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1 Introduction

The Phase One Report for the Bibb and Jones Cross County Connector (Connector) addresses the need and purpose for a connector corridor between I-75 north of Macon and US 80 east of Macon. This document summarizes the study process followed and presents the results of the technical analysis and public input included in Phase One study evaluations.

Background

The goal of the Bibb and Jones Cross County Connector Needs Analysis is to evaluate current and future transportation needs and the trip purposes that would be served by a facility stretching from I-75 in north Bibb County or southeast Monroe County to a terminus at US 80 in south Bibb County. If the needs assessment determines such a corridor is warranted, Phase Two efforts would include consideration of alignment alternatives and selection of a preferred alternative. The Phase One Report focuses on the need and purpose of the potential connector.

Growth in the north central and eastern part of Bibb and Jones Counties has been very aggressive. Accommodating current and expected future growth in population and traffic has stimulated discussion of the need for a cross county connector. A previous study, conducted by the Macon Bibb County Metropolitan Planning Commission in 1994, examined the feasibility of a new highway to improve east-west access through Bibb and Jones Counties. The new facility was expected to relieve traffic congestion along the Gray Highway corridor, add a crossing of the Ocumulgee River in northern Bibb County or southeastern Monroe County, and improve intra and inter-county accessibility.

The current study effort was initiated to revisit the need for a cross county connector. The study took into account the numerous environmental resources that span the study area, as well as the land use development patterns that have developed over the past several years. A number of alternative corridor alignments were considered in developing final recommendations.

The study area includes 66 square miles bounded by I-75 in southeast Monroe County in the west, the eastern Bibb County line in the east, southern Jones County in the south, and just south of the City of Gray in the north. The study area is graphically portrayed on each of the map figures within the study. The study area included southeast Monroe County to ensure that I-75 north of Bibb County could be evaluated as the western terminus. Expansion of the travel demand model was necessary to ensure that the lack of connectivity across the Ocmulgee River, exacerbated by growth in south Jones and Bibb County, could be evaluated.

Study Process

The study is organized into two phases. Phase One of the study addresses and documents the need for a connector between I-75 in Jones, or possibly Monroe, County and US 80 in the East Macon area. If study results determine that the cross county connector meets “need and purpose” criteria, then the study will enter its second phase. Phase Two of the study focuses on

identification and evaluation of potential alternatives, with alternative alignments recommended based on engineering design criteria and established planning factors.

The Phase One study included the following five tasks to accomplish its objective:

- Task 1 – Data Collection: Gathered and reviewed data and relevant plans and documents on roadway characteristics; traffic; land use; socio-economic characteristics; and environmental resources. Data collected provided the basis for technical evaluation of the transportation need.
- Task 2 – Public Involvement: Developed a detailed Public Involvement Plan and conducted a program of outreach activities. Developed the study's goals and objectives through guidance and input from study partners, the public, and stakeholders.
- Task 3 – Existing Conditions Evaluation: Developed evaluation factors and analyzed base year (in most cases 2002) data to identify key transportation problems (deficiencies) and need for improvements.
- Task 4 – Future Year (2030) Conditions Evaluation: Used an expanded travel demand forecast model to identify and evaluate future transportation problems, deficiencies, and needs.
- Task 5 – Technical Report: Outlined project need and purpose and summarized Phase One results and findings, with input from study partners, stakeholders, and the public.

The study process analyzed current and future travel demand. The Macon Area Transportation Study (MATS) TP+ travel demand model was modified to capture the study area, updated to reflect the latest data available, and applied to measure existing and future congestion.

Phase Two, Alternatives Assessment and Selection of Preferred Alternative, will build on the Phase One results establishing a need for a potential roadway connector. Phase Two activities include:

- Task 1 – Evaluation and Review of Phase One Results: Develop evaluation factors to identify and prioritize future improvements and conduct a cost/benefit analysis.
- Task 2 – Alternatives Development: Review the study's goals and objectives for this next phase with guidance and input from the public, study partners, and stakeholders.
- Task 3 – Public Involvement: Continue public involvement and outreach activities.
- Task 4 – Recommendations Development: Document recommendations for a preferred alternative and other related transportation improvements.
- Task 5 – Technical Report: Compile study findings, analysis results, and supporting information.

Stakeholder and public involvement is a vital study element and an important component of the data collection process. As a first step in the study, a Public Involvement Plan was prepared, reviewed, and approved by the Georgia Department of Transportation (GDOT) and local transportation planning partners. The plan outlines activities and procedures for the inclusion of identified stakeholders, local government representatives, and members of the general public.

The Bibb and Jones Cross County Connector Needs Analysis was a multi-agency effort. A Project Advisory Panel was formed with representatives from GDOT and the local transportation and planning agencies in the study area. Input from a broad base of stakeholders and the general public was also an essential element to ensure the success of this process. The Public Involvement Plan developed early in the study outlined strategies for involving the public, including Environmental Justice (EJ) communities.

The following techniques and activities were employed to maximize diverse and continuous public participation:

- Stakeholder Database
- Advisory Panel Meetings
- Public Information Meetings
- Media Outreach

The project team emphasized identifying and notifying EJ community stakeholders to ensure that the concerns and needs of low income and minority populations in the study area were considered. Public participation in the study was marketed using person-to-person outreach with the local organizations and agencies included in the stakeholder database. Telephone calls and written invitations were sent to a cross section of the community, including neighborhood groups, community service organizations, religious organizations, and churches.

Federal regulations and guidelines require that transportation plans and programs provide a fully inclusive public outreach program. Public input helps ensure that recommendations do not disproportionately impact minority and low-income communities, while also allowing those groups to fully share in the benefits of transportation infrastructure investments.

Study Goals and Objectives

The transportation goals and objectives for the Bibb and Jones Cross County Connector Needs Analysis are detailed in Table 1-1. Performance measures were assigned to each goal.

Table 1-1
Goals and Objectives

Goals	Objectives	Performance Measures
Determine the need for a cross county connector between I-75 north of Macon and US 80 east of Macon.	• To collect and present transportation needs as provided by the public, staff, and elected officials • To determine if the connector meets the following: capacity needs; safety concerns; cost, including efficient management and operation; economic development; community benefits and burdens; mobility enhancement; connectivity to other modes; accessibility; regional and statewide impacts; environmental concerns; preservation of existing transportation system; and other factors • To identify deficiencies in the transportation system	• Traffic Volumes • Level of Service • Accident rates • Compatibility with existing plans • Modeled V/C ratios
If connector is needed, provide alternative feasible alignment corridors.	• To scan environment for potential conflicts • To collect and present transportation needs as provided by the public, staff and elected officials • To prepare and evaluate alignment corridors	• Terrain compatibility • Vacant property • Environmental constraints • Modeled V/C ratios

Study Area Transportation Deficiencies

As a result of public involvement activities, interviews with local officials, and an update of the area's travel demand model, a general description of study area transportation deficiencies was developed. A listing of general transportation deficiencies identified includes:

- Limited number of Ocmulgee River crossings. There are no crossings between SR 18 in central Monroe County and downtown Macon.
- Congestion on Gray Highway. US 129 between Gray and Macon is currently congested and, with significant growth forecast, it is expected to experience increasing congestion.
- Congestion in downtown Macon. Streets in downtown Macon are forecast to be congested as a result of continued growth.
- Congestion on I-16 between its interchange with I-75 and East Macon. Current levels of service are poor and expected to worsen.

While these deficiencies were generally commented on by the public, the deficiencies in capacity and accessibility were also identified in the MATS travel demand model. A detailed study was conducted to document the deficiencies and define the need and purpose for the proposed connector.

2 Key Data Sources and References

Data collection efforts (Task 1) were undertaken to better understand the needs and issues in the study area and establish the baseline conditions on which to perform following study tasks. Data collection focused on identifying issues, planned projects, and existing travel patterns in the study area. As a first step in the data collection effort, local transportation and planning agencies were asked to provide or help secure copies of relevant databases, reports, and other documents. Table 2-1 outlines the data requirements of each task conducted in Phase One of the study.

Table 2-1
Phase One Data Requirements

Task Activities	Data Requirements
Task 1 – Data Collection	
Develop Advisory Panel	Nominations by local governments, RDC, and GDOT
Collect existing data from various sources	Socio-economic data, traffic, road inventory, transportation plans, comprehensive plans, studies, aerial photography, economic development information, land use, capital improvement programs, environmental studies, right-of-way, and land ownership
Conduct site visits to observe operational characteristics	Look at key locations in study area to analyze traffic operations
Meet with area agency representatives	Document local issues and goals
Develop database of previous projects/studies	Existing comprehensive plans, transportation plans, Capital Improvement Programs, environmental plans, area studies, TIP
Task 2 – Public Involvement	
Identify EJ communities	Socio-economic data, Advisory Panel input
Develop stakeholder database	Advisory Panel input
Identify activities and techniques	Measures of performance included in the PIP
Conduct media outreach	Media list of newspapers, radio stations, others
Hold public information and Advisory Panel meetings in both counties	Public and Advisory Panel input
Task 3 – Existing Conditions Evaluation	
Develop evaluation factors and prioritize transportation needs	Socio-economic data, traffic, road inventory, transportation plans, comprehensive plans, studies, aerial photography, economic development information, land use, capital improvement programs, environmental studies, right-of-way, and land ownership
Conduct preliminary environmental analysis to identify issues	Environmental plans, assessments, SHPO, USGS, NWI, and others
Expand/refine TP+ model to add TAZ from Jones and Monroe Counties	Road inventory, socio-economic data, land use
Evaluate Base Year V/C to identify deficiencies	Traffic counts and functional classification
Task 4 – Future Year (2030) Conditions Evaluation	
Map committed projects in GIS	Planned, committed projects, socio-economic forecasts

A principal objective during data compilation activities was the development of a composite database utilizing information available from numerous sources, as well as resolution of any conflicts which existed in the data. Data from all appropriate sources was reviewed by the study team and, where possible, compiled into a GIS format for planning purposes.

The data collection effort drew upon a broad range of sources using a variety of means so that an accurate and complete baseline was established. Coordination and consultation with Advisory Panel members and other local stakeholders helped identify issues, define the community impacted and understand the project's context. Existing data was collected from the various agencies and organizations to help identify planned projects and understand travel patterns. A quantitative analysis of traffic volumes and travel patterns was conducted, with the results shown through mapping. Planned projects and desired conditions were summarized in a tabular fashion as well as mapped.

Technical Data

The types of technical data collected for this effort can be generally grouped into the following categories:

- Socio-economic
- Traffic operations and usage, including crashes
- Roadway characteristics
- Travel demand model
- Environmental
- Planned projects

Table 2-2 summarizes the technical data collected, the data source, and how the data was integrated into Phase One of the study and will be used in Phase Two.

Table 2-2
Technical Data and Utilization

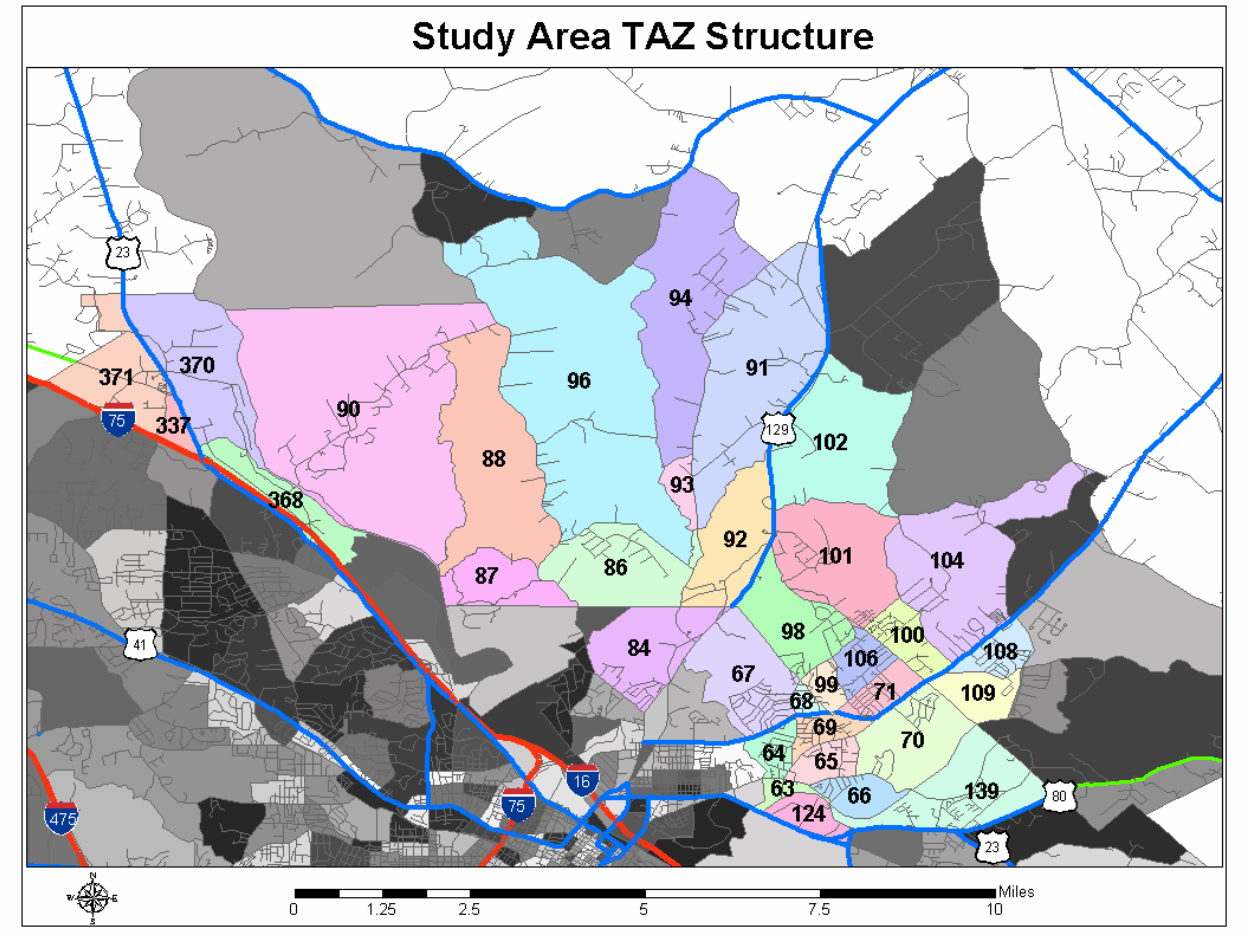
Data Description	Source	Data Type	Format	Study Use
Socio-economic				
Population, employment, and income data for Bibb, Jones, and Monroe Counties	MBPZ , Middle Georgia Regional Development Center, U.S. Census	Socio-economic	Electronic	Identify EJ communities, journey-to-work, population, employment
Traffic				
1997 - 2002 daily traffic (AADT)	GDOT	Traffic	Electronic, GIS	Evaluate traffic volumes, perform cut line analysis, model validation
County/city traffic counts	MBPZ	Traffic	Electronic, GIS	
Travel Demand Model				
MATS travel demand model 2000, E+C, and 2025 networks	MBPZ		Electronic, GIS	Establish existing travel patterns and forecast future travel patterns and trip production
Roadway Characteristics				
Roadway inventory	Field verification, aerial photography, GDOT	Road Inventory	Maps, photographs	GIS base mapping, define base conditions
Traffic control inventory (signals, posted speed limits, 4-way stops)	Field verification	Road Inventory	Report, maps	Develop baseline inventory
Lane geometry	Field verification, aerial photography		Maps, photographs	
Planned Projects				
TPRO database for Bibb, Jones, Monroe Counties	GDOT	Project information	GIS	Develop E+C model network
Accident/Crash Data				
2000, 2001 accident records	GDOT	1995-1997, 2001 accident records	Electronic	Evaluate traffic safety issues

