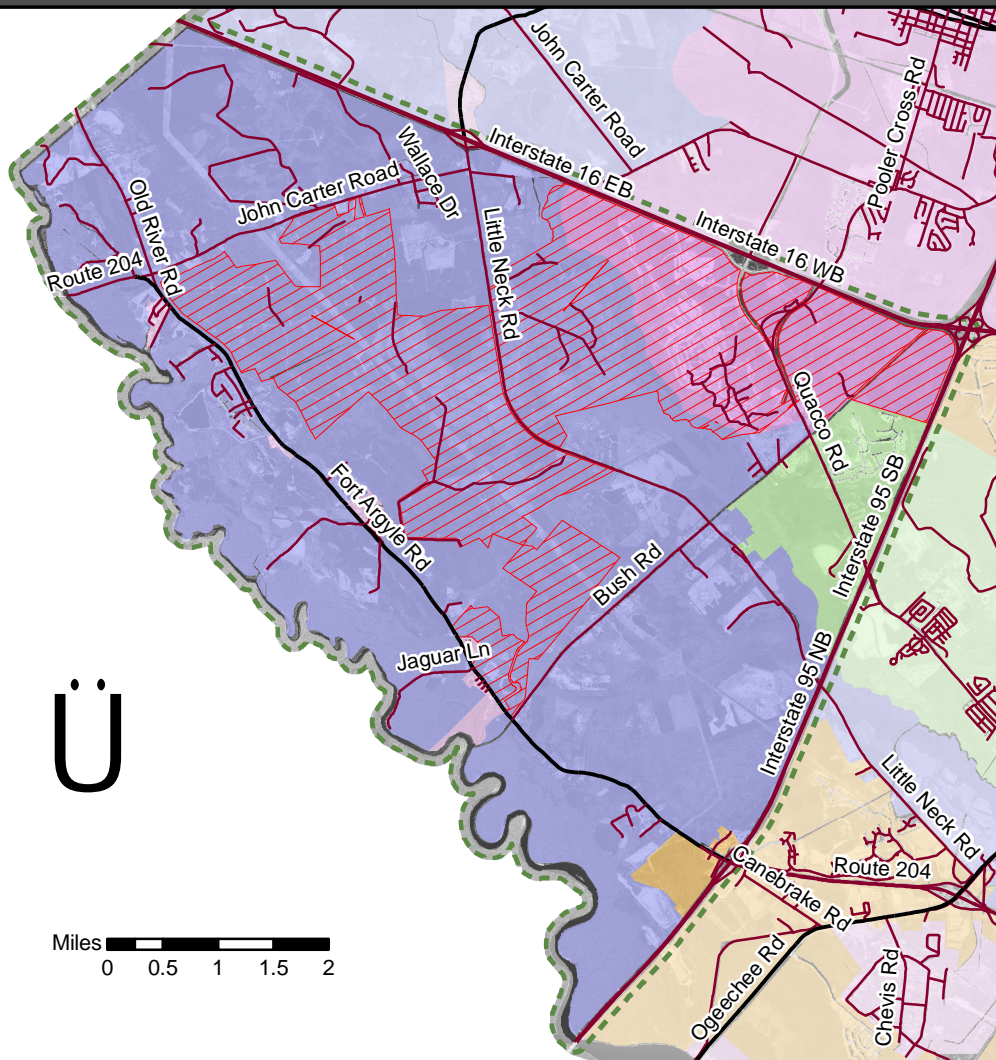


Figure 1.9 – Unincorporated West Chatham Future Development







Infrastructure

Water and Sewer Service

Individual wells and septic systems are currently the largest providers of water and wastewater services in the SW Sector Area. However, as presented in **Figures 1.10** and **1.11**, the City of Savannah is planning to extend both water and sewer services to the planned developments of New Hampstead and Belford, which will provide service to a significant portion of the SW Sector Area. As development in the area expands, the expansion of water and sewer service is expected to follow.



Water Service Areas

- | | |
|---|--|
|  Planned Unit Developments |  Consolidated Utilities |
|  Pooler |  Other Private System |
|  Savannah |  Individual Well |




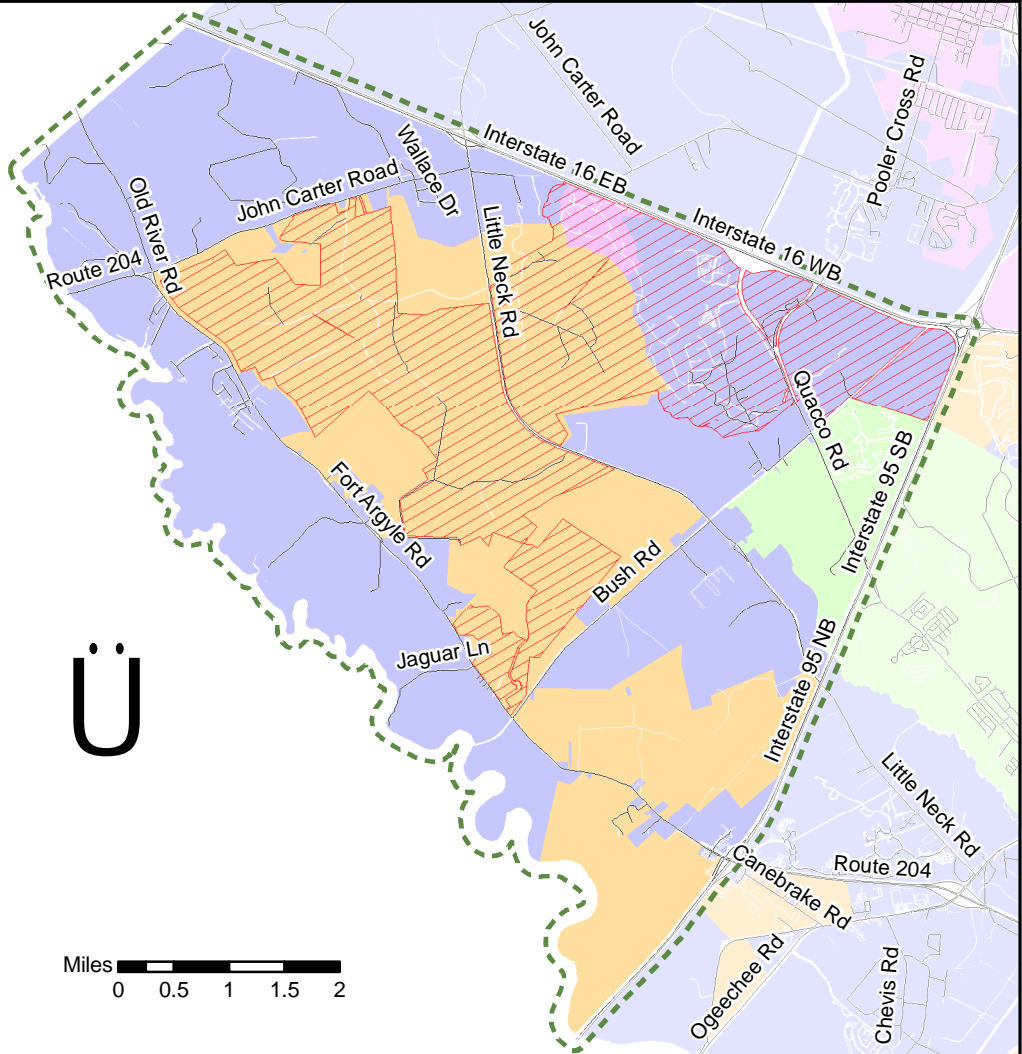





 SW Chatham County Study Area


Figure 1.11



Wastewater Service Areas

- | | | | |
|---|---------------------------|---|------------------------|
|  | Planned Unit Developments |  | Consolidated Utilities |
|  | Pooler |  | Septic Tank |
|  | Savannah | | |



 SW Chatham County Study Area

Emergency Medical Services

The only emergency facility located within the SW Sector Area is a Fire Station on Fort Argyle Rd. There are no police stations or medical facilities located in the SW Sector Area or within an approximately three-mile radius of the SW Sector Area (in Chatham County). The closest hospital is St. Joseph's Hospital in Savannah, which is approximately eight miles from the intersection of Fort Argyle Rd/SR 204 and I-95. As the population of the SW Sector Area grows, emergency medical services will need to be added to serve the new residents' emergency needs.

Schools

There are no schools located in the SW Sector Area. The Savannah-Chatham County Public Schools provides educational opportunities at elementary, middle and high schools levels. The elementary and middle schools that currently serve students in the sector area are located in the Godley Station area of Pooler and the high school serving the area is Groves High School. There are also private schools in Savannah and throughout Chatham County as an alternative to public education. As the population in the SW Sector Area grows, it is likely that additional school facilities will be added in closer proximity to the new residents, but currently, there are no definitive plans for building facilities in the SW Sector Area. However, the New Hampstead planned development has reserved a site for a new school campus.

Transportation System

Roadway Functional Classification

Table 1.2 and **Figure 1.12** details the functional classification of the facilities located within the SW Sector Area. As presented in the table, there are just over nine (9) miles of Interstate facilities located in the area, which are designated as either urban or rural Interstates. The urban minor arterial designation is applied to 1.20 miles of Little Neck Road, with the remainder of Little Neck designated as a rural major collector. Old River Road is designated as a rural major collector and Wallace Road and Old Highway 204 are designated as Urban and Rural Local Roads, respectively.

<i>Table 1.2 – Roadway Functional Classifications</i>		
Functional Class	Road Name	Total Miles
Urban Interstate Principal Arterial	I-16	3.18
	I-95	1.93
Rural Interstate Principal Arterial	I-16	1.48
	I-95	2.57
Urban Minor Arterial	Little Neck Rd	1.20
	Pine Barren Rd	
	Quacco Rd	
Rural Major Collector	Old River Rd	5.49
	John Carter Rd	
	Ft Argyle Rd/SR 204	
	Little Neck Rd	
Urban Local Road	Wallace Dr	0.91

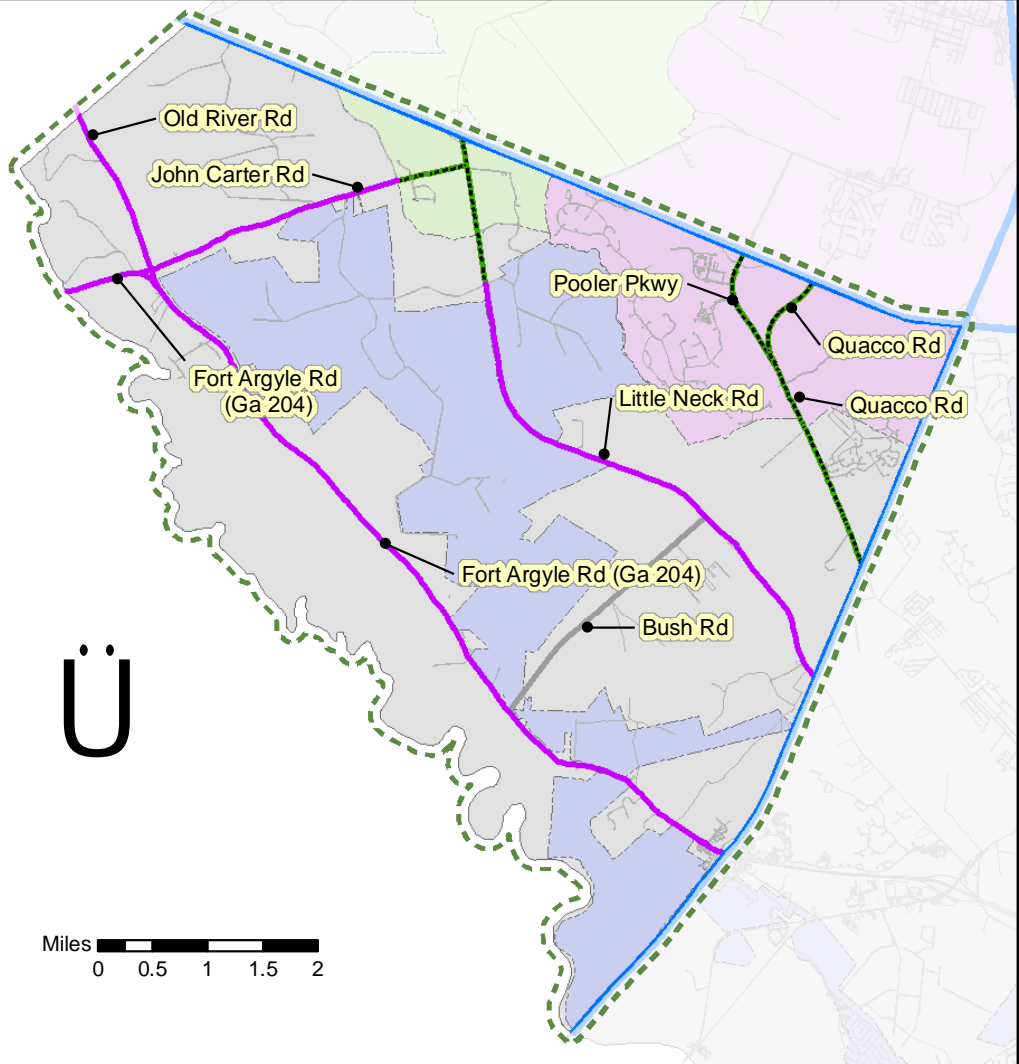
<i>Table 1.2 – Roadway Functional Classifications</i>		
Functional Class	Road Name	Total Miles
	Wallace Cir	
	Pine Barren Rd	
	Old Little Neck Rd	
	Canal Bank Rd	
	I-16 Ramp	
Rural Local Road	Old Hwy 204	3.25
	Old Hwy 204 Ext (?)	
	Riverside Ct	
	Big Cypress Dr	
	Cape Fear Dr	
	Newton Rd	
	Middle Landing Rd	
	Canvasback Dr	
	Gadwell Ln	
	Widgeon Ct	
	Baldpate Rd	
	(Unknown)	
	Elkin's Cemetery Rd	
	Uncle Shed's Rd	
	Bush Rd	
	Louis Scott Stell Jr Park Rd	
	Little Neck Rd	
	(Unknown)	
	I-95 Ramp	

Existing Traffic Conditions

Existing and recent traffic counts were obtained from GDOT and the MPC for the primary roadways within the SW Sector Area. Annual Average Daily Traffic (AADT) counts for 2005 within the sector range generally range between 2000 and 8000 vehicles per day (vpd). **Figure 1.13** presents the 2003-2005 AADT for the primary roads within the SW Sector Area and 2005 AADT for all traffic count locations within the SW Sector Area. **Figure 1.14** presents the locations of the traffic control devices within the SW Sector Area.

A particular measure of the travel service provided by a particular roadway is its Level of Service (LOS). Roadway LOS is a stratification of the quality of service provided by roadway facility based on travel speed, level of congestion, roadway characteristics and other factors. Similar to a student's report card, LOS is represented by the letters "A" through "F", with "A" representing the most favorable driving conditions and "F" representing the least favorable. The MPC standard for acceptable LOS are A, B and C, with LOS D, E and F characterizing deficient LOS.

For sub-area analyses, the use of a travel demand model is typically utilized to determine existing and future LOS. The approved 2030 Chatham Urban Transportation Study (CUTS) travel demand model was reviewed to identify potential roadway deficiencies within the sector. Based upon review of the 2001 base year daily model, all of the primary roadways included in the model network operate at LOS C or better, as presented in **Figure 1.15**.



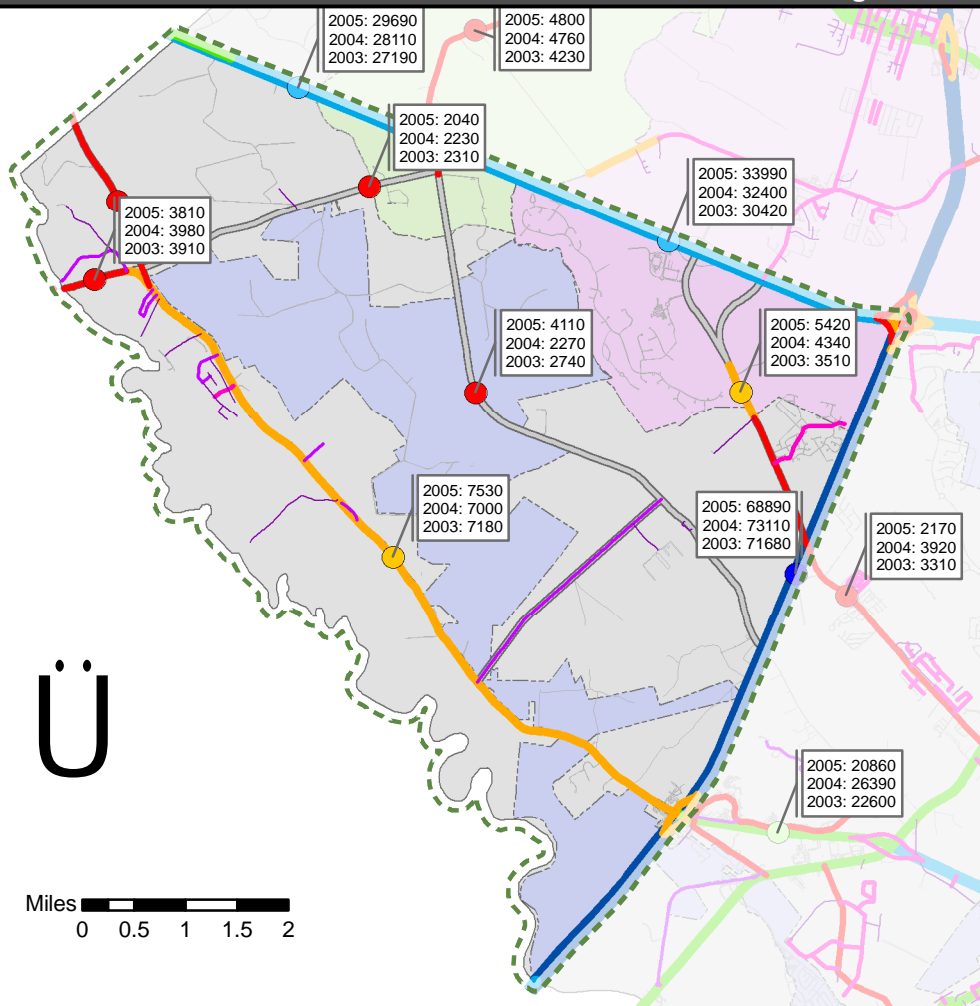
Functional Classification (Existing)

- Interstates
- Rural Major Collector
- - - Urban Minor Arterial
- Rural Local Road

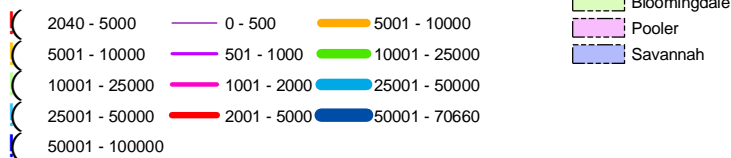
- Bloomingdale
- Pooler
- Savannah

SW Chatham County Study Area





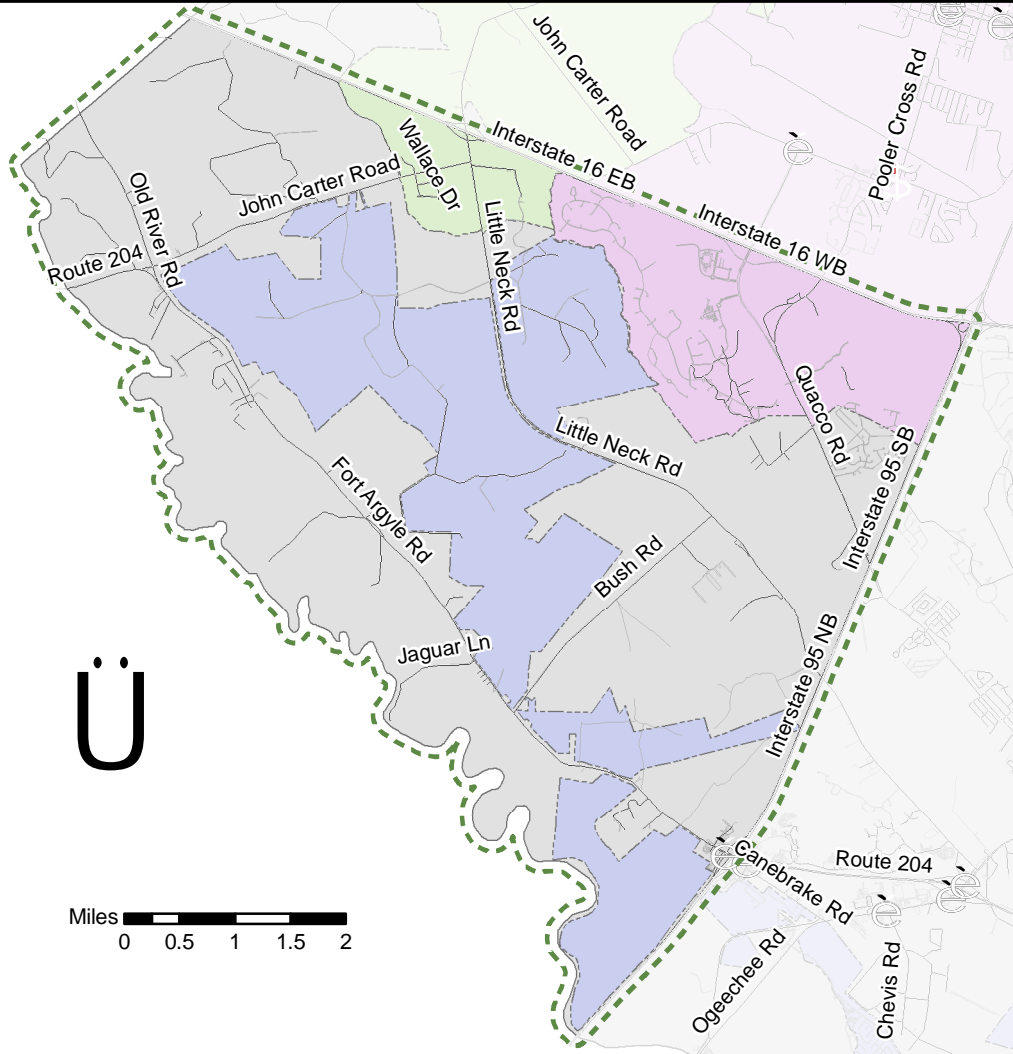
2005 AADT from GDOT and MPC Count Locations



Source: Georgia Department of Transportation

SW Chatham County Study Area





Traffic Control Devices



TWSC



Signals



AWSC

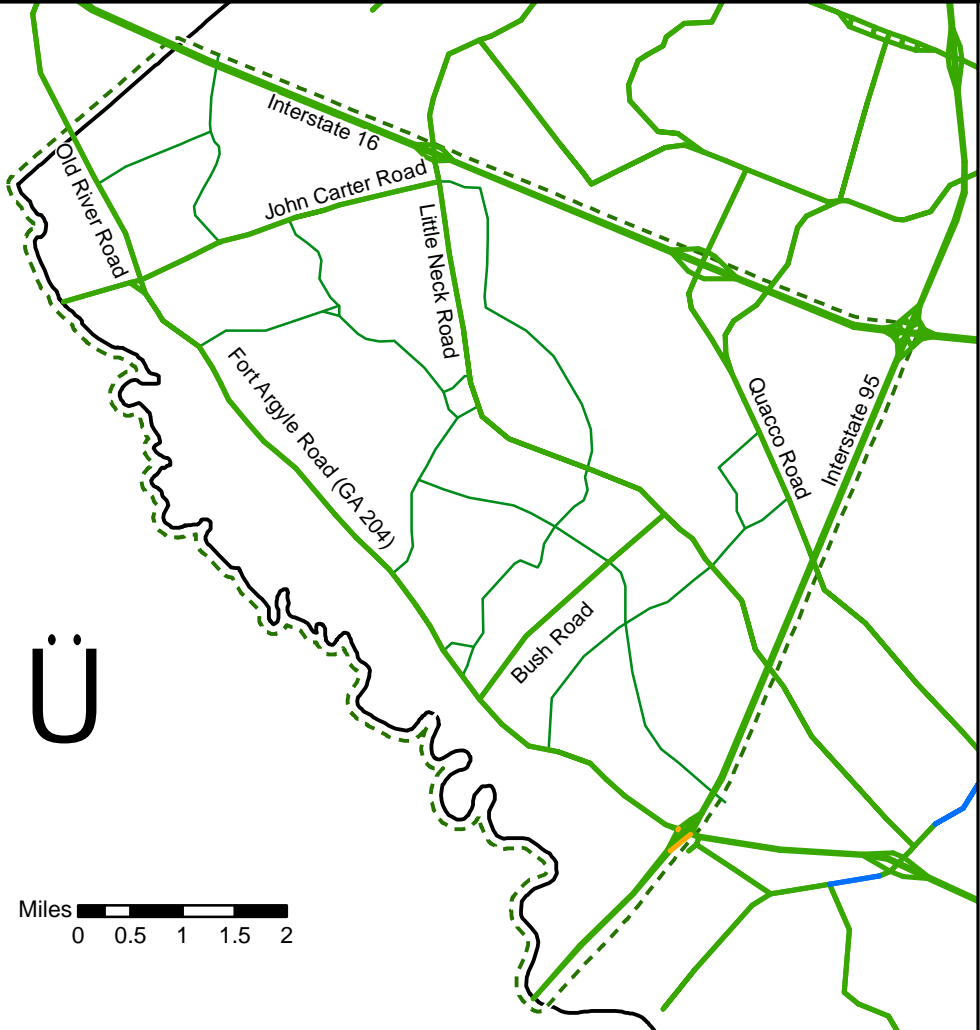
Bloomingdale

Pooler

Savannah




SW Chatham County Study Area



Level of Service (LOS)

- LOS C or better
- LOS D
- LOS E

Source: GDOT Travel Demand Model

 Southwest Chatham County Study Area



Freight Movement

Trucks are the primary mode for freight movements within the sector, as there are no rail lines within this vicinity. The sole existing heavy industrial parcel within the sector is the land fill located south of Little Neck Road, just west of I-95. The sole GDOT truck traffic data within the sector is along Quacco Road; the truck split in 2005 along this segment was 6.2%.

