

# 2040 Long Range Transportation Plan | **L RTP**



# **MACON AREA TRANSPORTATION STUDY**

## **2040 LONG RANGE TRANSPORTATION PLAN**

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A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY  
COMMITTEE APPROVING THE 2040 LONG RANGE TRANSPORTATION PLAN UPDATE

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, the original MATS Policy Committee approved the original 2040 Long Range Transportation Plan (2040 LRTP) on November 20, 2013; and

WHEREAS, at the time, of adoption of the original 2040 LRTP, the MATS area was significantly different in composition, and was designated as a Federal air quality “maintenance” region, requiring demonstration of transportation project conformity with air quality management goals for 8-hour ozone levels, and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>), under the 1997 National Ambient Air Quality Standards (NAAQS); and

WHEREAS, on January 1, 2014, Bibb County and the various municipalities incorporated therein were consolidated into a single jurisdictional entity, causing several of the MATS partner agencies to cease to exist as separate entities, and thereby requiring the MATS charter and Memorandum of Understanding to be updated to reflect these administrative changes; and

WHEREAS, on April 23, 2014, the Governor of the State of Georgia expanded the MATS to include that portion of Monroe County bordered by Interstate 75, Estes Rd., and the Monroe County/ Bibb County boundary; and

WHEREAS, on April 6, 2015, the U.S. Environmental Protection Agency (EPA) officially revoked the 1997 ozone NAAQS. The MATS region was deemed attaining under the 2008 ozone NAAQS by EPA, thereby no longer requiring a demonstration for transportation conformity for the ozone standard, so long as the region does not lapse back into non-compliance; and

WHEREAS, on October 24, 2016, EPA officially revoked the 1997 primary annual PM<sub>2.5</sub> NAAQS, and communicated to MATS that, since the MATS region was deemed attaining under the 2012 NAAQS for PM<sub>2.5</sub>, there is no longer a requirement to demonstrate transportation conformity for the annual PM<sub>2.5</sub> standard (including PM<sub>2.5</sub> hot-spot screenings/determinations), so long as the region does not lapse back into non-compliance; and

WHEREAS, under U.S. Code of Federal Regulations Title 23, Chapter 1, Subchapter E, Part 450, Section 324(d), the removal of the requirement to demonstrate transportation conformity also changes subsequent update cycles for the MATS Long Range Transportation Plan from 4 years to 5 years;

NOW, THEREFORE, BE IT RESOLVED that the MATS Policy Committee, the forum for cooperative transportation decision-making between locally elected officials in the Macon-Bibb County, Jones County and Monroe County areas, and duly appointed agency representatives from the State of Georgia, does hereby approve the 2040 Long Range Transportation Plan Update for the MATS region.

Adopted by the MATS Policy Committee on this 3<sup>rd</sup> day of May, 2017

By: Robert A. B. Reichert  
MATS Policy Committee Chairman

A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE  
APPROVING AMENDMENTS TO THE 2040 LONG RANGE TRANSPORTATION PLAN

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, subsequent to the adoption of the MATS 2040 Long Range Transportation Plan Update on May 3, 2017, the Georgia Department of Transportation (GDOT) identified phases of identified projects for inclusion in the forthcoming FY 2018-2021 Transportation Improvement Program, as well as projects to be removed from the 2040 Long Range Transportation Plan, because they have been fully obligated or are under construction

*Projects to be Included in FY 2018 – 2021 TIP*

- GDOT Project #0009861 - Houston Rd (US 41/SR 11/SR 49) @ Rocky Creek & Tobesofkee Creek
- GDOT Project #311005 – I-16 Eastbound from I-75 to Walnut Creek – Phase IV
- GDOT Project #0012701 – I-16 Westbound from I-75 to Walnut Creek – Phase V
- GDOT Project #0013712 – SR 11/SR 49/US 41@ Norfolk Southern Railroad (1.4 miles south of Macon)
- GDOT Project #0013921 – I-475 @ CR 742/Tucker Rd (2 miles west of Macon)
- GDOT Project #0013929 – I-75@SR 87/US 23
- GDOT Project #0014072 – I-16 Eastbound & Westbound @ Walnut Creek
- GDOT Project #0014895 – SR 247@Norfolk Southern Railroad
- GDOT Project #0014896 – Bass Rd. @ Norfolk Southern Railroad
- GDOT Project #0014897 – I-16 Eastbound & Westbound @ Ocmulgee River Overflow
- GDOT Project #0014898 – Oglethorpe St. @ Norfolk Southern Railroad in Macon
- GDOT Project #0014899 – College St. @ Norfolk Southern Railroad in Macon

*Projects to be Removed from MATS 2040 Long Range Transportation Plan*

- GDOT Project #342080 – Widen Jeffersonville Road from 2 to 4 thru lanes with continuous left turn lanes from Walnut Creek to Recreation Road. Widen Millerfield Road from 2 to 4 lanes from Jeffersonville Road to Bristol Drive. **Project has been obligated under FY 2014 – 2017 TIP**
- GDOT Project #351090 – Jeffersonville Rd.- Widen from 2 to 4 Lanes from Emery Highway to Walnut Creek Bridge. **Project has been obligated under FY 2014 – 2017 TIP**
- GDOT Project #351095 – Widen and replace bridge at Walnut Creek/ Jeffersonville Rd.. **Project has been obligated under FY 2014 – 2017 TIP**
- GDOT Project #0010412 – Replace Bridge on SR 49/Shurling Dr. @ Norfolk Southern Railroad 8.5 miles south of Gray. **Project is under construction**
- GDOT Project #311000 – I-16 Project (I-75 to SR 87) – Phase 1. **Project is under construction**
- GDOT Project #012699 – Pleasant Hill Neighborhood Improvements, I-16/I-75 – Phase 1B. **Project is under construction**
- GDOT Project #012700 – I-16/I-75 (I-75 Northbound from SR 19 to I-16 Interchange) – Phase 2. **Project is under construction**
- GDOT Project #311410 – I-16/I-75 (I-75 Southbound from SR 19 to I-16 Interchange) – Phase 3. **Project is under construction**

NOW, THEREFORE, BE IT RESOLVED that the MATS Policy Committee, the forum for cooperative transportation decision-making in the Macon urban area, does hereby approve the amendments to the MATS 2040 Long Range Transportation Plan as described above.

Adopted by the MATS Policy Committee on the 2<sup>nd</sup> day of August 2017.

By: Robert A. B. Reichert  
MATS Policy Chairman

**RESOLUTION BY THE MACON AREA TRANSPORTATION STUDY  
POLICY COMMITTEE**

WHEREAS, federal regulations require that the Long Range Transportation Plan and Transportation Improvement Programs include Safety Performance Management Targets for urbanized areas and,

WHEREAS, the Technical Coordinating Committee of MATS in coordination with the Federal Highway Administration, Federal Transit Administration, and the Georgia Department of Transportation has reviewed the requirement to adopt Safety Performance Management Targets for use in the transportation process,

WHEREAS, the Technical Coordinating Committee at its October 18, 2017 meeting reviewed the Safety Performance Management Targets approved by the Georgia Department of Transportation as follows:

- Number of Fatalities – To maintain the 5-year rolling average for traffic fatalities under the projected 1,593.3 (2014 – 2018) 5-year average by December 2018.
- Rate of Fatalities per 100 million vehicle miles traveled (VMT) – To maintain the 5-year rolling average for the rate of traffic fatalities per 100 million VMT under the projected 1.32 (2014 – 2018) 5-year average by December 2018.
- Number of Serious Injuries – To maintain the 5-year rolling average for serious injuries under the projected 19,642.8 (2014 – 2018) 5-year average by December 2018.
- Rate of Serious Injuries per 100 million VMT – To maintain the 5-year rolling average for the rate of serious injuries per 100 million VMT under the projected 16.318 (2014 – 2018) 5-year average by December 2018.
- Number of Non-motorized Fatalities and Serious Injuries – To maintain the 5-year rolling average for non-motorized fatalities and serious injuries under the projected 1,027.2 (2014 – 2018) 5-year average by December 2018.

NOW, THEREFORE, BE IT RESOLVED that the MATS Policy Committee agrees to support the Safety Performance Management Targets as approved by the Georgia Department of Transportation.

Adopted by the MATS Policy Committee on this 1<sup>st</sup> day of November, 2017

By: Robert A. B. Lechert  
MATS Policy Committee Chairman



A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE  
AMENDING THE 2040 LONG RANGE TRANSPORTATION PLAN AND  
THE TRANSPORTATION IMPROVEMENT PLAN FOR FY 2018 – 2021

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, under Code of Federal Regulations Title 23, Section 450.326, (23 CFR, Sec. 450.326) the FY 2018 – 2021 Transportation Improvement Program (TIP) is a subset of the 2040 Long Range Transportation Plan projects and activities to be undertaken within the MATS area in a specified four (4) year period; and

WHEREAS, on September 12, 2017, the Macon-Bibb County Transit Authority (MTA), was notified they were awarded a competitive discretionary grant from the Federal Transit Administration Low Or No Emission Vehicle grant program (49 U.S.C. 5339(c)) in the amount of \$1,750,000; and

WHEREAS, on October 17, 2017, the Macon-Bibb County Commission allocated \$1,076,000 in local matching funds to supplement the Low Or No Emission Vehicle grant funds

NOW, THEREFORE, BE IT RESOLVED NOW, that the MATS Policy Committee, the forum for cooperative transportation decision-making in the Macon urban area, does hereby amend the MATS 2040 Long Range Transportation Plan, and the MATS Transportation Improvement Plan for FY 2018 – 2021, to reflect the use of the Low Or No Emission Vehicle grant funds and matching funds for the purchase of at least two (2) electric busses for the MTA fleet, pay for necessary infrastructure upgrades and training of MTA staff on operations and maintenance, and any ancillary expenses related to attaining these goals.

Adopted by the MATS Policy Committee on the 6<sup>th</sup> day of December 2017.

By:   
MATS Policy Chairman

**GEORGIA, BIBB COUNTY  
NOTICE OF COMMENT PERIOD FOR AN  
AMENDMENT TO THE TRANSPORTA-  
TION IMPROVEMENT PROGRAM FOR  
THE MACON AREA TRANSPORTATION  
STUDY**

Notice is hereby given that the public comment period has begun for an amendment to the FY 2018 - 21 Transportation Improvement Program (TIP) and the 2040 Long Range Transportation Plan (LRTP) for the Macon Area Transportation Study. The amendment concerns funding under the Low or No Emissions Vehicle Grant Program for the purchase of at least two electric buses, related charging infrastructure and staff training. Comments on the proposed amendment will be received until the end of the working day on December 5, 2017.

Copies of the amendment may be obtained at the Macon-Bibb County Planning and Zoning Commission Office (682 Cherry Street, Suite 1000, Macon, GA 31201) and can also be viewed on the MATS official website at [www.MATS2040.org](http://www.MATS2040.org). If you have any questions, please call Ken North at (478) 751-7462, or e-mail at [knorth@mbpz.org](mailto:knorth@mbpz.org)

W0049348: 11/20/17

A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE  
AMENDING THE 2040 LONG RANGE TRANSPORTATION PLAN  
AS RELATED TO PERFORMANCE MEASURES AND SAFETY PERFORMANCE TARGETS

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, the 2040 Long Range Transportation Plan (LRTP), developed under the requirements of Code of Federal Regulations Title 23, Section 450.306, is the recognized instrument for accomplishing this objective; and

WHEREAS, under Code of Federal Regulations Title 23, Section 490.105, (23 CFR, Sec. 450.105), as authorized under the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act, Georgia Department of Transportation (GDOT) is required to identify Performance Management Targets in five general topic areas; Safety, Infrastructure Condition, System Reliability, Freight Movement and Economic Vitality, and Congestion Reduction; and

WHEREAS, under 23 CFR 490.105(f)(1), within 180 days after the adoption of each specific target by GDOT, MATS is required to establish their own targets; and

WHEREAS, under 23 CFR 490.105(f)(3)(i) and 23 CFR 490.105(f)(3)(ii), the MATS MPO may either choose to simply adopt the targets established by GDOT, or "Commit to quantifiable targets for that [individual] performance measure for their metropolitan planning area," and;

WHEREAS, on May 16, 2018, GDOT adopted Statewide Performance Management Targets for Infrastructure Condition, System Reliability, Freight Movement and Economic Vitality, and Congestion Reduction;

NOW, THEREFORE, BE IT RESOLVED, the MATS Policy Committee does hereby amend the 2040 LRTP to reflect the aforementioned Statewide Performance Measures and Performance Targets for Infrastructure Condition, System Reliability, Freight Movement and Economic Vitality, and Congestion Reduction.

BE IT FURTHER RESOLVED that, if updated State and/or MATS area Performance Targets on any Performance Measures under 23 CFR 490.105 are identified, and changes initiated by GDOT subsequent to this initial adoption, such changes may be incorporated into the LRTP under the Administrative Modification process, as described in the MATS Public Participation Plan.

BE IT FURTHER RESOLVED, if the MATS Policy Committee seeks to subsequently set revised Performance Targets on any Performance Measures identified under 23 CFR 490.105 for the MATS area, outside of guidance from GDOT, such revisions to the LRTP shall follow the Amendment process, as described in the MATS Public Participation Plan.

Adopted by the MATS Policy Committee on the 1<sup>st</sup> day of August, 2018.

By:   
MATS Policy Chairman



A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE  
APPROVING AMENDMENTS TO THE 2040 LONG RANGE TRANSPORTATION PLAN AND  
FY 2018 – 2021 TRANSPORTATION IMPROVEMENT PROGRAM

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, the 2040 Long Range Transportation Plan (2040 LRTP), developed under the requirements of Code of Federal Regulations (CFR) Title 23, Section 450.306, and the FY 2018 – 2021 Transportation Improvement Program (FY 2018 – 2021 TIP), developed under the requirements of CFR Title 23, Section 450.326, are the recognized instrument for accomplishing this objective; and

WHEREAS, subsequent to the adoption of the original MATS 2040 LRTP Update on May 3, 2017, and the original MATS FY 2018 – 2021 TIP on August 2, 2017, the Georgia Department of Transportation (GDOT) on August 6, 2018 identified the following phases of projects for inclusion or amendment in the MATS FY 2018-2021 TIP, as well as projects to be removed from the 2040 LRTP, because they have been identified as redundant or unnecessary:

- *Projects to be Removed from MATS 2040 Long Range Transportation Plan and FY 2018 – 2021 TIP*
  - GDOT Project # 0013929 – Bridge Replacement on SR 87/Riverside over I-75 Southbound.
  - GDOT Project # 0014898 – Bridge replacement over Norfolk Southern Railroad at Oglethorpe St. in Macon.
- *Projects to be Added or Amended in MATS 2040 Long Range Transportation Plan*
  - GDOT Project #0016130 – Bridge on SR18/Dames Ferry Rd. at Ocmulgee River, on Jones County/Monroe County border. New Project, to be added at GDOT Request – **\$154,000**
  - GDOT Project #0013712 – Norfolk Southern Bridge #734080Y on Hawkinsville Rd., 1.4 miles South of Macon – Increase project cost from **\$4,597,410.00** to **\$12,118,732.00**
- *Projects to be Added or Amended in MATS FY 2018 – 2021 TIP*
  - GDOT Project #0016130 – Bridge on SR18/Dames Ferry Rd. at Ocmulgee River, on Jones County/Monroe County border – New project. Add Preliminary Engineering Phase (**\$112,000**) in FY 2019 and Right of Way Acquisition Phase (**\$42,000**) in FY 2021
  - GDOT Project #351080 – Jeffersonville Rd. from Recreation Rd. to SR 540/Emery Rd./Ocmulgee East Blvd. Intersection – New project. Add Construction Phase (**\$6,821,702**) in FY 2019

NOW, THEREFORE, BE IT RESOLVED that the MATS Policy Committee, the forum for cooperative transportation decision-making in the Macon urban area, does hereby approve the amendments to the MATS 2040 Long Range Transportation Plan as described above.

Adopted by the MATS Policy Committee on the 14<sup>th</sup> day of November 2018.

By:   
MATS Policy Chairman



**A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE  
APPROVING AMENDMENTS TO THE 2040 LONG RANGE TRANSPORTATION PLAN AND  
FY 2018 – 2021 TRANSPORTATION IMPROVEMENT PROGRAM**

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, the 2040 Long Range Transportation Plan (2040 LRTP), developed under the requirements of Code of Federal Regulations (CFR) Title 23, Section 450.306, and the FY 2018 – 2021 Transportation Improvement Program (FY 2018 – 2021 TIP), developed under the requirements of CFR Title 23, Section 450.326, are the recognized instrument for accomplishing this objective; and

WHEREAS, subsequent to the adoption of the original MATS 2040 LRTP Update on May 3, 2017, and the original MATS FY 2018 – 2021 TIP on August 2, 2017, the U.S. Court of Appeals for the District of Columbia ("the Court") on February 16, 2018 issued the ruling in South Coast Air Quality Management District vs. EPA (882 F.3d 1138), upholding the revocation of the 1997 National Ambient Air Quality Standard (NAAQS) for 8-Hour Ozone concentration, but vacating the adoption of the replacement 2008 NAAQS for 8-Hour Ozone concentration. This decision resulted in the creation of "orphan areas", which were compliant with the 2008 NAAQS for 8-Hour Ozone concentration, but could not be found to be in Attainment with the updated standard because it had been vacated; and

WHEREAS, U.S. EPA issued guidance on November 29, 2018 ("EPA Guidance"), identifying the Macon area as an orphan area, resulting in the restoration of the air quality "Maintenance" status for the Macon air quality region; and

WHEREAS, pursuant to staff consultations between MATS, GDOT, FHWA, U.S. EPA, and Georgia EPD – Air Protection Branch, based on the restoration of the Maintenance status and EPA Guidance, it has been jointly determined that MATS needs to reinstate both air quality conformity determination, and inter-agency coordination and consultation, for transportation projects in the MATS area; and,

WHEREAS, because the Court upheld the revocation of the 1997 NAAQS for 8-Hour Ozone concentration, EPA Guidance concludes that a new regional emissions analysis is not required under 40 CFR 93.109(c) to support conformity determination; and

WHEREAS, U.S. EPA has assisted MATS staff by providing template language to meet the requirements for conformity determination and interagency consultation established by the aforementioned decision of the Court;

NOW, THEREFORE, BE IT RESOLVED that the MATS Policy Committee, the forum for cooperative transportation decision-making in the Macon urban area, does hereby approve amendments to the MATS 2040 Long Range Transportation Plan and the MATS FY 2018 – 2021 Transportation Improvement Program, to re-instate conformity determination and interagency coordination, based on EPA Guidance.

Adopted by the MATS Policy Committee on the 8<sup>th</sup> day of May 2019.

By:   
MATS Policy Chairman



**A RESOLUTION OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE  
APPROVING AMENDMENTS TO THE 2040 LONG RANGE TRANSPORTATION PLAN AND  
FY 2018 – 2021 TRANSPORTATION IMPROVEMENT PROGRAM**

WHEREAS, it is the objective of the Macon Area Transportation Study (MATS) to maintain a continuing, cooperative and comprehensive transportation planning process which results in plans and programs consistent with comprehensively planned development of the urbanized area; and

WHEREAS, the 2040 Long Range Transportation Plan (2040 LRTP), developed under the requirements of Code of Federal Regulations (CFR) Title 23, Section 450.306, and the FY 2018 – 2021 Transportation Improvement Program (FY 2018 – 2021 TIP), developed under the requirements of CFR Title 23, Section 450.326, are the recognized instruments for accomplishing this objective; and

WHEREAS, subsequent to the adoption of the original MATS 2040 LRTP Update on May 3, 2017, and the original MATS FY 2018 – 2021 TIP on August 2, 2017, the Georgia Department of Transportation (GDOT) on March 26, 2019 identified the following phases of projects for amendment in the MATS 2040 LRTP and MATS FY 2018-2021 TIP, as follows:

- *Project #0009861 -Replacement of bridges on Houston Rd at Rocky Creek & Tobosofkee Creek and overflows*
  - Advance Construction and Utilities project phases from FY 2020 to FY 2019
  - Increase Total Project Cost to \$23,008,668.49
  - Increase total cost in Construction phase to \$22,804,668.49
  - Increase total cost in Utilities phase to \$204,000.00

and

WHEREAS, pursuant to the requirements of CFR Title 23, Sections 324, the MATS 2040 LRTP must continue to demonstrate fiscal constraint after the proposed project cost adjustments;

NOW, THEREFORE, BE IT RESOLVED that the MATS Policy Committee, the forum for cooperative transportation decision-making in the Macon urban area, does hereby approve amendments to the MATS 2040 Long Range Transportation Plan Chapter 6 – Roads & Bridges Projects and Chapter 8 – Fiscal Assessment, and to the MATS FY 2018 – 2021 Transportation Improvement Program, to reflect the amendments to GDOT Project PI #009861, as described above.

Adopted by the MATS Policy Committee on the 8<sup>th</sup> day of May, 2019.

By:   
MATS Policy Chairman

# Chapter 1 | Introduction

## A Brief Introduction to Metropolitan Planning Organizations

Georgia has been growing rapidly. In 2010, Georgia had 9.7 million people.<sup>[1]</sup> By 2015, that number had grown to 10.2 million, and the State is on pace to grow to 13.4 million by 2040. That's over 31% more people in 25 years!<sup>[2]</sup>

More people mean more housing, more trips to work and school, and more trucks and trains keeping our store shelves stocked and sending things we make out to customers. But, how do we do that in a way that is environmentally friendly, and everyone has a chance to participate in the decision process?

The solution is, to form an organization where elected officials, public agencies, and the people work together to plan for future traffic needs. This organization is called a Metropolitan Planning Organization (MPO).

MPOs are the forum where city and county governments, the State, and Federal agencies coordinate on regional transportation projects. This includes developing new transportation projects, serving as the forum for public participation, coordinating on environmental review, air quality and performing financial analysis. The Macon Area Transportation Study (MATs) is the MPO for Macon metropolitan area, covering all Macon-Bibb County, southwest Jones County, and a small portion of Monroe County. Figure 1-1 provides a map of the MATs MPO area, and Figure 1-2 shows all the MPOs across Georgia, as of 2012.

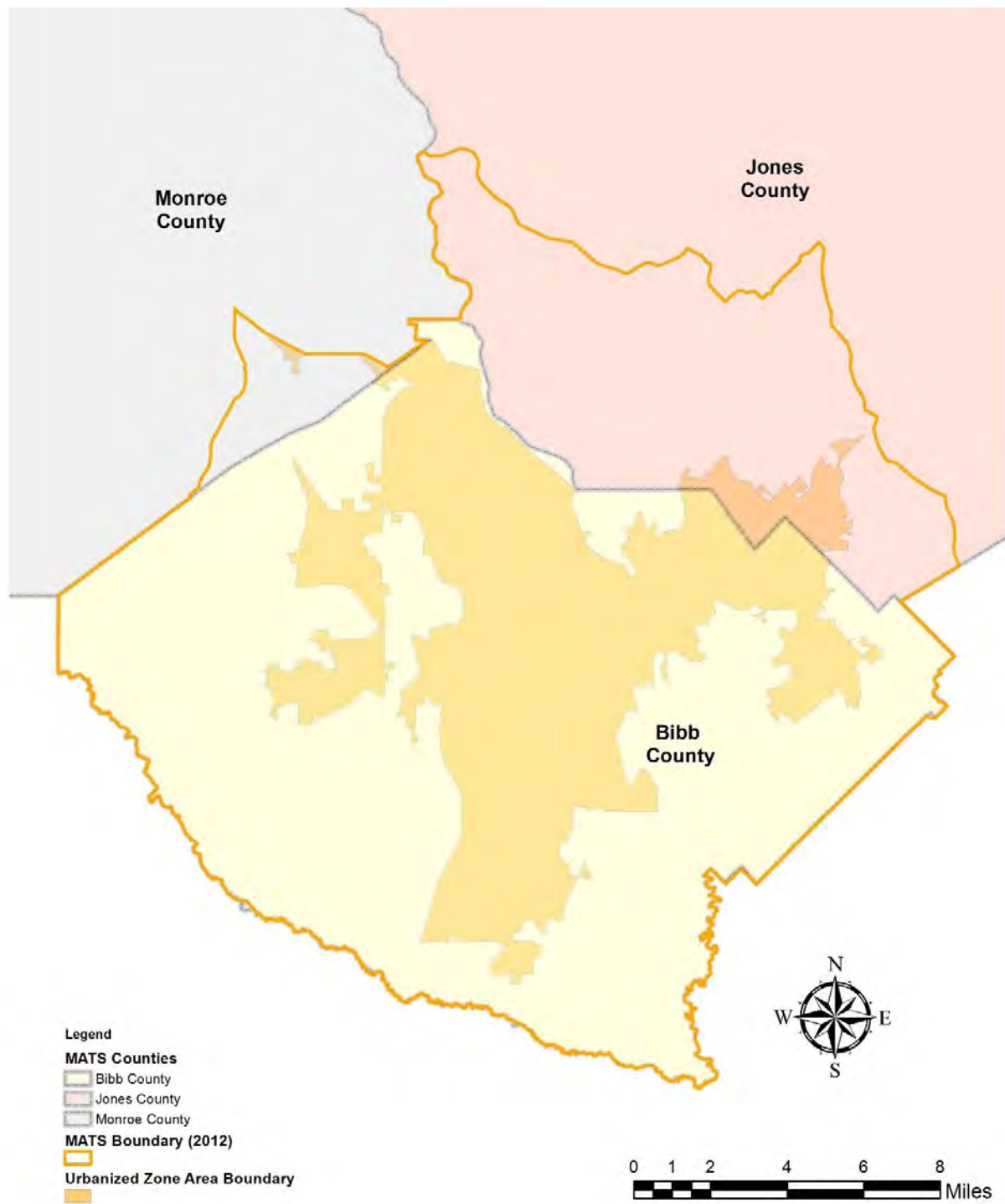


Figure 1-1: Overview of the MATS MPO Region



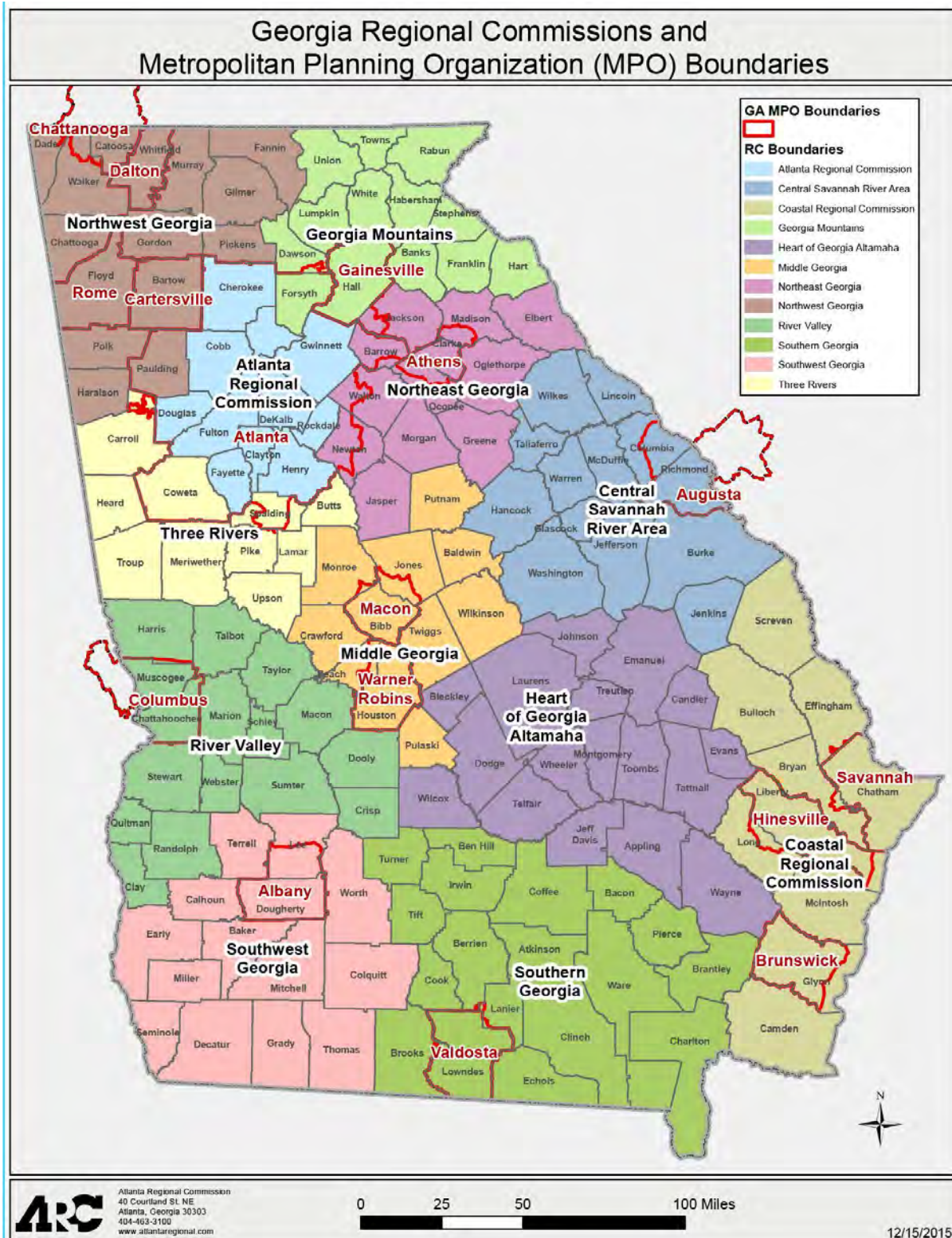


Figure 1-2: Distribution of MPOs Across Georgia

MPOs aren't unique to Georgia; there are over 400 MPOs nationwide.<sup>[3]</sup> MPOs were created in response to the Federal Aid Highway Act of 1962. As a result of this act, all Urbanized Areas<sup>[4]</sup> with populations

exceeding 50,000 persons were required to maintain a “continuing, cooperative, and comprehensive” transportation planning process involving all the local, State and Federal government partners. Over time, this mandate has grown to include monitoring and mitigation of impacts from transportation projects (e.g., maintaining clean air and water, protection of endangered species, environmental justice, etc.). A detailed discussion on MPO roles and activities can be found in The Transportation Planning Process Briefing Book, published by U.S. Federal Highway Administration.

## How Did the MATS MPO Get Started?

MATS was originally founded on February 21, 1964, by designation of the Governor and adoption of a Memorandum of Understanding (MOU) between The City of Macon, the County of Bibb, the Municipality of Payne City, the Georgia State Highway Department (now the Georgia Department of Transportation) and the Macon-Bibb County Planning and Zoning Commission. The roles and responsibilities of MATS are covered by the MOU.

Over the years, MATS has expanded geographically to include portions of Jones County and Monroe County as a result of the region's growth. Additionally, other agency partners such as the Middle Georgia Regional Commission and the Macon-Bibb County Transit Authority have also been added.

From time to time, the documents authorizing MATS need to be updated to reflect new circumstances. For example, the most recent changes to MATS happened in June 2015 and November 2015, when Payne City was removed from the MOU, and Macon-Bibb Industrial Authority replaced Payne City on the MATS Policy Committee (described below). This was done to account for the dissolution of Payne City by the Georgia Legislature, after the Macon-Bibb government consolidation in 2014.

## What Does the MATS MPO Do?

Federal regulations call for an MPO to carry out a process for the metropolitan planning area that provides for consideration and implementation of projects, strategies, and services that will:

- Support the economic vitality of the United States, the States, nonmetropolitan areas and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes throughout the State for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system

As part of this process, MATS staff (with input from Georgia DOT, U.S. Federal Highway Administration, Macon Transit Authority, and U.S. Federal Transit Administration) develops the **Long-Range Transportation Plan (LRTP)**, the **Transportation Improvement Program (TIP)**, and the **Unified Planning Work Program (UPWP)**. Figure 1-3 below provides a visual overview of the relationship between these documents.



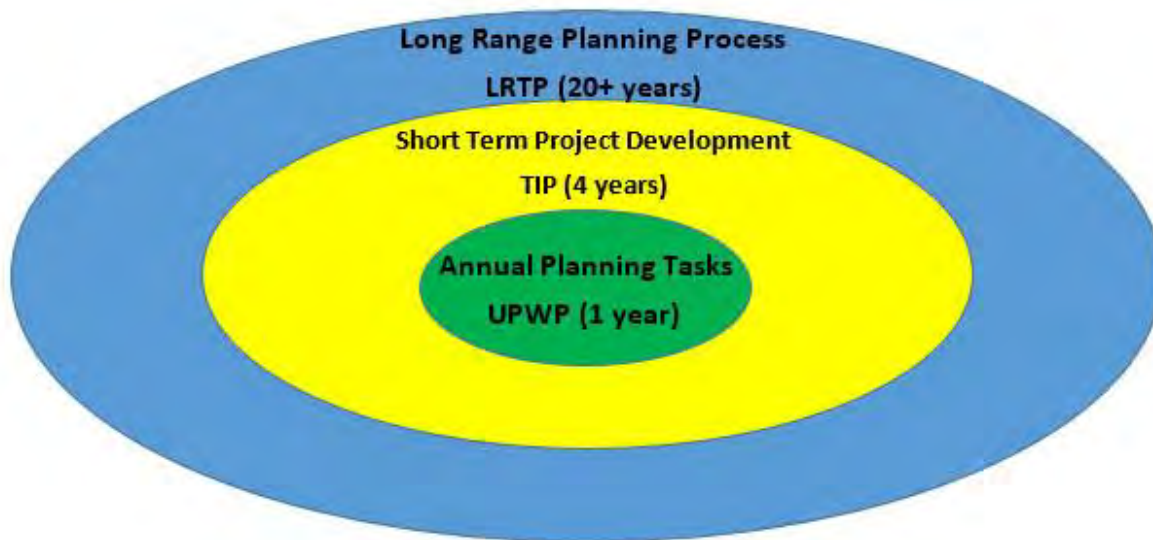


Figure 1-3: Relationship Between LRTP, TIP and UPWP Planning Documents

The Long Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP) are, respectively, long and short term lists of specific transportation projects for the MATS planning area. The LRTP is designed to forecast demand for transportation services at least 20 years into the future, taking into account anticipated population growth, housing needs and employment goals for the region. The LRTP serves as the official list of federally funded transportation projects and priorities, throughout the MPO region. The number and priority of projects on that list can be altered, based on the procedures laid out in the MATS Public Participation Plan.

At the State level, all LRTP project lists throughout Georgia feed into the Long Range Statewide Transportation Program (LRSTP). As the name suggests, the LRSTP is a statewide plan that addresses projected travel demand for at least 20 years, taking into account State policies and strategies for promoting efficient development, protection of natural resources, and employment.

In contrast to the 20-year time horizon, the Transportation Improvement Program (TIP) covers a period of 4 fiscal years. Any project that is listed in the TIP receiving federal funding must already be listed in the LRTP. If a brand new project is to be added to the TIP, it must simultaneously be added to the LRTP.

The main difference between the TIP and the LRTP is that where the LRTP is a list of all projects, TIP projects are active and at various stages of execution (i.e., Preliminary Engineering, Right Of Way acquisition, or Under Construction). The federally required update period for the TIP is every 4 years, although States and MPOs can have policies to update more frequently if they see fit.

Finally, the Unified Planning Work Program (UPWP) is the list of federally funded studies and ongoing activities, plus any supplementary planning projects identified by Georgia DOT and the MATS board members. This set of planning projects is revised each fiscal year.<sup>[1]</sup> Among the usual tasks supported in the UPWP, MATS develops demographic data, land use information, and analyses necessary for the development and monitoring of the Long-Range Transportation Plan and the Transportation Improvement Program.

The UPWP, TIP, and LRTP are all public documents, available to the public on the MATS website (<https://www.mats2040.org>), at the public library, the Macon-Bibb Planning and Zoning Commission, the Middle Georgia Regional Commission and the Georgia Department of Transportation local office.

## How is MATS Funded?

MATS is funded through local, State and Federal funding sources. At the Federal level, MATS is supported by annual grants from the Federal Highway Administration (through the “PL Grant” program) and the Federal Transit Administration (through the “5303 Grant” program).<sup>[2]</sup> These funds are authorized by the U.S. Congress, administered locally through Georgia Dept. of Transportation (Georgia DOT), and constitute 80% of the MATS budget. The remaining 20% is made up through State and local matching funds. In the case of 5303 Grant funds, there is an additional requirement that the 20% local match be split evenly between the State and local government (i.e., 10% each).

As with any type of federal funding, MATS is required to report on its activities supported by the funds on a regular basis. Each quarter, MATS submits grant activity reports to the Georgia DOT. Figure 1-3 describes the relationships between Federal funding, MPO activities, and reporting requirements.

<sup>[1]</sup> MATS fiscal year (FY) runs from July 1 of the previous year through June 30 of the current year. For example, FY 2017 runs from July 1, 2016, through June 30, 2017. FY 2018 will begin July 1, 2017.

<sup>[2]</sup> “PL Grant” and “5303 Grant” are shorthand for the federal processes that guide how MATS is funded. “PL” indicates that the funding is tied to the Public Law process, meaning the funding is part of Congress passing a new federal transportation bill or re-authorizing an existing law. “5303” is a reference to U.S. Code Title 49, Sub. III Sec. 5303, which covers planning for public transportation systems as they relate to national policy goals.

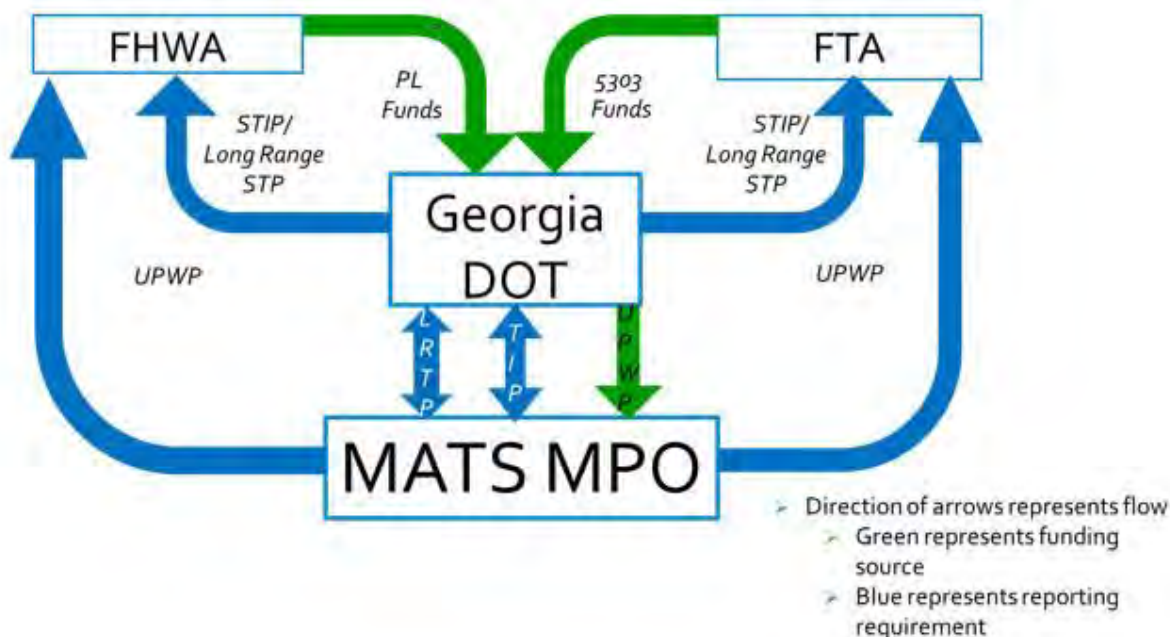


Figure 1-4: MATS Funding and Reporting Relationships With Federal and State Agencies

## Who Runs MATS?

Since inception, MATS has been composed of three committees; the Policy Committee (PC), the Citizen Advisory Committee (CAC), and the Technical Coordinating Committee (TCC). [The full MATS bylaws \(and amendments\) for all committees](http://www.mats2040.org) can be found on line at the main MATS website ([www.mats2040.org](http://www.mats2040.org)).

All MATS meetings are open to the public. Meeting notifications are posted on the MATS website, as well as at the Macon-Bibb Government Center, and the Macon-Bibb County Planning & Zoning Commission Office. Meetings are held quarterly, in the following sequence:

- CAC – Second Wednesday of the month immediately before a Policy Committee (PC) meeting;
- TCC – Third Wednesday of the month immediately before a Policy Committee (PC) meeting;
- PC – First Wednesday of the month in which the quarterly meeting is called

In addition to regularly scheduled meetings, specially called meetings may take place, at the discretion of the PC chair or the Director of the MPO. In the event of a special call meeting, notice will be posted on this website, as well as the Macon-Bibb Government Center and the Macon-Bibb County Planning & Zoning Commission Office.

The staff of the Macon-Bibb County Planning & Zoning Commission provides the technical support and planning expertise for MATS and its committees.

**Policy Committee (PC)** – The purpose of the PC is to “carry out a continuing, cooperative, and comprehensive multimodal transportation planning process that includes the development of the Long Range Transportation Plan and the Transportation Improvement Program which serve to develop a safe and efficient surface transportation system for all modes of travel.” The PC is the board that formally adopts the LRTP, TIP and any other documents or positions that officially lay out MATS policies or directs staff activities.

The voting membership of the PC is comprised of the following:

- Elected Officials
  - Macon-Bibb County – Mayor, plus 3 commissioners
  - Jones County – Commission Chair
  - Monroe County – Commission Chair
- Government Agency Representatives
  - Chairman, Macon-Bibb County Transit Authority
  - Chairman, Middle Georgia Regional Commission
  - Chairman, Macon-Bibb County Planning & Zoning Commission
  - Chairman, Macon-Bibb County Water Authority
  - Commissioner, Georgia Department of Transportation
  - Chairman, Citizens' Advisory Committee (CAC)
  - Chairman, Macon-Bibb County Industrial Authority

In addition to the voting members, the following participants are non-voting members:

- Eighth District Representative, Georgia State Transportation Board
- Second District Representative, Georgia State Transportation Board
- Executive Director, Macon-Bibb County Planning & Zoning Commission
- Division Administrator, Federal Highway Administration
- Chairman, Macon-Bibb County Urban Development Authority
- County Manager, Macon-Bibb County
- Macon-Bibb County Engineer
- Executive Director, Middle Ga. Regional Commission
- Local State Representative, State of Georgia

Regular meetings of the MATS Policy Committee are held quarterly. Meetings will be held on the first (1<sup>st</sup>) Wednesday of the month in which they are called. The usual meeting time and place for this meeting is:

Bibb County Engineering Annex Board Room

760 Third St.

Macon, GA 31201

9:30 a.m.

**Citizens Advisory Committee (CAC)** – As the name suggests, this committee was created as the primary forum for citizen engagement, to gauge community values and public attitudes in the planning process. The membership of the CAC is currently set at 20 members:

- one from each of the 9 Macon-Bibb County Commission districts
- one member from Jones County
- one member from Monroe County
- one member from American Association of Retired Persons
- one member from Macon Housing Authority
- one member from Bibb County Board of Education
- one member from The League of Women Voters
- one member each from the following interest areas
  - Pedestrian/bike user
  - Transit user
  - Environmental interest group
  - Disabled population
  - Disabled transportation user

One special consideration of the CAC is that the chair of this committee *also* has a voting seat on the MATS Policy Committee (PC: described above), and a non-voting seat on the Technical Coordinating Committee (TCC: described below).

The regular meetings of the MATS CAC is the second (2<sup>nd</sup>) Wednesday of the month in which it is called. This is one week immediately preceding a normal Technical Coordinating Committee (TCC) meeting. The usual meeting time and place for this meeting is:

Macon-Bibb County Planning & Zoning Commission Office

682 Cherry St., Suite 1000

Macon, GA 31201

6:00 p.m.

**Technical Coordinating Committee (TCC)** – This committee is comprised of agency staff from the MATS member jurisdictions, “to assist the MATS Policy Committee with collecting information, performing technical reviews, formulating recommendations, setting priorities, drafting MPO documents, maintaining MPO processes, and other matters as directed by the MATS Policy Committee.” The voting membership of the TCC is comprised of the following:

- Project Director, Macon Area Transportation Study
- Macon-Bibb County Planning & Zoning Commission - Planning Director
- Macon-Bibb County Planning & Zoning Commission - Transportation Planner

- Jones County Zoning Enforcement Officer
- Monroe County Zoning Enforcement Officer
- Macon-Bibb County Traffic Engineer
- Macon-Bibb County Sheriff's Department
- Macon-Bibb County Engineer
- Macon-Bibb County Attorney
- Manager of Middle GA Regional Airport
- Macon-Bibb County Director of Facilities Management
- Macon-Bibb County Director of Economic and Community Development
- Transportation Planner, Georgia DOT Planning Office
- Transportation Planner, Georgia DOT Intermodal Office
- Pre-Construction Engineer, Thomaston District Office, Georgia DOT
- Planning Director, Middle Georgia Regional Commission
- Executive Director, Middle Georgia Regional Commission
- Director, Macon-Bibb Co. Water Authority
- Executive Director, Macon-Bibb County Industrial Authority
- Director, Macon Transit Authority
- Executive Director, Macon-Bibb County Urban Development Authority
- Representative, Transportation Committee, Chamber of Commerce
- Executive Director, Macon-Bibb Co. Business Development Dept.
- Chief, Macon-Bibb Co. Fire Department

In addition to the voting members, the following participants are **non**-voting members:

- Intermodal Planning Engineer, Federal Highway Administration
- Area Engineer, Georgia DOT
- Chairman, Citizens Advisory Committee
- Urban Designer, Georgia DOT
- Division Administrator, Federal Highway Administration

The regular meetings of the MATS TCC is the third (3<sup>rd</sup>) Wednesday of the month in which it is called. This is two weeks immediately preceding a normal Policy Committee meeting. The usual meeting time and place for this meeting shall be:

Macon-Bibb County Planning & Zoning Commission Office

682 Cherry St., Suite 1000

Macon, GA 31201

10:00 a.m.

## **Significant Changes Since the Original 2040 LRTP Adoption**

The most significant change since the adoption of the original MATS 2040 LRTP is the improvement in our air quality status as determined by U.S. EPA and Georgia Environmental Protection Division (Georgia EPD).

The original MATS 2040 LRTP was adopted on November 20, 2013. At that time, the MATS area was already designated under the U.S. EPA 1997 National Ambient Air Quality Standards (NAAQS) as a “non-attainment” area, and subsequently a “maintenance” area, for ground-level ozone and fine particulate matter (PM 2.5). On April 6, 2015 the 1997 NAAQS for ozone was revoked and replaced with the new 2008

standard, and on October 24, 2016, the 1997 NAAQS for PM 2.5 was replaced with the 2012 NAAQS standards. Due to the progress MATS, GDOT and Georgia EPD had made under the State Implementation Plan (SIP), the MATS area met the newer (more stringent) 2008 and 2012 NAAQS standards for ozone and PM 2.5, respectively. U.S. EPA Division 4 office notified MATS staff via e-mail on October 24, 2016, that the 1997 NAAQS PM 2.5 rule was no longer in effect, and that demonstration for transportation conformity was no longer binding.

As a result of this change, MATS staff anticipates that amending and reprioritizing projects in the 2040 LRTP update will be significantly easier and that the next LRTP can take place on a 5-year cycle.

## Organization of This Document

The remaining sections of this document are organized as follows:

[Chapter 2](#) describes the updated goals and objectives for the 2040 LRTP, in relation to the new federal emphasis on performance measures. This section provides an overview of relevant federal legislation and anticipated metrics that will be used to evaluate specific types of projects.

[Chapter 3](#) describes the population and land use forecasts used to identify and prioritize transportation projects throughout the region. This section includes identification of zones where future population and job growth are anticipated.

[Chapter 4](#) describes the public participation processes employed and observations collected as part of this LRTP Update process.

[Chapter 5](#) describes the operations and management strategies employed throughout the MATS area, to make the most efficient and safe use of existing road infrastructure.

[Chapter 6](#) describes lists the prioritized **Road and Bridge** projects identified in this 2040 LRTP update. This includes estimates of project costs and anticipated revenue sources, and demonstration of fiscal balancing

[Chapter 7](#) describes the **Transit** projects identified in this 2040 LRTP update. This includes estimates of project costs and anticipated revenue sources, and demonstration of fiscal balancing.

[Chapter 8](#) provides a detailed fiscal plan for the projects identified in Chapter 6 and 7.

At this time, the **Road and Bridge projects** account has an identified **surplus of \$97,773,648.86**. The **Transit projects** account has an identified **surplus of \$14,316,635.57**

[Chapter 9](#) describes the Safety assessment of the MATS travels network in this 2040 LRTP update. This includes discussions of forthcoming safety performance measures.

[Chapter 10](#) describes the bicycle and pedestrian projects identified in this 2040 LRTP update.

[Chapter 11](#) describes the freight improvement and aviation projects identified in this 2040 LRTP update.

[Chapter 12](#) describes the Planning Considerations applicable to this 2040 LRTP update for minority and disabled communities. This includes identification of populations which have been marginalized historically (e.g., Environmental Justice population groups, Limited English Proficiency) and discussion of all relevant civil rights legislation and Executive Orders bearing on protections for these groups.

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[1] [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP\\_2015\\_PEPANNRES&src=pt](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2015_PEPANNRES&src=pt)

[2] Based on population projections provided by Georgia Governor's Office of Planning and Budget (GA-OPB), 2015 data release. GA\_OPB estimates can be obtained

at: [https://opb.georgia.gov/sites/opb.georgia.gov/files/related\\_files/site\\_page/2015%20updated%20Population%20Projection%20Request.pdf](https://opb.georgia.gov/sites/opb.georgia.gov/files/related_files/site_page/2015%20updated%20Population%20Projection%20Request.pdf)

[3]<https://www.planning.dot.gov/mpo.asp>

[4][https://www.fhwa.dot.gov/planning/census\\_issues/urbanized\\_areas\\_and\\_mpo\\_tma/faq/page01.cfm](https://www.fhwa.dot.gov/planning/census_issues/urbanized_areas_and_mpo_tma/faq/page01.cfm)



# Chapter 2 | Goals & Objectives

## Introduction

This section provides an overview of the goals and objectives adopted for the updated MATS 2040 Long Range Transportation Plan (LRTP). It also discusses the new emphasis on performance measures, which are quantifiable metrics of how well MATS is progressing towards the adopted goals and objectives. As discussed in greater detail below, this emphasis on performance measures is an outcome of the two most recent federal highway acts, Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21, adopted in 2012), and the Fixing American's Surface Transportation Act (FAST Act, adopted in 2015).

### MATS 2040 – A Long Range Transportation Plan for the Macon Area

The purpose of a long-range transportation plan (LRTP) is to assess future transportation infrastructure needs and opportunities over a 25-year period for an urbanized area known as a metropolitan planning area. The LRTP planning process helps coordinate how the region addresses transportation needs with the end goal of fostering an efficient, convenient, safe, secure, and sustainable transportation system. Recognizing both the challenges and opportunities that the region faces, the *MATS 2040 Update* looks into the future and describes a vision for the region's transportation system. The plan anticipates future conditions and outlines issues that should be considered when confronting those conditions. Most importantly, the plan identifies broad policy goals and objectives associated with strategic actions to improve accessibility, mobility, and regional connectivity in ways that support sustainability and economic growth.

As a community transportation policy document, *MATS 2040 Update* will set the direction for future transportation investments and enhances the findings of the *MATS 2040*, the region's previous LRTP, by using improved modeling tools and additional public input to more clearly define the region's transportation issues and identify a future vision along with strategies to realize it.

The *MATS 2040 Update* was developed by the Macon Area Transportation Study (MATS) - the Metropolitan Planning Organization (MPO) for the Macon urbanized area, which includes all of Macon-Bibb County, a small portion of southern Monroe County and the southern half of Jones County. MATS is directed by a Policy Committee composed of local elected officials, state transportation commissioners, and the commission chairs of the regional commission, planning and zoning commission, transit authority, and the water authority. The Policy Committee is advised by the Technical Coordinating Committee and depends on the Citizen's Advisory Committee to engage the public in the region's transportation planning discussions. MATS staff is responsible for updating the LRTP as well as other regional transportation planning documents.

### Towards Performance-Based Transportation Planning

In 2012, Congress passed the [Moving Ahead for Progress in the 21<sup>st</sup> Century \(MAP-21\) Act](#). MAP-21 introduced a new emphasis in the MPO transportation planning process, towards measurable performance and outcome-based metrics in the evaluation of projects and programs receiving federal support. MAP-21 focuses on 7 performance goal areas:

#### GOALS, OBJECTIVES AND PERFORMANCE MEASURES

A GOAL is a broad statement that describes a desired end state:  
"Foster livable communities that increase transportation choices."

AN OBJECTIVE is a specific, measurable statement that supports achievement of a goal:  
"Increase access to jobs and housing via transit."

A PERFORMANCE MEASURE monitors progress toward long-term goals and objectives: "Have additional transit routes been implemented."

(Source: FHWA (2014) Model Long Range Transportation Plans: A Guide for Incorporating Performance-Based Planning)



- Safety
- Infrastructure Condition
- Congestion Reduction
- System Reliability
- Freight Movement and Economic Vitality
- Environmental Sustainability
- Reduced Project Delivery Delays

Since there are always more projects than funding, MATS must prioritize transportation projects. One of the first questions asked is whether and how a proposed project addresses federal, state and regional transportation goals.

### Setting Our Transportation Goals

The *MATS 2040 Update* supports national transportation planning factors and goals, state transportation goals, and local economic and community development priorities. These goals, planning factors, and priorities help prioritize projects and assess progress in implementing the transportation vision outlined in *MATS 2040 Update*.

### Fixing America's Surface Transportation Act (FAST Act)

On December 4, 2015, President Obama signed the [Fixing America's Surface Transportation \(FAST\) Act](#) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes \$305 billion nationwide, between 2016-2020, for roadway construction, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, research, technology, and statistics programs. The FAST Act maintains the Federal Highway Authority's (FHWA) focus on safety, keeps intact the established structure of the various highway-related programs managed by FHWA, continues efforts to streamline project delivery, and, for the first time, provides a dedicated source of federal dollars for freight projects.

In addition, the FAST Act continues the emphasis raised in MAP-21 on performance-based outcomes, requiring that the metropolitan transportation planning process “*shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following factors:*”

- *Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;*
- *Increase the safety of the transportation system for motorized and non-motorized users;*
- *Increase the security of the transportation system for motorized and non-motorized users;*
- *Increase accessibility and mobility of people and for freight;*
- *Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;*
- *Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;*
- *Promote efficient system management and operation;*
- *Emphasize the preservation of the existing transportation system;*
- *Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and*
- *Enhance travel and tourism.”* [23 USC 450.306]

The FAST Act also requires federally funded transportation projects to support national goals for the nation's transportation system by focusing on projects that:

- Achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

- Maintain the highway infrastructure asset system in a state of good repair.
- Achieve a significant reduction in congestion on the National Highway System.
- Improve the efficiency of the surface transportation system.
- Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- Enhance the performance of the transportation system while protecting and enhancing the natural environment.
- Reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices. [23 U.S. Code § 150]

### **Georgia 2040 Statewide Transportation Plan & 2015 Statewide Strategic Transportation Plan**

The 2040 Statewide Transportation Plan (SWTP) and 2015 Statewide Strategic Transportation Plan (SSTP) provide a comprehensive look at transportation issues and investment needs in Georgia now and through the year 2040. It forecasts available funding for transportation investment and develops a set of strategic, financially constrained investment recommendations to meet the transportation demands of the State.

Georgia's transportation system is planned and constructed by several agencies across the State, including the Georgia Department of Transportation (GDOT), individual cities and counties, and port, airport, and transit authorities. GDOT shares responsibility for planning and programming transportation funding with 16 Metropolitan Planning Organizations (MPO) in urbanized areas across the State. GDOT has the responsibility to maintain and operate the roadways that it owns in urban areas.

While the 2040 SWTP/2015 SSTP focuses on the transportation assets owned and operated by GDOT, it touches upon all of the transportation facilities in the State, which include roadways, public transportation, railroads, airports, marine ports, and bicycle/pedestrian facilities. It presents statewide economic and transportation demand forecasts given expected population and employment growth and assesses the current and future performance of all these modes over the planning horizon.