Data Description	Source	Data Type	Format	Study Use
Aerial Photography				
3.75 Min Ortho Color Infrared (CIR) photos 2001	Georgia GIS Clearinghouse, County government		Photographs	GIS base mapping
Environmental Data				
Historic properties	GA Dept. of Natural Resources - Historic Preservation Division	Georgia Historic Resource Surveys - 1988 Bibb Co./ 1989 Jones Co. Historic Resource Surveys	USGS 7.5 minute topographic map overlay	Identify constraints
	National Park Service	National Register Information System - Bibb County and Jones County National Register listed properties	Database	Identify constraints
	GA Dept. of Natural Resources - Historic Preservation Div.	Proposed National Register nominations	Database	Identify constraints
	GDOT/Lichtenstein and Associates, Inc.	Georgia Historic Bridge Survey	Database	Identify constraints
Archaeological resources	University of Georgia - Athens	University of Georgia - Athens Archaeological Site Files	Electronic	Identify constraints
Waters of the United States (wetlands and streams)	U.S. Fish and Wildlife Service - National Wetlands Inventory (NWI)	USGS 7.5 minute topographic map overlay - Macon East, Macon Northeast, and Macon Northwest quadrangles	Electronic	Identify constraints
Known cemeteries	USGS	USGS 7.5 minute topographic map	Map	Identify constraints

Traffic Analysis Zone (TAZ) Socioeconomic Data

The MATS 1998 and 2025 models represent Bibb County and areas of Jones County south of Georgia State Route (SR) 18. As the northern junction point of I-75 and I-475 is within Monroe County, it was not included in the original MATS model. The original model consisted of 397 internal traffic analysis zones (TAZs) and 27 external stations. Figure 2-1 depicts the TAZ structure within the Connector study area.

Figure 2-1 Traffic Analysis Zone Structure



In order to test project scenarios that connect to the northern junction point between I-75 and I-475, the model was expanded as part of the study. Four internal TAZs were added within Monroe County, using block and block group data available from Census 2000. The base year model network was extended to the aforementioned junction point, which resulted in a relocation of the US 41 external zone from the Bibb-Monroe County line to a location west of I-75. Original MATS external zones for I-75 north and I-475 were merged, renumbered, and relocated to a point north of their juncture. Although the internal zone system is generally consistent with the census TAZ structure, certain modifications have been made to the available Census TAZ map for consistency with the model TAZ system. In order to be consistent with the external

zone system, the Census TAZs numbered 399, 401, 402, and 403 were removed from the TAZ database. Additionally, zones 41, 89, and 388 were split in accordance with the TP+ model network configuration. Figure 2-2 depicts the expanded model area TAZs while Figure 2-3 depicts the expanded model area network.

Figure 2-2. Expanded Model Area TAZs

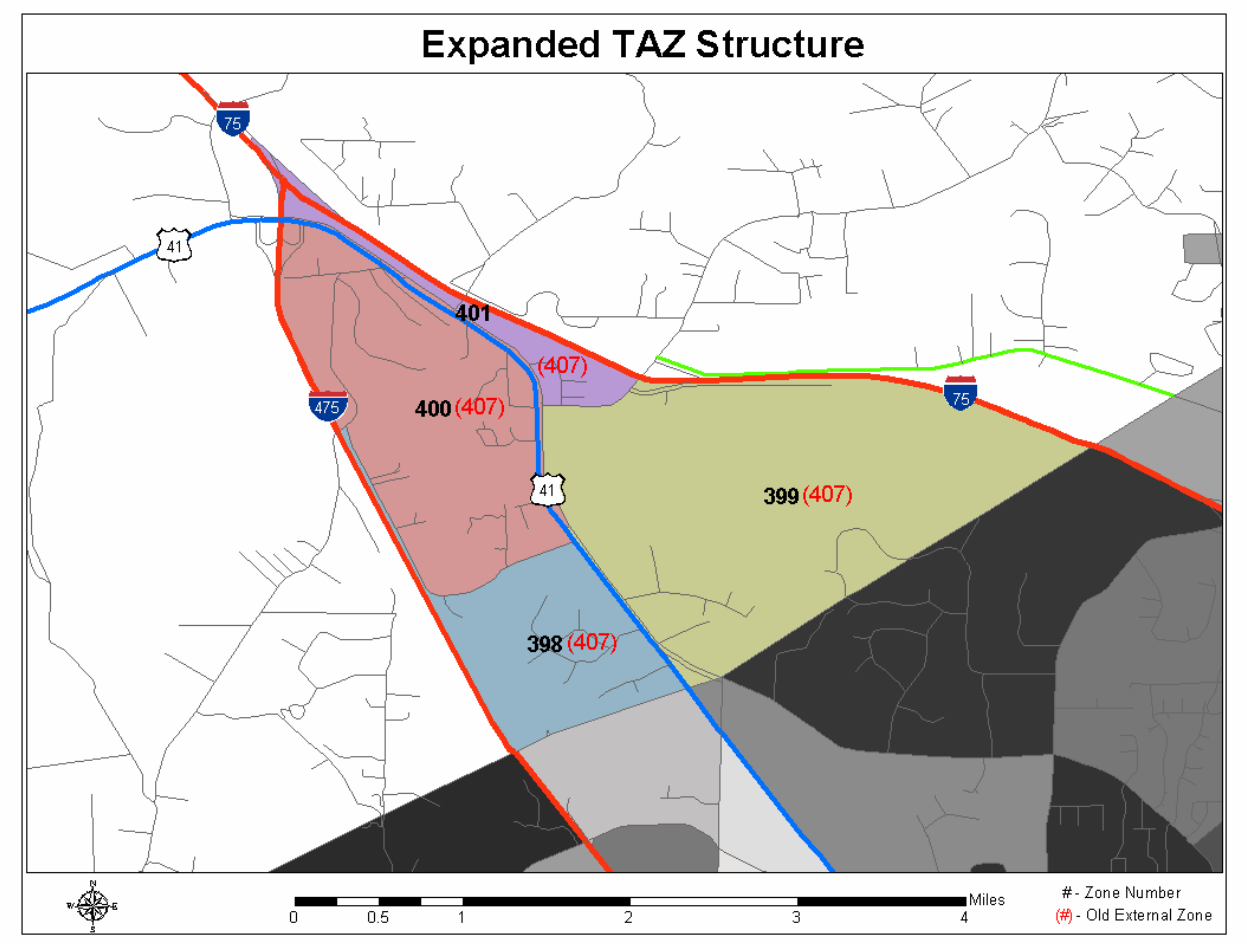
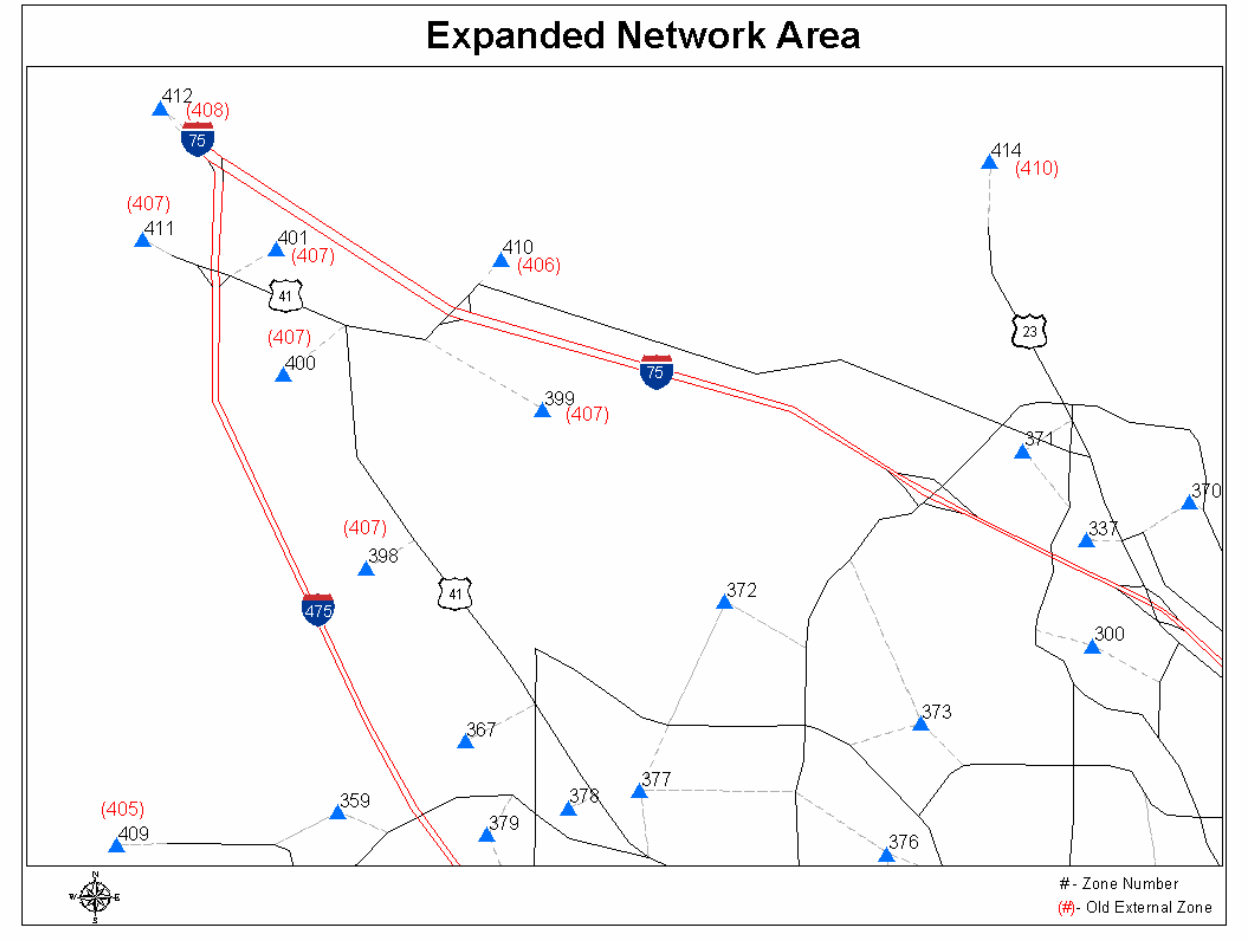
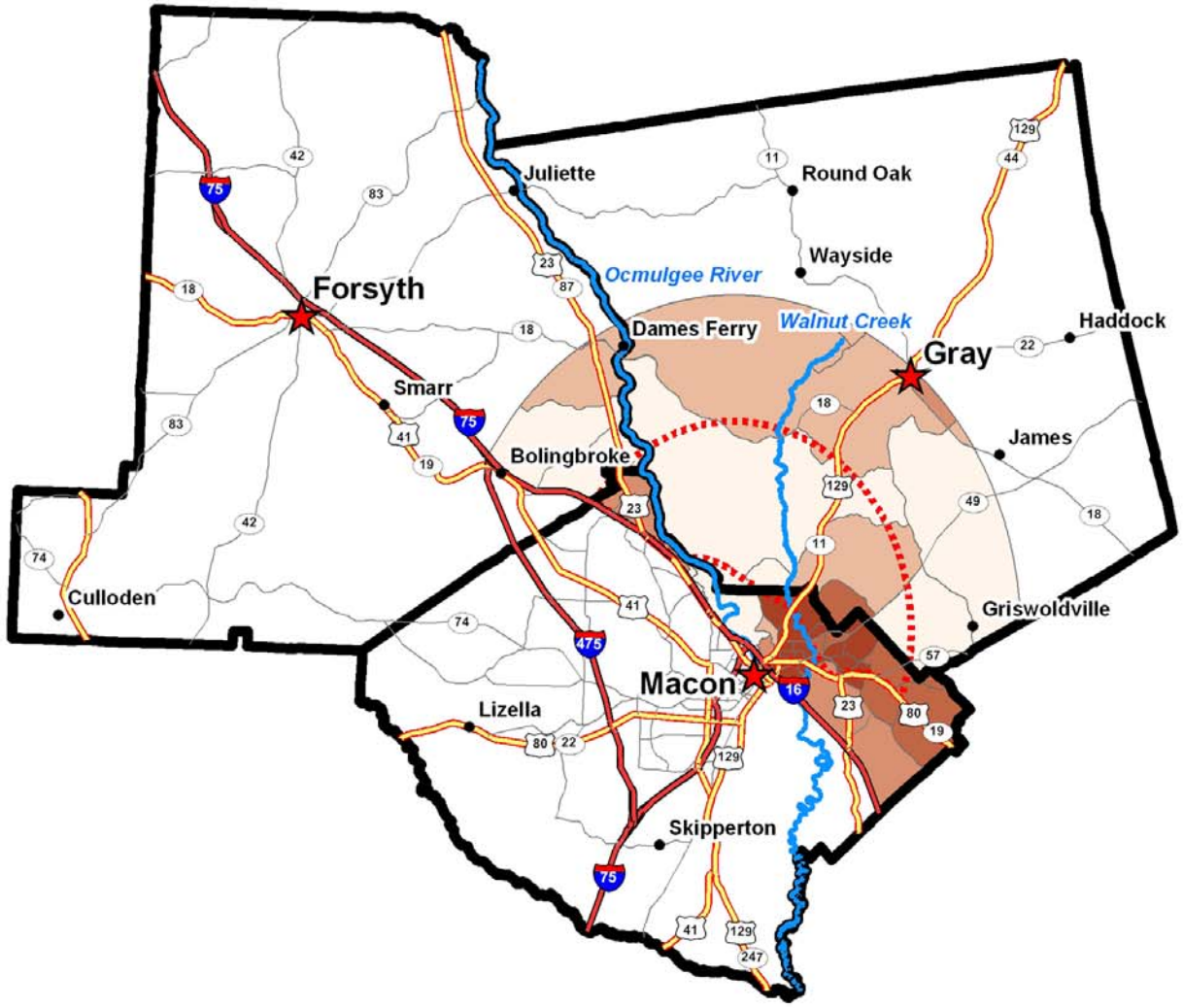


Figure 2-3 Expanded Model Area Network



Minority Population Year 2000



Minority Population by Census Block Group

- 74.9% and Above
- 56.2 - 74.8%
- 37.5 - 56.1%
- 18.8 - 37.4%*
- 18.7% and Below