Crash Analysis

Crash data was obtained from the Georgia Department of Transportation (GDOT) for the years 2000 through 2004; individual crash incidents are presented as **Figure 1.16**. The software used to compile the analysis for the SW Sector Area is the Critical Analysis Reporting Environment (CARE), which was developed by the University of Alabama. For the period between 2000 and 2004, a total of 3338 intersections within Chatham County were identified as having one (1) or more reported crashes. Of this total, 11 intersections within the SW Sector Area were identified as having one (1) or more crashes between 2000-2004. **Table 1.3** presents these identified intersection locations that are ranked by crash severity index. The index is calculated by GDOT using a scale of from 100 (worst) to 0 (best). The crash severity index is calculated using the following weighting factors:

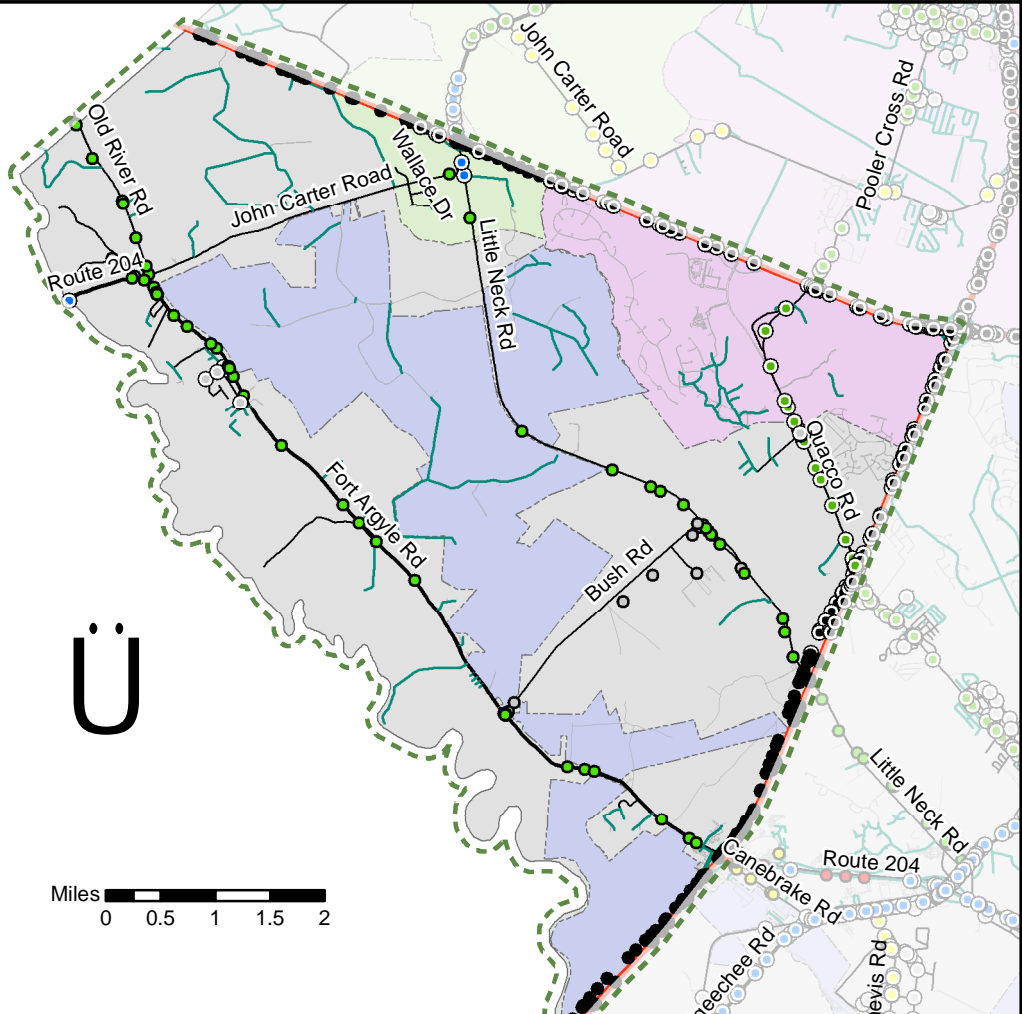
- Each complaint injury = 2
- Each visible injury = 4
- Each serious injury = 6
- Each fatality = 10

Table 1.3 - Intersection Crash Summary for the SW Sector Area (2000-2004)

Description	Number of Crashes				Severity Index	Persons Killed	Persons Injured
	Total	With Fatalities	With Injuries	With Property Damage Only			
Fort Argyle Road at Fort Argyle Road	10	1	6	3	30.0	1	12
Fort Argyle Road at Middle Landing Road	7	0	4	3	25.7	0	9
Quacco Road at Canal Bank Road	7	0	4	3	22.9	0	6
Old River Road at Pine Barren Road	4	0	3	1	20.0	0	10
Fort Argyle Road at Cape Fear Drive	3	0	2	1	20.0	0	2
Bush Road at Little Neck Road	2	0	1	1	20.0	0	1
Fort Argyle Road at Canvasback Drive	2	0	1	1	20.0	0	1
Fort Argyle Road at Bush Road	4	0	2	2	15.0	0	2
Quacco Road at Canal Bank Road	3	0	2	1	13.3	0	5
Old Little Neck Road at Little Neck Road	3	0	0	3	0.0	0	0
Fort Argyle Road at Arkwright Lane	1	0	0	1	0.0	0	0

Source: GDOT

For the intersections identified within the sector, the Fort Argyle Road intersection (SR 204 at CR 803) is the most severe with an index of 30, placing this intersection as one of the 100 most severe in the County. Over 47 percent of all Chatham County intersection crashes have a severity index of zero (0) indicating crashes with property damage only (and no reported injuries or fatalities).



Crashes (By Functional Classification)

- | | | | |
|----------------------------|----------------------------|-------------------|----------------------------|
| ● Rural Interstate | ○ Rural Local | ● Urban Collector | ○ Urban Interstate |
| ● Rural Principal Arterial | ○ Urban Interstate | ○ Urban Local | ○ Urban Freeway |
| ● Rural Minor Arterial | ○ Urban Freeway | ● Other | ○ Urban Principal Arterial |
| ● Rural Major Collector | ○ Urban Principal Arterial | | ○ Urban Minor Arterial |
| ● Rural Minor Collector | ○ Urban Minor Arterial | | |

- | |
|----------------|
| □ Bloomingdale |
| □ Pooler |
| □ Savannah |

SW Chatham County Study Area



Programmed and Planned Projects

Table 1.4 presents the projects identified as part of the CUTS 2007-2009 Transportation Improvement Program (TIP) within the SW Sector Area.

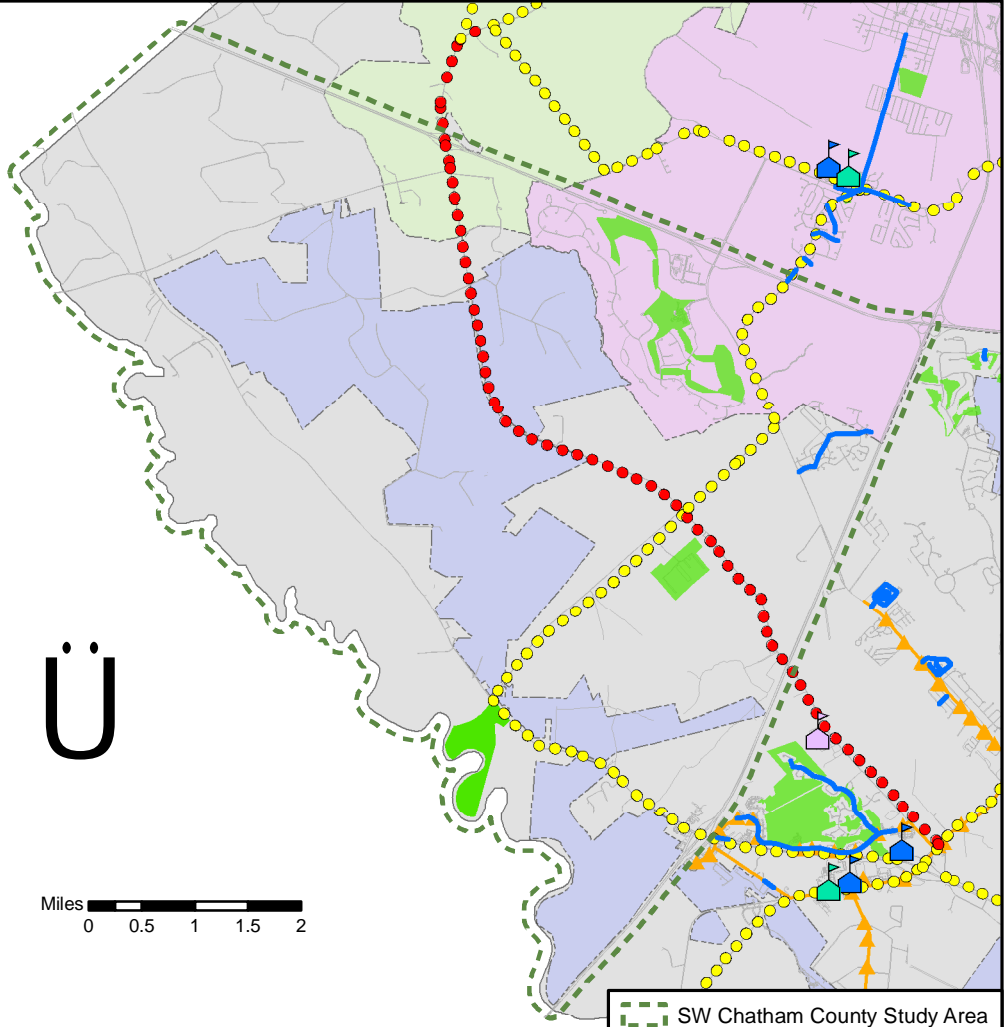
<i>Table 1.4 – SW Sector Projects in the CUTS 2007-09 TIP</i>						
Project Description	Project Type	Existing Lanes	Planned Lanes	Length (miles)	Fiscal Year	PI # / TIP #
SR 204 from CR 803/Fort Argyle Road to CR 770/Old River Road	Rumble Strips	--	--	--	PE authorized in 2005	0007190/ CSSTP-0007-00(190)

Table 1.5 presents the projects included as part of the Chatham County – Savannah MPC 2030 Long Range Transportation Plan (LRTP), which are either within or adjacent to the sector area.

<i>Table 1.5 - SW Sector Projects in the CUTS 2030 LRTP</i>						
Project Description	Project Type	Existing Lanes	Planned Lanes	Length (miles)	PI # / TIP #	Priority
Quacco Road	Widening	2	4	2.6	Not specified	3-36
Quacco Road / Little Neck Road	New Interchange	--	--	1.5	Not specified	3-37
I-95 / SR 204 Interchange Improvements	Interchange Modification	--	--	--	0007148 / CSSTP-0007-00(148)	2-27
I-16 / I-95 Interchange	Interchange Modification	--	--	0.3	0005957	I-1C-2
I-16 from I-95 to I-516	Widening	4	6	6.7	Not specified	I-2-4
I-95 from I-16 to Effingham County / SC	Widening	6	8	13	Not specified	I-3-6

Multimodal Facilities

There are currently no designated bicycle facilities located within the sector area as presented on **Figure 1.17**. However, planned facilities include a Class II facility, which indicated a bike lane or wide shoulder and a Class III facility which indicates a wide curb lane shared with vehicular traffic. These planned facilities do provide access to the existing park located within the area. There is only one small section of sidewalk within the sector area and there are currently no transit services.



Multimodal Facilities



Elementary



Private



Middle

Planned Bike Paths

CLASS I (Bike Path, Bike/Ped Sidewalk)

CLASS II (Bike Ln, Bike Shldr)

CLASS III (Wide Curb Ln, Shared Ln)

CAT Bus Stops

CAT Bus Routes

Sidewalks Present

Existing Land Use

Park/Rec



Assessment and Evaluation

As part of this Southwestern Chatham County Sector Plan, an assessment was completed to determine a recommended transportation network to meet future needs of the SW Sector. Two major Planned Unit Developments (PUDs) have recently been approved within the SW Sector including the New Hampstead and Belford PUDs. These two projects, in addition to other major projects within the Sector (such as the Savannah Quarters development and the Newton Tract DRI) have been the impetus for the SW Sector Area analyses including the detailed planning to develop the internal roadway structure. Upon completion, the two PUDs will add a significant amount of new residential, commercial and office uses within the SW Sector, as presented in **Table 2.1**.

Table 2.1 - Projected Development within New Hampstead and Belford PUDs

Planned Unit Development	Planned Development		
	Residential Units (total)	Office Development (Sq. ft.)	Commercial/Retail Development (Sq. ft.)
New Hampstead	11,275	92,848	2,241,434
Belford	2,146	N/A	270,100

Sources: New Hampstead Master Plan and Traffic Impact Study; Belford Master Plan and Traffic Impact Study

N/A = Not Applicable

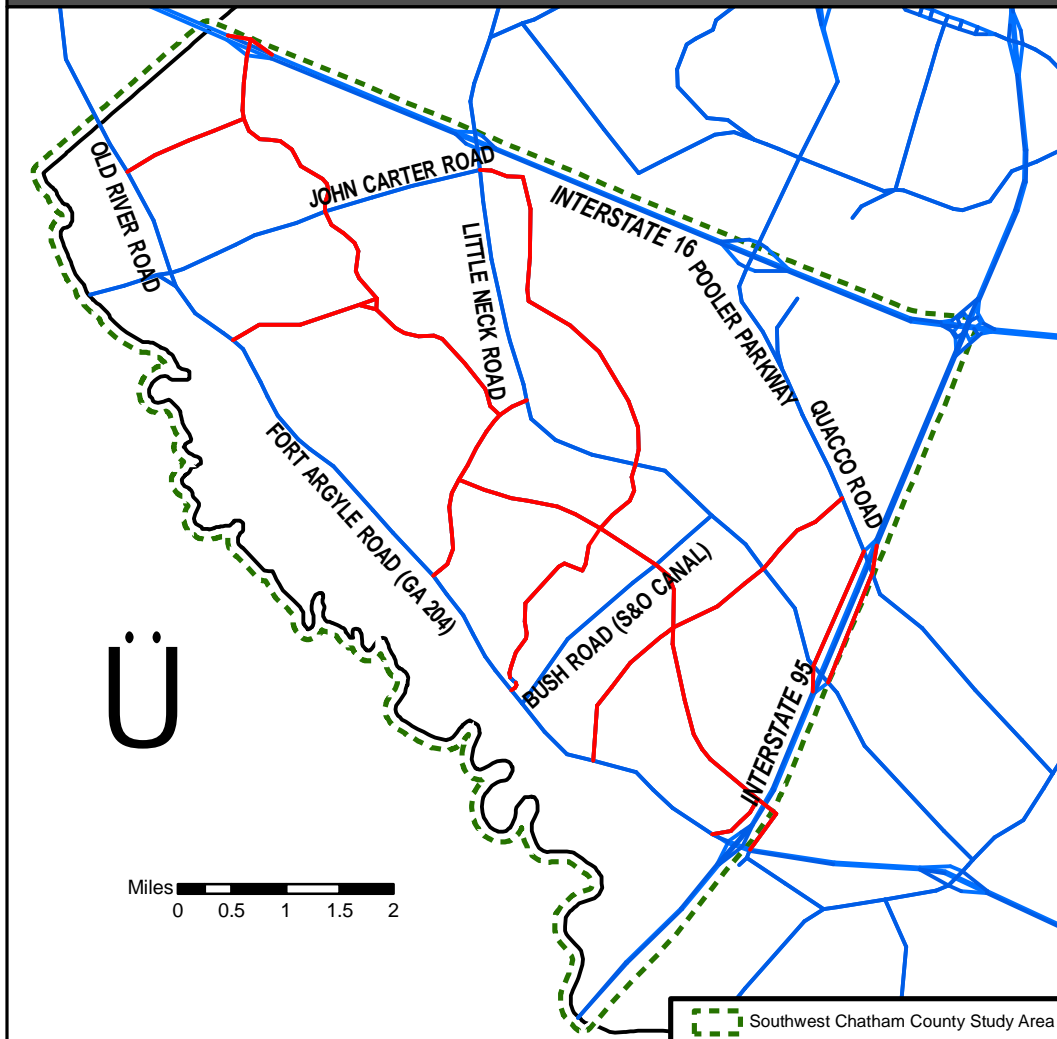
Note: Excludes schools, churches and municipal services

Several technical methods have been employed to assess the needs associated with the projected transportation network demands at buildout within the SW Sector Area. The primary tool utilized for the transportation needs assessment is the travel demand model developed for the ongoing Chatham County Interstates Study (CCIS). The CCIS model is a modified version of the Chatham Urban Transportation Study (CUTS)¹⁶ travel demand model maintained by the Georgia Department of Transportation (GDOT).¹⁷ For the purposes of this model development report, the “CCIS model” is used to describe the most current CCIS model files obtained from GDOT¹⁸. The following sub-sections detail the assessment methodology and the CCIS model refinements completed for the SW Sector Plan analysis and SW Sector Plan model.

Travel Demand Model Refinements for SW Sector Analysis

The CCIS model was reviewed against the Master Plans for the SW Sector Area PUDs, as well as other available land use and development information. This review focused upon the planned development pods/subdivisions within each Master Plan as well as the associated roadway network. The primary model elements reviewed include the roadway network variables, traffic analysis zone (TAZ) geographic structure (including centroid connectors/access point locations), and the socioeconomic data for each TAZ. Each of these elements is discussed in more detail in the following sub-sections.

Figure 2.1



Travel Demand Model

- Roads Added for Southwest Sector Plan
- Chatham Co Interstate Study Roads



Table 2.2 – Facility Types Included in CCIS and CUTS Models

Code	Facility Type	Code	Facility Type
1	Interstate	2	Freeway
3	Expressway	4	Parkway
5	HOV - Freeway	6	Freeway-to-Freeway Ramp
7	Entrance Ramp	8	Exit Ramp
9	Toll Road	11	Principal Arterial – Class I
12	Principal Arterial – Class II	13	Minor Arterial – Class I
14	Minor Arterial – Class II	15	One-Way Arterial
16	HOV – Arterial	21	Major Collector
22	Minor Collector	23	One-way Collector
30	Local Road	32	Centroid Collector

The area type for the SW Sector area (Rural: Code 7) was not changed from that coded into the CCIS or CUTS 2030 models¹⁹.

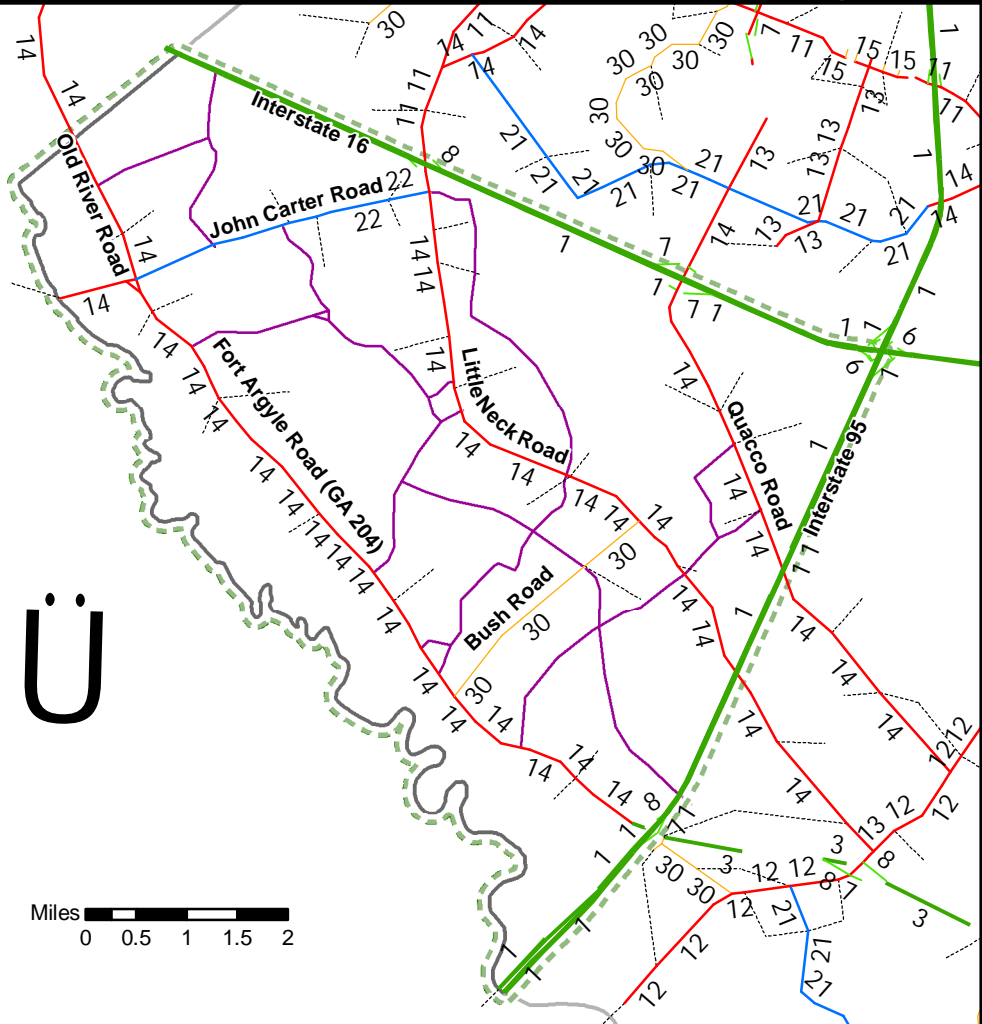
Figure 2.2 presents the original facility type included within the 2030 CCIS model. **Figure 2.3** presents the modified facility types for the refined SW Sector Buildout model roadway network. As presented in **Figures 2.2** and **2.3**, the facility types within the SW Sector include the following major categories: (from highest to lowest roadway capacity):

- #1 Interstate
- #12 Principal Arterial – Class II
- #14 Minor Arterial – Class II
- #21 Major Collector
- #22 Minor Collector
- #30 Local Road

Several refinements to facility types identified in the CCIS model were completed as part of the development of the SW Sector Plan model, including:


- Little Neck Road was changed from a Minor Arterial – Class II (#14) to a Principal Arterial – Class II (#12)
- A segment of GA 204 was changed from a Minor Arterial – Class II (#14) to a Principal Arterial – Class II (#12)
- Old River Road was changed from a Minor Arterial – Class II (#14) to a Major Collector (#21)
- John Carter Road was changed from a Minor Collector (#22) to a Minor Arterial – Class II (#14)

Figure 2.2

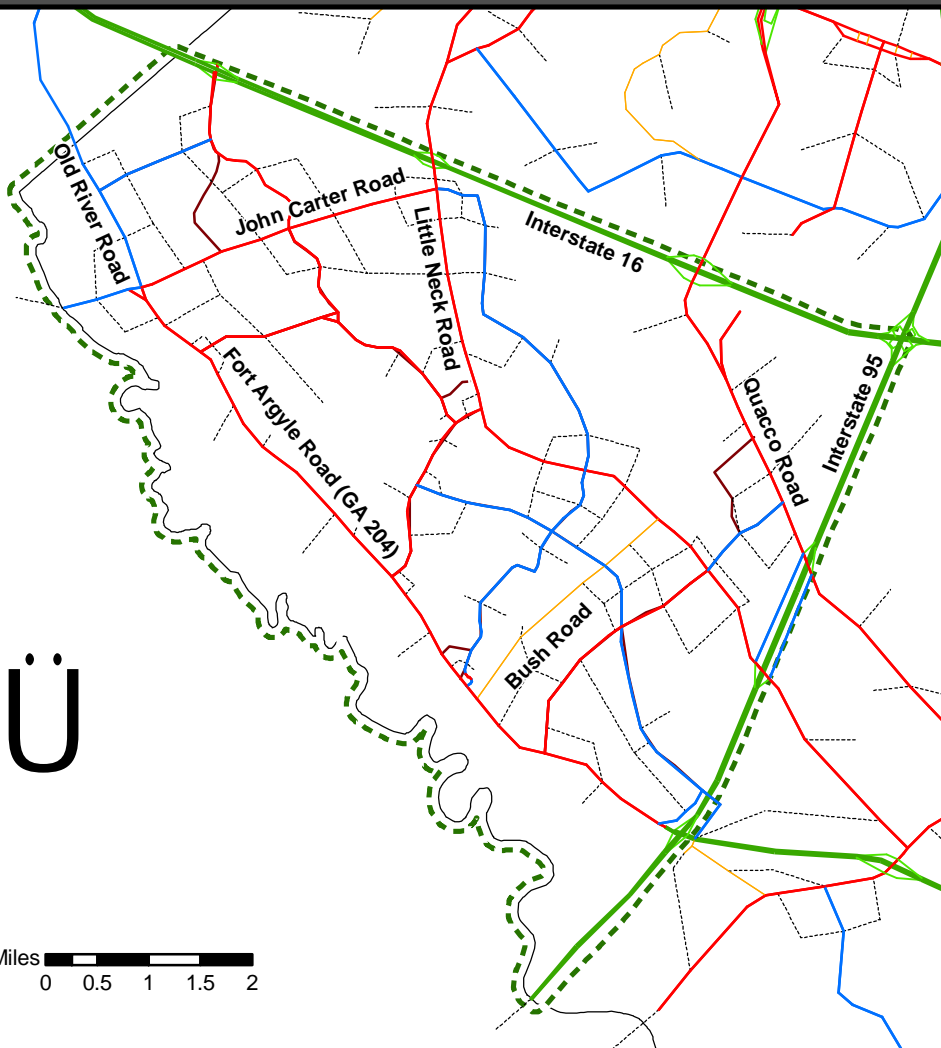


Facility Type (Chatham County Interstate Study Model)

- Interstate/Freeway (1,2,3)
- Access Ramp (6,7,8)
- Arterial Road (11,12,13,14,15)
- Collector Road (21,22,23)
- Local Road (30)
- Centroid Connector

 Southwest Chatham County Study Area





Facility Type (Buildout 2 Constrained)

- Interstate/Freeway
- Access Ramp
- Arterial Road
- Collector Road
- Local Road
- Centroid Connector

 Southwest Chatham County Study Area



- *Number of Lanes:*

The total number of roadway lanes from the 2030 CCIS model was reviewed and is presented on **Figure 2.4**. With the exception of I-16 and I-95 and a small section of Pooler Parkway just south of I-16, the 2030 CCIS model designates all roadways within the SW Sector as two-lane facilities.