For the first time, the plan combines the traditional transportation analyses of the federally required long-range transportation plan with the strategic business case for transportation investment required by the State. The plan's goals direct transportation funding to projects that:

- Relieve congestion;
- Improve reliability;
- Improve freight movement and economic development opportunities;
- Improve safety;
- Improve the environment; and,
- Maintain and preserve the existing transportation system

### **Previous 2040 LRTP Goals**

In addition to federal and state transportation goals, MATS is guided by local transportation goals and recommendations included in the *MATS 2040*, which was adopted in 2013. The *MATS 2040* included twelve broad goals to guide transportation and land use planning, three goals for improving bicycle and pedestrian amenities, and a recommendation to incorporate Complete Streets concepts into all MATS region roads (see column).

### **Integrating Federal, State, and Local Priorities into the LRTP**

The vision, goals, objectives, and performance measures developed for the *MATS 2040 Update* reflect national and state transportation goals and planning factors, local development needs, and input from the public. In addition, the LRTP is being developed in the context of the existing social, financial, and political

environment, through which local planning officials and other decision-makers must constantly navigate in a way that respects and supports the overarching framework of democratic governance while striving to fulfill the best interests of the local community that the plan is based on. Some current challenges facing the Macon region include:

- Pressures from sprawling development and population movement within the MPO and private economic disinvestment in large portions of the historic core of Macon result in a mismatch of infrastructure capacity and maintenance
- Community expectations for economic development which are integrally tied to transportation improvements
- Fulfilling important investment commitments in the context of fiscal strain at all levels of government
- Unresolved transportation funding challenges within national, state, and local political environments.

#### **2040 LRTP Update – Goals and Objectives**

The 2040 LRTP Update is the first LRTP update that incorporates this new emphasis on a performance-based planning process, using clearly identified goals, objectives and performance measures to identify and prioritize improvements to the region's transportation system. Goals reflect key priorities for desired outcomes for the transportation system and/or for society as a whole. Supporting objectives are specific, measurable statements that support the achievement of goals, and play a key role in shaping investment and policy priorities. Goals and objectives reflect State or regional priorities and policy directions, while considering the Federally-required planning factors and supporting national goals specified in law.

As part of the 2040 LRTP Update, MATS staff reviewed the originally adopted 2040 LRTP goals and reconciled them with the national and state goals identified in the FAST Act and the Georgia 2040 SWTP, respectively. The MATS staff also proposed transportation related objectives for which future performance measures can be developed. Table 2-1 shows how the updated goals and objectives approved by the MATS Policy Committee build upon the general goals areas specified in MAP-21, FAST Act, the Georgia 2040 Statewide Transportation Plan and 2015 Statewide Strategic Transportation Plan, and the MATS specific goals and objectives adopted as part of the original 2040 LRTP. These goals and objectives are summarized individually below.

Table 2-1: Comparison of Transportation Planning Goals & Objectives Under FAST Act, Georgia 2040 Statewide Transportation Plan, and MATS 2040 LRTP					
FAST Act National Planning Factors	FAST Act National Goals	GA 2040 SWTP/ 2015 SSTP State Goals	Current MATS 2040 LRTP Regional Goals	MATS 2040 LRTP Update Goals	MATS 2040 LRTP Update Objectives
Increase the accessibility and mobility of people and for freight	To achieve a significant reduction in congestion on the National Highway System  To improve the efficiency of the surface transportation system	Relieve congestion and improve reliability  Improve freight movement and economic development opportunities	Provide a transportation network that enhances interconnections between activity centers and neighborhoods.  Enhance the ability to travel within the metropolitan area regardless of mode of transportation.  Enhance the ability to travel within the metropolitan area regardless of mode of transportation.	Promote Multimodal and Affordable Travel Choices	A. Enhance transit services, amenities and facilities B. Improve bicycle and pedestrian facilities C. Increase utilization of affordable non-auto travel modes D. Improve efficient movement of goods and services within and through the region E. Support the development of passenger rail between downtown Macon and Atlanta
Promote efficient system management and operation	To achieve a significant reduction in congestion on the National Highway System  To improve the efficiency of the surface transportation system  To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.	Relieve congestion and improve reliability	The 2040 LRTP does not currently address these federal and state goals	Manage Congestion & System Reliability	A. Allow people and goods to move with minimal congestion and time delay, and greater predictability. B. Promote ride sharing, such as carpool, vanpool and park-and-ride. C. Enhance Intelligent Transportation Systems (dynamic signal phasing and vehicle detection systems)
Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	To enhance the performance of the transportation system while protecting and enhancing the natural environment.	Improve the environment	Encourage growth in areas that have access to existing and planned facilities.  Minimize intrusions into wetlands, natural habitats, flood plains, prime farmland, cultural and historic areas.  Reduce vehicular air pollution.  Promote development of community-oriented neighborhoods.  Promote development at a higher design and planning standard	Improve Air Quality, Protect the Environment, Improve Quality of Life, and Promote Good Land Use Planning	A. Reduce mobile source emissions, GHG, and energy consumption. B. Reduce the impact on the natural and cultural environment C. Link land use and transportation
Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight	To achieve a significant reduction in congestion on the National Highway System  To improve the efficiency of the surface transportation system			Access to Essential Services	A. Connect people to jobs, education and other important destinations using all modes.
Emphasize the preservation of the existing transportation system	To maintain the highway infrastructure asset system in a state of good repair.	Maintain and preserve the existing transportation system.	The 2040 LRTP does not currently address these federal and state goals	Improve Infrastructure Condition	A. Increase proportion of highways and highway assets in "good" condition B. Maintain transit vehicles, facilities and amenities in the best operating condition. C. Improve the condition of bicycle and pedestrian facilities and amenities.
				Ensure Equity	A. Ensure transportation needs are met for all populations (especially the aging and youth, economically disadvantaged, mobility impaired, and non-English speaking)

Table 2-1: Comparison of Transportation Planning Goals & Objectives Under FAST Act, Georgia 2040 Statewide Transportation Plan, and MATS 2040 LRTP					
FAST Act National Planning Factors	FAST Act National Goals	GA 2040 SWTP/ 2015 SSTP State Goals	Current MATS 2040 LRTP Regional Goals	MATS 2040 LRTP Update Goals	MATS 2040 LRTP Update Objectives
Increase the safety of the transportation system for motorized and nonmotorized users.  Increase the security of the transportation system for motorized and nonmotorized users.	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.	Improve safety.	Provide transportation corridors that are safe for all modes of travel.	Increase Safety, Health and Security	A. Increase safety of travelers and residents B. Promote public health through transportation choices (particularly for school age populations).
Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.  To achieve a significant reduction in congestion on the National Highway System  To improve the efficiency of the surface transportation system	Improve freight movement and economic development opportunities.	Foster a strong, diverse and well-designed commercial and industrial environment that provides for a full range of employment and economic choices.	Support Economic Vitality	A. Improve freight movement B. Increase funding and funding sources for all transportation modes C. Improve project delivery for all modes
Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.	To maintain the highway infrastructure asset system in a state of good repair.  To enhance the performance of the transportation system while protecting and enhancing the natural environment.	The 2040 SWTP/2015 SSTP do not currently address this federal goal.	The 2040 LRTP does not currently address this federal goal.	Improve Resiliency and Reduce Storm Water Impacts	A. Reduce the number of bridges and roadways vulnerable to natural disaster. B. Enhance environmental mitigation related to storm water management and habitat connectivity.
Enhancing travel and tourism	To improve the national freight network, strengthen the ability of rural communities to access	The 2040 SWTP/2015 SSTP do not currently address this	Provide a roadway network that enhances the scenic beauty of the community.	Enhance Travel and Tourism	A. Increase funding and identify greater variety of funding sources for transportation projects such as

Table 2-1: Comparison of Transportation Planning Goals & Objectives Under FAST Act, Georgia 2040 Statewide Transportation Plan, and MATS 2040 LRTP



### **Goal: Promote Multimodal and Affordable Travel Choices**

The MATS 2040 Update recognizes that the region's transportation network is intended to equitably serve all of the region's residents and visitors whether walking, bicycling, riding public transit, driving or riding in a private automobile, or hauling freight.

#### ***Objectives***

1. Enhance transit services, amenities, and facilities
2. Improve bicycle and pedestrian facilities
3. Increase utilization of affordable non-auto travel modes
4. Improve efficient movement of goods and services within and through the region
5. Support the development of passenger rail between downtown Macon and Atlanta

### **Goal: Manage Congestion & System Reliability**

The MATS 2040 Update implements cost-effective strategies to reduce unproductive congestion.

#### ***Objectives***

1. Allow people and goods to move with minimal congestion and time delay, and greater predictability
2. Promote ride sharing, such as carpool, vanpool, and park-and-ride.
3. Enhance Intelligent Transportation Systems (dynamic signal phasing and vehicle detection systems)

### **Goal: Improve Air Quality, Protect the Environment, Improve Quality of Life, and Promote Good Land Use Planning**

The MATS 2040 Update supports coordinating land use planning with transportation planning to help improve air quality and the environment as well as the quality of life for all of the region's residents.

#### ***Objectives***

1. Reduce mobile source emissions, GHG, and energy consumption
2. Reduce the impact on the natural and cultural environment
3. Link land use and transportation

### **Goal: Access to Essential Services**

The MATS 2040 Update recognizes that mobility of people and freight is the backbone of economic development and private investment in the community.

#### ***Objectives***

1. Connect people to jobs, education and other important destinations using all modes

### **Goal: Improve Infrastructure Condition**

The MATS 2040 Update recognizes the tremendous value of the region's existing transportation assets and prioritizes the improvement and maintenance of these existing assets.

#### ***Objectives***

1. Increase proportion of highways and highway assets in 'Good' condition

2. Maintain transit vehicles, facilities and amenities in the best operating condition.
3. Improve the condition of bicycle and pedestrian facilities and amenities
4. Improve response time to infrastructure repairs

### **Goal: Ensure Equity**

The MATS 2040 Update focus on the transportation needs of the region's most vulnerable populations is a critical element of the MATS 2040 Update.

#### ***Objectives***

1. Ensure transportation needs are met for all populations (especially the aging and youth, economically disadvantaged, mobility impaired, and minorities).
2. Enhance public participation among all communities

### **Goal: Increase Safety, Health and Security**

The MATS 2040 Update identifies the safety of the transportation system as of utmost importance and recognizes the value of a transportation system that can help improve the community's health by providing easily accessible active transportation opportunities.

#### ***Objectives***

1. Increase safety of travelers and residents
2. Promote public health through transportation choices

### **Goal: Support Economic Vitality**

The MATS 2040 Update promotes workforce mobility, efficient movement of freight, and timely implementation of transportation improvement projects.

#### ***Objectives***

1. Improve freight movement
2. Increase funding and funding sources for all transportation modes
3. Improve project delivery for all modes

### **Goal: Improve resiliency and reduce stormwater impacts**

The MATS 2040 Update recognizes that the long-term economic health and welfare of the region demands transportation infrastructure with minimal exposure to natural and man-made hazards and that mitigates the negative stormwater impacts that degrade the region's valuable gray and green infrastructure.

#### ***Objectives***

1. Reduce the number of bridges and roadways vulnerable to natural disaster

### **Goal: Enhance travel and tourism**

Attractive travel corridors enhance the travel experience for residents and visitors alike and can support economically beneficial tourism in the region.

#### ***Objectives***

1. Increase funding and funding sources for transportation enhancement projects

## Going Forward: Implementing Goals, Objectives and Performance Measures

The goals and objectives described in this section are designed to be used as guiding principles for evaluating how well MATS is achieving a sustainable and resilient regional transportation network. With that in mind, MATS will be developing specific performance measures related to these goals and objectives, based on guidance provided by U.S. DOT (through FHWA and FTA), the Georgia Dept. of Transportation, various local agency partners, and the general public.

Performance measures are designed to be clear, quantifiable and easily verifiable metrics about where both the State and the MATS region are achieving their transportation goals, and which goals need additional emphasis or resources. Specific performance metrics related to FAST Act Planning Emphasis Areas (described above) are currently in development at the federal level, and State target values for these metrics will be set by collaboration between Georgia Dept. of Transportation, FHWA and FTA. Once State specific target values are established, MATS will have an additional 180 days to establish specific local targets on these measures.

Table 2-2 describes the current set of performance measures being considered by MATS. Once the final performance measures are specified by the Federal and State Departments of Transportation, this list will be amended and specific performance targets set, in accordance with the steps laid out in the MATS Public Participation Plan.

### 2040 LRTP GOALS

#### *Land Use and Transportation*

- ✓ Encourage growth in areas that have access to existing and planned facilities (countywide).
- ✓ Minimize intrusions into wetlands, natural habitats, flood plains, prime farmland, cultural and historic areas (countywide).
- ✓ Foster a strong, diverse and well-designed commercial and industrial environment that provides for a full range of employment and economic choices (countywide).
- ✓ Provide a transportation network that enhances interconnections between activity centers and neighborhoods (countywide).
- ✓ Enhance the ability to travel within the metropolitan area regardless of mode of transportation (countywide).
- ✓ Provide a roadway network that enhances the scenic beauty of the community (countywide).
- ✓ Provide transportation corridors that are safe for all modes of travel (countywide).
- ✓ Reduce vehicular emissions that pollute our air (countywide).
- ✓ Establish, promote and sustain strong public involvement (countywide).
- ✓ Enhance the image, economic vitality, and sense of community identity of Downtown (downtown).
- ✓ Promote development of community-oriented neighborhoods (neighborhoods).
- ✓ Promote development at a higher design and planning standard (rural & suburban areas).

#### *Bicycle and Pedestrian*

- ✓ Create a system in the MATS area that will provide safe, convenient, and accessible bicycle and pedestrian facilities for all users.
- ✓ Develop an educational and promotional program to encourage bicycling and pedestrian forms of transportation.
- ✓ Identify funding sources to implement, upgrade and maintain bicycle and pedestrian facilities.

#### *Complete Streets*

- ✓ Incorporate Complete Streets concepts on all MATS streets, including local, collector, principal & minor arterials (excluding interstates).

Table 2-2: MATS 2040 LRTP Updated Goals, Objectives and Proposed Regional Performance Measures		
MATS 2040 LRTP Update Goals	MATS 2040 LRTP Update Objectives	MATS 2040 LRTP Update Proposed Performance Measures
Promote Multimodal and Affordable Travel Choices	<p>A. Enhance transit services, amenities and facilities</p> <p>B. Improve bicycle and pedestrian facilities</p> <p>C. Increase utilization of affordable non-auto travel modes</p> <p>D. Improve efficient movement of goods and services within and through the region</p> <p>E. Support the development of passenger rail between downtown Macon and Atlanta</p>	<p>A—</p> <ol style="list-style-type: none"> <li>1. Local per capita expenditures on transit operations</li> <li>2. Per capita transit service hours</li> <li>3. Total transit boardings</li> </ol> <p>B—</p> <ol style="list-style-type: none"> <li>1. Local per capita expenditures on bicycle and pedestrian facilities</li> <li>2. Miles of dedicated bicycle facilities</li> <li>3. Percentage of roadways within urbanized area (UA) that have sidewalks</li> </ol> <p>C—</p> <ol style="list-style-type: none"> <li>1. Percentage of transit, bicycle and pedestrian mode shares</li> <li>2. Percentage of transit, bicycle and pedestrian mode shares in transit corridors</li> <li>3. Percentage of transit, bicycle and pedestrian mode shares for work commute</li> </ol> <p>D—</p> <ol style="list-style-type: none"> <li>1. Tonnage of freight by mode moving through the region</li> <li>2. Value of goods shipped from origin within the region to outside areas, by mode</li> <li>3. Value of goods from outside the region arriving here as final destination, by mode</li> </ol> <p>E—</p> <ol style="list-style-type: none"> <li>1. TBD</li> </ol>
Manage Congestion & System Reliability	<p>A. Allow people and goods to move with minimal congestion and time delay, and greater predictability.</p> <p>B. Promote ride sharing, such as carpool, vanpool and park-and-ride.</p> <p>C. Enhance Intelligent Transportation Systems (dynamic signal phasing and vehicle detection systems)</p>	<p>A—</p> <ol style="list-style-type: none"> <li>1. Average work-trip travel time during peak hours for each mode</li> <li>2. Percentage of peak period VMT in congestion (Volume/Capacity &gt; =1.2)</li> <li>3. Average clearance time for crashes on principal roadways</li> <li>4. Annual hours of delay per auto commuter</li> </ol> <p>B—</p> <ol style="list-style-type: none"> <li>1. Percentage of commuters driving alone</li> <li>2. Average number of vehicle occupants</li> <li>3. Number of work places promoting ride sharing</li> </ol> <p>C—</p> <ol style="list-style-type: none"> <li>1. Percentage of VMT on roadways with real-time travel information</li> </ol>
Improve Air Quality, Protect the Environment, Increase Quality of Life	<p>A. Reduce mobile source emissions, GHG, and energy consumption</p> <p>B. Reduce the impact on the natural and cultural environment</p> <p>C. Enhance public participation among all communities.</p>	<p>A -</p> <ol style="list-style-type: none"> <li>1. Transportation GHG emissions per capita</li> <li>2. Transportation ozone and PM-2.5 emissions per capita</li> <li>3. Mobile source expenditures per capita</li> </ol> <p>B—</p> <ol style="list-style-type: none"> <li>1. Percentage of Environmental Justice (EJ) population and total population within census-defined urban area (UA) that is within ½ mile of bus transit service</li> <li>2. Highway and transit investment in communities of concern are similar to the general population in the Macon Area Transportation Study (MATS)</li> </ol> <p>C—</p> <ol style="list-style-type: none"> <li>1. Number of participants in public meetings, public hearings and surveys during the 2040 MATS LRTP update development process</li> <li>2. Number of Web site views and participation level in social media promote</li> </ol>
Increase Safety, Health and Security	<p>A. Increase safety of travelers and residents</p> <p>B. Promote public health through transportation choices (particularly for school age populations)</p>	<p>A—</p> <ol style="list-style-type: none"> <li>1. Number of vehicle crashes, serious injury and fatalities per million vehicle miles traveled</li> <li>2. Pedestrian and bicycle crashes, serious injuries and fatalities per capita</li> <li>3. Transportation Improvement Program (TIP) (4-year) expenditures in MPO for intersection/safety improvement projects.</li> </ol> <p>B—</p> <ol style="list-style-type: none"> <li>1. Percentage of adults who are physically inactive in the region</li> <li>2. Number of projects receiving support through Safe Routes to School program</li> </ol>

Table 2-2 (Continued): MATS 2040 LRTP Updated Goals, Objectives and Proposed Regional Performance Measures		
MATS 2040 LRTP Update Goals	MATS 2040 LRTP Update Objectives	MATS 2040 LRTP Update Proposed Performance Measures
Support Economic Vitality	<p>A. Improve freight movement</p> <p>B. Increase funding and funding sources for all transportation modes</p> <p>C. Improve project delivery for all modes</p>	<p>A—</p> <ol style="list-style-type: none"> <li>1. Truck hours of delay per trip</li> <li>2. Average truck speed on appropriate freight corridors</li> </ol> <p>B—</p> <ol style="list-style-type: none"> <li>1. Transportation Improvement Program (TIP) (4-year) expenditures in MPO as a percent of the 2040 MATS LRTP costs</li> </ol> <p>C—</p> <ol style="list-style-type: none"> <li>1. Percentage of TIP highway projects completed on-time (vs. GDOT project delivery measure)</li> </ol>
Improve Resiliency and Reduce Storm Water Impacts	<p>A. Reduce the number of bridges and roadways vulnerable to natural disaster.</p> <p>B. Enhance environmental mitigation related to storm water management and habitat connectivity.</p>	<p>A-</p> <ol style="list-style-type: none"> <li>1. Miles of roadway subject to impass by a 100 yr, 500 yr or 1,000 yr flood event</li> <li>2. Number of bridges at risk of washout by a 100 yr, 500 yr or 1,000 yr flood event</li> <li>3. Number of road projects addressing environmental mitigation related to storm water, habitat connectivity and/or adopting context sensitive design solutions.</li> </ol>
Enhance Travel and Tourism	<p>A. Increase funding and identify greater variety of funding sources for transportation projects such as pedestrian and bicycle facilities.</p>	<p>A—</p> <ol style="list-style-type: none"> <li>1. Number of pedestrian facilities upgrades/additions</li> </ol>

Table 2-2: MATS 2040 LRTP Updated Goals, Objectives and Proposed Regional Performance Measures



# Chapter 3 | Sociodemographics and Forecasting

## Introduction

This section of the Macon Area Transportation Study (MATS) 2040 LRTP Update describes the sociodemographic profile of the MATS region. Based on the observed historic population and employment patterns through the 2010 U.S. Census, and the predicted trends through the 2040 plan year, this update also addresses anticipated development scenarios for the region. These anticipated development scenarios guide the assessments of the transportation needs and opportunities for the MATS region.

Since the original 2040 LRTP was approved on November 20, 2013, several significant administrative changes have taken place which requires an updated socio-economic profile for the MATS area:

1. **Updated MATS Boundaries** – As a result of the 2010 U.S. Census, and the requirement under 23 CFR 450.104 that an MPO boundary contain the entirety of an Urbanized Zone Area, the boundary for MATS was expanded by the Governor on April 23, 2014 to include that portion of Monroe County bordered by Interstate 75, Estes Rd., and the Monroe County/Bibb County boundary.

The 2040 LRTP Update represents the first opportunity for MATS to incorporate any demographic or land use assessment of this area into the MPO region.

2. **Macon-Bibb County Government Consolidation** – In April 2012 the population of unincorporated Bibb County, the City of Macon, and Payne City voted to consolidate the municipal governments and Bibb County into a single administrative entity. This consolidation went into effect on January 1, 2014. At that time, City of Macon and Payne City, both members of the original MATS charter, ceased to exist as a government entity. Subsequent revisions to the MATS charter have addressed the necessary administrative changes and composition to the MPO governing board to make sure the population of these areas is still adequately represented.

Given these consolidation activities, it no longer makes sense to analyze or refer to the City of Macon as a separate entity. Therefore, the demographic analyses should be re-estimated to reflect the existing circumstances.

3. **MATS Improvements to Air Quality** – When the original MATS 2040 LRTP was passed, the MATS region was designated as an air quality “maintenance” region under the 1997 National Ambient Air Quality Standards (1997 NAAQS) for ozone and fine particulate matter (PM<sub>2.5</sub>). This designation meant that while MATS currently achieved the standards set under the NAAQS, their previous violation of the standard required that both MATS and Georgia Dept. of Transportation (GDOT) had to do additional review with regional division offices of U.S. EPA and U.S. DOT before any projects in the LRTP could be reprioritized or altered, to make sure that these project modifications did not cause the MATS region to fall out of conformity. The “maintenance” designation also shortened the update cycle on the LRTP from 5 to 4 years.

On April 6, 2015, the 1997 8-Hours Ozone NAAQS was revoked, replaced with the 2008 8-Hours Ozone NAAQS ([80 FR 12264](#)). Similarly, on October 24, 2016, the 1997 Annual PM<sub>2.5</sub> NAAQS was revoked, and replaced with the more stringent 2012 Annual PM<sub>2.5</sub> NAAQS ([81 FR 58010](#)).

Since MATS had already met both the new 2008 8-Hours Ozone NAAQS and the new 2012 Annual PM<sub>2.5</sub> NAAQS standards, U.S. EPA and Georgia Environmental Protection Division deemed MATS to be within air quality conformity guidelines. This removes the requirement of additional Federal review and restores the LRTP update cycle to 5 years.

With the conformity to the 2008 8-Hours Ozone NAAQS and the new 2012 Annual PM2.5 NAAQS standards changing the LRTP update cycle, and the administrative changes to both the MATS boundary and the government consolidations in Bibb County, it is prudent to revisit the original population trends and regional land use planning findings presented in the original MATS 2040 LRTP.

## HISTORIC POPULATION TRENDS

Figures 3-1 through 3-3 demonstrate the anticipated general countywide population trends in Macon-Bibb, Jones and Monroe Counties, starting in 1960 and continuing through to the plan year of 2040. For years 2015 through 2040, the population values are based on projections produced by the Georgia Governor's Office of Planning & Budget.

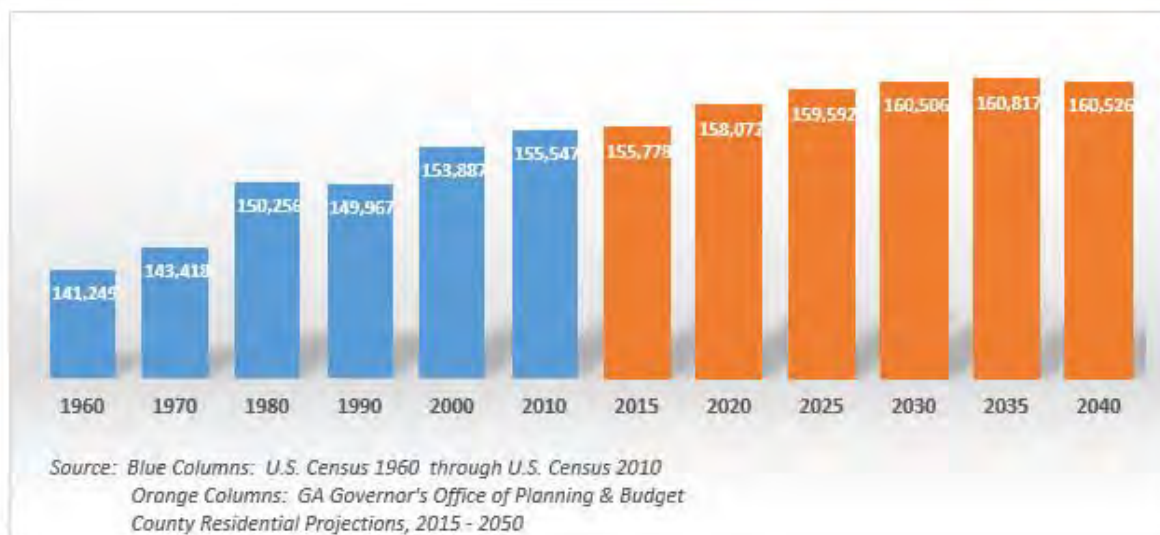


Figure 3-1: Bibb County Population Trends, 1960 – 2040

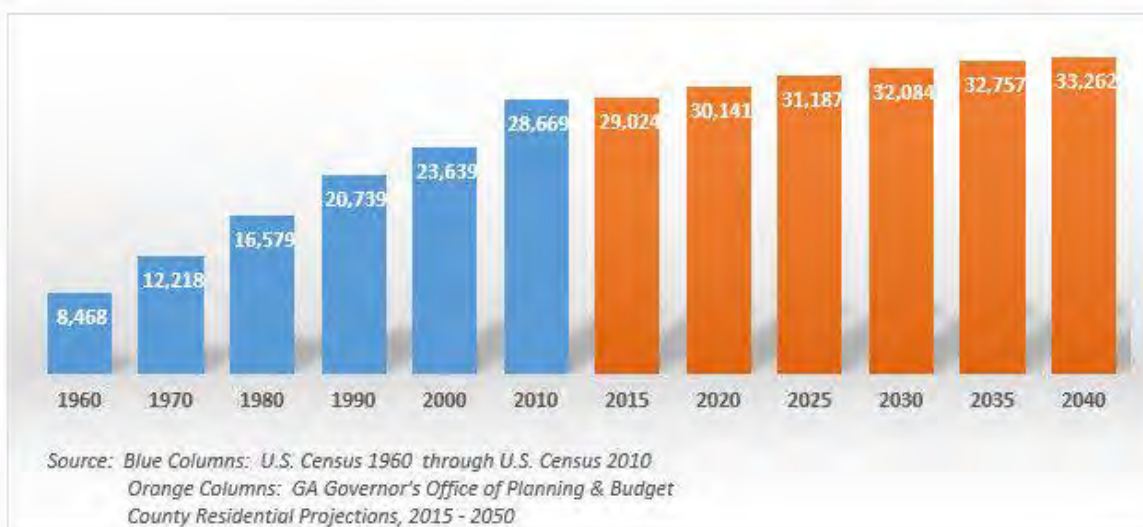


Figure 3-2: Jones County Population Trends, 1960 – 2040

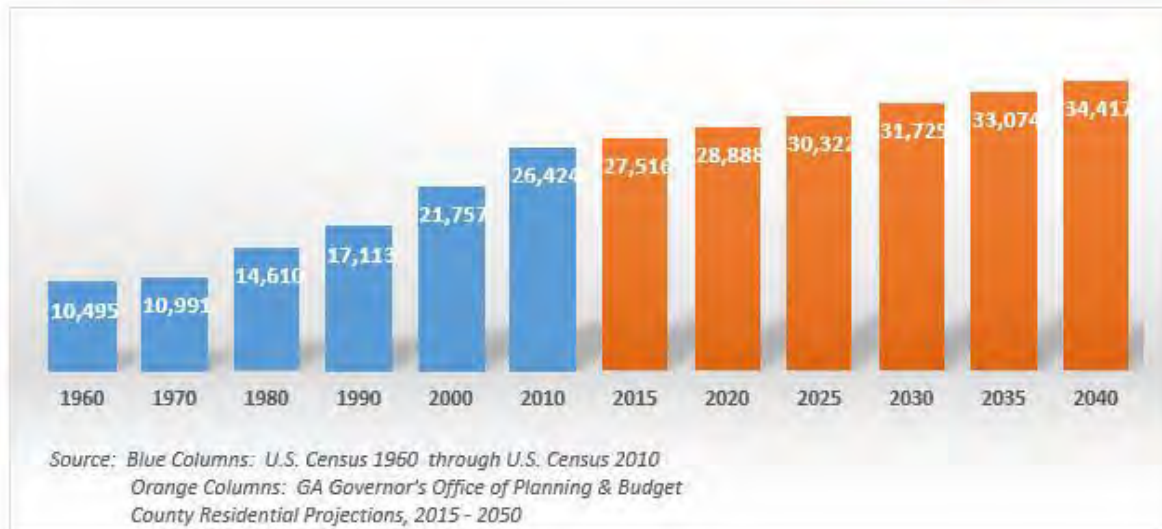


Figure 3-3: Monroe County Population Trends, 1960 – 2040

As of the 2010 U.S. Census, the total population of the MATS area is 169,054. In terms of ethnographic composition, the three counties vary significantly. Macon-Bibb County has the highest composition of the non-white population in all ethnic categories (except American Indian/Alaskan Native, where Jones County has the highest proportion). Macon-Bibb County is an African-American majority county.

Area	Total Population	African American	American Indian/Alaskan Native	Asian	Hawaiian/Pacific Islander	White	Other	2 or more races	Hispanic/Latino
Bibb County	155,547	80,744	287	2,492	74	65,494	215	1,852	4,389
Marginal %		51.91%	0.18%	1.60%	0.05%	42.11%	0.14%	1.19%	2.82%
Jones County	28,669	6,977	61	186	2	20,830	25	273	315
Marginal %		24.34%	0.21%	0.65%	0.01%	72.66%	0.09%	0.95%	1.10%
Monroe County	26,424	6,249	64	209	4	19,101	14	248	535
Marginal %		23.65%	0.24%	0.79%	0.02%	72.29%	0.05%	0.94%	2.02%

Source: U.S. Census 2010 SF 1 Dataset, Table P9: Population-Hispanic or Latino, And Not Hispanic or Latino, By Race

Table 3-1: U.S. Census 2010 Total Population, by Race of Bibb, Jones and Monroe Counties

This pattern is maintained when focusing on just that sub-area of each county that is covered by the MATS jurisdiction. One notable change is that in Jones County, the proportion of the population that is served by MATS that is African American is noticeably higher than Jones County as a whole.

Area	Total Population	African American	American Indian/Alaskan Native	Asian	Hawaiian/Pacific Islander	White	Other	2 or more races	Hispanic/Latino
Bibb County	155,547	80,744	287	2,492	74	65,494	215	1,852	4,389
Marginal %		51.91%	0.18%	1.60%	0.05%	42.11%	0.14%	1.19%	2.82%
Jones County	11,800	3,549	24	104	-	7,861	15	126	121
Marginal %		30.08%	0.20%	0.88%	0.00%	66.62%	0.13%	1.07%	1.03%
Monroe County	1,707	80	8	27	-	1,560	-	9	23
Marginal %		4.69%	0.47%	1.58%	0.00%	91.39%	0.00%	0.53%	1.35%

Source: U.S. Census 2010 SF 1 Dataset, Table P9: Population-Hispanic or Latino, And Not Hispanic or Latino, By Race

Table 3-2: U.S. Census 2010 Total Population, by Race of MATS Area

Because the results of the above tables indicate the vast majority of the population in each county fall into either White or African American ethnic groups, the subsequent demographic analyses will emphasize observed variations in these groups.<sup>[1]</sup> The table below shows the median age, by gender and ethnicity, for each population in Bibb, Jones and Monroe Counties.

	Bibb County			Jones County			Monroe County		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
Overall Population	33.8	37.2	35.6	37.9	39.4	38.7	40.1	42.5	41.3
African American	28.6	32.5	30.8	37.7	40.1	39.2	33.4	40.2	37.5
American Indian/Alaskan Native	36.8	33.8	35.4	40	47.5	42.5	41.9	48.5	45
Asian	32.5	32.6	32.5	38	40.1	39.6	39.4	35	36.6
Hawaiian/Pacific Islander	27	25.8	26.5	76.5	55.5	56.5	42.5	18.5	30.5
White	41.0	45.1	43.1	38.3	39.4	38.9	42.4	43.7	43.1
Other	25.4	21.3	24.1	18.1	27	20.8	26.5	24.5	25.5
2 or more races	16.5	20.6	18.6	13.4	16.1	15	17	15.6	16.2
Hispanic/Latino	25.4	23.9	25	23	28.5	26.5	25.7	30.1	26.9

Source: U.S. Census 2010 SF 1 Dataset, Tables P13 through P13H

Table 3-3: U.S. Census 2010 Median Age, by Race for Bibb, Jones and Monroe Counties



## Age Distribution

Figures 3-4 through 3-9 show the distribution of age by gender for both the overall counties and the MATS sub-areas for Jones and Monroe County.

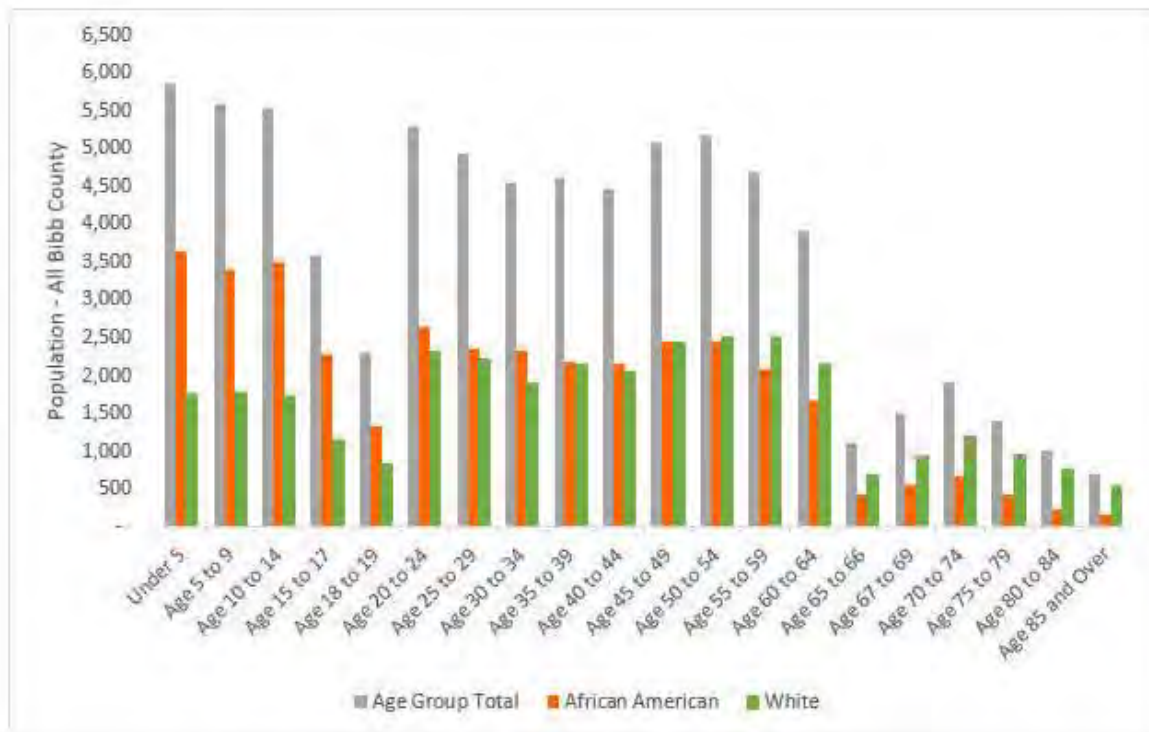


Figure 3-4: U.S. Census 2010 Age Distribution for Bibb County – Men

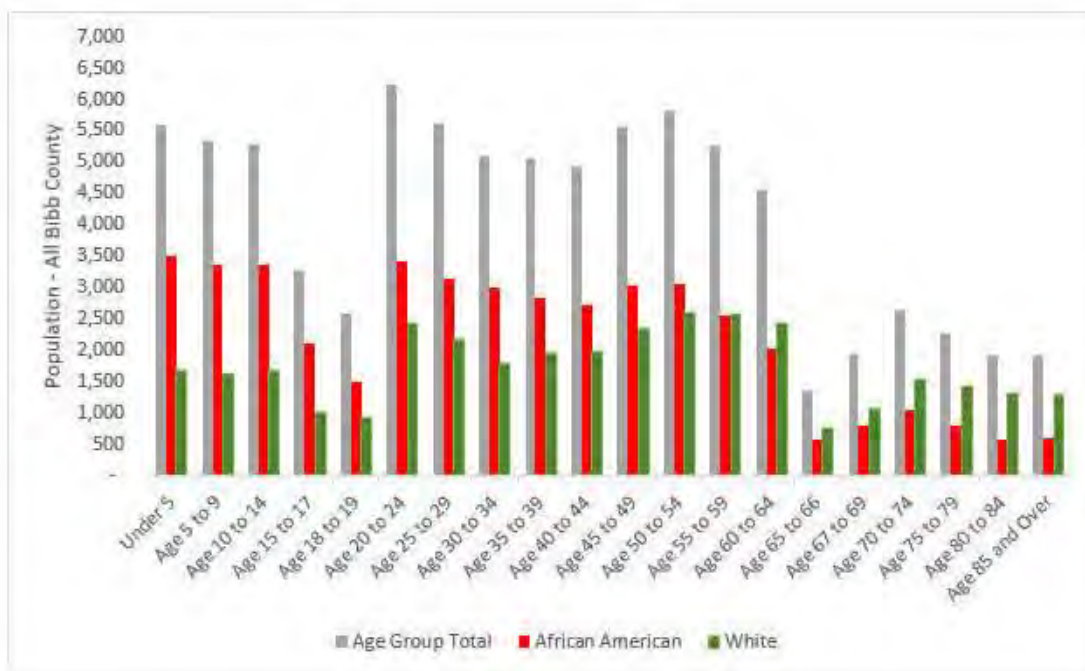


Figure 3-5: U.S. Census 2010 Age Distribution for Bibb County – Women



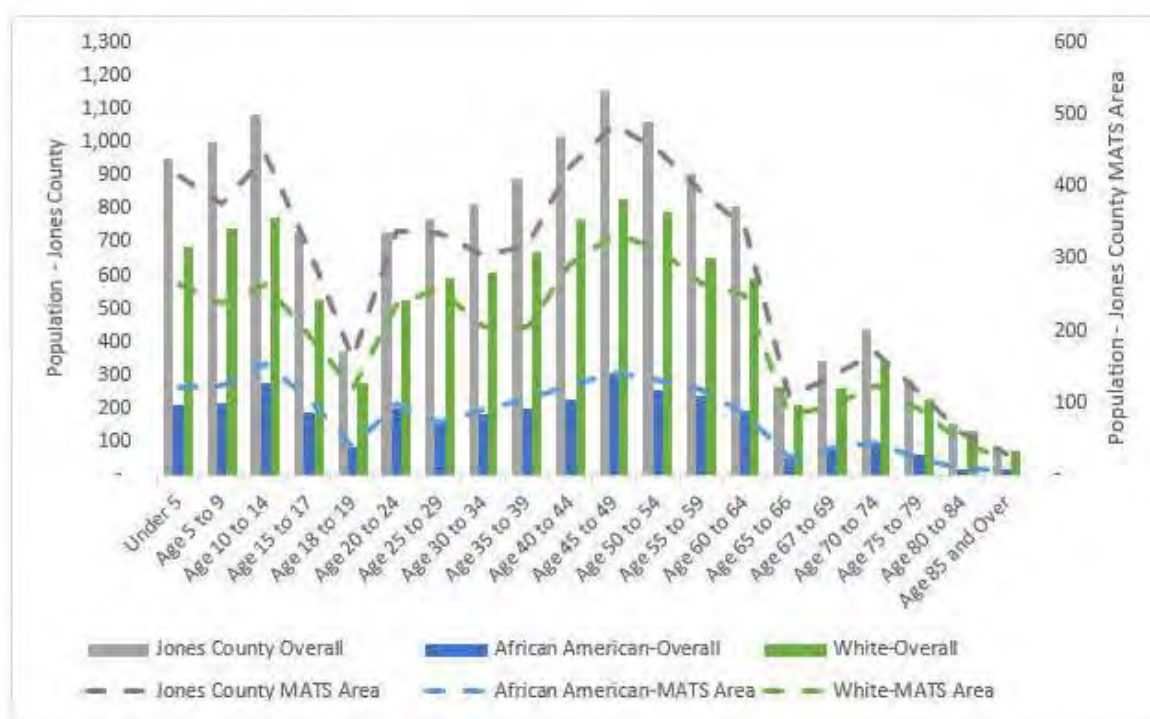


Figure 3-6: U.S. Census 2010 Age Distribution for Jones Overall vs. MATS area – Men

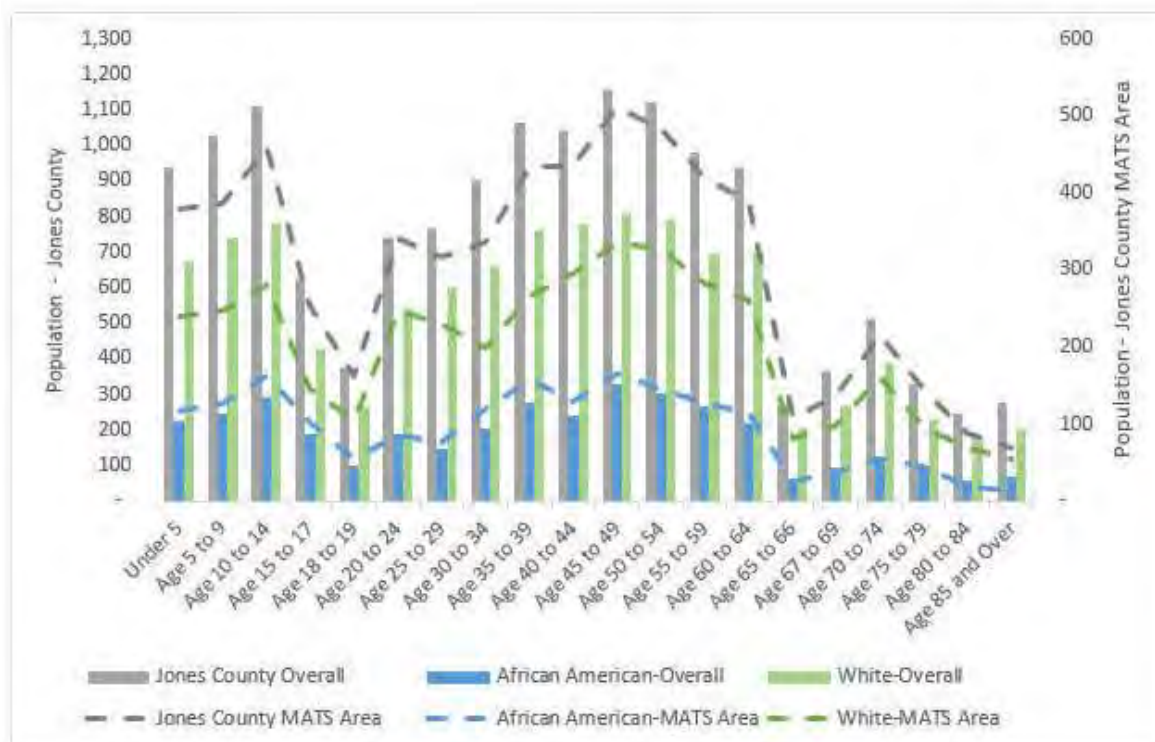


Figure 3-7: U.S. Census 2010 Age Distribution for Jones Overall vs. MATS area – Women

Comparing the median age in Jones County with the charts in Figures 3-6 and 3-7, it appears that the median age for both men and women is similar to the MATS sub-area when compared to Jones County in general,

with the notable exception that there is a trough in the Age 30-34 age group in the MATS sub-area for White women, and Age 35-39 group for White men, when compared to the rest of the county. This, in turn, creates a slight (but noticeable) difference in the overall age distribution for the MATS sub-area compared to the rest of Jones County in general. According to the 2010 U.S. Census, the MATS area holds 50.76% (3,557 out of 7,008) of the African American population for Jones County and 37.76% (7,925 out of 20,989) of the White population.

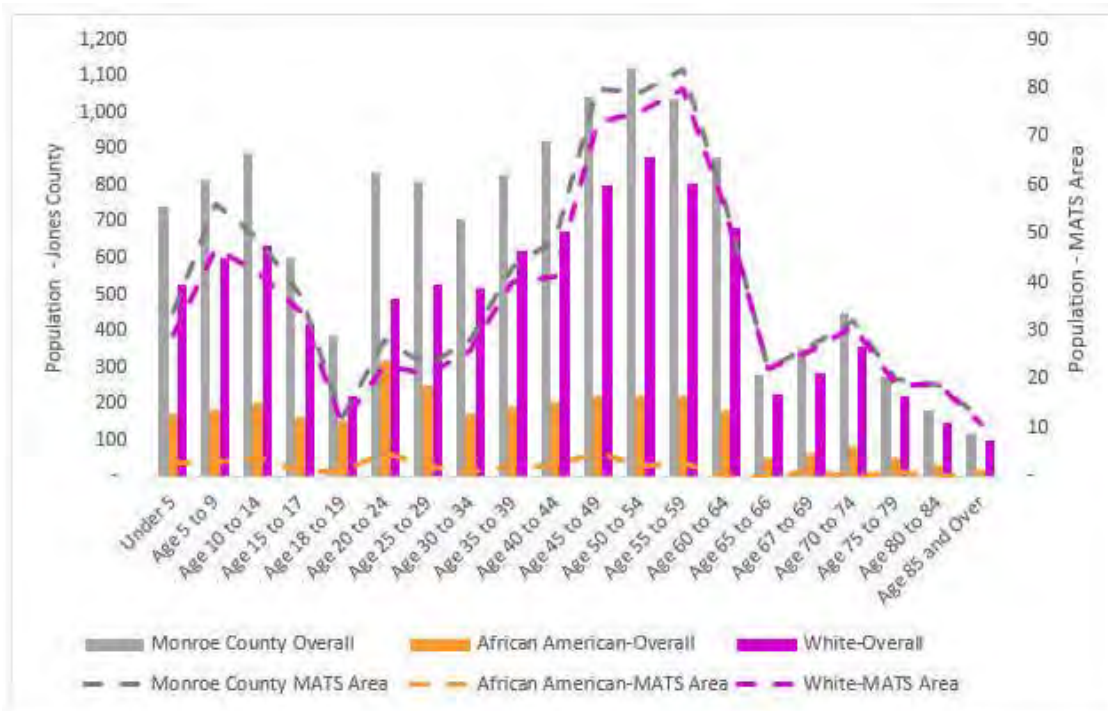


Figure 3-8: U.S. Census 2010 Age Distribution for Monroe County Overall vs. MATS area – Men

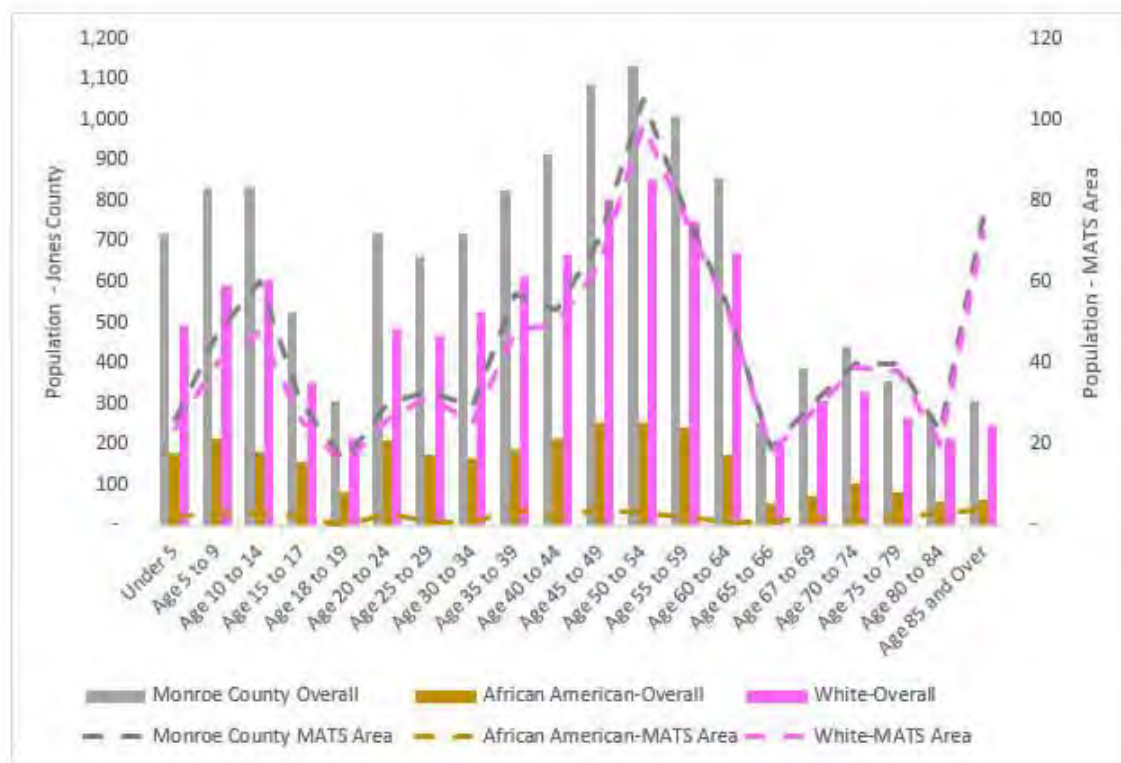


Figure 3-9: U.S. Census 2010 Age Distribution for Monroe County Overall vs. MATS area – Women

In Monroe County, Figures 3-8 shows much the same pattern for male age distribution in as seen in Jones County (i.e., an unexpected dip in the Age 25-29 group, when compared to the Monroe County population generally. This is earlier than the 35-39 group where the dip occurred in Jones County). In contrast, Figure 3-9 shows women's population in Monroe County MATS area appears to match the distribution of women's age in Monroe County generally.

### ***Household Income***

Table 3-4 and Figures 3-10, show the median household incomes in Bibb, Jones and Monroe counties, both overall and by racial sub-groups. Table 3-5 and Figure 3-11 repeat the analysis for the block groups covering those sections of Jones and Monroe counties in the MATS service area. All income values are taken from the American Community Survey 2008 – 2012 5 Year Estimate Dataset, Table B19013 (Median Household Income), and then adjusted to 2010 constant dollar values using the Consumer Price Index.[\[2\]](#)

	Bibb County	Jones County	Monroe County
<b>Overall</b>	<b>\$36,014.37</b>	<b>\$50,417.27</b>	<b>\$44,944.83</b>
<i>Margin of Error (90% C.I.)</i>	<i>\$1,084.61</i>	<i>\$3,224.39</i>	<i>\$4,050.67</i>
African American	\$25,098.94	\$39,620.56	\$22,681.84
<i>Margin of Error (90% C.I.)</i>	<i>\$1,209.98</i>	<i>\$9,214.44</i>	<i>\$4,064.91</i>
American Indian/Alaskan Native	\$36,482.60	No Data	No Data
<i>Margin of Error (90% C.I.)</i>	<i>\$50,257.71</i>	No Data	No Data
Asian	\$50,455.26	\$23,095.93	\$89,667.43
<i>Margin of Error (90% C.I.)</i>	<i>\$18,781.23</i>	<i>\$98,648.23</i>	<i>\$43,003.55</i>
Hawaiian/Pacific Islander	\$32,273.32	No Data	No Data
<i>Margin of Error (90% C.I.)</i>	<i>\$501.47</i>	No Data	No Data
White	\$51,108.69	\$55,107.12	\$50,141.84
<i>Margin of Error (90% C.I.)</i>	<i>\$2,029.61</i>	<i>\$2,645.04</i>	<i>\$4,121.90</i>
Other	\$27,644.26	\$20,284.68	\$52,406.04
<i>Margin of Error (90% C.I.)</i>	<i>\$12,183.34</i>	<i>\$498.62</i>	<i>\$16,079.20</i>
2 or more races	\$46,642.03	\$18,671.06	\$11,689.47
<i>Margin of Error (90% C.I.)</i>	<i>\$22,452.00</i>	<i>\$78,765.29</i>	<i>\$15,831.32</i>
Hispanic/Latino	\$30,983.57	\$25,643.14	\$46,300.12
<i>Margin of Error (90% C.I.)</i>	<i>\$13,500.64</i>	<i>\$191,928.49</i>	<i>\$31,484.08</i>

Table 3-4: Median Household Income (in 2010 Inflation Adjusted Dollars), by County and Race (Detail)

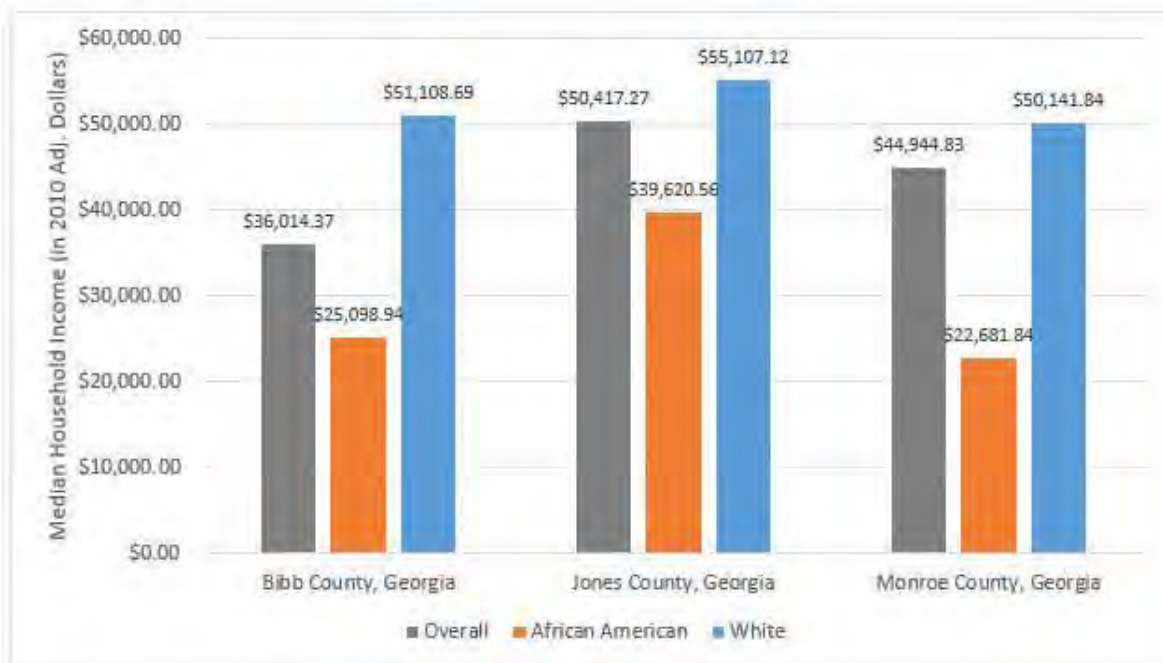


Figure 3-10: Median Household Income (in 2010 Inflation Adjusted Dollars), by County and Race (Summarized)



	Bibb County	Jones County					Monroe County	
		Census Tract 301.01		Census Tract 301.03		Census Tract 301.04	Census Tract 503.01	Census Tract 503.02
		Block Group 1	Block Group 1	Block Group 2	Block Group 1	Block Group 2	Block Group 3	Block Group 3
Overall	\$36,014.37	\$68,697.98	\$52,030.89	\$48,415.21	\$39,142.83	\$38,227.28	\$70,688.65	\$56,518.44
Margin of Error (90% C.I.)	\$1,084.61	\$14,361.11	\$40,747.91	\$18,514.35	\$3,354.50	\$18,357.64	\$36,652.60	\$19,473.59
African American	\$25,098.94	\$91,752.12	\$50,811.41	\$46,931.70	\$38,155.10	\$39,810.51	\$18,824.92	No Data
Margin of Error (90% C.I.)	\$1,209.98	\$125,626.71	\$79,545.98	\$7,280.75	\$11,727.46	\$45,808.19	\$184,736.06	No Data
American Indian/Alaskan Native	\$36,482.60	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Margin of Error (90% C.I.)	\$50,257.71	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Asian	\$50,455.26	\$2,373.42	No Data	No Data	No Data	No Data	No Data	No Data
Margin of Error (90% C.I.)	\$18,781.23	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Hawaiian/Pacific Islander	\$32,273.32	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Margin of Error (90% C.I.)	\$501.47	No Data	No Data	No Data	No Data	No Data	No Data	No Data
White	\$51,108.69	\$68,357.97	\$52,515.26	\$58,683.86	\$39,464.80	\$38,385.89	\$70,077.96	\$56,221.17
Margin of Error (90% C.I.)	\$2,029.61	\$11,896.52	\$45,134.78	\$8,612.30	\$2,627.95	\$19,192.47	\$30,952.22	\$26,258.58
Other	\$27,644.26	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Margin of Error (90% C.I.)	\$12,183.34	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2 or more races	\$46,642.03	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Margin of Error (90% C.I.)	\$22,452.00	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Hispanic/Latino	\$30,983.57	No Data	No Data	No Data	No Data	No Data	\$116,983.07	No Data
Margin of Error (90% C.I.)	\$13,500.64	No Data	No Data	No Data	No Data	No Data	\$1,500.60	No Data

Table 3-5: Median Household Income (in 2010 Inflation Adjusted Dollars), by MATS Area and Race (Detail)



Figure 3-11: Median Household Income (in 2010 Inflation Adjusted Dollars), by MATS Sub Area and Race (Summarized)

The results show African American households in each of these counties have median incomes well below the county as a whole, while White households have household incomes substantially higher than the corresponding county medians. When examining the block groups for the MATS areas specifically, several additional pieces of information come to light:

- The northwest section of the Jones County MATS area (Tract 301.03, Block Groups 1 and 3) have median incomes that are *higher* than both Bibb and Jones County in general, both overall and across both racial sub-groups.
- The southeast section of the Jones County MATS area (Tract 301.04, Block Groups 1 and 3) has median incomes that are *lower* than Jones County in general, both overall and across both racial sub-groups. Even though these areas are lower than the Jones County median incomes, the median income



for African American households in Jones County is higher than the median household income for both Bibb County generally, and the Bibb County African American population in particular.