*Statewide Avg = 37.4%

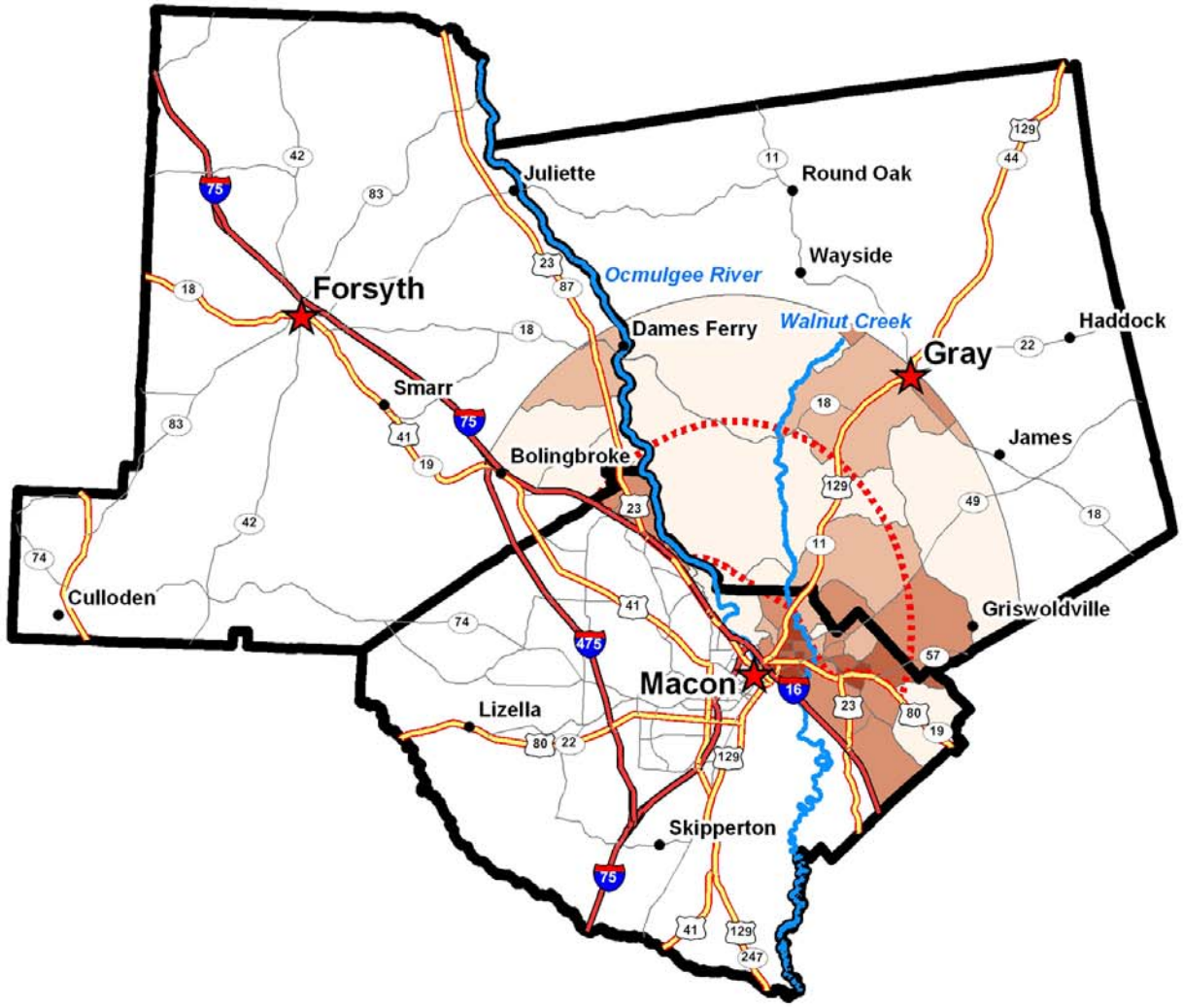
- County Seat
- City / Town
- Interstate
- US and State Route
- Local Road
- Corridor Boundary
- County Boundary

Figure 2-4

Source: Day Wilburn Assoc., and US Census Bureau 2000.

This map is intended for planning purposes only.

Population below Poverty Level Year 2000



Population below Poverty Level by Census Block Group

- 39.1% and Above
- 26.1 - 39.0%
- 13.1 - 26.0%
- 6.6 - 13.0%*
- 6.5% and Below

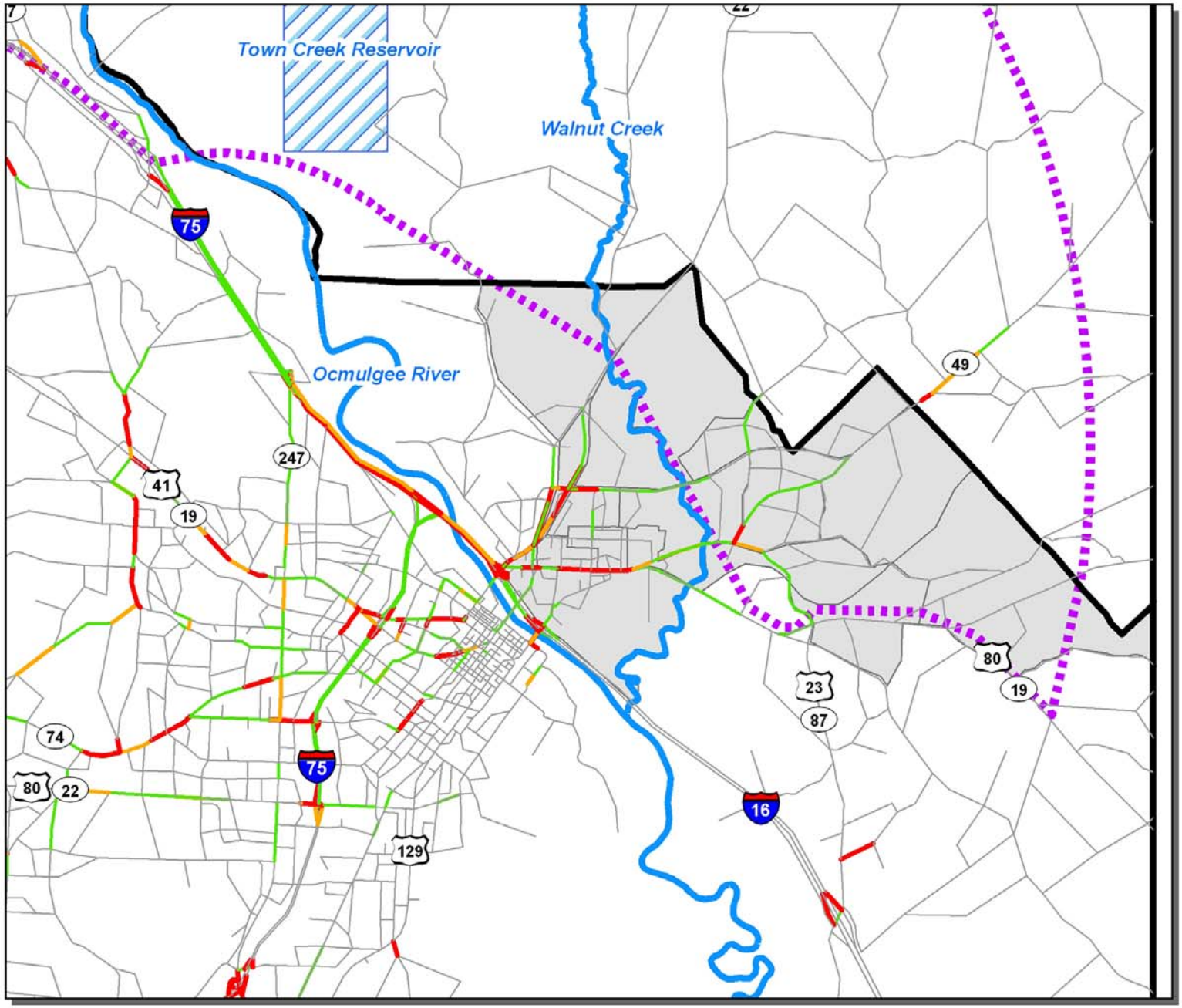
*Statewide Average = 13.0%

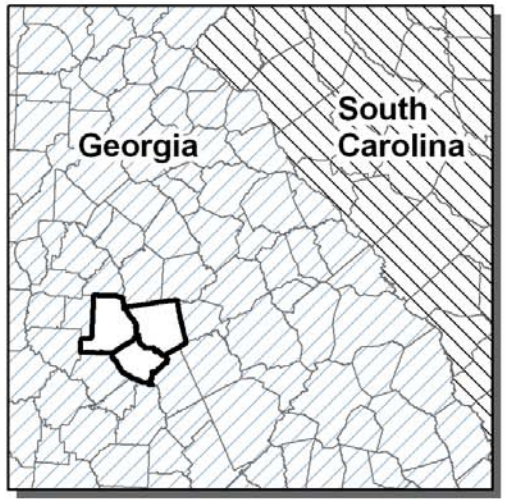
- County Seat
- City / Town
- Interstate
- US and State Route
- Local Road
- Corridor Boundary
- County Boundary

Figure 2-5

Source: Day Wilburn Assoc., and US Census Bureau 2000.

This map is intended for planning purposes only.





1998 Modeled Volume-to-Capacity Needs

- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- Census Block Groups >= 1/2 std. dev. above the mean for minority and/or poverty
- County Boundary

Figure 2-6

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.

The identification and mapping of minority and low-income communities in the study area assisted with outreach efforts. Located in various pockets, the highest concentrations of minority and low income communities within the study area are illustrated on the maps in Figures 2-4 and 2-5. Using 2000 Census data, the maps show the location (by Census block group) of those communities that exceed the statewide average for minority population and those communities that fall below the statewide average poverty level. As shown in these figures, the area with the highest concentration of minority and low-income communities is located in northeastern Bibb County, with smaller concentrations of low-income and minority communities in southeastern Jones County and north central Bibb County.

Identified system deficiencies were mapped against the low-income and minority areas, as shown on Figure 2-6. Recommended system improvements in areas with low-income and minority populations within the study area will be mapped and evaluated in Phase Two.

The consultant team discussed data availability with GDOT, Macon-Bibb Planning and Zoning Commission (MBPZ), Monroe County, and Middle Georgia Regional Development Center (RDC) staff, reaching the conclusion that base year 1998 and future year 2025 socioeconomic data was not available for Monroe County. Therefore, Census 2000 geography was used to combine Census Blocks into TAZs and Census 2000 data was used to populate the zones in Monroe County. Wherever possible, data was used at the block level and aggregated; however, certain data items not available at the block level (such as income) were assumed equal in all zones within the block group comprising this portion of Monroe County. Since only minimal commercial establishments are found in this area of Monroe County, employment was assumed equal to zero.

In the absence of actual 2030 forecasts, year 2025 MATS trip productions, trip attractions, and external trips were extrapolated based on linear growth between the base year 1998 and horizon year 2025. For Monroe County, available countywide Census population growth between 1990 and 2000 was used to increase year 2000 TAZ data to 2030 levels. Table 2-3 provides a summary of key socioeconomic data assumptions for the Monroe County TAZs while Table 2-4 provides a summary of external trip growth between 1998 and 2030.

Table 2-3
Monroe County Socioeconomic Assumptions
Tract 503 BG 3

Growth Rate						
Tract Wide Growth	**1990**		**2000**		**Rate**	
Population	2,816		4,265		4.24%	
Households	911		1,496		5.09%	
	1990		**2030**		**Rate**	
Zonal Growth	**Population**	**Households**	**Population**	**Households**	**Population**	**Households**
Zone 398	225	77	782	341	248%	343%
Zone 399	92	29	320	128	248%	341%
Zone 400	398	145	1,383	642	248%	343%
Zone 401	111	39	386	173	248%	344%
Totals	826	290	2,870	1,284	248%	343%

Table 2-4
Summary of Monroe, Bibb, and Jones Counties External Trips for the Study Area

Old Ext.	Old 1998 Count	Old 2025 Count	New Ext.	Road ID	New 1998 Count	New 2030 Count	1998 - 2030 Increase	1998 - 2030 % Growth
398	61,400	139,300	402	I-75 S	61,400	153,726	92,326	250%
399	3,200	8,200	403	Fulton Mill Rd	3,200	9,126	5,926	285%
400	2,800	6,300	404	Knoxville Rd	2,800	6,948	4,148	248%
401	3,600	11,200	405	US 80 W	3,600	12,607	9,007	350%
402	900	1,600	406	Bethel Church Rd	900	1,730	830	192%
403	400	1,000	407	Lower Thomaston	400	1,111	711	278%
404	2,700	5,600	408	SR 74	2,700	6,137	3,437	227%
405	3,400	6,200	409	Zebulon Rd	3,400	6,719	3,319	198%
406	34,200	89,700	410	Pate Rd	2,500	5,769	3,269	231%
407	2,900	6,800	411	US 41 N	2,640	5,953	3,313	225%
408	27,000	61,000	412	I-75 N	60,000	151,000	91,000	252%
409	1,200	3,500	n/a		n/a	n/a	n/a	n/a
410	6,700	11,800	414	US 23 N	6,700	12,744	6,044	190%
411	1,200	2,800	415	Upper River Rd	1,200	3,096	1,896	258%
412	17,500	31,600	416	US 129 N	17,500	34,211	16,711	195%
413	8,800	15,400	417	SR 49	8,800	16,622	7,822	189%
414	5,100	10,100	418	SR 57	5,100	11,026	5,926	216%
415	400	900	419	Davis Rd	400	993	593	248%
416	2,700	4,700	420	US 80 E	2,700	5,070	2,370	188%
417	500	800	421	Riggins Mill Rd	500	856	356	171%
418	19,800	44,000	422	I-16	19,800	48,481	28,681	245%
419	2,900	5,200	423	US 23 S	2,900	5,626	2,726	194%
420	28,800	44,000	424	US 129 S	28,800	46,815	18,015	163%
421	6,600	12,300	425	US 41 S	6,600	13,356	6,756	202%
422	4,700	11,600	426	Houston Rd	4,700	12,878	8,178	274%
423	2,400	5,300	427	Henderson Rd N	2,400	5,837	3,437	243%
424	1,700	3,800	428	Henderson Rd S	1,700	4,189	2,489	246%
Totals	**253,300**	**544,700**			**253,340**	**582,625**	**329,285**	**230%**

Note: The highlighted externals (410, 411, and 412) do not match with previous externals.

Traffic and Travel Patterns Data

Figures 2-7 through 2-9, which were prepared from the GDOT Road Characteristics files, provide information useful in demonstrating traffic and travel patterns in the study area. Average annual daily traffic (AADT) helps identify potential deficiencies.

Roadway Characteristics

The study area roadway network contains a total of 1,121 lane miles. The lane miles assigned to each functional classification in the study area are listed in Table 2-5. The data was taken from the existing travel demand model.