The SW Sector Plan model included the addition of the major internal roadways (see **Figure 2.1**). Both lane-constrained and unconstrained travel demand model runs were completed as part of the analysis; the model runs and results are discussed later in this summary. The resulting lane configuration for the proposed roadway network within the SW Sector is presented as **Figure 2.5**. As presented on **Figure 2.5**, the majority of the planned facilities within the SW Sector are four lane facilities, with the following exceptions:

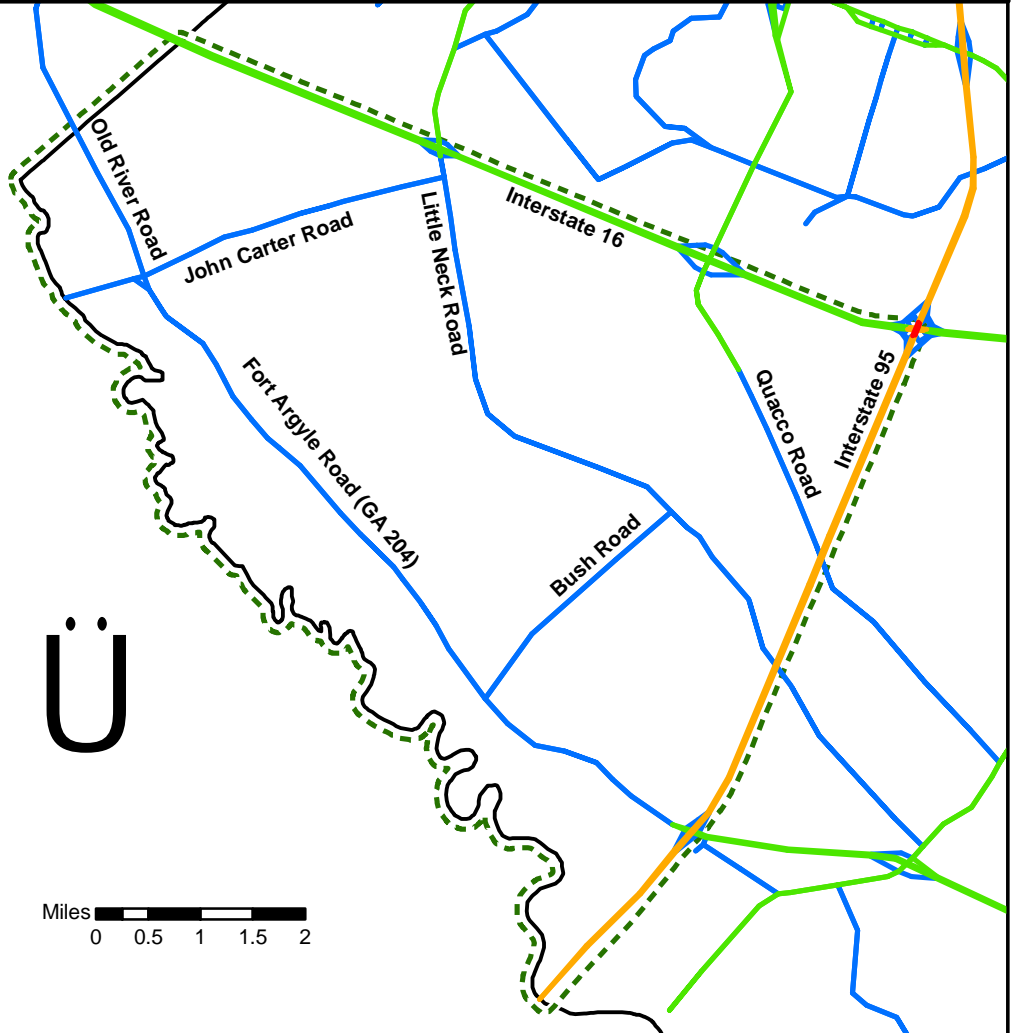
- Little Neck Road (6 to 8 lanes) from New Hampstead Parkway north to I-16
- Pooler Parkway / Quacco Road (6 lanes)
- GA 204 (6 lanes) from Belford Spine Road south to I-95
- Northern segment of Quacco Road to GA 204 Connector
- John Carter Road (2 lanes) west of GA 204
- Connector (2 lanes) from Old River Road to new “unnamed” road near new I-16 interchange

Traffic Analysis Zones (TAZs) and Centroid Connectors

The CCIS travel model included 27 traffic analysis zones (TAZs) in the SW Sector Area. Based upon review of the master plans for both the New Hampstead and Belford PUDs and future land use map, many of the original 27 TAZs were split to create a refined 65-TAZ structure within the SW Sector. The location of the TAZs and the refined centroid connectors for the new TAZ structure were developed based upon the following criteria:

- TAZ boundaries were developed based upon geographic locations of planned development “pods”. Specifically, geographic areas separated by natural features (i.e. rivers/wetlands) and also segregated by major land use types (commercial, residential and mixed-use land uses) to adequately test the future conditions along each roadway facility.
- Centroid connector locations were estimated based upon most feasible and probable driveway/access locations.

Figure 2.6 presents the original CCIS TAZ structure and centroid connector locations; **Figure 2.7** presents the refined SW Sector Plan TAZ structure including 65 zones.



Number of Lanes (Chatham County Interstate Study Model)

- 2 Lanes
- 4 Lanes
- 6 Lanes
- 8 Lanes


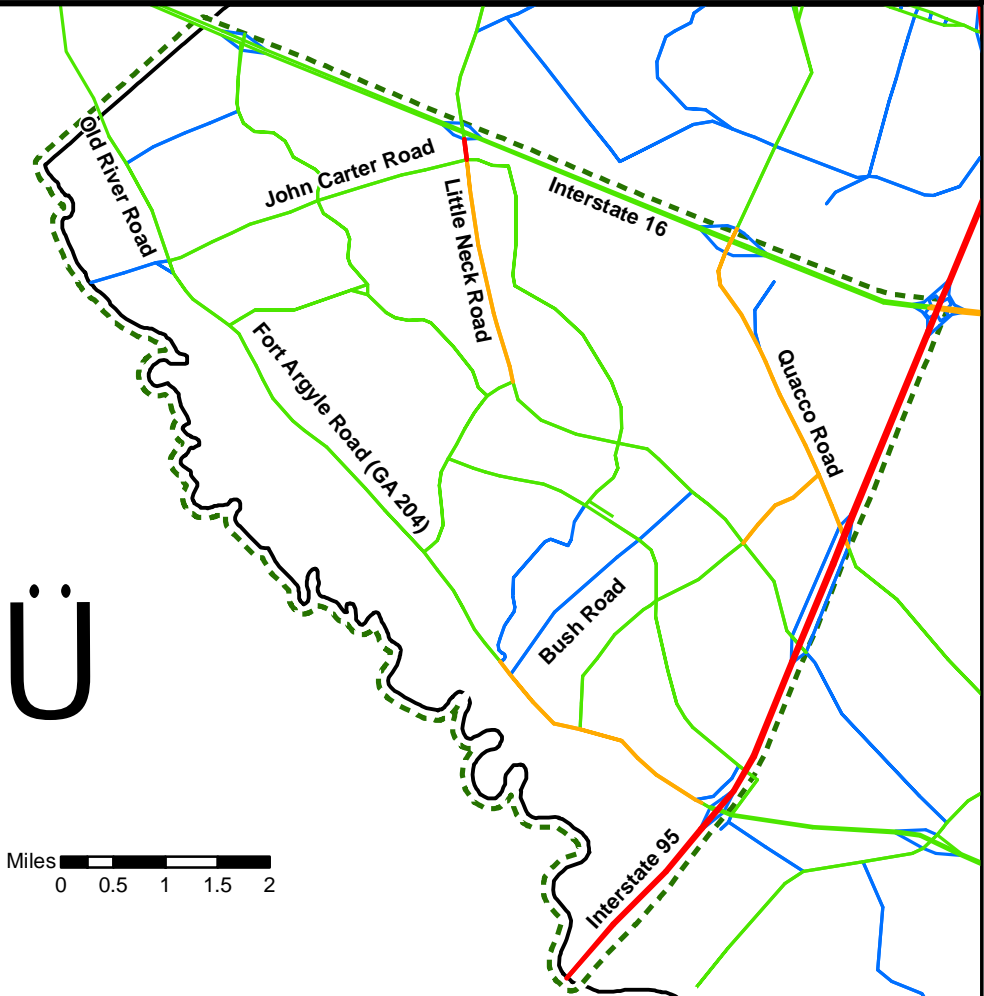
 Southwest Chatham County Study Area



Figure 2.5



Number of Lanes - Constrained Buildout Models
Southwest Sector Plan Model

- 2 Lanes
- 4 Lanes
- 6 Lanes
- 8 Lanes


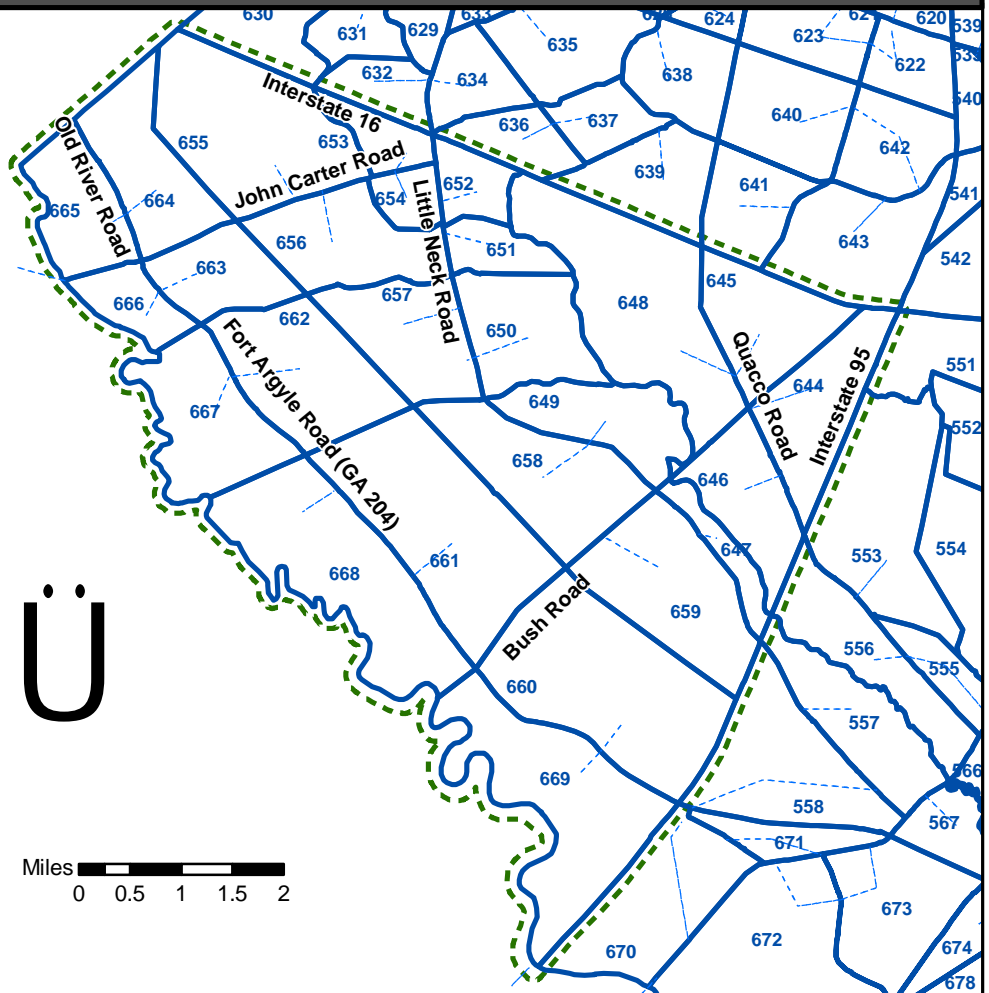
 Southwest Chatham County Study Area



Figure 2.6



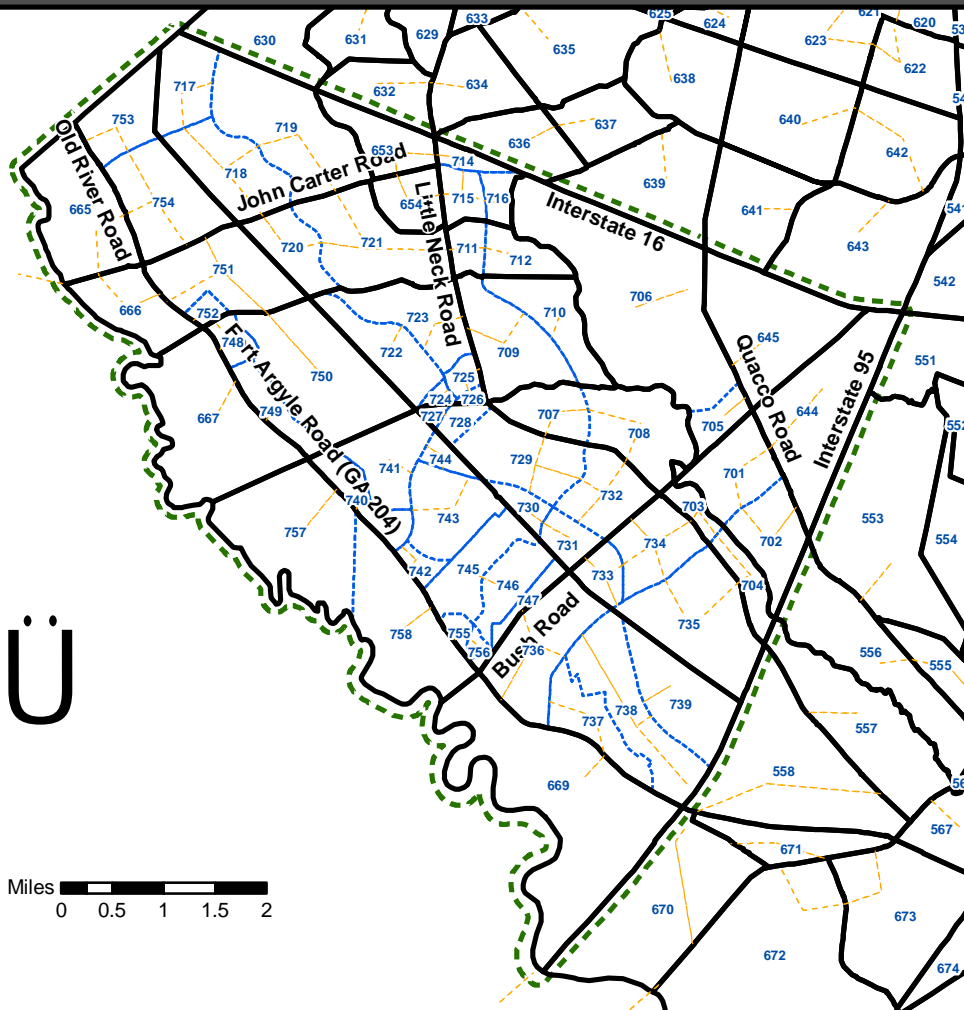
Traffic Analysis Zone (TAZ) Structure -
Chatham County Interstate Study Model

- Centroid Connectors
- CCIS Model TAZs

Southwest Chatham County Study Area



Figure 2.7



Traffic Analysis

- Centroid Connectors
- CCIS Model TAZ Zones
- Additional TAZ Zones

 Southwest Chatham County Study Area



Socioeconomic Data Development

Subsequent to development of the refined TAZ structure and road network for the SW Sector, socioeconomic (SE) data was developed to test three (3) different land development scenarios including the 2030 horizon year and two buildout scenarios (designated Buildout Scenario One and Buildout Scenario Two). The following is a summary of the various development scenarios and the respective SE data development rationale for each scenario.

- *2030 Horizon Year*

MPC staff projections (population and number of households) for the 2030 horizon year were utilized as the basis for the 2030 projections for the SW Sector and all of Chatham County. Employment data projections for the SW Sector area only were determined using the MPC 2030 population projections as a basis and the following methodology:

1. Utilized New Hampstead and Belford PUD Traffic Impact Studies and most recent master plans to obtain proposed development quantities;
2. Utilized ITE Trip Generation Manuals to develop equivalency data to estimate the number of employees for proposed development land use types;
3. Allocated the proposed employment data for the New Hampstead and Belford PUDs to their respective TAZs (based upon the refined TAZ structure developed for the SW Sector);
4. Developed a PUD ratio of equivalent commercial/office land uses to the residential development based upon the existing proposed PUDs within the SW Sector;
5. Reviewed the MPC's Future Land Use Map to determine the amount of potential development (and equivalent employment) for PUD and employment-related land uses for the other TAZs (excluding New Hampstead and Belford TAZs) within the SW Sector through 2030. This projection was based upon the amount of residential development projected by MPC staff for the SW Sector through 2030.

For areas within Chatham County outside the SW Sector, employment data from the CCIS was utilized without modification.

- *Buildout – Scenario One*

MPC staff projections (population and number of households) for the buildout scenario were utilized as the basis for the Buildout – Scenario One projections for the SW Sector and all of Chatham County.

Population/household/housing unit data from the CCIS model TAZ structure (27 TAZs) was allocated into the new TAZ structure (65 TAZs) using percentage of developable upland area. Revised employment estimates for the SW Sector area were developed using the quantity of residential development projected by the MPC at Buildout. The employment SE data for the remaining portions of Chatham County (outside the SW Sector) were developed using the CCIS 2030 TAZ-level employment projections escalated using the same factor as the countywide population growth projected from the 2030 horizon to Buildout - Scenario One (56.9%).

- *Buildout – Scenario Two*

A revised estimate of population/households/housing units was developed for the SW Sector using the following methodology:

1. Applied New Hampstead net average housing unit density to PUD areas on Future Land Use Map (FLUM) for developable upland area only using the following steps:
 - o Used Minimum developable PUD coverage: 5% of gross TAZ area;
 - o Assumed 10% vacancy (households), which is consistent with MPC estimation practice;
 - o Used MPC pop/housing unit.
2. Used MPC 2030 population/households/housing units for Non-PUD SW Chatham areas using the following steps:
 - o Allocated total population/households/housing unit data from CCIS 27 TAZs to new (65 TAZ) structure using percentage of developable upland area;
 - o Reduced population/households/housing units assigned to each new zone by proportion of developable area of PUD/Non-PUD.
3. Population and household projections for select TAZs were refined based upon detailed review of the projected Master Plans for the SW Sector PUDs as well as existing and future land use information.

MPC staff projections (population and number of households) were utilized for the area outside the SW Sector area.

Revised employment projections for Buildout – Scenario Two are based upon the population and housing unit projections for this Scenario following the same methodology used for Buildout Scenario One. The employment data for the remaining portions of Chatham County (outside the SW Sector) were developed using the CCIS 2030 employment projections by TAZ escalated using same factor as countywide population growth projected from the 2030 horizon to Buildout - Scenario Two (61.8%).

Table 2.3 presents a summary of the population, housing unit, and total employment projections for the three development Scenarios: 2030 Horizon Year, Buildout One and Buildout Two.

Table 2.3 - Socioeconomic Data Projections for 2030 and Buildout Scenarios

Data Element	2030 Horizon Year			Buildout Scenario 1			Buildout Scenario 2		
	SW Sector	Chatham County	SW Sector % of County Total	SW Sector	Chatham County	SW Sector % of County Total	SW Sector	Chatham County	SW Sector % of County Total
Housing Units	14,080	161,196	8.7%	34,216	251,664	13.6%	43,239	260,687	16.6%
Population	32,385	351,523	9.2%	78,539	548,180	14.3%	97,147	566,788	17.1%
Total Employment	8,098	218,731	3.7%	10,520	341,098	3.1%	11,883	352,677	3.4%

The SE data sets for the 2030 horizon year and two Buildout Scenarios were utilized for the travel demand analyses. **Figures 2.8** and **2.9** present the 2030 Horizon Year SE data, **Figures 2.10** and **2.11** present the Buildout - Scenario One SE data, and **Figures 2.12** and **2.13** present the Buildout - Scenario Two SE data.

External Station Traffic Data

The external station traffic data within the CCIS model was utilized without modification for the 2001 base year and 2030 horizon year. For the two buildout scenarios, an estimated buildout year was determined based upon an average annual percentage population growth from 2001 to 2030. Corresponding external station traffic count data was escalated (by each respective station) to the same projected buildout year using the 2001 to 2030 CCIS growth rates.

Travel Demand Model Alternative Analysis

A refined travel demand model (using the refined roadway network and TAZ structure discussed previously) was utilized to test the proposed roadway network within the SW Sector. Numerous analyses / model run iterations were completed for the SW Sector for the 2030 horizon and two buildout scenarios.

Initial lane-constrained model runs were completed for the 2030 horizon and two buildout scenarios (Buildout Scenario One and Two). These initial lane-constrained runs included coding each roadway segment within the SW Sector as a two-lane facility. Subsequent to reviewing these initial lane-constrained results, unconstrained model runs were completed for each of the three scenarios to better understand travel demand free from influences from localized congestion. These unconstrained runs removed the “constraint” that potential congestion would have on trip path/routing to allow the model to forecast trip assignment under ideal conditions.

Using the results from both the initial lane-constrained and unconstrained analyses, a final set of lane-constrained model runs were completed using the recommended roadway lane assignments. Traffic volumes were obtained and subsequently translated to volume-to-capacity (v/c) ratios for each roadway segment. Level-of-service (LOS) was then calculated using the equivalency table presented in **Table 2.4**²⁰.

Table 2.4 – LOS and Volume-to-Capacity Ratios

LOS	Volume-to-Capacity Ratios
LOS A, B or C	< 0.70
LOS D	0.70 – 0.85
LOS E	0.85 – 1.00
LOS F	>1.00

Figures 2.14a and **2.14b** present the projected traffic volumes and level-of-service for the 2030 horizon year; **Figures 2.15a** and **2.15b** present the projected traffic volumes and level-of-service for

Buildout Scenario One; **Figures 2.16a** and **2.16b** present the projected traffic volumes and level-of-service for Buildout Scenario Two.