- The median income for the MATS area of Monroe County is substantially higher overall, and for White households in particular, than for the rest of Monroe County. For African American households in Monroe County, the median household income in the MATS area is substantially lower than the county as a whole.

### *Household Size*

Figures 3-12 and 3-13 show the median household sizes in Bibb, Jones and Monroe counties, both by housing tenure (owner occupied vs. rental) and by racial sub-groups. All data for these tables are taken from U.S. Census 2010, Summary File 1 data set, Tables H11, H11A, H11B, and H14.

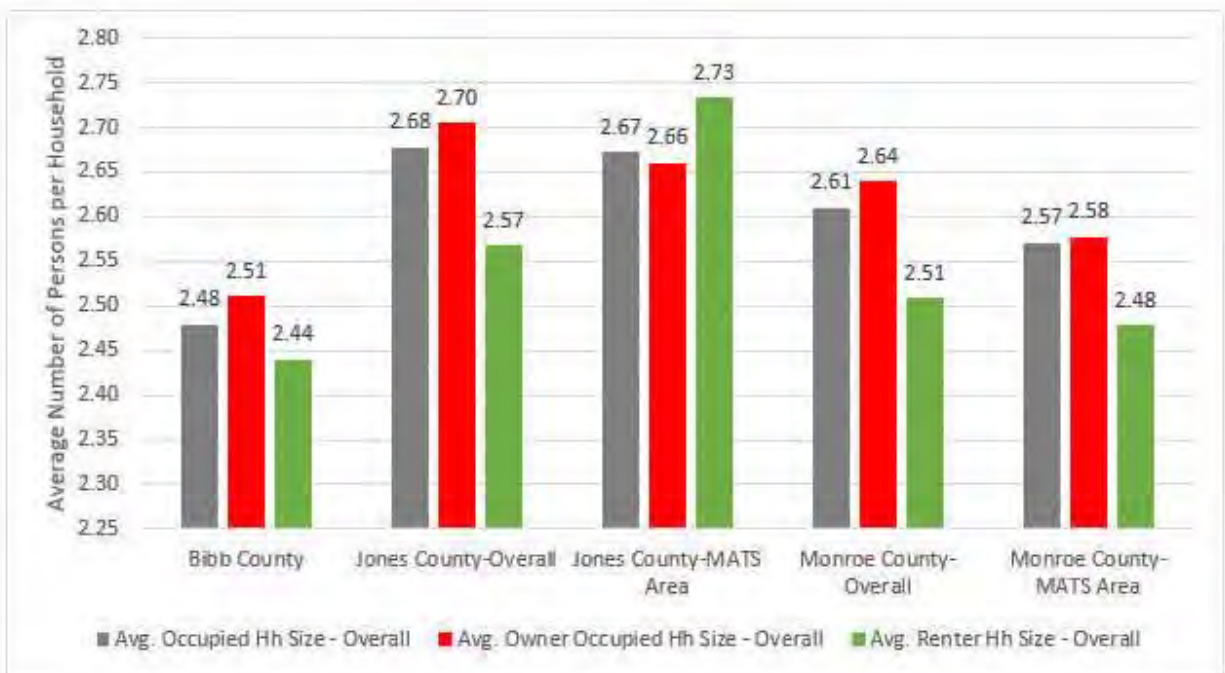


Figure 3-12: Average Household Size per County Overall, and for MATS sub-areas of Jones and Monroe Counties, by Ownership vs. Rental Status

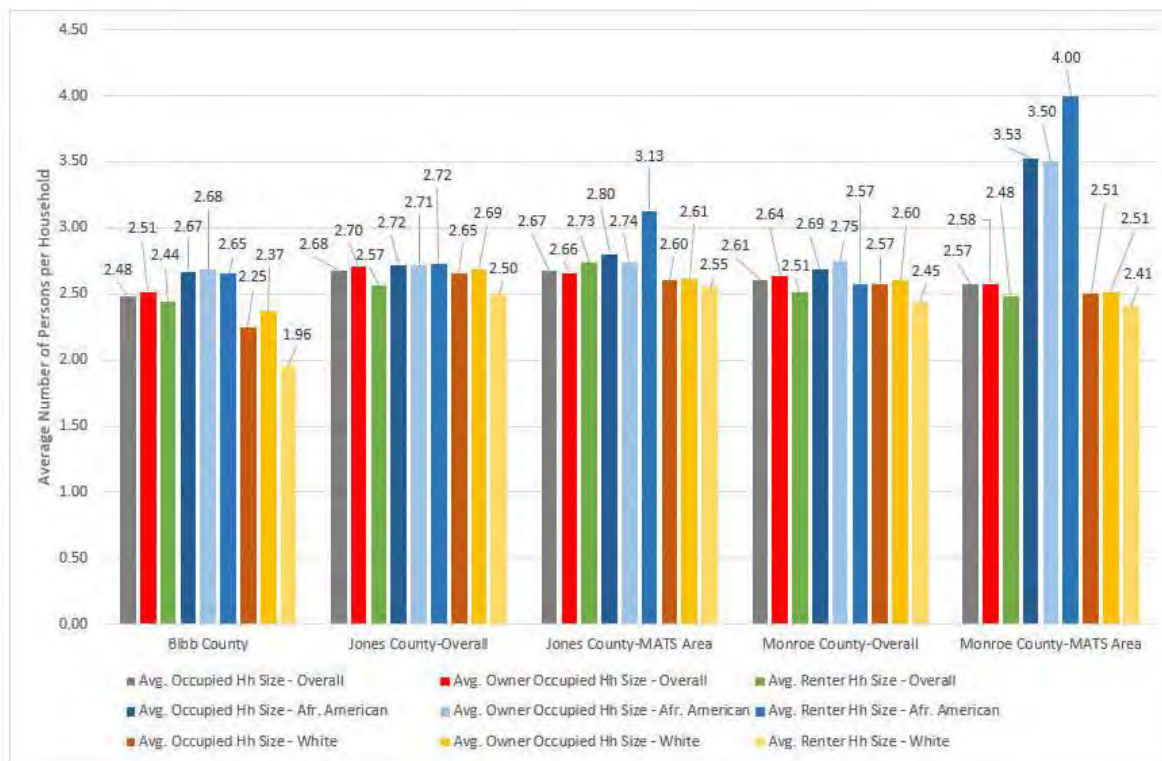


Figure 3-13: Average Household Size per County Overall, and for MATS Sub Areas of Monroe and Jones Counties, by Ownership vs. Rental Status and Race

The results indicate that while overall average household size varies in a relatively tight range between counties, there are noticeable differences between MATS areas of Jones and Monroe Counties, and their respective County overall household size averages. The Jones County MATS Area has substantially higher average household size for the African American community (particular renters) than for Jones County in general. Monroe County exhibits the same pattern for the African American community, although the small absolute number of renters in the Monroe MATS area (i.e., 4 persons in 1 rental household) make it impossible to draw any meaningful conclusion about that specific population sub-group.

### Employment

As of 2010, there were approximately 103,141 jobs in the MATS areas. All employment data for the 2010 base year are collected from the National Establishment Time-Series Database, 2012 Release (NETS 2012), produced by Walls & Associates. This data was obtained as part of a purchase through Dun & Bradstreet. The particular version of the NETS 2012 obtained covers all economic activities in Macon-Bibb, Jones, and Monroe counties from 1990 through 2012, and includes the total employment at the particular establishment, along with the 8 digit Standard Industrial Classification (SIC) Code (version 1987) for up to six economic activities at a particular establishment.

Table 3-6 below aggregates these jobs according to the categories specified in the *General Summary of Recommended Travel Demand Model Development Procedures for Consultants, MPOs and Modelers (GSR-TDM)*, distributed by Georgia Dept. of Transportation (GDOT).[\[3\]](#)

	Total Employment	Manufacturing	Retail	Service	Wholesale	Undassified
Macon Bibb	100279	5460	20336	67383	7068	32
Jones County	2121	131	208	1614	168	0
MATS Area						
Monroe County	741	5	19	687	30	0
MATS Area						
Total	103141	5596	20563	69684	7266	32

Table 3-6 Employment in MATS Areas by GDOT Modeling Category - 2010

The vast majority of jobs (100,279 out of 103,141; 97.23%) were concentrated in the Macon-Bibb area. As the largest population center for the MATS area, this concentration would be consistent with expectations. The largest employment categories in all MATS areas are Service (n=69,684) and Retail (n=20,563). The high proportions concentrations of Manufacturing and Wholesale employment in the area Macon-Bibb sub-area reflect the fact that Macon-Bibb serves as a rail and logistics hub for the Norfolk-Southern Rail Road.

### GROWTH PROJECTIONS AND FUTURE LAND USE

The profile of the MATS region described in the previous section for the 2010 Census period establishes the assumptions for anticipated growth patterns through the 2040 plan year. The working assumption is that whatever population and employment growth comes about between 2010 and 2040 will follow similar marginal distributions as the last time a full population count was performed. This assumption will need to be re-examined at each new census, or as new data becomes available, to identify population trends and emerging opportunities or challenges.[\[4\]](#)

#### *Population Growth and Distribution*

Table 3-7 and Figure 3-15 show the anticipated future land use for the MATS area and the total acreage in each category. Future land use was obtained by reviewing the Macon-Bibb County 2040 Future Land Use Plan, the Middle Georgia Regional Commission 2007 Comprehensive Plan for Jones County, and the Middle Georgia Regional Commission 2007 Comprehensive Plan for Monroe County. Middle Georgia Regional Commission conducts comprehensive plan updates for Jones and Monroe Counties based on the schedules specified by Georgia Dept. of Community Affairs and uses a 20-year time horizon for future land use planning. Therefore, the Jones and Monroe County future land use time horizons extend only to 2027. All acreage is calculated as net acres, after removing the street right of way and the 100-year floodplain (i.e., areas not available for construction).

County	Future Land Use Category	Total Acres
Bibb	Rural Residential	27,555.42
Bibb	Suburban Residential	41,154.85
Bibb	Urban Residential	18,974.99
Bibb	Office/Service	336.92
Bibb	Community Commercial	5,987.20
Bibb	Regional Commercial	458.58
Bibb	Central Business District	261.03
Bibb	Industrial	12,599.86
Bibb	Institutional	4,113.45
Bibb	Transportation/Communication/Utilities	1,401.23
Bibb	Parks/Recreation/Open Space	1,765.96
	<b>Total</b>	<b>114,609.49</b>
Jones	Rural Residential	14,150.44
Jones	Suburban Residential	11,022.00
Jones	Urban Residential	6,570.98
Jones	Community Commercial	844.02
Jones	Industrial	1,461.37
Jones	Institutional	251.07
Jones	Transportation/Communication/Utilities	1,131.61
Jones	Parks/Recreation/Open Space	2,595.21
Jones	Agriculture/Forestry	2,817.47
	<b>Total</b>	<b>40,844.16</b>
Monroe	Residential (Various)	4,612.28
Monroe	Commercial (Various)	237.86
	<b>Total</b>	<b>4,850.14</b>

Table 3-7 MATS Future Land Use Acreage, by Category



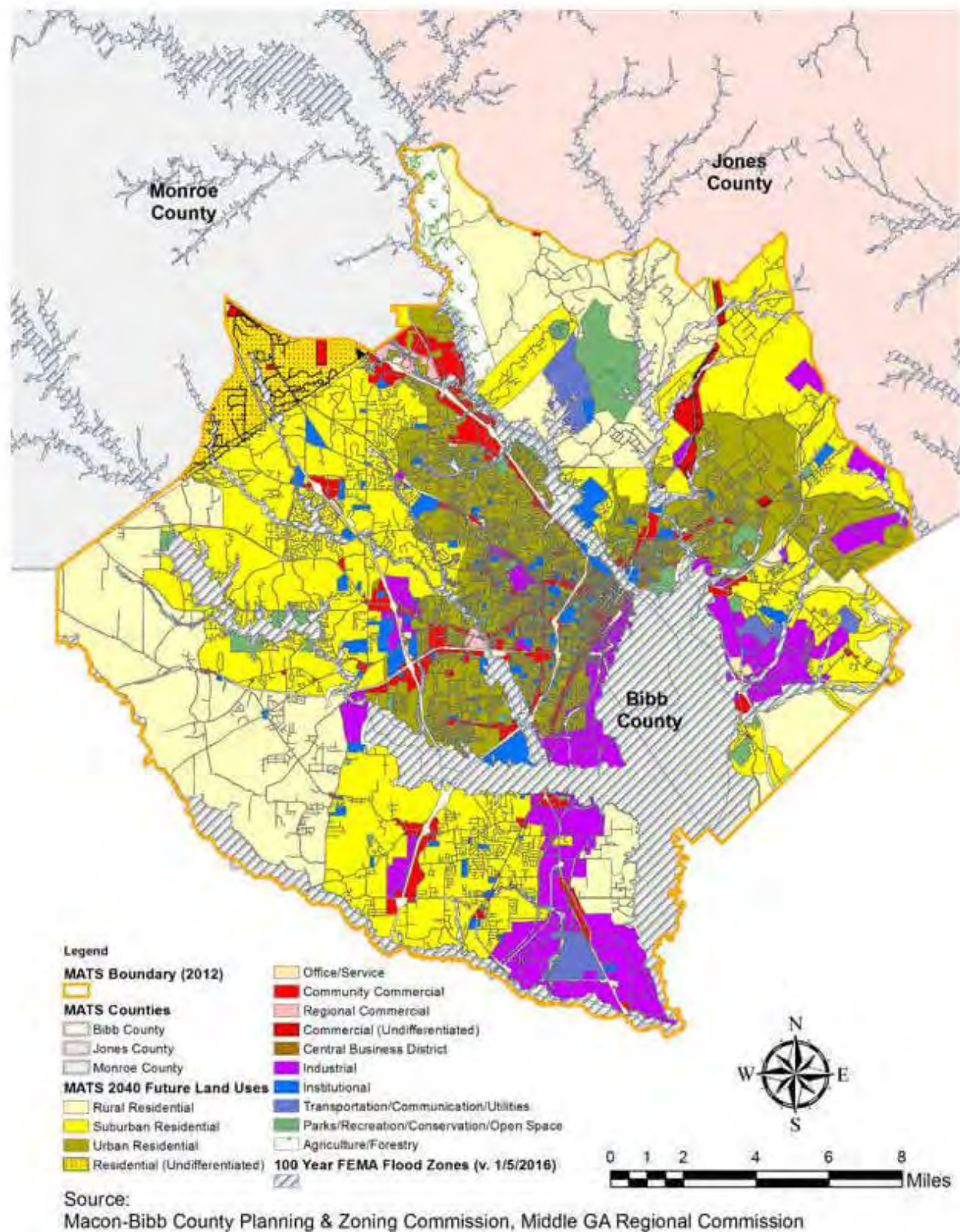


Figure 3-14: MATS MPO Future Land Use



Table 3-8 uses the trends in U.S. Census data and Georgia Governor's Office of Planning & Budget population forecast data to extrapolate the growth in the population of each of the three MATS counties between 2010 and 2040. In percentages terms, Bibb County is anticipated to experience moderate growth (3.20%), with higher percentages focused in Jones County (16.02%) and Monroe County (30.25%). For the counties as a whole, this translates into similar total population growth for Bibb and Jones (4,979 for Bibb; 4,593 for Jones). When focusing the analysis on just the the MATS areas, the absolute population growth in Bibb County will be more than twice population growth in the Jones County and Monroe County MATS areas combines (i.e., 4,979 vs. 1,891+517 = 2,408).

County	U.S. Census	Anticipated County		Anticipated County		Anticipated	
	2010 Population	Estimated 2040 Population	% Growth 2010 through 2040	Population Growth 2010 through 2040	Population % in MATS Area - 2010	Population Growth Within MATS Area	
Bibb	155,547	160,526	3.20%	4,979	100.00%	4,979	
Jones	28,669	33,262	16.02%	4,593	41.17%	1,891	
Monroe	26,424	34,417	30.25%	7,993	6.46%	517	

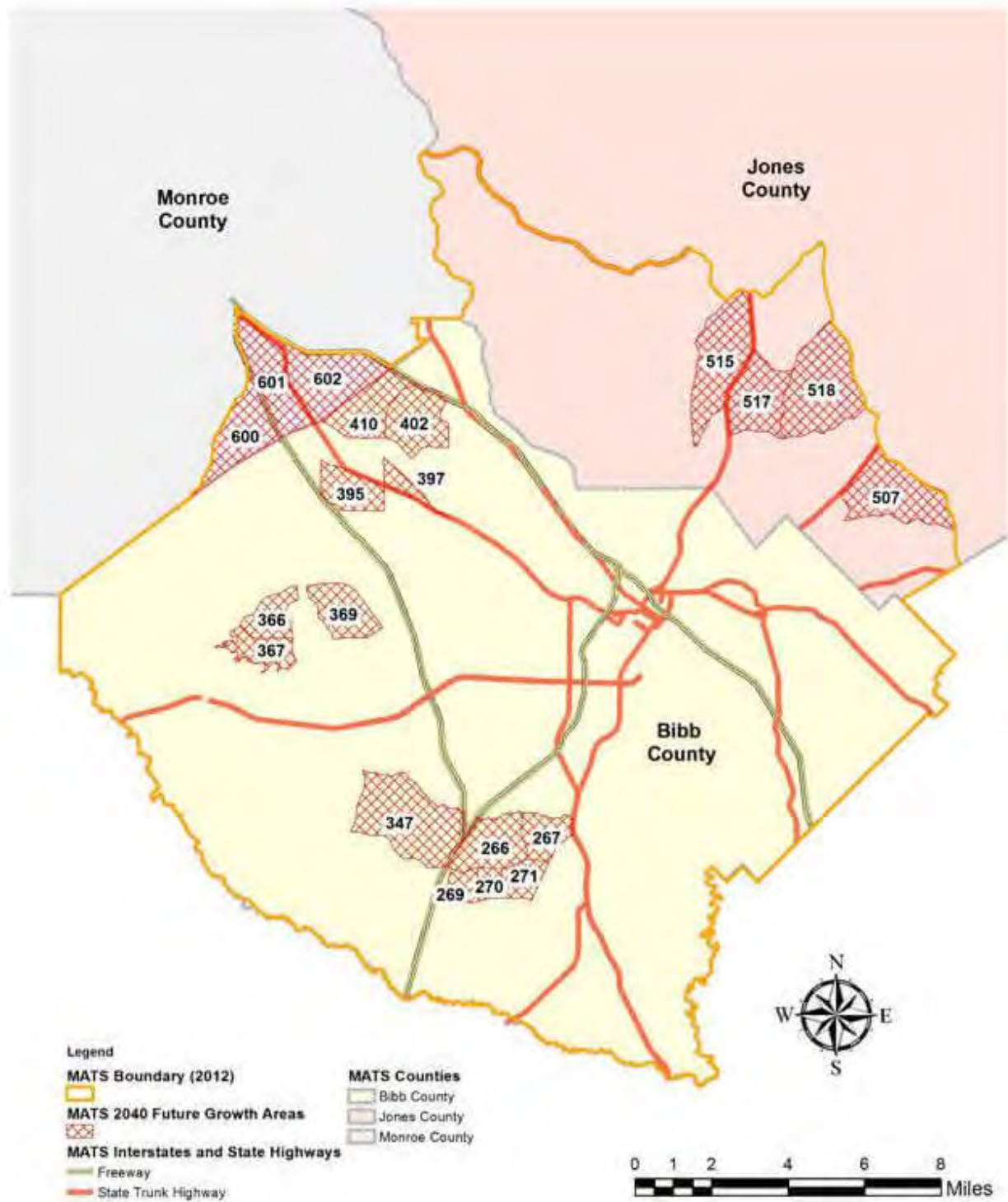
Source: U.S. Census 2010SF 1 Dataset, Table P1

GA Governor's Office of Planning & Budget, Population Projections 2015 - 2050

Table 3-8: MATS Area Population Growth Projections: 2010 - 2040

Figure 3-15 below shows where the growth is anticipated to be distributed throughout the MATS region. These areas were identified and prioritized through consultation with the Zoning Director for Macon-Bibb County Planning & Zoning Commission, the Planning Director for Jones County, and the Monroe County Administrator. The zone numbers represented on the map correspond to specific Transportation Analysis Zones (TAZs), which are the geographic unit used by GDOT to conduct travel demand modeling. TAZs are comprised of Census Blocks, meaning it is possible to calculate socio-demographic variables for TAZs by aggregating the data from the relevant Census Blocks, assuming the data is available at the Census Block level from the U.S. Census.

Tables 3-9, 3-10 and 3-11 give context to the map in Figure 3-15 by calculating the amount of residential growth that is anticipated to go in each zone in Macon-Bibb County, Jones County, and Monroe County, respectively. Using the most recent future land use plans available for each county, the amount of new residential acreage available for development was calculated by subtracting acreage already encumbered in 2010 from the future planned acreage. This amount of new acreage was multiplied by existing housing densities per acre in 2010 (using U.S. Census 2010 household counts and 2010 encumbered residential acreage), and adjusting for the observed 2010 housing vacancy rate, to estimate the number of new households in each zone. The number of new households was then multiplied by the average household size to estimate the amount of new population in each zone. A running population growth total is calculated so that it may be measured against the anticipated population growth for the MATS region of each county (see Table 3-6 above).



Source:  
Macon-Bibb County Planning & Zoning Commission

Figure 3-15: MATS 2040 Future Growth Areas

TAZ	Growth Priority	Net Residential Acres in Future Land Use Plan	Acres Already Encumbered in 2010*	Available Residential Acres, 2010 - 2040	Total Number of Housing Units in TAZ, 2010	Average Number of Housing Units per Acre, 2010	Additional Housing Units in TAZ, 2040**	TAZ Vacancy Rate, 2010	Estimated Number of New Households, 2040	Average Household Size in TAZ, 2010	Estimated Population Growth by 2040	Running Total of County Population Growth, 2040***
269	1	385.20	409.60	-24.40	149	0.36	0	10.07%	0	2.56	0	0
270	1	268.66	265.00	3.66	356	1.34	5	3.37%	5	2.57	13	13
271	1	506.10	500.31	5.79	480	0.96	6	3.75%	5	2.55	13	26
266	1	952.13	729.01	223.12	396	0.53	118	4.66%	113	2.75	311	337
410	2	1037.49	1162.04	-124.55	427	0.37	0	3.98%	0	2.66	0	337
397	2	200.16	145.70	54.46	188	1.29	70	2.66%	68	1.75	119	456
267	2	338.68	289.28	49.40	511	1.77	87	16.05%	73	2.56	187	643
395	2	776.77	510.50	266.27	336	0.66	175	8.93%	160	2.19	351	994
402	2	1119.47	882.97	236.50	1163	1.32	312	4.04%	299	2.72	814	1808
367	3	175.55	151.10	24.45	103	0.68	17	5.83%	16	2.56	41	1849
366	3	717.15	305.42	411.73	116	0.38	156	6.90%	146	2.56	373	2222
369	3	1009.72	281.34	728.38	204	0.73	528	5.39%	500	2.74	1372	3594
347	3	2142.97	388.50	1754.47	143	0.37	646	6.29%	605	2.97	1797	5391
<u>368</u>	<u>3</u>	<u>549.30</u>	<u>103.10</u>	<u>446.20</u>	<u>204</u>	<u>1.98</u>	<u>883</u>	<u>8.82%</u>	<u>805</u>	<u>2.53</u>	<u>2036</u>	<u>7427</u>
<u>348</u>	<u>3</u>	<u>1971.46</u>	<u>446.62</u>	<u>1524.84</u>	<u>309</u>	<u>0.69</u>	<u>1055</u>	<u>4.85%</u>	<u>1004</u>	<u>2.68</u>	<u>2703</u>	<u>10130</u>
<u>370</u>	<u>4</u>	<u>314.97</u>	<u>209.39</u>	<u>105.58</u>	<u>224</u>	<u>1.07</u>	<u>113</u>	<u>16.07%</u>	<u>95</u>	<u>1.81</u>	<u>171</u>	<u>10301</u>
<u>378</u>	<u>4</u>	<u>1231.08</u>	<u>878.00</u>	<u>353.08</u>	<u>311</u>	<u>0.35</u>	<u>125</u>	<u>6.43%</u>	<u>117</u>	<u>2.73</u>	<u>319</u>	<u>10620</u>
379	4	783.16	312.00	471.16	387	1.24	584	6.72%	545	2.68	1459	12079
<u>282</u>	<u>5</u>	<u>820.94</u>	<u>341.80</u>	<u>479.14</u>	<u>24</u>	<u>0.07</u>	<u>34</u>	<u>0.00%</u>	<u>34</u>	<u>2.67</u>	<u>91</u>	<u>12170</u>
<u>260</u>	<u>5</u>	<u>180.60</u>	<u>75.00</u>	<u>105.60</u>	<u>237</u>	<u>3.16</u>	<u>334</u>	<u>24.47%</u>	<u>252</u>	<u>3.20</u>	<u>806</u>	<u>12976</u>

\* Acreage is defined as encumbered if U.S. 2010 Census identifies Census Block as having at least one person living in it.

\*\* In some cases, housing can exist where it was legal before local zoning changed. In those cases, available residential acreage would be calculated at less than zero.

Under those circumstances, existing houses can stay, but new housing stock cannot be added, and therefore new population growth cannot be assigned to the TAZ.

\*\*\* Rows in underlined italics represent additional capacity for residential growth, in excess of projections

Table 3-9: Anticipated Macon - Bibb County Population Growth Distribution, 2010 - 2040

TAZ	Growth Priority	Net Residential Acres in Future Land Use Plan	Acres Already Encumbered in 2010*	Available Residential Acres, 2010 - 2040	Maximum Number of New Households per Acre Under Current Land Use Plan	Maximum Allowable Number of New Housing Units	TAZ Vacancy Rate, 2010	Number of New Households, 2040	Average Household Size in TAZ, 2010	Estimated Population Growth by 2040	Running Total of County Population Growth, 2040**
507	1	1429.74	1419.12	10.63	1.82	19	30.23%	13	3.41	44	44
518	2	2304.85	2280.85	23.99	1.82	44	7.38%	41	2.71	111	155
515	3	1922.44	1918.62	3.82	1.82	7	10.05%	6	2.73	16	171
<u>517</u>	<u>4</u>	<u>1298.95</u>	<u>908.53</u>	<u>390.42</u>	<u>1.82</u>	<u>710</u>	<u>3.23%</u>	<u>687</u>	<u>2.68</u>	<u>1844</u>	<u>2015</u>
<u>514</u>	<u>5</u>	<u>1792.01</u>	<u>1789.82</u>	<u>2.19</u>	<u>0.91</u>	<u>2</u>	<u>6.09%</u>	<u>2</u>	<u>2.75</u>	<u>5</u>	<u>2020</u>
<u>526</u>	<u>6</u>	<u>1068.92</u>	<u>612.16</u>	<u>456.76</u>	<u>1.82</u>	<u>830</u>	<u>5.56%</u>	<u>784</u>	<u>2.80</u>	<u>2192</u>	<u>4212</u>
<u>512</u>	<u>7</u>	<u>519.26</u>	<u>428.51</u>	<u>90.75</u>	<u>1.33</u>	<u>121</u>	<u>12.50%</u>	<u>106</u>	<u>2.50</u>	<u>265</u>	<u>4477</u>
<u>523</u>	<u>8</u>	<u>5749.74</u>	<u>4840.87</u>	<u>908.86</u>	<u>1.82</u>	<u>1652</u>	<u>4.68%</u>	<u>1575</u>	<u>2.63</u>	<u>4143</u>	<u>8620</u>

\* Acreage is defined as encumbered if U.S. 2010 Census identifies Census Block as having at least one person living in it.

\*\* Rows in underlined italics represent additional capacity for residential growth, in excess of projections

Table 3-10: Anticipated Jones County MATS Area Population Growth Distribution, 2010 - 2040

TAZ	Net Residential Acres in Future Land Use Plan	Acres Already Encumbered in 2010*	Available Residential Acres, 2010 - 2040	Existing Households in 2010 Census	Average Number of Housing Units per Acre, 2010	Maximum Number of New Housing Units, 2040	TAZ Vacancy Rate, 2010	Number of New Households, 2040	Average Household Size in TAZ, 2010	Estimated Population Growth by 2040	Running Total of County Population Growth, 2040
600	1690.94	1687.91	3.03	108	0.06	0.19	4.42%	0	2.83	0	0
601	1295.37	1233.18	62.19	228	0.18	11.50	5.00%	11	2.56	28	28
602	1806.09	1770.70	35.39	277	0.16	5.54	2.11%	5	2.47	12	40

\* Acreage is defined as encumbered if U.S. 2010 Census identifies Census Block as having at least one person living in it.

Table 3-11: Anticipated Monroe County MATS Area Population Growth Distribution, 2010 - 2040

The results from Tables 3-9 and 3-10 indicate that Macon-Bibb and Jones County are capable of absorbing all the anticipated population growth within their MATS areas under existing land use plans; Macon-Bibb has capacity for 12,976 new residents, but is only anticipated to receive 4,591; Jones County has capacity for 8,620 new residents in its MATS area, but is only anticipated to receive 1,891. On the other hand, the results in Table 3-11 suggest that the MATS area of Monroe County may not be able to contain its anticipated growth under existing land use conditions. The low observed housing density in the MATS area of Monroe County leaves only enough acreage available for 40 new residents out of a projected estimate of 517. The Monroe County Administrator explained that the observed household densities in Table 3-11 for Monroe County TAZs are much lower than the maximum permitted densities (i.e., a maximum of 1 household per acre, uniform



across all Monroe County TAZs). It is, therefore, possible to increase the density of housing in this area with subdivision and sales of existing lots if Monroe County is inclined to further develop this area. If not, then it is likely that the balance of the anticipated MATS area growth for Monroe County will be displaced into other nearby areas.

### ***Employment Growth***

Table 3-12 and 3-13 project total employment, and marginal growth in employment, respectively by 2040. The results in these tables are based on employment projections conducted by Wall & Associates, in partnership with Dun & Bradstreet, under contract with MATS.

	Total Employment	Manufacturing	Retail	Service	Wholesale	Unclassified
Macon Bibb	111987	5557	21538	78334	6534	24
Jones County	2283	61	231	1801	190	1
MATS Area						
Monroe County	942	5	24	878	34	0
MATS Area						
Total	115212	5623	21793	81013	6759	25

Table 3-12 Forecast Employment in MATS Areas, By GDOT Modeling Category - 2040

	Total Employment	Manufacturing	Retail	Service	Wholesale	Unclassified
Macon Bibb	11708	97	1202	10951	-534	-8
Jones County	162	-70	23	187	22	1
MATS Area						
Monroe County	201	0	5	191	4	0
MATS Area						
Total	12071	27	1230	11329	-507	-7

Table 3-13 Forecast Marginal Change in Employment in MATS Areas, By GDOT Modeling Category - 2010 to 2040

The results indicate that the MATS area can anticipate approximately 12,071 additional jobs by the target year of 2040. Consistent with the observations from the 2010 base year (see Table 3-6 above), the vast majority of this job growth (11,708 out of 12,701; 96.99%) will accrue to the Macon-Bibb area. Exploring the changes by sector, across the entire MATS region, net job losses are anticipated in the Wholesale sector (-507 jobs), while Manufacturing and Unclassified sectors are expected to remain relatively stable (i.e., +27 jobs and -7 jobs, respectively). Significant gains are expected in the Retail (+1,230 jobs) and Service (+11,329 jobs) sectors.

These estimates may prove to be low. Although the Wall & Associates dataset used to produce these forecasts were the most current available (i.e., through 2014), they could not have taken account of significant growth in manufacturing and freight logistics activity in Macon-Bibb that have come about since the final year of the dataset. There is also road and runway infrastructure projects related to the expansion of the Macon-Bibb County Regional Airport that will expand the capacity of the airport as an aircraft repair facility, and provide ancillary opportunities for expanded passenger travel. Since these projects have not yet fully come online, it is

difficult to estimate their full employment impact to the MATS region, but it is likely to improve upon the employment numbers presented here.

### Estimated Land Use Impacts of Employment Growth

Tables 3-14 and 3-15 calculate the estimated acreage needed to accommodate job growth in Macon-Bibb County. Similar calculations could not be performed on Jones and Monroe counties because estimates of vacant parcels at the same level of detail for the sub-regions of those counties covered by MATS could not be obtained. However, Macon-Bibb is anticipated to take the majority of the anticipated employment growth in the MATS region (96.99%; see Table 3-12 and 3-13 above for details), so it is expected that any employment overflows from Jones and Monroe would accrue to the Macon-Bibb area.

GDOT Employment Category	Net Acres per Employee (2010 Estimate)	Anticipated 2010 - 2040 Employment Growth	Anticipated Acres Needed for Employment Growth
Manufacturing Employment	0.98	97	95.49
Retail Employment	0.51	1202	612.02
Service Employment	0.67	10951	7335.23
Wholesale Employment	1.98	0	0.00
Unclassified Employment	1.51	0	0.00
<b>Total</b>			<b>8042.74</b>

Table 3-14 Estimated Land Requirements for Employment Growth in Macon-Bibb County Through 2040

Using the 2010 employment figures in Table 3-6 as a starting point, Table 3-14 calculates the amount of acres required to accommodate the new employment growth in the Macon-Bibb area. Net number of acres per employee were calculated by overlaying Dun & Bradstreet employment locations with the 2011 archived parcel layer for Macon-Bibb County to obtain the net acreage for the facility where the employment activity was being conducted. Using this joined data, gross densities of number of net acres per employee across GDOT employment categories were calculated. Multiplying these densities by the amount of non-zero growth in employment categories (based on values from Table 3-13, above) results in the anticipated number of acres per employment category needed to accommodate anticipated growth. The estimated number of area needed to accommodate future employment through the 2040 plan year is approximately 8042.74 acres

	Total Acres	Vacant Acres, Not in 100 yr Flood Zone	Acres of Anticipated Residential Growth	Acres Available for Job Growth
Total Residential	87685.26	25740.83	3758.21	21982.62
<i>Rural Residential</i>	27555.42	10424.34		
<i>Suburban Residential</i>	41154.85	12002.20		
<i>Urban Residential</i>	18974.99	3314.28		
Office/Service	336.92	41.25	0.00	41.25
Community Commercial	5987.20	1603.95	0.00	1603.95
Regional Commercial	458.58	108.56	0.00	108.56
Central Business District	261.03	19.04	0.00	19.04
Industrial	12599.86	3459.12	0.00	3459.12
Institutional	4113.45	323.43	0.00	323.43
Transportation/Communication/Utilities	1401.23	10.70	0.00	10.70
Parks/Recreation/Open Space	1765.96	98.17	0.00	98.17
<b>Total</b>	<b>114609.49</b>	<b>31405.04</b>	<b>0.00</b>	<b>27646.83</b>

Table 3-15: Available Land, By Category for Development in Macon-Bibb County (As of Feb. 21, 2017)



Table 3-15 breaks out the amount of available acreage for future development in each land use category. Total acres per land use category are the same as originally presented in Table 3-7 and Figure 3-14 above. Subsequently, information on location and size of vacant parcels was obtained from the Macon-Bibb County Tax Assessors office. These available parcels were then overlaid onto the future land use layer for the MATS region, and any parcels that intersected the 100-year floodplain identified by the Federal Emergency Management Agency (FEMA) were removed from consideration. The results of the analysis underlying Table 3-15 indicate that there are 31,405.04 acres in Macon-Bibb County outside the most recent 100-year floodplain as defined by FEMA.

Finally, the amount of acreage anticipated for future residential development out to the 2040 target year (i.e., in Table 3-9, the greater than zero values of *Available Residential Acres 2010-2040*, for TAZs which were anticipated to be filled with new residential growth) was deducted from the total amount of available acreage. This was done to examine whether or not Macon-Bibb could accommodate both the anticipated residential and employment growth under the 2040 Future Land Use Plan as it is currently presented. When this adjustment is taken into account, the amount available for all forms of development drops from 31,405.04 to 27,646.83 acres.

Since the amount of available land is greater than the anticipated combined residential need and employment need (31,405.04 available vs. 8042.74 needed for employment and 3758.21 needed for additional residential development), the assessment is that Macon-Bibb County does have sufficient total land available to accommodate both forms of growth. However, these totals indicate revisions to the future land use plan may need to take place. At the moment, the amount of employment activity land uses (i.e., Office/Service, Community Commercial, Regional Commercial, Central Business District, Industrial, Institutional, and Transportation/Communication/Utilities) available for development total 5,566.04 acres. This is only 69.21% of the anticipated employment activity acreage needed.

Several strategies exist to address this shortfall, some of which are already in place in Macon-Bibb. Increasing residential and business activity densities through a continuance of existing mixed use practices in the urban center, allowance of home based businesses for activities with low or no impact on the surrounding neighborhood, and rehabilitation and reuse of existing buildings could all make significant contributions to reducing or eliminating the gap. As a last resort, it is also possible to rezone non-commercial land uses to commercial activities, or expand the list of allowable activities within non-commercial zones. However, these rezonings should not be done without significant deliberation, as such changes are not easily reversed or amended.

## SUMMARY

The MATS region is likely to experience moderate population growth through 2040. Total population increase for the MATS region is anticipated to be approximately 7,400 residents and 12,000 new jobs. Even when added to the existing 2010 population of 169,054, this is still under the 200,000 population threshold that would designate MATS as a larger MPO region.

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[1] As described in Table 3-2 above, there are 6 additional ethnic groups (American Indian/Alaskan Native, Asian, Hawaiian/Pacific Islander, Hispanic/Latino, Other, and 2 or More Races) considered by the U.S. Census. While not regularly presented in subsequent tables due to their relatively small proportion of the regional population, the raw data for each of these groups can be found in [Appendix A](#).

[2] Unlike the U.S. Census 2010, the American Community Survey is a *sample* of a population, rather than a full 100% count. Samples, by definition, contain variability (i.e., mathematically quantified levels of instability) in their estimates. This variability can, in some cases, make it difficult to draw definitive conclusions about differences or patterns between population groups (e.g., Counties) and sub-groups (e.g., ethnic groups, or sub-areas vs. Counties as a whole).

The variability in the estimates used here is found in the Margin of Error (MOE) associated with each data point. For full details on how MOEs are developed and used in the American Community Survey, please refer to the technical documentation at: <http://www.census.gov/library/publications/2009/acs/state-and-local.html>

[3] For full details on this document, please see [Appendix B](#).

[4] For full details on technical methods for establishing 2010 baseline values and constructing 2040 forecasts, see [Appendix C](#).

## Chapter 4 | Public Involvement



### Introduction

This chapter describes the public engagement efforts undertaken and public comment opportunities provided as part of the update to the MATS 2040 Long Range Transportation Plan (LRTP) Update. The LRTP Update was developed through two key activities: *widespread public involvement* and *detailed technical work*.

The public involvement process was guided by the **MATS Macon Area Transportation Participation Plan**, which was adopted by the **MATS Policy Committee** on May 13, 2015, and amended March 9, 2016. The requirements for the **Public Participation Plan** were established by the [Moving Ahead for Progress in the 21st Century Act \(MAP-21\)](#) which sets regulations for **Metropolitan Planning Organizations (MPOs)** to include public participation

in the transportation planning process.

The contents of the **LRTP Update** have been developed in conjunction with all interested parties who have had reasonable opportunities for comment, in accordance with the **MATS Participation Plan**. The Participation Plan defines the process for ensuring that citizens from all segments of the public including, but not limited to, users of pedestrian and bicycle facilities, representatives of the disabled, the poor, and minority communities have an opportunity to be involved in the LRTP Update. This also includes public agencies, providers of public transportation, providers of non-emergency transportation services, providers of freight transportation services, entities responsible for safety and security operations including fire and police, and other interested parties.

One of the goals of the **Participation Plan** is that input into the transportation planning process should be accessible and reasonable to those willing to participate. Furthermore, the public should be involved early in the participation and decision-making process. Participants should be provided with the information they need to participate in a productive and beneficial manner. Measures should be developed to provide information to those groups who are traditionally underserved such as low-income and minority groups. The input and the concerns of the public should be considered and included in the final outcome.

### Public Outreach Strategies

How would you spend one BILLION DOLLAR\$ Campaign

**MATS MPO** engaged the public through a series of outreach sessions called “*How would you spend one BILLION DOLLAR\$*”, (on local transportation projects) where staffers spoke to people in various areas around Macon – Bibb County and Jones County at community fresh market events, library, bus transfer station and group settings. At each outreach session, participants were able to interact with planning staff and planning interns to provide feedback on transportation planning improvements within the **MATS** area (Macon-Bibb County and the southern portion of Jones and Monroe counties). Staff members utilized visual aid boards to display:

- Proposed projects for the Long Range Transportation Plan;
- Interactive board that list options for participants to identify which is more important for the area (Widen roads and add more car lanes; Add/Install bike lanes; Add/Install sidewalks, crosswalks and paths; Improve public transportation; Repair or replace bridges; Improve safety; and Repair/improve existing road network);
- GDOT Project Descriptions;
- Macon Transit Authority Bus Routes; and
- Draft goals and objectives and provided information about the MPO and FHWA road safety info (ex. roundabouts, road diets, complete streets, pedestrian islands, etc.).



We used “sticky dot” exercises to engage participants to prioritize the various goals.

Graphics and “sticky dot” exercises were used to engage participants to help tell the “transportation story” relating to transportation challenges, good project examples and funding transportation within the MATS area. Participants were also encouraged to join the *MATS Transportation Connection* e-newsletter mailing list and visit the project website [mats2040.org](http://mats2040.org) to stay abreast of project updates.

Participants were encouraged to write down their thoughts, suggestions, and concerns about the region's transportation system. As previously mentioned, staff utilized visual techniques and conducted dot exercises to allow participants to vote for their highest priority transportation projects. Participants were given three sticky dots to place where they would prioritize transportation spending. Participants could place as many of their 3 dots as they liked on any of the following categories.

Overall, during the timeframe of the public outreach activities, staff spoke with and recorded input from roughly 105 community members and approximately 50 community members signed up for MATS e-newsletter. The general public provided feedback on road improvement projects, public transportation, active transportation projects such as walking and biking, safety improvement projects, freight and truck movement projects, location specific projects, rail projects and other projects.

#### **Public Outreach Venue Partners**

## **Public Outreach Timeframe / Locations: June 15, 2016 – July 27, 2016**

- Wednesday, June 15, 2016, 3:30 PM - 6:30 PM, Mulberry St. Farmer's Market (Tattnall Square Park)
- Friday, June 24, 2016, 10:00 AM – 2:00 PM, Macon Terminal Station/Macon Transit Authority (Bus Transfer Station), 200 Cherry Street, Macon, Georgia
- Wednesday, June 29, 2016, 6:00 PM – 8:00 PM, Special Called MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)
- Tuesday, July 12, 2016, 10:00 AM – 7:00 PM, Public Information Open House, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)
- Wednesday, July 13, 2016, 6:00 PM – 8:00 PM, MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)
- Monday, July 18, 2016, 6:00 PM – 8:00 PM, Public Information Open House, Washington Memorial Library, 1180 Washington Avenue, Macon, Georgia 31201
- Wednesday, July 20, 2016, 10:00 AM – 12:00 PM, MATS Technical Coordinating Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)
- Thursday, July 21, 2016, 6:00 PM – 8:00 PM, Jones County Government Center – Charlotte C. Wilson Conference Room, (166 Industrial Boulevard, Gray Georgia 31032)
- Tuesday, July 26, 2016, 10:00 AM – 2:00 PM, This location did not want to be listed.
- Wednesday, July 27, 2016, 10:00 AM – 7:00 PM, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

## **Public Outreach Press/Media Partners**

MATS was diligent in ensuring that all segments of the population were made aware of public involvement opportunities. MATS staff used various types of media across the Middle Georgia area to ensure that all residents were reached. Traditional methods included:

- Contacting the major print media outlets in the region, including The Macon Telegraph; Jones County News; and Greater Macon Chamber of Commerce, to include stories and purchase legal ads related to 2040 LRTP Update activities
- Contacting publications reaching minority and underserved communities, such as the Middle Georgia Informer (African American newspaper) and Que Pasa (Spanish language newspaper) to include stories and purchase legal ads related to 2040 LRTP Update activities
- Television coverage (including staff interviews) on local affiliates 13 WMAZ (CBS Affiliate), Fox 24 NewsCentral, and 41 NBC;
- Contacting local community and government organizations such as Macon-Bibb County Consolidated Government; Washington Memorial Library; Greater Macon Chamber of Commerce; and Middle Georgia CEO E-Newsletter, for mention on their respective websites, and in their newsletters and blog posts.

Full-text versions of the original print articles and legal ads are included in Appendix D. In addition to these traditional methods, in this update MATS, staff established a MATS 2040 LRTP Update page on Facebook (<https://www.facebook.com/MATS2040/>) and completely overhauled the MATS website ([mats2040.org](http://mats2040.org)).

## **Compilation of Public Outreach Comments**

### *Initial Public Comments*



Public comment on the 2040 LRTP Update was conducted in two phases. The first was the initial public listening period, which ran from June 15, 2016, through August 1, 2016. Listed below is a compilation of comments received via email, public outreach activities, and written comments received via postal service by the August 1, 2016, deadline.

\* Each asterisk represents an individual survey response to the affiliated question.

### **Road Improvement Projects: Specific prompt: For roads, what would you focus on...**

#### *Public responses:*

- I-16 / I-75 Interchange
  - I-16/I-75 Interchange – **Downsize** and make one – way exits around Spring Street. The current plan adversely affects Rose Hill Cemetery, Shirley Hills Neighborhood and the Riverwalk;
  - **Reduce the scale** of the I-16/I-75 interchange and spend some of that money on streets that people are comfortable walking and biking on;
  - I-16 / I-75 interchange proposal: The scope of the proposed project seems to be **over-scaled and destructive** to the picturesque and/or historic parts of our city. Having recently attended presentations on good urban design, it is apparent that forward thinking promotes safe walking and biking for residents, good connection between neighborhoods, and a road scale that does not overwhelm. Without question, the current road system needs improvement for safety, but size alone is not the answer. I hate the image of Macon taking on the ugliness of the Atlanta highway jungle. Surely we can do better. I love our city, particularly the historic neighborhoods and districts, and wish these areas to be respected and protected;
  - I-16 / I-75 exchange project: While a change is needed for safety reasons, the solution here is **completely overbuilt**. It will have a very bad effect on many of the wonderful things in downtown Macon, such as Rose Hill cemetery, Riverside cemetery (where my parents are buried) and both the Pleasant Hill and Shirley Hills Neighborhoods. 14 lanes are frankly ridiculous; spaghetti junction in the middle of a historic area. There are many consultants who can design a smaller exchange that cures the current safety problem and does not adversely impact all of the positive things in the area.
  - Please, please review the alternative plans, like those presented by 8 80 cities, and convey those recommendations to GDOT with a request that the I-16/I-75 interchange project is **scaled back**.
  - The I-16/I-75 Interchange Project is one that will have a tremendous impact upon the City of Macon. While there is no disputing the fact that, for safety reasons, changes need to be made, it is crucial that the current design is **scaled back**. The adverse effects it will have on the Ocmulgee Heritage Trail, Rose Hill Cemetery, Riverside Cemetery, the Pleasant Hill Neighborhood, the Shirley Hills Neighborhood, and the efforts to connect the Main Street neighborhood with downtown as well as the progress being made toward making Macon a more walkable, bikeable city. These adverse effects can be mitigated by downsizing the project while still addressing safety concerns. Many respected and qualified road consultants have made recommendations as to how this can be done and I encourage MATS to encourage GDOT to listen to them. The consultants from 8 80 Cities, who have recently been in Macon presenting workshops on good urban planning, would be a valuable resource. According to them, and other experts in the field of urban planning and road design, best practices have moved away from building multilane, high-speed highways through the hearts of downtowns and it would truly be a shame to invest the amount of money this project is going to cost to create something that is considered to be really bad urban design. As representatives of the people of Macon-Bibb County with respect to transportation planning, I urge MATS to review the recommendations of at least one reputable urban planner (8 80Cities would be a

good one) and then convey those recommendations to GDOT with a request that the I-16/I-75 Interchange project is scaled back.

- I-16 / I-75 interchange: The design could be **scaled down** to meet the transportation and safety needs and at the same time be more sensitive to the city of Macon, our wonderful and growing riverwalk and the surrounding neighborhoods, particularly Shirley Hills and Pleasant Hill. We have significantly increased the access to the Ocmulgee River through the improvements to Amerson River Park. The connection between this new and heavily used park and the Ocmulgee trail is about to be built and that will connect on to the Ocmulgee Monument. Great things are coming together and no one has studied the impact along the river to the pedestrian access and how it will be negatively affected by the interstate expansion. This new design will have the greatest negative effect on our city of anything currently being considered. It is not too late to improve the design.
- Safety on the I-75/I-16 interchange
- Improve merging movements from Gray Highway to travel I-75 South and/or North;
- **Second Street Corridor Improvements:** Continue Second Street improvements to Eisenhower Pkwy – including streetscaping and bike lanes
- **Emery Highway:** Improve road conditions
- **\*\*Jeffersonville Road:** Improve road conditions on Jeffersonville Rd. to address potholes and such
- **\*\*Forest Hill Road:** Improve road by straightened out the sharp curve between Wimbish Road and Overlook Drive traveling south or north, and address potholes and such
- **Eisenhower Parkway:** Improve pedestrian safety (signals, crosswalks, sidewalks) @ Harrison Road
- **Columbus Road:** Improve connectivity from Thomaston Road/Mercer University to Middle Georgia State University (Sidewalks, Bike Lanes)
- **Bass Road:** Widen to 4 lanes in its entirety
- **Zebulon Road:**
  - Extend Zebulon Road across the train tracks to connect with Rivoli Drive
  - Widen to 4 lanes from Lake Wildwood Entrance to Lamar Road
- **Peake Road:**
  - Re-evaluate yield sign @ 90-degree turn @ Morningside of Macon /Lake Wildwood Entrance
- **Thomaston Road:**
  - Widen to 3 or 4 lanes between Tucker Road and the new roundabout at Lamar Road
- **Napier Avenue:** Road repair; bumpy road conditions
- **Pleasant Hill Neighborhood:** Roads in Pleasant Hill are in bad condition (Alphabet City area)
- Road maintenance needed all over

**Public Transportation (Macon Transit Authority):** Specific prompt: **For public transit, what would you focus on...**

*Public responses:*

- More transit routes to and from work and commercial destinations and housing (Industrial Highway)
- Develop a transfer station in Westgate Shopping Center\*\*
- Develop a transfer station in west Macon to transfer bus riders without having to come all the way downtown (ex. getting from Eisenhower to Zebulon).
- All day bus pass
- Better seating and shelter at bus stops
- Run buses later in the evening and Saturday\*\*
- Run buses on Sunday\*\*
- More frequent buses (especially West Gate/Bloomfield route)
- Fix air conditioning on buses \*\*\*\*\* / heating\*
- Need better mechanics to fix buses
- Buses are dangerous and catch fire

- MTA drivers not on-time and make personal stops while on route (run into pharmacy) while passengers sit on bus and wait
- Bus stations needed at Zebulon Road (Walmart); Forsyth Road/Tucker (Kroger); Houston Ave (Church's Chicken)
- Polite bus drivers
- Put things inside bus transfer station for customers
- Buses for senior citizens
- Improve public transportation
- WiFi on buses
- Activities to use at the bus transfer station: music, theater, games/game room, trampoline, pool, playground, stereo system, bounce house, kitchen to store food and eat in
- Better buses
- A system like MARTA for Macon
- Public transit options to destinations outside of Macon
- Buses to out of city destinations like Atlanta and Calloway Gardens
- More frequent bus service, maybe in smaller buses
- Need to accommodate elderly and handicapped riders (kneeling buses, bus stop locations/conditions)
- Increased frequency (at least every 30 minutes)
- Sunday bus service (currently lacking, but needed)
- Para-transit window for pick-up is too long and inconvenient
- Improved connections to Macon Parks (especially Amerson Park, which currently is not accessible)
- Expanded and additional routes to better serve entire community
- Smaller buses with expanded routes
- Bike and pedestrian grid
- Fewer regulations
- Better and more bus options for all areas of the community
- Willing to pay more taxes for better system
- Discount tickets for senior citizens and children
- Reliable, Efficient and safe public transportation system, Unskilled workforce, leadership and supervision, customer service. Outsourcing public transit may be a better option.
- Bus Routes
  - Bring back the Warner Robins Bus Route
  - Zebulon Road / Vineville Avenue Bus Route
    - Improve route for the elderly
    - Improve route from downtown to Vineville Avenue

**Active Transportation (Bicycling & Walking):** Specific prompt: **For walking and biking, what would you focus on...**

*Public responses:*

- Road diet to create a greenway on Riverside Drive from Martin Luther King Jr. Blvd. to Pierce Ave.
- Connect the Ocmulgee trail to downtown and surrounding neighborhoods with comfortable biking/walking streets
- Third Street Lane as a bicycle and pedestrian connector to downtown
- Trails connecting the parks downtown
- More sidewalks, especially where there are currently gaps\*\*
- Add sidewalks and bike lanes on Houston Ave. (houses)
- Add bike lanes and sidewalks to Forest Hill Road\*\*
- Add sidewalks to Napier Avenue
- Add sidewalks to Forsyth Road
- Add sidewalks on Eisenhower (Macon Mall)

- Add sidewalks & bike lanes along Peake Road from Pine Pointe Hospice to Stratford Academy
- Create more nature trails
- Gray Highway: Construct a pedestrian bridge across Gray Highway near the River Edge Senior Housing Center
- Macon needs more sidewalks and better sidewalks throughout the city
- Sidewalks should be mandatory for all new developments
- People need sidewalks to businesses like the Macon Mall
- Install bike lanes and sidewalks on all major roads and arterials
- Add bike lanes to Upper River Road, Stagecoach Road, and all future road improvement projects (Jones County)
- Grid of pedestrian only paths connecting the suburbs with Macon's Urban Core
- At least two pedestrian bridges over the Ocmulgee. One should be architecturally beautiful with world class design.
- Pedestrian-centric design
- More separated from the road sidewalks throughout Bibb Co.
- Develop 3rd St Lane into a pedestrian corridor into downtown.
- Further development of the Heritage Trail
- Bicycle transportation in downtown Macon. A planned network of bike lanes connecting important destinations in the downtown area would be an inviting attribute for residents and visitors to our city. There are sharrows painted on College Street, but continuously painted bike lanes connecting libraries, schools, and parks would be much better. These destinations should include:
  - Hospital (both)
  - Post office
  - Terminal Station/bus stop
  - Tattnell Square Park/Mercer U.
  - Freedom Park
  - Washington Library
  - Hutchings Career Center and to Ingleside Village Central Ga Technical College and any nearby high schools
  - Please put in more bike lanes and redo Vineville. It's dangerous. I walked my dog there and almost got killed. There is no reason that road needs to exist in its current state. People drive too fast, there are no sidewalks, and the lane shift is a death waiting to happen.
  - More bike lanes, especially protected bike lanes
  - lower speed limits for streets that run alongside sidewalks (Vineville is a good example)
  - More space between sidewalks and traffic (Vineville is a good example here too). Walking alongside Vineville on the sidewalk with cars ripping along at 50 Mph is scary and dangerous.
  - More pedestrian-friendly crosswalks, less space between them or even more pedestrian bridges
  - More sidewalks (the addition to log cabin is a good example of a place that really needed it and is finally getting something to accommodate pedestrians safely)
  - Sidewalk repairs to accommodate strollers and wheelchairs.