Table 2-5
Study Area Roadways by Functional Classification

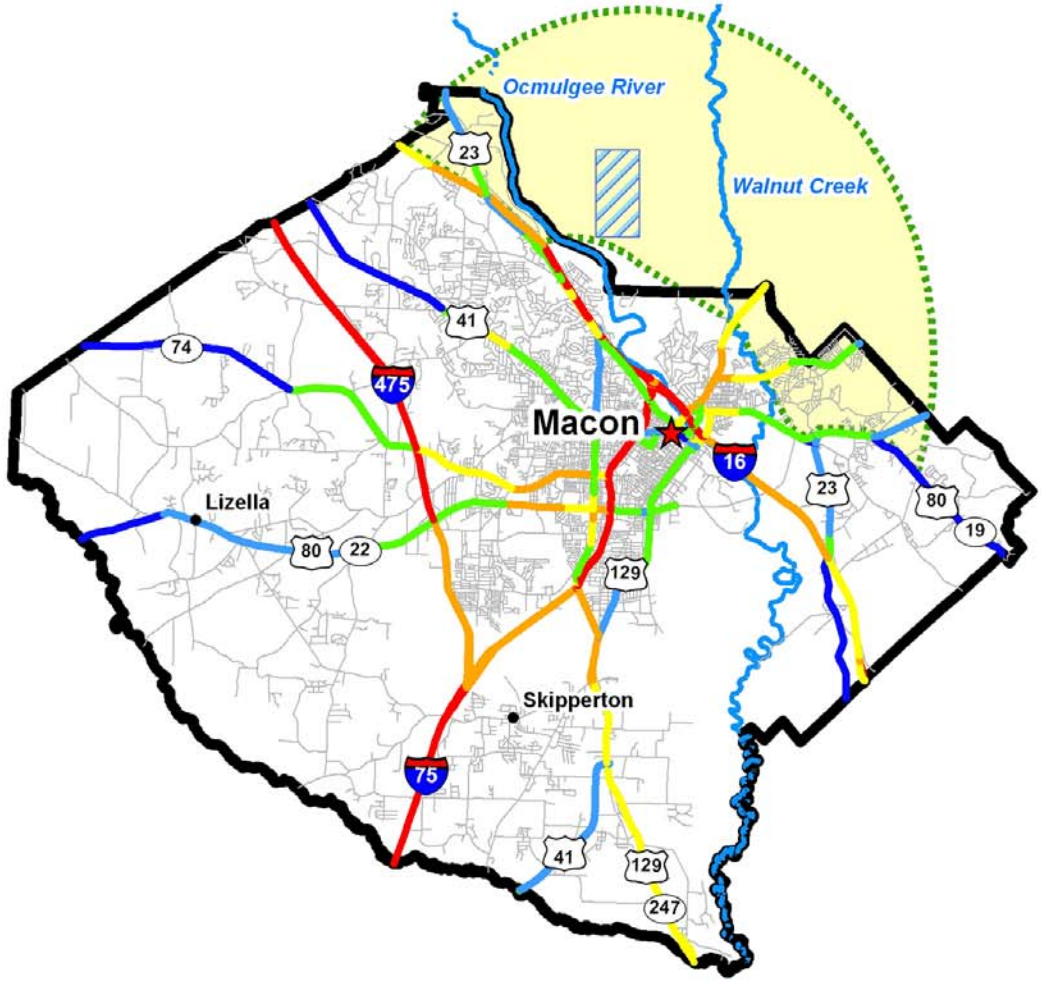
Functional Classification	Lane Miles	Percentage of Total
Interstates	223	19.9%
Ramps	14	1.3%
Principal Arterials	241	21.5%
Minor Arterials	351	31.3%
Collectors	292	26.0%
Total	1121	100.0%

Travel Demand Model

As described, the existing TP+ travel demand forecast model was the basis for developing the model that captured travel demand throughout the entire study area. The expanded model served as the base year model scenario used to identify existing and future congestion and deficiencies. The model methodology included generalized level of service determinations based on volume to capacity (v/c) ratios. Model results, combined with information gathered during Task 1 and public input from Task 2, was evaluated against the factors developed in Task 3.1 to help identify deficiencies.

The trips generated in the model are distributed by seven trip purposes (home-based work, home-based other, home-based shop, nonhome-based, truck, internal-external, and internal-external truck) during three periods (AM peak period, PM peak period, and off-peak period). In lieu of a mode split model, person trips are converted to vehicle trips on the basis of auto occupancy factors. These vehicle trips are then applied to time-of-day factors and later combined to generate a daily trip load. Special generators in the Tom Hill Sr. Blvd commercial area and at the Arkwright/I-75 interchange help to compensate for inadequate trip generation in these areas. There are five turn prohibitors in the model, in addition to one turn penalty located on the Spring Street Bridge.

Bibb County Annual Average Daily Traffic (AADT)
Year 2001



Legend

- 40,001 and Above
- 30,001 - 40,000
- 20,001 - 30,000
- 10,001 - 20,000
- 5,001 - 10,000
- 5,000 and Below
- County Seat
- City / Town
- Local Road
- River / Creek
- Town Creek Reservoir
- Corridor Boundary
- County Boundary

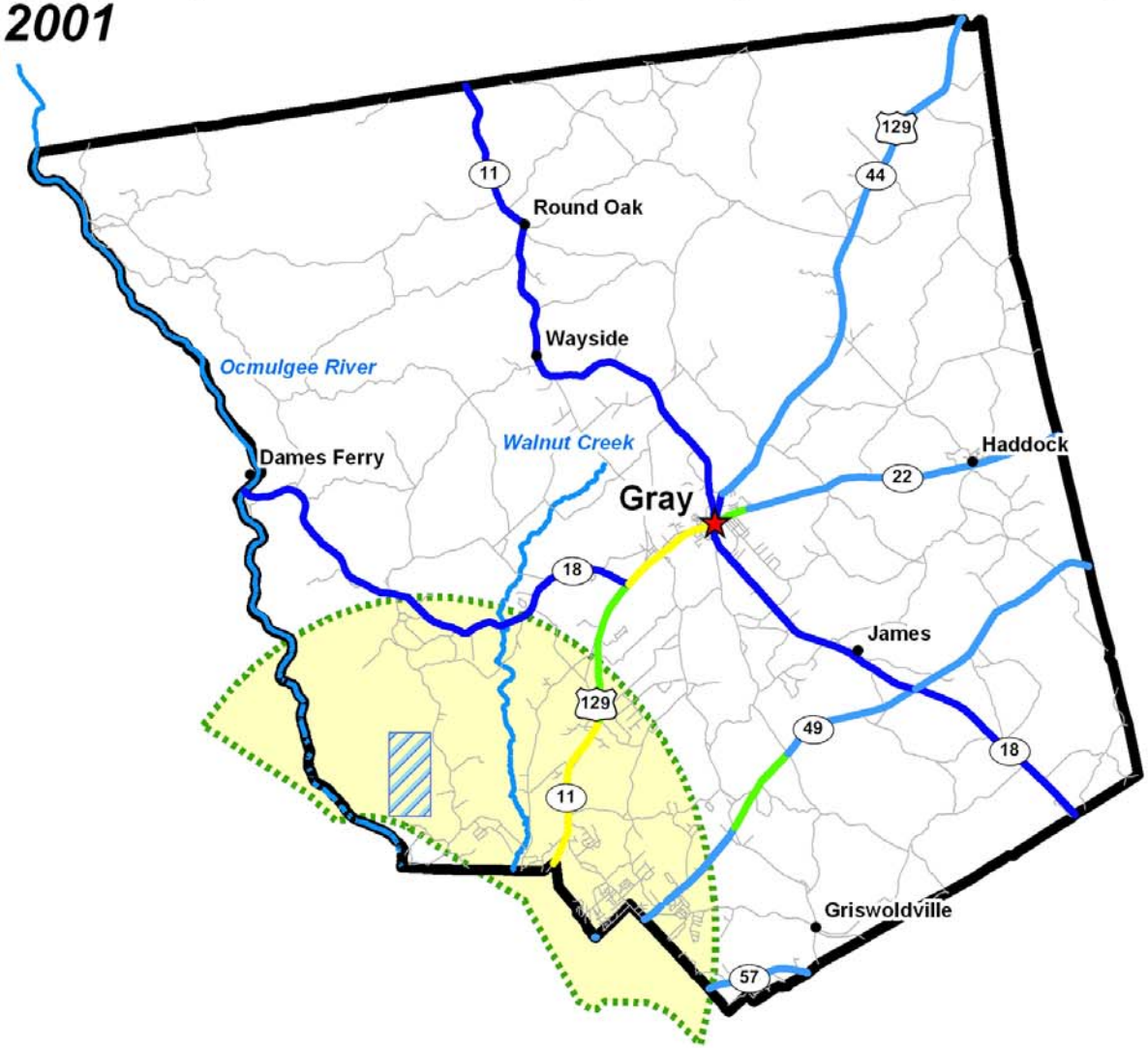
Figure 2-7

Source: Day Wilburn Associates Incorporated.

This map is intended for planning purposes only.

DWA
Day Wilburn Associates, Inc.

Jones County Annual Average Daily Traffic (AADT)
Year 2001



Legend

- 40,001 and Above
- 30,001 - 40,000
- 20,001 - 30,000
- 10,001 - 20,000
- 5,001 - 10,000
- 5,000 and Below
- County Seat
- City / Town
- Local Road
- River / Creek
- Town Creek Reservoir
- Corridor Boundary
- County Boundary

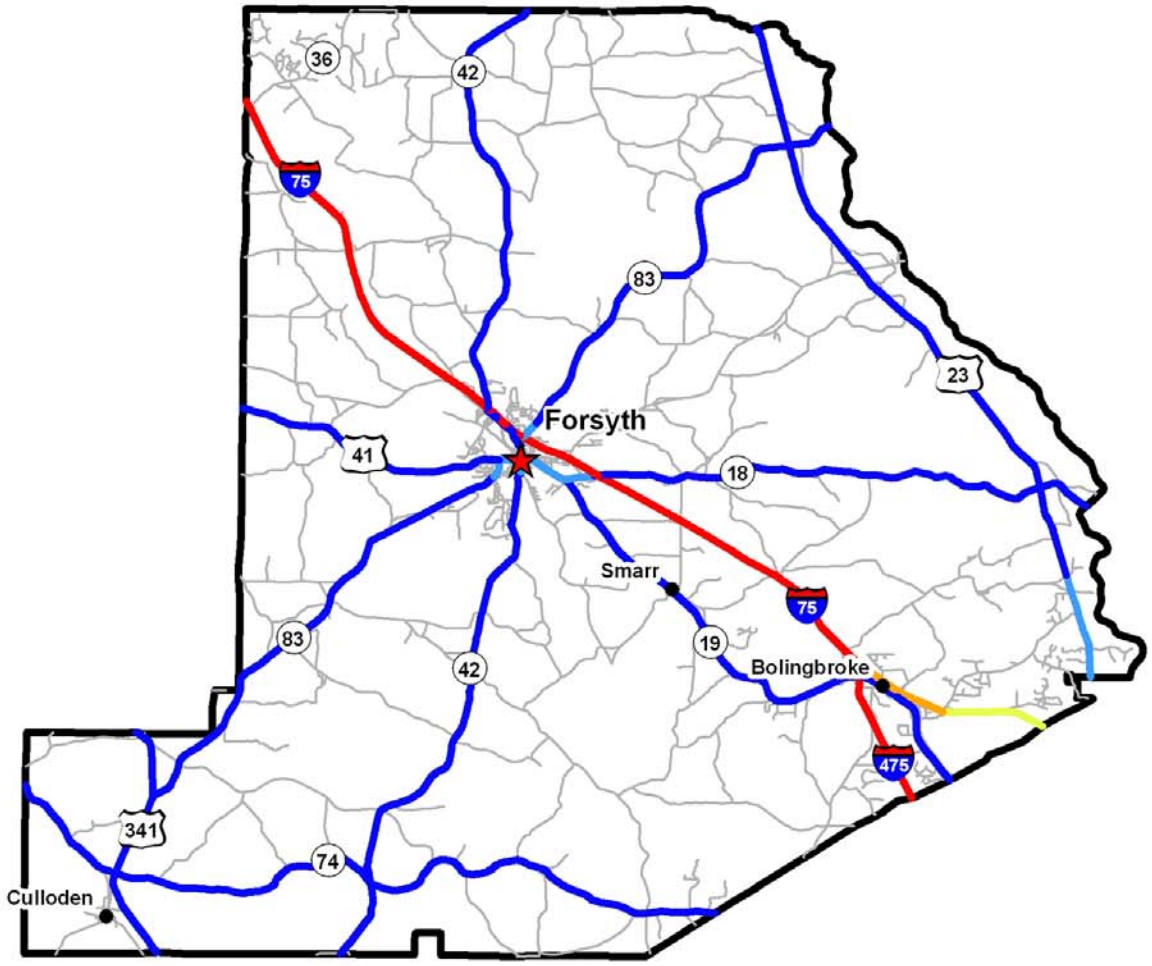
Figure 2-8

Source: Day Wilburn Associates Incorporated.

This map is intended for planning purposes only.

DWA
Day Wilburn Associates, Inc.

Monroe County Annual Average Daily Traffic (AADT) Year 2001



Legend

- 40,001 and Above
- 30,001 - 40,000
- 20,001 - 30,000
- 10,001 - 20,000
- 5,001 - 10,000
- 5,000 and Below
- County Seat
- City / Town
- Local Road
- River / Creek
- Town Creek Reservoir
- Corridor Boundary
- County Boundary

Figure 2-9

Source: Day Wilburn Associates Incorporated.

This map is intended for planning purposes only.

DWA
Day Wilburn Associates, Inc.

Along with the lack of a mode split, the model also does not generate any transit skims nor does it possess a transit network component. Reevaluation of incorporating a transit component may be appropriate in the future to provide an alternative for accommodating ongoing growth.

Modeled and Existing Congestion Locations

Given the nature of this future corridor feasibility study, an evaluation of model simulated volume to capacity (v/c) ratios for base year 1998 conditions was determined to be adequate to identify existing areas of congestion within the study area. Additional revisions were made to the MATS model during expansion into Monroe County to improve model validity around the Bibb-Jones County line.