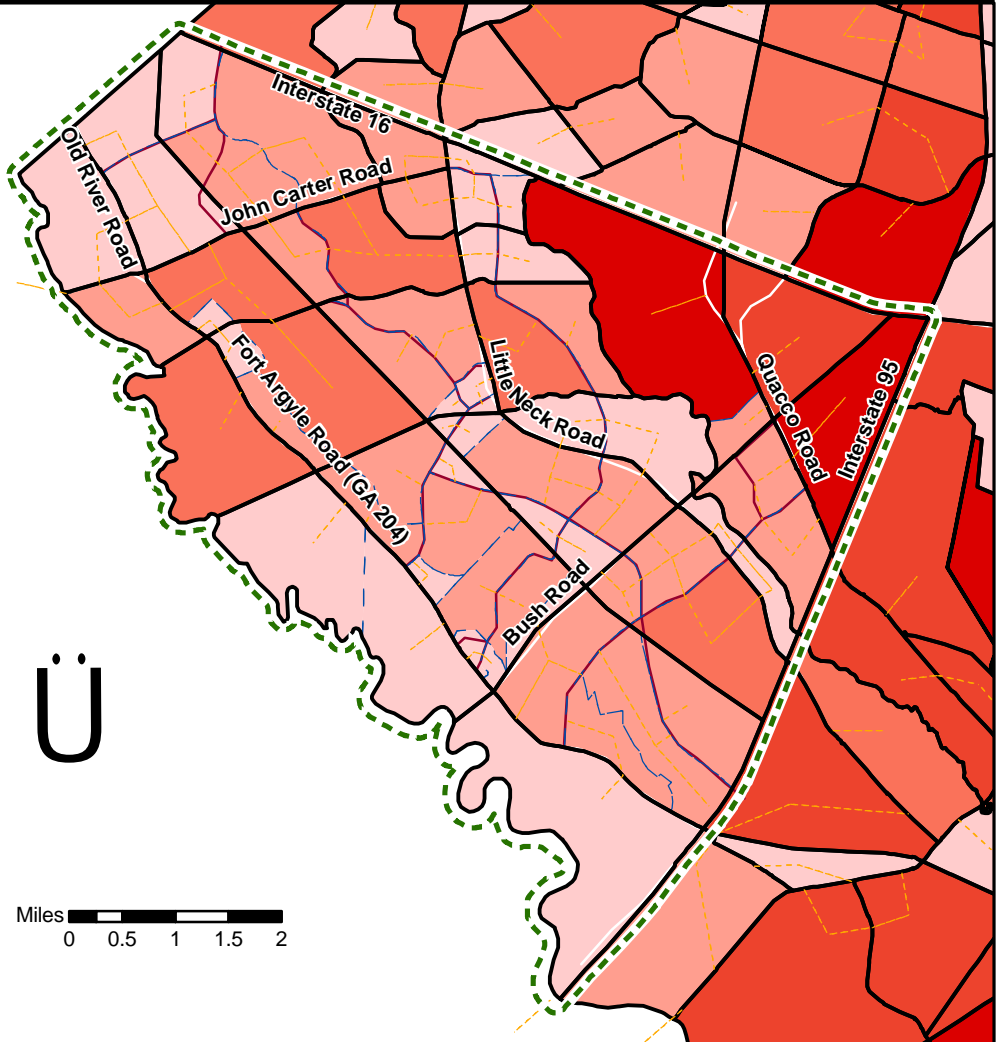
Travel Demand Model Results

The LOS results for each of the three scenarios run using the recommended roadway network were analyzed to determine “critically deficient” segments that are defined by the MPC as roadway segments with a $v/c > 0.85$ (LOS E or F). **Table 2.5** presents the critically deficient segments for each of the three model scenarios run using the final recommended roadway network.

Table 2.5 – Summary of Critically Deficient Segments within the SW Sector

<i>Roadway Segment</i>	<i>2030 Horizon Year</i>	<i>Buildout Scenario One</i>	<i>Buildout Scenario Two</i>
I-95 from Bryan County north past US 80	<i>X</i>	<i>X</i>	<i>X</i>
I-16 from Effingham County Line to east of the I-95 Interchange	<i>X</i>	<i>X</i>	<i>X</i>
GA 204 between the proposed Belford spine road and proposed New Hampstead Parkway		<i>X</i>	<i>X</i>
Little Neck Road between the Quacco Road/SR 204 connector road west to the first New Hampstead development pod			<i>X</i>
Little Neck Road between John Carter Road and I-16			<i>X</i>

As presented on **Table 2.5**, the majority of the roadways within the SW Sector are forecast to operate at LOS D conditions or better for all three of the land use scenarios. Results for Buildout Scenario 2 indicate the worst conditions of the three scenarios since Scenario Two includes the highest projected SE data within the SW Sector.



Population 2030 in TAZ

--- Centroid Connectors

□ CCIS Model TAZs

□ Additional TAZs

0 - 300

301 - 700

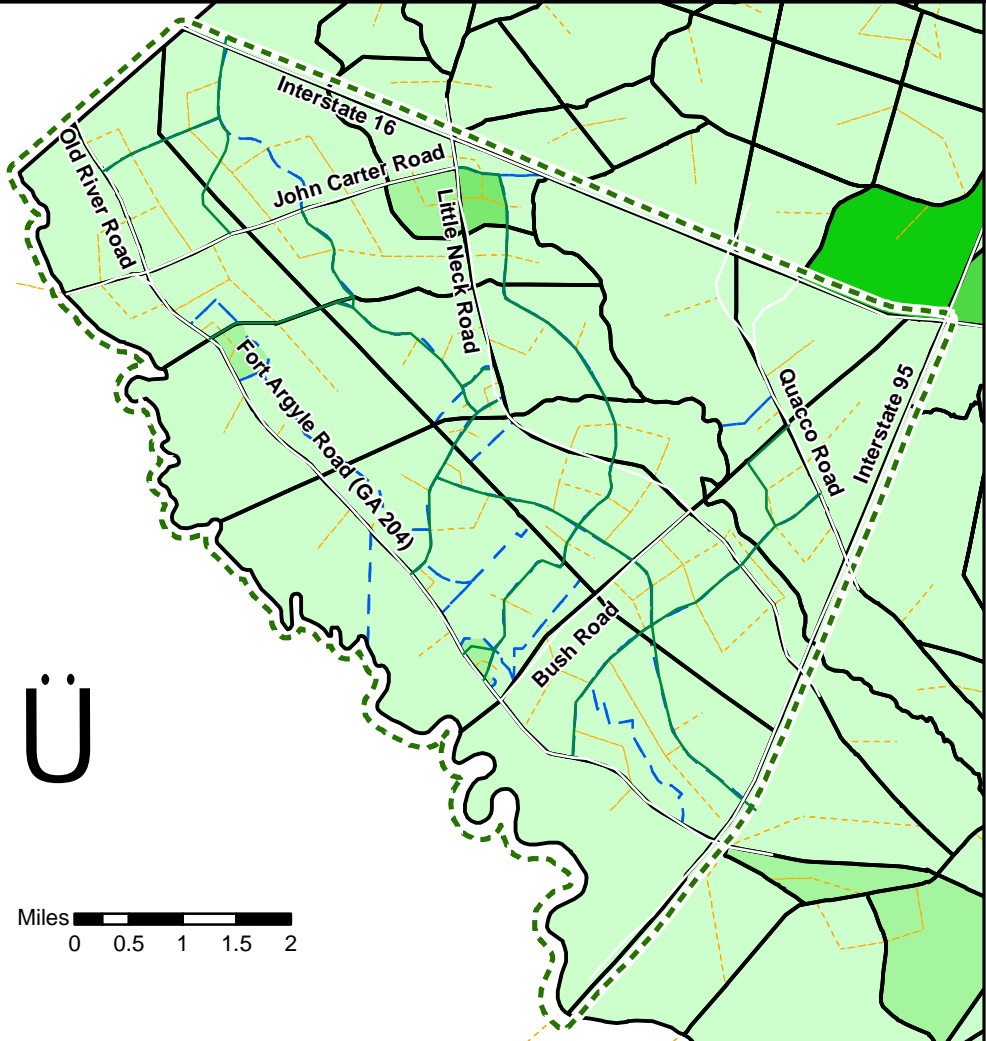
701 - 1500

1501 - 2500

2501 - 5000

Southwest Chatham County Study Area





2030 Employment in TAZ

CCIS Model TAZs

Additional TAZs

Centroid Connectors

0 - 500

501 - 1000

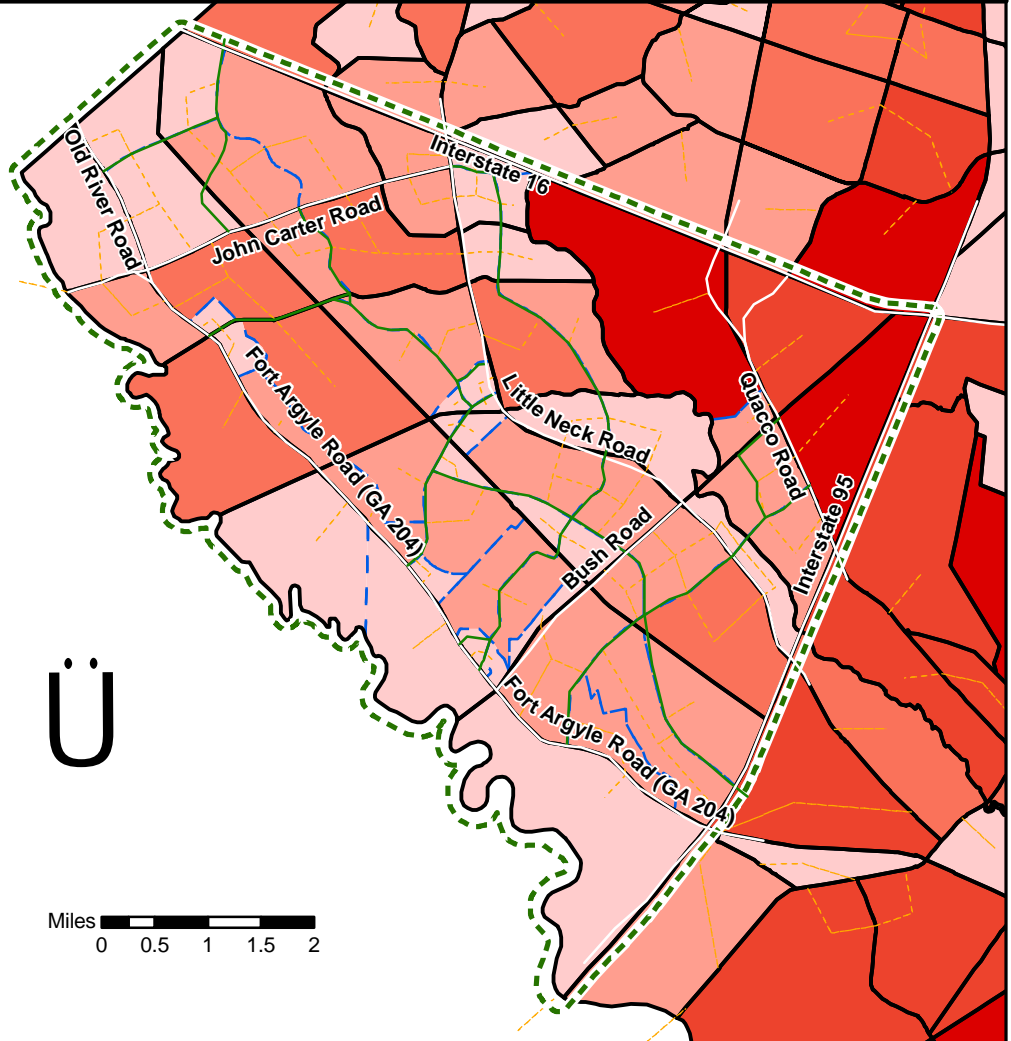
1001 - 2000

2001 - 5000

5001 - 10000



Southwest Chatham County Study Area



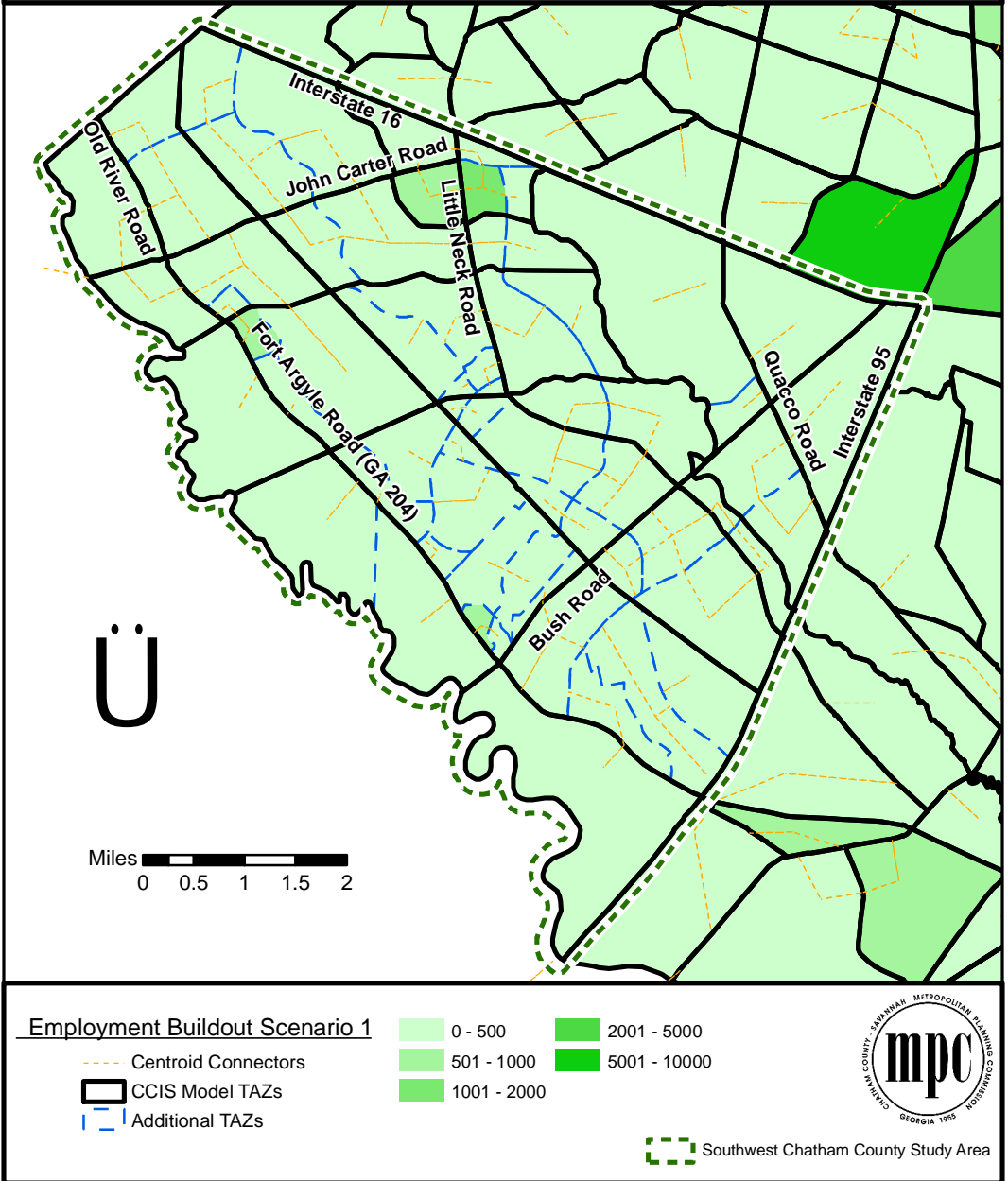
Population in TAZ

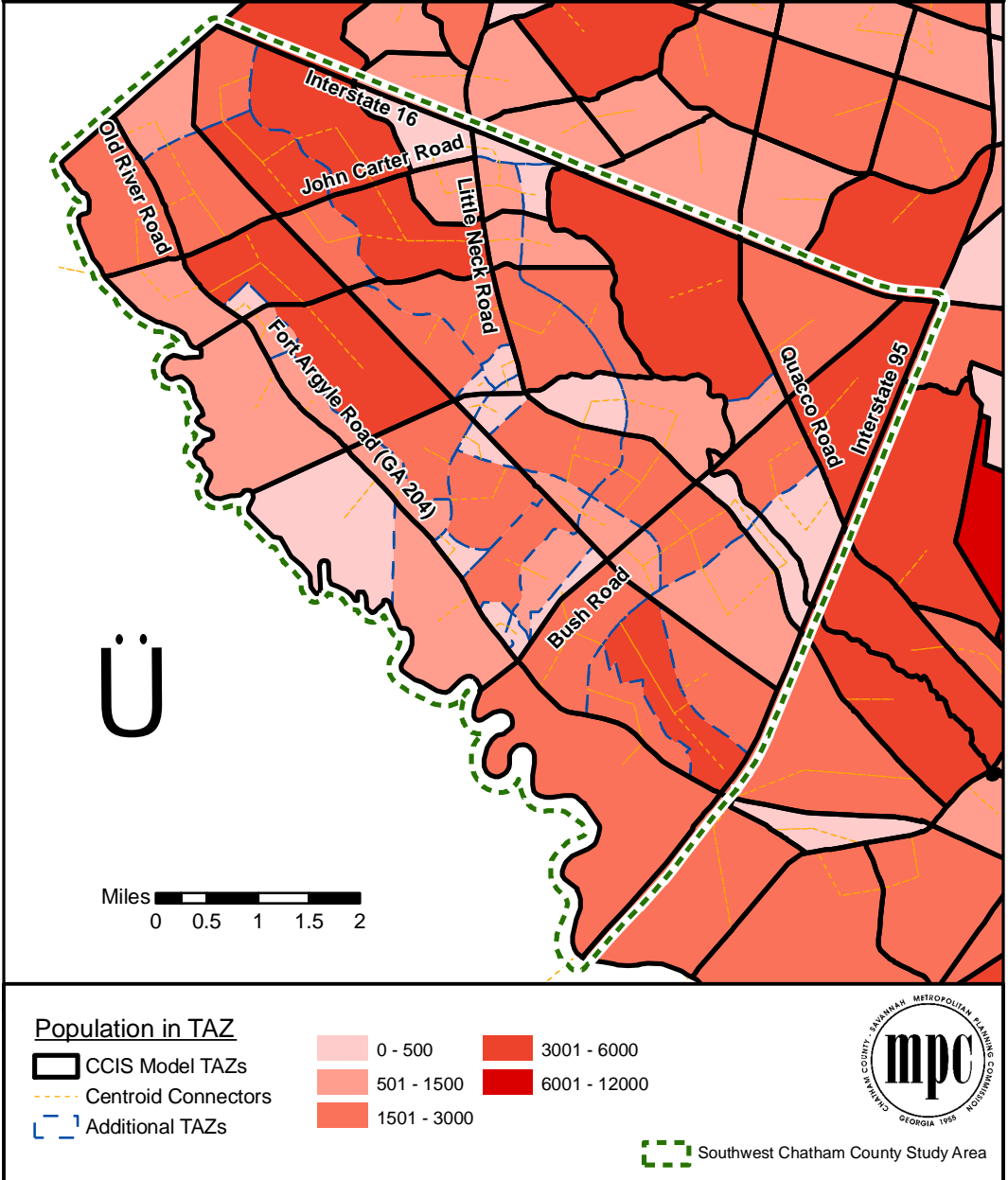
- Centroid Connectors
- CCIS Model TAZs
- Additional TAZs

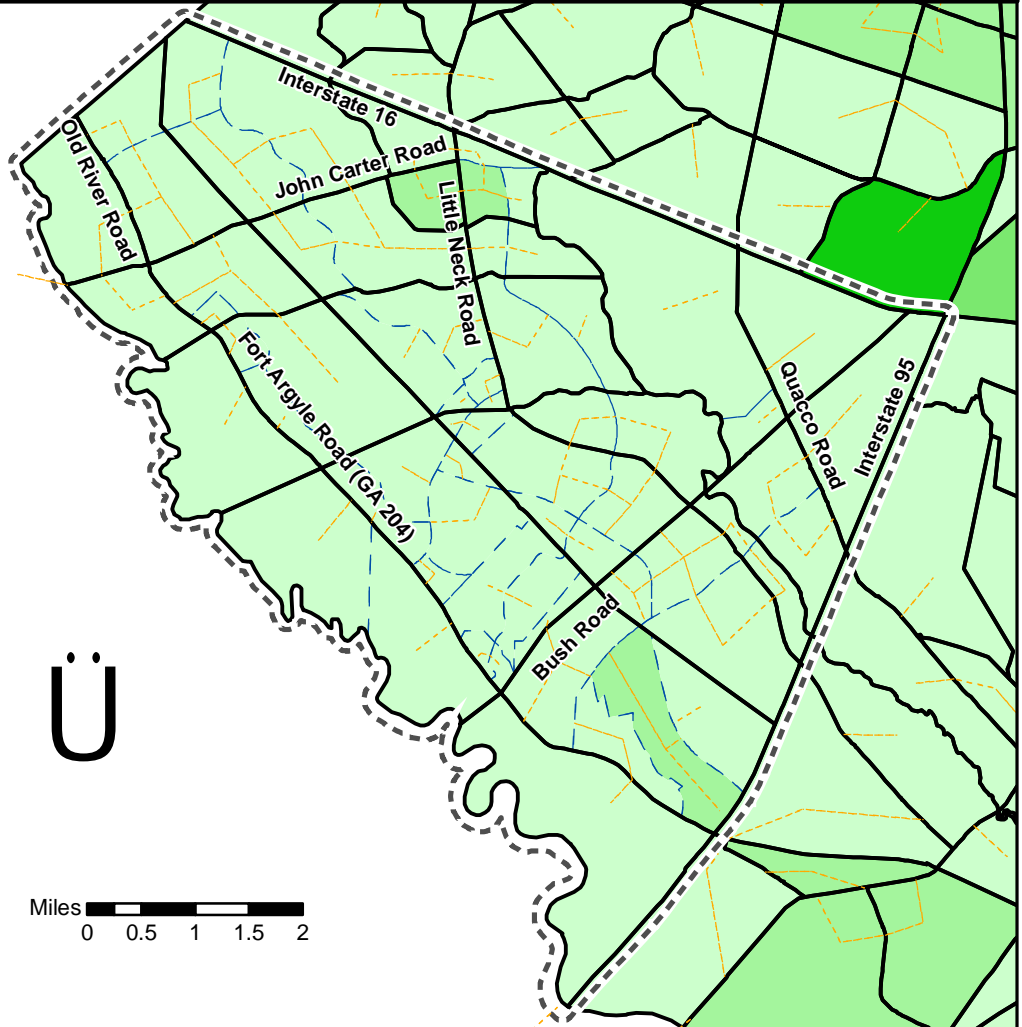
	0 - 300		1501 - 2500
	301 - 700		2501 - 5000
	701 - 1500		