#### **Trails:**

- Rails to Trails Project:
  - This project could be best suited for a mountain bike trail;
  - Invest in the central Georgia rail to trail between Macon and Milledgeville;
  - The Central Georgia Rail Trail project may be a project for future generations to tackle, but someday this project will come to fruition. A recent study by the North West Georgia RDC tells us of the economic benefits of having a regional multi-use trail system. This trail could have a great impact on the economy of Bibb and Jones County.
  - Development of the rail line greenway path to Milledgeville (regional item)



### **Safety Improvements:**

- **Hawkinsville Road (Hwy 247)**
  - Redesign of Allen Road @ Kuhmo Parkway entrance (at the request of Kuhmo representatives)
  - Traffic calming/roundabout at intersection of 2nd/Grants Chapel Alley/Bowden Street
  - Safety concerns at the intersection of Mercer University Dr. and Pio Nono Ave. (***NOTE from Brad Belo 6/24/16 – GEARS 2013-2015: 27 collisions, 7 collisions w/ injuries, 0 fatalities, 13 total injuries, 54 total vehicles involved***)
  - Safety concerns along Gray Hwy – dangerous to cross and lots of fatalities; resurface Gray Highway (Spring Street) near I-16
  - College Street/Coleman Avenue intersection improvements for pedestrian safety
  - Construct more protection barriers for pedestrians and bike lanes in downtown/connectors
  - Mercer University Drive/Columbus Rd. intersection improvement for safety
  - Re-paint traffic lane striping in neighborhoods
  - Install traffic light at Walnut Creek Road and Shurling Drive. There have been several accidents in front of Harvey's Grocery Store
  - Add Pedestrian countdown clocks at crosswalk signals like those in downtown in rest of county
  - Reducing speeding for safety
  - More roundabouts, fewer traffic signals, and more road calming
  - More roundabouts and fewer signs
  - Intersection at Vineville/Forsyth and Park St/Forest Hill safety concerns, many collisions (***NOTE from Brad Belo 6/24/16 – GEARS 2013-2015: 35 collisions, 6 collisions w/ injuries, 0 fatalities, 7 total injuries, 72 total vehicles involved***)
  - Anthony and Felton intersection safety concerns (***NOTE from Brad Belo 6/24/16 – GEARS 2013-2015: 8 collisions, 4 collisions w/ injuries, 0 fatalities, 11 total injuries, 16 total vehicles involved***)

### **Freight and Truck Movement:**

- **Joe Tamplin Blvd./Chestney Road/Riggins Mills Road:**
  - Improve with the installation of a roundabout
- **Guy Paine Road @ Broadway:**
  - Improve road due to bumpy road conditions along the road and at Broadway
- **Hawkinsville Road (Hwy 247):**
  - Redesign of Allen Road @ Kuhmo Parkway entrance (at the request of Kuhmo representatives)

### **Location Specific Issues:**

- Mulberry Street/MLK Blvd. intersection improvements for pedestrians – eliminate channelized turn lanes and islands and narrow crossing of Mulberry for pedestrians
- North Highlands intersection safety (throughout neighborhood)

### **Rail Service (Train):**

- Add train connection between Macon and Atlanta
- Train running from Atlanta to Central GA (MARTA??)/Warner Robins
- Connector to the northern/southern counties

### **Other:**

- Extension of the airport runway
- Install sound barriers along I-75 through the city limits. This project should be added to the LRTP
- MCCG / Navicent Health Area: *What are the traffic mitigation plans as a result of the 60 unit residential facility. If roundabout, patients, and staff should be educated on how to navigate through them.*
- Better transportation and schools needed for economic development
- Options to decrease the number of lanes
- Repave roads that Macon Transit Authority (MTA) use that is falling apart, not just segments of roads.
- Tear down abandoned buildings and rebuild nice buildings and communities in Macon except for North Macon (already nice). Every other side east, west, south some parts of downtown as well.
- More traffic circles and fewer lanes (road diet)
- Improve air quality
- Need more downtown development – need skyscrapers downtown.
- Stop repaving newer roads
- Build infrastructure to attract retirees
- Signs Advertising “*Will Buy Houses for Cash*”: Remove signs or place a ban on future signs that are placed in neighborhoods
- Clean business parking lots
- Roads are great in Macon – Bibb County, but east – west connections could be improved from the Zebulon Road area to East Macon
- When making adjustments to the Long Range Transportation plan it should not only take into account changing demographics but also a variety of modes of transportation (Foot, Bicycle, Auto, Truck, Train) and needs of transport (People & Things). It should also take into account that compared to the past things may change rapidly. I would recommend integrating the ideas and concepts of what transportation will look like in the future from Tesla Motors Master Plan <https://www.tesla.com/blog/master-plan-part-deux> and while I don't see us banning the car as the following article recommends, I do see our community relying less on automobiles in the future. If Tesla's views take 20 years till 2036 to come to fruition you will see a rapidly dwindling number of cars per household compared to the present day. <http://www.fastcodesign.com/3061586/slicker-city/5-rules-for-designing-great-cities-from-denmarks-star-urbanist>

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Dear John:

I would love to be a participant at your 'pedestrian safety' summit since I was the first person, four to five years ago, to publicly mention, at a Citizens Advisory Committee of the Metropolitan Transportation Study, that the city of Macon had the highest pedestrian death per 100,000 population in the state of Georgia. (Brunswick, I think, beat us by one death in 2014). But, alas, as are most “public” meetings in our community, this one is on a Tuesday, between the hours of 8:30 am and 12:30 pm, on a workday when most people who should be there, can't because they have to work during those hours. I'm self-employed and I am one of those.

Most of the pedestrian deaths are among economically disadvantaged people and many of those have to work during those hours as well. Because of this, it is

a certainty that the summit will be front end loaded with elected officials and bureaucrats who are most responsible for approving and building (and defending) the high speed and dangerous roads that we have in our community. So... I expect more of the same. Yesterday I had a brief conversation with an unnamed county commissioner who told me the reason Macon has so many pedestrian deaths is because pedestrians don't use crosswalks and he said, "it's just common sense"! In other words, 'blame the pedestrian'! FYI, a recent four-year study done by the state of New York showed that 63% of their pedestrian accidents were caused by driver error and 37% by pedestrian error. I fail to see how the state of New York and their pedestrian statistics could be far removed from our own.

Good luck with your seminar! I hope you can find a mechanism to get past the "common sense" attitude of blaming the pedestrians (victims) who in most cases don't own cars to take them to even buy life's necessities.

In closing, I would like to refer you to this website, which clearly shows the relationship between pedestrian deaths and road design, and that holds true, in my humble opinion, for our community as well.  
<http://www.smartgrowthamerica.org/documents/dangerous-by-design-2014/dangerous-by-design-2014.pdf>

Thank you for taking the time to read my e-mail response. If I come across as somewhat angry, it's because I am. One pedestrian death is too many when there are solutions available from studies done all over the country, but it will require that our elected officials and (most of) those on staff at P&Z to change their paradigm of how they look at road design, and admit that the roads that have been approved and built for our community for the last 30 years, are outdated, dangerous to pedestrians as well as drivers, and should be retrofitted into Complete Street designs. But then they will have to admit that the roads they've approved for the last thirty years are "dangerous by design" and unfortunately I don't think that will happen.

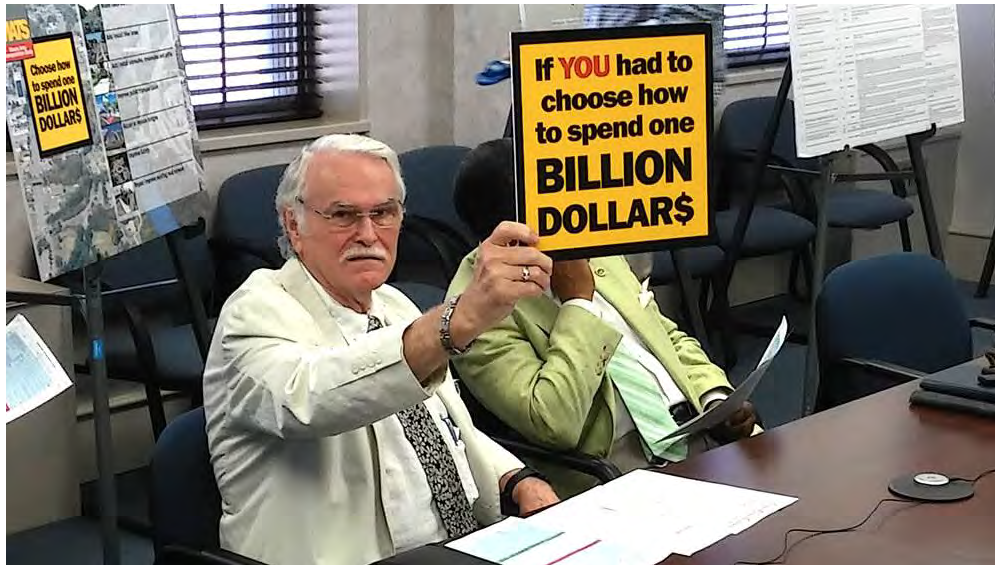
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As a result of these preliminary comments, the MATS Citizen Advisory Committee (CAC), at their meeting on July 13, 2016, initiated the following actions regarding the 2040 LRTP Update:

- ***CAC reviewed the Goals and Objectives developed in response to MAP-21 and FAST Act requirements.*** These Goals and Objectives were subsequently reviewed by the MATS Policy Committee at the August 3, 2016, meeting.

- **Draft revenue projections:** The CAC recommends that MATS staff calculate the revenue projections with the 2% inflation across the board for cost and revenues regarding the proposed LRTP project list.
- **Draft project list:** The CAC recommends to move the Seventh Street Truck Route Project back into network 2020.

A motion was made and properly seconded to approve the above recommendations suggested by the CAC to forward to the MATS Technical Coordinating Committee and MATS Policy Committee.



mna-holding-sign-in-library



We used “sticky dot” exercises to engage participants to prioritize the various goals.





We were out at the Washington Library to get public's feedback.



MATS personnel discussing the project with public.







guys-talking-after-MATS-meeting



Guy-walking-on-Log-Cabin-at-new-bridge

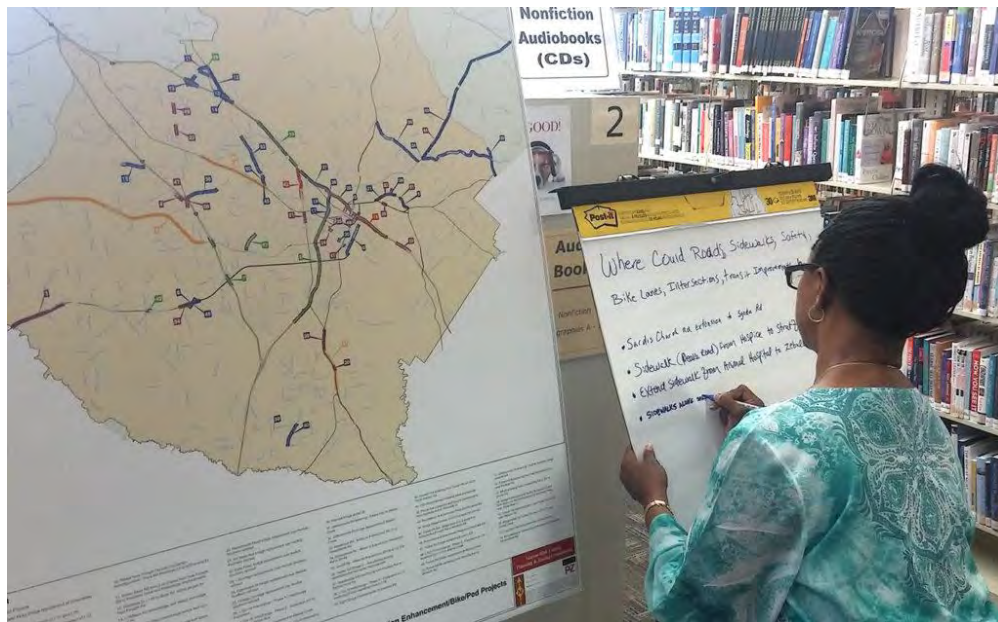


Jim-and-group-discussing-idea-in-conf-room



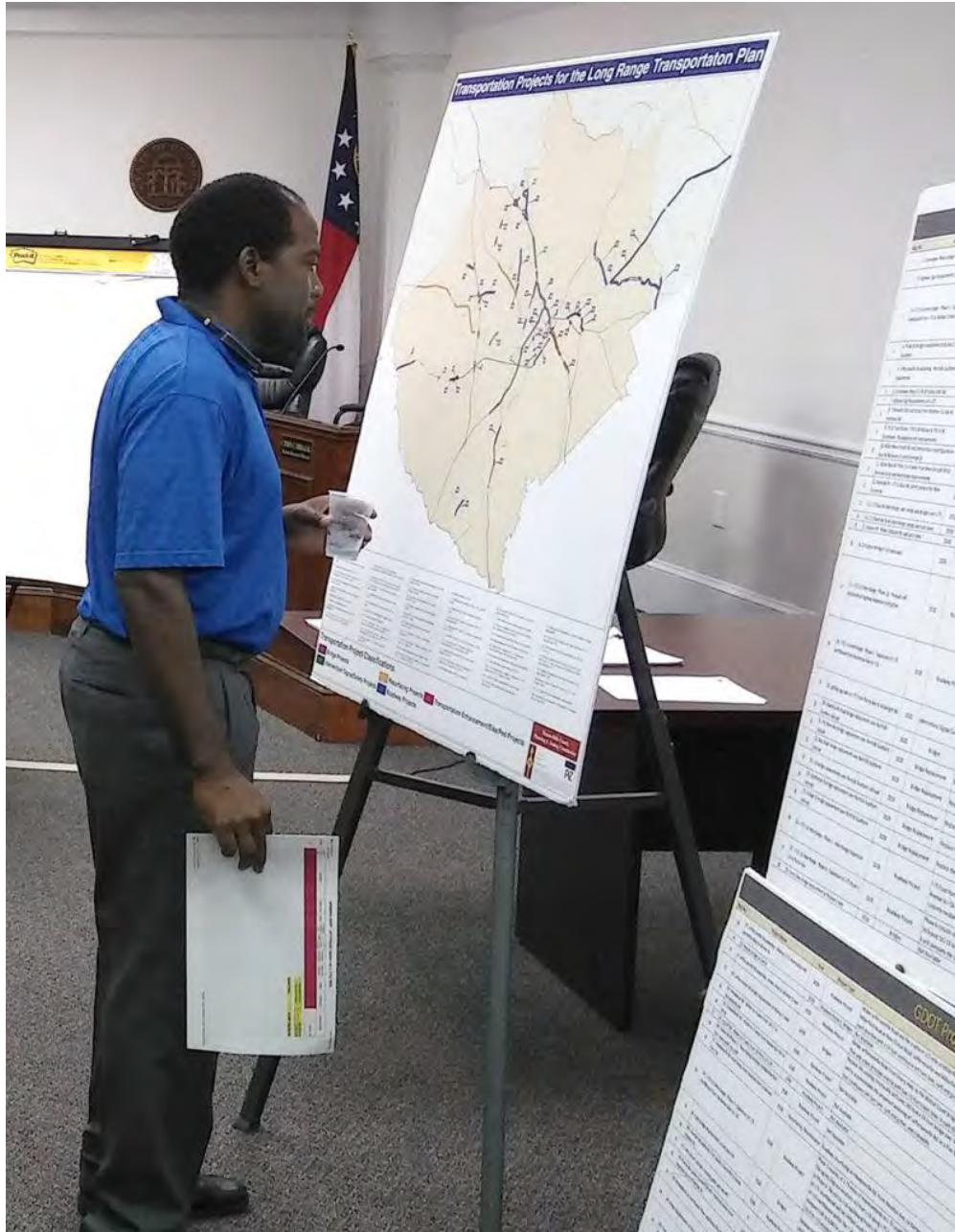
lady-adding-suggestions





Library-Lady-adding-suggestion





man-studying-Land-Use-Map



meeting-in-conference-room



Public-Involvement-3-ladies-in-CONference-Room-pointing-at-map

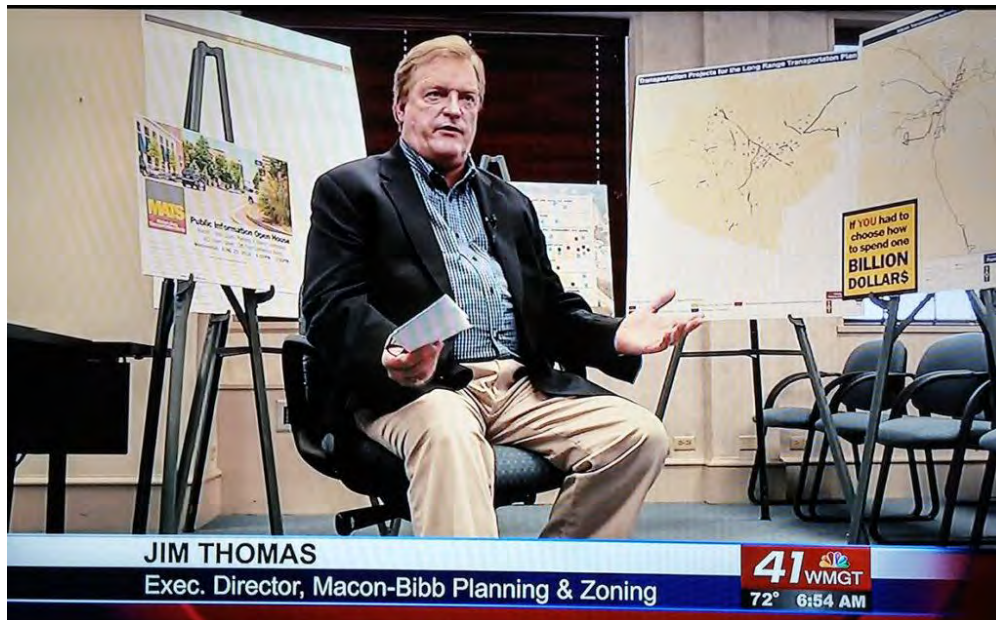




TC-meeting



Wes-at-outdoor-conversation-mats



41NBC-June-29,-2016-Jim

41NBC-June-29,-2016-Jim



Walnut-St-Bike-Route





**MATS**  
Macon Area  
Transportation Study

**If YOU had to choose how to spend one BILLION DOLLARS**

**Public Information Open House**  
Tuesday, July 12, 2016 ~ 10:00 a.m. – 7:00 p.m.  
**Planning & Zoning Commission Conference Room**  
682 Cherry Street, Suite 1000  
Willie C. Hill Government Center Annex Building

**MATS Citizens Advisory Committee Meeting**  
Wednesday, July 13, 2016 ~ 6:00p.m. – 8:00 p.m.  
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682 Cherry Street, Suite 1000  
Willie C. Hill Government Center Annex Building

**Public Information Open House**  
Monday, July 18, 2016 ~ 6:00 p.m. – 8:00 p.m.  
**Washington Memorial Library**  
1180 Washington Avenue

**MATS Technical Coordinating Committee Meeting**  
Wednesday, July 20, 2016 ~ 9:00 a.m. – 11:00 a.m.  
**Planning & Zoning Commission Conference Room**  
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**Public Information Open House**  
Thursday, July 21, 2016 ~ 6:00 p.m. – 8:00 p.m.  
**Charlotte C. Wilson Conference Room**  
Jones County Government Center  
166 Industrial Boulevard, Gray, GA

**Public Information Open House**  
Wednesday, July 27, 2016 ~ 10:00 a.m. – 7:00 p.m.  
**Planning & Zoning Commission Conference Room**  
682 Cherry Street, Suite 1000  
Willie C. Hill Government Center Annex Building

MATSOpenhouseschedule

## ***MATS Transportation Connection Newsletter***

*(Covering transportation improvement projects in Macon - Bibb County and the southern portions of Jones & Monroe Counties)*

[View this email in your browser](#)



*MATS Transportation Connection Newsletter is a public outreach tool to keep the public engaged and aware of transportation improvement projects within the MATS area.*

**If YOU had to  
choose how  
to spend one  
BILLION  
DOLLAR\$**

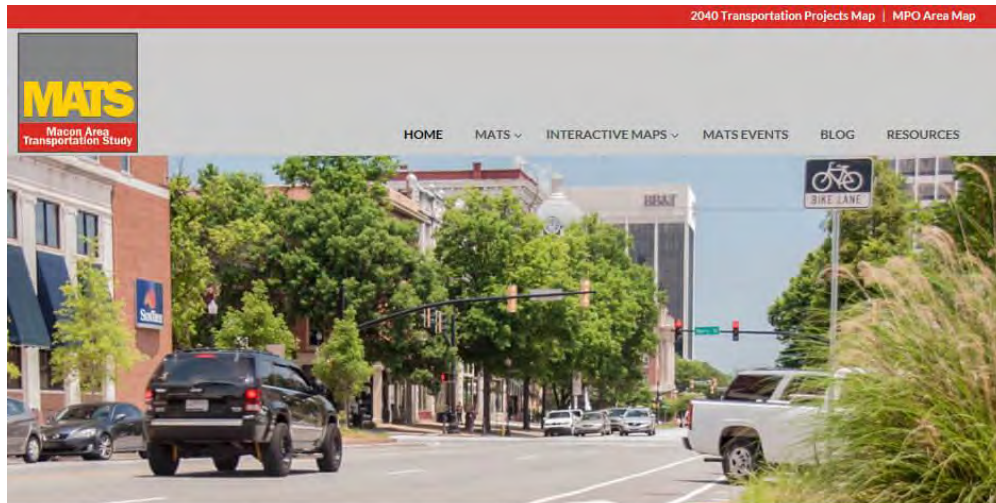


**U.S. Department  
of Transportation  
Federal Highway  
Administration**

### **Seeking public input on future transportation plans for the Macon area**

The MATS staff of the Macon-Bibb County Planning & Zoning Commission is continuing to seek engagement from the community during the update of the 2040 Long Range Transportation Plan. The final public engagement opportunity is Wednesday, July 27, 2016 from 10:00AM - 7:00PM. The general public can drop in at anytime during this timeframe at the Willie C. Hill Government Center Annex Building, 682 Cherry Street, Suite 1000 (10th Floor), Macon, GA.

MATS\_Connections\_Newsletter



## New GDOT Projects on the Horizon for Bibb County

Project ID: 311000-

Description: Widening | I-16 FROM I-75 TO SR 87; INCL SR 87  
INTERCHANGE - PHASE I [\[LINK\]](#)

### Stay updated!

Stay up-to-date on the latest info about Macon Area Transportation!

Subscribe!

Website\_Capture







## How would you spend the money?

**If YOU had to  
choose how  
to spend one  
BILLION  
DOLLAR\$**

*The catch is you have to benefit the most people and you can only spend it on our local transportation projects.*

**Let us know at [mats2040.org](http://mats2040.org)**

# **MATS**

**Macon Area Transportation Study**

MATS-ad

## **PUBLIC NOTICE**

Seeking public input about future transportation plans for the southern portion of Jones County

### **Public Information Open House**

Thursday, July 21, 2016, 6:00PM – 8:00PM, Jones County Government Center – Charlotte C. Wilson Conference Room, (166 Industrial Boulevard, Gray Georgia 31032)

To view the current list of proposed projects, please visit [www.mats2040.org](http://www.mats2040.org)

Jones-County-Newspaper-July-13,-2016



JULIO 2016

## Macon esta buscando la opinión pública acerca de los futuros planes de transporte para el área

El personal de (Macon Area Transportation Study) MATS un grupo de la Comisión de Planificación y Zonificación del Condado Macon-Bibb que está buscando la participación de la comunidad y la recopilación de información de la opinión pública durante el plan la actualización de transporte de largo alcance de 2040 esto incluye el proceso de planificación, así como la actualización del plan integral del proceso de planificación. Necesita tu opinión.

El Plan de transporte de largo alcance incluirá aproximadamente un billón de dólares, en proyectos de transporte en los próximos 25 años y la opinión del público es de vital importancia para ayudar a establecer prioridades. Este plan se orienta a el futuro de las mejoras en el transporte en el condado Macon-Bibb y una porción de los condados Jones y Monroe e incluye nuevas carreteras, nuevas instalaciones para bicicletas y peatones, nuevas oportunidades de tránsito, así como mejoras de la infraestructura de transporte existente.

El LRTP (el plan de largo alcance) se actualiza cada cuatro años y su impacto puede ser visto en la zona de Macon en proyectos de carreteras que se encuentran actualmente en construcción, al igual que la extensión Sardis Church Road y el ensanchamiento, de Forrest Hill Road y la planificación de proyectos como la expansión e intercambio de la I-75 / I-16, el J ensanchamiento de Jeffersonville Road nuevas rotondas, y los nuevos puentes sobre vías férreas y vías navegables.

El Plan Integral es un plan obligatorio del estado y requerido por el Departamento de Asuntos de la comunidad y es un plan de 20 años que, además de transporte, describe la visión de una comunidad en las áreas de desarrollo de la comunidad, el uso de la tierra y la vivienda, la recreación, el cual es actualizado cada 10 años.

La actualización tanto del Plan de Transporte a Largo Plazo y el proceso del Plan Integral se basa en gran medida en la opinión del público. Usted tiene una oportunidad única para expresar sus opiniones para ayudar a moldear el futuro de Macon - Bibb; ayuda a determinar el carácter, la magnitud y la calidad del desarrollo y la reconstrucción de nuestra zona; ayuda a formular las metas y objetivos de nuestros futuros sistemas de transporte; ayuda a priorizar una lista de proyectos y propuestas de transporte; y proponer proyectos de transporte que le gustaría ver en el área de estudio MATS.

Su participación tendrá un impacto en las políticas de planificación del condado Macon - Bibb y juntos vamos a crear un plan para el futuro de nuestra comunidad. Exhortamos y animamos a todos a compartir ideas y proporcionar comentarios en una o más de las próximas reuniones de puertas abiertas, eventos de alcance comunitario, o de las reuniones de la comisión de MATS:

Si deseas dar tu opinión sobre el topico de transportacion y como puede ser mejorada puedes ir a cualquiera de estas reuniones o ir la pagina de internet MATS2040.org

- Tuesday, July 12, 2016, 10:00AM – 7:00PM, Public Information Open House, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)
- Wednesday, July 13, 2016, 6:00PM – 8:00PM, MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex

Building, Macon, Georgia)

- Monday, July 18, 2016, 6:00PM – 8:00PM, Washington Memorial Library, (1180 Washington Avenue, Macon, Georgia)

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Para obtener más información con respecto a MATS, el proceso LRTP, la lista de proyectos actuales de transporte en la zona y el horario de difusión pública, por favor visite nuestro sitio web regularmente para cualquier cambio / actualizaciones en [www.mats2040.org](http://www.mats2040.org). También puede presentar sus comentarios el último día será el lunes 1º de agosto de, 2016 envíe su comentario a Gregory L. Brown, Planificador, 682 Cherry Street, Suite 1000, Macon, Georgia 31201, o por correo electrónico a [gbrown@mbpz.org](mailto:gbrown@mbpz.org)

**Usted tiene voz en decidir que su  
sucederá con la transportación  
en el condado Macon-Bibb  
PARTICIPE**

**WWW.QUEPASAGA.COM**



**Si Tú pudieras escoger como utilizar un BILLON DOLARES**

Debe alcanzar y beneficiar a la mayor cantidad de personas y solamente lo puedes gastar en proyectos de transportacion local.

**¿Cómo usted utilizaría el dinero?**

**Dejenos saber en [mats2040.org](http://mats2040.org)**

**MATS**  
Macon Area Transportation Study  
[www.mats2040.org](http://www.mats2040.org)



# Seeking Public Input About Future Transportation Plans For The Macon Area

The MATS staff of the Macon-Bibb County Planning & Zoning Commission is seeking engagement from the community and gathering information from the public during the update of the 2040 Long Range Transportation Plan planning process, as well as the update of the Comprehensive Plan planning process. The Long Range Transportation Plan will include approximately a billion dollars of transportation projects over the next 25 years and public input is vitally important to help set priorities. This plan guides future transportation improvements in Macon-Bibb County and a portion of Jones and Monroe Counties and includes new roadways, new pedestrian and bike facilities, new transit opportunities, as well as upgrades of existing transportation infrastructure. The LRTP is updated every four years and its impact can be seen around the Macon area in road projects that are currently under construction, like the Sardis

Church Road extension and the Forest Hill Road widening, and planned projects like the I-75/I-16 interchange expansion, Jeffersonville Road widening, new roundabouts, and new bridges over rail lines and waterways. The Comprehensive Plan is a state mandated plan required by the Georgia Department of Community Affairs and is a 20-Year plan which, in addition to transportation, outlines the vision of a community in areas of community development, land use, recreation, and housing which is updated every 10 years.

The update of both the Long Range Transportation Plan and the Comprehensive Plan process relies heavily on input from the public. You have a unique opportunity to voice your opinions to help shape the future of Macon - Bibb County; help determine the character, scale and quality of development and redevelopment of our area; help formulate the goals and objectives of our future transportation systems; help prioritize a

list of proposed transportation projects; and propose transportation projects that you would like to see in the MATS study area. Your involvement will impact planning policies for Macon - Bibb County and together we will create a blueprint for the future of our community. Everyone is encouraged to share ideas and provide comments at one or more of the upcoming open houses, community outreach events, or MATS committee meetings:

• **Wednesday, June 15, 2016, 3:30PM - 6:30PM.** Mulberry St. Farmer's Market (Tattnall Square Park, Macon, Georgia)

• **Friday, June 24, 2016, 10:00AM - 2:00PM.** Public Information Open House at Macon Terminal Station, Bus Transfer Area, (200 Cherry Street, Macon, Georgia)

• **Wednesday, June 29, 2016, 6:00PM - 8:00PM.** Special Called MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)



## MACON-BIBB COUNTY Planning & Zoning

• **Tuesday, July 12, 2016, 10:00AM - 7:00PM.** Public Information Open House, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

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Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

For more information regarding MATS, the LRTP process, the list of current transportation projects in the area and the public outreach schedule, please visit our website regularly for any changes / updates at [www.mats2040.org](http://www.mats2040.org). You may also submit comments by Monday, August 1, 2016 to Gregory L. Brown, Senior Planner, 682 Cherry Street, Suite 1000, Macon, Georgia 31201 or via email at [gbrown@mbpz.org](mailto:gbrown@mbpz.org).

MATS-Article

The Jones County News

[www.jcnnews.com](http://www.jcnnews.com)

WEDNESDAY, AUGUST 17, 2016 • A3

### REGIONAL GOALS

## Transportation meeting focuses on future growth

DEBBIE LURIE-SMITH  
[debbie@jcnnews.com](mailto:debbie@jcnnews.com)

The Macon Area Transportation Study (MATS) staff of Macon-Bibb County Planning & Zoning recently had a meeting with the citizens of Jones County to receive input for future transportation projects.

New ideas for future projects in Jones County that were brought up at the July 21 meeting included bike lanes, signage, widening of Upper River and Stage Coach roads, completion of the Rails to Trails project - possibly changing it to a

mountain bike trail, a connector for the northern and southern counties, and even a train.

The meeting was facilitated by Gregory Brown, who is a senior planner for the Macon-Bibb County Planning & Zoning Commission. He explained that Jones County is included in Macon's urbanized zone, which means it is a part of the Macon-Bibb Metropolitan Planning Organization when it comes to receiving federal transportation improvement dollars.

MORE GROWTH ► A6



◀ Jones County Commission candidate John Wood (left), Commissioner Jonathan Pitts (second right), and chairman-elect Chris Weidner (far right) share ideas at the MATS meeting.

DEBBIE LURIE-SMITH/  
EDITOR

Jones\_County\_Newspaper\_August\_2016

Suggestions from residents help the agency make recommendations to the Georgia Department of Transportation to improve public roads, get projects funded and create new transit opportunities in Macon. The long-range plan helps guide how transportation dollars are spent for the next 20 to 25 years.

The plan, updated every four years, involves improvement on all kinds of initiatives — from the current Forest Hill Road widening to plans down the road to expand the Interstate 75/16 interchange.

Residents expressed concerns about the I-75/I-16 interchange at the last such feedback request, Brown said. Since then, progress has been made and the project is in its fifth phase, with roadway plans and construction slated for 2020.

Brown said input makes for real change.

“A lot of citizen input went into adding bike lanes to some of our roadways and also improving pedestrian infrastructure,” he said. “We need (the public’s) input prioritizing projects and formulating goals and objectives.”

After the suggestions, ideas will be sent through a collection of committees within the organization to sketch out details.

A second and third public information open house will be held July 12 and July 27 at the Willie C. Hill Government Center Annex Building in downtown Macon.

The Macon Area Transportation Study group was established in 1964, in response to the Federal Aid Highway Act of 1962. All urban areas with populations exceeding 50,000 people are required to maintain a transportation planning process. It is the Macon area’s metropolitan planning organization and comprises Macon-Bibb County, the southwest portion of Jones County and a small portion of southern Monroe County.

*Avery Braxton: 478-744-4326, @Ave\_Braxton*

Telegraph\_2\_



# GROWTH

44 CONTINUED FROM A3

He said Macon's MPO currently includes approximately 185,000 people, and MATS projects can be funded up to 80 percent by federal funds.

Jones County already has four road improvement projects and one bridge replacement project on the MATS list. Those projects are the widening to four lanes Joycliff Road from Highway 49 to Highway 129, Griswoldville Road from Henderson Road to Highway 49, Henderson Road from Highway 57 to Griswoldville Road, and Highway 49 from Griswoldville Road to Highway 18.

The bridge replacement project is the bridge at Old Garrison Road.

Georgia has been growing rapidly, as has its traffic. In 2010, Georgia had 9.6 million people and it is on pace to grow to 14.7 million by 2030. That's over 50 percent more people in the next 20 years.

Brown said the MATS information gathering process is part of its 2040 Long

Range Transportation Plan (LRTP) and part of the update to its Comprehensive Plan. According to a press release about the long-range plan, it includes a billion dollars of transportation projects over the next 25 years.

The planner said the Rails to Trails project was discussed at the last MATS meeting and was on the list to be considered for addition to the LRTP this year.

The plan includes new roadways, new pedestrian and bike facilities, new transit opportunities, as well as upgrades of existing transportation infrastructure. The LRTP is updated every four years. The Comprehensive Plan is a state mandated plan required by the Georgia Department of Community Affairs and is a 20-year plan, which includes community development, land use, recreation, and housing. The Comprehensive Plan is updated every 10 years.

The updates of both the plans rely heavily on input from the public.

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MATS STUDY

# Macon transportation planners want residents' feedback

Public's assistance sought for long-range planning

20 to 25 years of development in the works

Open house coming up Friday morning

BY AVERY BRAXTON  
abraxton@macon.com

The transportation planning agency for the Macon area is seeking the public's help to shape long-range thinking.

The Macon Area Transportation Study staff is updating the 2040 Long Range Transportation Plan, and residents can comment on or propose transportation projects they'd like to see in their communities. There's an open house at the Terminal Station on Cherry

Street at 10 a.m. Friday.

The public's input is essential in the overall progress of Macon transportation efforts, said Greg Brown, a senior planner and MATS spokesman.

"It helps significantly because one of our requirements to update the transportation plan is gather public input on the front end," Brown said. "The general public can help us prioritize projects — where money should and shouldn't go."

Suggestions from residents help the agency

make recommendations to the Georgia Department of Transportation to improve public roads, get projects funded and create new transit opportunities in Macon. The long-range plan helps guide how transportation dollars are spent for the next 20 to 25 years.

The plan, updated every four years, involves improvement on all kinds of initiatives — from the current Forest Hill Road widening to plans down the road to expand the Interstate 75/16 interchange.

Residents expressed concerns about the I-75/I-16 interchange at the last such feedback request, Brown said. Since then, progress has been made and the project is in its fifth phase, with roadway plans and construc-

tion slated for 2020.

Brown said input makes for real change.

"A lot of citizen input went into adding bike lanes to some of our roadways and also improving pedestrian infrastructure," he said. "We need (the public's) input prioritizing projects and formulating goals and objectives."

After the suggestions, ideas will be sent through a collection of committees within the organization to sketch out details.

A second and third public information open house will be held July 12 and July 27 at the Willie C. Hill Government Center Annex Building in downtown Macon.

The Macon Area Transportation Study group was established in 1964, in response to the Federal Aid Highway Act of 1962. All urban areas with populations exceeding 50,000 people are required to maintain a transportation planning process. It is the Macon area's metropolitan planning organization and comprises Macon-Bibb County, the southwest portion of Jones County and a small portion of southern Monroe County.

Avery Braxton:  
478-744-4326,  
@Ave\_Braxton

## Seeking public input about future

The MATS staff of the Macon-Bibb County Planning & Zoning Commission is seeking engagement from the community and gathering information from the public during the update of the 2040 Long Range Transportation Plan (LRTP) planning process, as well as the update of the Comprehensive Plan planning process.

The LRTP will include approximately a billion dollars of transportation projects over the next 25 years and public input is vitally important to help set priorities. This plan guides future transportation improvements in Macon-Bibb County and a portion of Jones and Monroe counties and includes new roadways, new pedestrian and bike facilities, and new transit opportunities, as well as upgrades of existing transportation infrastructure.

The LRTP is updated every four years and its impact can be seen around the Macon area in road projects that are currently under construction, like the Sardis Church Road extension and the Forest Hill Road widening, and planned projects like the I-75/I-16 interchange expansion, Jeffersonville Road widening, new roundabouts, and new bridges over rail lines and waterways.

The Comprehensive Plan is a state-mandated plan required by the Georgia Department of Community Affairs and is a 20-year plan which, in addition to transportation, outlines the vision of a community in areas of community development, land use, recreation, and housing, which is updated

every 10 years.

The update of both the LRTP and the Comprehensive Plan process relies heavily on input from the public. You have a unique opportunity to voice your opinions to help shape the future, help determine the character, scale, and quality of development and redevelopment of the area; help formulate the goals and objectives of future transportation systems; help prioritize a list of proposed transportation projects; and propose transportation projects that you would like to see in the MATS study area.

Your involvement will impact planning policies. Everyone is encouraged to share ideas and provide comments at one or more of the upcoming open houses, community outreach events, or MATS committee meetings:

- Tuesday, July 12, 10:00 a.m. - 7:00 p.m., Public Information Open House, Macon-Bibb County Planning & Zoning Commission, 682 Cherry St., Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon;

- Wednesday, July 13, 6:00 p.m. - 8:00 p.m., MATS Citizens Advisory Committee meeting, same location as July 12 open house;

- Monday, July 18, 6:00 p.m. - 8:00 p.m., Washington Memorial Library, 1180 Washington Ave., Macon;

- Wednesday, July 20, 9:00 a.m. - 11:00 a.m., MATS Technical Coordinating Committee meeting, same location as July 12 open house;

- Wednesday, July 27, 10:00 a.m. - 7:00 p.m., Public Information Open House, same location as July 12 open house.

For more information regarding MATS, the LRTP process, the list of current transportation projects in the area, and the public outreach schedule, please visit the website regularly for any changes/updates at [www.mats2040.org](http://www.mats2040.org).

You may also submit comments by Monday, Aug. 1, to Gregory L. Brown, senior planner, 682 Cherry St., Suite 1000, Macon, GA 31201, or via email at [gbrown@mbpc.org](mailto:gbrown@mbpc.org).

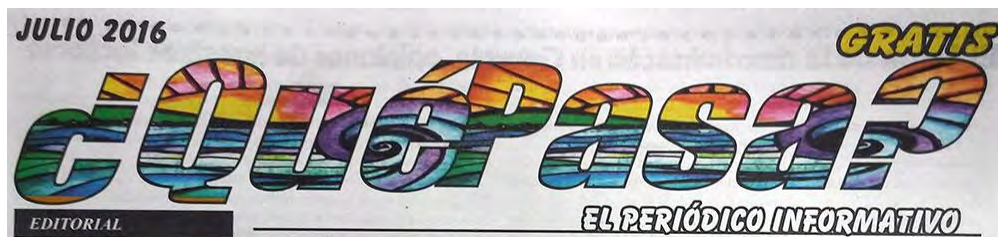


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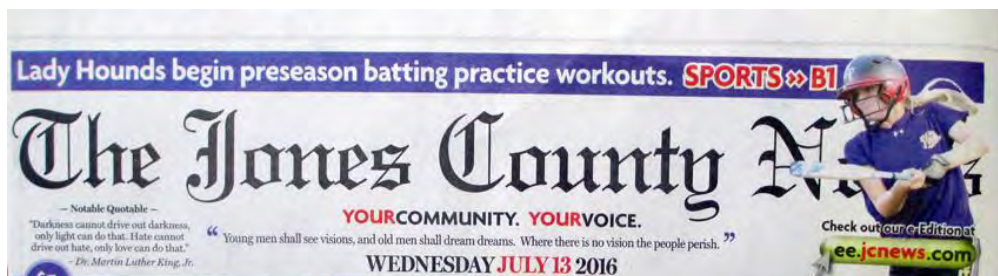


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### ***Final Public Comments***

The second and final public comment period on the 2040 LRTP Update document took place during a 30-day window, from March 6, 2017 through April 5, 2017. As in the first phase, legal ads were run in the Macon Telegraph and the Middle Georgia Informer, as well as posting the public comment period prominently on the [www.mats2040.org](http://www.mats2040.org). In addition, during the second public comment period, notifications were also sent to State and Federal partner agencies to solicit their input on the contents of the 2040 LRTP Update.

Copies of the legal ads for the second round of comments, the comments received from the general public, the e-mail distribution list for the partner agencies, text of the message sent to the partner agencies, and the received responses, can be found in Appendix E. The nature of the comments received during this second period were primarily editorial in nature (i.e., identification of typographical and document formatting errors). One telephone comment was received from the general public, asking about whether or not there were any projects identified along Hartley Bridge Rd. between I-75 and Houston Rd., and expressing concerns about potential for increased traffic. MATS responded that at this time, there are no projects on Hartley Bridge Rd. in the 2040 LRTP Update, but that if any such projects were identified in future, the project list could be amended.

# Chapter 5 | Operational & Management Strategies

## Operational & Management Strategies

This section of the Macon Area Transportation Study (MATS) 2040 LRTP Update provides an overview of the Operational and Management Strategies (OMS) recognized by MATS to improve the performance of existing transportation facilities in order to increase the safety and mobility of pedestrians and to relieve traffic congestion. OMS are important because they reflect the safe and efficient use of existing facilities, thereby mitigating the need for construction of new or expanded infrastructure. The following sections discuss a variety of OMS, specifically:

- Intelligent Transportation Systems;
- Incident Management; and
- Transportation Asset Management.

### Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) are the application of advanced computer, electronic, and communication technologies used in an integrated manner to increase the safety and efficiency of the transportation network. Road and highway conditions can change suddenly and traffic delays can result from accidents, bad weather and broken down vehicles.

The Transportation Management Center (TMC), based in Atlanta, is an important part of the Intelligent Transportation Systems in Georgia. TMC covers the entire Interstate system throughout Georgia (including for the MATS area), enhancing travel safety and efficiency by monitoring incidents, controlling traffic and providing information through the following activities:

- TMC collects important information from closed circuit television cameras and video detection systems located along Interstates, providing “at the moment” reporting on speeds, vehicle volumes, traffic congestion and accidents;
- TMC confirms problems, establishes the cause, and analyzes the effect it will have on traffic. TMC also contacts the appropriate department to respond to the situation.
- TMC notifies travelers on affected Interstate segments via Changeable Message Signs. These signs relay updated information such as travel times and incident messages.

In addition to these reactive measures, there is a traffic information phone service (Georgia 511) that provides free travel information, allowing travelers to report an accident and to receive current traffic reports. Georgia 511 is an advanced phone service that provides assistance 24 hours a day. Travelers can use the phone system to do the following:

- Receive road construction or closure information
- Obtain estimated trip times
- Report a traffic accident or road hazard
- Receive road traffic conditions
- Obtain route specific information

Georgia 511 also provides information on the following:

- Transit service in the area
- Tourism information
- Rideshare information
- Travel Planning
- Air quality conditions

In addition to calling, the Georgia 511 website ([www.511ga.org](http://www.511ga.org)) provides real-time traveler information current travel conditions for roadways in the MATS area including:

- Weather conditions
- Location and scope of active road construction activities on Interstate and State highways
- Alerts and special events which might impact traffic flow (e.g., a parade shutting down a particular part of a State route)

Driver can also sign up for e-mail alerts to their mobile devices from the Georgia 511 system, which pushes travel updates to subscribers as they become available. These roadside ITS technologies allow the website to provide travelers with real time information on trip times, travel alerts, congestion levels and traffic accident locations. This information helps drivers dynamically optimize their route choices, which reduces the congestion levels on the regional road network.

## **Incident Management**

Incident management deals with stalled vehicles, traffic accidents, roadway debris and spilled loads. A portion of traffic congestion is due to vehicle crashes or incidents but in some cases, the initial incident can be minor. However, there is also an increased risk of secondary crashes that result from a primary crash or incident. Subsequently, the secondary crash caused by the initial incident may be even more severe than the primary crash.

Improved incident management can increase the safety of the transportation system. The incident management program was initiated to develop and sustain a method to facilitate the safe and fast clearance of roadway incidents, thereby lessening the impact on emergency vehicles and the traveling public. Georgia DOT strives to improve incident response across the entire state. For the MATS area, the GDOT incident management program is the Coordinated Highway Assistance & Maintenance Program (CHAMP).

CHAMP was established as a result of the Georgia Transportation Funding Act of 2015 (GTFA: see [Ch. 8: Fiscal Assessment](#) for more details). CHAMP patrols Interstate segments outside the metropolitan Atlanta region, with the exception of I-59 and I-24 (neither of which are in the MATS service area). CHAMP has three main functions: roadway maintenance, motorist assistance, and emergency response. Their specific tasks include:

- Provide quick response to maintenance issues and enhance proactive major maintenance by providing immediate district notification about bridge/roadway damage, signs down, markings missing, signal malfunction, commercial vehicle crashes and spills and other major maintenance concerns.
- Provide immediate resolution for minor maintenance needs such as vegetation issues, blocked drainage and debris removal (including abandoned or disabled vehicles).
- Offer motorist assistance and temporary traffic control, which helps to reduce secondary incidents and increase responder safety.
- As an on-scene incident responder, assist with emergency response and provide roadway clearance and coordinate long-term traffic control and traveler information.

- Detect, verify, report and provide assistance on traffic incidents to ensure safe, quick clearance on interstates outside of Metro Atlanta AND on non-interstate state routes within 10 miles on either side of interstates, when requested.
- Maintain and/or improve safe and efficient traffic flow.
- Assist the Department of Public Safety and other law enforcement agencies.
- Identify, verify and report maintenance issues and/or property damage to infrastructure to GDOT, TMC, and District staff.

CHAMP operates 7 days a week, 16 hours each day, with the remaining 8 hours covered on an “on-call” basis. CHAMP operators patrol a 50-mile section of Interstate highway during an 8-hour shift. In the MATS area, there are three active vehicles patrolling from 6:00 a.m. to 10:30 p.m. daily for the following routes;

- South on I-475 to the I-75 merge, then returning North on I-75 to the I-475/I-75 merge in Monroe County;
- East on I-16 from the I-75/I-16 out to the 50 mile limit, then returning West along I-16
- North from the I-475/I-75 merge to Exit 216 in Henry County, then returning South on I-75 back down to the I-475/I-75 merge (i.e., serving Monroe County, mostly outside the MATS area)

CHAMP patrols use one driver in a Ford F-250 pick-up truck on each route. In the event that an incident is beyond the capacity of a single patrol vehicle to respond, CHAMP operators in the MATS area contact the GDOT District 3 office located in Thomaston (outside the MATS area) for dispatch of additional maintenance personnel.

### **Transportation Asset Management**

Transportation Asset Management (TAM) is a comprehensive, integrated and systematic method for cost effectively managing physical transportation assets through the use of strategic goals, performance measures and data. TAM is a simple concept which involves the preservation of transportation assets by strategically anticipating and reacting to problems before they occur rather than afterward. The most obvious example is the consistent prioritization and application of routine repairs to extend the life of existing infrastructure, rather than expensive asset replacement due to foregone maintenance.

An effective Transportation Asset Management (TAM) program requires the coordination of three factors; strategic planning, asset management, and performance management. Strategic planning identifies and documents goals and objectives. In addition, it also identifies short-term business strategies and sets the direction. Asset management focuses on extending the life-cycle of an existing asset, using data in order to make informed decisions and encourages collaboration and coordination. Performance measures help to set performance management and targets based on objectives. It also helps to determine if progress is being made towards identified goals, and guides decisions in making adjustments. See Chapter 2, Table 2-1 for a detailed discussion on LRTP Goals and Objectives and Performance Measures as they related to TAM.

The TAM principles currently adopted by GDOT for pavements, bridges, and signs can be found in the 2014-2018 Transportation Asset Management Plan.[\[1\]](#) For pavement management, risk factors such as average daily traffic and truck traffic percentage are used along with the Computerized Pavements Condition Evaluation Systems to guide decisions regarding roadway improvements. Figure 5-1 shows the locations in Bibb, Jones and Monroe Counties where GDOT traffic demand sensors are permanently located to collect vehicle counts (both total vehicles, and truck counts).





Figure 5-1 Distribution of GDOT Traffic Demand Sensors in Bibb, Jones and Monroe Counties

TAM is an important method to determine how to invest funding (and prioritize maintenance) for transportation projects. Preventive maintenance on assets will reduce life cycle costs and improve travel conditions, safety and reliability, resulting in an overall better-managed transportation system.

[1] For full document, see [http://www.tamtemplate.org/wp-content/uploads/tamps/005\\_georgiadot-2.pdf](http://www.tamtemplate.org/wp-content/uploads/tamps/005_georgiadot-2.pdf)

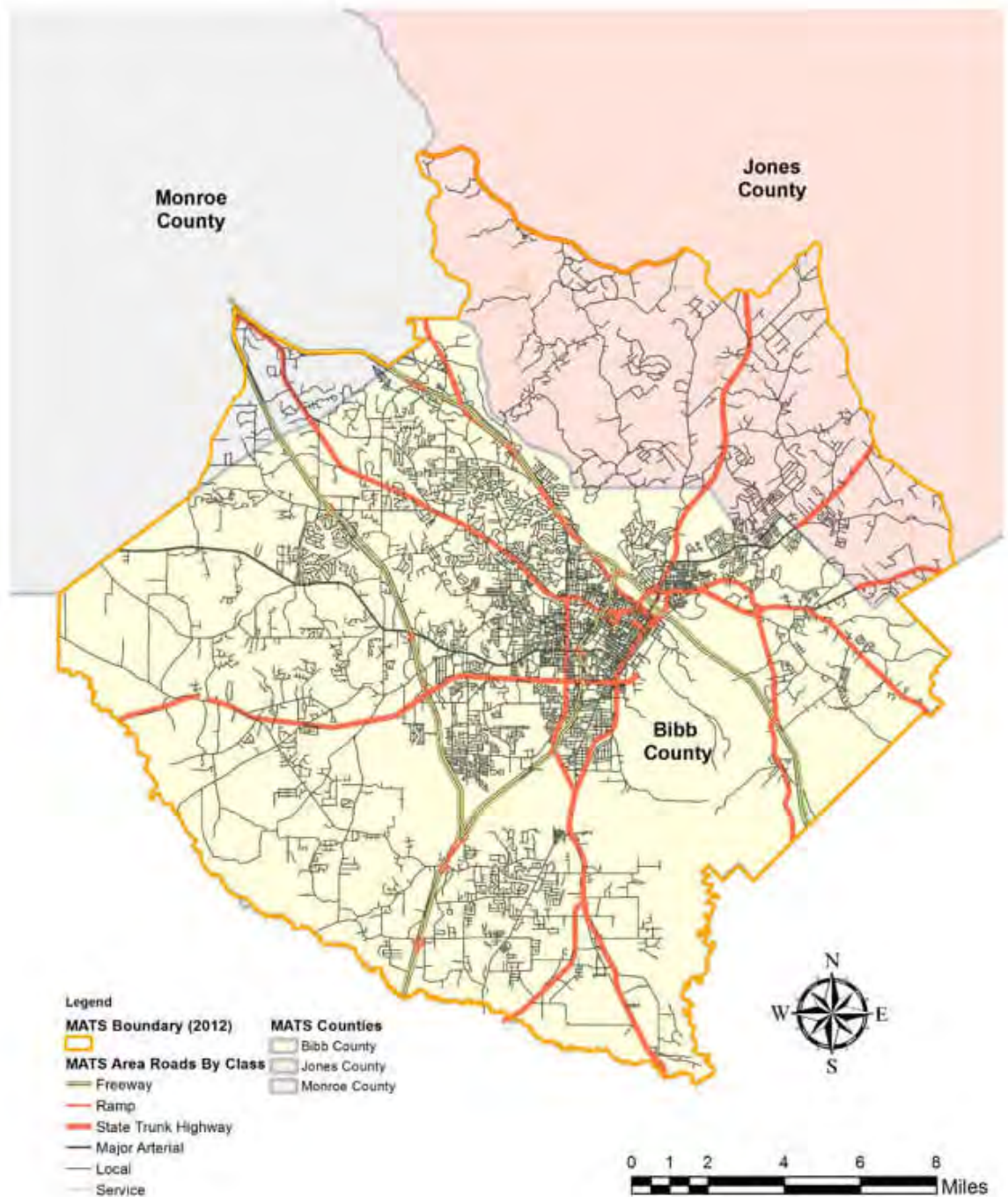
## Chapter 6 | Roads and Bridges Projects

### Introduction

This section addresses the anticipated roads and bridge projects identified in the updated **2040 Long Range Transportation Plan (LRTP)**. The general goals of these proposed projects are defined under the [Moving Ahead For Progress in the 21<sup>st</sup> Century Act \(MAP-21\)](#) and [Fixing America Surface Transportation Act \(FAST Act\)](#), described in the [Goals and Objectives section](#). To facilitate these goals, the LRTP is updated every 5 years, to account for changes in demographics, budgets and/or project prioritization at the State and local level. Table 6-1 describes in detail a number of road centerline miles in each major road category, and Figure 6-1 provides an overview of the regional road network across the MATS jurisdiction.