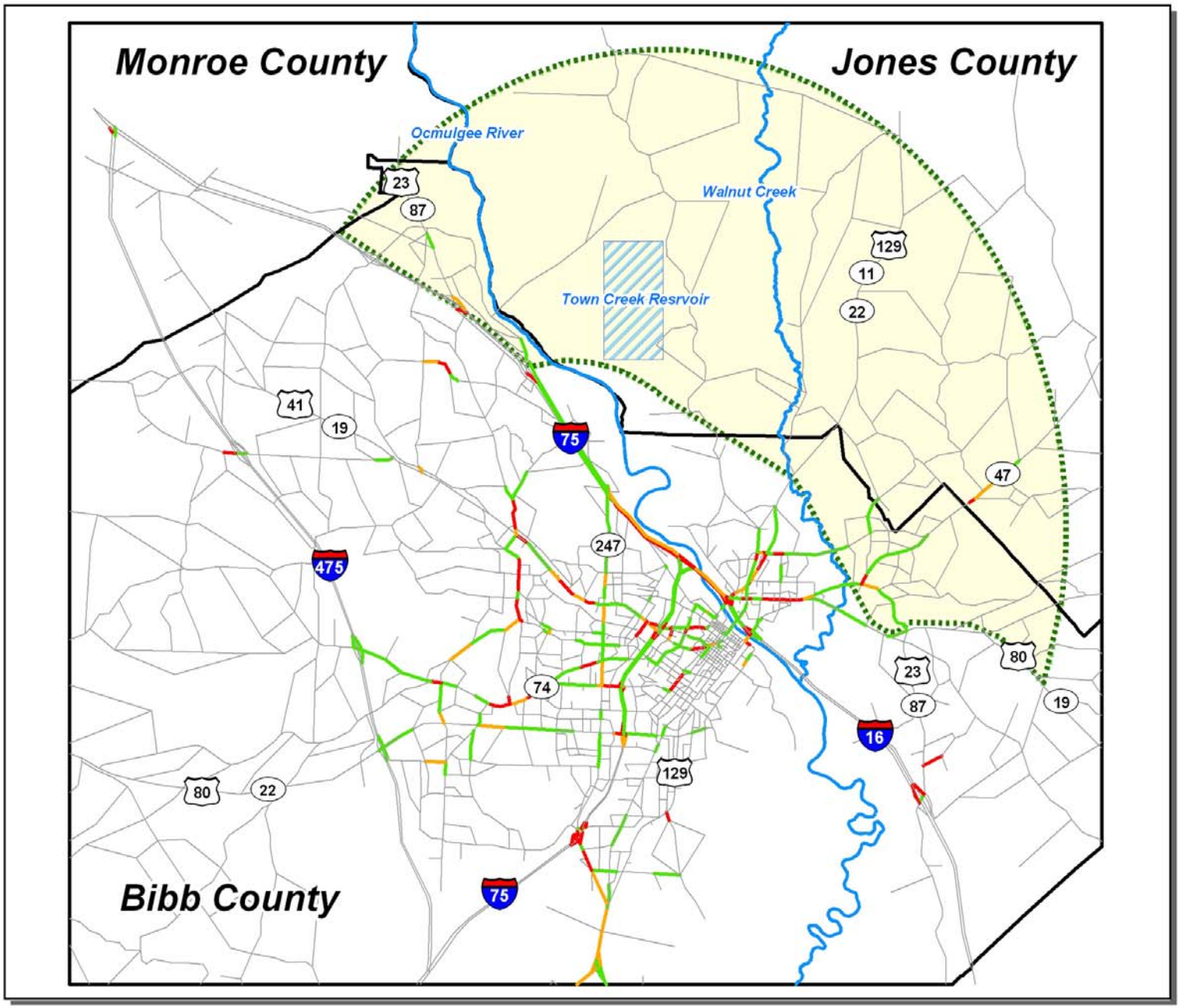
Based on a review of model volume-over-count ratios on key roadway segments in the study area, 1998 v/c ratios are reasonably accurate indicators of existing congested areas. Figure 2-10 displays 1998 v/c ratios in the study area while Figure 2-11 provides an inset of the downtown Macon area. High v/c ratios (greater than 1.0) are being experienced along US 129, Clinton Road, US 80, and sections of I-16 and I-75 within the study area. Excessively high v/c ratios are experienced on most of the ramps connecting I-16 with major streets (such as Spring, Coliseum, and MLK) in the downtown Macon area. A ramp v/c ratio exceeds 3.0 on the northbound on-ramp at the I-16/US 41 interchange leaving downtown. These conditions speak to the need for alternative corridors to be considered in re-routing through traffic outside this already congested area.

Environmental Data

Environmental concerns throughout the study area are significant. In order to appropriately identify deficiencies, initial environmental data items were collected. A preliminary analysis of environmental issues potentially affecting the project was conducted. Significant issues were identified for further analysis.

Preliminary existing environmental information was collected as part of Phase One. The data collected consist of published information from a variety of sources, as listed below:

- Wetlands and Streams – U.S. Fish and Wildlife Service National Wetlands Inventory. Impacts to wetlands and streams are regulated by the U.S. Army Corps of Engineers.
- Protected Species – U.S. Fish and Wildlife Service County lists and Georgia Department of Natural Resources Database for known locations of protected species.
- Historic Resources – Georgia Department of Natural Resources Historic Preservation Division; Georgia Historic Bridge Survey; National Register information System – Bibb and Jones Counties; Georgia Historic Resource Surveys – 1988 Bibb County and 1989 Jones County.
- Cemeteries – USGS topographic maps. Special permits would be necessary if cemeteries are affected.
- Archaeological Resources – University of Georgia Archaeological Site Files.



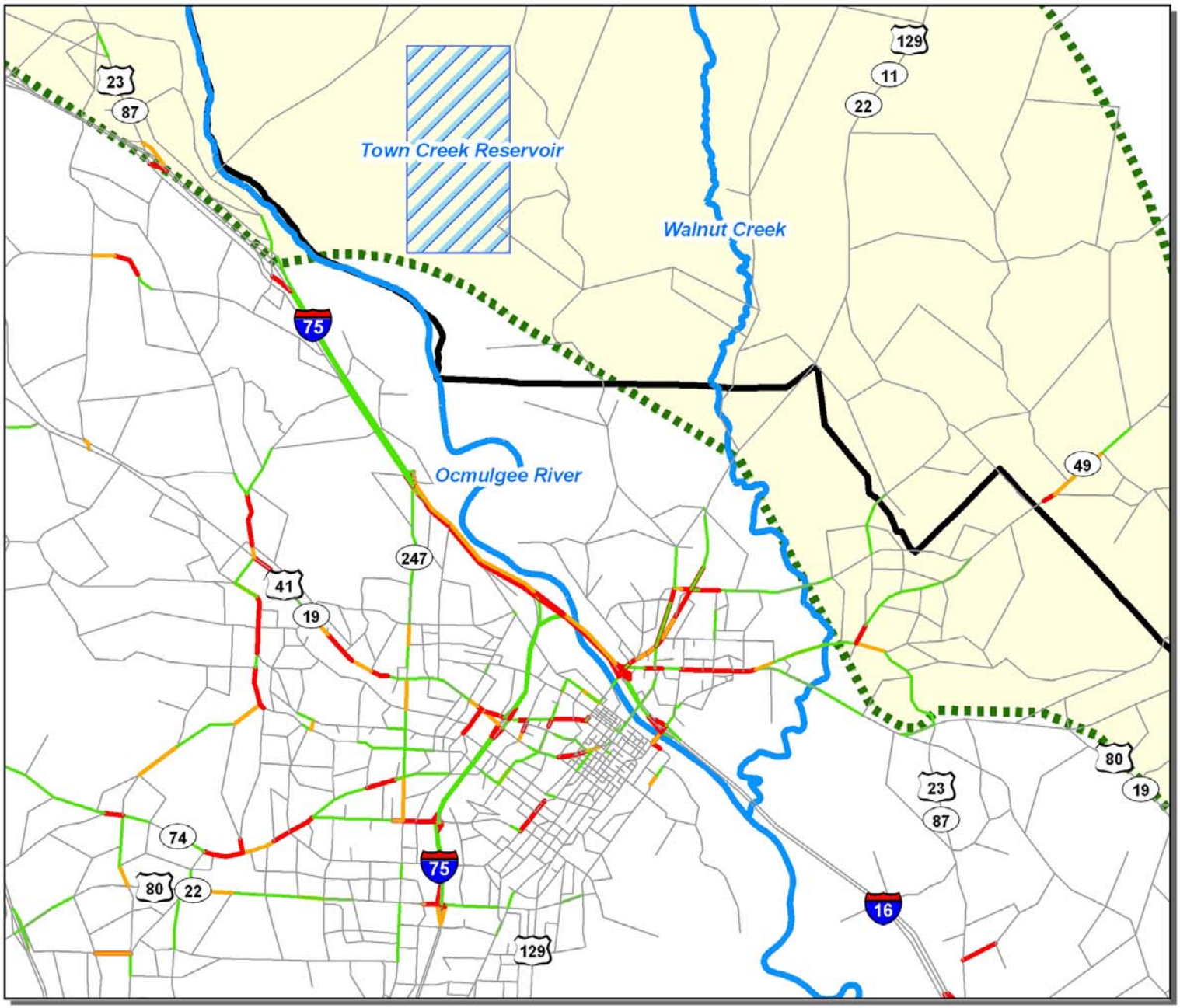
1998 Modeled Volume-to-Capacity Needs

- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- County Boundary

Figure 2-10

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.



1998 Modeled Volume-to-Capacity Needs

- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- County Boundary

Figure 2-11

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.

The purpose of the data is to identify constraints that may affect the development of viable alternatives for the Connector. Attempts to avoid these resources should be made during the alternatives development phase of the project. The data was compiled in a GIS format and has not been field verified.

Interview Data

Field review of general travel conditions in the study area and observations of operational characteristics at key locations were conducted to ensure the team's familiarity with conditions firsthand, thereby facilitating review and analysis of data. The field review was part of individual meetings with local governments, MBPZ staff, city and county agencies, chambers of commerce, economic and industrial development entities, the RDC, and others as needed to collect available data. An Advisory Panel meeting was also held to introduce the study, outline the process, and gain initial input from members. Interviews attempted to determine key stakeholder perspectives to the proposed cross county facility. This was valuable in getting a sense of public support for the project.

Advisory Panel Meeting

The purpose of the initial Advisory Panel meeting was to explain the study's purpose and process, collect initial input, and obtain further guidance on the overall scope and objectives of the study. Advisory Panel members included representatives from GDOT, MBPZ, MGRDC, and local governments, as well as other transportation planning stakeholders. Meeting participants helped define the objectives of the study, overall development and transportation goals for the area, and key issues. The following summarizes issues and concerns raised for consideration:

- Reasons for the Connector:
  - Alleviate traffic on Gray Highway.
  - Provide an additional river crossing.
  - Facilitate traffic out of Milledgeville and Eatonton reaching I-75 and I-16.
  - Reduce congestion on Joycliff, Henderson, and Graham Roads
  - Improve limited east-west connectivity in Jones County.
  - Provide development opportunities in Jones County.
  - Excessive through traffic from Milledgeville to Medical Center.
  - Provide alternative to Spring and 2nd Streets.
  - Reduce truck traffic on SR 49 and SR 57 (approximately 400 gravel trucks per day on SR 49).
  - Provide increased capacity on I-16 and I-75 in Macon, which are near capacity.
  - Address issues related to truck traffic, such as its restriction on some roads, including Henderson and Shirley Roads.

- Reasons the Connector remains an issue:
  - Not enough money to construct the Connector.
  - Bibb and Jones Counties could not agree on a crossing.

  - Project became confused with Eisenhower Parkway connection.

- Other comments/points from the Advisory Panel:
  - Public comment was limited in 1994 study preparation, and the public does not know that the current study is underway. (This comment was addressed as part of the Public Involvement and outreach effort.)
  - There are new elected officials in Jones County, and the position of the current Commission is not clear.
  - Jones County would not favor the Joycliff and Henderson Roads alignments for a crossing.
  - Environmental concerns
    - River crossing
    - Wetlands and streams
    - Watershed Protection Area for reservoir
    - Piedmont National Forest
  - Better connectivity is needed, including a river crossing and accommodations for truck traffic.
  - There are different needs in the northern part of the county than in the southern portion. The need for the Connector in the northern part is mostly to provide a river crossing. There are limited crossings to I-75 from growing Jones County, and traffic currently goes through one of five river crossings in Macon to connect to I-75. In the southern section, the need is based on industrial traffic (heavy gravel trucks) that travels GA 49 and GA 57 to get to I-75 or I-16.
  - The previous 1994 Bibb Jones Cross County Connector Study is still valid.

Issues Identified in the Field Interviews

Individual interviews were held with the following local stakeholders:

- G.B. “Butch” Moore, Chairman, Jones County Board of Commissioners
- Al Andrews, Commissioner, Jones County Board of Commissioners
- Larry Childs, Commissioner, Jones County Board of Commissioners
- Phil Clark, Senior Planner, Middle Georgia Regional Development Center
- Chip Cherry, Director, Macon Chamber of Commerce
- Sandra McKinney, Jones County Chamber of Commerce/Development Authority
- Frank Duke, Jones County Chamber of Commerce/Development Authority
- Frank Sanders, Macon Water Authority
- Tony Rojas, Macon Water Authority
- Tommy Olmstead, Chairman, Bibb County Board of Commissioners
- Jeffrey Greene, Mayor’s Office, City of Macon
- Ben Spears, Chairman, Monroe County Board of Commissioners
- Mike Bilderback, Commissioner, Monroe County Board of Commissioners
- Sid Banks, Public Works Superintendent, Monroe County
- Gail King, Monroe County Clerk

Interviewees were asked the following five questions:

- What is the critical function of a potential connector?
- Which is the best alternative – the southern alignment or northern alignment?
- What environmental issues exist and what neighborhoods might be impacted?
- What truck traffic issues exist?
- What are the long range land use, economic development and transportation planning impacts?

In general, interviewees in Jones and Bibb Counties expressed support for the project and agreed that it would help reduce congestion and improve east-west connectivity. The question of Jones County's response to the potential connection at Joycliff and Henderson Roads was not confirmed. Jones County did not have any preconceived notions about the facility's alignment. Several alternatives to the north and south alignments were put forward, as well as issues concerning environmental, truck traffic and long range impacts. Monroe County officials were concerned about the possibility of relocation of residents to accommodate the Connector. They made some alternative suggestions regarding traffic in Bibb and Jones County.

Observations of Operations at Key Locations

During field visits, observations of key transportation related locations were documented.

Traffic Operations

- Eastern Study Area (US 80 / US 23 / Jeffersonville Road area and US 129 / GA 49) – This portion of the study area generally has good existing operational and speed design characteristics around the US and State Routes. However, higher traffic volumes may be causing some operational issues at the intersections of the major routes during peak periods. The intersection of US 80 at US 23 may require additional study due to high volumes and skewed side roads. In addition, the intersection of US 129 at GA 49 has queuing issues due to the high volumes. The residential streets in this area appear to be functioning well.
- Central Study Area (southern Jones County) – This portion of the study area has poorer operational and design characteristics. Because the terrain in the area is a rolling terrain, county roads in the area have poorer vertical and horizontal speed designs. Many of the intersections cross at less than desirable angles with less than desirable sight distances. These deficiencies do not appear to be a major issue at this time due to the low traffic volumes. It should also be noted that there are limited opportunities for east-west travel in this portion of Jones County.
- Western Study Area (I-75, Bass Road, Riverside Drive, Arkwright Road) – This part of the study area includes the quickly growing north side of Macon. The I-75 interchanges in this area are currently functioning near capacity at peak hours, and serious queuing appears to be an issue at most of the interchanges. In addition, the I-75/Riverside Drive and I-75/Arkwright Road interchanges are skewed due to the proximity of the Ocmulgee

River. Many of the local streets also appear to have operational and design issues due to the high volumes.

Development

- Eastern Study Area (US 80 / US 23 / Jeffersonville Road area and US 129 / GA 49) – This portion of the study area appears to be undergoing some slow growth and development. The US 80 / US 23 area appears to have undergone little to no development over the past few years, and the neighborhoods between Jeffersonville Road and GA 49 appear well established. There is commercial and residential development in the area of US 129 and GA 49.
- Central Study Area (southern Jones County) – This portion of the study area appears to have undergone little development. It is still very rural in nature with a few estate style residential homes and larger tracts of land. The terrain and poorer connectivity will limit development in this area. The main feature in the area is the Town Creek Reservoir, which is surrounded by large tracts of undeveloped land in order to preserve the watershed for the reservoir.
- Western Study Area (I-75, Bass Road, Riverside Drive, Arkwright Road) – This part of the study area has experienced significant commercial and residential growth. Retail shopping, restaurants, and hotels are following the growing residential areas on the north side of Macon.