SW Southwest Chatham County Study Area









Employment in TAZ

--- Centroid Connectors

□ CCIS Model TAZs

□ Additional TAZs

0 - 600

601 - 2000

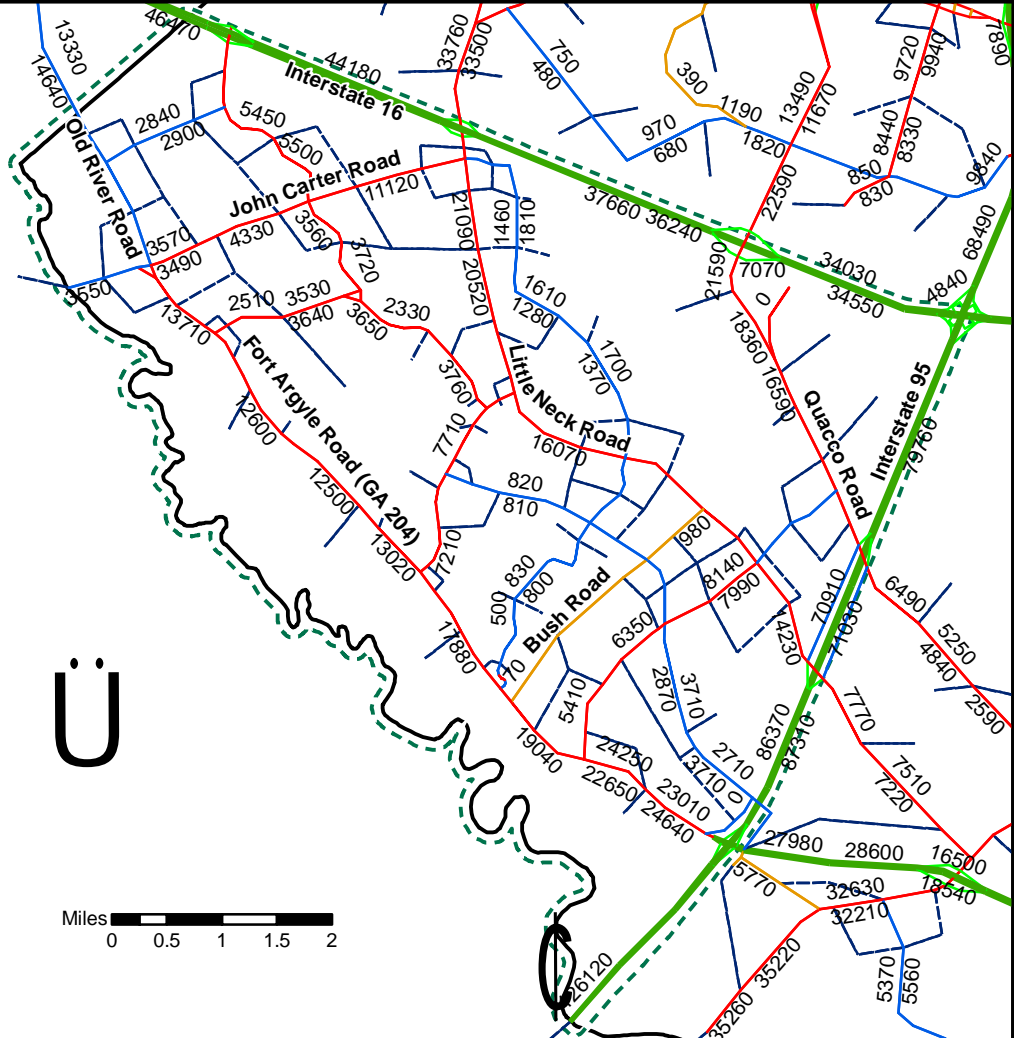
2001 - 5000

5001 - 10000

10001 - 16000



Southwest Chatham County Study Area

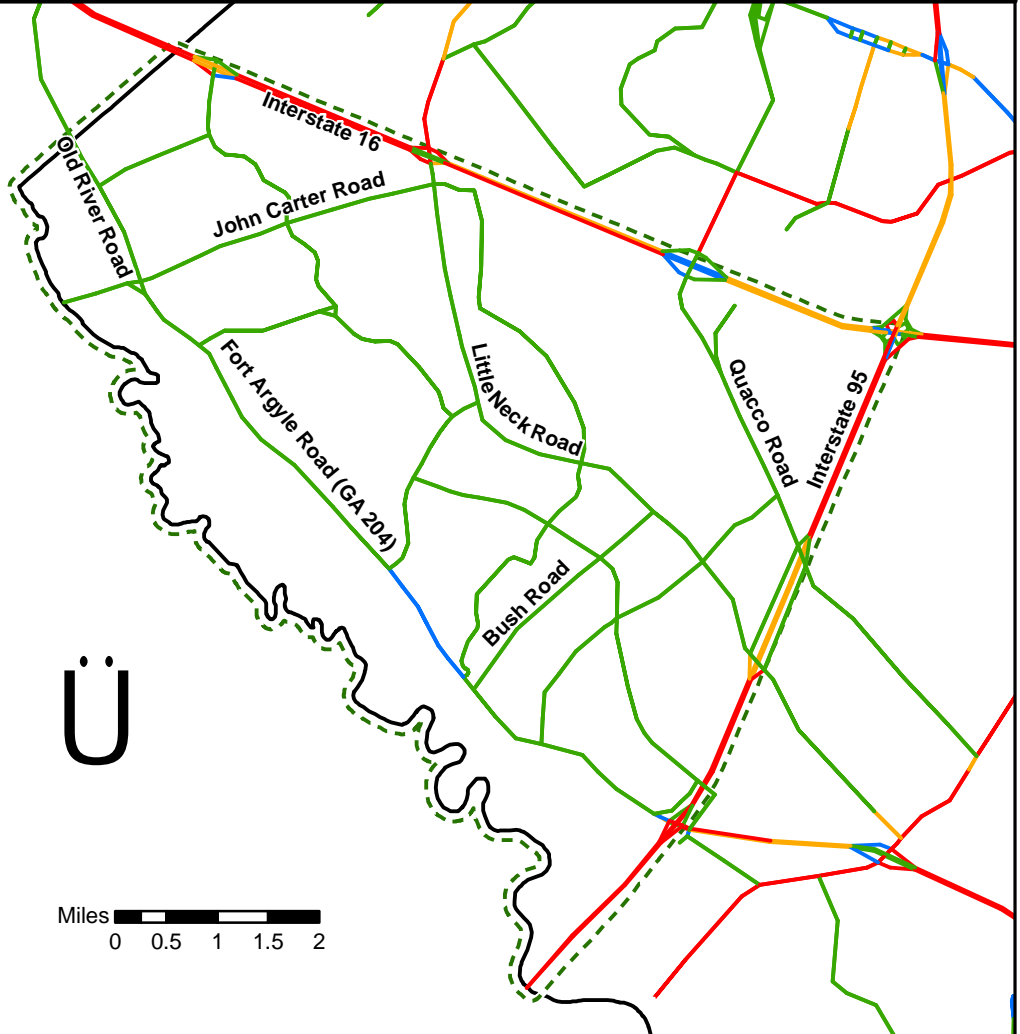


Facility Type

- Interstate/Freeway (1,2,3)
- Access Ramp (6,7,8)
- Arterial Road (11,12,13,14,15)
- Collector Road (21,22,23)
- Local Road (30)
- Centroid Connector (31)


Southwest Chatham County Study Area



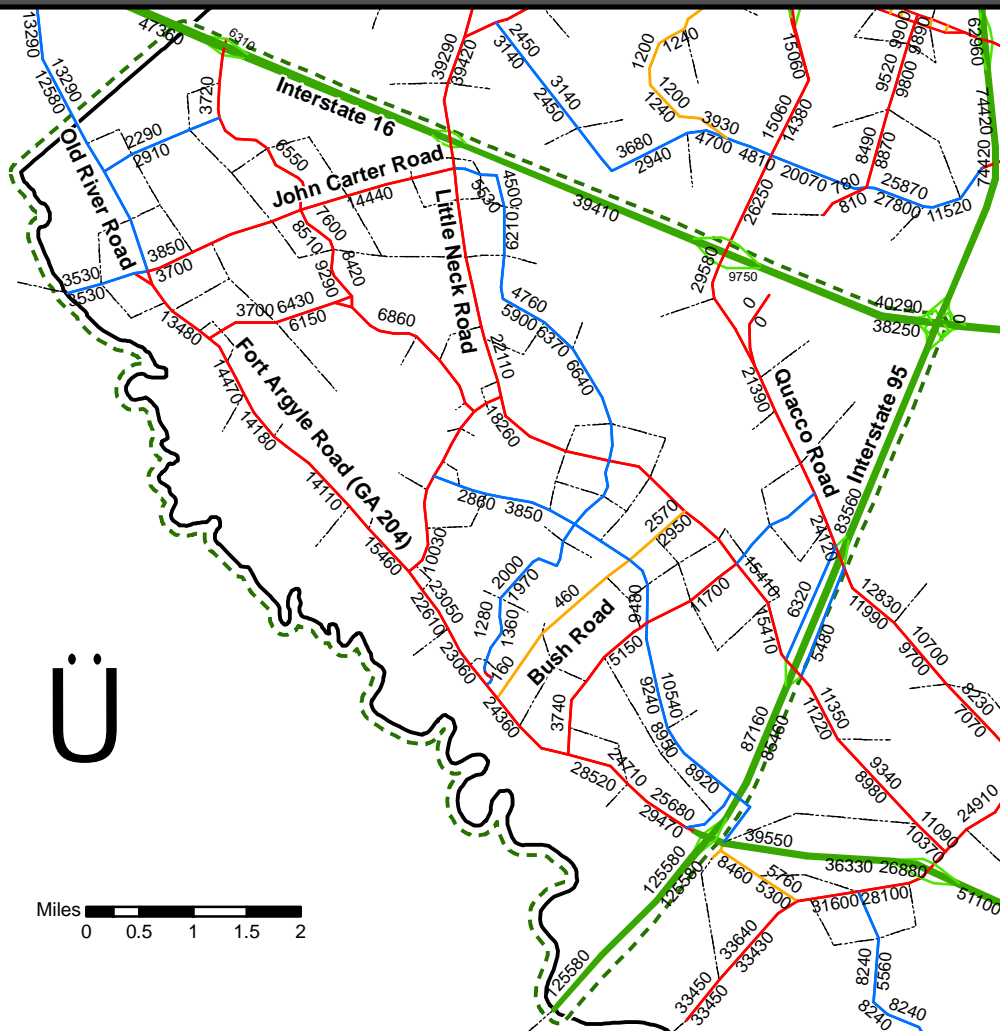


Level of Service (LOS)

- LOS C or better
- LOS D
- LOS E
- LOS F

 Southwest Chatham County Study Area



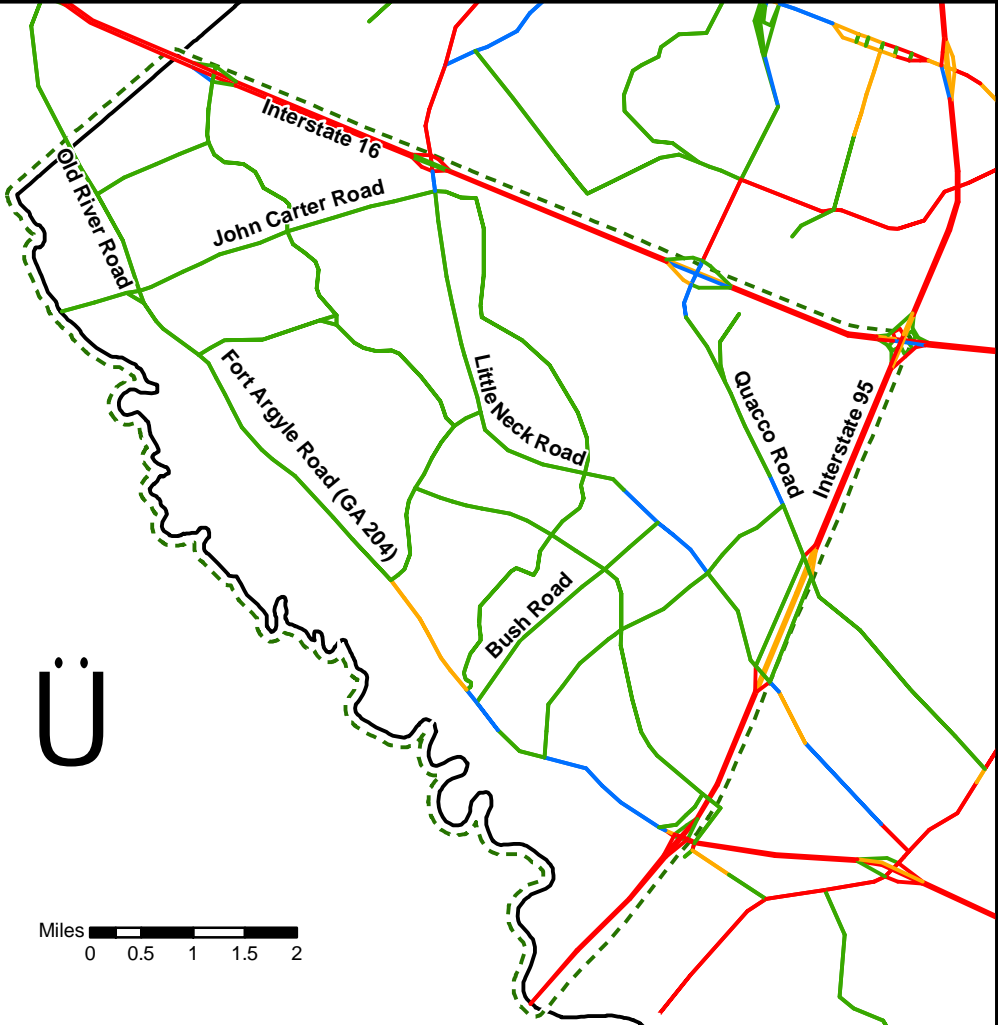


Facility Type

- Interstate/Freeway (1,2,3)
- Access Ramp (6,7,8)
- Arterial Road (11,12,13,14,15)
- Collector Road (21,22,23)
- Local Road (30)
- - - Centroid Connector (31)


SW Southwest Chatham County Study Area



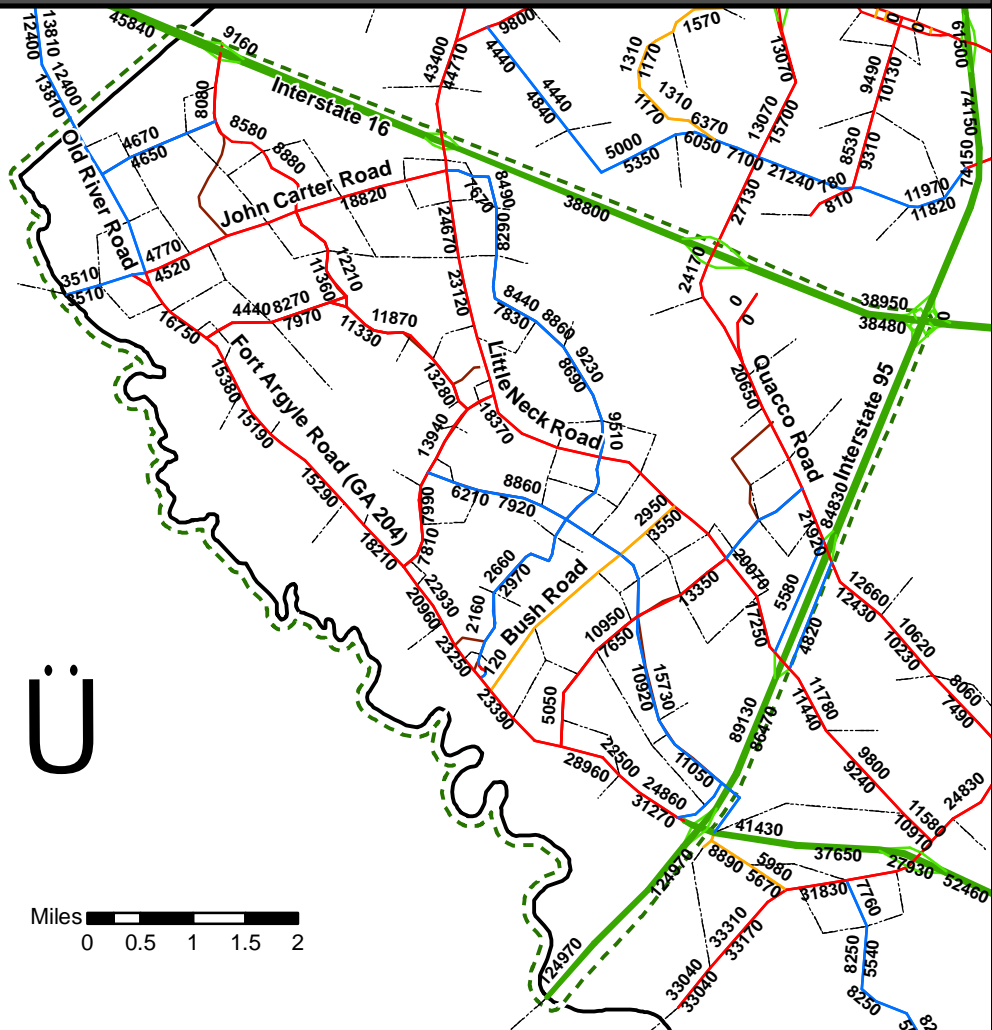


Level of Service (LOS)

- LOS C or better
- LOS D
- LOS E
- LOS F

 Southwest Chatham County Study Area





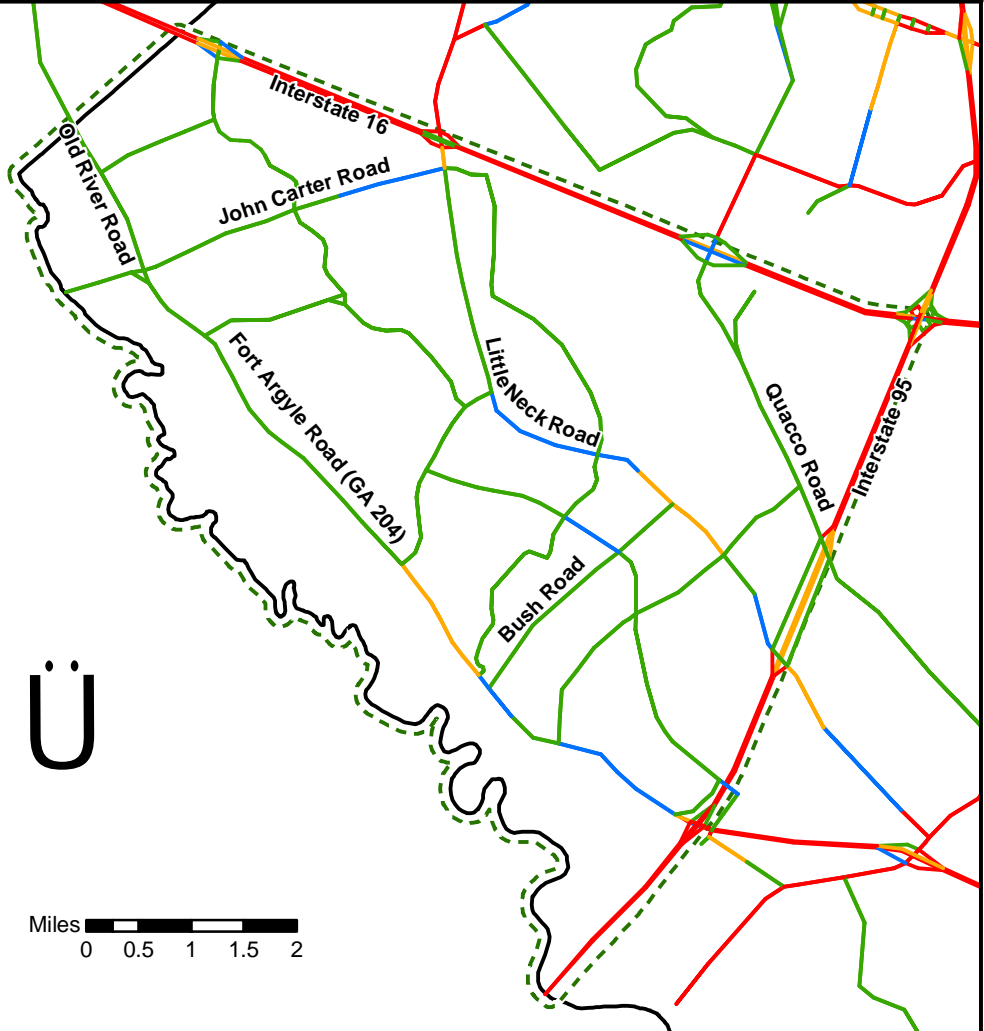
Facility Type

- Interstate/Freeway (1,2,3)
- Access Ramp (6,7,8)
- Arterial Road (11,12,13,14,15)

- Collector Road (21,22,23)
- Local Road (30)
- Centroid Connector


Southwest Chatham County Study Area





Level of Service

- LOS C or better
- LOS D
- LOS E
- LOS F

 Southwest Chatham County Study Area



Model Development - Data Sources

This assessment was completed utilizing several key sources of information:

- Development Master Plan and Traffic Impact Study for the Belford Planned Unit Development (PUD)
- Development Master Plan and Traffic Impact Study for the New Hampstead PUD
- GDOT Chatham County Interstates Study - Travel Demand Model files, and
- Savannah-Chatham Metropolitan Planning Commission (MPC) staff socioeconomic data projections through 2030
- MPC Future Land Use map
- GIS data to determine developable land:
 - National Wetlands Inventory
 - Conservation areas from MPC future land use map (Chatham/Savannah)
 - Conservation areas from local tax digest (Bloomingdale/Pooler)
 - Publicly owned lands from Chatham County parcel file

3

Coordination and Participation

The development of the SW Sector Plan was completed through collaboration with the study team (RS&H staff, City of Savannah, Chatham County and Metropolitan Planning Commission staff) as well as local property owners, developers and other key stakeholders. Several work sessions have been conducted as part of the plan development; a discussion of each work session including participants and key accomplishments follows.

- **Work Session #1**
 - *Participants:* MPC Staff and RS&H Staff
 - *Key Accomplishments:* The preliminary master plans for the New Hampstead and Belford Planned Unit Developments (PUDs) were reviewed and analyzed. The work session resulted in development of a draft roadway network for detailed evaluation using the refined travel demand model (discussed in *Section 2* of this report).
- **Work Session #2**
 - *Participants:* Local Developers, Mike Vacquer, MPC Staff and RS&H Staff
 - *Key Accomplishments:* The preliminary roadway network for the SW Sector Area was reviewed with input received from the participants.

4

Recommended Plan

The recommended plan for the SW Sector Area encompasses several key elements:

- Roadway infrastructure needs and cost estimates;
- Roadway functional classifications and minimum right-of-way (ROW) requirements;
- Policy recommendations including access management and multimodal transportation system integration
- Potential funding mechanisms.

Each element is discussed in more detail in the following sub-sections.

Roadway Infrastructure Needs

The results of the travel demand model analysis presented in Section 2 and off-model assessment activities indicate that several major and minor roadway improvements are required within the SW Sector Area. The recommended improvements are presented in **Table 4.1** and **Table 4.2** below, and presented graphically on **Figure 4.1**.

Recommended Roadway Improvements

Southwestern Chatham County Sector Plan

Figure 4.1

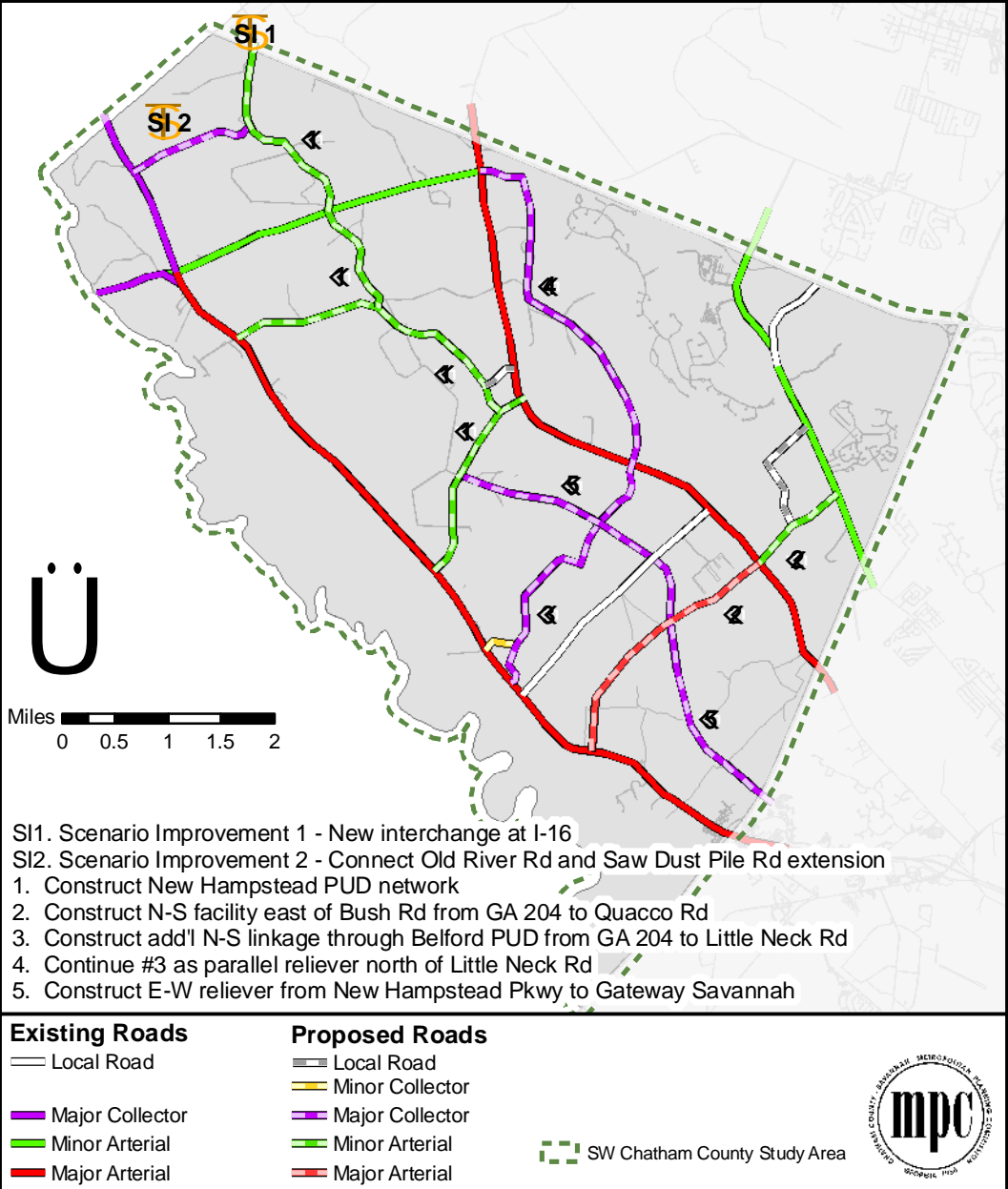


Table 4.1 – Recommended Roadway Improvements For Existing Roadways within the SW Sector Area