County	Total	State					
	Centerline Miles	Freeway	Ramps	Trunk Highway	Major Arterial	Local Streets	Service Roads
Jones	366.95	0.00	0.08	109.82	0.00	244.22	12.83
Macon-							
Bibb	1422.64	87.06	25.97	110.86	23.36	1175.40	0.00
Monroe	59.39	20.77	0.79	3.59	0.00	34.25	0.00

Table 6-1: Road Centerline Miles in MATS Area By Type, per County



Source:  
 Macon-Bibb County Planning & Zoning Commission

Figure 6-1: Road Network for MATS MPO Service Area

## Road and Bridge Projects

Table 6-2 below lists the road and bridge projects adopted by the MATS Policy Committee. The initial list for this LRTP Update was adopted on November 9, 2016. Projects on this list are in priority order, as decided by



the MATS Policy Committee in consultation with Georgia Dept. of Transportation Office of Planning. The guidelines for setting road and bridge project prioritization are as follows:

1. **First Priority - Projects listed in the original MATS 2040 LRTP identified as ongoing (i.e., already underway or about to begin).** Delaying existing projects to promote others where plans have not been finalized would introduce logistical complications, and potentially create equity concerns
2. **Second Priority - Projects with higher need, as assessed by local planning and engineering staff.**

The operational definition of need used here prioritizes:

2040. *Safety and State of Good Repair* – Projects which were determined as necessary to maintain or repair deficiencies in existing road and bridge infrastructure were prioritized above new projects. The specific order of prioritization among these projects was determined based on consultation with County engineering staff and GDOT Office of Planning.

Figures 5-2 through 5-6 below indicate the locations in the Statewide network identified by GDOT Office of Planning for capacity expansion, and as having insufficient Level of Service by 2040.

2041. *Economic Development Potential* – This includes projects which improved freight movement, relieve congestion or coordinate travel infrastructure with anticipated economic development activities at regional activity centers.

- **Third Priority - New projects identified by public input and recommendations from elected officials.** Projects in this category are primarily associated with pedestrian and bicycle infrastructure, and repair projects which were not otherwise prioritized as immediately critical to the state of good repair.

In addition to prioritizing the project list, Table 6-2 also provides the following information:

- The list identifies how many totals, and which specific, planning factors identified under the FAST Act are addressed by each project;
- Whether or not the project is part of the current Transportation Improvement Program (TIP) for the MATS region. A project that is part of the current TIP has at least begun the preliminary engineering and environmental assessments necessary to begin construction, and may already be under construction;
- The anticipated total project cost for each of the projects

Finally, Figure 6-7 provides a locational orientation to where the projects in Table 6-2 are located throughout the MATS region.

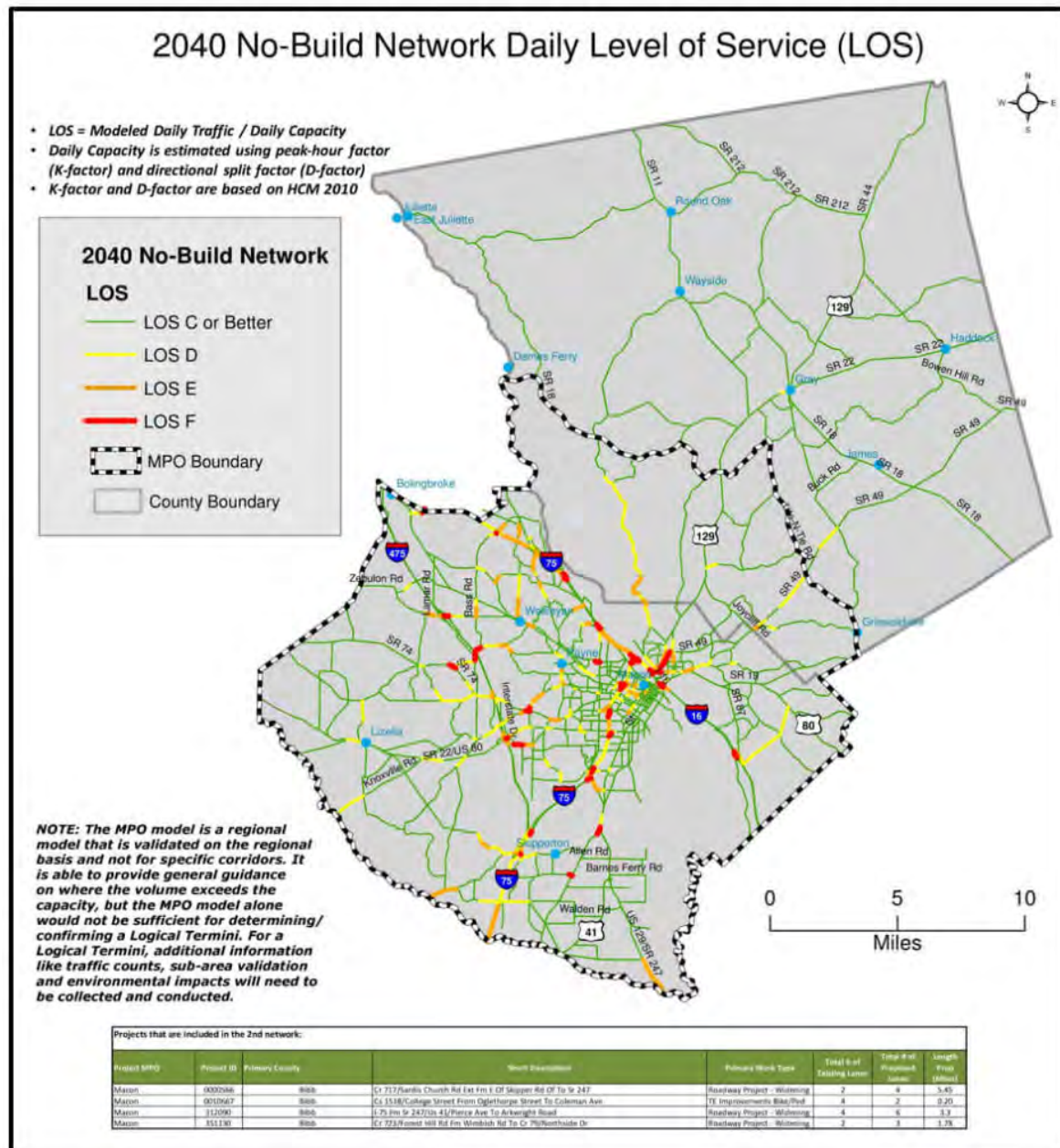


Figure 6-2: Daily Level of Service in 2040 MATS Area if No Transportation Projects Are Undertaken | Source: Georgia Dept. of Transportation, Office of Planning

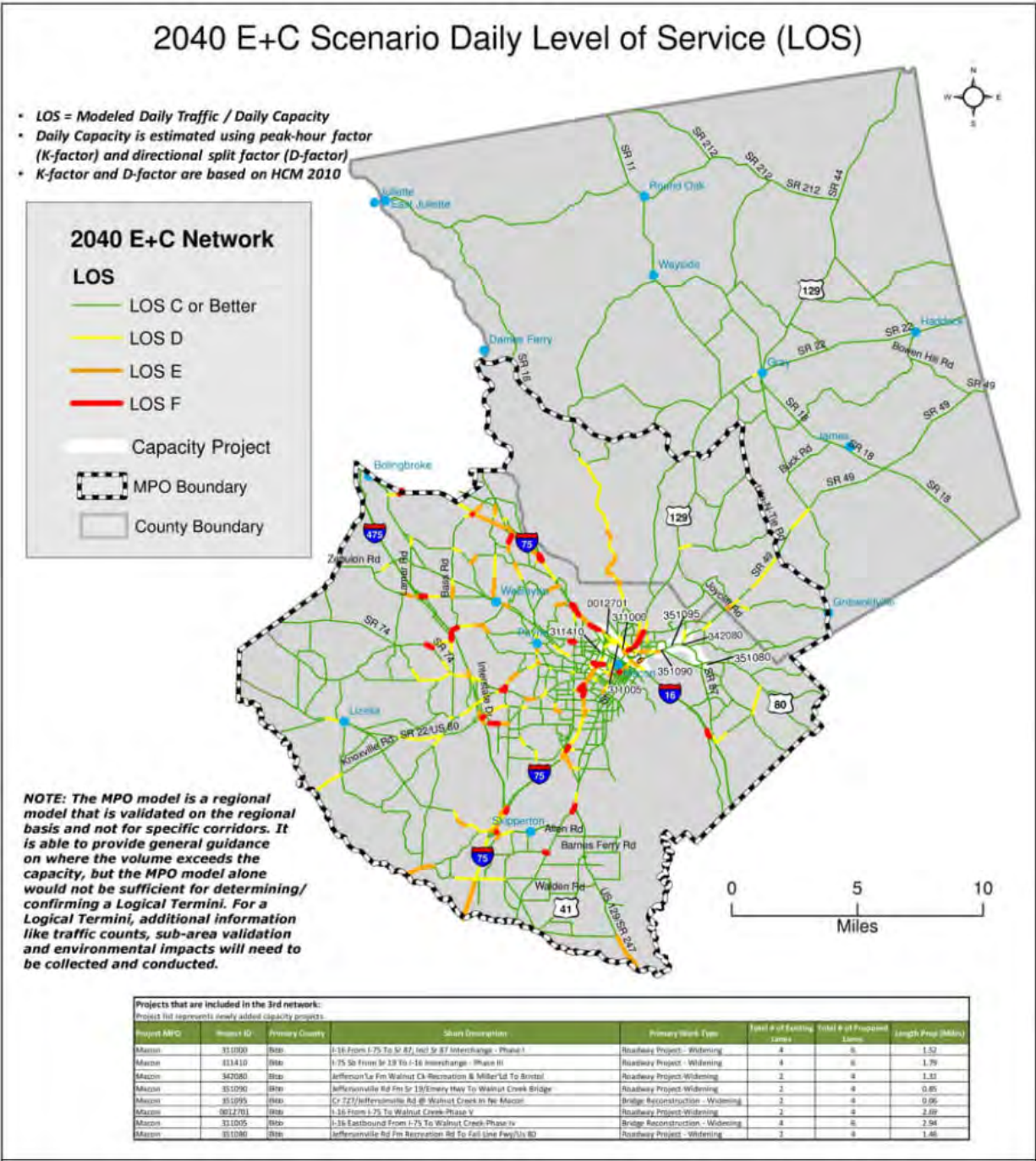


Figure 6-3: Daily Level of Service in 2040 MATS Area if Projects Currently Underway or Planned Are Completed | Source: Georgia Dept. of Transportation, Office of Planning



Figure 5-4: Daily Level of Service in 2040 MATS Area As Envisioned Under Current Statewide Transportation Improvement Program (STIP)

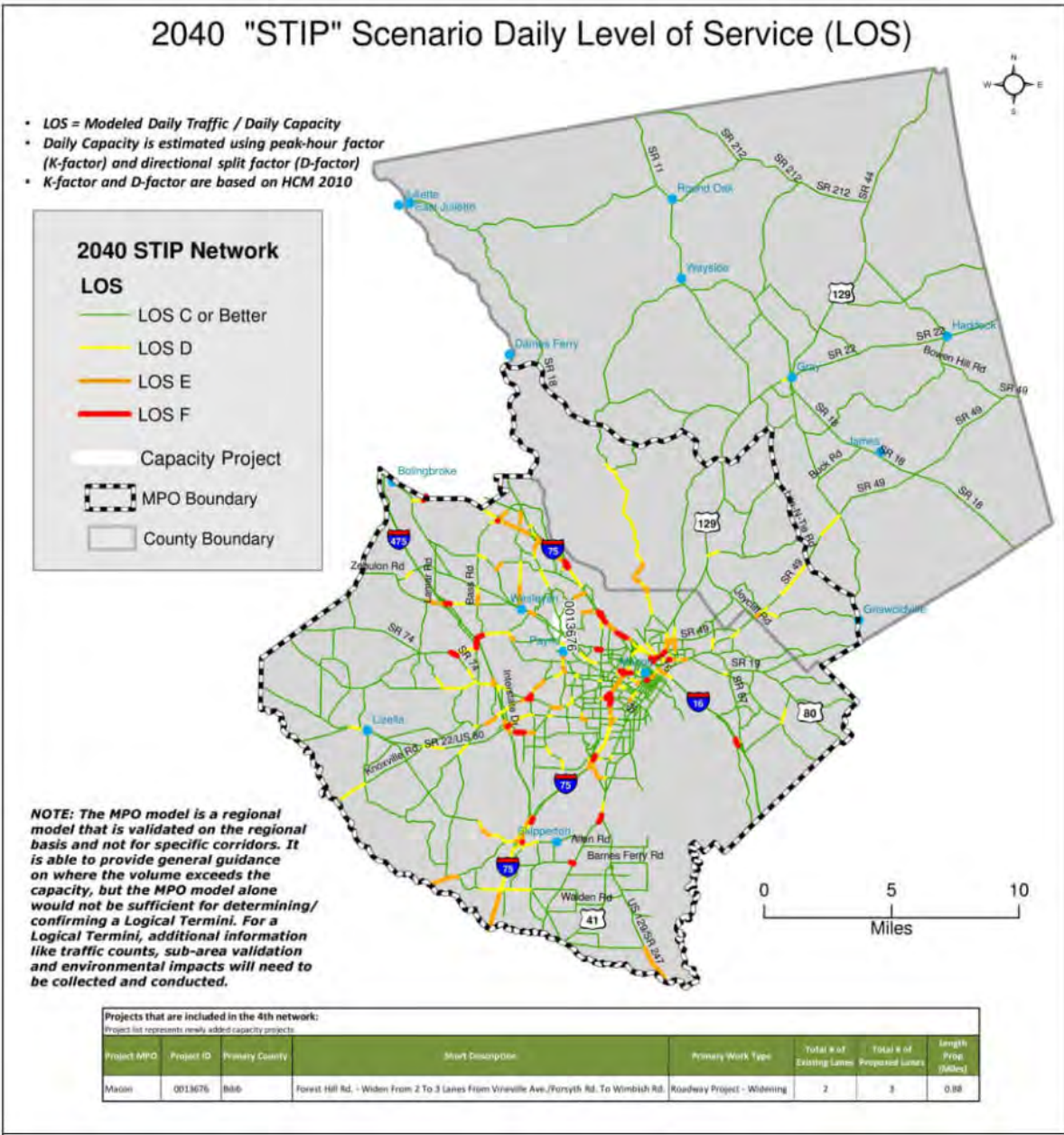


Figure 6-4: Daily Level of Service in 2040 MATS Area As Envisioned Under Current Statewide Transportation Improvement Program (STIP)



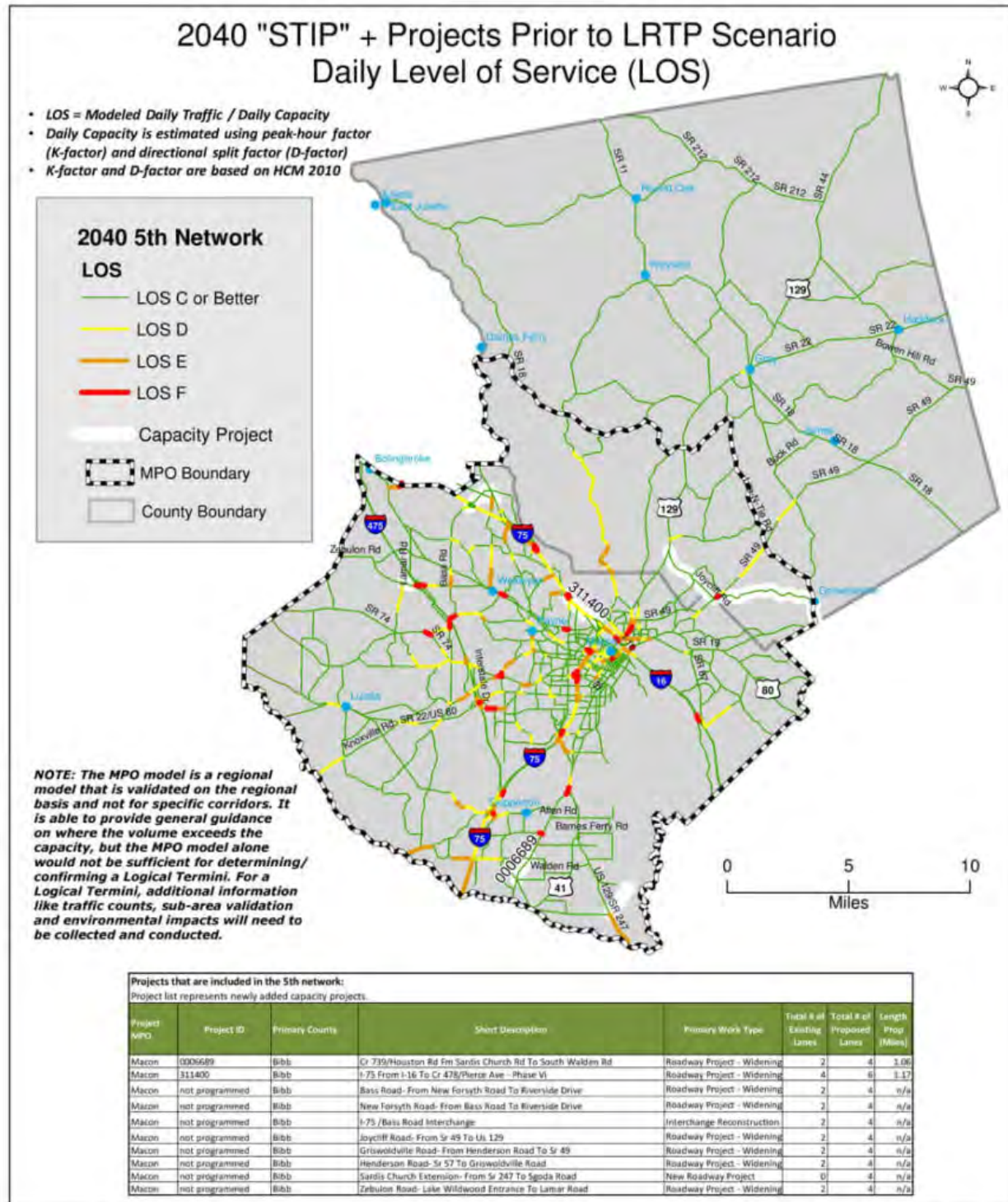
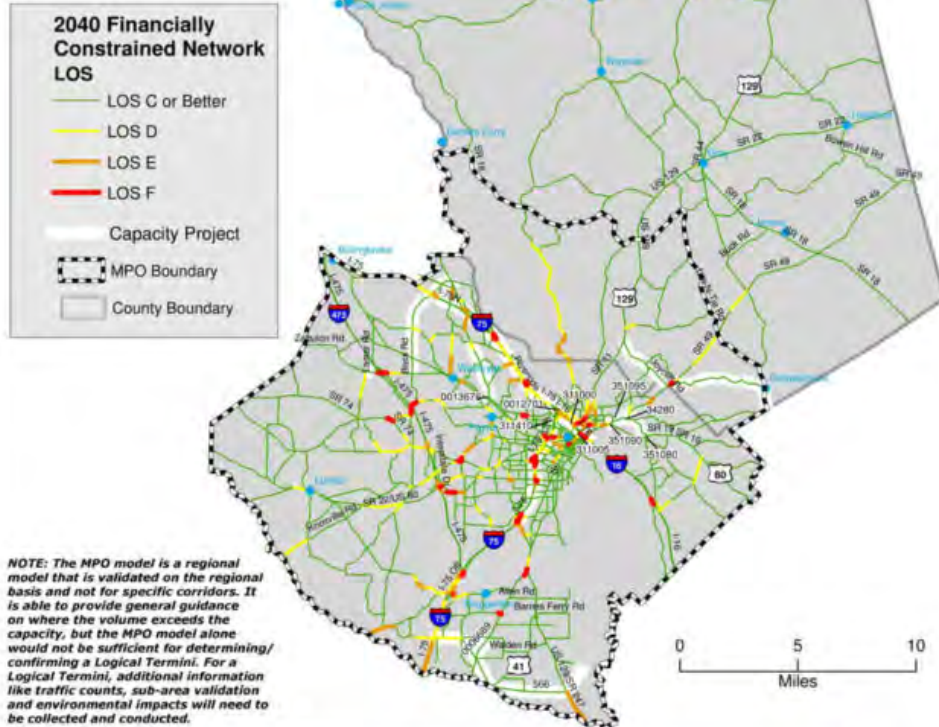


Figure 6-5: Daily Level of Service in 2040 MATS Area As Envisioned Under Current Statewide Transportation Improvement Program (STIP), Emphasizing Projects Beginning 2018 Through 2020

LOS = Modeled Daily Traffic / Daily Capacity  
Daily Capacity is estimated using peak-hour factor (K-factor) and directional split factor (D-factor)  
K-factor and D-factor are based on HCM 2010

[illegible]

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Priority Number	GDOT Project ID#	Description	Project Type	County	Number of LRTP Goals Addressed	Promote Multimodal and Affordable Travel Choices for people and freight?	Manage Congestion & System Reliability?	Improve Air Quality, Protect the Environment, Improve Quality of Life, and Promote Good Land Use Planning?	Connect People?	Improve Infrastructure Condition?	Ensure Equity?	Increase Safety, Health and Security?	Support economic vitality?	Improve resiliency and reduce stormwater impacts?	Enhance travel and tourism?	In FY 18-21 TIP?	Funding in the 18-21 TIP years	Total Project Cost	Total Project Outstanding Balance (i.e., Total Cost - (FY 14/17 TIP + FY 18-21 TIP))
1.	0009861	Replacement of bridges on Houston Rd at Rocky Creek & Tobosofkee Creek and overflows	Bridges	Bibb	6	X			X	X	X	X		X		Yes	\$23,008,668.49	\$23,008,668.49	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
2.	N/A	Middle Georgia Regional Airport - Runway overpass/tunnel for Sardis Church Rd. Extension and Avondale Mill Rd.	Roadway Project	Bibb	3	X			X				X					\$6,000,000.00	\$6,000,000.00
3.	N/A	7th St. Truck Route - 7th St. @ Walnut & 7th St. @ Eisenhower - Roundabout and Improvements	Roadway Project	BIBB	7	X	X	X		x		X	X		X			\$12,650,000.00	\$12,650,000.00
4.	N/A	Pierce Ave. (SR 247) - Pedestrian improvements and bike lanes from Vineville Ave. to Riverside Dr.	TE/Bike/Ped	Bibb	5	X		X	X		X	X						\$2,500,000.00	\$2,500,000.00
5.	311005-	I-16 Eastbound from I-75 to Walnut Creek-Phase IV	Bridge Reconstruction	Bibb	5	X	X		X	X		X				Yes	\$143,931,297.00	\$143,931,297.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
6.	0012701	I-16 from I-75 to Walnut Creek-Phase V	Roadway Project	Bibb	5	X	X		X	X		X				Yes	\$95,586,019.00	\$95,586,019.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
7.	311400	I-75 from I-16 to CR 478/Pierce Ave - Phase VI	Roadway Project	Bibb	5	X	X		X	X		X						\$42,006,315.82	\$42,006,315.82
8.	N/A	Bass Rd. widening, Phase I: I-75 Bowman Rd. to New Forsyth Rd.	Bridges & Roadway Project	Bibb	6	X	X	X		X		X	X					\$24,391,717.00	\$24,391,717.00
9.	N/A	Bass Rd. widening, Phase II: Bowman Rd. to Westchester Dr.	Roadway Project	Bibb	6	X	X	X		X		X	X					\$9,112,478.00	\$9,112,478.00
10.	331870	Tucker Rd. - Replace Bridge at Rocky Creek	Bridges	Bibb	5				X	X	X	X	X					\$4,233,568.00	\$4,233,568.00
11.	N/A	Safety Improvements Eisenhower Parkway from Bloomfield Dr to C Street	Safety Project	Bibb	7	X		X	X	X	X	X	X					\$1,000,000.00	\$1,000,000.00
12.	0013676	Forest Hill Rd. - Widen from 2 to 3 lanes from Vineville Ave./Forsyth Rd. to Wimbish Rd.	Roadway Project	Bibb	4		X		X	X		X						\$13,853,807.00	\$13,853,807.00
13.	N/A	Safety Improvements Emery Hwy from Spring Street to Irwinton Highway	Safety Project	Bibb	6	X		X	X	X	X	X						\$1,000,000.00	\$1,000,000.00
14.	N/A	Safety Improvements Gray Hwy from I-75 to Jones County Line	Safety Project	Bibb	6	X		X	X	X	X	X						\$1,000,000.00	\$1,000,000.00

15.	N/A	I-75/Riverside Drive Interchange - Signalize interchange. Modify ramps to add turn lanes & storage. Run fiberoptic.	Intersection/ Signal/ Safety	Bibb	2		X				X							\$755,777.00	\$755,777.00
16.	0006659	Peake Rd. bridge replacement - Replace Bridge at Rocky Creek	Bridges	Bibb	5			X	X	X	X	X						\$1,833,329.00	\$1,833,329.00
17.	0014897	I-16 EB & WB @ OCMULGEE RIVER OVERFLOW	Bridge Replacement	Bibb	3				X		X		X		Yes	\$10,265,302.00	\$11,250,000.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost	
18.	0014895	SR 247 @ NS #718364M IN MACON	Bridge Replacement	Bibb	5	X	X		X		X	X			Yes	\$ 2,765,302.00	\$3,250,000.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost	
19.	0014896	CR 742/BASS ROAD @ NS # 718357C 2 MI W OF MACON	Bridge Replacement	Bibb	4	X	X		X		X				Yes	\$ 4,265,302.00	\$5,000,000.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost	
20.	0014899	CR 5813/COLLEGE STREET @ NS #718370R IN MACON	Bridge Replacement	Bibb	5	X	X		X		X	X			Yes	\$ 250,000.00	\$2,700,000.00	\$1,950,000.00	
21.	N/A	I-75 Corridor: Mercer University Drive- NB and SB Ramp Intersections (as a result of failing 2012 and 2040 LOS)	Traffic Signals	Bibb	2		X		X								\$200,000.00	\$200,000.00	
22.	N/A	I-75 Corridor: Eisenhower Parkway- NB Ramp Intersection (as a result of failing 2040 LOS)	Traffic Signals	Bibb	2		X		X								\$200,000.00	\$200,000.00	
23.	N/A	I-75 Corridor: Pio Nono Avenue NB Ramp Intersection	Traffic Signals	Bibb	2		X		X								\$200,000.00	\$200,000.00	
24.	N/A	I-75 Corridor: Between Bass Road to Riverside Drive (as a result of failing 2040 LOS)	Auxiliary Lanes	Bibb	2		X		X								\$6,200,000.00	\$6,200,000.00	
25.	N/A	I-75 Corridor: Riverside Drive to Arkwright Road- both directions (as a result of failing 2040 LOS)	Auxiliary Lanes	Bibb	2		X		X								\$6,800,000.00	\$6,800,000.00	
26.	N/A	I-75 Corridor: Pierce Avenue at intersection with Riverside Drive (as a result of failing 2012 and 2040 LOS)	Turn Lanes	Bibb	2		X		X								\$600,000.00	\$600,000.00	
27.	N/A	I-75 Corridor: Forsyth Street- NB off ramp (as a result of failing 2012 and 2040 LOS)	Turn Lanes	Bibb	2		X		X								\$300,000.00	\$300,000.00	
28.	N/A	I-75 Corridor: Forsyth Street to Mercer University Drive- Both Directions (as a result of failing 2012 and 2040 LOS)	Auxiliary Lanes	Bibb	2		X		X								\$10,700,000.00	\$10,700,000.00	
29.	N/A	I-75 Corridor: Mercer University Drive to Eisenhower Parkway- both directions (as a result of failing 2040 LOS)	Auxiliary Lanes	Bibb	2		X		X								\$2,600,000.00	\$2,600,000.00	



30.	N/A	I-75 Corridor: Eisenhower Parkway to Pio Nono Avenue in Both Directions	Auxiliary Lanes	Bibb	2		X			X							\$8,100,000.00	\$8,100,000.00
31.	0013712	Replace Railroad Bridge on SR 11/SR 49/US 41 @ Norfolk Southern #734080Y, 1.4 Miles South of Macon	Bridges	Bibb	4	X			X		X	X			Yes	\$11,149,539.28	\$12,118,732.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
32.	0013921	Bridge Replacement - Replace Bridge on I-475 @ CR 742/Tucker Rd, 2 miles West of Macon.	Bridges	Bibb	2				X		X				Yes	\$ 3,878,460.00	\$4,350,000.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
33.	0014072	Bridge Replacement - Replace Bridge on I-16 Eastbound & Westbound @ Walnut Creek 1 Mile East of Macon	Bridges	Bibb	2				X		X				Yes	\$10,030,604.00	\$10,750,000.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
34.	0000835	Reconstruction of Bridge at Norfolk Southern Railroad on Jeffersonville Rd, between Recreation Rd. and Emery Rd.	Bridges	Bibb	6	X			X	X	X	X	X				\$19,227,132.06	\$19,227,132.06
35.	351080-	Widen Jeffersonville Road from 2 to 4 thru lanes with a continuous left turn lane from Recreation Rd. to Emery Rd (US 80).	Roadway Project	Bibb	6	X			X	X	X	X	X		Yes	\$ 6,821,701.57	\$9,070,702.00	Fully accounted in FY 2018-2021 TIP to reflect Total Project Cost
36.	N/A	Bass Rd. widening, Phase III - Westchester Dr. to Zebulon Rd. widened from 2 to 4 lanes	Roadway Project	Bibb	6	X	X	X	X		X	X	X				\$21,942,036.00	\$21,942,036.00
37.	0007029	Columbus Rd (SR 22) - Replace Bridge at Echeconnee Creek	Bridges	Bibb, Crawford	2				X		X						\$774,061.41	\$774,061.41
38.	333150	Emery Hwy - Reconstruct Bridge at Walnut Creek	Bridges	Bibb	3					X		X	X				\$5,902,371.00	\$5,902,371.00
39.	N/A	Henderson Rd. - Widen to 4 lanes from SR 57 to Griswoldville Rd.	Roadway Project	Jones	0												\$11,089,192.00	\$11,089,192.00
40.	N/A	Griswoldville Rd. - Widen to 4 lanes from Henderson Rd. to SR 49	Roadway Project	Jones	0												\$36,963,568.00	\$36,963,568.00
41.	N/A	Joycliff Rd. - Widen to 4 lanes from SR 49 to US 129	Roadway Project	Jones	0												\$35,732,383.00	\$35,732,383.00
42.	N/A	Sardis Church Rd. Extension from SR 247 to Sgoda Rd. - New Road on new location project. Includes study	Roadway Project	Bibb	2	X						X					\$62,409,791.00	\$62,409,791.00
43.	N/A	Bolingbroke Bike Loop - Bolingbroke to Estes Rd, to Zebulon Rd., to Bass Rd., to New Forsyth Rd., to Macon-Bibb County	TE/Bike/Ped	Bibb, Monroe	4	X		X	X	X							\$946,843.64	\$946,843.64
44.	0016130	SR 18 @ Ocmulgee River, 13 Miles East of Forsyth	Bridges	Jones	0										Yes	\$154,000.00	\$154,000.00	\$0.00

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	Project Balances	\$353,174,369.93
	Total for TIP Obligated Projects	\$312,106,195.34
	Grand Total	\$665,280,565.27

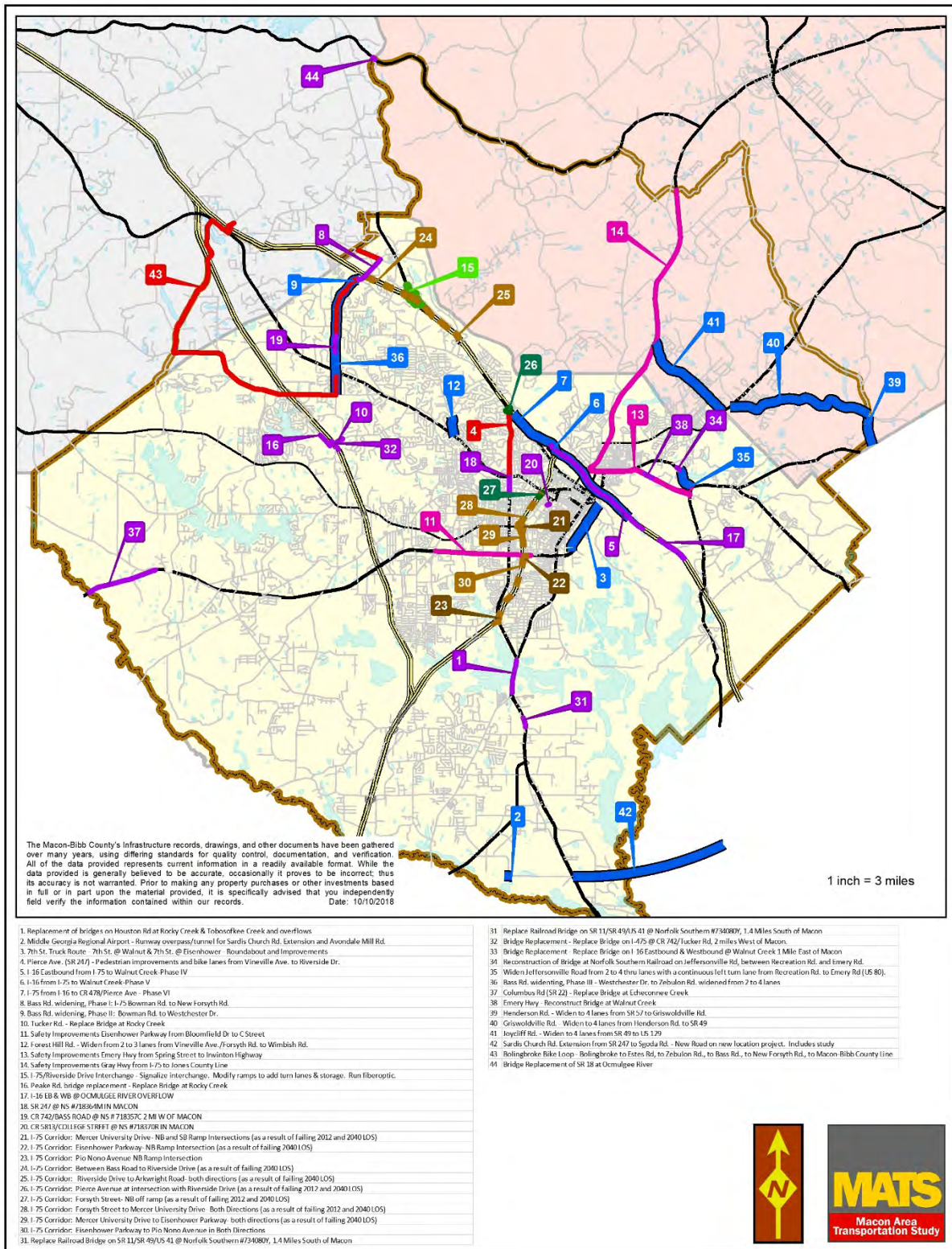


Figure 6-7 Road and Bridges Projects Throughout MATS Area

## Costs and Revenue Estimation

### Costs

The total cost of all obligated road and bridge projects listed in Table 6-2 above is estimated at **\$665,267,407.27**. This value is based on project cost estimates from GDOT and Macon-Bibb County Engineering Department. It includes an assumption of 2% increase in non-obligated project costs each year over the entire planning and construction duration of the project. This assumption is an average, based on GDOT's historic project management experience with road and bridge projects. While in any specific year this 2% assumption may be high or low, the expectation is that over the operational life of this LRTP, individual years will balance out around a 2% inflation rate. This assumption is a continuation of the project cost inflation assumptions applied in the original 2040 LRTP.

Of the \$665,267,407.27, the amount already obligated to these projects (as of March 26, 2019) is **\$312,093,037.34**. Reducing the total project costs by these expended or obligated amount leaves a net outstanding cost of **\$353,174,369.93**.

### Revenues

Revenues for road and bridge projects were estimated using historic funding patterns. GDOT provided MATS with 10 years (FY 2007 through 2016, inclusive) of funding allocations for both highway capital and highway maintenance expenditures, broken out by Federal, State, and Local funding sources. Each of these funding sources was averaged over the 10 year period to estimate the revenues from each funding source in FY 2017.

#### Highway Capital Expenditures

<u>Fiscal Year</u>	<u>Federal Funding</u>	<u>State Funding</u>	<u>Local Funding</u>	<u>Total Funding</u>
<b>2007</b>	\$16,535,893.25	\$3,912,671.32	\$100,000.00	\$20,548,564.57
<b>2008</b>	\$13,974,844.15	\$3,419,364.41	\$195,584.14	\$17,589,792.70
<b>2009</b>	\$29,367,868.41	\$7,066,436.12	\$45,431.00	\$36,479,735.53
<b>2010</b>	\$72,670,656.41	\$17,398,099.20	\$1,758,916.06	\$91,827,671.67
<b>2011</b>	\$10,593,438.99	\$949,092.14	\$560,714.29	\$12,103,245.42
<b>2012</b>	\$2,751,912.75	\$387,055.26	\$133,422.93	\$3,272,390.94
<b>2013</b>	\$33,846,017.46	\$6,085,882.14	\$2,222,850.29	\$42,154,749.89
<b>2014</b>	\$3,574,497.28	\$136,200.00	\$250,000.00	\$3,960,697.28
<b>2015</b>	\$47,055,432.40	\$11,763,858.09	\$530,981.54	\$59,350,272.03
<b>2016</b>	\$6,492,080.51	\$1,301,485.12	\$385,800.00	\$8,179,365.63

Table 6-3: Historic Pattern of Highway Capital Funding | Source: Georgia Dept. of Transportation, Office of Planning



**Highway Maintenance Expenditures**

<b>Fiscal Year</b>	<b><u>Federal Funding</u></b>	<b><u>State Funding</u></b>	<b><u>Local Funding</u></b>	<b><u>Total Funding</u></b>
<b>2007</b>				
<b>2008</b>				
<b>2009</b>				
<b>2010</b>	\$3,315,735.81	\$0.00	\$0.00	\$3,315,735.81
<b>2011</b>	\$3,311,559.43	\$544,548.53	\$0.00	\$3,856,107.96
<b>2012</b>				
<b>2013</b>				
<b>2014</b>	\$213,254.61	\$53,313.66	\$0.00	\$266,568.27
<b>2015</b>	\$187,940.80	\$46,985.20	\$0.00	\$234,926.00
<b>2016</b>	\$7,254,068.54	\$1,342,678.12	\$0.00	\$8,596,746.66

Table 6-4: Historic Pattern of Highway Maintenance Funding | Source: Georgia Dept. of Transportation, Office of Planning

From FY 2018 onward, the revenue value is inflated by 2% each year to account for coverage of increased project costs. This 2% reflects the same assumptions of GDOT non-obligated project costs and an assumption that cost sharing arrangements between the Federal, State and Local project partners will continue at their inflation-adjusted historic averages.

Summing the inflation adjusted values for the Federal, State and Local categories from FY 2017 through FY 2040, the total revenue estimate values Highway Capital Expenditure and Highway Maintenance projects are provided in Table 6-5 below.

### Highway Capital Projects Revenue Estimates

	Summed Estimates @ 2% Inflation	
Federal	\$	720,580,270.82
State Match	\$	159,471,840.55
Local Match	\$	18,811,967.86
<b>Total Estimated Revenues</b>	<b>\$</b>	<b>898,864,079.24</b>
<b>Finalized TIP Project Adjustments (as of 10/8/2018)</b>	<b>\$</b>	<b>312,106,195.34</b>
<b>Net Highway Capital Revenues Available</b>	<b>\$</b>	<b>586,757,883.90</b>
<b>Outstanding Road &amp; Bridge Projects in LRTP</b>	<b>\$</b>	<b>353,174,369.93</b>
<b>Capital Surplus (deficit)</b>	<i>New Estimate (10/8/2018)</i>	<b><u>\$ 233,583,513.96</u></b>

### Highway Maintenance Revenue Estimates

	Summed Estimates @ 2% Inflation	
Federal	\$	86,900,410.29
State Match	\$	12,092,845.55
Local Match	\$	-
<b>Total Estimated Revenues</b>	<b>\$</b>	<b>98,993,255.84</b>
<b>FY 18-21 TIP Project Adjustments (as of 7/6/2017)</b>	<b>\$</b>	<b>32,480,000.00</b>
<b>Net Highway Capital Revenues Available</b>	<b>\$</b>	<b>66,513,255.84</b>
<b>Outstanding Road &amp; Bridge Projects in LRTP</b>	<b>\$</b>	<b>-</b>
<b>Maintenance Surplus (deficit)</b>	<i>New Estimate (as of 7/6/2017)</i>	<b><u>\$ 66,513,255.84</u></b>

Table 6-5: Projected Highway Capital and Maintenance Funding 2017 – 2040

### Statement of Fiscal Balancing

Comparing the net revenue and net cost estimates, the Roads and Bridges project list has identified an anticipated surplus of **\$233,583,513.96** for Highway Capital projects over the operating life of the updated 2040 LRTP

Net Anticipated Revenues \$898,864,079.24

- Net Anticipated Costs: \$659,066,732.00
  - Estimated TIP Obligations (as of 10/8/2018) \$312,106,195.34
  - Outstanding Road & Bridge Projects in LRTP \$353,174,369.93

Anticipated Capital Surplus: **\$233,583,513.96**

Similarly, for Highway Maintenance the anticipated surplus is \$66,513,255.84

Net Anticipated Revenues: \$98,993,255.84

- Net Anticipated Costs: \$32,480,000.00

Anticipated Capital Surplus: **\$66,513,255.84**

These surpluses are the totals across all Federal, State and Local funding sources. How much of that surplus accrues to each level of government is, in part, dependent on the specific funding sources used to pay for the individual projects.

Normal cost sharing arrangements for federally supported transportation projects involve the federal government paying up to 80% of the total project cost, with the remaining 20% (commonly known as “match”) being the responsibility of the State and Local participants (23 US Code §120(b): <https://www.fhwa.dot.gov/map21/docs/title23usc.pdf>). Since the passage of the original MATS 2040 LRTP, there have been significant updates to how the State and Local portion are being generated.

### ***Georgia Transportation Funding Act Of 2015***

On May 4, 2015, the Governor signed the Georgia Transportation Funding Act of 2015 (GTFA 2015: <http://www.legis.ga.gov/Legislation/en-US/display/20152016/HB/170>). This act provides for a variety of State funding sources (i.e., vehicle registration fees, hotel/motel occupancy taxes, a 1% sales tax on retail motor fuels up to \$3.00 per gallon) which are to be dedicated to funding transportation projects. Since passage of this act, the practical effect has been for GDOT to identify certain transportation projects of statewide significance, which are then fully funded in their 20% match requirement by supplemental state funding. The result is that federally sponsored road and bridge projects which are matched with GTFA 2015 funds require significantly lower budget contributions from the local jurisdictions where the projects are located. In many cases, the local funding component is completely eliminated.

### ***Local Revenue Options***

Just as GTFA 2015 provides a mechanism for the State to assume the full match burden of road and bridge projects, there are policies in place by which Local partners can either assume the 20% match portion, or even fully assume the entire cost of the project (which would effectively remove the project from the LRTP project list).

### ***Special Purpose Local Option Sales Tax***

The Special Purpose Local Option Sales Tax (SPLOST) is a mechanism under Georgia state law (Title 48, Ch. 8, Article 3, Part 1: <http://www.lexisnexis.com/hottopics/gacode/>), whereby voters within a county can, within certain limits, assign a self-imposed 1% sales tax for the purpose of funding for a variety of capital improvement projects. Originally passed in 1985, the legislation has undergone several legislative

updates. The most recent SPLOST in the MATS region passed in the Macon-Bibb County consolidated government on November 8, 2016, authorizing \$35,000,000 for various transportation projects throughout the Macon-Bibb area. To the extent that projects are on the road and bridges projects list for this 2040 LRTP Update, these projects can have their match paid for through SPLOST funds, either in part or all the way up to the full 20% match requirement. Alternatively, if the MATS Policy Committee were to decide to accelerate a project faster than GDOT's timetable, they could use SPLOST funds to remove it from the LRTP project list entirely. This strategy would allow the jurisdiction sponsoring the project to proceed at their own pace, but it would also forego any opportunity for State or Federal support for the project.

### ***Georgia Transportation Infrastructure Bank***

Another local funding option is the Georgia Transportation Infrastructure Bank (GTIB). GTIB was established to provide a revolving loan fund (and in some cases, grant funding) for qualified eligible infrastructure projects, including mass transit and bicycle infrastructure (Title 32, Ch. 10, Article 2: <http://www.lexisnexis.com/hottopics/gacode/>)[1]. Because the GTIB program allows local units of government to borrow for project costs over the design life of a project, the effect of the GTIB program is to reduce the immediate budget impacts of coming up with the local match for large infrastructure and facilities projects. For example, if GTIB financing were used to meet local match requirements for a 5-year construction project for a bridge with a 30-year design life, the local jurisdiction could issue a bond to meet the match requirements and pay it back over a period no longer than 30 years. This has a less intense fiscal impact on the local government than financing the match requirement in each of the 5 budget years over which the bridge is being constructed.

SPLOST and GTIB are not mutually exclusive. A local jurisdiction could elect to use either, both or neither of these funding sources to address local match requirements for transportation projects.

## **Projects for Future Study and the LRTP Amendment Process**

In addition to the projects in Table 6-2, several supplemental projects were identified through the public involvement and MATS committee processes. Table 6-6 below identifies these projects using the same evaluation criteria as was used in Table 6-2.

Unlike Table 6-2, the projects in Table 6-6 are not listed in any particular priority order. Many of these are new projects for consideration, and as of yet have not had any programmatic or fiscal evaluation. Any project costs associated with these projects are considered advisory, and subject to change.



<u>Unprioritized</u> Project Number	GDOT Project ID#	Description	Project Type	County	Promote Multimodal and Affordable Travel Choices for people and freight?	Manage Congestion & System Reliability?	Improve Air Quality, Protect the Environment, Improve Quality of Life, and Promote Good Land Use Planning?	Connect People?	Improve Infrastructu re Condition?	Ensure Equity?	Increase Safety, Health and Security?	Support economic vitality?	Improve resiliency and reduce stormwater impacts?	Enhance travel and tourism?	<u>Proposed</u> Network Year	In LRTP?	In FY 14-17 TIP?	Anticipated Budget
1.	N/A	<u>Lane reorientation on US 41/Pio Nono Ave. between Mercer Univ. Dr. and Anthony Rd. Add dedicated center left turn lane, crosswalk across Pio Nono, sidewalks on both sides</u>	<u>Roadway Project</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
2.	<u>N/A</u>	<u>Lane reorientation on US 41/Pio Nono Ave. from Rolf Ave. to Hillcrest Ave. Add dedicated center left turn lane</u>	<u>Roadway Project</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
3.	<u>N/A</u>	<u>Improvements at US 80/Eisenhower Pkwy and US 41/GA 247/Pio Nono Ave. Road maintenance and restriping, crosswalk improvements, improved transit access points, improve dedicated left turn lanes from US 80 eastbound to GA 247 northbound</u>	<u>Roadway Project</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
4.	<u>N/A</u>	<u>Resurfacing of US 41/Pio Nono Ave. from I-75 to Hawkinsville Rd.</u>	<u>Resurfacing/Maintenance</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
5.	N/A	<u>Extension of 2nd St. pedestrian improvements from Ash St./new bridge alignment down to Eisenhower Blvd. Possible new roundabout at intersection of 2nd St./Bowden St./Grants Chapel Alley.</u>	<u>TE/Bike/Ped</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
6.	<u>N/A</u>	<u>Central Georgia Rail Trail - Macon to Milledgeville pedestrian/bike trail conversion on abandoned CSX right of way</u>	<u>TE/Bike/Ped</u>	<u>Bibb, Jones</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>\$7,077,123.90</u>
7.	<u>N/A</u>	<u>Add sidewalks along Napier Ave. from Park St. to Forsyth Ave.</u>	<u>TE/Bike/Ped</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
8.	<u>N/A</u>	<u>Replace existing crosswalk signals with new signals incorporating countdown clocks</u>	<u>TE/Bike/Ped</u>	<u>Bibb</u>											<u>2030</u>	<u>No</u>	<u>No</u>	<u>New Project</u>
9.	0006689	Houston Rd. - Widen from 2 to 4 lanes from north of Sardis Church Rd. Extension (approx. South Walden Rd.) to existing Sardis Church Rd./North Walden Rd.	Roadway Project	Bibb											2040	Yes	No	<u>\$8,390,118.16</u>

10.	N/A	Zebulon Rd. - Widen Zebulon Rd. from Lake Wildwood entrance to Lamar Rd. from 2 to 4 lanes. Add turn lanes at Lamar Rd. and Zebulon Rd.	Roadway Project	Bibb											2040	Yes	No	\$1,783,137.00
11.	331750	Houston Rd. - Standardize lanes from south of Sardis Church Rd. extension (South Walden Rd.) to US 41 in Houston County	Roadway Project	Bibb, Houston											2040	Yes	No	\$453,630.00
12.	Local	Tucker Rd. (Phase 2) - Resurfacing, striping, standardization, turn lanes, multi-use path from Foster to Idlewood. Phase I from Idlewood to Forsyth is complete	Roadway Project	Bibb											2040	Yes	No	\$1,320,171.00
13.	N/A	Bass Rd. widening, Phase IV - New Forsyth Rd. to Riverside Dr. widened from 2 to 3 lanes	Roadway Project	Bibb	6	X	X	X		X		X	X		2040		No	\$9,525,089.00
14.	N/A	Widen Forest Hill Rd. from Hall to Northside Dr.	Roadway Project	Bibb	6	X	X	X		X		X	X		2040		No	New Project

From time to time it will be necessary to modify the financially constrained project list to reflect updated project costs, changes in project timetables, or add and remove projects from consideration. These actions require formal amendments to the LRTP and possibly the TIP. Both the LRTP and TIP can be amended at any time, in accordance with the procedures specified in the [MATS Public Participation Plan](#). The process for amending the LRTP project list involves the following steps:

1. Updating and/or creating new project sheets for the current TIP, to reflect changes in any projects currently underway;
2. Updating the project tables in the relevant LRTP chapters, to reflect the new projects and associated cost changes;
3. Updating the fiscal analysis in this LRTP chapter to continue demonstrating fiscal constraint (i.e., that revenues are sufficient to cover anticipated costs), even with the proposed amendments
4. Soliciting public input in accordance with the approved MATS Public Participation Plan (revised 3/9/2016), which involves;
  1. Completing a 15 day public review period with drafts of the proposed amended LRTP project list and (if necessary) TIP, available for download from the MATS website
  2. Soliciting comments and recommendations from the MATS Citizen Advisory Committee and MATS Technical Coordinating Committee
5. After close of public comment period, formal adoption of the amended LRTP project list and (if necessary) TIP by the MATS Policy Committee.

In accordance with these procedures, the following project list amendments have been made to the LRTP Roads and Bridges Projects List:

**Amendment Date: 08/02/2017**

1. GDOT Projects #342080, #351090 and #351095 (all associated with upgrades to Jeffersonville Rd.) are hereby removed from the project list. These projects have been fully obligated under the FY 14-17 TIP, and were carried through under the LRTP as approved on 5/3/2017 in order to maintain their eligibility. With the adoption of the FY 2018-2021 TIP, these projects will no longer have bearing on the LRTP project list, and therefore should not be included in future fiscal analyses.
2. GDOT Projects #311000, #0012699, #0012700, and #311410 (Phases 1, 1B, 2 and 3, respectively, of the I-16/I-75 Interchange upgrade), and # 0010412 (Replace Bridge on SR 49/Shurling Dr. @ Norfolk Southern Railroad 8.5 miles south of Gray) are hereby removed from the project list. These projects are under construction, and with the adoption of the FY 2018-2021 TIP will no longer have bearing on the LRTP project list. Therefore, they should not be included in future fiscal analyses.

The remaining projects on the Roads and Bridges project list have had their priority numbers adjusted to reflect the aforementioned project removals.

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**Amendment Date: 11/14/2018**

On August 6, 2018, GDOAT Office of Planning requested the following amendments to the MATS 2040 LRTP Roads and Bridges Project List:

1. GDOT Project #0013929 (Bridge Replacement at I-75 and SR 87/US 23/Riverside Dr.) is hereby removed from the project list. This project is being cancelled because the work will be subsumed under an existing GDOT project (GDOT Project #0012700)
2. GDOT Project #0014898 (Bridge Replacement on CR 1694/Oglethorpe St. at Norfolk Southern Railroad) is hereby removed from the project list. This project is being cancelled due to Norfolk Southern revocation of local match requirement.
3. GDOT Project #0016130 (Bridge Replacement on SR 18 @ Ocmulgee River, 13 Miles East of Forsyth) is hereby added to the project list. While only 14% of this project is within the MATS MPO area, because it will use federal funding it must be listed in both the LRTP Roads & Bridges project list, and the TIP. The line item in the LRTP project list represents 14% of the estimated \$1,100,000 total cost of the project (i.e., \$154,000).

The remaining projects on the Roads and Bridges project list have had their priority numbers adjusted to reflect the aforementioned project removals.

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[1] The full list of what is defined as an “eligible project” can be found in Title 32, Ch. 10, Article 2, Part 3, Sec. 122 of the 2016 GA State Code. See <http://www.lexisnexis.com/hottopics/gacode/> for specific definitions.

**Amendment Date: 5/1/2019**

On March 26, 2019, GDOAT Office of Planning requested the following amendments to the MATS 2040 LRTP Roads and Bridges Project List:

1. GDOT Project #0009861 (Replacement of bridges on Houston Rd at Rocky Creek & Tobosofkee Creek and overflows) cost is increased from \$16,807,993.00 to \$23,008,668.49 (i.e., +6,200,675.49), as part of advancing timeline on the project.

There are no changes to the priority numbers for the projects on the Roads and Bridges project list as a result of this amendment.

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[1] The full list of what is defined as an “eligible project” can be found in Title 32, Ch. 10, Article 2, Part 3, Sec. 122 of the 2016 GA State Code. See <http://www.lexisnexis.com/hottopics/gacode/> for specific definitions.



# Chapter 7 | Public Transportation

## Introduction

This section of the Macon Area Transportation Study (MATS) 2040 LRTP Update provides an overview of the current transit system and ADA service in the MATS area, and any improvements planned in the next six fiscal years (i.e., FY 2018 through FY 2023, inclusive).

## Background

The providers of public transit service for the MATS area include Jones County Transit (JCT) and the Macon-Bibb County Transit Authority (MTA). Currently, Monroe County does not have any form of public transit option anywhere within their jurisdiction.

### *Jones County*

Jones County Transit system was originally commissioned in 1997. Due to the size, demographic composition and geographic distribution of the population of Jones County, JCT operates as a Coordinated Transportation System, which “combines all relevant personal transit needs in the County under a single provider who has direct control.”<sup>[1]</sup> The JCT coordinates with the Georgia Dept. of Human Services (DHS), and the Georgia Dept. of Transportation Section 5311 (GDOT 5311) program to conduct their Coordinated Transportation System program.<sup>[2]</sup>

### *Macon-Bibb County*

Originally a privately owned concern, the City of Macon purchased their transit system from the private operator in 1973; MTA as an agency was formed in 1980 by an act of the Georgia legislature. MTA was first funded by local sources but finally applied for federal funding assistance in FY 2000. Currently, funding for the MTA system is provided by federal, state and local sources as well as system revenues.