Environmental

- Eastern Study Area (US 80 / US 23 / Jeffersonville Road area and US 129 / GA 49) – This portion of the study area has several observed environmental concerns. The Ocmulgee National Park and associated archeological and Native American resources are prevalent between the Ocmulgee River and US 80. Additional streams and neighborhood parks are located between US 80 and SR 49. The existing neighborhoods in this portion of the study are primarily African American.
- Central Study Area (southern Jones County) – The primary observed environmental concern in this portion of the study area is the Town Creek Reservoir and its associated streams. Protecting the watershed for this reservoir will be an environmental concern.
- Western Study Area (I-75, Bass Road, Riverside Drive, Arkwright Road) – The primary observed environmental concern in this portion of the study area is the Ocmulgee River and its associated streams.

Previous Studies

Information from existing planning studies, including the current TIP, County Comprehensive Plans, and the 1994 Cross County Connector Study, were used to help build an effective database, thus forming a strong foundation for needs assessment and development of recommendations to better meet transportation needs in the study area. Elements of these studies, including socioeconomic data, identified transportation deficiencies, environmental

information, GIS themes, and suggested projects, were included in Phase One of the study. Table 2-6 outlines the studies and plans that were collected to support this effort.

Table 2-6
Previous Studies

Document Name	Source	Study Use
Cross County Connector Study for Bibb and Jones County, April 1994	MBPZ, GDOT, FHWA, RDC	Compare study findings and develop recommendations
Construction Work Program for Bibb and Jones Counties	GDOT	Identify short range transportation projects in study area
Bibb County Comprehensive Plan/Land Use Plan	RDC, Bibb County	Identify short range transportation projects and land use
Update to the City of Gray-Jones County Comprehensive Plan	RDC, Jones County	Identify short range transportation projects and land use
2002-2007 Comprehensive Economic Development Strategy of the Middle Georgia Economic Development District	RDC	Identify economic development implications for Connector
Georgia Statewide Transportation Improvement Plan (Walker and Catoosa Counties)	GDOT	Identify short term transportation projects in study area

3 Inventory of Existing and Forecast Conditions

In order to evaluate the transportation system, determine deficiencies, and propose solutions, a review of existing conditions is required. The 1998 MATS travel demand model included performance factors needed for evaluation, and those same factors were used for the current analysis and assessment. The performance factors included vehicle miles of travel, vehicle hours of travel and crash data. System wide characteristics of existing transportation conditions in the study area are described in the following tables.

Existing Traffic Conditions

Table 3-1 shows daily vehicle miles traveled (VMT) by functional classification of roads in Bibb and Jones Counties. The total VMT for these counties is almost 4.7 million vehicle miles traveled.

Table 3-1
Vehicle Miles Traveled (VMT) by Functional Classification

Functional Classification	VMT
Interstate	2,024,078
Ramps	53,631
Principal Arterials	1,176,009
Minor Arterials	927,783
Collectors	420,372
Local	88,979
Total	**4,690,852**

Table 3-2 shows daily vehicle hours traveled (VHT) by road functional classification for the transportation network in Bibb and Jones Counties. The total VHT for Bibb and Jones Counties is almost 91,000 VHT.

Table 3-2
Vehicle Hours Traveled (VHT) by Functional Classification

Functional Classification	VHT
Interstate	25,792
Ramps	3,208
Principal Arterials	25,996
Minor Arterials	22,846
Collectors	10,236
Local	2,893
Total	**90,971**

Roadways with volume to capacity ratios over 0.90 in an urban area are considered to be deficient. Roadways with volume to capacity ratios over 0.75 in a rural area are considered

deficient. Figures 2-10 and 2-11 provide a visual display of the locations of congested roadways in the vicinity of the study area, as determined by the 1998 model.

Table 3-3 lists the results of relevant 2002 traffic count stations in and around the study area. The modeled base year results are generally consistent with existing conditions.

Table 3-3
Study Area Traffic Volumes

County (station #)	Count Station Location	2002 AADT
Bibb (096)	US 80 in east Macon	16,825
Bibb (045)	US 129 south of Jones County line	25,788
Bibb (038)	US 129 north of I-16	47,743
Bibb (352)	I-75 just west of interchange with I-16	56,412
Bibb (365)	I-16 just east of Ocmulgee crossing	70,445
Jones (101)	US 129 just east of SR 57	22,102
Jones (107)	US 129 @ Clinton	25,056
Jones (109)	US 129 @ Gray	24,858
Jones (163)	SR 49 north of Bibb County line	10,603
Monroe (220)	I-75 just north of Bibb County line	26,753
Monroe (222)	I-75 just south of I-475 interchange	35,671
Monroe (224)	I-75 north of I-475 interchange	60,591

Source: Georgia Department of Transportation Traffic Count Data

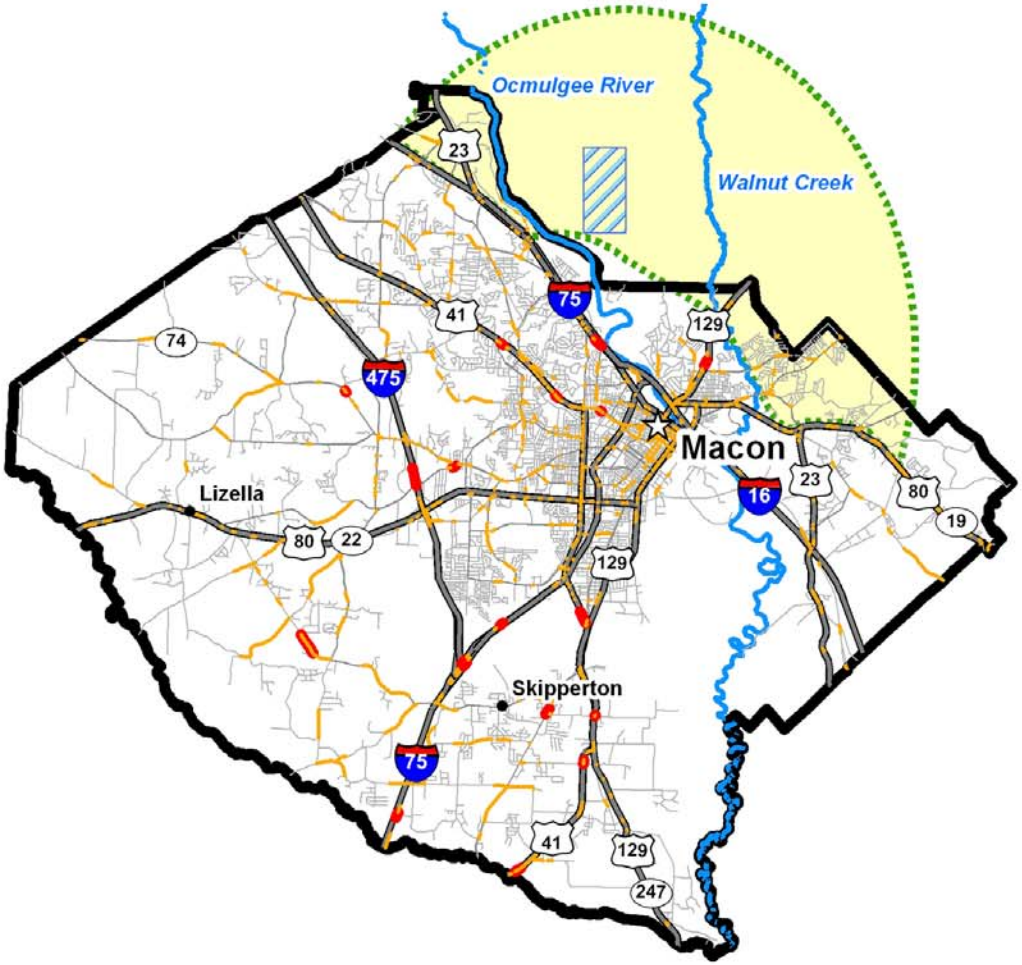
Table 3-3 and Figures 2-10 and 2-11 illustrate congestion in the area of the US 129 and I-16 interchange. Approaches to the interchange are assigned v/c ratios over 0.90 and in many cases over 1.00. As growth and development continues in the north Macon and south Jones County region, the congested locations will require a significant level of additional transportation infrastructure in order to regain an acceptable level of service. Other areas of deficiency are found along the I-75 and US 41 corridors, as well as locations throughout central and western Macon, with spot locations on SR 49 in southeast Jones County.

Crash and fatality rates were computed for the two counties. Figures 3-1 and 3-2 identify potential crash and fatality deficiencies in Jones and Bibb Counties, respectively. The fatality rate on the southern section of US 129 in Jones County is in excess of the statewide average. The statewide average crash rate is also exceeded in the Jones County section of the study area by SR 18, Upper River Road, and Graham Road. The I-75 and US 80 corridors in the Bibb County portion of the study area include sections of roadway that experienced higher than average crash and fatality rates.

Preliminary Analysis of Environmental Issues

Preliminary existing environmental information was collected as part of Phase One. The purpose of the data is to help identify constraints that may affect the consideration of potential alternative alignments for the Connector.

Bibb County Crash and Fatality Rates
Year 2001



0 1.5 3 6 9 12 Miles

Legend

- Fatality Rates in Excess of the Statewide Average
- Crash Rates in Excess of the Statewide Average
- County Seat
- City / Town
- Major Road
- Local Road
- River / Creek
- Town Creek Reservoir
- Corridor Boundary
- County Boundary

Figure 3-1

Source: Georgia DOT Crash Database 1995-97 and 2001.

This map is intended for planning purposes only.

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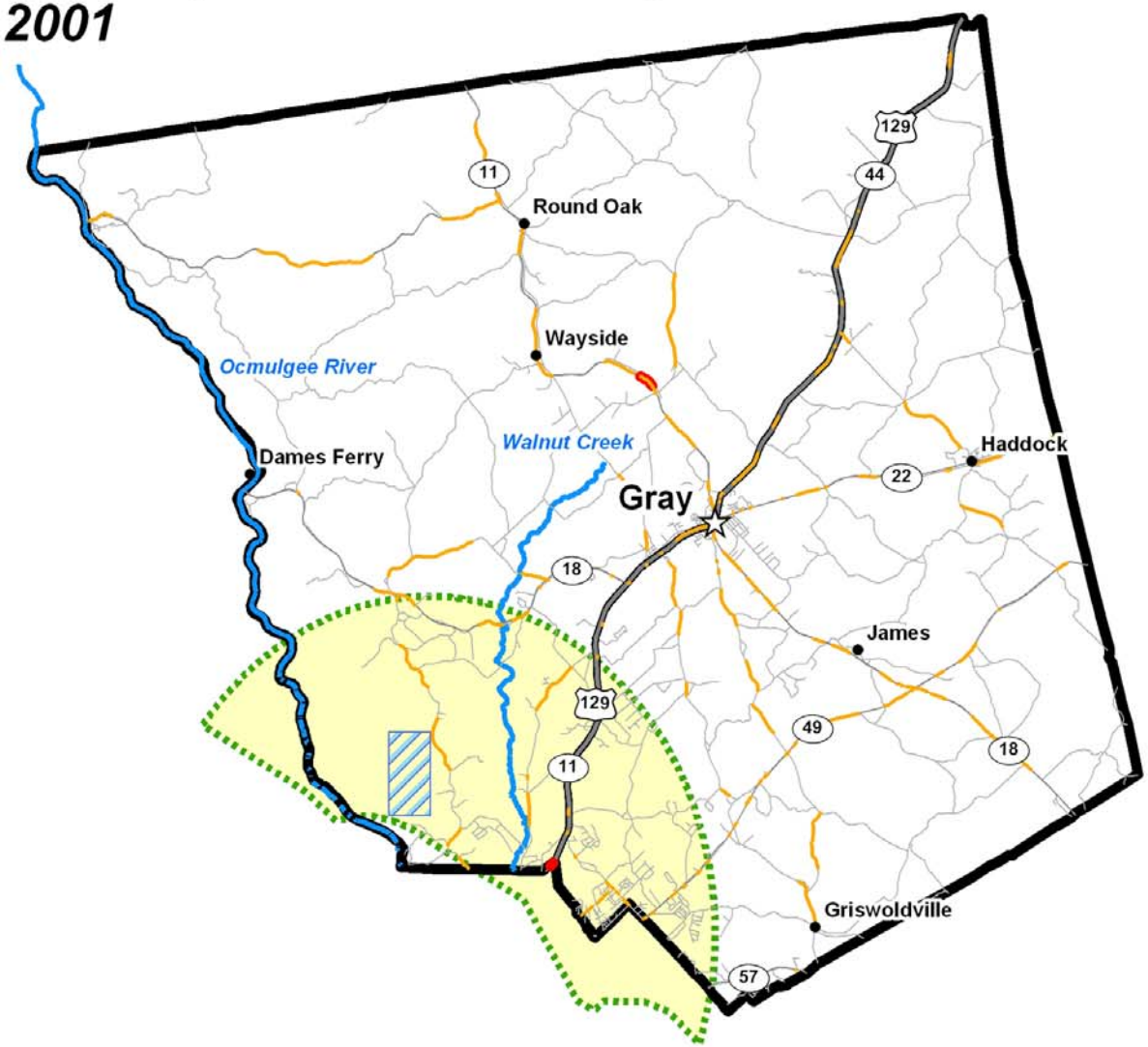
Jones County Crash and Fatality Rates
Year 2001



Legend

- Fatality Rates in Excess of the Statewide Average
- Crash Rates in Excess of the Statewide Average
- County Seat
- City / Town
- Major Road
- Local Road
- River / Creek
- Town Creek Reservoir
- Corridor Boundary
- County Boundary

Figure 3-2

Source: Georgia DOT Crash Database 1995-97 and 2001.

This map is intended for planning purposes only.

DWA
Day Wilbara Associates, Inc.

Existing databases that include information pertaining to environmental resources, such as waters of the United States (US), threatened and endangered species, historic resources, archaeological resources, cemeteries, and public parkland/wildlife management areas, were checked. Attempts to avoid these resources should be made during the potential alternatives development phase of the project. The data items were compiled in a GIS format and will be field verified in Phase Two.

Waters of the United States

Waters of the United States (US), including wetlands, streams, and other open water bodies, were identified from the National Wetlands Inventory (NWI) maps produced by the US Fish and Wildlife Service (USFWS). The largest water body in the study area is the Ocmulgee River. Several other streams and creeks exist in the study area, including Town Creek, McKay Branch, Bartlett Branch, Walnut Creek, Bonner Creek, Sand Creek, Rock Creek, Dry Bone Creek, and Swift Creek. Wetlands associated with the floodplains of these water bodies exist throughout the study area. Several isolated wetlands and open water bodies are also present in the study area. An expansive riverine wetland system associated with the Ocumulgee River, including Bond Swamp, exists to the south of the study corridor.