Existing Roadway Facility	Existing Lane Configuration	Recommended Improvements for Existing Facilities	Proposed Facility Functional Classification	Approximate Length (miles)
Little Neck Road	2 lanes	Widen to 4 lanes from I-95 to New Hampstead Parkway / Roadway 1	Arterial - Major	4.07
		Widen to 6 lanes from New Hampstead Parkway / Roadway 1 to John Carter Road	Arterial - Major	2.18
		Widen to 8 lanes from John Carter Road to I-16	Arterial - Major	0.20
Pooler Parkway / Quacco Road	2 lanes	Widen 6 lanes within the SW Sector Area (between I-95 and I-16)	Arterial - Minor	3.38
Fort Argyle Road / GA 204	2 lanes	Widen to 6 lanes from I-95 to Belford Spine / Roadway 3	Arterial - Major	2.44
		Widen to 4 lanes from Belford Spine Road / Roadway 3 north to John Carter Road	Arterial - Major	5.05
John Carter Road	2 lanes	Widen to 4 lanes from Little Neck Road to Old River Road / Fort Argyle Road / GA 204	Arterial - Minor	3.04
John Carter Road	2 lanes	Segment south of Old River Road - Not recommended for widening	Collector - Major	0.78
Old River Road	2 lanes	Widen to 4 lanes from John Carter Road to I-95 (beyond SW Sector Area)	Collector - Major	2.75
Bush Road (S&O Canal)	2 lanes	Not recommended for widening	Local Road	2.49

Table 4.2 – Recommended Roadway Improvements For New Roadways within the SW Sector Area

New Roadway Facility ID / Name	New Facility Description	Recommended Number of Lanes	Proposed Facility Functional Classification	Approximate Length (miles)
1 / Highgate Boulevard	New Hampstead Pkwy. To Fort Argyle Road (SR 204)	4	Arterial - Minor	3.11
1 / New Hampstead Parkway	Little Neck Road to Fort Argyle Road (SR 204)	4	Arterial - Minor	1.98
1 / Saw Dust Pile Road	Highgate Boulevard / Roadway 1 to the new I-16 Interchange	4	Arterial - Minor	3.15
2 / Little Neck Road - Fort Argyle Road Connector	Connecting Fort Argyle Road to Little Neck Road at intersection with Quacco Road connector	4	Arterial - Major	2.54
2 / Little Neck Road - Quacco Road Connector	Connecting Quacco Road with Little Neck Road	6	Arterial - Minor	1.06
3 / Belford Spine	Connector between Fort Argyle Road (SR 204) and New Roadway 5	2	Collector - Major	1.81
3 / Belford Spine	Connector between New Roadway 5 and Little Neck Road	4	Collector - Major	0.72
4	New roadway parallel to Little Neck Road from intersection of Belford Spine / Roadway 3 to intersection of John Carter Road	4	Collector - Major	3.52
5	New roadway from I-95 west to New Hampstead Parkway / Roadway 1 intersecting Bush Road, and the Belford Spine / Roadway 3	4	Collector - Major	4.75
Scenario Improvement #1: New Interchange at I-16	New interchange at I-16 with extension of Saw Dust Pile Road	N/A	N/A	N/A
Scenario Improvement #2: Old River Road to Saw Dust Pile Road Extension Connector	New roadway connecting Old River Road and Saw Dust Pile Road Extension	2	Collector - Major	1.19
New Interchange and Frontage Roads at I-95 with Quacco Road and Little Neck Road	Add new partial interchanges at I-95 and Quacco Road and Little Neck Road with one-way frontage road system	2 (per each direction of frontage road system)	N/A	1.08

Roadway Functional Classifications

Functional classification corresponds to the character or type of travel service on a particular roadway. Functional classification (excluding freeways) is often presented in the following three (3) major categories:

- 1) Arterials – This roadway functional classification generally connects the major activity centers/hubs, carries the highest volume of traffic, serves longer destination trips, and has the least amount of land access of the three functional classification types (e.g. least number of driveways/access points).
- 2) Collectors - This roadway functional classification generally serves intermediate length trips, connects arterials to one another, and provides both land access as well as traffic circulation within most land uses.
- 3) Local Roads - This roadway classification generally provides the highest amount of access to adjacent land access and connections to the higher roadway classifications.

Figures 4.2 and 4.3 are from the American Association of State Highway and Transportation Officials (AASHTO) “A Policy on Geometric Design of Highways and Streets” (also known as the AASHTO Greenbook). **Figure 4.2** presents typical suburban roadway functional classification geography, while Figure 4.3 presents a generalized relationship between land access (e.g. driveways/curb-cuts) in relation to typical roadway functional classifications.

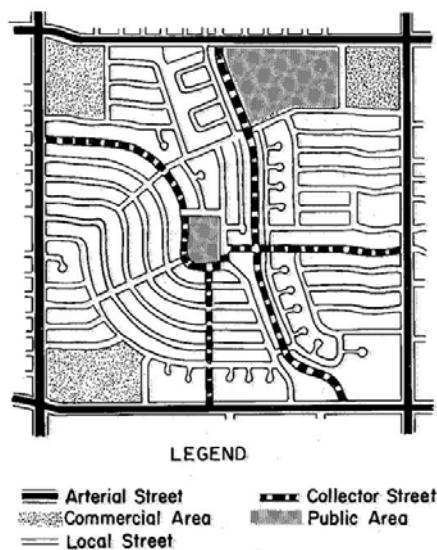


Figure 4.2 – Suburban Functional Classifications
Source: AASHTO “Greenbook”, 1990

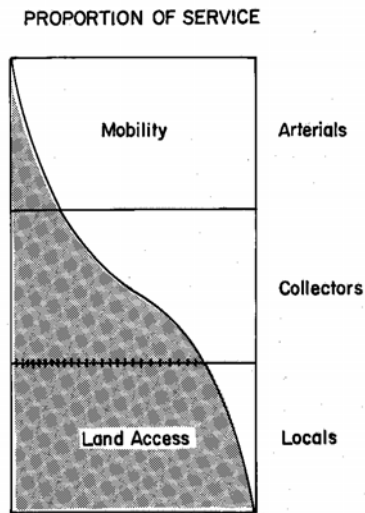


Figure 4.3 – Land Access versus Functional Classification
Source: AASHTO “Greenbook”, 1990

Tables 4.1 and **4.2** also present the proposed functional classification designations for the existing and new roadways within the SW Sector Area. Within the SW Sector Area, additional functional classification categories (major and minor) have been developed for the arterial and collector classifications; thereby creating five distinct categories:

- Arterial – Major
- Arterial – Minor
- Collector – Major
- Collector - Minor
- Local roadways

Table 4.3 presents the recommended design criteria for each of the five (5) functional classifications. The specific design criteria have been developed through review of the GDOT Design and Driveway Manual and other sources. The specific design criteria for each of the proposed functional classifications include:

- Number of Lanes *
- Design Speed and Speed Limits
- Estimated Required Right-of-Way (ROW) *
- Median Type
- Multimodal Treatments
- Access Management Treatments

* Additional information on the recommended ROW and number of lanes is presented in a subsequent section of this report.

Table 4.3
Proposed Typical Sections by Functional Classification

Class	Lanes	Design Speed**	Speed Limit	Right-of-Way*	Right-of-Way (Guidance)	Median**	Multimodal	Access Management
Arterial								
Major	4-8	55	45-50 (50)	200' - 230'	200'	24' - 44' (raised or depressed - RoW)	Multi-Use Trail	Highly Controlled (2640' median opening, 1000' driveway)
Minor	2-4 (4)	55	35-45 (40)	150' - 200'	150'	4'-24' (24') (flush or raised - AADT)	Sidewalk and Striped Bike Lane or Multi-Use (1320' median opening, 500' driveway)	Elevated Control
Collector								
Major	2-4 (4)	45	30-35 (35)	120 - 150'	130'	none-16' (16') (flush or raised - AADT)	Sidewalk and Paved Shoulder	GDOT Standard w/Shared Parcel Access
Minor	2-4 (2)	35	30	100'	100'	none	Sidewalk and Paved Shoulder	GDOT Standard
Local Road								
	2	30	25	40' 40' (or existing)		none	Sidewalk	GDOT Standard

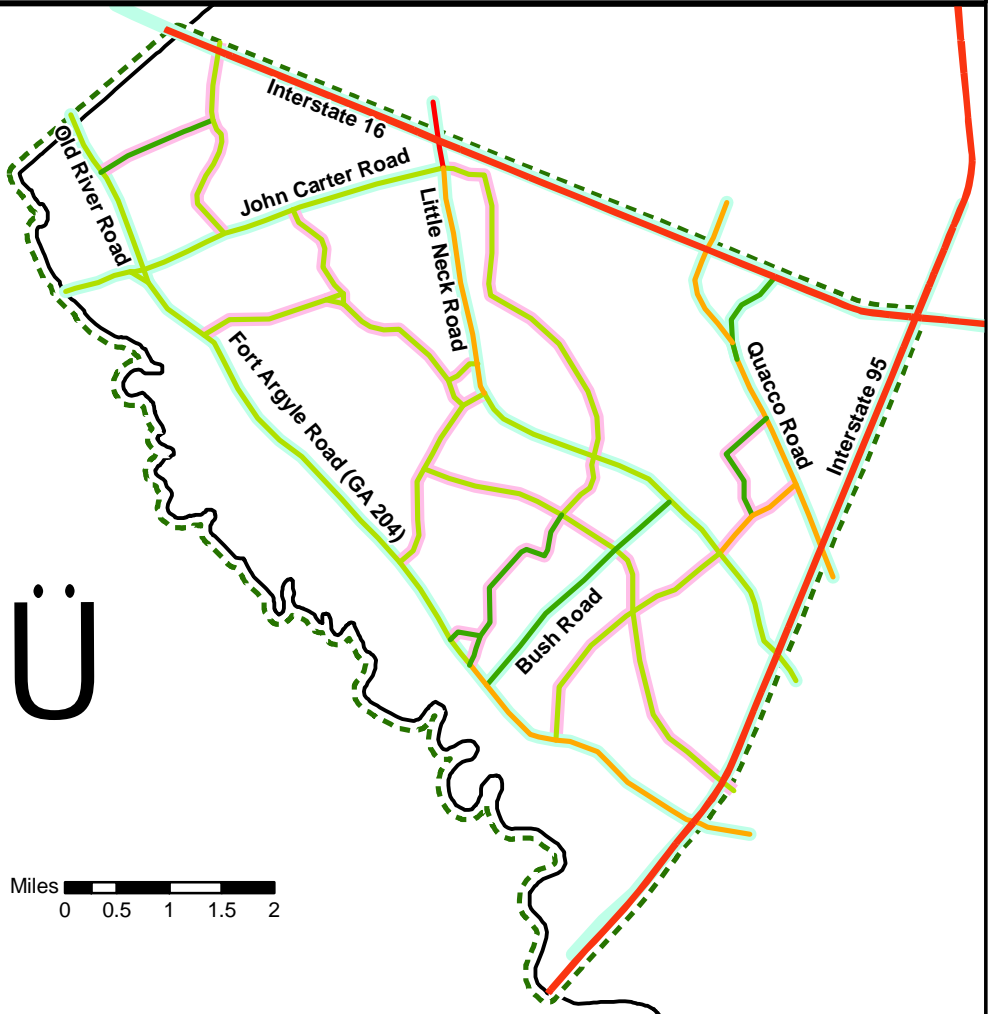
Note: Where applicable, values have been based on GDOT Design and Driveway Manuals

* Right-of-Way values are rough approximations required to support ultimate lane construction and multimodal treatment

** Design Speed and Median Width values reflect suburban character of Sector Area and are not intended to match standard GDOT Urban or Rural typical sections

Figure 4.4 presents the recommended number of lanes for the existing and new roadways within the SW Sector Area, while Figure 4.5 presents the recommended centerline ROW widths for the same roadway network.

Figure 4.4



Recommended Lane Configuration

- 2 Lanes
- 4 Lanes
- 6 Lanes
- 8 Lanes
- Interstates
- Existing
- Proposed

Southwest Chatham County Study Area





Proposed ROW

- 100 Feet
 - 130 Feet
 - 150 Feet
 - 200 Feet
 - 230 Feet
- Road Buffer relative to ROW
- Interstates

Southwest Chatham County Study Area



Minimum Rights-of-Way (ROW) and Number of Lanes

Minimum right-of-way recommendations and number of lanes for the various functional classification designations within the SW Sector Area have been developed to accommodate specific design elements including multimodal treatments (bicycle and pedestrian facilities) as well as access management treatments including medians. The recommended ROW widths were determined by evaluating current City of Savannah and Chatham County design requirements, as well as drawing from research conducted on design guidelines for approximately 20 peer jurisdictions across the United States (mainly within Georgia and Florida). A listing of the peer jurisdictions reviewed is presented below as **Table 4.4**; a summary of the detailed research findings are presented in **Appendix B**.

Table 4.4 - Peer Jurisdiction Review for Minimum ROW Widths and Number of Lanes by Functional Classification

State	Jurisdiction
<i>Georgia</i>	City of Woodbine
	City of Hinesville
	McIntosh County
	Town of Thunderbolt
	Garden City
	City of Brunswick
	City of Pembroke
	City of Savannah
	Glynn County
	Liberty County
	City of Valdosta
	City of Lake Park, GA
	City of Duluth
<i>Florida</i>	Hillsborough County
	St. Luce County
	Indian River County
	Lake County, FL
	Martin County
<i>Oregon</i>	City of Glendale

Cost Estimates

Cost estimates for the above listed roadway projects were determined by using a cost estimating tool; the tool uses current local unit costs (on a per mile basis) and other parameters such as number of structures. The estimated improvement costs for existing roadways are presented in **Table 4.5**, while the cost estimates for new roadways are presented on **Table 4.6**. Detailed project costing sheets are provided in **Appendix C**.

Table 4.5 – Estimated Project Costs for Existing Roadway Improvements within the SW Sector Area (Costs in Million \$)

Existing Roadway Facility	Existing Lane Configuration	Recommended Lane Configuration	Approximate Length (miles)	PE Cost	ROW Cost	Construction Cost	Total Cost
Little Neck Road	2 lanes	4 lanes	4.07	\$1.78	\$7.09	\$17.83	\$26.70
		6 lanes	2.18	\$1.32	\$5.06	\$13.18	\$19.57
		8 lanes	0.20	\$0.16	\$0.53	\$1.63	\$2.33
Pooler Parkway / Quacco Road	2 lanes	6 lanes	3.38	\$2.05	\$7.85	\$20.54	\$30.45
Fort Argyle Road / GA 204	2 lanes	6 lanes	2.44	\$1.71	\$5.67	\$17.15	\$24.53
		4 lanes	5.05	\$2.06	\$8.80	\$20.62	\$31.49
John Carter Road	2 lanes	4 lanes	3.04	\$1.20	\$5.30	\$12.01	\$18.51
	2 lanes	2 lanes	0.78	N/A	N/A	N/A	N/A
Old River Road	2 lanes	4 lanes	2.75	\$0.83	\$4.79	\$8.32	\$13.95
Bush Road (S&O Canal)	2 lanes	2 lanes	2.49	N/A	N/A	N/A	N/A

N/A – Not recommended for Widening

Table 4.6 – Estimated Project Costs for New Roadway and Interchange Improvements within the SW Sector Area (Costs in Million \$)

New Roadway Facility ID / Name	New Facility Description	Recommended Number of Lanes	Approximate Length (miles)	PE Cost	ROW Cost	Construction Cost	Total Cost
1 / Highgate Boulevard	New Hampstead Pkwy. To Fort Argyle Road (SR 204)	4	3.11	\$1.24	\$4.70	\$12.39	\$18.32
1 / New Hampstead Parkway	Little Neck Road to Fort Argyle Road (SR 204)	4	1.98	\$0.76	\$2.99	\$7.85	\$11.63
1 / Saw Dust Pile Road	Highgate Boulevard / Roadway 1 to the new I-16 Interchange	4	3.15	\$1.38	\$4.76	\$13.76	\$19.89
2 / Little Neck Road - Fort Argyle Road Connector	Connecting Fort Argyle Road to Little Neck Road at intersection with Quacco Road connector	4	2.54	\$1.02	\$4.43	\$10.15	\$15.59
2 / Little Neck Road - Quacco Road Connector	Connecting Quacco Road with Little Neck Road	6	1.06	\$0.51	\$1.85	\$5.13	\$7.49
3 / Belford Spine	Connector between Fort Argyle Road (SR 204) and New Roadway 5	2	1.81	\$0.52	\$2.10	\$5.19	\$7.81
3 / Belford Spine	Connector between New Roadway 5 and Little Neck Road	4	0.72	\$0.25	\$1.09	\$2.53	\$3.88
4	New roadway parallel to Little Neck Road from intersection of Belford Spine / Roadway 3 to intersection of John Carter Road	4	3.52	\$1.18	\$5.31	\$11.81	\$18.31
5	New roadway from I-95 west to New Hampstead Parkway / Roadway 1 intersecting Bush Road, and the Belford Spine / Roadway 3	4	4.75	\$1.59	\$7.17	\$15.94	\$24.70

Table 4.6 – Estimated Project Costs for New Roadway and Interchange Improvements within the SW Sector Area (Costs in Million \$)

New Roadway Facility ID / Name	New Facility Description	Recommended Number of Lanes	Approximate Length (miles)	PE Cost	ROW Cost	Construction Cost	Total Cost
Scenario Improvement #1: New Interchange at I-16	New interchange at I-16 with extension of Saw Dust Pile Road	N/A	N/A	\$0.66	\$2.32	\$6.60	\$9.58
Scenario Improvement #2: Old River Road to Saw Dust Pile Road Extension Connector	New roadway connecting Old River Road and Saw Dust Pile Road Extension	2	1.19	\$0.24	\$1.38	\$2.42	\$4.05
New Interchange and Frontage Roads at I-95 with Quacco Road and Little Neck Road	Add new partial interchanges at I-95 and Quacco Road and Little Neck Road with connecting one-way frontage road system	2 (per each direction of frontage road system)	1.08	\$0.95	\$5.02	\$9.45	\$15.41

Potential Funding Mechanisms within the SW Sector Area

The following provides a summary of potential funding mechanisms for completion of transportation improvement projects in within the SW Sector Area. This summary includes a detailed discussion of the following funding mechanisms:

- Direct Impact fees
- Special Purpose Local Options Sales Tax (SPLOST)
- Community Improvement Districts (CIDs)
- Infrastructure Development Districts (IDDs)
- Tax Increment Financing (TIF), and
- Special Service Districts (SSDs)
- Proportionate Fair Share (Florida applicability only)

Direct Impact Fees

In order to adopt an ordinance, the Georgia Development Impact Fee Act - Title 36 of the Official Code of Georgia (O.C.G.A.) requires local governments to first undertake the following:

- 1) Include a Capital Improvements Element (CIE) in the comprehensive plan that projects future public service needs, outlines a schedule of capital improvement projects, and establishes service area designations as well as level-of-service criteria for public facilities in each service area. The CIE must be adopted prior to the adoption of the impact fee ordinance. The CIE must be updated annually.
- 2) Establish a development impact fee advisory committee that is comprised of at least 40% real estate development community representatives.
 - a. Prioritize identified projects with Committee into a five-year schedule of system improvements
 - b. Identify specific project information such as service area location, start and completion dates, costs, funding sources for each project including percent derived from impact fees.
- 3) Hold two public hearings regarding the ordinance.

A direct impact fee is imposed by local government via ordinance, and designed to require a development to pay for its impact upon the entire infrastructure system. It may cover a variety of services. In Georgia, direct impact fees can be used towards:

- Libraries
- Recreation
- Water supply
- Roads and Bridges
- Public safety (police, fire, jails, EMS)
- Wastewater treatment
- Storm water management

The impact fee ordinance must include:

- 1) Schedule for different land uses that imposes fees on a per unit and service area basis
- 2) Fee based on actual (or reasonable estimates of) service costs, taking into account present value of future funding sources
- 3) Provision that a party may request an individual assessment of impact fees for their property
- 4) Provisions for refunds/credits if impact fee exceeds fees or dedications already made
- 5) Mechanism for appealing imposition of impact fees

DCA Suggested Considerations:

- 1) Identify services to be covered by impact fees for which major capital costs will be incurred over the next 5-10 years that will not be covered by normal general funding sources.
- 2) Find a balance in developing the fee structure for the impact fees considering what the market will be able to absorb without discouraging growth.
- 3) Some communities initiate an impact fee program based upon services that are less complicated to quantify each development's fair share of the costs (i.e. recreation, libraries, police, EMS, water supply and waste water treatment versus fire, roads and bridges and storm water management).
- 4) Impact fee program must be consistent with local comprehensive plan.
- 5) Designated impact fee service delivery areas must not conflict with county service delivery strategy.
- 6) Development impact fee structure with lowest fees in locations where the community would like to see the most development (i.e. infill areas), and higher in less desirable locations, and the highest in environmentally sensitive areas that the community would not like to see any development.

Georgia Impact Fee Legal Considerations²¹:

- 1) Legal definitions in the O.C.G.A. §36.71 are important:
 - a. Impact fee ordinance is tied to CIE; the CIE ties future improvements to "System Improvements" defined as "capital improvements that are public facilities and are designed to provide services to the community at large"
 - b. Impact fees can only support "System Improvements" not "Project Improvements" defined as "improvements that provide service for a specific project".
- 2) Impact fees can only be used to pay for the impacts from new growth (not used to mitigate existing system deficiencies)
- 3) Impact fees cannot exceed a proportionate share of the cost of the system improvements
- 4) Impact fees not used within six (6) years must be refunded to the developers
- 5) Counties and municipalities must keep detailed records specifying the category for the collected fees, the payee of fees, and the service area for which the fees are collected. If fees are collected for several service types (i.e. parks and roads), and if one of the projects is not built within six years, then that portion of the impact fee would need to be refunded.

Georgia Jurisdictions with Existing Impact Fee Programs

The following presents a sample of existing impact fee programs within Georgia. **Table 4.7** presents a summary of the existing fee rates for select residential and commercial development types within each respective jurisdiction, and a breakdown of fees related to transportation improvements.

Table 4.7 Sample of Adopted Impact Fees for Georgia Jurisdictions

Jurisdiction	Services Included	Example Impact Fees				
		Service Area	Development Type	Fee (%) for Transportation / Roads	Admin. Fee (%)	Total Fee
City of Roswell	<ul style="list-style-type: none"> Public Safety Parks & Recreation Transportation 	Entire City	Detached Residential	\$161.68 (7.9%) per dwelling unit	\$59.93 (3%)	\$2,057.56 per dwelling unit
			Attached Residential	\$109.54 (6.0%) per dwelling unit	\$53.24 (3%)	\$1,827.86 per dwelling unit
			General Office	\$279.54 (30.3%) per 1000 sq. ft	\$26.88 (3%)	\$923.01 per 1000 sq.ft.
			Shopping Center	\$425.54 (56.2%) per 1000 sq. ft	\$22.07 (3%)	\$757.76 per 1000 sq.ft.
Cherokee County	<ul style="list-style-type: none"> Library Fire Protection Sheriff's Patrol Parks & Recreation Public Safety Facility Roads 	Unknown	Detached Residential	\$251.50 (15.3%) per dwelling unit	\$47.54 (3%)	\$1,643.55 per dwelling unit
			Attached Residential (Condo / Town House)	\$154.00 (10%) per dwelling unit	\$44.62 (3%)	\$1,542.43 per dwelling unit
			General Office	\$266.20 (21.4%) per 1000 sq. ft	\$35.90 (3%)	\$1,241.14 per 1000 sq.ft.
			Shopping Center	\$356.77 (41.7%) per 1000 sq. ft	24.76 (3%)	\$855.99 per 1000 sq.ft.
Effingham County	<ul style="list-style-type: none"> Parks Public Safety Roads Sewer Water 	Entire County	Detached Residential	\$988 (16.5%) per dwelling unit	Not Specified	\$6,000 per dwelling
			Attached Residential	\$681 (17.1%) per dwelling unit	Not Specified	\$3,992 per dwelling
			General Office	Varies by sq. ft. (\$830 to \$1,200) per 1000 sq. ft	Not Specified	Varies (\$860 to \$1,250) per 1000 sq. ft.
			Commercial / Retail Center	Varies by sq. ft. (\$1,240 to \$2,070) per 1000 sq. ft	Not Specified	Varies by Sq. ft. (\$1,360 to \$2,170) per 1000 sq. ft

Sources: City of Roswell, Cherokee County and Effingham County websites; Georgia Jurisdictions with Proposed Impact Fee Programs

The City of Douglasville and Douglas County are both currently evaluating adopting impact fee ordinances. **Table 4.8** presents a summary of the proposed fee rates for select residential and commercial development types within each of these two jurisdictions. The following summarizes a few key elements of the proposed impact fee program for each jurisdiction.