## Description of Service

### *Jones County*

JCT operates on a reservation basis, Monday through Friday from 8:00 a.m. to 5:00 p.m. The system is run under sub-contracts with Quality Trans, Inc., administered by the Middle Georgia Regional Commission (for those trips associated with DHS supported activities), and with Middle Georgia Community Action Agency (MGCAA: for trips associated with the GDOT 5311 program).

For trips associated with DHS supported activities, there is no charge to the passenger; Quality Trans, Inc. is paid according to the schedule described in Table 7-1 below. Currently, Quality Trans Inc. operates one van (wheelchair accessible) covering the Jones County MATS area.

<b>CONTRACTOR NAME:</b>	FY2017 COST PROPOSAL - Middle Georgia Regional Commission: Baldwin, Houston, Jones, Polaski, Putnam, Twiggs and Wilkes Counties				
<b>TYPE</b>	<b>DEFINITION</b>	<b>AGING</b>	<b>DFCS</b>	<b>DBHDD</b>	<b>GAFA</b>
Core Trip	Any one-way trip that occurs between 6 AM and 6 PM. Trips are inclusive of ambulatory, wheelchair, fixed route, one-way passenger, one-way division trips, scheduled, and demand response.	\$10.00	\$20.00	\$12.00	\$20.00
Non-Core Trip	Any one-way trip that occurs between 6 PM and 6 AM. Trips are inclusive of ambulatory, wheelchair, fixed route, one-way passenger, one-way division trips, scheduled, and demand response. This will include all non-core hour trips, holidays, and weekends.	\$25.00	\$25.00	\$25.00	\$25.00
Long Distance Trip (30 - 75 MILES)	An hourly rate for the transport time of a long distance trip. A long distance trip is defined as any trip over 30 miles one-way and no more than 75 miles (will only include mileage for the passenger being counted as long distance).	\$40.00	\$40.00	\$40.00	\$40.00
Long Distance Trip (> 75 MILES)	Long distance trip is defined as any trip over 75 miles (will only include mileage for the passenger being counted as long distance).	\$40.00	\$40.00	\$40.00	\$40.00
Field Trip Hourly	Any field trip with more than 3 passengers originating at a designated location, transported to a designated location, and arriving back at the same location. To charge an hourly rate, the trip must be less than 8 hours. These trips are not charged per passenger.	\$40.00	\$40.00	\$40.00	\$40.00
Wait Rate for Field Trips and Long Distance Trips	An hourly rate for the time a driver must wait for a consumer that cannot be dropped off and picked up at a later time.	\$40.00	\$40.00	\$40.00	\$40.00
Wheelchair Trip	Any one-way trip that is ordered by a HSP that requires the use of a vehicle lift. The consumer may have temporary or permanent physical limitation (or disabilities) that prohibit or make it difficult for the consumer to climb the vehicle steps. For instance, the consumer may require the use of a mobility aid, such as a wheelchair, walker, cane, or the consumer may experience a problem which makes it difficult to climb the vehicle's steps.	\$10.00	\$20.00	\$12.00	\$20.00

Table 7-1: Reimbursement Rate Schedule for Quality Trans, Inc. for Jones County Transit System Services

For trips associated with GDOT 5311 activities, MGCAA charges the rider \$2.00 per round trip, plus \$0.50 per stop, up to a maximum of \$4.00 per day, for trips within Jones County. For trips that cross the Jones County boundary, the rider pays \$4.00 per round trip plus \$0.50 per stop, up to a maximum of \$6.00 per day. No discounts or coupons are available. MGCAA operates 3 buses (2 wheelchair accessible) throughout Jones County.

### ***Macon-Bibb***

Currently, MTA operates eleven fixed bus routes in Bibb County. The service hours for the bus routes are from 5:25 a.m. to 10:00 p.m. Monday – Friday but on Saturdays, the hours are from 5:25 a.m. to 7:00 p.m. The main transfer station for the transit system is presently located at 200 Cherry St., Macon GA (i.e., Terminal Station). This facility was originally constructed in 1916 as a hub for all 15 railroads (regional and national) operating in the Macon area. The station ceased rail operations in 1975 and was sold to private interests. It was finally purchased by City of Macon in 2002 through a TEA grant and converted into a mixed-use office, retail and multi-modal transportation center. In 2008, MTA moved their main office from the Riverside Drive garage location to the Terminal Station, and it is anticipated to be used as an intermodal regional commuter rail facility again in the future.

The regular fare for the transit system is \$1.25 for a one-way trip and \$0.50 for a transfer. Reduced fares are available for the elderly and disabled (\$0.60), and K-12 students (\$0.75). The Transit Authority sells passes at the Terminal Station for the public ([www.mta-mac.com/fares.html](http://www.mta-mac.com/fares.html)). There are also ticket vending machines available at the transfer station.

MTA also offers paratransit service, provided on demand with 24-hour prior notice via telephone appointment. Riders are charged \$2.50 one-way, \$5.00 round trip, with passes available at discounted rates (<http://www.mta-mac.com/paratransit.html>)

A general description of each MTA route is provided below. The maps on the following pages show each route individually, and the full system operated by the Macon Transit Authority. All fixed routes for transit riders operated by MTA originate from Terminal Station.

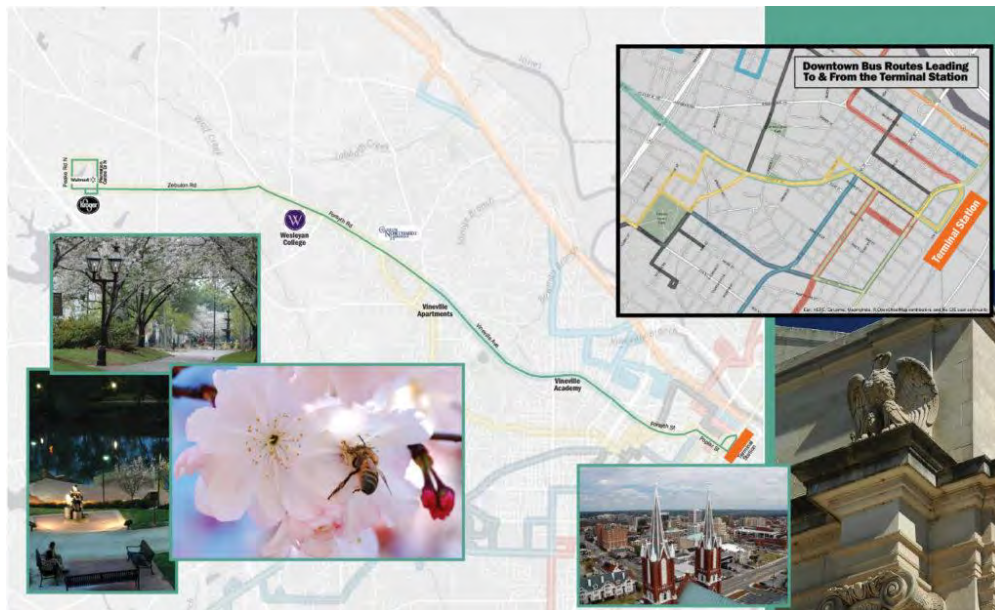


Figure 7-1: MTA Route 1 - Vineville Route/Zebulon Rd.

The service area for this route includes Washington Ave., Hardeman Ave., Vineville Ave. and Forsyth Rd. In addition, Zebulon Rd. and Plantation Dr. is included in this route. The Transit Authority operates only one bus for this route. This transit route includes service to Northside Hospital. This route runs Monday through Friday, 6:20 a.m. to 6:29 p.m.



Figure 7-2: MTA Route 2 - Bellevue-Log Cabin Route

This route includes service to Zebulon and Peake Roads. In addition, the route also serves Log Cabin Rd., Napier Ave., Forsyth Rd. and Hollingsworth Rd. This route runs Monday through Friday, 5:45 a.m. to 9:52



p.m., and Saturday 5:45 a.m. to 6:51 p.m. MTA operates two vehicles along this route on weekdays, and one vehicle on Saturdays.



Figure 7-3: MTA Route 3 - West Macon

This route serves the areas along Montpelier Ave., Columbus Road, Jackson St., Ash St. and Mercer University Drive. This route runs Monday through Friday, 5:37 a.m. to 9:53 p.m., and Saturday 5:37 a.m. to 6:33 p.m. MTA operates two vehicles along this route on weekdays, and one vehicle on Saturdays.

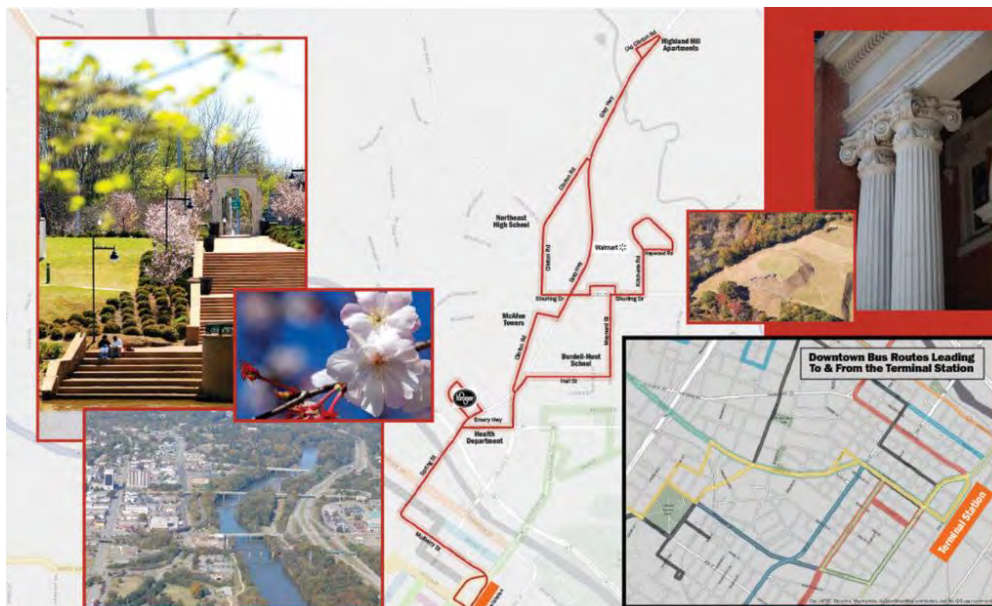


Figure 7-4: MTA Route 4 - North Highlands

Service is provided to various sites on Gray and Emery Hwy. including Baconsfield Shopping Center and the Macon-Bibb County Health Department. This route runs Monday through Friday, 5:53 a.m. to 9:51 p.m., and Saturday 5:37 a.m. to 6:15 p.m.



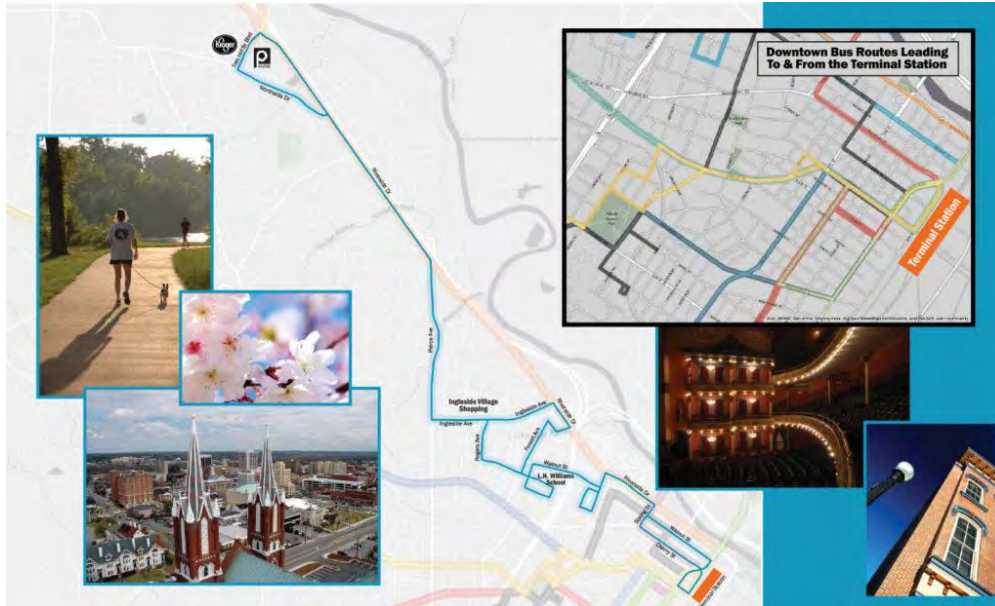
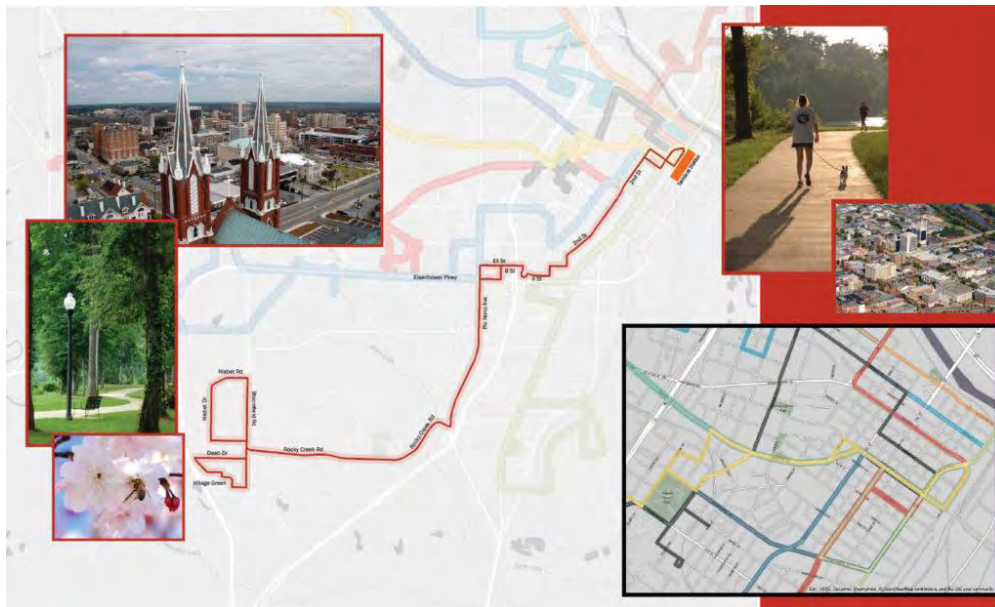


Figure 7-5: MTA Route 5 – Ocmulgee

This bus operates along Riverside Dr., Pierce Ave., Ingleside Ave., and Northside Drive. The route extends to the Kroger Shopping Center on Tom Hill Sr. Blvd. This route runs Monday through Friday, 5:41 a.m. to 9:52 p.m., and Saturday 5:41 a.m. to 6:31 p.m. MTA operates two vehicles along this route on weekdays, and one vehicle on Saturdays.



Route 6 - Westgate/Bloomfield

Figure 7-6: MTA

This route consists of Eisenhower Pkwy., Pio Nono Ave., Bloomfield Rd., and Rocky Creek Road. MTA operates only one bus along the route, which runs Monday through Friday, 5:45 a.m. to 9:41 p.m., and Saturday 5:45 a.m. to 6:27 p.m.

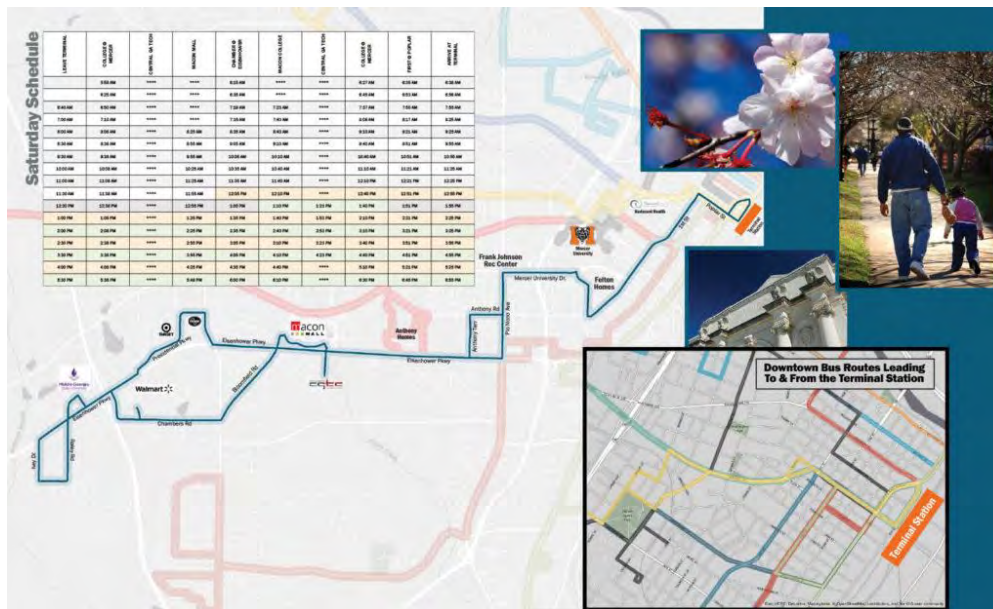


Figure 7-7: MTA Route 9 - Macon Mall/Chambers Road

This route offers service to Macon Mall, Eisenhower Crossing Shopping Center, Virginia College, and Central Georgia Tech. The route consists of Telfair Street, Pio Nono Ave., Ivey Rd., and Eisenhower Pkwy. This route runs Monday through Friday, 5:28 a.m. to 9:48 p.m., and Saturday 5:58 a.m. to 6:45 p.m. MTA operates three vehicles along this route on weekdays, and two vehicles on Saturdays.



Figure 7-8: MTA Route 11 - East Macon/Kings Park

The East Macon – Kings Park route provides transportation to such sites as Coliseum Hospital and Northeast Plaza Shopping Center. The service area for this route includes Coliseum Drive, Shurling Drive, Old Clinton Rd., and Gray Highway. This route runs Monday through Friday, 5:25 a.m. to 9:49 p.m., and Saturday 5:37 a.m. to 6:25 p.m. MTA operates two vehicles along this route on weekdays, and one vehicle on Saturdays.



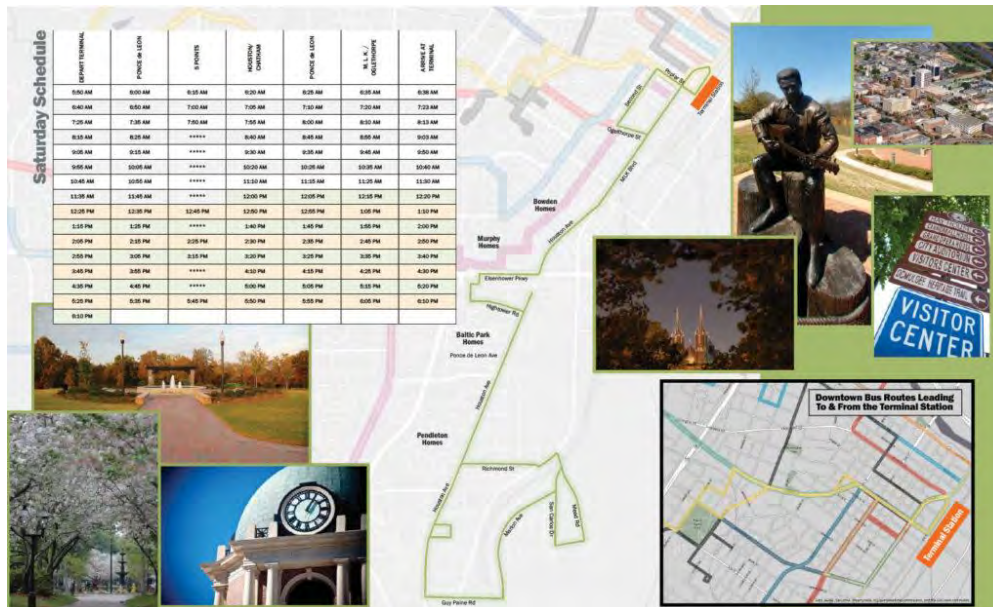


Figure 7-9: MTA Route 12 - Houston Ave/Peach Orchard

This route serves the Houston Ave. and Peach Orchard area of the city. The Peach Orchard area consists of Guy Paine Rd., Marion Ave., Mead Rd., Carlos Dr., and a portion of Broadway. This route runs Monday through Friday, 5:40 a.m. to 9:50 p.m., and Saturday 5:50 a.m. to 6:05 p.m. MTA operates two vehicles along this route on weekdays, and one vehicle on Saturdays.

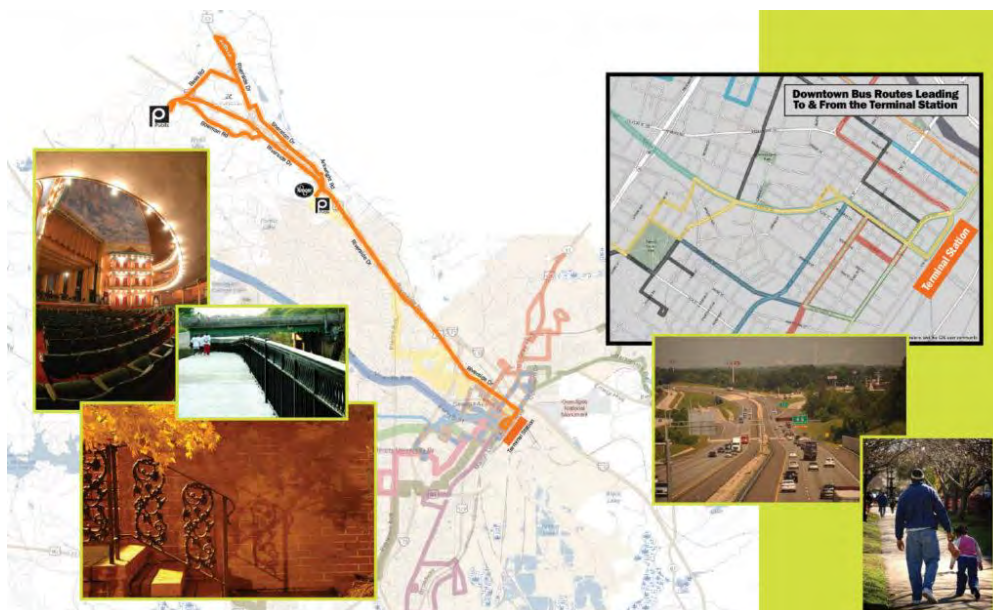


Figure 7-10: MTA Route 13 - North Macon – Industrial Route

This route operates along Riverside Dr., Sheraton Dr., Wesleyan Dr., Tom Hill Sr. Blvd. and Bass Road. Service is provided to such areas as the River Cross Shopping Center, K-Mart, and the Bass Pro Shop facility. This is a limited service route, running Monday through Friday, 7:25 a.m. to 9:46 a.m., and 3:20 p.m. to 5:55 p.m. On Saturdays, the schedule is 7:00 a.m. to 8:55 a.m., and 3:20 p.m. to 5:40 p.m. MTA operates one vehicle along this route, both on weekdays and Saturdays.

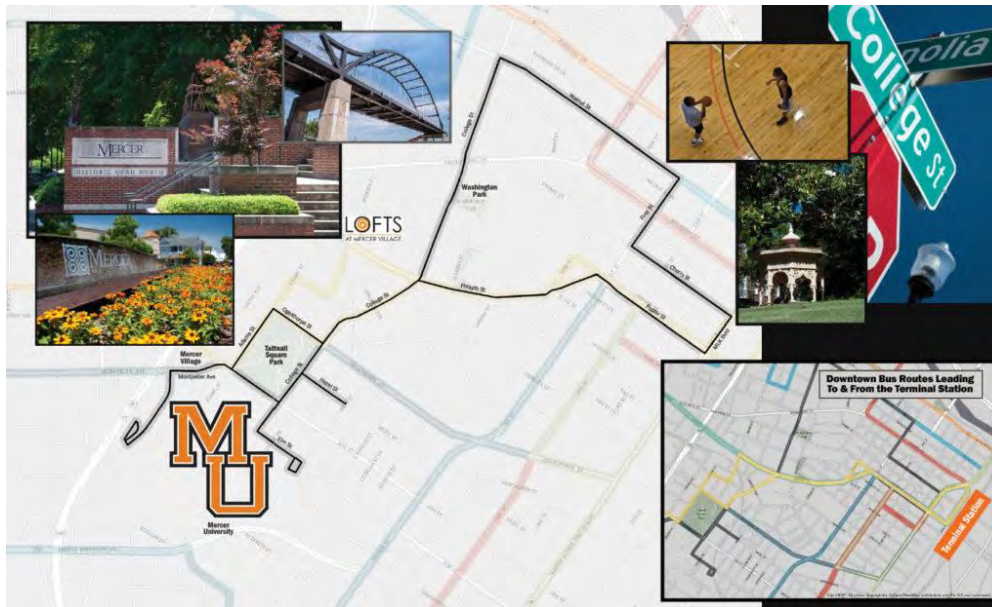


Figure 7-11: MTA Route 14 - Mercer/Downtown

This is a sponsored limited service route, originally commissioned by Mercer University in 2015. The route originates at Mercer University, and depending on the day of the week, the stop schedule varies. On Wednesdays, the bus runs from 7:00 p.m. to 11:00 p.m., making a circuit between Mercer University and Zebulon Rd. Thursday through Saturday, the bus runs 7:00 p.m. to 2:50 a.m., making a circuit through the Macon-Bibb downtown along Forsyth St., College St., and Walnut St. MTA operates one vehicle along this route.

## ADA Service

The American with Disabilities Act of 1990 (ADA) states complementary paratransit service must be provided to the disabled population who are not able to use the regular local transit system. In the Jones and Macon-Bibb County areas, ADA services are provided as a reservation service that picks up riders at their residence and takes them to their destination (i.e., door to door service). JCT meets the ADA requirement by having all but one of its vans wheelchair accessible (see below).

For its part, MTA maintains a fleet of twelve operating vans as part of the requirements for the Americans with Disabilities Act (ADA). The table below describes the characteristics of the MTA ADA service. This service is important for the disabled population and conforms to all the requirements of the ADA legislation.

<u>SERVICE CHARACTERISTIC</u>	<u>WEEKDAY</u>	<u>SAITURDAY</u>	<u>SUNDAY</u>
<u>SPAN OF SERVICE</u>	5:20 am – 10 pm	5:20 am – 8 pm	CLOSED
<u>DAILY VAN Hrs</u>	8 hours pervan	8 hours pervan	CLOSED
<u>DAILY VAN MILES</u>	115 miles/day	102miles per day	CLOSED
<u>DAILY RIDERSHIP</u>	17 clients/day	13 clients per day	CLOSED

SOURCE: Macon Transit Authority

Table 7-2 ADA Service Characteristics for Macon Transit Authority



## Macon-Bibb Transit Authority Routes

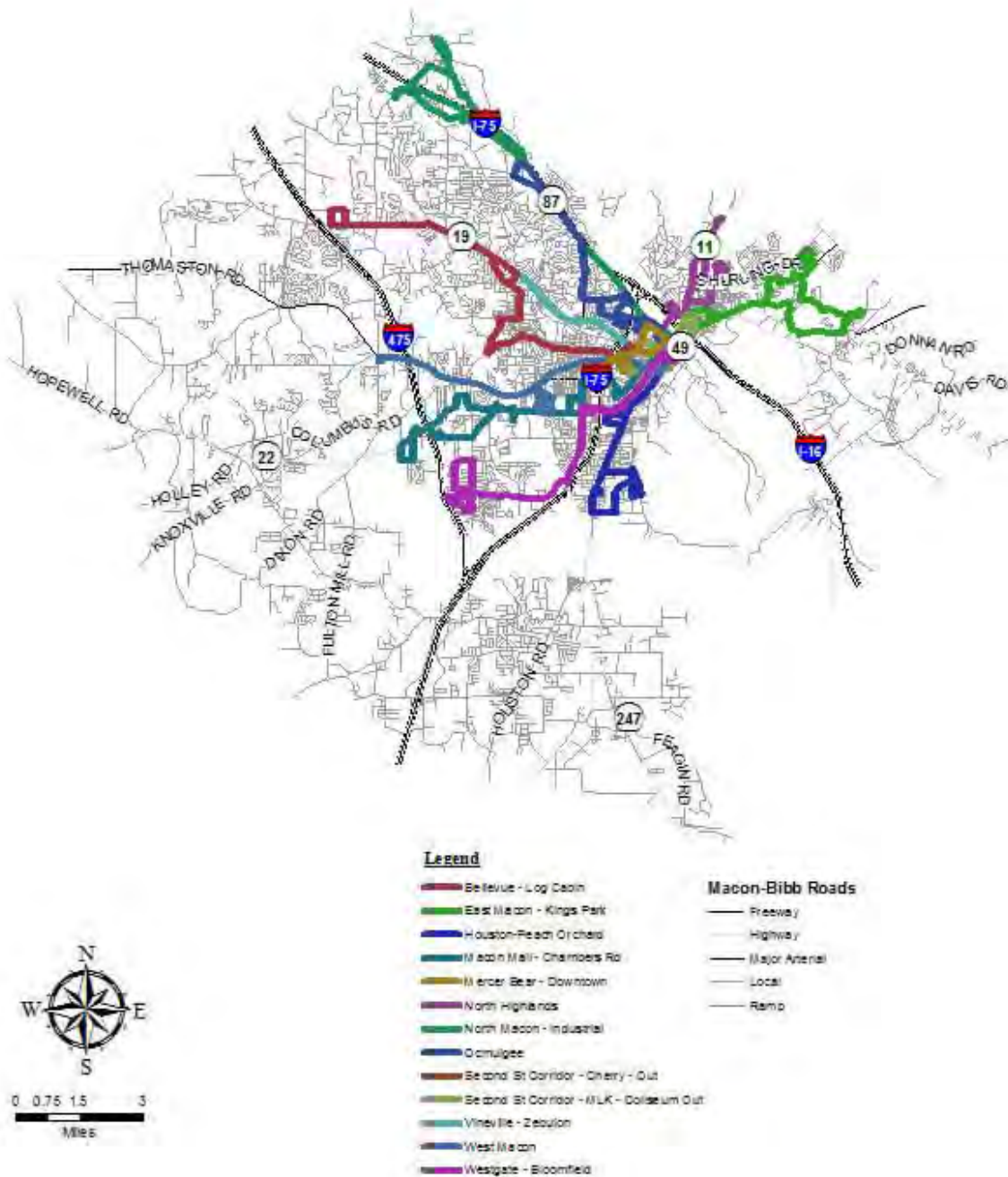


Figure 7-12: MTA Route Master Map

## Anticipated Service Changes

MTA periodically conducts ridership surveys to evaluate the effectiveness and productivity of the routes currently in operation, and to account for changes to agency budgets due to changes in local, State and/or

Federal support. As a result of earlier analyses, in 2016 MTA suspended two routes, the Ocmulgee Industrial Route (a.k.a. “GEICO” Route, so named because the route ran to the GEICO customer service building on the east side of Macon-Bibb County) and the BiRD Route (Bus into Robins Daily), serving the Warner Robins Air Force Base. In both cases, the routes had to be suspended due to Federal funding shortfalls, and lower than anticipated ridership, which is due in part to reduced fuel costs.

In terms of additional routes, there are plans to add service to the Second Street Corridor under a program that would allow the purchase of electric buses. The MTA is also considering a route that will provide service to the colleges on Eisenhower Parkway, Mercer University Dr., and the Macon Mall as well as the residential areas. Furthermore, there are also plans to begin additional routes that will serve the southern areas of Macon and Bibb County including the new Kumho plant. However, these improvements will all depend on the availability of sufficient funding in the future.

As part of a proposed capital improvement program, there are plans to increase and improve the overall number of bus shelters and benches. The MTA is also considering locating information kiosks at key locations throughout the Macon-Bibb area, and has already placed kiosks at the transfer center and at the corner of Cherry St. & MLK Dr. in order to provide the public with schedule and bus information.

With regards to the conditions and operations of Terminal Station, several significant changes have already happened or are in the process of taking place. MTA has constructed a new maintenance and administrative office facility at 2737 Broadway, Macon GA, using funding under the American Reinvestment and Recovery Act ([see new location here](#)). As a result of this change, MTA has expanded garage facilities, and has additional space in Terminal Station to lease out. A wi-fi system at the Terminal Station was installed in October 2010, and a wireless tablet based bus location system was incorporated into MTA vehicles in November 2015. Furthermore, the conference room in the Terminal Station has been renovated and includes an audio-visual center, and the kitchen has been upgraded for special events. There will be additional improvements to the Terminal Station as additional revenue becomes available. In terms of parking, there are plans for two new additional parking lots for the Terminal Station that will encourage the use of the Cherry St. plaza as a pedestrian mall and special events venue.

## **Transit Vehicles**

### ***Jones County***

There are currently 4 vehicles in use in the JCT transit system, split between the Coordinated Transportation System and the GDOT 5311 program. The Coordinated Transportation System program (run by Quality Trans Inc.) has one wheelchair accessible passenger van (11 passengers, plus one additional for a wheelchair-bound rider). The van is 2009 model year and is anticipated to be replaced in FY 2017.

The GDOT 5311 program (run by Middle Georgia Community Action Agency) uses 3 mini-busses, 2 of which are wheelchair accessible. The passenger capacities are:

- 14 persons in the non-wheelchair accessible vehicle,
- 11 passengers, with 2 spots for wheelchairs in each of the wheelchair accessible vehicles

Although the vans are operated and maintained by Middle Georgia Community Action Agency, the vehicles are owned by Jones County. The vehicles are on a 5 year/100,000 mile replacement schedule; 2 of the vehicles are the model year 2011, and 1 is the model year 2010. Replacement of all three vehicles is currently underway.

### ***Macon-Bibb County***

Currently, the MTA has an active total bus fleet of 31 passenger vehicles. The number of vehicles during peak usage is 21 vehicles for the transit route system. It is essential to replace the old buses for the MTA in order to maintain an efficient bus fleet. The Bus Replacement Schedule for FY 2017 – FY 2022 in regards to the MTA is found on the following page (Table 7-2). MTA plans to retire and replace 2 passenger buses each year. The bus replacement schedule also lists the number of passenger buses by model year.

MTA has instituted a fleet management plan in order to decrease the overall spare ratio. Subsequently, the spare ratio will be 47% (i.e., 10 vehicles) each year.

MODEL YEAR	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	11	9	7	5	3	1
2011	0	0	0	0	0	0
2012	5	5	5	5	5	5
2013	1	1	1	1	1	1
2014	1	1	1	1	1	1
2015	4	4	4	4	4	4
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	8	8	8	8	8	8
2019		2	2	2	2	2
2020			2	2	2	2
2021				2	2	2
2022					2	2
2023						2
2024						
ACTIVE FLEET	30	30	30	30	30	30
PEAK BUSES	20	20	20	20	20	20
SPARES	10	10	10	10	10	10
SPARE RATIO	50%	50%	50%	50%	50%	50%
BUSES RETIRED	8	2	2	2	2	2
BUSES PURCHASED	8	2	2	2	2	2

SOURCE: MACON TRANSIT AUTHORITY

Table 7-3 Macon Transit Authority Vehicle Replacement Schedule

## Transit Ridership

### *Jones County*

Table 7-4 shows the ridership trend for Jones County Transit since Fiscal Year 2011

FY	DHS Coordinated Trips	GDOT 5311 Program	Total
2011	7,987	8,969	16,956
2012	8,168	7,745	15,913
2013	5,321	6,594	11,915
2014	3,783	5,184	8,967
2015	3,996	6,911	10,907
2016	3,196	6,556	9,752

Table 7-4: Jones County Yearly Transit Trip Totals, by Program

After a noticeable drop off in 2012, a total number of trips has been relatively stable around the 10,000 trips per year mark. The reduction is consistent across both the DHS Coordinated Trips and GDOT 5311 program. In the case of the DHS Coordinated Trips Program, the drop is due to the shut down of the Department of Behavioral Health & Developmental Disabilities program in November 2012 (FY 2013), and the drop off in the Department of Family & Children Services rides provided after momentary demand spikes in 2012 through 2014.

### *Macon-Bibb County*

According to MTA's internal projections, the daily ridership will increase 18.43% by the year 2022 (see Table 7-5 below). This increase will occur as a result of increased demand and service options. In terms of ridership characteristics, the majority of the transit users are African Americans in the 25-61-year-old age group. Most of these users do not have an automobile and use the transit system for such purposes as travel to work, shopping, and medical visits. As mentioned above, MTA has recently completed construction of a new dedicated maintenance and administrative facility and is in the process of moving their offices to the new location.

YEAR	2017	2022	PERCENT CHANGE
BUS SERVICE	2,780	3,222	15.90%
PARATRANSIT SERVICE	145	242	66.90%
TOTAL	2,925	3,464	18.43%

SOURCE: MACON TRANSIT AUTHORITY

Table 7-5 Projected Daily Ridership for Macon Transit Authority, 2017 - 2022



## Funding Sources

The main funding source for the Transit Authority is the FTA Section 5307 grant program. The Section 5307 program provides funding for both capital and operating costs. The federal share of the program provides 80% of the costs for capital projects and the remainder is covered by state and local shares that are responsible for 10% each. The amount of funding that remains after the acquisition of capital items can be applied to operating costs under the Section 5307 grant program. However, the funding applied to the operating costs cannot exceed 50% of the total amount. The rest of the operating costs are covered by local sources. The Transit Authority also receives farebox revenues from its daily operations as well as revenue from advertising.

In the future, MTA plans to purchase a number of capital items, including passenger buses, new bus shelters and other items. These capital items will be acquired through the FTA Section 5307 grant program. The MTA plans to acquire a total of 10 passenger buses over the next six years as part of the fixed route system. In addition, there are plans to purchase 2 buses for the paratransit service which is required under the ADA guidelines. In addition to vehicles, there are plans to provide funding for the maintenance and renovation of the Terminal Station in FY 2018. Furthermore, in subsequent years new office equipment and furniture will be purchased as well as new computers and software. For a complete list of the capital projects, Table 7-6 on the following page contains the Capital Improvement Program for FY 2018 – FY 2023. The list of capital items is subject to revision in the future according to needs that may arise. The MTA files a grant application under the Section 5307 program each year to acquire capital items. The amount of funding levels under the Section 5307 program can vary each year but it is important that the amounts remain relatively consistent in the future in order to support local transit service.

Table 7-6 MTA Capital Improvement Program, FY 2018 – 2023

CAPITAL IMPROVEMENT	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
PURCHASE 40 FT. DIESEL BUSES (2)	\$860,000					
PURCHASE 35 FT. ELECTRIC BUSES (2), PLUS CHARGING INFRASTRUCTURE AND STAFF TRAINING	\$2,826,000					
PURCHASE 35 FT. CUT-A-WAY BUSES (16)	\$1,080,000	\$360,000	\$360,000	\$360,000	\$360,000	\$360,000
BUSES FOR ADA SERVICE (2)		\$170,000				
BUS MAINTENANCE PARTS & SUPPLIES FOR FLEET	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
REPLACE & REFURBISH BUS SHELTERS & BENCHES		\$200,000			\$200,000	
NEW SERVICE VEHICLES (6)			\$200,000			
OFFICE EQUIPMENT & FURNITURE	\$5,000		\$5,000		\$5,000	
COMPUTER EQUIPMENT & SOFTWARE	\$50,000		\$50,000		\$50,000	
GPS TABLETS WITH KITS (30)	\$19,000		\$19,000		\$19,000	
TERMINAL STATION MAINTENANCE & RENOVATION		\$500,000	\$700,000	\$220,000	\$250,000	\$325,000
REPLACE SUPERVISOR VAN (1)	\$30,000					
<b>TOTAL</b>	<b>\$4,970,000</b>	<b>\$1,330,000</b>	<b>\$1,434,000</b>	<b>\$680,000</b>	<b>\$984,000</b>	<b>\$785,000</b>

Table 7-6 MTA Capital Improvement Program, FY 2018 – 2023

Looking at Table 7-6, Macon Transit Authority plans to make the highest proportion of capital investments in FY 2018. Under the provisions of the Section 5307 program, the balances of Federal and Local anticipated capital funding can be applied in future years to the operating costs (balances of State capital funds may not be applied towards operating expenses). It is anticipated the local funding share required for operating costs will not increase substantially over the next five years. Table 7-7 contains the overview of the funding sources available for both Capital and Operating expenses associated with anticipated MTA activities.

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>CAPITAL COSTS (FROM TABLE 7-6)</b>	<b>\$4,970,000</b>	<b>\$1,330,000</b>	<b>\$1,434,000</b>	<b>\$680,000</b>	<b>\$984,000</b>	<b>\$785,000</b>
<b>CAPITAL FUNDS</b>	<b>\$4,970,000</b>	<b>\$1,330,000</b>	<b>\$1,290,600</b>	<b>\$680,000</b>	<b>\$984,000</b>	<b>\$785,000</b>
· FEDERAL (80%)	\$3,465,200	\$1,064,000	\$1,147,200	\$544,000	\$787,200	\$628,000
· STATE MATCH (10%)	\$214,400	\$133,000	\$143,400	\$68,000	\$98,400	\$78,500
· LOCAL MATCH (10%)	\$1,290,400	\$133,000	\$143,400	\$68,000	\$98,400	\$78,500
<b>OPERATING COSTS</b>	<b>\$5,453,458</b>	<b>\$5,562,528</b>	<b>\$5,673,778</b>	<b>\$5,787,254</b>	<b>\$5,902,998</b>	<b>\$6,021,058</b>
<b>OPERATING FUNDS</b>	<b>\$5,453,458</b>	<b>\$5,562,528</b>	<b>\$5,673,778</b>	<b>\$5,787,254</b>	<b>\$5,902,998</b>	<b>\$6,021,058</b>
· FEDERAL (50%)	\$2,726,729	\$2,781,264	\$2,836,889	\$2,893,627	\$2,951,499	\$3,010,529
· LOCAL (50%)	\$2,726,729	\$2,781,264	\$2,836,889	\$2,893,627	\$2,951,499	\$3,010,529
<b>NET INCOME (LOSS)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>FEDERAL FUND WORKSHEET</b>						
<b>FTA SECTION 5307</b>						
NEW	\$4,441,929	\$3,845,264	\$3,984,089	\$3,437,627	\$3,738,699	\$3,638,529
APPLIED TO Capital Projects	\$1,715,200	\$1,064,000	\$1,147,200	\$544,000	\$787,200	\$628,000
AVAILABLE FOR OPERATING ASSISTANCE	\$2,726,729	\$2,781,264	\$2,836,889	\$2,893,627	\$2,951,499	\$3,010,529

Table 7-7 MTA Financial Plan, FY 2018 - 2022

### Long-Term Capital Projects

MATS is not aware of any long-term capital projects for the JCT system. With respect to MTA, there is currently a plan to purchase electric passenger buses to service the Second St. and the Eisenhower Parkway corridors. MTA would like to begin purchasing electric buses by FY 2020 if funding is made available. The anticipated acquisition schedule is to purchase 2 to 4 buses at a time, with a total of 8 electric buses as the goal for this program. Currently, the cost for a single electric bus is estimated to be \$800,000. Because a funding source has not been identified at this time, these purchases are being treated as contingencies to be pursued as grant opportunities arise.

### Regional Public Transit Options

Aside from the JCT programs described above, the only other public transit operator operating between counties in the MATS region is Greyhound Lines, serving the larger cities of Atlanta, Savannah, and Jacksonville, Florida, with stops in Tifton (Tift County) and Valdosta (Lowndes County). The routes serving these cities are either non-stop or stop in counties not covered by the MATS area.

Recently, the Georgia state legislature has expressed interest in studying what would be required to establish a series of regional public transportation systems, with integrated statewide connectivity. Under Georgia House Resolution 848 (2017-2018 Session), the House established a study committee tasked with “[assessing] the needs for and means of providing a system of mass transportation and mass transportation facilities for any one or more metropolitan areas in this state.”<sup>[1]</sup> All MPOs throughout the State (including MATS) are included as members of this study committee. MATS anticipates actively participating in the activities of this study committee.

## PROJECTS FOR FUTURE STUDY, AND THE LRTP AMENDMENT PROCESS

If the MATS Policy Committee, in conjunction with Jones County Transit and/or Macon Transit Authority, decides to introduce new transit projects, this would require formal amendments to the LRTP and possibly the TIP. The process is identical to the one described for roads and bridges in the previous chapter; it is re-stated here for the sake of convenience.

Both the LRTP and TIP can be amended at any time, in accordance with the procedures specified in the [MATS Public Participation Plan](#). The process for amending the LRTP project list involves the following steps:

1. Updating and/or creating new project sheets for the current TIP, to reflect changes in any projects currently underway;
2. Updating the project tables in the relevant LRTP chapters, to reflect the new projects and associated cost changes;
3. Updating the fiscal analysis in this LRTP chapter to continue demonstrating fiscal constraint (i.e., that revenues are sufficient to cover anticipated costs), even with the proposed amendments
4. Soliciting public input in accordance with the approved MATS Public Participation Plan (revised 3/9/2016), which involves;
  1. Completing a 15 day public review period with drafts of the proposed amended LRTP project list and (if necessary) TIP, available for download from the MATS website
  2. Soliciting comments and recommendations from the MATS Citizen Advisory Committee and MATS Technical Coordinating Committee
5. After close of public comment period, formal adoption of the amended LRTP project list and (if necessary) TIP by the MATS Policy Committee.

In accordance with these procedures, the following project list amendments have been made to the LRTP Public Transportation Projects List:

### **Amendment Date: 8/2/2017**

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1. As a result of changes to the 5307 and 5339 funding programs initiated by GDOT Intermodal Office in June 2017, the values in Table 7-6 and 7-7 should be compared to the list of approved capital projects in the *current* TIP. As of this amendment date, the current TIP for MATS covers FY 2018-2021. See [MATS FY 2018- 2021 TIP](#) Ch. 5 – Mass Transit for additional details.

[1] For full text of the resolution, see <http://www.legis.ga.gov/Legislation/20172018/170277.pdf>

### **Amendment Date: 12/6/2017**

On June 26, 2017, Macon Transit Authority (MTA) applied for a competitive grant under the Federal Transit Administration 5339(c) Low or No Emissions Vehicle Grant Program for the intended purchase of six (6) electric busses, and pay for related charging infrastructure installation and staff training. The original grant application was submitted in the amount of \$4,115,002.00, to be matched with \$1,075,998.00, resulting in a total request of \$5,191,000.00

On September 12, 2017, MTA was notified they were awarded a grant in the amount of \$1,750,000.00. Subsequent to this notification, on October 17, 2017 the Macon-Bibb County Board of Commissioners authorized local matching funds in the amount of \$1,076,000, for a grand total of \$2,826,000.00. A letter was sent on or about October 23, 2017 to Georgia Dept. of Transportation – Intermodal Division committing these local matching funds.



Table 7-6 and Table 7-7 have been updated to reflect the budget and expenditure increases for the award described in this amendment. The increase in the FY 2018 budget from \$2,144,000 to \$4,970,000 reflects an additional \$1,750,000.00 in Federal funding, \$0.00 in State Match funding, and \$1,076,000.00 in Local Match funding. Additional details for how this impacts the fiscal position of the LRTP can be found in Table 8-9.”

## Chapter 8 | Fiscal Assessment

### Introduction

This section addresses the costs and revenues associated with the roads and bridge projects (Chapter 6), and public transportation projects (Chapter 7), identified in the updated 2040 Long Range Transportation Plan (LRTP). For details on costs of individual projects and activities, please see the associated chapter.

### Road Projects - Costs and Revenue Estimation

#### Costs

The total cost of all obligated road and bridge projects listed in Chapter 6 is estimated at **\$665,267,407.27** (as of March 26, 2019).<sup>[1]</sup> This value is based on project cost estimates from GDOT and Macon-Bibb County Engineering Department. It includes an assumption of 2% increase in non-obligated project costs each year over the entire planning and construction duration of the project. This assumption is an average, based on GDOT's historic project management experience with road and bridge projects. While in any specific year this 2% assumption may be high or low, the expectation is that over the operational life of this LRTP, individual years will balance out around a 2% inflation rate. This assumption is a continuation of the project cost inflation assumptions applied in the original 2040 LRTP.

Of the \$665,267,407.27, the amount already obligated (as of March 26, 2019) to these projects is **\$312,093,037.34**. Reducing the total project costs by these expended or obligated amount leaves a net outstanding cost of **\$353,174,369.93**.

#### Revenues

Revenues for road and bridge projects were estimated using historic funding patterns. GDOT provided MATS with 10 years (FY 2007 through 2016, inclusive) of funding allocations for both highway capital and highway maintenance expenditures, broken out by Federal, State, and Local funding sources. Each of these funding sources was averaged over the 10 year period to estimate the revenues from each funding source in FY 2017.

<b>Fiscal Year</b>	<b><u>Federal Funding</u></b>	<b><u>State Funding</u></b>	<b><u>Local Funding</u></b>	<b><u>Total Funding</u></b>
<b>2007</b>	\$16,535,893.25	\$3,912,671.32	\$100,000.00	\$20,548,564.57
<b>2008</b>	\$13,974,844.15	\$3,419,364.41	\$195,584.14	\$17,589,792.70
<b>2009</b>	\$29,367,868.41	\$7,066,436.12	\$45,431.00	\$36,479,735.53
<b>2010</b>	\$72,670,656.41	\$17,398,099.20	\$1,758,916.06	\$91,827,671.67
<b>2011</b>	\$10,593,438.99	\$949,092.14	\$560,714.29	\$12,103,245.42
<b>2012</b>	\$2,751,912.75	\$387,055.26	\$133,422.93	\$3,272,390.94
<b>2013</b>	\$33,846,017.46	\$6,085,882.14	\$2,222,850.29	\$42,154,749.89
<b>2014</b>	\$3,574,497.28	\$136,200.00	\$250,000.00	\$3,960,697.28
<b>2015</b>	\$47,055,432.40	\$11,763,858.09	\$530,981.54	\$59,350,272.03
<b>2016</b>	\$6,492,080.51	\$1,301,485.12	\$385,800.00	\$8,179,365.63
<b>Total</b>	<b>\$236,862,641.61</b>	<b>\$52,420,143.80</b>	<b>\$6,183,700.25</b>	<b>\$295,466,485.66</b>
<b>Average</b>	<b>\$23,686,264.16</b>	<b>\$5,242,014.38</b>	<b>\$618,370.03</b>	<b>\$29,546,648.57</b>

Source: Georgia Dept. of Transportation - Office of Planning

Table 8-1 Historic Pattern of Highway Capital Funding

<b>Fiscal Year</b>	<b>Federal Funding</b>	<b>State Funding</b>	<b>Local Funding</b>	<b>Total Funding</b>
<b>2007</b>				
<b>2008</b>				
<b>2009</b>				
<b>2010</b>	\$3,315,735.81	\$0.00	\$0.00	\$3,315,735.81
<b>2011</b>	\$3,311,559.43	\$544,548.53	\$0.00	\$3,856,107.96
<b>2012</b>				
<b>2013</b>				
<b>2014</b>	\$213,254.61	\$53,313.66	\$0.00	\$266,568.27
<b>2015</b>	\$187,940.80	\$46,985.20	\$0.00	\$234,926.00
<b>2016</b>	\$7,254,068.54	\$1,342,678.12	\$0.00	\$8,596,746.66
<b>Total</b>	<i>\$14,282,559.19</i>	<i>\$1,987,525.51</i>	<i>\$0.00</i>	<b><i>\$16,270,084.70</i></b>
<b>Average</b>	<b>\$2,856,511.84</b>	<b>\$397,505.10</b>	<b>\$0.00</b>	<b>\$3,254,016.94</b>

**Source: Georgia Dept. of Transportation - Office of Planning**

Table 8-2 Historic Pattern of Highway Maintenance Funding

From FY 2018 onward, the revenue value is inflated by 2% each year to account for coverage of increased project costs. This 2% reflects the same assumptions of GDOT non-obligated project costs, and an assumption that cost sharing arrangements between the Federal, State and Local project partners will continue at their inflation adjusted historic averages.

Summing the inflation adjusted values for the Federal, State and Local categories from FY 2017 through FY 2040, the total revenue estimate values Highway Capital Expenditure and Highway Maintenance projects are provided in Table 8-3 and 8-4 below:

	Summed Estimates @ 2% Inflation
Federal	\$ 720,580,270.82
State Match	\$ 159,471,840.55
Local Match	\$ 18,811,967.86
<b>Total Estimated Revenues</b>	<b>\$ 898,864,079.24</b>
<b>Finalized TIP Project Adjustments (as of 10/2/2019)</b>	<b>\$ 312,106,195.34</b>
<b>Net Highway Capital Revenues Available</b>	<b>\$ 586,771,041.90</b>
<b>Outstanding Road &amp; Bridge Projects in LRTP</b>	<b>\$ 353,174,369.93</b>
<b>Capital Surplus (deficit) <i>New Estimate (10/2/2019)</i></b>	<b><u>\$ 233,583,513.96</u></b>

Table 8-3: Highway Capital Projects Revenue Estimates

	Summed Estimates @ 2% Inflation
Federal	\$ 86,900,410.29
State Match	\$ 12,092,845.55
Local Match	\$ -
<b>Total Estimated Revenues</b>	<b>\$ 98,993,255.84</b>
<b>FY 18-21 TIP Project Adjustments (as of 7/6/2017)</b>	<b>\$ 32,480,000.00</b>
<b>Net Highway Capital Revenues Available</b>	<b>\$ 66,513,255.84</b>
<b>Outstanding Road &amp; Bridge Projects in LRTP</b>	<b>\$ -</b>
<b>Maintenance Surplus (deficit) <i>New Estimate (as of 7/6/2017)</i></b>	<b><u>\$ 66,513,255.84</u></b>

Table 8-4: Highway Maintenance Revenue Estimates

Comparing the net revenue and net cost estimates, the Roads and Bridges project list has identified an anticipated surplus of **\$233,596,671.96** for Highway Capital projects over the operating life of the updated 2040 LRTP

Net Anticipated Revenues:	\$586,771,041.90
Net Anticipated Costs:	\$353,174,369.93
Anticipated Capital Surplus:	\$233,596,671.96



Similarly, for Highway Maintenance the anticipated surplus is \$66,513,255.84.

Net Anticipated Revenues:       \$98,993,255.84

Net Anticipated Costs:           \$32,480,000.00

Anticipated Capital Surplus:     \$66,513,255.84

These surpluses are the totals across all Federal, State and Local funding sources. How much of that surplus accrues to each level of government is, in part, dependent on the specific funding sources used to pay for the individual projects.

### **Public Transportation - Costs and Revenue Estimation**

As described in Chapter 7 – Public Transportation, the two transit systems operating in the MATS service area Jones County Transit System and the Macon Transit Authority. The two systems operate under separate funding programs. For those programs receiving federal assistance, the funding practice has historically been that Federal Transit Administration (FTA) will pay 80% of capital costs, with the requirement that the State and Local partners account for the balance equally (i.e., 10% each). In contrast, operating costs are split 50% federal, and 50% State/Local contribution. In Georgia, the practice has been that the State does not contribute to operating costs, but does allow positive balances in non-State portions of capital funding to be transferred to operating expenses.

## Jones County

Jones County Transit System operates under the Georgia Coordinated Transportation Program (GCTP), and the GDOT 5311 Program.

The GCTP is operated by the Georgia Department of Human Services (DHS), consolidating transportation programs provided by the various agencies under the jurisdiction of DHS. These agencies include Department of Family and Children Services (DFCS), Department of Behavioral Health & Developmental Disabilities (DBHDD), Georgia Vocational Rehabilitation Agency (GVRA) and Area Agency on Aging (Aging). The transportation programs for the agencies are funded by the following federal programs:

- Capital Assistance Program for Elderly Persons
- Rehabilitation Services – Vocational Rehabilitation
- Special Programs for Aging – Supportive Services and Senior Center
- Temporary Assistance for Needy Families
- Social Services Block Grant

GCTP services are provided by private contractor (see Chapter 7 for details), paid from the federal grants at a pre-determined rate. Using the ridership counts and total from Table 7-4 in Chapter 7 in combination with the program-specific reimbursement rates, the average reimbursement per trip across all GCTP programs is \$10.71.