Waters of the US are regulated by the US Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act. Impacts to waters of the US require a permit, the type of which depends on the amount and extent of impacts. In addition, Section 404 b(1) guidelines require that avoidance and minimization of impacts be demonstrated. Besides the Section 404 permit, a new bridge crossing over the Ocmulgee River would also require a US Coast Guard permit.

Threatened and Endangered Species

Plants and wildlife listed as threatened or endangered by the USFWS are protected by the federal Endangered Species Act (ESA) of 1973. The USFWS maintains county lists of species that may occur within each county in the state. In addition, the Georgia Department of Natural Resources (DNR) maintains a database of known locations of protected species. These resources were consulted for information regarding threatened and endangered species within the study corridor, which are listed in Table 3-4.

Table 3-4
Potentially Occurring Threatened and Endangered Species

Animals		**Federal Status**
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Wood stork	*Mycteria americana*	Endangered
Plants		
Fringed campion	*Silene polypetala*	Endangered
Green pitcher-plant	*Sarracenia oreophila*	Endangered
Relict trillium	*Trillium reliquum*	Endangered

Source: U.S. Fish and Wildlife Service (June and July, 2002).

The study area is likely to provide suitable habitat for the plants listed in Table 3-4. There are known nesting/foraging sites for the bald eagle and wood stork available in the nearby Bond Swamp National Wildlife Refuge, located south of the study corridor. In addition, there are recorded nesting/foraging sites for the red-cockaded woodpecker available in the Piedmont National Wildlife Refuge, located north of the study corridor.

Under the requirements of Section 7 of the ESA, consultation with the USFWS would be required to determine the effects of a proposed project on federally protected species.

Historic Resources

Existing information on previously identified historic properties was checked to determine if any are located within the study corridor. The review of existing information revealed no National Register of Historic Places (NRHP) listed properties are located within the study corridor. The nearest NRHP listed resource is the Fort Hill Historic District, located southwest of the study corridor in the City of Macon. No National Register Historic Landmarks are located within the study corridor. However, one bridge determined eligible for inclusion in the National Register in the updated Georgia Historic Bridge Survey (GHBS) is located within the study corridor. This bridge is identified as GDOT Bridge 021-00182X-001.06N on SR 11 / SR 22 over Walnut Creek, constructed circa 1921.

Approximately 65 properties 50 years of age or older were identified within the study corridor in the 1989 Georgia DNR 1989 Jones County Survey. No properties 50 years of age or older were identified in the DNR 1988 Bibb County Survey. Most of the historic properties identified within the study corridor are single-family residences. They are interspersed throughout the corridor, but in general occur along existing roadways.

Field surveys for historic properties should be conducted in the future, and the Criteria of Eligibility would be applied in consultation with the Georgia State Historic Preservation Officer (SHPO) and other consulting parties to determine if any sites are eligible for inclusion in the NRHP. Because of the age of the DNR surveys, it is likely that additional properties will be

identified when the study corridor is field surveyed for historic properties. Also, many of the properties identified in the County survey may no longer be in existence.

Cemeteries

Approximately 18 existing cemeteries were identified from US Geological Survey (USGS) topographic maps within the study corridor. Any right-of-way acquisition and/or disturbance of gravesites from a cemetery would require a Land Use Permit pursuant to O.C.G.A. 36-72, Abandoned Cemeteries and Burial Grounds.

Archaeological Resources

The University of Georgia Archaeological Site Files were researched for known archaeological sites. A total of 14 previously recorded archaeological sites (9BI16, 9JO24, 9BI85, 9JO287, 9JO257, 9JO198, 9JO202, 9JO204, 9JO232-234, 9JO187, 9JO6, 9BI70) are located in the project area or within a radius of 0.5 mile of the project boundary. The 14 sites include prehistoric and historic sites and generally fall into three categories in regard to their NRHP status (at least as far as can be determined from the site files, which contain only basic information). The sites are of unknown eligibility, were recommended eligible based on survey or testing data, and in at least one case, were recommended eligible and data recovery was conducted at the site (9JO6). Further research would need to be undertaken to determine the status of the sites included in the last category.

The Ocumulgee National Monument is located south of the study corridor. This significant archaeological National Monument preserves a continuous record of human life in the Southeast and includes archaeological artifacts from over 12,000 years ago, including the Lamar Mounds.

Other Sensitive Resources

Other sensitive environmental resources in the vicinity of the study corridor include the Bond Swamp National Wildlife Refuge, located south of the study corridor, and the Piedmont National Wildlife Refuge, located north of the study corridor. These areas are nearby, but beyond the limits of the study corridor.

Environmental Justice

Environmental justice is an increasingly important element of transportation planning and project development. It is fundamentally about fairness toward the disadvantaged, such as low-income, minority and elderly populations, and ensuring due consideration of their transportation needs. Identifying the size and location of these population groups in the study area is an important first step toward ensuring that they are included in the needs analysis process and that a cross county connector, if needed, would not disproportionately benefit or burden any segment of the population.

The 2000 Census put the population of Bibb County at 153,887 persons. Of persons reporting one race in 2000, 49.7 percent is classified as minority (compared to 37.4 percent statewide) and 19.1 percent of the population lives in poverty (compared to 13 percent statewide below federal poverty levels). According to the 2000 Census, Jones County had a population of 23,639 persons. Of persons reporting one race, 24.9 percent is classified as minority (compared to 37.4 percent statewide) and 10.2 percent of the population lives in poverty (compared to 13 percent statewide below federal poverty levels). In addition, 2000 Census data indicates that 12.7 percent of the population in Bibb County and 10.3 per cent of the population in Jones County is over the age of 65 (compared to 9.6 per cent statewide). With a projected 13.7 percent increase in population over the 25-year time frame of the MATS 2025 Long Range Transportation Plan (LRTP), changing from 173,698 in 1998 to 197,523 in 2025, these segments of the population can also be expected to increase.

Using 2000 Census data, Figures 2-4 and 2-5 showed the location (by Census block group) of communities that either exceed the statewide average for minority population or fall below the statewide average poverty level. Several block groups in the study area have a high percentage of minority and low-income communities. The area of northeastern Bibb County between I-16 and the Jones County line, including east Macon, shows the highest concentration of low-income and minority communities. Smaller communities can be found in southeastern Jones County and north western Bibb County near the Monroe County line. The 2025 LRTP forecasts significant growth in two block groups in the study area for the Connector. Southern Jones County is expected to receive more than 2,000 additional households, and 1,000 new households are anticipated in north Macon near the Monroe County line. Considering that both of these block groups have low-income and minority populations that are significantly higher than the statewide average, it is reasonable to expect an increase in these segments of the population. The transportation needs of these communities, as well as potential transportation impacts of a cross county connector, will have to be considered during the development of potential alternatives.

4 Demand Analysis

To analyze future demand, land use expectations and anticipated growth were used to forecast increases in future socioeconomic characteristics of the study area. Planned projects were incorporated, and an assessment of travel patterns for networks that included existing plus committed and future projects was developed.

For the purposes of the Phase One technical analysis, two model runs were conducted for the year 2030. First, the model was executed using an existing plus committed (E+C) network, provided by GDOT, and including all roadway projects committed to construction within the next five years. The second model run was conducted using the 2025 MATS Long-Range Transportation Plan (LRTP) network provided by GDOT staff. Both of these model runs reflect model expansion into Monroe County as well as validation refinements in the study area. Also, trip productions, trip attractions, and external trips were extrapolated to the design year of 2030, based on linear growth trends between the base year 1998 and the original MATS horizon year of 2025.

As a summary of general growth in travel patterns, model-generated estimates of vehicle-miles traveled (VMT) for the 1998 base year, 2030 E+C, and 2030 LRTP network model runs were reviewed. Table 4-1 depicts the VMT of the three model runs and shows that the improvements scheduled for 2030 reduce overall VMT.

Table 4-1
Vehicle Miles Traveled by Functional Class for 1998, E+C and LRTP

Functional Class	1998 VMT	2030 E+C	2030 LRTP
Interstates	2,024,078	4,177,353	4,118,109
Ramps	53,631	123,463	129,547
Principal Arterials	1,176,009	1,857,998	1,845,865
Minor Arterials	927,783	1,703,157	1,707,370
Collectors	420,372	621,775	618,713
Local	88,979	167,413	157,528
Total	4,690,852	8,651,159	8,577,132

Planned Projects

The sources consulted in order to identify planned projects in the study area included the Georgia Department of Transportation, the Macon-Bibb Planning and Zoning Commission, Bibb County and Jones County. A summary table of the planned projects is outlined in Table 4-2.

Table 4-2
Programmed Projects

Fiscal Year	Location	Project Description
2004	I-75: Pierce to Arkwright	Widen from 4 to 6 lanes
2004	Jeffersonville Road	Widen from 2 to 4 lanes with turn lanes
2004	Forest Hill Road	Widen from 2 to 4 lanes with turn lanes
2005	I-16: SR 11 to SR 87	Widen from 4 to 6 lanes with CD system
2005	I-16 @ MLK Drive	Bridge reconstruction as part of interchange project
2005	Riverside: Northside to Hall	Widen from 2 to 5 lanes
2006	Eisenhower Parkway	Construct Eisenhower Pkwy-Lower Boundary to Emery
2006	Forsyth/Poplar from west of I-75 to Eisenhower	Widen Forsyth and Poplar from 3 to 5 lanes
2006 (ROW)	I-75: Pierce to I-16	Widen from 4 to 6 lanes (long range)
2006 (ROW)	I-16 @ I-75	Modification of interchange (long range)
Long Range	I-16 Bridges	Widen bridges at Ocmulgee River, Walnut Creek and Ocmulgee Overflow

Year 2030 No Build (E+C) Model Results

Volume to capacity (v/c) ratios within the study area increase dramatically between 1998 and 2030. The 2030 existing plus committed (E+C) network model run provides a worst case scenario since it only assumes projects currently programmed for construction will be open to traffic. The general exception to this rule would be locations where improvements have been made since 1998, whereby it is conceivable that the 2030 E+C v/c ratios could be lower than those for 1998. However, since only a minimal amount of roadway improvements are assumed, those corridors that are widened will likely experience an over-assignment of traffic due to growth in development without a corresponding increase in regional capacity to meet this demand.

Within the study area, the only significant network change is the widening of Jeffersonville Road from two to four lanes between Emery Highway on the west and Emery Road on the east. This single improvement results in lower v/c ratios along these two corridors using the 2030 E+C network model run versus the year 1998 network model run. This appears to be the only location in the study area where v/c ratios universally improve between 1998 and 2030. Further to the west and south, the recently completed six-laning of I-475 also has a positive impact on v/c ratios, improving v/c ratios somewhat on I-75 immediately north of the I-16 interchange. However, these programmed improvements do not address the transportation issues raised by the Advisory Panel, public comments, or the study results. Growth in traffic crossing the Ocmulgee River has outstripped the ability of the current network, including existing plus committed projects. The lack of mobility and accessibility has hindered network operations and will cause even more such transportation problems. This same lack of mobility will impact economic development in Jones County and in north Bibb where there already is a high percent of households in poverty. The results of this analysis definitively indicate a need for additional

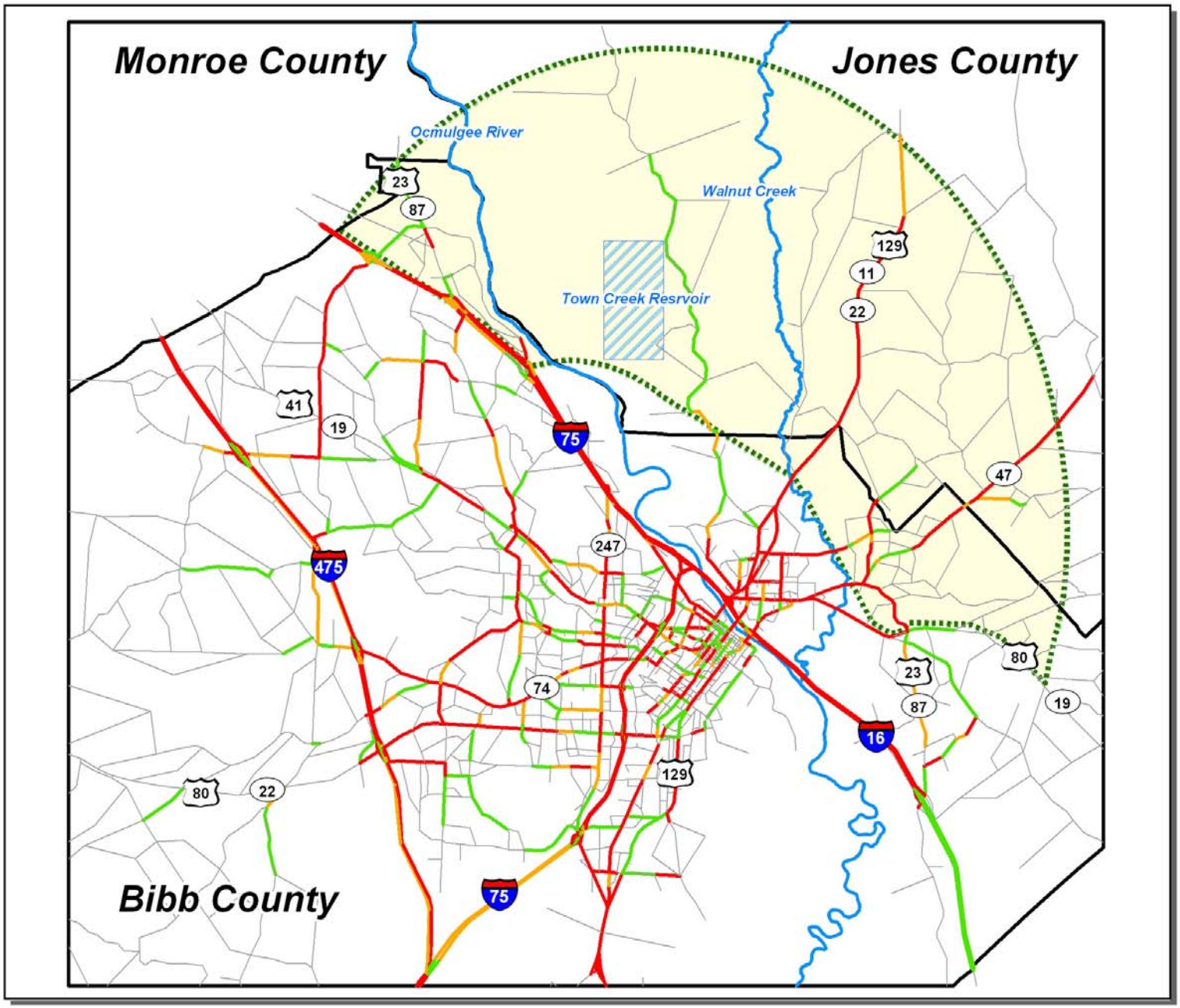
capacity relief within the study area. Figure 4-1 depicts year 2030 v/c ratios using the expanded area E+C network. Figure 4-2 provides an inset depicting v/c ratios for the downtown Macon area.