- Douglas County:
 - Impact fees for roadways are proposed for unincorporated Douglas County only (separate fee structure for City of Douglasville)
 - Roadway impact fees will only fund system improvements that expand the capacity of arterial roads that are not part of the State system. Developers will be required to dedicate rights-of-way and complete full project-level improvements²².
- City of Douglasville:
 - Roadway impact fees will only fund system improvements that expand the capacity of arterial roads. Developers will be required to dedicate rights-of-way and complete full project-level improvements²³.

Gordon County is an example of a County where impact fees for roads were evaluated but not recommended. As part of the *Gordon County, GA Impact Fee Feasibility Analysis Report* (July 21, 2006) impact fees were recommended for public safety, parks and recreation, and for library services, but not for roads. The report recommends the continued use of Special Purpose Local Options Tax (SPLOST) funds (discussed below) for use in roadway expansions, and also recommends that developers be required to complete traffic impact studies to determine their “fair share cost” with implementation of mitigation improvements.

Table 4.8
Sample of Proposed Impact Fees for Georgia Jurisdictions

Jurisdiction	Services Included	Example Impact Fees				
		Service Area	Development Type	Fee (%) for Transportation / Roads	Admin. Fee (%)	Total Fee
Douglas County (excludes City of Douglasville)	<ul style="list-style-type: none"> • Parks • Libraries • Arterial Roads • Sheriff • Jails • Fire / Rescue <i>* City of has separate set of proposed impact fees, with City residents only funding Countywide libraries, jails and fire\rescue.</i>	Entire County	Detached Residential	\$3,943 (59.1%)	Not Specified	\$6,673 per dwelling
			Attached Residential	\$2,715 (60.1%)	Not Specified	\$4,514 per dwelling
			General Office	Varies by sq. ft (\$2,320 to \$4,640) per 1000 sq. ft	Not Specified	Varies (\$2,650 to \$5,160) per 1000 sq. ft.
			Shopping Center	Varies by sq. ft. (\$5,440 to \$8,950) per 1000 sq. ft	Not Specified	Varies (\$5,940 to \$9,760) per 1000 sq. ft.
City of Douglasville	<ul style="list-style-type: none"> • Parks • Libraries • Arterial Roads • Police • Jails • Fire / Rescue 	Entire City	Detached Residential	\$5,604 (76.0%)	Not Specified	\$7,370 per dwelling
			Attached Residential	\$3,859 (76.4%)	Not Specified	\$5,050 per dwelling
			General Office	Varies by sq. ft (\$3,760 to \$6,390) per 1000 sq. ft	Not Specified	Varies (\$4,110 to \$6,950) per 1000 sq. ft.
			Shopping Center	Varies by sq. ft. (\$7,490 to \$12,330) per 1000 sq. ft	Not Specified	Varies (\$8,040 to \$13,220) per 1000 sq. ft.

Source: Links to Douglas County and City of Douglasville Impact Fee Studies provided on Gordon County website

Special Purpose Local Options Sales Tax (SPLOST)

The Special Purpose Local Option Sales Tax (SPLOST) law was enacted by Georgia legislators in 1985. The law authorizes a county tax of 1 percent on items subject to the state sales tax for funding capital projects. SPLOST is neither a municipal nor a joint county-municipal tax, such as the regular Local Option Sales Tax (LOST). As such, only a County's Board of Commissioners can authorize a SPLOST.

SPLOST proceeds can be used for capital improvement projects that would otherwise be paid for with General Fund and property tax revenues. Often, the cost savings for the community is great, as projects funded through the use of bonds could cost up to twice as much as those that are paid for using SPLOST cash reserves.

SPLOST also has the benefit of allowing communities to streamline construction of transportation projects, since no state or federal funding is involved thereby minimizing the associated project permitting and procedural "red tape".

Of Georgia's 159 counties, only Chatham County has the distinction of implementing SPLOST when it first became authorized (1985) and continuing it every year thereafter. Under the law, the 1% increase in the sales tax can be used for a specific period/dollar amount for certain capital projects (i.e. roads, courthouses, recreation and libraries) and other projects by interlocal agreement, such as drainage and civic and community-based improvements.

SPLOST has proved a popular revenue source. Voters have approved it in every election (1985, 1989, 1993, 1995, 1998, 2003). With an 80%+ approval rate, the current tax will expire September 30, 2008.

Through the added penny, Chatham County will have generated some \$1 billion, including interest earnings. Add to this amount some \$500 million in funds leveraged from the Georgia Department of Transportation for road projects, the value of an added penny totals some \$1.5 billion. This number does not include matching state funds for other projects and private foundation funding for civic and community projects.

Source: Chatham County Website, August 2007

Community Improvement Districts (CIDs)

Community Improvement Districts (CIDs) are a means for property owners within commercial areas of Georgia to establish special tax districts to fund infrastructure improvements (O.C.G.A. § 99-9-7.1). In Georgia, state law restricts the use of Community Improvement Districts (CIDs) to commercial districts and specifically forbids the inclusion of residential communities into a Community Improvement District. CIDs do not replace city or county government, but are a mechanism to supplement existing funding streams. The following types of projects can be funded by CIDs:

- Street\road construction
- Sidewalks and streetlights
- Parking facilities
- Water and sewage systems
- Terminal and dock facilities
- Public transportation, and
- Parks and recreational facilities

CIDs are constitutionally established local governments entirely run by district leaders (typically business/property owners including real estate and banking interests. CIDs self-assess themselves, but are also able to leverage large sums of state and federal funds. CIDs are typically popular with local city and county governments where they are located. One drawback of CIDs is that their autonomous legal framework and ability to leverage state and federal monies may cause accountability issues for CIDs to local governments and the general public.

There are numerous CIDs located within the Metro Atlanta region, including:

- Town Center CID
- Fulton and DeKalb Perimeter CIDs
- North Fulton CID
- Cumberland CID
- Gwinnet Place CID
- Gwinnett Village CID
- Highway 78 CID
- Buckhead CID
- Midtown Atlanta CID
- Downtown Atlanta CID
- South Fulton CID

There are no other CIDs known to exist within the State outside of the Metro Atlanta region.

Infrastructure Development Districts (IDDs) – PROPOSED

Infrastructure Development Districts (IDDs) are a new proposed mechanism for Georgia included as part of House Bill (HB) 1323 titled the Georgia Smart Infrastructure Growth Act of 2006. A similar bill (HB 414) titled the Rural Georgia Economic Development Act of 2006 would create Residential Community Improvement Districts (RCIDs).

A measure has been enacted that calls for a constitutional amendment ballot question in November 2008 to enable IDD. If the amendment passes by a majority of the popular vote in November 2008, the legislation will become effective on January 1, 2009.

HB 1323 and IDDs are modeled after Section 190, Community Development Districts (CDDs), of Florida statute, adopted in 1980²⁴. CDDs were created in Florida as a means of relieving local governments from paying for off-site mitigation projects. This is accomplished by creating long-term financing options for developers through the sale of long term tax free municipal bonds. The process for creation and operation of IDDs, mirrors CDDs in Florida, as follows:

1. Developers and land owners petition a “host” local government (city, county or combination) for creation of the IDD. All land owners in the district must sign the petition. The IDD is created if approved by the host government.
2. The IDD is governed by a five (5) member board, four of which must be listed on the petition. Any subsequent elections for board members are held on the basis of one vote per acre of land owned.
3. Based upon the legislation, future property owners will not have the opportunity to vote on three (3) board members until 80 percent of the land in the IDD is sold.
4. IDDs have broader authority, often extending above the authority of the host governments. Some of the key powers include:
 - a) The authority to undertake a wide variety of projects including “any development, improvement, property, utility, facility, works enterprise, or service undertaken or established in accordance with the law”²⁵.
 - b) Ability to “finance, fund, plan, establish, acquire, construct, or reconstruct, enlarge, or extend, equip., operate and maintain systems, facilities, and basic infrastructures” (§ 36-93-8)
 - c) Levy and assess ad valorem taxes
 - d) Establish and collect fees
 - e) Establish and collect special assessments

The primary controversial issues associated with CDDs in Florida are:

1. The districts are not democratic in that they are governed by developers and not residents, and
2. They use tax exempt public financing to reduce the cost of private development (the general public pays for benefits enjoyed by only a few).

IDDs will have similar powers as local governments, but will be developer controlled. IDDs will also be provided public funds for projects benefiting private developments, and will be exempt from constitutional restrictions on debt²⁶.

Tax Increment Financing (TIF) / Tax Allocation Districts (TADs)

Tax Increment Financing (TIF) within Georgia is governed by the Georgia Redevelopment Powers Law (O.C.G.A. § 36-44), and is common in most states across the Country. TIF is a mechanism that allows a local government to capture increases in local property revenues within a specific area (designated as a Tax Allocation District or TAD or also called TIF districts), while using the revenue to finance projects within a specified time period. Once the TAD or TIF district is established, a base year and tax rate are established. The tax “increment” or the increase in assessed property values over the base year values, are then collected over a specified period of time and used to meet the debt service payments. The tax increment district is dissolved after a specified period of time which is included in the original redevelopment plan for the TIF.

The original intent of TIFs was to finance the redevelopment of blighted areas. The use of TIFs to finance development and redevelopment in non-blighted communities has become controversial across the nation leading many states to propose TIF reform laws to restrict the use of public money to finance development in affluent areas. Many states, including Georgia, have included a “but for” test in the TIF statutes that restrict the use of TIFs for blighted or sensitive areas. Specifically, the “but for” test asks the question would development have occurred without the expenditure of public funds. The following is an excerpt from Georgia statute § 36-44-8.(3)(G)(i):

The redevelopment area on the whole has not been subject to growth and development through private enterprise and would not reasonably be anticipated to be developed without the approval of the redevelopment plan or includes one of more natural or historical assets which have not been adequately preserved or protected and such asset or assets would not be reasonably anticipated to be adequately preserved or protected without the approval of the redevelopment plan;

Of particular interest to the MPC in rapidly developing areas within the SW Sector Area is the reference in the statute to natural or historical resources which would not be reasonably anticipated to be adequately preserved. With several large-scale proposed developments (including New Hampstead), an intensive legal review of this statute, including precedent cases within the state, is certainly recommended. Assuming the general public and the elected officials within the MPC region would support the use of TIF within developing areas, this is one potential funding mechanism that may warrant further consideration.

A TAD has been established along Presidents Street just east of the Historic District in Downtown Savannah as a means to help fund infrastructure improvements along this rapidly redeveloping major corridor.

Statewide Transportation Funding Initiatives

Several proposals and resolutions have been brought to the table over the past year to address the statewide funding transportation shortfall. Several proposals have included a new State sales tax and creation of legislation that will allow for two or more counties to join together to vote a one percent

(1%) sales tax dedicated to transportation, where these funds would remain in the partnered counties and their respective municipalities.

As a result, the Georgia Senate adopted Resolution 365 creating the Joint Committee on Transportation Funding. The Joint Committee has met three times since June 2007 and a fourth meeting is scheduled for late August. Any report of findings and recommendations from the Joint Committee for proposed legislation must be made before the committee is abolished on December 31, 2007.

Special Districts, Service Districts, and Special Service Districts (SSDs)

Special Districts

“Special District” is the terminology found in the Georgia State Constitution and Georgia code. Under the home rule section in the state constitution, special districts may be created by general law (by the General Assembly), municipal or county ordinance or resolution for the provision of services within the district and fees, assessments, or taxes may be levied and collected by same law, ordinance, or resolution. (Ga. Const. Art. IX, § II, Para. VI)

The law/ordinance/resolution should:

Create the district; establish geographical boundaries; specify purposes; authorize levy of fees/assessments/taxes within the district; and establish an effective date for the law/ordinance/resolution.

For example: many counties create special districts including only those unincorporated areas of the county for provision of services exclusive to those unincorporated areas.

Service Districts

“Service district” terminology is not found in Georgia code except in relation to mental health facilities.

Special Service Districts

“Special Service District” is the terminology used locally and under the service delivery strategy state code section to refer to districts created under the “Special District” authority. Funding for services within unincorporated portions of a county shall be derived from special service districts created by the county in which property taxes, insurance premium taxes, assessments, or user fees are levied or imposed or through such other mechanism agreed upon by the affected parties. Local examples include:

- Chatham County Ordinance Chapter 8 creates three special service districts within the County per the County’s constitutional authority and defines boundaries of districts as well as services to be provided including (but not limited to) road improvements, R/W maintenance, Savannah transit in the special district of unincorporated Chatham County.
- Chatham Area Transit (CAT) special service district includes incorporated as well as unincorporated areas of Chatham County. (County Commission defines district area.)
- City of Savannah has special service districts for convention transportation and ferry service to Hutchinson Island.

It appears that a Special Service District within the SW Sector Area is a viable option for the collection of taxes or fees to provide for transportation system improvements (or other services) within the district itself.

Proportionate Fair Share Fee - FLORIDA

This type of fee addresses a specific transportation concurrency issue, such as a roadway producing poor LOS with the addition of a new development (as opposed to an impact fee, which addresses the transportation system as a whole). The developer pays a “fair share” of the cost needed to bring transportation facility back into compliance, and local government pays the rest or finds alternate funding sources.

Establishing a proportionate fair share fee requires local government to adopt a different kind of growth management policy. Traditionally, developments cannot be built until proper infrastructure is in place. Under proportionate fair share policy, however, once a developer has paid the fee, development can move forward even if county hasn’t provided funding or seeks to slow the progress of the development for other reasons.

The policy was recently mandated for all local governments in Florida (§163.3180 (16) F.S.); there are no current applications in Georgia with the exception of the proportionate share requirement regarding calculating impact fees detailed in Georgia Code (§37-71-4).

APPENDIX A

CUTS \ Chatham Interstates Travel Demand Model Information (Area Types, Model Capacities and Model Speeds)

Table 3-3 CUTS Model Capacity

Facility Type	Area Type						
	1	2	3	4	5	6	7
Interstate	1900	1950	2000	2050	2100	2150	2200
Freeway	1600	1670	1730	1790	1850	1910	1960
Expressway	1300	1380	1450	1530	1600	1660	1720
Parkway	1170	1240	1310	1380	1440	1490	1550
HOV - Freeway	1900	1950	2000	2050	2100	2150	2200
Freeway-to-Freeway Ramp	1900	1950	2000	2050	2100	2150	2200
Entrance Ramp	1600	1650	1700	1750	1800	1850	1900
Exit Ramp	850	890	930	960	1000	1250	1500
Toll Road	1600	1670	1730	1790	1850	1910	1960
Principal Arterial - Class I	1000	1150	1290	1440	1580	1640	1700
Principal Arterial - Class II	980	1040	1090	1150	1200	1400	1600
Minor Arterial - Class I	850	890	930	960	1000	1250	1500
Minor Arterial - Class II	680	710	740	770	800	1100	1400
One-Way Arterial	820	850	890	920	960	1320	1680
HOV - Arterial	1000	1150	1290	1440	1580	1640	1700
Major Collector	560	580	600	610	630	970	1300
Minor Collector	300	330	350	380	400	800	1200
One-way Collector	360	400	420	460	480	960	1440
Local Road	160	180	210	230	250	680	1100
Centroid Connector	0	0	0	0	0	0	0

Table 3-4 CUTS Model Speed

Facility Type	Area Type						
	1	2	3	4	5	6	7
Interstate	55	55	60	60	65	70	75
Freeway	50	50	55	55	60	63	68
Expressway	45	45	50	50	55	55	60
Parkway	45	45	50	50	55	55	60
HOV - Freeway	55	55	60	60	65	70	75
Freeway-to-Freeway Ramp	55	55	55	55	55	55	55
Entrance Ramp	55	55	55	55	55	55	55
Exit Ramp	17	19	21	26	30	37	45
Toll Road	55	55	60	60	65	70	75
Principal Arterial - Class I	25	26	32	35	38	49	55
Principal Arterial - Class II	20	21	29	32	36	47	50
Minor Arterial - Class I	17	19	21	26	30	37	45
Minor Arterial - Class II	15	17	19	24	28	35	45
One-Way Arterial	20	22	23	29	32	38	45
HOV - Arterial	25	26	32	35	38	49	55
Major Collector	14	15	17	21	24	32	45
Minor Collector	13	14	15	18	21	29	45
One-way Collector	14	15	17	21	24	32	45
Local Road	12	13	14	16	18	26	45
Centroid Connector	12	13	14	16	18	26	45

APPENDIX B

Summary of Peer Review Research on Functional Classifications and Corresponding Right-of-Way Designations

Summary of Minimum Right-of-Way Requirements by Roadway Classification
Chatham - Savannah Metropolitan Planning Commission

Regional Location	Jurisdiction	Regulation	Roadway Classification	Roadway Width by # of lanes				Pavement Width	Median	No. Lanes	Paved Shoulder / Bike Lane	Notes
				2	4	6	8					
COASTAL / SOUTH GEORGIA	City of Woodbine	"The Subdivision Regulations of Woodbine, GA", section 302	Major Arterial - single	80'				24'		2	4'	
			Major Arterial - divided	80'				12'		2	4'	
			Collector - single	60'				24'		2	4'	
			Collector - divided	60'				12'		2	4'	
			Minor - single	60'				18'		2	4'	
			Minor - divided	60'				9'		2	4'	
			Marginal Access Easement	50'				18', 9'			4'	
	City of Hinesville	Subdivision Regulations - City of Hinesville, GA 1978	Arterial		80'			56'		4		(from 1978 document, '07 doesn't have this info)
			Arterial - service lanes		100'			74'		4		
			Arterial - left turn		90'			68'		4		
			Arterial - left turn and service		100'			86'		4		
			Collector - left turn	60'				37'		2		
			Collector - left turn and service	80'				56'		2		
			Collector		80'			48'		4		
			Collector - service		90'			68'		4		
			Local - parking (both)	60'				46'		2		
			Local - no parking	60'				26'		2		
	City of Hinesville	City of Hinesville Subdivision Regulations - Draft 2007	Arterial		80'							
		7.1.15	Collector		60'							
			Local		60'							
	McIntosh County	McIntosh County Subdivision Regulations	Arterial		80'			56'		4		curb and gutter
		Article VII	Arterial - left turn		90'			68'		4		curb and gutter
			Collector - left turn	60'				40'		2		curb and gutter
			Collector		80'			54'		4		curb and gutter
			Local - no parking	60'				24'		2		curb and gutter
			Local - parking	60'				40'		2		curb and gutter
			Arterial		80'			56'		4		paralleling ditch-typical
			Arterial - service		100'			74'		4		
			Arterial - left turn		90'			68'		4		
			Arterial - left turn and service		110'			86'		4		
			Collector - left turn	60'				40'		2		
			Collector - left turn and service	80'				56'		2		
			Collector		80'			54'		4		
			Collector		90'			78'		4		
			Local - no parking	60'				24'		2		
			Local - parking	60'				40'		2		
	Town of Thunderbolt	ordinance as "Subdivision Regulations os Thunderbolt, GA",	Major Artery		80'			36'				
		Article VI, sec. 601.02	Minor Street		60'			24'				
	Garden City	Article III, section 70-62	Major Arterial		60'						8' (ditches)	
			Secondary Arterial		60'						8' (ditches)	
			Collector		60'						8' (ditches)	
			Minor Street		40'						8' (ditches)	
	Brunswick	Subdivisions Regulations for City of Brunswick	Major Arterial		120'			see Major Thoroughfare plan				
		City of Brunswick and Glynn County, Article XIII, Section 1300-1302	Major Collector		90'			39'				
			Minor Local Road		60'			31'				
			Permanent Cul-de-Sac		50'			31'				
			Marginal Access Road		60'			31'				
			Service or Alley		20'			18'				
	Pembroke	City of Pembroke, Article VII, Sec. 7.1.12	Arterial Street		80'			56'		4	N/A	curb and gutter

Summary of Minimum Right-of-Way Requirements by Roadway Classification
Chatham - Savannah Metropolitan Planning Commission

Regional Location	Jurisdiction	Regulation	Roadway Classification	Roadway Width by # of lanes				Pavement Width	Median	No. Lanes	Paved Shoulder / Bike Lane	Notes
				2	4	6	8					
			Arterial Street - service		100'			74'		4	N/A	curb and gutter
			Arterial Street - left turn lane		90'			68'		4	N/A	curb and gutter
			Arterial Street - left and service		110'			86'		4	N/A	curb and gutter
			Collector - parking	60'				27'		2	N/A	curb and gutter
			Collector - left turn	60'				40'		2	N/A	curb and gutter
			Collector - left and service		80'			56'		2	N/A	curb and gutter
			Collector		80'			54'		4	N/A	curb and gutter
			Collector - service		90'			78'		4	N/A	curb and gutter
			Local Street - parking		60'			22'			N/A	curb and gutter
			Collector or Arterial	80'				24'		2	13, n/a *	* ditch, shoulder
			Collector or Arterial		104'			48'		4	18', 6' *	* ditch, shoulder
			Collector or Arterial - left turn		118'			62'		4	18', 10' *	* ditch, shoulder
	Savannah	Article G, Sec. 8-2022	Major Arterial		70'			36'				MPC can determine add'l ROW
			Secondary Arterial		70'			36'				MPC can determine add'l ROW
			Collector Street		60'			36'				
			Minor Street		60'			26'				
			Frontage Road		40'			24'				
	Glynn County	Ordinance of Glynn County, Article VI, Sec. 602.4	Major Arterial - single	100'				24'		2	8'	
			Major Arterial - divided	100'				12'		2	8'	
			Major Arterial - single		100'			48'		4	8'	
			Major Arterial - divided		100'			24'		4	8'	
			Minor Arterial - single	80'				24'		2	8'	
			Minor Arterial - divided	80'				12'		2	8'	
			Minor Arterial - single		80'			44'		4	8'	
			Minor Arterial - divided		80'			22'		4	8'	
			Collector - single	70'				24'		2	6'	
			Collector - divided	70'				12'		2	6'	
			Sub-collector - single	60'				20'		2	4'	
			Sub-collector - divided	60'				10'		2	4'	
			Minor Street - single	50'				18'		2	4'	
			Minor Street - divided	50'				9'		2	4'	
	Liberty County	Article VII, Section 7.1	Arterial		80'							
			Collector		60'							
			Local		60'							
	City of Valdosta	Article IV, Section 4-6-11	Highways		100'			varies				
			Major		80'			64'				
			Secondary		80'			44'				
			Collector		60'			36'				
			Residential		50'			26'				
	City of Lake Park, GA	Article V, Section 5-6.12	Major Arterial		100'			64'				
			Second Arterial		100'			48'				
			Collector		80'			24'				
			Marginal Access		70'			24'				
			Local Street		60'			22'				
			Alley - residential		20'			12'				
	Hillsborough County	Transportation Technical Manual	Rural Minor Collector (2 lane Divided)	122'								Traditional Neighborhood Development Roads (TND)
			Rural Minor Collector (2 lane Undivided)	100'								
			Rural Minor Collector (2 lane Undivided)	96'								
			Local Rural Road (2 lane Undivided)	92'								
			Urban Major Collectors (4 lane divided)		110'							
			Urban Minor Collectors (2 lane divided)	86'								
			Urban Collectors (2 lane undivided)	64'								
			Local Urban Roads (2 lane undivided)	50'								
			Minor Urban Collectors (Main Streets) TND	82'								
			Minor Urban Collectors (Avenues) TND	104'								

Summary of Minimum Right-of-Way Requirements by Roadway Classification
Chatham - Savannah Metropolitan Planning Commission