Since GCTP funding is based on specific program ridership and reimbursement, fiscal balancing for this program in future years will depend on negotiated rates with private providers, as well as total funding allocated by the component federal programs.

The GDOT 5311 program for Jones County is also operated by a private contractor, although it is a distinct and separate provider from the one responsible for GCTP. Table 8-6 shows the historical funding pattern for the Jones County GDOT 5311 program for the past 10 completed fiscal years.

DFCS			
Fiscal Year	Trips	Trip Charge	Program Reimbursement
2011	268	15.50	4,634.00
2012	1,472	15.50	40,514.00
2013	1,128	15.50	23,950.50
2014	806	15.50	18,900.00
2015	170	18.00	3,140.00
2016	74	20.00	1,554.00
<b>Total</b>	<b>3,918</b>		<b>92,693</b>
DBHDD			
Fiscal Year	Trips	Trip Charge	Program Reimbursement
2011	1,858	10.94	20,326.52
2012	1,865	9.80	18,277.00
2013	513	9.80	5,027.40
2014	-	-	-
2015	-	-	-
2016	-	-	-
<b>Total</b>	<b>4,236</b>		<b>43,631</b>
GVRA			
Fiscal Year	Trips	Trip Charge	Program Reimbursement
2011	-	-	-
2012	-	-	-
2013	-	-	-
2014	-	-	-
2015	-	-	-
2016	11	20.00	231.00
<b>Total</b>	<b>11</b>		<b>231</b>
Aging			
Fiscal Year	Trips	Trip Charge	Program Reimbursement
2011	5,861	8.00	47,220.75
2012	4,832	8.00	39,322.30
2013	3,680	8.00	30,214.25
2014	2,977	8.00	23,816.00
2015	3,827	9.00	35,951.50
2016	3,111	10.00	34,611.00
<b>Total</b>	<b>24,288</b>		<b>211,136</b>
Program Summaries			
Fiscal Year	Trips	Average Trip Charge	Total Reimbursement
2011	7987	\$ 9.04	\$ 72,181.27
2012	8169	\$ 12.01	\$ 98,113.30
2013	5320	\$ 11.13	\$ 59,192.15
2014	3783	\$ 11.29	\$ 42,716.00
2015	3997	\$ 9.78	\$ 39,091.50
2016	3196	\$ 11.39	\$ 36,396.00
<b>Total</b>	<b>32452</b>	<b>\$ 10.71</b>	<b>\$ 347,690.22</b>

Table 8-5 Jones County GCTP Program Revenues, FY 2011 - 2016

### Transit Capital Revenues

Fiscal Year	Federal Contribution	State Contribution	Local Contribution	Total
FY 2007				\$0.00
FY 2008				\$0.00
FY 2009				\$0.00
FY 2010	\$60,103.20	\$7,512.90	\$7,512.90	\$75,129.00
FY 2011				\$0.00
FY 2012	\$39,368.00	\$0.00	\$0.00	\$39,368.00
FY 2013				\$0.00
FY 2014				\$0.00
FY 2015				\$0.00
FY 2016				\$0.00
<b>Average</b>	<b>\$49,735.60</b>	<b>\$3,756.45</b>	<b>\$3,756.45</b>	<b>\$11,449.70</b>

### Transit Operating Revenues

Fiscal Year	Federal Contribution	State Contribution	Local Contribution	Total
FY 2007	\$32,455.00	\$0.00	\$32,454.00	\$64,909.00
FY 2008	\$71,483.00	\$0.00	\$71,482.00	\$142,965.00
FY 2009	\$72,309.00	\$0.00	\$72,308.00	\$144,617.00
FY 2010	\$69,553.00	\$0.00	\$69,552.00	\$139,105.00
FY 2011	\$72,538.00	\$0.00	\$72,537.00	\$145,075.00
FY 2012	\$77,071.00	\$0.00	\$77,072.00	\$154,143.00
FY 2013	\$74,134.00	\$0.00	\$74,134.00	\$148,268.00
FY 2014	\$76,979.85	\$0.00	\$76,979.91	\$153,959.76
FY 2015	\$76,762.23	\$0.00	\$76,762.28	\$153,524.51
FY 2016	\$79,691.00	\$0.00	\$79,692.00	\$159,383.00
<b>Average</b>	<b>\$70,297.61</b>	<b>\$0.00</b>	<b>\$70,297.32</b>	<b>\$140,594.93</b>

Table 8-6 Jones County GDOT 5311 Program Historic Funding Patterns

The Transit Capital Revenues average for the Jones County GDOT 5311 Program for the FY 2007 through FY 2016 period is artificially low, since FY 2012 expenditure was based on a competitive discretionary grant which did not require State or Local matching contributions. Removing that grant from consideration, the only year with a non-zero capital improvement balance is FY 2010, with \$75,129 available (\$60,103.20 Federal Contribution (80%), \$7,512.90 State Contribution (10%), and \$7,512.90 Local Contribution (10%)). For FY 2017, the anticipated transit capital revenue budget is \$45,003.00 (\$36,002.40 Federal Contribution (80%), \$4,500.30 State Contribution (10%), and \$4,500.30 Local Contribution (10%))

Similar to the GCTP, services for the Jones County GDOT 5311 are delivered by contract with a private provider (see Ch. 6 for details). As such, fiscal balancing will depend upon negotiations of future conditions which, at this time, cannot be predicted accurately.

### Macon Transit Authority

The Macon Transit Authority (MTA) operates as sub recipients to GDOT under the FTA 5307 formula grant program for capital and operating costs. In comparison to Jones County, as a public agency operating under a different transit support program, it is easier to forecast the anticipated revenues and expenses for the LRTP period. Using the same assumptions for estimating and inflating revenue streams for transit as were used for roads and bridges (i.e., calculating the 10 year average from FY 2007 through 2016 (using data obtained from MTA annual audits and GDOT Intermodal Office), then inflating the average value by 2% each year from 2017 through 2040), Tables 8-7 estimates the transit revenues for MTA through 2040.

#### Transit Capital Revenues

	@ 2% Inflation
Federal	\$ 22,234,257.10
State Match	\$ 2,759,823.00
Local Match	\$ 2,759,826.22
<b>Total Estimated Transit Capital Revenues</b>	<b>\$ 27,753,906.32</b>

#### Transit Operating Revenues

	@ 2% Inflation
Federal	\$ 60,405,147.98
State Match	\$ -
Local Match	\$ 73,746,114.23
Passenger Fees	\$ 28,951,375.24
Advertising	\$ 483,096.89
Rent	\$ 10,023,882.30
Investment Income	\$ 29,583.10
Miscellaneous	\$ 1,198,753.20
<b>Total Estimated Transit Operating Revenues</b>	<b>\$ 174,837,952.95</b>
FY 14-17 TIP Project Adjustments (as of 6/8/2016)	<b>\$ 4,095,000.00</b>
<b><u>Net Transit Operating Revenues Available</u></b>	<b><u>\$ 198,496,859.27</u></b>

Table 8-7 Projected Transit Capital and Operating Funding for MTA 2017 – 2040

Table 8-7 projects out the anticipated costs of transit operations for MTA, averaging 7 years of cost estimates (FY 2017 through 2023) from the MTA Transit Facilities Plan updates for FY 2017 and FY 2018.



Fiscal Year	Estimated Annual Capital Costs				Estimated Annual Operating Expenses			
	Total	Federal Portion (80%)	State Portion (10%)	Local Portion (10%)	Total	Federal Portion (50%)	State Portion (0%)	Local Portion (including transfers from any Capital Budget surpluses: 50%)
2017	\$ 1,745,000.00	\$ 1,396,000.00	\$ 174,500.00	\$ 174,500.00	\$ 4,226,016.00	\$ 2,113,008.00	\$ -	\$ 2,113,008.00
2018	\$ 2,144,000.00	\$ 1,715,200.00	\$ 214,400.00	\$ 214,400.00	\$ 5,453,458.00	\$ 2,726,729.00	\$ -	\$ 2,726,729.00
2019	\$ 1,330,000.00	\$ 1,064,000.00	\$ 133,000.00	\$ 133,000.00	\$ 5,562,528.00	\$ 2,781,264.00	\$ -	\$ 2,781,264.00
2020	\$ 1,434,000.00	\$ 1,147,200.00	\$ 143,400.00	\$ 143,400.00	\$ 5,673,778.00	\$ 2,836,889.00	\$ -	\$ 2,836,889.00
2021	\$ 680,000.00	\$ 544,000.00	\$ 68,000.00	\$ 68,000.00	\$ 5,787,254.00	\$ 2,893,627.00	\$ -	\$ 2,893,627.00
2022	\$ 984,000.00	\$ 787,200.00	\$ 98,400.00	\$ 98,400.00	\$ 5,902,998.00	\$ 2,951,499.00	\$ -	\$ 2,951,499.00
2023	\$ 785,000.00	\$ 628,000.00	\$ 78,500.00	\$ 78,500.00	\$ 6,021,058.00	\$ 3,010,529.00	\$ -	\$ 3,010,529.00
2024	\$ 1,300,285.71	\$ 1,040,228.57	\$ 127,800.00	\$ 130,028.57	\$ 5,518,155.71	\$ 2,759,077.86	\$ -	\$ 2,759,077.86
2025	\$ 1,326,291.43	\$ 1,061,033.14	\$ 130,356.00	\$ 132,629.14	\$ 5,628,518.83	\$ 2,814,259.41	\$ -	\$ 2,814,259.41
2026	\$ 1,352,817.26	\$ 1,082,253.81	\$ 132,963.12	\$ 135,281.73	\$ 5,741,089.21	\$ 2,870,544.60	\$ -	\$ 2,870,544.60
2027	\$ 1,379,873.60	\$ 1,103,898.88	\$ 135,622.38	\$ 137,987.36	\$ 5,855,910.99	\$ 2,927,955.49	\$ -	\$ 2,927,955.49
2028	\$ 1,407,471.07	\$ 1,125,976.86	\$ 138,334.83	\$ 140,747.11	\$ 5,973,029.21	\$ 2,986,514.60	\$ -	\$ 2,986,514.60
2029	\$ 1,435,620.50	\$ 1,148,496.40	\$ 141,101.53	\$ 143,562.05	\$ 6,092,489.79	\$ 3,046,244.90	\$ -	\$ 3,046,244.90
2030	\$ 1,464,332.91	\$ 1,171,466.32	\$ 143,923.56	\$ 146,433.29	\$ 6,214,339.59	\$ 3,107,169.79	\$ -	\$ 3,107,169.79
2031	\$ 1,493,619.56	\$ 1,194,895.65	\$ 146,802.03	\$ 149,361.96	\$ 6,338,626.38	\$ 3,169,313.19	\$ -	\$ 3,169,313.19
2032	\$ 1,523,491.96	\$ 1,218,793.56	\$ 149,738.07	\$ 152,349.20	\$ 6,465,398.91	\$ 3,232,699.45	\$ -	\$ 3,232,699.45
2033	\$ 1,553,961.79	\$ 1,243,169.44	\$ 152,732.83	\$ 155,396.18	\$ 6,594,706.89	\$ 3,297,353.44	\$ -	\$ 3,297,353.44
2034	\$ 1,585,041.03	\$ 1,268,032.82	\$ 155,787.49	\$ 158,504.10	\$ 6,726,601.02	\$ 3,363,300.51	\$ -	\$ 3,363,300.51
2035	\$ 1,616,741.85	\$ 1,293,393.48	\$ 158,903.24	\$ 161,674.19	\$ 6,861,133.04	\$ 3,430,566.52	\$ -	\$ 3,430,566.52
2036	\$ 1,649,076.69	\$ 1,319,261.35	\$ 162,081.30	\$ 164,907.67	\$ 6,998,355.71	\$ 3,499,177.85	\$ -	\$ 3,499,177.85
2037	\$ 1,682,058.22	\$ 1,345,646.58	\$ 165,322.93	\$ 168,205.82	\$ 7,138,322.82	\$ 3,569,161.41	\$ -	\$ 3,569,161.41
2038	\$ 1,715,699.39	\$ 1,372,559.51	\$ 168,629.39	\$ 171,569.94	\$ 7,281,089.28	\$ 3,640,544.64	\$ -	\$ 3,640,544.64
2039	\$ 1,750,013.37	\$ 1,400,010.70	\$ 172,001.97	\$ 175,001.34	\$ 7,426,711.06	\$ 3,713,355.53	\$ -	\$ 3,713,355.53
2040	\$ 1,785,013.64	\$ 1,428,010.91	\$ 175,442.01	\$ 178,501.36	\$ 7,575,245.28	\$ 3,787,622.64	\$ -	\$ 3,787,622.64
<b>Total</b>	<b>\$ 35,123,409.98</b>	<b>\$28,098,727.99</b>	<b>\$3,324,342.67</b>	<b>\$3,512,341.00</b>	<b>\$ 149,056,813.72</b>	<b>\$74,528,406.86</b>	<b>\$0.00</b>	<b>\$74,528,406.86</b>
<b>Total MTA Anticipated Expenses</b>	<b>\$ 184,180,223.70</b>							

Table 8-8 Estimated Capital and Operating Expenses for Macon Transit Authority

The results in Table 8-7 and Table 8-8 support the conclusion that MTA expected revenues will exceed anticipated expenses through 2040, by approximately **\$14,316,635.57**.

## **PROGRAM BALANCING AND FUTURE AMENDMENTS**

### ***Program Balancing and Demonstration of Fiscal Constraint***

Table 8-9 provides an overview of the fiscal analysis for the Highway Program and Transit Program for the MATS planning area. Since both programs anticipate revenues from Federal, State and Local sources exceed estimated project costs for the duration of the planning period, the 2040 Long Range Transportation Plan continues to meet fiscal constraint requirements.

Highway Program		
Revenues		
Highway Capital Funds	\$	898,864,079.24
Federal Contribution	\$	720,580,270.82
State Match	\$	159,471,840.55
Local Match	\$	18,811,967.86

Highway Maintenance		
Funds	\$	98,993,255.84
Federal Contribution	\$	86,900,410.29
State Match	\$	12,092,845.55
Local Match		\$0.00

Expenditures		
TIP Obligations	\$	344,586,195.34
Capital Obligations	\$	312,106,195.34
Safety & Maintenance Obligations ((FY 18-21 TIP)	\$	32,480,000.00
Updated LRTP Projects List	\$	353,174,369.93
Anticipated Road & Bridge Capital Projects	\$	353,174,369.93
Anticipated Maintenance Projects		\$0.00

Highway Funds Summary		
Total Revenues	\$	997,857,335.07
Total TIP Obligations	\$	344,586,195.34
Total New Projects	\$	353,174,369.93

Highway Fund	
Balance	\$ 300,096,769.80

Transit Program		
Revenues		
Transit Capital Program	\$	27,753,906.32
Federal Contribution	\$	22,234,257.10
State Match	\$	2,759,823.00
Local Match	\$	2,759,826.22

Transit Operating		
Program	\$	134,151,262.22
Federal Contribution	\$	60,405,147.98
State Match		\$0.00
Local Match	\$	73,746,114.23
Other Transit Revenues	\$	40,686,690.73
Passenger Fees	\$	28,951,375.24
Advertising	\$	483,096.89
Rent	\$	10,023,882.30
Investment Income	\$	29,583.10
Miscellaneous	\$	1,198,753.20

Expenditures		
TIP Obligations	\$	14,448,795.00
Estimated Capital Costs	\$	35,123,409.98
Federal Contribution	\$	28,098,727.99
State Match	\$	3,324,342.67
Local Match	\$	3,512,341.00
Estimated Operating Costs	\$	149,056,813.72
Federal Contribution	\$	74,528,406.86
State Match		\$0.00
Local Match	\$	74,528,406.86

Transit Funds Summary		
Total Revenues	\$	202,591,859.27
Total TIP Obligations	\$	14,448,795.00
Estimated Capital Cost	\$	35,123,409.98
Estimated Operating Costs	\$	149,056,813.72

Transit Fund	
Balance	\$ 3,962,840.57

Table 8-9 Transportation Programs Master Balance Sheet

Future Amendments

From time to time it will be necessary to modify the fiscal analysis and the project list to reflect updated project costs, changes in project timetables, or add and remove projects from consideration. These actions require formal amendments to the LRTP and possibly the TIP. Both the LRTP and TIP can be amended at any time, in accordance with the procedures specified in the [MATS Public Participation Plan](#). The process for amending the LRTP project list involves the following steps:

1. Updating and/or creating new project sheets for the current TIP, to reflect changes in any projects currently underway;
2. Updating the project tables in the relevant LRTP chapters, to reflect the new projects and associated cost changes;
3. Updating the fiscal analysis in this LRTP chapter to continue demonstrating fiscal constraint (i.e., that revenues are sufficient to cover anticipated costs), even with the proposed amendments
4. Soliciting public input in accordance with the approved MATS Public Participation Plan (revised 3/9/2016), which involves;
  1. Completing a 15 day public review period with drafts of the proposed amended LRTP project list and (if necessary) TIP, available for download from the MATS website
  2. Soliciting comments and recommendations from the MATS Citizen Advisory Committee and MATS Technical Coordinating Committee
5. After close of public comment period, formal adoption of the amended LRTP project list and (if necessary) TIP by the MATS Policy Committee

In accordance with these procedures, the following project list amendments have been made to the LRTP Projects List:

**Amendment Date: 8/2/2017**

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1. GDOT Projects #342080, #351090 and #351095 (all associated with upgrades to Jeffersonville Rd.) are hereby removed from the Roads and Bridges project list (Table 6-2). These projects have been fully obligated under the FY 14-17 TIP, and were carried through under the LRTP as approved on 5/3/2017 in order to maintain their eligibility. With the adoption of the FY 2018-2021 TIP, these projects will no longer have bearing on the LRTP project list, and therefore should not be included in future fiscal analyses.
2. GDOT Projects #311000, #0012699, #0012700, and #311410 (Phases 1, 1B, 2 and 3, respectively, of the I-16/I-75 Interchange upgrade), and # 0010412 (Replace Bridge on SR 49/Shurling Dr. @ Norfolk Southern Railroad 8.5 miles south of Gray) are hereby removed from the Roads and Bridges project list (Table 6-2). These projects are under construction, and with the adoption of the FY 2018-2021 TIP will no longer have bearing on the LRTP project list. Therefore, they should not be included in future fiscal analyses.
3. The remaining projects on the Roads and Bridges project list have had their priority numbers adjusted to reflect the aforementioned project removals.
4. As a result of changes to the 5307 and 5339 funding programs initiated by GDOT Intermodal Office in June 2017, the values in Table 7-6 and 7-7 should be compared to the list of approved capital projects in the current TIP. As of this amendment date, the current TIP for MATS covers FY 2018-2021. See [MATS FY 2018- 2021 TIP](#) Ch. 5 – Mass Transit for additional details.

As a result of the changes initiated by GDOT Intermodal, the TIP obligations for the Transit Program in Table 8-9 in this section reflect the total amount of transit funding authorized by GDOT Intermodal as of June 2017.

**Amendment Date: 12/06/2017**



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On September 12, 2017, MTA was notified they were awarded a grant in the amount of \$1,750,000.00 for the intended purchase of electric buses, and pay for related charging infrastructure installation and staff training. Subsequent to this notification, on October 17, 2017, the Macon-Bibb County Board of Commissioners authorized local matching funds in the amount of \$1,076,000, for a grand total of \$2,826,000.00. A letter was sent on or about October 23, 2017, to Georgia Dept. of Transportation – Intermodal Division committing these local matching funds. See Amendment #2 in Chapter 7 – Public Transit for full details.

Although this is a one-time special purpose grant, Table 8-9 has been updated accordingly to reflect the impact of these changes on the anticipated transit funding stream from 2017 through the 2040 planning horizon year. The award of the grant was included under a new line item: Transit Capital Program – Special Projects, resulting in a revenue increase in the Transit Capital Program line item from **\$27,753,906.32** to **\$30,579,906.32**. The associated expenditure has been included under the Transit Expenditures - TIP Obligations, with a corresponding increase from **\$14,448,795.00** to **\$17,274,295.00**.

Because the funds were awarded through a special grant and matched with additional local funding, the net effect is that the transit fund balance remains unchanged, at \$3,962,840.57. Since anticipated revenues continue to exceed expenditures, the LRTP maintains fiscal constraint.

**Amendment Date: 11/14/2018**

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On August 6, 2018, GDOAT Office of Planning requested the following amendments to the MATS 2040 LRTP Roads and Bridges Project List:

1. GDOT Project #0013929 (Bridge Replacement at I-75 and SR 87/US 23/Riverside Dr.) is hereby removed from the project list. This project is being cancelled because the work will be subsumed under an existing GDOT project (GDOT Project #0012700)
2. GDOT Project #0014898 (Bridge Replacement on CR 1694/Oglethorpe St. at Norfolk Southern Railroad) is hereby removed from the project list. This project is being cancelled due to Norfolk Southern revocation of local match requirement.
3. GDOT Project #0016130 (Bridge Replacement on SR 18 @ Ocmulgee River, 13 Miles East of Forsyth) is hereby added to the project list. While only 14% of this project is within the MATS MPO area, because it will use federal funding it must be listed in both the LRTP Roads & Bridges project list, and the TIP. The line item in the LRTP project list represents 14% of the estimated \$1,100,000 total cost of the project (i.e., \$154,000).

As a result of the changes initiated by GDOT Office of Planning, the TIP obligations for the Highway Program in Table 8-9 in this section reflect the total amount of highway and bridge funding authorized and obligated by GDOT Office of Planning as of August 2018.

**Amendment Date: 5/8/2019**

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On March 26, 2019, GDOAT Office of Planning requested the following amendments to the MATS 2040 LRTP Roads and Bridges Project List:

1. GDOT Project #0009861 (Replacement of bridges on Houston Rd at Rocky Creek & Tobosofkee Creek and overflows) cost is increased from \$16,807,993.00 to \$23,008,668.49 (i.e., +6,200,675.49), as part of advancing timeline on the project.

As a result of the changes initiated by GDOT Office of Planning, the TIP obligations for the Highway Program in Table 8-8 in this section reflect the total amount of highway and bridge funding authorized and obligated by GDOT Office of Planning as of March 2019.

## **COST SHARING AND SUPPLEMENTAL FUNDING SOURCES**

Normal cost-sharing arrangements for federally supported transportation projects involve the federal government paying up to 80% of the total project cost, with the remaining 20% (commonly known as “match”) being the responsibility of the State and Local participants (23 US Code § 120(b): <https://www.fhwa.dot.gov/map21/docs/title23usc.pdf>). Since the passage of the original MATS 2040 LRTP, there have been significant updates to how the State and Local portion are being generated.

### Georgia Transportation Funding Act Of 2015

On May 4, 2015 the Governor signed the Georgia Transportation Funding Act of 2015 (GTFA 2015: <http://www.legis.ga.gov/Legislation/en-US/display/20152016/HB/170>). This act provides for a variety of State funding sources (i.e., vehicle registration fees, hotel/motel occupancy taxes, a 1% sales tax on retail motor fuels up to \$3.00 per gallon) which are to be dedicated to funding transportation projects. Since passage of this act, the practical effect has been for GDOT to identify certain transportation projects of statewide significance, which are then fully funded in their 20% match requirement by supplemental state funding. The result is that federally sponsored road and bridge projects which are matched with GTFA 2015 funds require significantly lower budget contributions from the local jurisdictions where the projects are located. In many cases, the local funding component is completely eliminated.

### Local Revenue Options

Just as GTFA 2015 provides a mechanism for the State to assume the full match burden of road and bridge projects, there are policies in place by which Local partners can either assume the 20% match portion, or even fully assume the entire cost of the project (which would, effectively remove the project from the LRTP project list).

### Special Purpose Local Option Sales Tax

The Special Purpose Local Option Sales Tax (SPLOST) is a mechanism under Georgia state law (Title 48, Ch. 8, Article 3, Part 1: <http://www.lexisnexis.com/hottopics/gacode/>), whereby voters within a county can, within certain limits, assign a self-imposed 1% sales tax for the purpose of funding for a variety of capital improvement projects. Originally passed in 1985, the legislation has undergone several legislative updates. The most recent SPLOST in the MATS region passed in the Macon-Bibb County consolidated government on November 8, 2016, authorizing \$35,000,000 for various transportation projects throughout the Macon-Bibb area. To the extent that projects already on the road and bridges projects list for this 2040 LRTP Update, these projects can have their match paid for through SPLOST funds, either in part or all the way up to the full 20% match requirement. Alternatively, if the MATS Policy Committee were to decide to accelerate a project faster than GDOT's timetable, they could use SPLOST funds to remove it from the LRTP project list entirely. This strategy would allow the jurisdiction sponsoring the project to proceed at their own pace, but it would also forego any opportunity for State or Federal support for the project.

### Georgia Transportation Infrastructure Bank

Another local funding option is the Georgia Transportation Infrastructure Bank (GTIB). GTIB was established to provide a revolving loan fund (and in some cases, grant funding) for qualified infrastructure projects eligible projects, including mass transit and bicycle infrastructure (Title 32, Ch. 10, Article 2: <http://www.lexisnexis.com/hottopics/gacode/>)<sup>[2]</sup>. Because the GTIB program allows local units of government to borrow for project costs over the design life of a project, the effect of the GTIB program is to reduce the immediate budget impacts of coming up with local match for large infrastructure and facilities projects. For example, if GTIB financing were used to meet local match requirements for a 5 year construction project for a bridge with a 30 year design life, the local jurisdiction could issue a bond to meet the match requirements and pay it back over a period no longer than 30 years. This has a less intense impact fiscal on the local government than financing the match requirement in each of the 5 budget years over which the bridge is being constructed.

SPLOST and GTIB are not mutually exclusive. A local jurisdiction could elect to use either, both or neither of these funding sources to address local match requirements for transportation projects.

<sup>[1]</sup> For details on costs and descriptions for individual road and bridge projects, please see Chapter 6.

<sup>[2]</sup> The full list of what is defined as an “eligible project” can be found in Title 32, Ch. 10, Article 2, Part 3, Sec. 122 of the 2016 GA State Code. See <http://www.lexisnexis.com/hottopics/gacode/> for specific definitions.

# Chapter 9 | Safety

## Introduction

This chapter presents background information and analysis related to transportation safety in the MATS region. Safety is an essential consideration in the development and growth of the MATS transportation network. There are many federal, state, and local directives that incorporate safety into the transportation planning process. Overall, safety is a key element in the transportation planning process and, with new research and available data, safety can be incorporated into the transportation project development process (planning, design, and maintenance) to effectively identify countermeasures to reduce crashes and crash severity for a community.

### Federal Performance Measures

The Federal Highway Administration (FHWA) updated Safety Performance Management Measures (Safety PM) in March 2016 in order to better assess serious injuries and fatalities on public roads.

These new safety performance measures continue to fulfill FHWA's commitment that safety improvement progress is transparent, based on a data-driven process, and is monitored and tracked. The Safety PM Final Rule establishes five performance measures that States and Metropolitan Planning Organizations (MPOs) must set targets for each year. These performance measures are the five-year rolling averages for:

- Number of Fatalities,
- Rate of Fatalities per 100 Million Vehicle-Miles Traveled (VMT),
- Number of Serious Injuries,
- Rate of Serious Injuries per 100 million VMT, and
- A number of Non-motorized Fatalities and Non-motorized Serious Injuries.

The Non-motorized Fatalities and Non-motorized Serious Injuries performance measure encourages all States to address pedestrian and bicycle safety and highlights attention on transportation system users who are not in motor vehicles, such as pedestrians and bicyclists. Having a uniform national safety non-motorized performance measure will increase momentum throughout the country to address pedestrian and bicyclist serious injuries and fatalities. Under the new rules, States and MPOs are required to establish and report annual targets for each measure. FHWA will then assess whether a State has met or made significant progress toward meeting their targets.

These new performance measures require transportation safety stakeholders to collaborate more closely than ever before. State Departments of Transportation, MPOs, and a host of other safety stakeholders are beginning conversations on the new requirements, which became effective on April 14, 2016. States and MPOs are required to set safety targets for the calendar year 2018.

### State Highway Safety Plan

The 2015 Georgia Strategic Highway Safety Plan (SHSP) documents Georgia's continued efforts to reduce highway crashes, injuries, and fatalities. The SHSP incorporates education, engineering, enforcement, and

## Did you know?

There were nearly 35,000 reported crashes in Macon-Bibb County between 2011 and 2015, which resulted in nearly 13,000 reported injuries and 112 fatalities<sup>[1]</sup>. An important component of the LRTP is to incorporate safety into the planning process to help reduce the number of crashes.



emergency medical services as critical elements for developing safer roads. The SHSP aligns all of Georgia's highway related safety plans and outlines goals and strategies that support the plan's vision statement:

“Every life counts – Strive for zero deaths and injuries on Georgia roads.”

**The SHSP's priority goals and performance measures include:**

- Reduce total traffic fatalities by 9%;
- Decrease the number of serious injuries;
- Reduce the fatality rate per 100M VMT by 4.8%;
- Reduce unrestrained passenger fatalities by 22.7%;
- Reduce alcohol-impaired driving fatalities by 5%;
- Reduce speed related fatalities by 29%;
- Reduce motorcyclist fatalities by 1.8%;
- Reduce the count of un-helmeted motorcyclist fatalities;
- Reduce drivers age 20 or younger involved in fatal crashes by 2.4%;
- Decrease pedestrian fatalities;
- Increase observed safety belt use to 96%;
- Reduce bicyclist fatalities by 15.5%;
- Continue implementation of the SHSP with all roadway safety stakeholders in Georgia.[\[2\]](#)

**A Vision of Zero Deaths On Our Roadways**

In October 2016 the U.S. Department of Transportation's National Highway Traffic Safety Administration, Federal Highway Administration, and Federal Motor Carrier Safety Administration and the National Safety Council (NSC) launched the [Road to Zero Coalition](#) with the goal of ending fatalities on the nation's roads within the next 30 years.

The year 2015 marked the largest increase in traffic deaths in the United States since 1966 and preliminary estimates for the first half of 2016 show an alarming uptick in fatalities - an increase of about 10.4 percent as compared to the number of fatalities in the first half of 2015.

"Every single death on our roadways is a tragedy. We can prevent them. Our drive toward zero deaths is more than just a worthy goal. It is the only acceptable goal." - National Highway Traffic Safety Administration Administrator Mark Rosekind

With the rapid introduction of automated vehicles and advanced technologies, the U.S. Department of Transportation believes it is now increasingly likely that the vision of zero road deaths and serious injuries can be achieved in the next 30 years by focusing on overall system design, addressing infrastructure design, vehicle technology, enforcement, and behavior safety. An important principle of the effort will be to find ways to ensure that inevitable human mistakes do not result in fatalities.[\[3\]](#)

The U.S. DOT's efforts could not come at a better time because traffic deaths are on the rise throughout the nation and in Georgia. According to the Georgia Governor's Office of Highway Safety, fatal crashes in Georgia jumped 28% between 2014 and 2016 - from 1,170 traffic fatalities in 2014 to 1,500 in 2016.[\[4\]](#)

Local governments in the MATS region are also working to reduce traffic fatalities. In May 2016, the Macon-Bibb County Commission unanimously passed a resolution supporting **Vision Zero** strategies in Macon-Bibb County. Vision Zero is an international movement, designed to improve the safety and well-being of our communities. Cities across the nation have implemented their own Vision Zero Action Plans and have seen a reduction in traffic deaths. Based on their success, we know there are measures we can take to reduce and

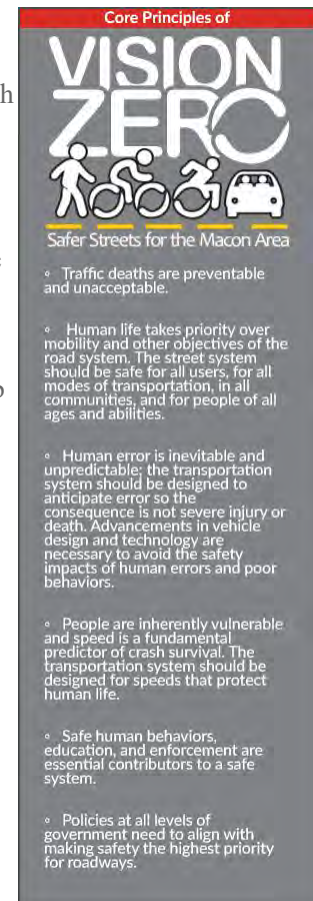
eliminate the serious injuries and deaths that occur on our streets. Through better street design, education, and public involvement, we can make the MATS region more accessible and safe for everyone.

## Sidebar

### Core Principles of Vision Zero

The Vision Zero concept was created in Sweden in 1997 and is widely credited with a significant reduction in fatal and serious crashes on Sweden's roads since that time. Cities across the United States are adopting bold Vision Zero initiatives that share common principles.

Macon-Bibb County's Vision Zero goal is an important first step in reducing traffic fatalities and serious injuries on our roadways. As shown in Table 9-1, between 2011-2015, 117 people died in traffic crashes in the MATS region. Most of these were on Macon-Bibb County's roads [\[5\]](#). An additional 800 people were seriously injured and thousands more were taken to the hospital for treatment in Macon-Bibb County alone.



## 2013-2015 Crashes - Fatal and Serious Injury Crashes - Macon-Bibb County

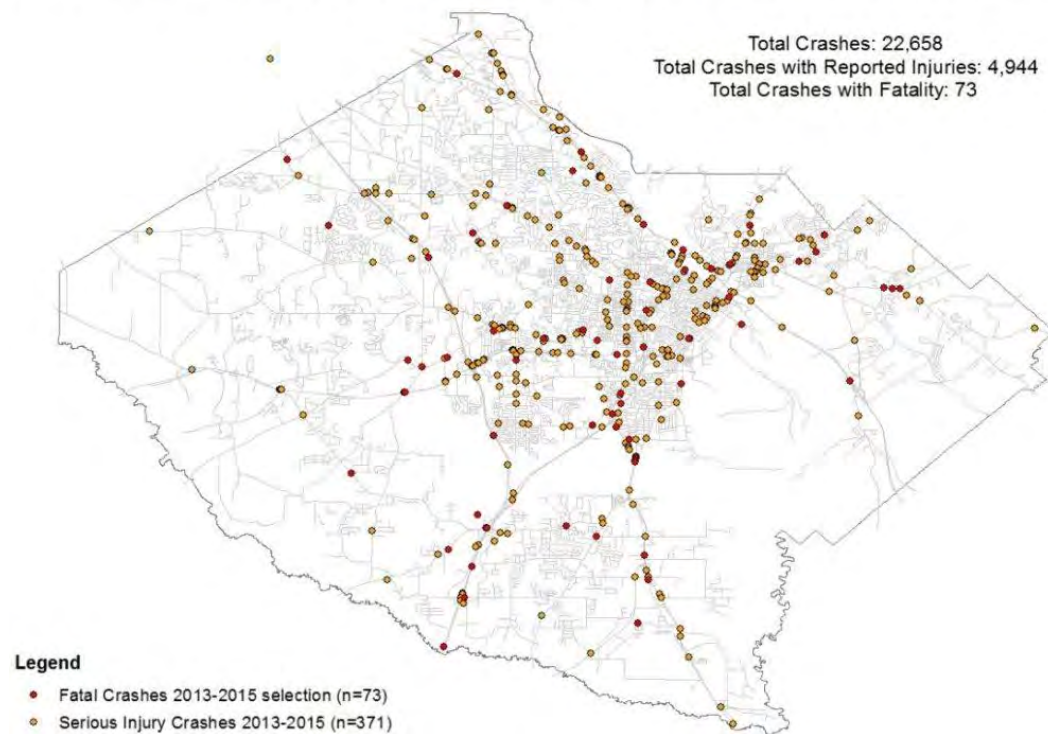


Figure 9-1: 2013-2015 Crashes – Fatal and Serious Injury Crashes – Macon-Bibb County [6]

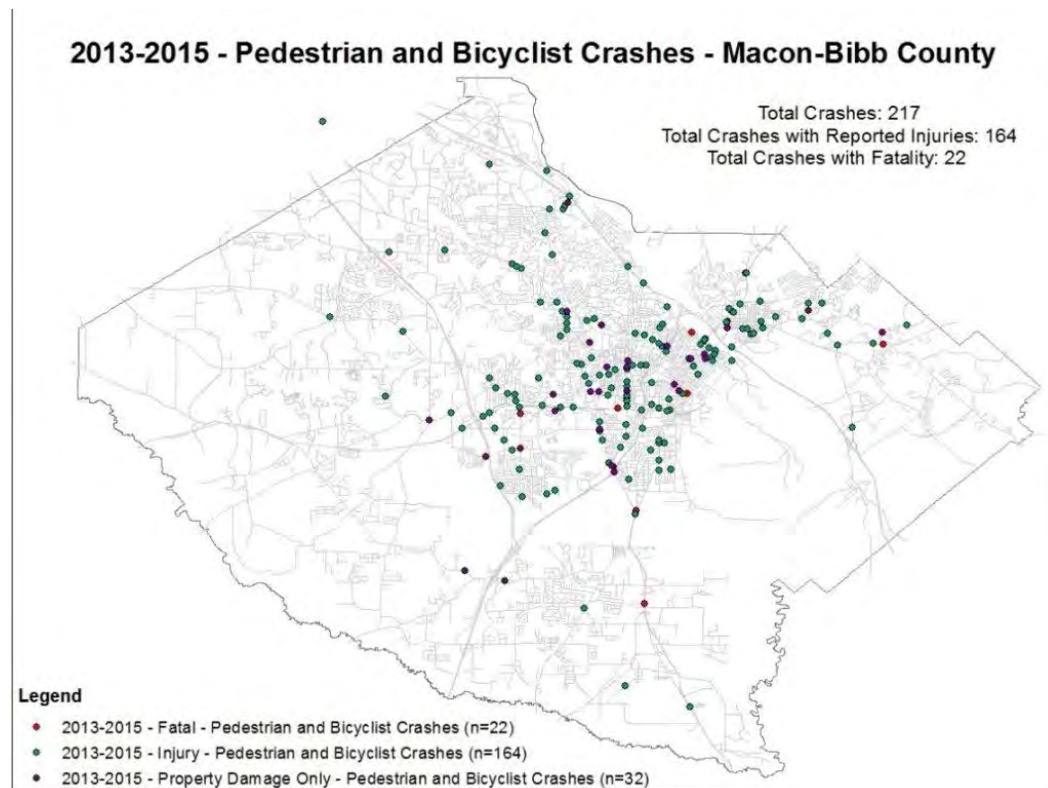


Figure 9-2: 2013-2015 Crashes – Pedestrian and Bicyclist Crashes – Macon-Bibb County

These traffic deaths tell a story at odds with Macon-Bibb County's desire to create safe neighborhoods and safe communities that are sustainable, walkable, and bikeable[7]. The Macon-Bibb County Commissioner's support for Vision Zero strategies makes a clear statement that the cost is too high.

Year	MATS				Macon-Bibb Co.				Jones Co. (MATS only)				Monroe Co. (MATS only)			
	All	Motor Vehicle	Bicyclist	Pedestrian	All	Motor Vehicle	Bicyclist	Pedestrian	All	Motor Vehicle	Bicyclist	Pedestrian	All	Motor Vehicle	Bicyclist	Pedestrian
2011	21	18	0	3	19	16	0	3	0	0	0	0	2	2	0	0
2012	19	16	0	3	17	14	0	3	1	1	0	0	1	1	0	0
2013	31	22	1	8	29	21	0	8	0	0	0	0	2	1	1	0
2014	23	15	1	7	23	15	1	7	0	0	0	0	0	0	0	0
2015	23	17	0	6	21	15	0	6	2	2	0	0	0	0	0	0
<b>TOTAL</b>	<b>117</b>	<b>88</b>	<b>2</b>	<b>27</b>	<b>109</b>	<b>81</b>	<b>1</b>	<b>27</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>0</b>

Table 9-1 MATS Fatal Crashes, 2011 – 2015

### Pedestrian Fatalities

Pedestrians are at particular risk in Macon-Bibb County. While only 2% of people identify walking or biking as their primary way to commute to work in Macon-Bibb County, pedestrians and bicyclists made up 26% of all traffic-related deaths between 2011-2015, compared to 14% in Georgia and 15% nationwide[8]. Both public health measures and the Pedestrian Danger Index show an increasingly dangerous environment for pedestrians in Macon-Bibb County.

### 2014 Pedestrian Fatalities per 100,000[9]

US: 1.53; GA: 1.61; Macon-Bibb Co.: 4.26

### 2016 Pedestrian Danger Index

US: 52.5; GA: 98.1; Macon-Bibb Co.: 217.6

Pedestrian fatalities per 100,000 is a public health measure that allows a meaningful comparison between localities or through time. In Macon-Bibb County, this measure has increased 11% from 3.81 to 4.26 between 2012 and 2016 and is two and a half times as high as the national and state rates.

The “Pedestrian Danger Index,” or PDI, is a calculation of the share of local commuters who walk to work—the best available measure of how many people are likely to be out walking each day—and the most recent data on pedestrian deaths. First developed in the 1990s by the Surface Transportation Policy Partnership and used more recently by Smart Growth America's Transportation for America program, PDI is the rate of pedestrian deaths relative to the number of people who walk to work in the region. The higher an area's PDI, the more dangerous it is for people walking. In Macon-Bibb County, the PDI increased from 137.8 to 217.6 between 2008-2012 and 2012-2016 indicating an increasingly dangerous pedestrian environment and is substantially higher than the 2016 national PDI and state PDI[10].

### Causes of Deaths and Serious Injuries on Macon-Bibb County Roads



Crash data from 2011-2015 was analyzed in an effort to understand the causes of traffic violence in the MATS region. The data revealed significant factors contributing to deaths and serious injuries on the County's streets, as well as where most of those crashes occurred. Close examination reveals that many deadly crashes happen as a result of dangerous behaviors—speeding, driving impaired by drugs or alcohol, or violating traffic laws.

#### **2014 Traffic Fatalities Per 100,000 persons[\[11\]](#)**

US: 10.27; GA: 11.53; Macon-Bibb Co.: 14.94; Monroe Co.: Jones Co.

#### **2014 Traffic Fatalities Per 100 Million Vehicle Miles Traveled[\[12\]](#)**

US: 1.08; GA: 1.04; Macon-Bibb Co.: 1.10

While a deadly or serious injury crash can happen anywhere, more of them happen on certain street types. Wide, fast arterials with multiple lanes in each direction see a disproportionate number of traffic deaths. All too often, these streets run through lower-income neighborhoods where people rely heavily on walking and transit.

#### **Factor: Street Design**

The safest streets slow down traffic, provide separation between modes, and provide visual cues that make it clear that people using different modes share the space. These streets keep all people safer—even when they make mistakes.

At the other end of the spectrum, wide streets with four or more lanes of fast-moving traffic, unprotected pedestrian crossings and bike lanes, and longer distances between signals are the places where deadly crashes happen most often. While mistakes can occur anywhere, these streets are where those mistakes more often can have lethal consequences. As shown in Table 9-2, in Macon-Bibb, 89% of all deadly pedestrian and bicycle crashes and over half of all of the county's deadly crashes occur on our principle and minor arterials. These make up just 14% of the county's total street right of way. A similar patterns is observed for the Monroe County MATS area in Table 9-4 [\[13\]](#).

<b>Road Types</b>	<b>Center Line Miles</b>	<b>% of Roads</b>	<b>All Traffic Fatalities (2011-2015) (112 fatalities)</b>	<b>Pedestrian and Bicyclist Fatalities (2011-2015) (28 fatalities)</b>
Interstate	42	3%	21%	4%
Arterial Roads	174	14%	56%	89%
Collector Roads	141	11%	12%	0%
Local Roads	915	72%	11%	7%

Table 9-2: Percentage of Centerline Miles vs. Percentage of Fatal Accidents, by Road Type: Macon-Bibb County

Road Types	Center Line Miles	% of Roads	MATS Region Traffic Fatalities (2011-2015) (4 fatalities)	Pedestrian and Bicyclist Fatalities (2011-2015) (0 fatalities)
Interstate	0	0%	0%	0%
Arterial Roads	65	11%	0%	0%
Collector Roads	125	21%	75%	0%
Local Roads	396	68%	25%	0%

Table 9-3: Percentage of Centerline Miles vs. Percentage of Fatal Accidents, by Road Type: Jones County MATS Area

Road Types	Center Line Miles	% of Roads	MATS Region Traffic Fatalities (2011-2015) (6 fatalities)	Pedestrian and Bicyclist Fatalities (2011-2015) (1 fatalities)
Interstate	29	4%	67%	0%
Arterial Roads	77	12%	33%	100%
Collector Roads	155	23%	0%	0%
Local Roads	403	61%	0%	0%

Table 9-4: Percentage of Centerline Miles vs. Percentage of Fatal Accidents, by Road Type: Monroe County MATS Area

#### Factor: Speed

Between 2011-2015, 18% of fatal crashes in Macon-Bibb County were attributed to speeding. Five percent of all fatal crashes in Jones County and 20% of all fatal crashes in Monroe County were attributed to speeding (these percentages are not limited to the MATS area)[\[14\]](#).

Figure 9-3 shows how speed impacts the severity of a crash. A person walking who is struck by a vehicle traveling at 40+ mph is 8 times more likely to die or receive a serious injury than one struck by a vehicle traveling at less than 20 mph.[\[15\]](#)

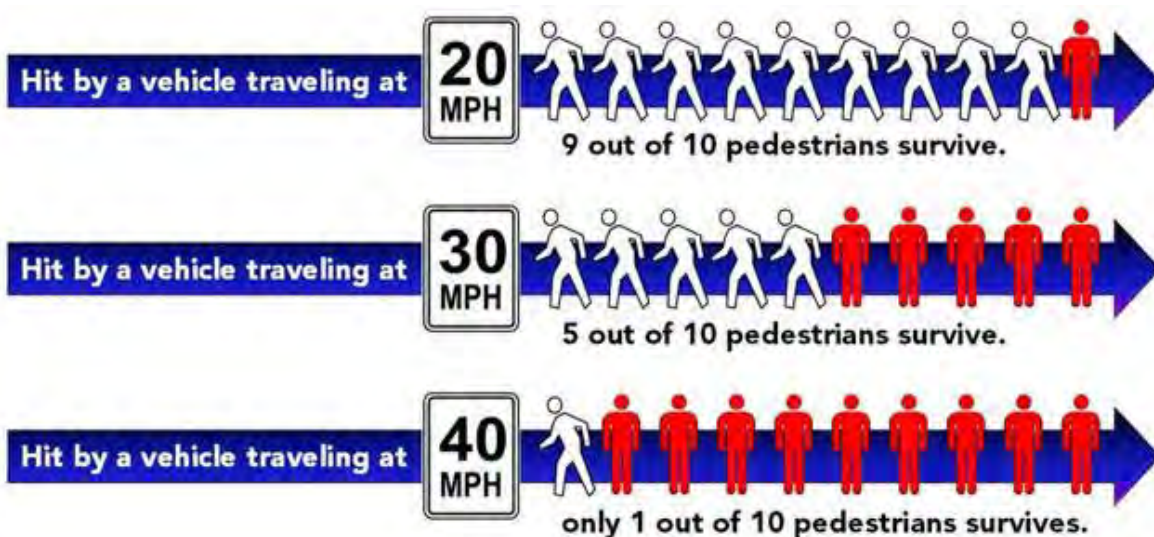


Figure 9-3: Impact Speed and a Pedestrian's Risk of Severe Injury or Death

In a community where walkers and bicyclist make up a disproportionate number of traffic deaths, slowing speeds is critical. Obtaining that objective will take a suite of policy, infrastructure, education, and enforcement actions.

Posted speed limits tell drivers the speed at which they should be driving in normal conditions. In turn, the posted speed needs to match the speed that is safe. Street design is integral to achieving the desired driving speed, directly influencing the driving speed that feels comfortable. Street and lane width, signal spacing, markings, buffers, curb extensions, and medians can all affect a driver's speed.

In tandem with design, working to change social norms, education, and enforcement reinforces community expectations about safety and compliance.

#### **Factor: Impairment**

Alcohol and drug impairment is a major contributor to death and injury on our streets. Between 2011-2015, alcohol-impaired driving was attributed to 25% of fatal crashes in Macon-Bibb County, 47% of all fatal crashes in Jones County, and, 22% of all fatal crashes in Monroe County [16] – compared to 24% in Georgia and 31% in the nation as a whole. [17]

#### **Traffic crash data**

Three years of records (2013-2015) that included over 22,000 crashes in Macon-Bibb County, 514 crashes in the MATS portion of Jones County, and 164 crashes in the MATS portion of Monroe County, were analyzed to identify top crash roads in the MATS region. Crash data was downloaded from the Georgia Electronic Accident Reporting System (GEARS).

**The High Crash Network** includes the MATS region's most dangerous roads for people driving, walking, and bicycling. The most dangerous roads in the MATS region are all located in Macon-Bibb County. The 10 roads with the highest number of crash deaths and reported injuries in Macon-Bibb County in 2013-2015 in Macon-Bibb County in Table 9-5. The 5 roads with the highest number of crashes and crash deaths in Jones and Monroe County portions of MATS are presented in Tables 9-6 and 9-7, respectively.

<b>Macon-Bibb County</b>	<b>Crashes</b>	<b>Fatal Crashes</b>	<b>Injury Crashes</b>
PIO NONO AVE.	809	7	376
I-75	731	3	274
RIVERSIDE DR.	717	4	210
EISENHOWER PKWY.	600	2	272
MERCER UNIVERSITY DR.	533	5	299
FORSYTH RD.	473	1	183
EXIT RAMPS (I-75, I-16, I-475)	436	0	141
GRAY HWY.	431	3	153
VINEVILLE AVE.	405	1	131
I-16	339	2	108

Table 9-5: Roads with Highest Numbers of Fatal and Injury Crashes in Macon-Bibb County, 2013-2015

<b>Jones County</b>	<b>Crashes</b>	<b>Fatal Crashes</b>	<b>Injury Crashes</b>
GRAY HWY (US HWY 129)	90	0	24
STATE ROUTE 49	81	1	31
JOYCLIFF RD.	42	1	15
UPPER RIVER RD.	25	0	4
GRAHAM RD.	22	0	3

Table 9-6: Roads with Highest Numbers of Fatal and Injury Crashes in Jones County, 2013-2015

<b>Monroe County</b>	<b>Crashes</b>	<b>Fatal Crashes</b>	<b>Injury Crashes</b>
STATE ROUTE 401	47	0	9
STATE ROUTE 408	39	0	12
STATE ROUTE 19	24	1	11
INTERSTATE 75	7	0	7
INTERSTATE 475	5	0	3

Table 9-7: Roads with Highest Numbers of Fatal and Injury Crashes in Monroe County, 2013-2015

Between 2013-2015, 199 pedestrian and bicyclist crashes occurred in Macon-Bibb County, killing 22 pedestrians and bicyclists and injuring at least 165 people. The 5 roads with the highest number of pedestrian and bicycle crashes in the MATS region between 2013-2015 are listed in Table 9-8. Only Macon-Bibb County locations are listed because there are relatively few pedestrian and bicycle crashes – total of 3 crashes – in the MATS portions of Jones and Monroe counties.[\[18\]](#)

<b>Roads</b>	<b>Crashes</b>	<b>Fatal Crashes</b>	<b>Injury Crashes</b>
PIO NONO AVE.	15	3	11
EISENHOWER PKWY	12	1	9
GRAY HWY	7	2	5
EMERY HWY	6	0	5
MONTPELIER AVE	5	1	4

Table 9-8: Roads with Highest Number of Crashes Involving Pedestrians and Cyclists in Macon-Bibb County, 2013 - 2015

### Developing Safer Streets

The MATS region, and particularly Macon-Bibb County, is dedicated to creating a safer transportation network. Complete Streets, road safety audits, and the Pedestrian Safety Review Board, along with a Vision Zero approach to traffic deaths, are all being used in Macon-Bibb County to begin eliminating traffic fatalities and serious injuries on our roadways.

### Complete Streets



**Complete Streets** are streets for everyone. They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

By adopting a Complete Streets policies, MATS communities direct their transportation planners and engineers to routinely design and operate the entire road right of way to enable safe access for all users, regardless of age, ability, or mode of transportation. This means that every transportation project will make the street network better and safer for drivers, transit users, pedestrians, and bicyclists. In the MATS region, GDOT is the primary entity implementing Complete Streets road designs based on adopted design policy guidelines.

### **Complete Streets on State Roads - GDOT's Design Policy Manual**

GDOT's primary strategy for implementing Complete Streets is to incorporate bicycle, pedestrian, and transit accommodations into roadway construction and maintenance projects. Local governments and planning agencies can also implement Complete Streets by partnering with GDOT, and by initiating and managing their own locally-funded projects and programs.

The following principles form a basis for the bicycle and pedestrian accommodation policies included in GDOT's Design Policy Manual:

1. Accommodations for bicycles and pedestrians should be integrated into roadway construction projects through design features appropriate to the context and function of the transportation facility.
2. The design and construction of new facilities should anticipate likely demand for bicycling and pedestrian facilities within the design life of the facility.
3. The design of intersections and interchanges should accommodate bicyclists and pedestrians in a manner that addresses the need to safely cross roadways, as well as to travel along them.
4. The design of new and reconstructed roadways should not preclude the future accommodation of bicyclists and pedestrians along and across corridors.
5. While it is not the intent of maintenance resurfacing to expand existing facilities, opportunities to provide facilities or to enhance safety for pedestrians and bicyclists should be considered during the development of these projects.

The following principles form a basis for the transit accommodation policies presented in the remainder of this chapter:

1. Accommodations for transit should be integrated into roadway construction projects through design features appropriate for the context and function of the roadway, and associated transit facility (e.g., transit stops, stations, or park-and-ride lots).
2. The design of roadways and intersections should address the need of pedestrians to safely walk along and across roadways, to access nearby transit facilities.
3. The design of new and reconstructed roadways should not preclude the accommodation of transit facilities (e.g., for light rail, streetcars, and bus rapid transit) planned and funded for construction within the design life of the roadway project.

### **Developing Complete Streets Policies for Local Roads**

Although the City of Macon approved a resolution supporting a Complete Streets Policy in 2012, it was not renewed for the consolidated government and none of the MATS communities currently have an adopted Complete Streets policy for local streets.

The National Complete Streets Coalition recognizes many types of statements as official commitments to a Complete Streets approach, including legislation, resolutions, executive orders, departmental policies, policies adopted by an elected board, comprehensive or master plans, and design guidance.

The concept of “Complete Streets” is itself simple and inspiring, but a policy must do more than simply affirm support for the concept. The best policies refine a community's vision for transportation, complement community needs, and establish a flexible approach necessary for an effective Complete Streets process and outcome.

The National Complete Streets Coalition advocates for a comprehensive policy model that includes ten ideal elements:

1. **Vision:** The policy establishes a motivating vision for why the community wants Complete Streets: to improve safety, promote better health, increase efficiency, improve the convenience of choices, or for other reasons.
2. **All users and modes:** The policy specifies that “all modes” includes walking, bicycling riding, public transportation, driving trucks, buses and automobiles and “all users” includes people of all ages and abilities.
3. **All projects and phases:** All types of transportation projects are subject to the policy, including design, planning, construction, maintenance, and operations of new and existing streets and facilities.
4. **Clear, accountable exceptions:** Any exceptions to the policy are specified and approved by a high-level official.
5. **Network:** The policy recognizes the need to create a comprehensive, integrated and connected network for all modes and encourages street connectivity.
6. **Jurisdiction:** All other agencies that govern transportation activities can clearly understand the policy's application and may be involved in the process as appropriate.
7. **Design:** The policy recommends the use of the latest and best design criteria and guidelines while recognizing the need for design flexibility to balance user needs in context.
8. **Context sensitivity:** The current and planned context (buildings, land use, and transportation needs) is considered when planning and designing transportation solutions.
9. **Performance measures:** The policy includes performance standards with measurable outcomes.
10. **Implementation steps:** Specific next steps for implementing the policy are described.