Year 2030 Build (2025 LRTP) Model Results

Because the 2025 MATS Long-Range Transportation Plan (LRTP) network model run includes a significant number of roadway improvements expected to be completed over the next 20 years, v/c ratios for the 2030 LRTP network model run are generally worse than those for 1998 and better than those in the 2030 E+C network model run. In spite of this, the LRTP network was prepared for a 2025 horizon year and is insufficient to handle travel demand in the year 2030. Furthermore, long range transportation plans, consistent with federal planning requirements, generally reflect only those improvements deemed as "financially feasible." Long range transportation plans are also constrained to physical, social, economic, and environmental conditions that preclude the construction of many needed highway projects.

LRTP projects of note in the study area include the interchange improvements at I-16/US 23, the widening of SR 49, and the Joycliff Extension. The v/c ratios along these project corridors show a marked improvement over the E+C. Additionally, v/c ratios along US 129 show some improvement as well. Even though the LRTP projects succeed in mitigating some of the anticipated high volume traffic in the study areas, high v/c ratios persist along US 129 and in downtown Macon. The results of this scenario also definitively indicate a need for additional capacity relief within the study area.

Figure 4-3 depicts year 2030 v/c ratios using the expanded area LRTP network. Figure 4-4 provides an inset depicting v/c ratios for the downtown Macon area.



2030 Modeled E+C Volume-to-Capacity Needs

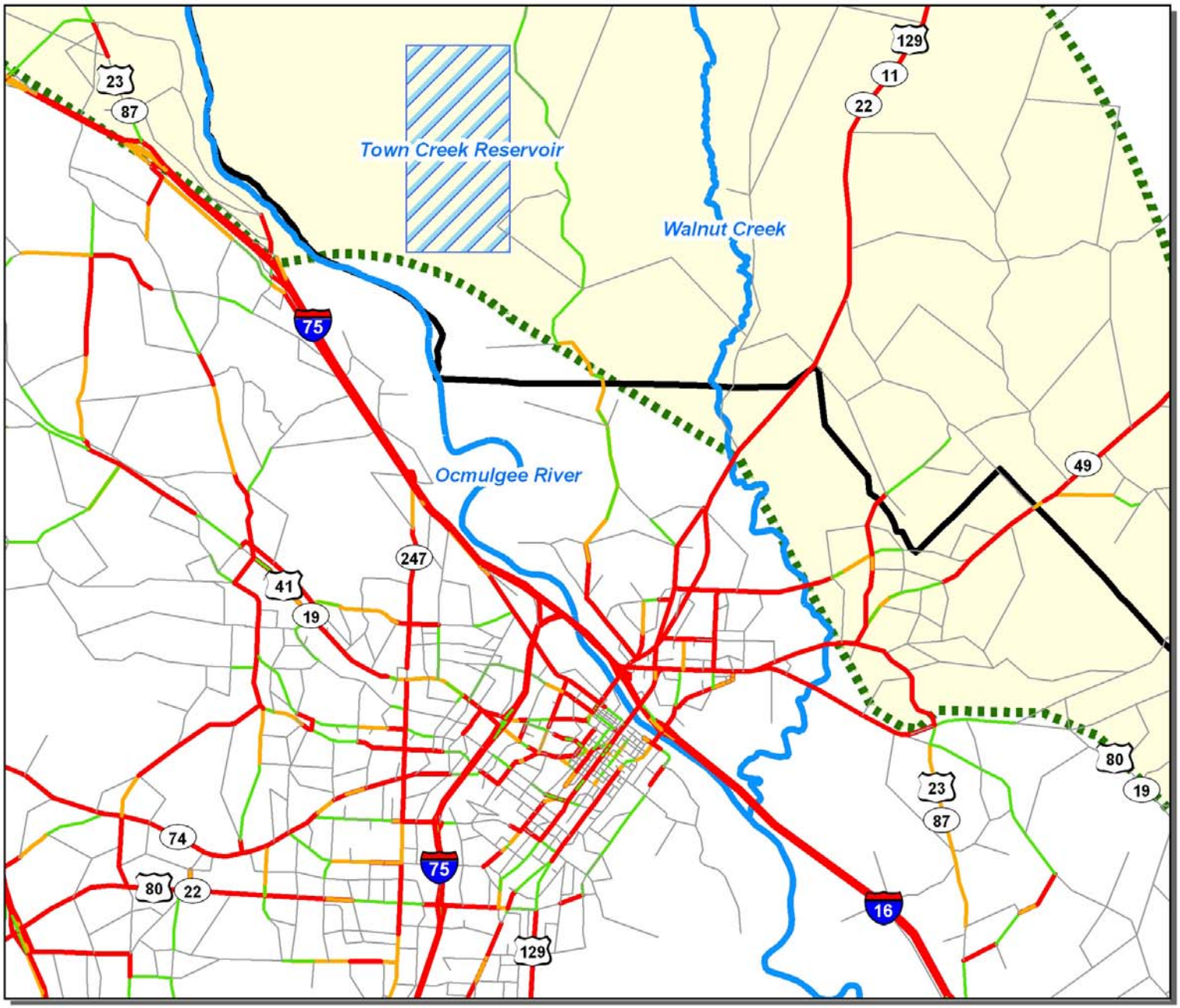
- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- County Boundary

Figure 4-1

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.

DWA
Day Wilburn Associates, Inc.



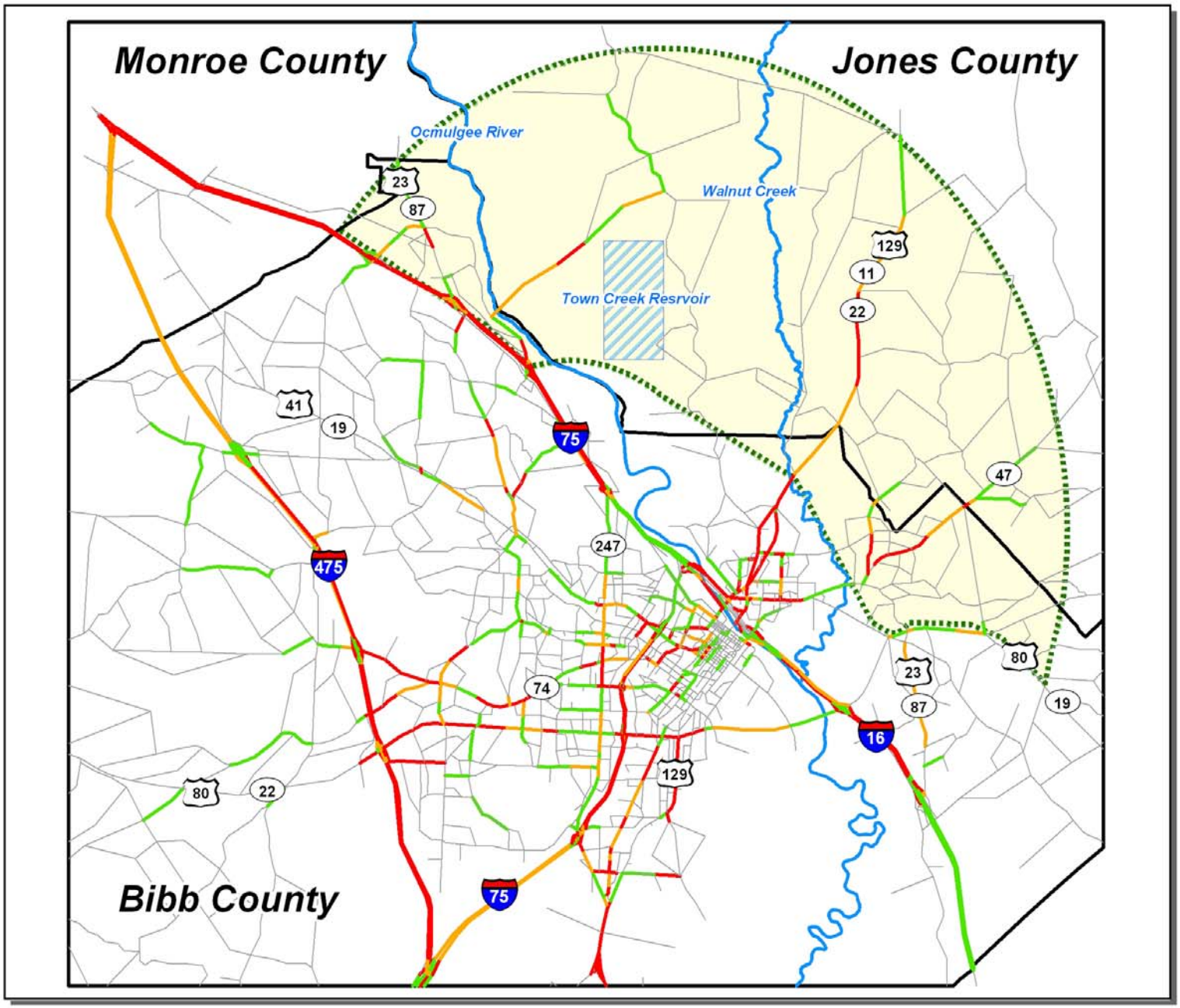
2030 Modeled E+C Volume-to-Capacity Needs

- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- County Boundary

Figure 4-2

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.



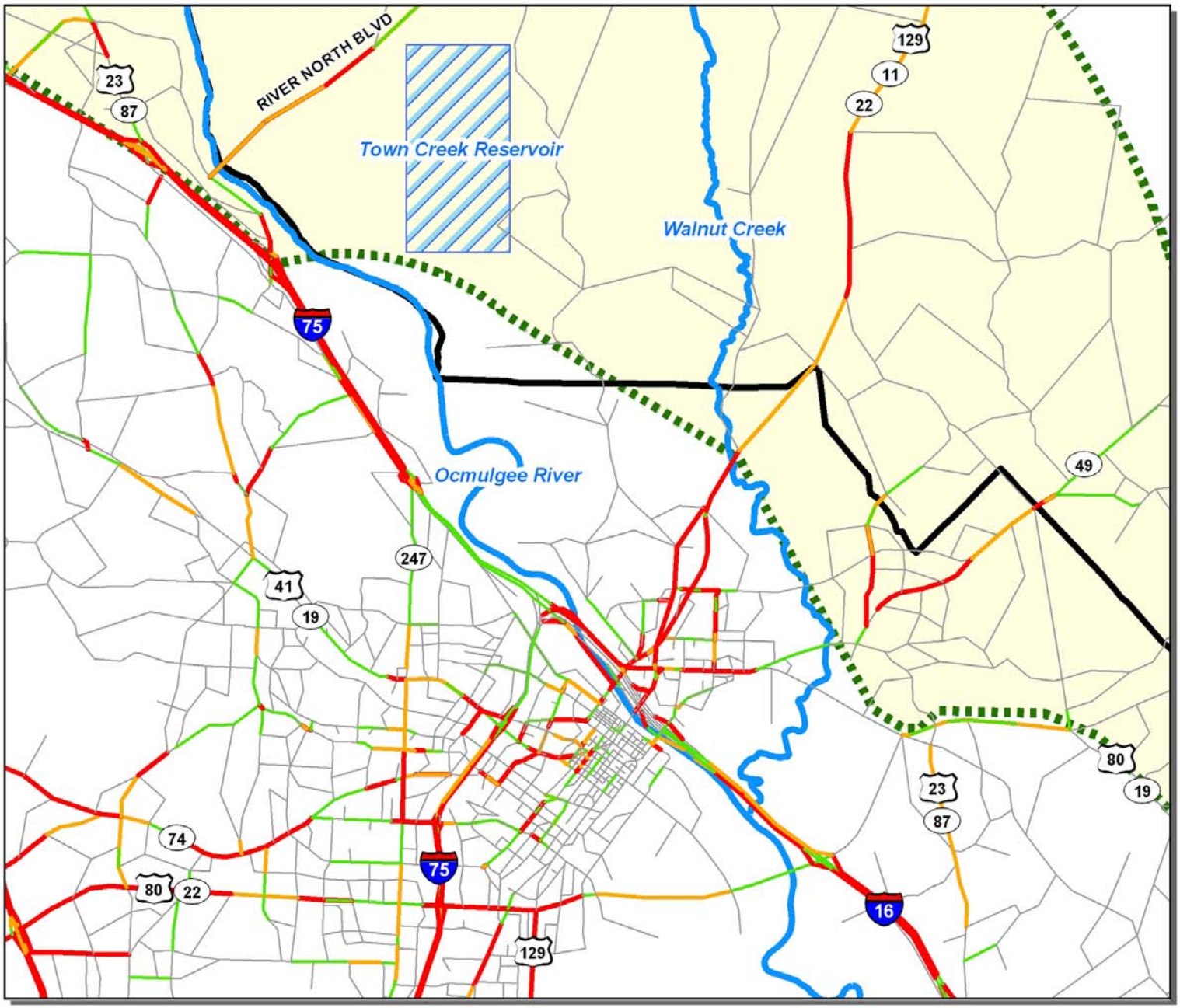
2030 Modeled LRTP Volume-to-Capacity Needs

- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- County Boundary

Figure 4-3

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.



2030 Modeled LRTP Volume-to-Capacity Needs

- >= 1.00
- 0.90 - 0.999
- 0.70 - 0.899
- < 0.70
- County Seat
- City / Town
- Corridor Boundary
- County Boundary

Figure 4-4

Source: Day Wilburn and Cambridge Systematics.

This map is intended for planning purposes only.

5 Need and Purpose

The Connector would function as a major arterial accommodating through traffic from I-75 in southeast Monroe County to east Bibb County, as well as collecting and distributing trips within south Jones County and City of Macon area. The northeastern terminus of the Connector would tie into the six-lane section of I-75 in southeast Monroe County, with the southern terminus intersecting with the two-lane section of US 80 in eastern Bibb County, providing a continuous roadway between southeast Monroe and east Bibb Counties.

The need exists to provide local and through traffic with an improved east-west connector to reduce traffic on US 129, I-16, and other collectors and local streets in the south Jones/Macon area. Every state route in the study area, including SR 49, US 129, US 29, US 23, and SR 11, is forecast to have an unacceptable level of service by 2030. Without the proposed new location connector, area roadways likely will continue to experience accident rates in excess of the statewide average (307 per 100 million vehicle miles traveled).

The purposes of the proposed connector are to reduce traffic on US 129 and other area state routes, provide local and through traffic with a facility that adequately serves current and future travel demand, and provide the traveling public a safer driving environment. The proposed Connector would accomplish these purposes by providing an effective transportation corridor from I-75 north of Macon to US 80 east of Macon, circumventing the congested I-75/I-16 interchange and downtown Macon area facilities. Construction of the Connector will enhance the safety of the system, facilitate the movement of freight, and improve traffic safety and operations in Macon and south Jones County.

Assuming a 22-mile-long, four-lane alignment with a 44-foot-wide grass median, design and construction costs estimated to implement the Connector total approximately $46.2 million. Estimated right of way costs total $6.7 million, based on approximately 670 acres (250 feet of right of way) multiplied by $10,000 per acre. Significant bridges over the Ocmulgee River and Walnut Creek increase the cost estimate by approximately $1 million. The cost for the entire project is estimated to total $51.9 million in current dollars. Benefits to implementing the Connector include reduced congestion, increased safety, and greater connectivity for the traveling public. Benefits will be quantified once Phase II is complete and vehicle miles traveled (VMT) is calculated for the study area with the inclusion of the facility.