Regional Location	Jurisdiction	Regulation	Roadway Classification	Roadway Width by # of lanes				Pavement Width	Median	No. Lanes	Paved Shoulder / Bike Lane	Notes
				2	4	6	8					
FLORIDA	St. Luce County, FL		Major Urban Collectors (Type II Blvds) TND	110'								
			Major Urban Collectors (Type I Blvds) TND	128'								
			Local Urban Streets TND	69'								
			Local Urban Lanes TND	52'								
			Alleys TND	20'								
			Principal Arterial - Rural		242'							
			Principal Arterial - Urban		130'							
			Minor Arterial/Major Collector		130'							
			Minor Collector		100'							
			Subdivision Collector Roads		80'							
	Indian River County, FL	Land Development Code, Section 952.08 (1) (e)	Local Roads (swale)		60'							
			Local Roads (curb & gutter)		50'							
			Principal Arterial - Urban			130'		12'		6		
			Principal Arterial - Rural			240'		12'		6		
			Principal Arterial - Urban		100'			14'		4		outside lanes as req'd
			Principal Arterial - Rural		200'			14'		4		
			Principal Arterial - Urban				200'			8		specific ROW to U.S. 1 Corridor
			Principal Arterial - Urban			130'				6		specific ROW to U.S. 1 Corridor
			Principal Arterial - Rural			240'				6		specific ROW to U.S. 1 Corridor
			Principal Arterial - Urban w/ frontage roads		140'					4		specific ROW to U.S. 1 Corridor
			Principal Arterial - Rural w/ frontage roads		240'					4		
			Minor Arterial		100'			12'		4		
			Minor Arterial	100'				14'		2		outside lanes where req'd
			Collector Street - Urban & Rural		80'			12'				
			Subdivision Collector - Urban & Rural		60'			12'				
			Local, Minor, Res., Urban & Rural (swale drainage)		60'			10' *, 11' **				* sgl-fam subdivision roadway **where in conjunction with commercial site plan
			Local, Minor, Res., Urban (curb & gutter)		50'			10' *, 11' **				* sgl-fam subdivision roadway **where in conjunction with commercial site plan
			Marginal Access - Urban & Rural									* sgl-fam subdivision roadway *** when in conjunction with heavy commercial or industrial development
					40'			11**, 12' ***				
					94'					4		
	Lake County, FL	Transportation Element - Goals, Objectives and Policies	Urban Arterial									
		Objective Tr 4.3, Policy Tra 4.3-1, 4.3-2	Urban Arterial			128'				6		
			Suburban Arterial		174'					4		
			Suburban Arterial			200'				6		
			Rural Arterial		200'					4		
			Rural Arterial			200'				6		
			Freeway		216'					4		
			Freeway			240'				6		
			Freeway				216'			8		
			Principal Arterial - Rural		200'	200'		12'		4 to 6	4'-5'	
			Principal Arterial - Urban		128'	128'		12'		4 to 6	4'-5'	
			Minor Arterial - Rural	200'	200'	200'		12'		2 to 5	4'-5'	
			Minor Arterial - Urban	128'	128'	128'		12'		2 to 5	4'-5'	
			Major Collector - Rural	100'	100'			12'		2 to 5	3'-5'	
			Major Collector - Urban	80'	80'			12'		2 to 5	3'-5'	
			Minor Collector - Rural	80'				12'		2 to 3	3'-5'	
			Minor Collector - Urban	70'				12'		2 to 3	3'-5'	
			Local Feeder / Distributor - Rural	80'				10'-12'		2	0'-2'	
			Local Feeder / Distributor - Urban	60'				10'-12'		2	0'-2'	
			Local - Rural	66'				10'		2	0'	
			Local - Urban	50'				10'		2	0'	

Summary of Minimum Right-of-Way Requirements by Roadway Classification
Chatham - Savannah Metropolitan Planning Commission

Regional Location	Jurisdiction	Regulation	Roadway Classification	Roadway Width by # of lanes				Pavement Width	Median	No. Lanes	Paved Shoulder / Bike Lane	Notes
				2	4	6	8					
	Martin County, FL	Section 4.19 of Article IV of Martin County Land Development Regulations, directed by Board of County Commissioners										*additional 12 ft required where a right-turn lane is to be provided at an access connection, including roadway intersections; buffer - landscaped strip b/w edge of payment and sidewalk. The swale shall serve as the min. buffer on roadways where the swale is greater than the min buffer.
			Parkway - divided * (swale drainage)		190'			12'	30'	4	5'	buffer- 25'
			Parkway - divided * (curb & gutter)		150'			12'	30'	4	5'	
			Parkway - divided * (swale drainage)			215'		12'	30'	6	5'	buffer - 25'
			Parkway - divided * (curb & gutter)			175'		12'	30'	6	5'	
			Major Arterial I- divided * (swale drainage)		180'			12'	30'	4	5'	buffer -15'
			Major Arterial I- divided * (curb & gutter)		130'			12'	30'	4	5'	
			Major Arterial - divided * (swale drainage)			200'		12'	30'	6	5'	buffer - 15'
			Major Arterial - divided * (curb & gutter)			160'		12'	30'	6	5'	
			Minor Arterial * (swale drainage)		130'			11'			5'	buffer - 10'
			Minor Arterial * (curb & gutter)		115'			11'			5'	
			Major Collector * (swale drainage)		100'			11'			5'	buffer - 10'
			Major Collector * (curb & gutter)		80'			11'			5'	
			Minor Collector (swale drainage)		100'			11'				
			Minor Collector (curb & gutter)		80'			11'				buffer - 10'
			Local		60'							
			Local		60'							buffer - 4.5'
			Alley		30'							
			Alley		20'							no curb & gutter
METRO ATLANTA	City of Duluth, GA	Article VI, Section 6.3.2	Principal Arterial			120'-150'				6		as determined by SCDOT
			Major Arterial		100'-120'	100'-120'				4 to 6		
			Minor Arterial		80'-100'			52'-66'		4		
			Major Collector		80'			52'				
			Minor Collector		60'-80'			28'				
			Local Street - non-residential		60'			32'				
			Local Street - Residential Urban		50'			27'				
			Local Street - Residential Rural		60'			24'				
OREGON	Glendale, OR	City of Glendale Public Works Design Standards	Arterial		75'			44'				
		Section 6	Commercial and Industrial		60'			36'				
			Collector		60'			36'				
			Minor		50'			36'				
			Alley		20'			20'				

APPENDIX C

Detailed Project Costing Sheets

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description Fort Argyle Road: 4-lane Section
 From Limit Belford Spine / Roadway 3
 To Limit John Carter Road
 Notes Excludes bridge structures
 Project Length 5.1 miles

Cost Summary

Preliminary Engineering \$2,062,500
 Right-of-Way \$8,799,120
 Construction \$20,625,000
 Total \$31,486,620

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	5.1	2	10.1	\$11,110,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$11,110,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	5.1			\$2,525,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	5.1			\$1,515,000
Sidewalks	\$150,000				\$0
				Subtotal	\$4,040,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000	2			\$3,600,000
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$3,600,000
Total Construction Cost					\$18,750,000

66%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	5.1	150	3999600	\$7,999,200
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$7,999,200

28%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,875,000
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$2,862,420
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Total (PE+ROW+CST) \$28,624,200

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description Fort Argyle Road: 6-lane Section
 From Limit Belford Spine / Roadway 3
 To Limit I-95
 Notes Excludes bridge structures
 Project Length 2.4 miles

Cost Summary

Preliminary Engineering \$1,714,680
 Right-of-Way \$5,668,608
 Construction \$17,146,800
 Total \$24,530,088

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	2.4	4	9.76	\$10,736,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$10,736,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	2.4			\$1,220,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	2.4			\$732,000
Sidewalks	\$150,000				\$0
				Subtotal	\$1,952,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000	1			\$1,800,000
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$2,900,000
Total Construction Cost					\$15,588,000

70%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	2.4	200	2576640	\$5,153,280
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$5,153,280

23%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,558,800
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$2,230,008
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Total (PE+ROW+CST) \$22,300,080

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description John Carter Road: 4-lane Section
 From Limit Little Neck Road
 To Limit Fort Argyle Road (SR 204)
 Notes Excludes bridge structures
 Project Length 3.0 miles

Cost Summary

Preliminary Engineering \$1,201,200
 Right-of-Way \$5,296,896
 Construction \$12,012,000
 Total \$18,510,096

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	3.0	2	6.08	\$6,688,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$6,688,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	3.0			\$1,520,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	3.0			\$912,000
Sidewalks	\$150,000				\$0
				Subtotal	\$2,432,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000	1			\$1,800,000
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,800,000
Total Construction Cost					\$10,920,000

65%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	3.0	150	2407680	\$4,815,360
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,815,360

29%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,092,000
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6%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,682,736
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Total (PE+ROW+CST) \$16,827,360

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Little Neck Road: 4-lane Section
From Limit	I-95
To Limit	New Hampsteak Pkwy / Roadway 1
Notes	Excludes bridge structures
Project Length	4.1 miles

Cost Summary

Preliminary Engineering	\$1,783,100
Right-of-Way	\$7,091,568
Construction	\$17,831,000
Total	\$26,705,668

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	4.1	2	8.14	\$8,954,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$8,954,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	4.1			\$2,035,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	4.1			\$1,221,000
Sidewalks	\$150,000				\$0
				Subtotal	\$3,256,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000	1			\$1,800,000
Arterial-Collector/Local Intersection	\$1,100,000	2			\$2,200,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$4,000,000
Total Construction Cost					\$16,210,000

67%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	4.1	150	3223440	\$6,446,880
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$6,446,880

27%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,621,000
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$2,427,788
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Total (PE+ROW+CST) \$24,277,880

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Little Neck Road: 6-lane Section
From Limit	John Carter Road
To Limit	New Hampstead Pkwy / Roadway 1
Notes	Excludes bridge structures
Project Length	2.2 miles

Cost Summary

Preliminary Engineering	\$1,318,460
Right-of-Way	\$5,064,576
Construction	\$13,184,600
Total	\$19,567,636

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	2.2	4	8.72	\$9,592,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$9,592,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	2.2			\$1,090,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	2.2			\$654,000
Sidewalks	\$150,000				\$0
				Subtotal	\$1,744,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000	1			\$650,000
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$650,000
Total Construction Cost					\$11,986,000

67%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	2.2	200	2302080	\$4,604,160
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,604,160

26%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,198,600
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,778,876
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Total (PE+ROW+CST) \$17,788,760

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description Little Neck Road: 8-lane Section
 From Limit I-16 Interchange
 To Limit John Carter Road
 Notes Excludes bridge structures
 Project Length 0.2 miles

Cost Summary

Preliminary Engineering \$162,800
 Right-of-Way \$534,336
 Construction \$1,628,000
 Total \$2,325,136

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	0.2	6	1.2	\$1,320,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$1,320,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	0.2			\$100,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	0.2			\$60,000
Sidewalks	\$150,000				\$0
				Subtotal	\$160,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$0
Total Construction Cost					\$1,480,000

70%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	0.2	230	242880	\$485,760
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$485,760

23%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$148,000
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$211,376
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Total (PE+ROW+CST) \$2,113,760

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description Old River Road: 4-lane Section
 From Limit John Carter Road
 To Limit County Line
 Notes Excludes bridge structures
 Project Length 2.8 miles

Cost Summary

Preliminary Engineering \$832,700
 Right-of-Way \$4,791,600
 Construction \$8,327,000
 Total \$13,951,300

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	2.8	2	5.5	\$6,050,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$6,050,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000				\$0
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	2.8			\$420,000
				Subtotal	\$420,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,100,000
Total Construction Cost					\$7,570,000

60%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	2.8	150	2178000	\$4,356,000
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,356,000

34%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$757,000
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6%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,268,300
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Total (PE+ROW+CST) \$12,683,000

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Pooler Parkway/Quacco Road: 6-lane Section
From Limit	I-16 (SW Sector Area line)
To Limit	I-95
Notes	Excludes bridge structures
Project Length	3.4 miles

Cost Summary

Preliminary Engineering	\$2,054,360
Right-of-Way	\$7,852,416
Construction	\$20,543,600
Total	\$30,450,376

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000	3.4	4	13.52	\$14,872,000
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$14,872,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	3.4			\$1,690,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	3.4			\$1,014,000
Sidewalks	\$150,000				\$0
				Subtotal	\$2,704,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,100,000
Total Construction Cost					\$18,676,000

67%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	3.4	200	3569280	\$7,138,560
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$7,138,560

26%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,867,600
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$2,768,216
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Total (PE+ROW+CST) \$27,682,160

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	New I-16 Interchange		
From Limit	at Saw Dust Pile Road Extension		
To Limit			
Notes			
Project Length	NA	miles	

Cost Summary

Preliminary Engineering	\$660,000
Right-of-Way	\$2,323,200
Construction	\$6,600,000
Total	\$9,583,200

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000			0	\$0
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$0
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000				\$0
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000				\$0
				Subtotal	\$0
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000	1			\$6,000,000
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$6,000,000
Total Construction Cost					\$6,000,000

69%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	1.0	200	1056000	\$2,112,000
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$2,112,000

24%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$600,000
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$871,200
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Total (PE+ROW+CST) \$8,712,000

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	New I-95 Partial Interchanges and Frontage Roads		
From Limit	Quacco Road		
To Limit	Little Neck Road		
Notes			
Project Length	1.1	miles	

Cost Summary

Preliminary Engineering	\$945,120
Right-of-Way	\$5,018,112
Construction	\$9,451,200
Total	\$15,414,432

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	1.1	4	4.32	\$2,592,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$2,592,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000				\$0
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000				\$0
				Subtotal	\$0
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000	2			\$6,000,000
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$6,000,000
Total Construction Cost					\$8,592,000

61%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	1.1	400	2280960	\$4,561,920
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,561,920

33%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$859,200
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6%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,401,312
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Total (PE+ROW+CST) \$14,013,120

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 1 - Highgate Blvd 4-lane Section		
From Limit	New Hampstead Parkway		
To Limit	Fort Argyle Road		
Notes	Excludes bridge structures		
Project Length	3.1 miles		

Cost Summary

Preliminary Engineering	\$1,238,600
Right-of-Way	\$4,696,349
Construction	\$12,386,000
Total	\$18,320,949

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	3.1	4	12.4	\$7,440,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$7,440,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	3.1			\$1,555,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	3.1			\$465,000
				Subtotal	\$2,020,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000	1			\$1,800,000
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,800,000
Total Construction Cost					\$11,260,000

68%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	3.1	130	2134704	\$4,269,408
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,269,408

26%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,126,000
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,665,541
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Total (PE+ROW+CST) \$16,655,408

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description Roadway 1 - New Hampstead Blvd 4-lane Section
 From Limit Little Neck Road
 To Limit Fort Argyle Road
 Notes Excludes bridge structures
 Project Length 2.0 miles

Cost Summary

Preliminary Engineering \$785,290
 Right-of-Way \$2,989,958
 Construction \$7,852,900
 Total \$11,628,148

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	2.0	4	7.92	\$4,752,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$4,752,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	2.0			\$990,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	2.0			\$297,000
				Subtotal	\$1,287,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,100,000
Total Construction Cost					\$7,139,000

68%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	2.0	130	1359072	\$2,718,144
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$2,718,144

26%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$713,900
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,057,104
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Total (PE+ROW+CST) \$10,571,044

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 1 - Saw Dust Pile Road 4-lane Section
From Limit	Highgate Blvd / Roadway 1
To Limit	I-16
Notes	Excludes bridge structures
Project Length	3.2 miles

Cost Summary

Preliminary Engineering	\$1,375,825
Right-of-Way	\$4,756,752
Construction	\$13,758,250
Total	\$19,890,827

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	3.2	4	12.6	\$7,560,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$7,560,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	3.2			\$1,575,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	3.2			\$472,500
				Subtotal	\$2,047,500
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000	1			\$1,800,000
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$2,900,000
Total Construction Cost					\$12,507,500

69%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	3.2	130	2162160	\$4,324,320
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,324,320

24%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,250,750
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,808,257
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Total (PE+ROW+CST) \$18,082,570

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 2 - Little Neck to Fort Argyle Connector: 4-lane Section		
From Limit	Fort Argyle Road		
To Limit	Little Neck Road		
Notes	Excludes bridge structures		
Project Length	2.5 miles		

Cost Summary

Preliminary Engineering	\$1,015,080
Right-of-Way	\$4,425,696
Construction	\$10,150,800
Total	\$15,591,576

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	2.5	4	10.16	\$6,096,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$6,096,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	2.5			\$1,270,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	2.5			\$762,000
Sidewalks	\$150,000				\$0
				Subtotal	\$2,032,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,100,000
Total Construction Cost					\$9,228,000

65%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	2.5	150	2011680	\$4,023,360
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,023,360

28%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$922,800
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,417,416
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Total (PE+ROW+CST) \$14,174,160

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 2 - Little Neck to Quacco Connector: 6-lane Section		
From Limit	Quacco Road		
To Limit	Little Neck Road		
Notes	Excludes bridge structures		
Project Length	1.1 miles		

Cost Summary

Preliminary Engineering	\$513,040
Right-of-Way	\$1,846,944
Construction	\$5,130,400
Total	\$7,490,384

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	1.1	6	6.36	\$3,816,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$3,816,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	1.1			\$530,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	1.1			\$318,000
Sidewalks	\$150,000				\$0
				Subtotal	\$848,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$0
Total Construction Cost					\$4,664,000

68%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	1.1	150	839520	\$1,679,040
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$1,679,040

25%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$466,400
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$680,944
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Total (PE+ROW+CST) \$6,809,440

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 3 -Belford Spine: 2-lane Section		
From Limit	Fort Argyle Road		
To Limit	Roadway 5		
Notes	Excludes bridge structures		
Project Length	1.8 miles		

Cost Summary

Preliminary Engineering	\$519,200
Right-of-Way	\$2,102,496
Construction	\$5,192,000
Total	\$7,813,696

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	1.8	2	3.62	\$2,172,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$2,172,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	1.8			\$905,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	1.8			\$543,000
Sidewalks	\$150,000				\$0
				Subtotal	\$1,448,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000	1			\$1,100,000
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$1,100,000
Total Construction Cost					\$4,720,000

66%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	1.8	100	955680	\$1,911,360
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$1,911,360

27%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$472,000
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$710,336
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Total (PE+ROW+CST) \$7,103,360

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 3 -Belford Spine: 4-lane Section		
From Limit	Little Neck Road		
To Limit	Roadway 5		
Notes	Excludes bridge structures		
Project Length	0.7 miles		

Cost Summary

Preliminary Engineering	\$253,440
Right-of-Way	\$1,087,258
Construction	\$2,534,400
Total	\$3,875,098

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	0.7	4	2.88	\$1,728,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$1,728,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	0.7			\$360,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000	0.7			\$216,000
Sidewalks	\$150,000				\$0
				Subtotal	\$576,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$0
Total Construction Cost					\$2,304,000

65%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	0.7	130	494208	\$988,416
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$988,416

28%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$230,400
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7%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$352,282
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Total (PE+ROW+CST) \$3,522,816

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 4 - Little Neck Parallel Reliever 4-lane Section		
From Limit	Little Neck / Belford Spine Intersection		
To Limit	Little Neck / John Carter Intersection		
Notes	Excludes bridge structures		
Project Length	3.5 miles		

Cost Summary

Preliminary Engineering	\$1,180,960
Right-of-Way	\$5,315,482
Construction	\$11,809,600
Total	\$18,306,042

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	3.5	4	14.08	\$8,448,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$8,448,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	3.5			\$1,760,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	3.5			\$528,000
				Subtotal	\$2,288,000
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$0
Total Construction Cost					\$10,736,000

65%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	3.5	130	2416128	\$4,832,256
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$4,832,256

29%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,073,600
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6%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$1,664,186
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Total (PE+ROW+CST) \$16,641,856

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Roadway 5 - New Roadway South and Parallel to Little Neck: 4-lane Section		
From Limit	I-95		
To Limit	New Hampstead Pkwy		
Notes	Excludes bridge structures		
Project Length	4.8 miles		

Cost Summary

Preliminary Engineering	\$1,593,625
Right-of-Way	\$7,172,880
Construction	\$15,936,250
Total	\$24,702,755

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	4.8	4	19	\$11,400,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$11,400,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	4.8			\$2,375,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	4.8			\$712,500
				Subtotal	\$3,087,500
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$0
Total Construction Cost					\$14,487,500

65%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	4.8	130	3260400	\$6,520,800
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$6,520,800

29%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$1,448,750
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6%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$2,245,705
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Total (PE+ROW+CST) \$22,457,050

Cost Estimate Sheet

Project Cost Estimation Spreadsheet

Project Identification

Description	Scenario 2: Old River to Saw Dust Pile Rd Ext. Connector 2-lane Section
From Limit	Saw Dust Pile Rd Extension
To Limit	Old River Road
Notes	Excludes bridge structures
Project Length	1.2 miles

Cost Summary

Preliminary Engineering	\$242,165
Right-of-Way	\$1,382,304
Construction	\$2,421,650
Total	\$4,046,119

Construction Costs

Per Lane-Mile Components	Unit Cost/Ln Mile (ft)	Miles (ft)	Add Lanes	Lane-Miles	Cost
Major Bridge (cost & lgth in feet)	\$1,800			0	\$0
Freeway New Construction	\$2,700,000			0	\$0
Freeway Widening	\$2,500,000			0	\$0
Rural New Location	\$500,000			0	\$0
Rural Widening	\$600,000			0	\$0
Urban New Construction	\$600,000	1.2	2	2.38	\$1,428,000
Urban Widening	\$1,100,000			0	\$0
Surface Street Upgrade	\$400,000			0	\$0
Bridge (cost & Lgth in feet)	\$1,100			0	\$0
Bridge over RR (cost & lgth in feet)	\$1,300			0	\$0
				Subtotal	\$1,428,000
Additional Per Mile Components	Unit Cost/Mile	Miles			Cost
Add NJ Barrier Median	\$1,500,000				\$0
Add Grass Median	\$800,000				\$0
Add Raised Median	\$500,000	1.2			\$595,000
Add Flush Median	\$350,000				\$0
Retaining Walls	\$4,000,000				\$0
Sound Barriers	\$1,500,000				\$0
Bike/Ped Facility	\$300,000				\$0
Sidewalks	\$150,000	1.2			\$178,500
				Subtotal	\$773,500
Individual Components	Unit Cost - Each	Quantity			Cost
Freeway-to-Freeway Interchange	\$30,000,000				\$0
Single-point Interchange	\$15,000,000				\$0
Compressed Diamond Interchange	\$12,000,000				\$0
Diamond Interchange	\$6,000,000				\$0
Half Diamond	\$3,000,000				\$0
Grade Separation	\$2,500,000				\$0
Arterial-Arterial Intersection	\$1,800,000				\$0
Arterial-Collector/Local Intersection	\$1,100,000				\$0
Collector-Local Intersection	\$650,000				\$0
Traffic Signalization / Upgrade	\$200,000				\$0
				Subtotal	\$0
Total Construction Cost					\$2,201,500

60%

Right-of-Way Costs

Area Type	Unit Cost/sq ft	Miles	ROW Width	Sq Ft ROW	Cost
Urban Open	\$2	1.2	100	628320	\$1,256,640
Urban Residential	\$5			0	\$0
Urban Commercial	\$12			0	\$0
Suburban/Rural Open	\$1			0	\$0
Suburban/Rural Residential	\$3			0	\$0
Suburban/Rural Commercial	\$8			0	\$0
Total Right-of-Way Cost					\$1,256,640

34%

Preliminary Engineering Costs

PE %	10%	Total Preliminary Engineering Cost	\$220,150
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6%

Contingency Costs

Contingency %	10%	Total Contingency Cost	\$367,829
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Total (PE+ROW+CST) \$3,678,290

ENDNOTES:

¹ U.S. Census Bureau, “1990 STF 3: Table P001. Persons.”

² U.S. Census Bureau, “Census 2000 SF 3: Table P1. Total Population.”

³ U.S. Census Bureau, “Census 2000 SF 3: Table P6. Race.”

⁴ U.S. Census Bureau, “1990 STF 3: Table P008. Race.”

⁵ U.S. Census Bureau, “1990 STF 3: Table P013. Age.”

⁶ U.S. Census Bureau, “Census 2000 SF 3: Table P8. Sex by Age.”

⁷ Chatham County-Savannah MPC. *CUTS: Socioeconomic and Land Use Data - Current Conditions, January 2004.*

<http://www.thempc.com/documents/CompLRPlanning/Reports/landusedata2004.pdf>

⁸ Chatham County-Savannah MPC. *CUTS: Socioeconomic and Land Use Data – Year 2030 Projections, January 2004.*

<http://www.thempc.com/documents/CompLRPlanning/Reports/landusedata2033.pdf>

⁹ U.S. Census Bureau, “Census 2000 SF 3: Table P31. Travel Time to Work for Workers 16 Years and Over.”

¹⁰ US DOT FHWA, *An Overview of Transportation and Environmental Justice*, Publication No. FHWA-EP-00-013

¹¹ Container capacity is measured in twenty-foot equivalent units (TEUs)

¹² Savannah Economic Development Authority (December 18, 2005). *Ikea and Target: Measuring the Ripple*. Press Release.

http://www.seda.org/content.php?section=media_center&release=48

¹³ U.S. Department of the Interior, Fish and Wildlife Service, *Classification of Wetlands and Deepwater Habitats of the United States*

¹⁴ <http://new.savannahnow.com/node/109188>

¹⁵ Belford Master Plan dated 4/12/06

¹⁶ CUTS is the designated Metropolitan Planning Organization (MPO) for Savannah and all of Chatham County

¹⁷ The CCIS model was obtained from GDOT in the fall of 2006, and was developed by a GDOT consultant based upon the model developed for the CUTS 2030 Long Range Transportation Plan (LRTP) adopted in September 2004.

¹⁹ The rural area-type designation is also coded into the CCIS and CUTS 2030 models for the area north of the sector; this coding should be re-visited as part of the 2035 LRTP update process.

²⁰ The **Table 2.4** equivalency ranges were taken directly from the GDOT CUTS/CCIS models.

²¹ Olson, Peter R. of Jenkins & Olsen. September 2000.

²² Project-level improvements within Douglas County include local and collector streets, or intersections improvements including local or collector streets, such as traffic signalization and/or turn lane improvements.

²³ Project-level improvements within the City of Douglasville include local and collector streets, or intersections improvements including local or collector streets, such as traffic signalization and/or turn lane improvements.

²⁴ Matthews, John. *Analysis of HB 1323, Infrastructure Development Districts (IDDs)*. Georgia State University, Andrew Young School of Policy Studies

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