### Complete Street Survey by GA Bikes

In April 2016, Georgia Bikes conducted the state's first ever multi-city public opinion poll on people's attitudes toward Complete Streets policies and creating safer streets and neighborhoods for walking and biking.

The poll found overwhelming support in the Macon region for Complete Streets policies (92% in favor) and for investing in transportation safety improvements (94% in favor). Poll results can be found at the [Georgia Bikes website](#).

### Road Safety Audits

In 2016, Macon-Bibb County and GDOT began conducting Road Safety Audits (RSA) on high collision roadways in the county. An RSA is a formal safety performance examination of an existing or future road or intersection by an audit team. RSAs are used to identify potential solutions leading to both short-term improvements and longer term efforts including construction projects. It is a proactive, innovative approach that helps identify safety issues to be considered in future road improvement projects.

The findings of an RSA are unique to the safety concerns identified on each roadway. For example, the Eisenhower Parkway (U.S. Hwy 80) RSA identified high speeds, large intersections, long distances between

protected crossings, and a lack of dedicated pedestrian and bicycle facilities as significant safety challenges confronting people walking, biking and taking the bus on the corridor. Numerous other issues impact the safety of motor vehicle users.

As of October 2016, RSAs have been completed for portions of Eisenhower Parkway (U.S. Hwy 80), Emery Highway (U.S. Hwy 23), and portions of Jeffersonville Road (U.S. Hwy 80). A county led RSA is under development for portions of Gray Highway (U.S. Hwy 129). All three audits resulted in similar recommendations, including:

1. Complete intersection improvement projects that upgrade signal equipment, provide ADA accessible curb ramps and sidewalks access to bus stops and add intersection lighting.
2. Where appropriate, convert median breaks along the corridor into R-cuts to reduce conflicts and improve safety.
3. Add sidewalks and bike lanes and consider lane reconfigurations that would greatly improve access and safety for people walking, taking transit, and riding bikes, as well as provide a more uniform, predictable, and safe corridor for motor vehicle users.
4. Install raised pavement markings and refreshing all striping to improve visibility.

### **Macon-Bibb County Pedestrian Safety Review Board**

Responding to concerns about pedestrian safety, the Macon-Bibb County Commission created the multi-department [Pedestrian Safety Review Board](#) (Board) in April 2015 charging it with finding ways to make all of the county's roads, streets, and alleys safe for pedestrians.

Meeting each month, the Board establishes a forum for the sheriff's department, health department, county schools, traffic engineers, facilities management, planning and zoning, elected officials, AARP, and concerned citizens to develop strategies for creating a safer environment for pedestrians.

In just over a year, the Board has:

- Started an education campaign to help encourage pedestrians to use crosswalks;
- Hired a consultant to help the county consider Vision Zero strategies to reduce traffic fatalities;
- Planned the first Macon-Bibb County Pedestrian Safety Summit for August 16, 2016;
- Developed a list of potential Special Purpose Local Option Sales Tax (SPLOST) projects that provide sidewalks, crosswalks, and other pedestrian safety features at high-risk locations; and,
- Began improving data collection and mapping of high collision and dangerous roadways and intersections.

While the Board is working to become an organizing focal point for many pedestrian improvement efforts, it is building upon community master plans like the [Macon Action Plan](#) and the [College Hill Corridor Master Plan](#), which envision more pedestrian and bicycle friendly development in Macon's urban core and have helped guide substantial pedestrian improvements in and around Tattnall Square Park and Mercer Village. The downtown's newest gateway project, the Second Street Corridor, includes sidewalks and an 8-foot multi-use path and is now graced by a new pedestrian bridge at Stadium Drive. And, new speed humps and flashing lights have been added on Ingleside Avenue to help protect pedestrians.

### **Conclusion**

Safety is an essential consideration in the development and growth of the MATS transportation network. Many federal, state and local directives incorporate safety into the transportation planning process. With new research and available data, safety can be incorporated into the transportation project development process

(planning, design, and maintenance) to effectively identify countermeasures to reduce crashes and crash severity throughout the MATS region.

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[1] Source: Georgia Electronic Accident Reporting System (GEARS: <https://www.gearsportal.com>) and U.S. DOT Fatality Analysis Reporting System (FARS: <https://www-fars.nhtsa.dot.gov/Main/index.aspx>)

[2] Source: 2015 Georgia Strategic Highway Safety Plan <http://www.gahighwaysafety.org/fullpanel/uploads/files/vision-and-goals.pdf>

[3] U.S. DOT, National Safety Council Launch 'Road to Zero' Coalition to End Roadway Fatalities, Oct. 3, 2016, <https://www.nhtsa.gov/press-releases/us-dot-national-safety-council-launch-road-zero-coalition-end-roadway-fatalities>

[4] Death Toll on Georgia Highways Continues to Climb, Jan. 3 2017, <http://www.cbs46.com/story/34174964/death-toll-on-georgia-highways-continues-to-climb>

[5] NHTSA Fatality Analysis Reporting System (FARS)

[6] NHTSA Fatality Analysis Reporting System (FARS)

[7] Forward Together Strategic Plan (2015) <http://www.maconbibb.us/wp-content/uploads/2015/05/Macon-Bibb-County-Strategic-Plan.pdf>

[8] FARS, <https://www-fars.nhtsa.dot.gov/States/StatesCrashesAndAllVictims.aspx>

[9] Source: FARS, <https://www-fars.nhtsa.dot.gov/States/StatesPedestrians.aspx>

[10] Dangerous By Design 2016, Smart Growth America, <https://smartgrowthamerica.org/dangerous-by-design/>

[11] Source: FARS, US Census

[12] Sources: FARS, GDOT, Report 445

[13] Source: FARS, GDOT, Mileage by Route and Road System Report 445 for 2015

[14] NHTSA

[15] Source: AAA, Impact Speed and a Pedestrian's Risk of Severe Injury or Death, 2011, <https://www.aaafoundation.org/sites/default/files/2011PedestrianRiskVsSpeed.pdf>

[16] Blood alcohol content equal to or greater than 0.08.

[17] 2010-2014 NHTSA Fatality Analysis Reporting System <https://www-fars.nhtsa.dot.gov/States/StatesAlcohol.aspx>

[18] GEARS shows one pedestrian crash and injury in the MATS portion of Jones County between 2013 and 2015. Two crashes that killed one bicyclist and injured another bicyclist in the MATS portion of Monroe County between 2013 and 2015. The bicyclist injury and fatality occurred in the same crash at SR 19 (Dixie Hwy) and Heritage Drive in October 2013. A second bicycle crash in the Monroe County portion of MATS, with no reported injuries or fatalities, occurred in May 2014 at or near the intersection of Rivoli Road and Klopfer Road.



# Chapter 10 | Pedestrians and Bicyclists

## Introduction

Livable communities that support bicycling and walking are a high priority for MATS communities. A livable community is one that provides safe and convenient transportation choices to all citizens, whether it's by walking, bicycling, transit, or driving.

However, each year pedestrian and bicyclist fatalities comprise a disproportionately high 28% of all traffic fatalities in the MATS region despite being less than 2% of commuters. Between 2011-2015, at least 6 pedestrians and bicyclists were killed in the MATS region each year; in 2016, 8 were killed[1]. Eighty-three additional crashes injured pedestrians and bicyclists[2]. These numbers are unacceptable.

	2015 Pedestrian and Bicyclist Fatalities <sup>3</sup>			
	Pedestrian/Bicycle Fatalities	Percentage of Total Fatalities	Fatalities per 100,000 Persons <sup>4</sup>	Pedestrian Danger Index - 2016 <sup>5</sup>
United States	6,194	17.7%	1.94	52.5
Georgia	206	14.4%	2.01	98.1
MATS	6	28.6%	TBD	TBD
Macon-Bibb Co.	6	28.6%	3.90	217.6

Table 10-1 Pedestrian and Bicycle Facilities 2015 [3],[4],[5]

## Pedestrian and Bicycle Facilities

Eliminating the region's pedestrian and bicyclist fatalities and creating a safe, comfortable and accessible walking and bicycling network in the MATS region requires the cooperation and leadership of a wide range of partners including the Georgia Department of Transportation (GDOT), the Middle Georgia Regional Commission, local governments, and regional and local non-profit organizations.

GDOT responds to design guideline warrants to identify pedestrian and bicycle facilities along state routes. The regional commission helps to coordinate applications for GDOT funding for middle Georgia's counties and towns. Local governments include pedestrian and bicycle facilities when planning improvement on local roads and when coordinating with GDOT on state route improvements.

Macon-Bibb County has taken the additional steps of endorsing Vision Zero strategies for improving roadway safety, designating Special Purpose Local Option Sales Tax (SPLOST) funds specifically for pedestrian improvements[6], and organizing the Pedestrian Safety Review Board to help reduce pedestrian and bicycle fatalities and serious injuries.

Community master plans in the MATS region, like the Macon Action Plan and College Hill Corridor Master Plans, emphasize the importance of focusing on pedestrian and bicyclist safety and accessibility as basic strategies to support economic revitalization and improved quality of life.

Regional non-profits are working to develop pedestrian and bicycle facilities that cross municipal boundaries. For example, the Central Georgia Rail-to-Trail Association is working to create a 33-mile long multi-use trail along an abandoned railway connecting downtown Macon to Milledgeville.

Finally, local non-profit organizations like Bike-Walk Macon and NewTown Macon advocate for new and improved pedestrian and bicycle facilities and pursue grant funding for significant pedestrian and bicycle facility improvements like the Ocmulgee Heritage Trail, Macon Connects Pop-Up Bicycle Network and Open Streets events. The Historic Macon Foundation is incorporating pedestrian and bicycle-friendly traffic calming strategies into its efforts to revitalize Beall's Hill and has launched its Bikes for Beall's Hill initiative – which provides two free bicycles to new homeowners in the Beall's Hill neighborhood[7].

Finally, the Macon-Bibb County Convention and Visitors Bureau is encouraging residents and visitors alike to explore downtown Macon on the bicycle by renting one of the newly introduced Macon Bike Share bicycles, which rent for only \$3 an hour – the first hour free.[8]

### **Why Invest in Walking and Bicycling**

Walking and bicycling in the MATS region should be safe, convenient, comfortable, and viable transportation options that connect people to places, foster recreational and economic development opportunities, improve personal health and the environment, and elevate the quality of life in the region.

### **Access for All**

Walking and bicycling are affordable transportation options available to everyone. Walking and bicycling facilities should be designed to be used by all County residents, not just those who are fit and fast walkers or

## **World's Largest Pop-Up Bike Network**



For one week in Sept. 2016, with the help of 90 local volunteers,

**NewTown Macon** – in partnership with **Macon-Bibb County, Bike Walk Macon, 8-80 Cities** and **Better Block** – linked different areas of the urban core to one another via a complete bike network by installing 5 miles of bike infrastructure and creating the largest pop-up bike network ever constructed.

[Pop-Up Bike Network >>](#)

those confident riding bicycles swiftly or in traffic. Designing streets for safe walking and bicycling can also lead to safer driving, fewer mode conflicts, and reduced peak hour congestion for motorists.

### Personal Health

Active transportation is any self-propelled, human powered mode of transportation such as walking or bicycling. Such activities help people meet recommended physical activity levels, thereby reducing chronic disease and associated health care costs. Improved walking and bicycling infrastructure for recreation and daily trips to work, running errands, or take the kids to school creates a sustained increase in physical activity and a healthier community.

### Economic Health

Business and employee relocation decisions are increasingly based on the quality of life considerations such as walking and bicycling facilities. Active transportation infrastructure also generates tourism revenue, supports local business, and creates jobs.

### Air Quality

Replacing driving trips with walking and bicycling trips can play an important part in a comprehensive strategy to improve air quality throughout the region.

## Did you know?

Did you know that 1 in 3 residents in Macon-Bibb County – about 52,000 people - do not have a driver's license?[9] Or, that 40% of all households only have access to one vehicle and 23% of rental households do not have access to any vehicles?[10]

### What does a good walking and bicycling network look like?

#### INTEGRATION

Integrate walking and bicycling into community planning to enhance livability, health, transportation, the environment, and economic development.

#### NETWORK

Develop a safe, comfortable, and attractive walking and bicycling network that connects people of all ages, abilities, and neighborhoods to the places they want to go.

#### MAINTENANCE

Maintain the walking and bicycling system year-round.

#### PROGRAMS

Promote the safety and attractiveness of walking and bicycling through education, encouragement, and enforcement programs.

#### TRANSIT CONNECTIONS

Integrate pedestrian and bicycle facilities with transit routes, stations, and stops.



Figure 10-1: National Guidance for Pedestrian and Bicyclist Transportation Options

### National Guidance for Pedestrian and Bicyclist Transportation Options

FAST Act: [The Fixing America's Surface Transportation \(FAST\) Act](#) reauthorized Federal surface transportation programs for FY 2016 through 2020. While there are pedestrian and bicyclist references in many provisions, in summary:

- Pedestrian and bicycle infrastructure projects remain broadly eligible across Federal-aid highway and transit programs.
- U.S. Department of Transportation (USDOT), States, MPOs, and cities should continue to promote and adopt design criteria and standards that provide for the safe and adequate accommodation of pedestrians, bicyclists, and motorized users.

USDOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems.

In support of this commitment, transportation agencies and local communities should go beyond minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. Such actions should include:

- Considering walking and bicycling as equals with other transportation modes.
- Ensuring that there are transportation choices for people of all ages and abilities, especially children.
- Going beyond minimum design standards.
- Integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges.
- Collecting data on walking and biking trips.
- Setting mode share targets for walking and bicycling and tracking them over time.
- Removing snow from sidewalks and shared-use paths.
- Improving nonmotorized facilities during maintenance projects.

Increased commitment to and investment in bicycle facilities and walking networks can help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities. Walking and bicycling provide low-cost mobility options that place fewer demands on local roads and highways. DOT recognizes that safe and convenient walking and bicycling facilities may look different depending on the context — appropriate facilities in a rural community may be different from a dense, urban area. However, regardless of regional, climate, and population density differences, it is important that pedestrian and bicycle facilities be integrated into transportation systems. While DOT leads the effort to provide safe and convenient accommodations for pedestrians and bicyclists, success will ultimately depend on transportation agencies across the country embracing and implementing this policy.

This DOT policy is based on various sections of the United States Code (U.S.C.) and the Code of Federal Regulations (CFR) in Title 23—Highways, Title 49—Transportation, and Title 42—The Public Health and Welfare. The State and Metropolitan Planning Organization (MPO) planning regulations describe how walking and bicycling are to be accommodated throughout the planning process (e.g., see 23 CFR 450.200, 23 CFR 450.300, 23 U.S.C. 134(h), and 135(d)).

The above-referenced code sections describe how bicyclists and pedestrians of all abilities should be involved throughout the planning process, should not be adversely affected by other transportation projects, and should be able to track annual obligations and expenditures on nonmotorized transportation facilities.

Source: ["United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations."](#) signed on March 11, 2010.

## **State Guidance for Pedestrian and Bicyclist Transportation Options**



The FAST Act requires states to develop Strategic Highway Safety Plans (SHSP). Georgia's SHSP includes a safety focus on bicycle and pedestrian transportation.

In response to this focus the *Georgia Bicycle and Pedestrian Safety Action Plan* was adopted in 2007 and envisions:

*“A safe and accessible environment that supports and encourages increased levels of bicycling and walking. All state, local, and regional transportation agencies provide a transportation system where walking and bicycling are viable transportation choices, and residents and visitors are able to walk and bike safely and conveniently to accomplish their daily activities while maintaining active and healthy lifestyles.”*

Four goals are established in the document and guide the 2040 LRTP update:

**Goal 1:** Improve bicycle and pedestrian safety;

**Goal 2:** Increase trips made by bicycle and on foot;

**Goal 3:** Increase funding for bicycle and pedestrian programs and infrastructure improvements; and

**Goal 4:** Improve bicycle and pedestrian-related data collection.

(Source: Summarized from Georgia Bicycle and Pedestrian Safety Action Plan, 2007, <http://www.dot.ga.gov/drivesmart/travel/Documents/BikePedSAP.pdf>)

### **The Macon-Bibb County Bikeway and Pedestrian Plan**

The Macon-Bibb County Bikeways and Pedestrian Plan (2003) serves as the county's blueprint for making walking and bicycling safe and efficient transportation options for people of all ages and abilities. The pedestrian element explored pedestrian safety improvement needs. The bicycle element identified bike routes that can be improved with relatively minimal local investment and larger bicycle facility upgrades that will require new construction that may need to be coordinated with the Transportation Improvement Program (TIP) projects.

The plan helped guide the establishment of three goals for the development of safe, convenient and accessible bicycle and pedestrian transportation options in the MATS region. These goals were included in the 2040 LRTP, adopted in 2013, and are maintained in this update.

**Goal #1: Create a system in the MATS area that will provide safe, convenient, and accessible bicycle and pedestrian facilities for all users.**

Objective 1: Develop a connected system of bicycle and pedestrian facilities that serve major origins and destination points within the study area such as employment centers, commercial areas, educational/cultural facilities and provide bicycle routes that offer recreational value.

Objective 2: Ensure all recommended bicycle and pedestrian facilities are ADA compliant.

Objective 3: Encourage an interconnection of bicycle and pedestrian facilities with other modes of alternative forms transportation such as transit in order to reduce dependence on private transportation, reduce traffic and improve air quality.

Objective 4: Examine residential and commercial development regulations and encourage the inclusion of bicycle and pedestrian friendly facilities in site plan reviews.

Objective 5: Incorporate a maintenance program to increase the longevity of safe and usable facilities.

**Goal #2: Develop an educational and promotional program to encourage bicycling and pedestrian forms of transportation.**

Objective 1: Develop a bicycle suitability map that describes the existing conditions of different roadways to allow cyclists to select a route appropriate to their skill level.

Objective 2: Develop pedestrian brochures to encourage walking between major points of interest.

Objective 3: Encourage employers to accommodate the needs of bicyclists and pedestrians.

Objective 4: Encourage and implement a MATS area wide Bike to Workday.

Objective 5: Encourage and implement a bicycle and pedestrian safety program in area schools

**Goal #3: Identify funding sources to implement, upgrade and maintain bicycle and pedestrian facilities.**

Objective 1: Encourage the inclusion of bicycle and pedestrian facilities within the design of scheduled TIP road projects.

Objective 2: Actively pursue all eligible federal and state grants for the bicycle and pedestrian plan, development, and maintenance.

**PEDESTRIAN AND BICYCLE FACILITIES**

Accomplishing the region's pedestrian and bicycle goals will require a coordinated approach that combines education, enforcement, emergency response, and engineering. Engineering involves the strategic and prioritized design and installation of effective pedestrian and bicycle facilities.

**Pedestrian Facilities**

Most trips begin and end as walking trips even when a car, bicycle, or bus is also involved. Macon's central business district has a largely complete walking network that extends along several arterials toward outlying neighborhoods. Most of the residential neighborhoods outside of Macon's urban core lack a complete walking network with sidewalks, safe crosswalks, and traffic calming designs that encourage walking.

**Linear Facilities**

Pedestrians use several different types of facilities in the MATS region, primarily sidewalks. Every street in the County should be designed for pedestrians.

**Multi-Use Paths**

These facilities are shared by many active transportation and recreation users including pedestrians, bicyclists, and in-line skaters. The Ocmulgee Heritage Trail is the premier multi-use path in the MATS Region. Eleven miles of the trail are currently open with several more miles planned to open over the next few years.

## **Neighborhood Byways**

Neighborhood byways are multi-modal linear facilities on streets with low traffic volumes and speeds. Additionally, intersection improvements that allow bicyclists and pedestrians to cross large or busy streets are critical to their utility. Wayfinding signage and shared lane markings are also important components. Traffic diversion and calming measures are often used when traffic volumes or speeds are higher than desirable.

## **Sidewalks**

Sidewalks are the most common walking facility in the MATS region. There are roughly 293 miles of roads with sidewalks on one or both sides of the road in Macon-Bibb County, which represents only 13% of all of the roads. Some sidewalks are directly adjacent to busy travel lanes and lack a buffer or barrier, while others are buffered and separated from traffic by landscaping, parking, seating, or other physical means.

The identification of gaps in the sidewalk network is a very fine-grained exercise. Aerial photography shows sidewalks missing on some busy arterial corridors, such as Bloomfield Drive, Eisenhower Parkway, and Gray Highway, in some commercial developments, such as in the Plantation Centre and Rivergate, and in many residential neighborhoods. These sidewalks should be filled in as redevelopment allows.

## **Landscaping & Street Furniture**

Landscaping, street trees, and street furniture can have a profound effect on improving the pedestrian feel of a corridor. The County should include the following in appropriate streetscape designs:

- Landscaping and street trees, especially shade trees.
- Planters.
- Benches, tables, and chairs.

## **Lighting**

Street lighting is often designed primarily for the safety and comfort of motorists except at intersections, where crosswalks are typically illuminated. The illumination of sidewalks and other walkways is often a separate consideration. Pedestrian lighting typically includes shorter lights (14-18' maximum pole heights) directly above walkways and accent lighting that illuminates features on or near buildings.

Pedestrian lighting increases drivers' visibility of pedestrians, promotes perceived personal security, illuminates potential hazards, and creates vibrant and inviting streetscapes. The addition of pedestrian-scale lighting should be considered in the urban core and neighborhood business districts, along busy arterials and multiuse paths, and in conjunction with significant street reconstructions.

## **Crossings and Intersections**

The majority of pedestrian deaths occur at uncontrolled crossing locations such as mid-block or un-signalized intersections. These are among the most common locations for pedestrian fatalities generally because of inadequate pedestrian crossing facilities and insufficient or inconvenient crossing opportunities, all of which create barriers to safe, convenient, and complete pedestrian networks.

Expecting pedestrians to travel significantly out of their way to cross a roadway to reach their destination is unrealistic and counterproductive to encouraging healthier transportation options. By focusing on uncontrolled locations, agencies can address a significant national safety problem and improve the quality of life for pedestrians of all ages and abilities.

Intersections in the region should be designed for pedestrian safety and comfort, with pedestrian enhancements appropriate to traffic speed, traffic volume, pedestrian crossing distance, and other similar factors. The section below, together with the following signals section, describes some of the primary options that should be considered for crossing and intersections improvements. As streets are repaved and reconstructed, pedestrian crossing ramps are being added. When reconstruction projects allow, additional improvements should be considered as part of those projects.

### **Crosswalks**

Crosswalks exist everywhere that sidewalks and streets intersect, whether marked or not. Marked crosswalks provide a delineated space for pedestrians and other sidewalk users to cross. Differences in striping patterns (e.g. double ladder or piano key crosswalks) and paving surfaces (e.g. raised and/or brick crosswalks) offer varying levels of visibility and delineation between pedestrians and automobiles, bicyclists, and other roadway users.

### **Bulbouts**

Bulbouts reduce the width of roadway crossings at intersections and mid-block crossings. They also create a visual traffic calming cue to drivers to slow for pedestrians, improve pedestrian visibility, and protect transit passengers as they board or alight from buses or streetcars. Sufficient space for bicyclists is a necessary design consideration.

### **Roundabouts**

Roundabouts allow for constant vehicular traffic flow through intersections and do provide some benefits to pedestrians and bicyclists, such as reduced traffic speeds. However, they also have drawbacks. Yielding compliance at crosswalks may be reduced if the facility is not designed properly. Also, designs often require bicyclists to merge into traffic through the roundabout, which is uncomfortable for many riders.



Figure 10-2: Oglethorpe Roundabout



## Median Refuge Islands

Refuge islands enable pedestrians to cross one direction of a street at a time. They are typically used in conjunction with crosswalks where traffic volumes or speeds are high or roads are wide. Sometimes other traffic control measures such as signals or flashing beacons are also used.



Figure 10-3: Median Refuge Islands - Source Richard Drdul, Flickr

## Traffic Signal & Warning Beacon Considerations

Traffic signal standards are well established in the U.S. The MATS region carefully adheres to state and national standards. Typical concerns that pedestrians experience at signalized crossings include:

- Delays caused by long signal cycles.
- Lack of understanding of WALK and flashing DON'T WALK indications.
- Uncertainty about whether the button must be pressed to activate a pedestrian signal, particularly in downtown areas where signals operate differently during different times of day.
- Lack of confirmation that someone has already pressed a push button.
- Conflicts with turning vehicles at intersections.

## Pedestrian Countdown Timers

Macon-Bibb County installs pedestrian countdown timers at county-owned traffic signals. Many GDOT owned signals also have pedestrian countdown timers and as GDOT upgrades pedestrian facilities, new countdown timers are installed. Pedestrian countdown timers improve safety by providing information to assist pedestrians with crossing decisions. Pushbuttons with confirmation lights are also sometimes used so that people can see whether the signal has been activated.

# Pedestrian Safety Countermeasures

The Federal Highway Administration recently highlighted several pedestrian safety countermeasures proven to protect pedestrians:

- Road Diets can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities.
- Pedestrian hybrid beacons (PHBs) are a beneficial intermediate option between RRFBs and a full pedestrian signal. They provide positive stop control in areas without the high pedestrian traffic volumes that typically warrant signal installation.
- Pedestrian refuge islands allow pedestrians a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility.
- Raised crosswalks can reduce vehicle speeds.
- Crosswalk visibility enhancements, such as crosswalk lighting and enhanced signing and marking, help drivers detect pedestrians—particularly at night.

## Benefits

- Improved Safety. Countermeasures are available that offer proven solutions for reducing pedestrian fatalities at uncontrolled crossing locations.
- Targeted Investment. By focusing on uncontrolled locations, agencies can address a significant national pedestrian safety problem.
- Enhanced Quality of Life. Improving crossing opportunities boosts quality of life for pedestrians of all ages and abilities.



Figure 10-4: FHWA Recommended Pedestrian Safety Countermeasures

## BICYCLE FACILITIES

Bicycle Facilities Inventory – Existing 2016		Total Miles	Locations
Conventional	Conventional Bike Lanes	1.5 miles	College St. (1,000 ft.) Second St. (500 ft.) Third St. (500 ft.) Napier Ave. (3/4 mile) Sardis Church Rd. (1/2 mile)
	Shared Lane Markings (Sharrows)	1 ¾ mile	College St. (1 mile) Forsyth St. (1/2 mile) Coleman Ave. (1/4 mile)
Low Stress	Multi-Use Paths	5 miles	Ocmulgee Heritage Trail (5 miles, not counting sidewalk connections)
	Protected Bike Lanes	0 mile	N/A
	Buffered Bike Lanes	0 mile	N/A

Table 10-2: Inventory of Existing Bike Facilities in Macon-Bibb County, by Type

Bicycle facilities can generally be grouped into two categories – conventional and low-stress facilities.

### **Conventional Bike Facilities**

Conventional facilities like bike lanes and shared lane markings have been standard practice in the U.S. for many years. They provide dedicated or shared space for confident bicyclists who have experience riding next to traffic.

### **Conventional Bike Lanes**

This type of bikeway uses signage and striping to delineate roadway space for exclusive use of bicyclists. Conventional bike lanes are typically located to the right of the outside car lane. Parking may be allowed to the right of the bike lane.

### **Shared Lane Markings**

Shared lane markings (i.e. “sharrows”) indicate a travel lane shared by bicyclists and motor vehicles. According to NACTO, shared lane markings “reinforce the legitimacy of bicycle traffic on the street and recommend proper bicyclist positioning.”

### **Riding Bicycles on Sidewalks**

Riding bicycles on sidewalks is not recommended except for children. Many Georgia cities and counties have regulations regarding where sidewalk riding is legal. Sidewalks were designed to accommodate pedestrians, not bicycles. Motorists are not looking for or expecting bicycles on sidewalks, which is potentially dangerous if you cross a driveway or pull back out onto the road from a sidewalk. A moving bicycle poses a danger to pedestrians. Bicyclists need to slow down or get off and walk if pedestrians are present, and call out or signal a warning if approaching from behind. When in doubt, bicyclists should always yield to pedestrians. Try to avoid sidewalk riding if at all possible. In Macon-Bibb County only children 10 and under are permitted to ride on sidewalks.

Source: [GDOT, Georgia BIKE SENSE: A Guide for Cyclists & Motorists](#)

### **Four Types of Bicyclists**

Bicycle riders can be divided into 4 categories ...

- **Strong & Fearless** - “will ride regardless of roadway conditions.”
- **Enthused & Confident** - “comfortable sharing the roadway with automotive traffic, but they prefer to do so operating on designated bicycle facilities.”
- **Interested but Concerned** - “curious about bicycling...they like riding a bicycle, but, they are afraid to ride.”
- **No Way No How** - “not interested in bicycling at all, for reasons of topography, inability, or simply a complete and utter lack of interest.”

A recent national survey indicates that 10% of respondents fell into the category of “strong and fearless” and another 10% were “enthused and confident.” The vast majority of respondents – 50-60% - were “interested, but concerned” and 20-30% were “no way, no how.” Though “strong and fearless” and “enthused and confident” bike riders will benefit from new bicycle facilities, it is the “interested, but concerned” members of the community who will most benefit from and be most attracted to expanded bike infrastructure.

Source: <http://www.citylab.com/commute/2016/01/the-4-types-of-cyclists-youll-meet-on-us-city-streets/422787/>

## **Low-Stress Bike Facilities**

Low-stress bikeways appeal to a broader cross-section of the public than conventional facilities. Their low-stress nature is a result of greater separation from traffic; use of low-volume, low-speed streets depending on the specific facility type; and/ or directional wayfinding signage that directs bicyclists to destinations and specific routes much like interstate highway signage for automobiles.

## **Multi-Use Paths**

A multi-use path is a facility that is physically separated from motorized vehicular traffic by an open space or barrier, and either within the highway or right-of-way or within an independent right-of-way. There are two existing multi-use paths in the MATS region: Tucker Road Trail (pedestrian only) and the Ocmulgee Heritage Trail.

There are two multi-use paths in the MATS region including much of the Ocmulgee Heritage Trail and the Tucker Road multi-use path (pedestrian only).

**Tucker Road Multi -Use Trail** - The Tucker Road Trail (pedestrian only) extends from Forsyth Road to Brandywine Drive in Macon-Bibb County. Though separated from vehicle traffic, at 5 feet in width does not meet GDOT's minimum width or road separation requirements for a multi-use trail.<sup>[12]</sup>

**Ocmulgee Heritage Trail** - The Ocmulgee Heritage Trail is a multi-use trail connecting Central City Park to Amerson Water Works Park – and all of the neighborhoods and commercial areas nearby. Part multi-use trail (paved and gravel), part sidewalk the trail is a tremendous recreational resource that is regularly being improved.

Recent expansions to the trail include connections between Riverside Cemetery and Amerson Waterworks Park (currently gravel) – completed in winter 2017 - and the extension of the trail to Walnut Creek from the Otis Redding Bridge (planned to be under construction beginning in 2017). A 2017 scoping study will explore the potential for developing a Riverside Drive Greenway connecting the Otis Redding Bridge to Madison Street and the entrance to Riverside Cemetery.

## **Protected Bike Lanes**

Protected bike lanes are separated from traffic by a physical barrier of some kind and are also distinct from the sidewalk. Barriers may be in the form of planters, raised curbs, parking, bollards, or other streetscape elements. Protected bike lanes can be configured for either one-way or two-way travel.

## **Buffered Bike Lanes**

These are similar to conventional bike lanes with the difference being a painted buffer between the bike lane and adjacent car lane. Alternatively, the buffer may also be placed between the bike lane and parked cars. Where space permits, buffers are sometimes placed on both sides of the bike lane. Buffered bike lanes differ from protected bike lanes because the buffer space is paint rather than a physical barrier.

## **Proposed Bikeways**



Several bikeways have been proposed in the MATS region that may one day provide safe, comfortable, and attractive bicycling connections to neighborhoods, commercial areas, parks and schools throughout Macon-Bibb County and much of the MATS region. Developing these bikeways is a long-range goal that will take several years to complete.

There are currently few, if any, bicycle facilities on these routes and most currently require extensive travel on narrow sidewalks, which were not designed for bicycle travel, and mixed bicycle/motor vehicle travel, which many experienced bicyclists would find uncomfortable, unpleasant, and potentially dangerous and is not recommended for amateur bicyclists.

The above map shows existing bicycle facilities and bicycle routes that were included in the county's 2003 plan and in the 2040 LRTP. In addition, a proposed Bass Road – Bolingbroke Loop bikeway is shown on the map as well as a Downtown Bikeway network that was modified to reflect the very successful Macon-Connects Pop-Up Bike Network temporarily installed in September 2016.

**East Macon Bikeway** - The East Macon bikeway (4 miles) traverses a historically and culturally significant portion of Macon and connects Main Street, Fort Hill Street, Shurling Drive, and Millerfield Road. This route provides access to several attractions in East Macon such as Fort Hawkins, Ocmulgee National Monument, Northeast Plaza Shopping Center, Shurlington Plaza, and various schools.

The East Macon Bikeway is challenged by high traffic volume, high vehicle speeds and lack of dedicated bicycle facilities.

**Downtown Bikeway** - The Downtown Bikeway (3 miles) traverses through many historical areas and neighborhoods in Macon and connects Mercer University to downtown. This bikeway connects Tattnall Square Park, Oglethorpe Street, College Street, Georgia Avenue, New Street and Walnut Street. This route provides access to such facilities as the U.S. Post Office, Washington Park, Macon's City Auditorium, Central City Park, and Tattnall Square Park.

Moderate daily vehicle use and moderate speeds make this route a potentially significant bicycling route if developed. However, on-street parking limits the type, quantity, and location of dedicated bicycle facilities along this route.

In September 2016, a **Macon Connects Pop-Up Bike Network** temporarily expanded upon the Downtown Bikeway. The Macon Connects downtown bikeway (5 miles) connected College Street, Walnut Street, Cherry Street, Poplar Street, Second Street, Third Street, Fifth Street, Oglethorpe Street and Forsyth Street and temporarily installed a variety of bicycle facilities on all of these streets, including: sharrows (i.e., bicycle symbols with chevrons painted on the road surface to indicate direction of travel, and advise motorists to be on alert for cyclists in the lane of traffic), conventional bike lanes, buffered bike lanes, two-way cycle tracks, and two-way median cycle tracks.

**Freedom Park Bikeway** - Freedom Park Bikeway (6 miles) connects Tattnall Square, Dannenberg Avenue, Holt Avenue, Beech Avenue, Wood Street, Bartlett Street, Roff Avenue, Lake Street, Fairmont Avenue, and Napier Avenue. This bikeway connects numerous residential neighborhoods, schools, and commercial areas.

Moderate daily vehicle use and moderate speeds for several sections of this route make this a potentially significant bicycling route if further developed with dedicated bicycle facilities. Bike lanes have been installed on a  $\frac{3}{4}$  mile section of Napier Avenue between Ayers Road and Forsyth Road – though high speeds (40 mph) may make bicycling here uncomfortable for some. Wide vehicle lanes (15 ft) along this stretch of road could accommodate painted buffering to better protect bicyclists and slow vehicle traffic.

**Columbus Road Bikeway** - Columbus Road Bikeway (3.5 miles) connects Brentwood Avenue, Churchill Street, Berkner Street, Mercer University Drive, ending at Columbus Road. The route provides access to regional shopping centers such as the Macon Mall, Eisenhower Crossing @ Presidential Parkway, and many commercial establishments.

The majority of this route is on Mercer University Drive, which currently lacks dedicated bicycle facilities and has high daily vehicle use and speeds. To travel this bikeway safely most (if not all) bicyclist would have to use the 5-ft. sidewalks on Mercer University Drive, which were not designed to be and do not meet GDOT's minimum width or road separation requirements for a multi-use trail. [\[13\]](#)

**Central Route Bikeway** - The Central Route Bikeway route is a state designated bike route and is part of a network of bike routes throughout the State of Georgia. The route spans the entire length of the county beginning on Forsyth Road near the Monroe County line and ending on Industrial Highway near the Houston County line. The route travels along Forsyth Road, Vineville Avenue, Pio Nono Avenue, Hawkinsville Road and Industrial Highway.

There are currently no dedicated bicycle facilities along this route and high daily traffic and high speeds limit the usefulness of this route to only the most experienced bicycle riders.

**Sardis Church Road Bikeway** - The Sardis Church Road Bikeway (6 miles) – expected to be completed in 2018, will connect Hawkinsville Road to Frank Amerson Parkway. This route will include a 4-ft., unbuffered bicycle lane in each direction.

**Bass Road-Bolingbroke Loop Bikeway** - Developed as part of a Transportation Enhancement grant application by the Middle Georgia Regional Commission, the Bass Road-Bolingbroke Loop bikeway (19 miles) connects Bass Road, Colaparchee Road, Zebulon Road, Estes Road, Dixie Highway, Pate Road and New Forsyth Road.

### **Commuting and Recreation Bicycle Routes for future consideration**

The following routes were proposed by the Bicycle and Pedestrian Committee as part of the 2040 LRTP process. These potential bicycle routes are included in this LRTP update as candidates for further research and possible development in the future. The routes were suggested as commuting or recreation routes. The bicycle routes are briefly summarized below.

**North Macon to Downtown Commuter Route** – (6 miles) Connects the Ocmulgee Heritage Trail and downtown to north Macon. The route connects Rivoli Drive, Northside Drive, Riverside Drive, Red Oak Drive, Clairmont Avenue, Audubon Drive, Riverview Road, North Pierce Avenue, Ocmulgee Heritage Trail.

**East Macon Arc** – These two routes are recreational routes that connect the Ocmulgee Heritage Trail and East Macon Park.

**Route A** – (16 miles) Connects Ocmulgee Heritage Trail Parkview Drive, Nottingham Drive, Curry Drive, Boulevard Drive, Clinton Road, Upper River Road, Stagecoach Road, Graham Road, Walnut Ridge Road, Old Gray Highway, Joycliff Road, New Clinton Road, Millerfield Road, Jeffersonville Road, and Ocmulgee East Boulevard.

**Route B** – (5 miles) Connects Ocmulgee Heritage Trail, Jeffersonville Road, and Ocmulgee East Boulevard.

**Downtown to North Macon Commuter Routes** - Located in the heart of Macon-Bibb County, these commuter routes connect the Central Business District, the Historic District, tourist attractions, recreational

areas and many cultural and educational facilities. Much of this sector contains existing routes from the previous plans.

**Route A** - (6 miles) Connects Central City Park, Riverside Drive, Third Street, Mulberry Street, Georgia Avenue, College Street, Walnut Street, Clayton Street, Buford Place, McDonald Street, Pierce Avenue, Elizabeth Street, De Soto Street, Vineville Avenue, Hairmechanics Boulevard, Ridge Avenue, Forest Hill Road, Forsyth Road.

**Route B** – (7 miles) Connects Central City Park, Walnut Street, Seventh Street, Poplar Street, Fifth Street, Oglethorpe Street, College Street, Coleman Avenue, Napier Avenue, Birch Street, Hillcrest Avenue, Forsyth Road.

**Downtown Scenic Circuit** – (4 miles) Terminal Station is the focal point of this route, because of the tourist information and maps. This route connects Terminal Station, Fifth Street, Poplar Street, Seventh Street, Oglethorpe Street, College Street, Georgia Avenue, Orange Street, Bond Street, Mulberry Street, Second Street, Cherry Street.

**Sub-South Route** - (5.4 miles) Houston Road between Hawkinsville Road and Sardis Church Road.

**South Lizella Route** - (10 miles) Connects Fulton Mill Road, Heath Road, Harley Bridge Road, Sardis Church Road.

**Tobesofkee / Wildwood Route** (19 miles) - Connects Northside Drive, Rivoli Drive, Old Forsyth Road, Colaparchee Road, Zebulon Road, Lamar Road, Lower Thomaston Road, North Lizella Road, Hopewell Road, and Midway Road.

### **Proposed Actions Items for 2040 LRTP Update**

- MATS staff intends to complete a MATS Bikeways and Pedestrian Plan by the end of June 2018 (i.e., beginning of FY 2019)
- MATS staff intends to complete an update of the Macon-Bibb County Bikeways and Pedestrian Master Plan (last adopted in 2003) by the end of June 2018 (i.e., beginning of FY 2019)

[1] FARS

[2] GEARS

[3] Source: USDOT NHTSA, 2015 Motor Vehicle Crashes: Overview <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812318>

[4] Source: FARS, <https://www.fars.nhtsa.dot.gov/States/StatesPedestrians.aspx>

[5] The “Pedestrian Danger Index,” or PDI, is a calculation of the share of local commuters who walk to work—the best available measure of how many people are likely to be out walking each day—and the most recent data on pedestrian deaths. First developed in the 1990s by the Surface Transportation Policy Partnership and used more recently by Smart Growth America’s Transportation for America program, PDI is the rate of pedestrian deaths relative to the number of people who walk to work in the region. The higher an area’s PDI, the more dangerous it is for people walking. Dangerous By Design 2016, Smart Growth America, <https://smartgrowthamerica.org/dangerous-by-design/>

[6] 2016 Macon-Bibb County SPLOST resolution

[http://www.boarddocs.com/ga/maconbibb/Board.nsf/files/ACBFSJ408637/\\$file/8-2-2016%20-%20A%20-%20Committee%20Amendment%20Call%20of%20Election%20Macon-Bibb%20SPLOST.pdf](http://www.boarddocs.com/ga/maconbibb/Board.nsf/files/ACBFSJ408637/$file/8-2-2016%20-%20A%20-%20Committee%20Amendment%20Call%20of%20Election%20Macon-Bibb%20SPLOST.pdf)

[7] Macon-Telegraph, Dec. 16, 2016, “Free bikes program rolling in historic Macon neighborhood.” <http://www.macon.com/news/local/article121281423.html>

[8] Macon-Telegraph, Oct. 21, 2016, "Bike share program drawing lots of users in the first month."  
<http://www.macon.com/news/local/article109700377.html>

[9] FHWA, Licensed Drivers by Sex and Region to Population - 2013,  
[target="\\_blank">http://www.fhwa.dot.gov/policyinformation/statistics/2013/dl1c.cfm](http://www.fhwa.dot.gov/policyinformation/statistics/2013/dl1c.cfm)

[10] PHYSICAL HOUSING CHARACTERISTICS FOR OCCUPIED HOUSING UNITS more information

2011-2015 American Community Survey 5-Year Estimates, <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

[11] Source: Safe Transportation for Every Pedestrian, FHWA,

[12] GDOT, Pedestrian and Streetscape Guide, 2003, [http://www.dot.ga.gov/drivesmart/travel/Documents/ped\\_streetscape\\_guide\\_june05.pdf](http://www.dot.ga.gov/drivesmart/travel/Documents/ped_streetscape_guide_june05.pdf)

[13] GDOT, Pedestrian and Streetscape Guide, 2003, [http://www.dot.ga.gov/drivesmart/travel/Documents/ped\\_streetscape\\_guide\\_june05.pdf](http://www.dot.ga.gov/drivesmart/travel/Documents/ped_streetscape_guide_june05.pdf)



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## Chapter 11 | Freight Transportation Network: Trucks, Rail, Aviation, Ports

### Introduction

This section addresses the existing conditions and anticipated needs of freight and logistics infrastructure in the MATS area. Every day, millions of trucks, trains, airplanes, ships and barges move over our highways, local roads, railways, navigable waterways, and pipelines, transporting millions of tons of raw materials and finished products from the entire spectrum of our economy. Collectively, these materials and products provide the quality of life that we enjoy today and are the reason that we drive the world's economy. In today's economy, domestic and global businesses need to be assured that their goods and products will move safely, affordably, and reliably.[1] <sup>1</sup>

However, as these goods and products are transported from its origin to destination, there are challenges such as years of underinvestment, a complex planning process, in addition to emerging trends, like a growing population, which is the reason why the U.S. DOT is supporting the freight transportation system through improved planning, dedicated funding streams, and innovative technologies.

### Background

In the late 1980's Georgia began to under-invest in its transportation system relative to the rest of the U.S. This underinvestment has contributed to the underperformance of the Georgia economy in the *post-2000* period relative to other states. The challenge for Georgia is whether or not it will make investments today to meet the freight transportation demand forecast for the future. If sufficient investments are made, there is the potential for increased economic growth beyond what is forecast and an opportunity to continue the State's economic leadership. In contrast, insufficient investment will lead to economic challenges in Georgia.[2] <sup>2</sup>

While highways are an important component of moving freight, enormous quantities of materials and products move over other freight modes, and a good portion of these goods will also move over multiple modes before reaching their final destination.



Figure 11-1: Six Key Trends & Challenges in Freight Transportation

## Freight Planning Framework: Legislation, Factors, Goals, Performance Measures

### National Freight Goals and Federal Legislation

Freight planning and goods movement have long been an integral part of the metropolitan planning process. The new legislation signed into law by President Obama on December 4, 2015, Fixing America's Surface Transportation Act, or "FAST Act", is the first law enacted in over ten years. This law provides long-term funding certainty for surface transportation, meaning States and local governments can move forward with critical transportation projects, like new highways and transit lines, with the confidence that they will have a Federal partner over the long term. The law also makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects. Under the new FAST Act legislation, a policy provision regarding freight would establish both formula and discretionary grant programs to fund critical transportation projects that would benefit freight movements. These programs are similar to what the Obama Administration proposed and will for the first time provide a dedicated source of Federal funding for freight projects, including multimodal projects. The Act emphasizes the importance of

Federal coordination to focus local governments on the needs of freight transportation providers. More specifically, FAST Act includes a number of provisions focused on ensuring the safe, efficient and reliable movement of freight. The FAST Act:

- *Establishes a National Multimodal Freight Policy that includes national goals to guide decision-making.*
- *Requires the Development of a National Freight Strategic Plan to implement the goals of the new National Multimodal Freight Policy.* The National Freight Strategic Plan will address the conditions and performance of the multimodal freight system, identify strategies and best practices to improve intermodal connectivity and performance of the national freight system and mitigate the impacts of freight movement on communities.
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*Creates a new discretionary freight-focused grant program that will invest \$4.5 billion over 5 years.* This new program allows States, Metropolitan Planning Organizations (MPOs), local governments, tribal governments, special purpose districts and public authorities (including port authorities), and other parties to apply for funding to complete projects that improve safety and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.



- *Establishes a National Highway Freight Program.* The Act provides \$6.3 billion in formula funds over five years for States to invest in freight projects on the National Highway Freight Network. Up to 10 percent of these funds may be used for intermodal projects.
- *Includes new authorities and requirements to improve project delivery and facilitate innovative finance.* The FAST Act includes provisions intended to reduce the time it takes to break ground on new freight transportation projects, including by promoting best contracting practices and innovating financing and funding opportunities and by reducing uncertainty and delays with respect to environmental reviews and permitting.
- *Collects performance measures for leading U.S. maritime ports.* The FAST Act requires the Bureau of Transportation Statistics (BTS) to collect and annually report performance measures for the nation's top 25 ports, as measured by three methods (total tonnage, containers, and dry bulk tonnage). [3]<sup>3</sup>

Figure 11-2: Our Freight System Is More Than Just Infrastructure

According to the federal law (23 USC 134) governing metropolitan transportation planning and federal law (23 USC 135) governing statewide and nonmetropolitan transportation planning, it is in the national interest policy to encourage and promote safe and efficient management, operation and development of surface transportation systems that will serve the mobility needs of people and freight. In general, the metropolitan planning process for a metropolitan area shall provide consideration of projects and strategies that will increase accessibility and mobility of people and freight, as well as enhance the integration and connectivity of the transportation system, across and between modes for people and freight. The same policies are addressed in federal law (49 U.S. Code 5303 AND Code 5304) governing metropolitan transportation planning and statewide and nonmetropolitan transportation planning for public transportation.[4]<sup>4</sup> These laws require that freight planning is considered in the development of MPO's long range transportation plans, transportation improvement program document and other applicable work elements.

## FAST Act National Planning Factors:

- Increase the accessibility and mobility of people and freight
  - *Goal: To achieve a significant reduction in congestion on the National Highway System*
  - *Goal: To improve the efficiency of the surface transportation system*

- Promote efficient system management and operation
  - *Goal: To achieve a significant reduction in congestion on the National Highway System*
  - *Goal: To improve the efficiency of the surface transportation system*

- *Goal: To reduce project costs, promote jobs and the economy and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices*



Figure 11-3: GDOT 2040 Statewide Transportation Plan - 2015 Statewide Strategic Transportation Plan – January 2016

## Georgia Statewide Freight Goal(s):

- *Improve Freight and Economic Development*

## Macon Area Transportation Study (MATS) MPO Freight Goals:

- Support Economic Vitality
  - *Improve Freight Movement*
  - *Increase funding and funding sources for all transportation modes*
  - *Improve project delivery for all modes*
- Promote Multimodal and Affordable Travel Choices
  - *Improve efficient movement of goods and services within and through the region*
- Manage Congestion & System Reliability
  - *Allow people and goods to move with minimal congestion, time delay, and greater predictability*

## Overview of Notice of Proposed Rulemaking (NPRM): Freight Performance Measures

The Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST Act) continues the mandate that the Secretary develop regulations (23 CFR 490) to establish Transportation Performance Management (TPM) requirements to carry out the National Highway Performance Program (NHPP), Freight Movement on the Interstate, and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. This is the third of three proposed rules that together establish a set of performance measures for State DOTs and Metropolitan Planning Organizations (MPOs). More information regarding the proposed target establishments, data sources and reporting requirements can be found at <https://www.fhwa.dot.gov/tpm/rule/overview20042016.pdf><sup>5</sup>.

- MAP-21 transformed the Federal-aid highway program by establishing new requirements for performance management to ensure the most efficient investment of Federal transportation funds. Performance management increases the accountability and transparency of the Federal-aid highway program and provides for a framework to support improved investment decision making through a focus on performance outcomes for key national transportation goals.
- On April 22, 2016 the Federal Highway Administration (FHWA) posted a Notice of Proposed Rulemaking (NPRM) in the Federal Register to propose national performance management measure regulations to assess the performance of the National Highway System, Freight Movement on the Interstate System, and the Congestion Mitigation and Air Quality Improvement Program, as required by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act ("FAST Act"). This rule was finalized and published on January 18, 2017, and goes into effect on February 17, 2017.
- On May 27, 2016, the U.S. Department of Transportation's (USDOT) FHWA and Federal Transit Administration (FTA) published the Final Rule on Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning in the Federal Register to implement the changes to the planning process established by MAP-21 and the FAST Act.
- On June 27, 2016, USDOT posted in the Federal Register a Notice of Proposed Rulemaking on Metropolitan Planning Organization Coordination and Planning Reform.

### This NPRM proposes regulations that would make progress towards the following national goals:

- **Congestion reduction** - *To achieve a significant reduction in congestion on the NHS.*
- **System reliability** - *To improve the efficiency of the surface transportation system.*
- **Freight movement and economic vitality** - *To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.*
- **Environmental sustainability** - *To enhance the performance of the transportation system while protecting and enhancing the natural environment.*

In addition, this NPRM:

- *Provides for greater consistency in the reporting of condition/performance;*
- *Proposes requirements for the establishment of targets that can be aggregated at the national level;*
- *Proposes reporting in a consistent manner on progress achievement; and*
- *Proposes a process for determining a State DOT's significant progress.*



State DOTs would be expected to use the information and data generated as a result of the new regulations to make better-informed transportation planning and programming decisions. The new performance aspects of the Federal-aid program would allow FHWA to better communicate a national performance story and more reliably assess the impacts of Federal funding investments.<sup>[5]</sup><sup>6</sup> However, since performance measures and targets are not required for this update of the MATS Long Range Transportation Plan, freight performance will not be monitored. For the next MATS LRTP update, the MPO should be prepared to establish performance measures along the local and state freight corridors in Macon – Bibb County and the southern portion of Jones and Monroe Counties within the MATS urbanized area as outlined in Table 11-1.

**Proposed Performance of the National Highway System, Freight Movement on the Interstate, Congestion and Air Quality Performance Measures\***

Part 490 Subpart	Proposed Performance Measures**	Proposed Metrics	Applicability
<b>Performance of the National Highway System (NHS) (Subpart E)</b>	Percent of the Interstate System providing for Reliable Travel Times	Level of Travel Time Reliability (LOTR)	Interstate System mileage within the State or each MPA
	Percent of the non-Interstate NHS providing for Reliable Travel Times	Level of Travel Time Reliability (LOTR)	Non-Interstate NHS mileage within the State or each MPA
	Percent of the Interstate System where Peak Hour Travel Times meet expectations	Peak Hour Travel Time Ratio (PHTR)	Interstate System mileage within each urbanized area with a population over one million
	Percent of the non-Interstate NHS where Peak Hour Travel Times meet expectations	Peak Hour Travel Time Ratio (PHTR)	Non-Interstate NHS mileage within each urbanized area with a population over one million
<b>Freight Movement (Subpart F)</b>	Percent of the Interstate System Mileage providing for Reliable Truck Travel Times	Truck Travel Time Reliability (TTTR)	Interstate System mileage within the State or each MPA
	Percent of the Interstate System Mileage Uncongested	Average Truck Speed	Interstate System mileage within the State or each MPA
<b>CMAQ Traffic Congestion (Subpart G)</b>	Annual Hours of Excessive Delay Per Capita	Total Excessive Delay	NHS roads in urbanized areas with populations over one million that are, all or in part, designated as nonattainment or maintenance areas for ozone (O <sub>3</sub> ), carbon monoxide (CO), or particulate matter (PM)
<b>CMAQ On-Road Mobile Source Emissions (Subpart H)</b>	2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor	Annual Tons of Emission Reductions by project for each applicable criteria pollutant and precursor	All projects funded by CMAQ program in areas designated as nonattainment or maintenance for O <sub>3</sub> , CO, or PM for each State or MPA

Table 11-1: Proposed Performance Measures for the National Highway System, Freight Movement on the Interstate, and Congestion Management and Air Quality

Freight activities represent an important contributor to the economic vitality of the region. With access to major state highways, interstates, rail, aviation and ports, MATS must consider ways to improve freight movement and maintain adequate freight access. A safe and efficient transportation system that accommodates the needs of the freight community is an important element of the MATS Long Range Transportation Plan. However, in order for States and MPO's to be effective in freight planning, the previously mentioned planning factors and goals are encouraged to be addressed.

## Purpose and Methodology

It is the purpose of this section of the 2040 LRTP update to assess the existing freight and goods movement transportation modes in the MATS area and to recommend to policy and decision makers the needed improvements that should be considered in efficiently moving goods and services throughout the area. In an effort to gather the necessary feedback regarding freight movement by truck in the MATS area, the MPO developed a “Freight and Goods Movement Survey”, to be completed by local freight stakeholders. The results of the survey will ultimately assist transportation planners in meeting the needs of the local freight community and can be found in the “Freight & Goods Movement - Truck” portion of this LRTP update.

## What Is Transportation Planning & Freight Transportation

The Federal Highway Administration (FHWA) defines transportation planning as: “A continuing, comprehensive, and cooperative process to encourage and promote the development of a multimodal transportation system to ensure safe and efficient movement of people and goods while balancing environmental and community needs.” Freight transportation can broadly be defined as the movement of goods from one place to another. Whether the movement of goods is by truck, rail, air or ocean-bound shipping, transportation planners should not only be concerned with the shipment of these goods but must also consider the movement of these goods within metropolitan areas. Freight considerations within transportation planning practice include: <sup>[6]</sup><sup>7</sup>

- *Developing an understanding of the freight volume, value, key commodities and mode splits;*

- *Establishing policies and programs to integrate freight within the overall transportation planning process and account for freight needs in project selection and prioritization; and*
- *Linking freight mobility to other community goals such as economic development and job growth*

## Overview of Transportation Freight Movement Modes: Truck, Rail, Aviation, Ports



Figure 11-4: Summary Utilization Metrics for U.S. Infrastructure

Transportation has increasingly become not about the movement of people from one point to another, but instead, about the movement of goods and services from one point to another. As critical as freight is to Georgia's economy, freight can be transported via roadways, rail, air, waterways and/or pipelines. Because each mode of freight transportation offers different levels of service (*travel time and reliability*) and different levels of pricing (*cost*), the value, weight, and fragility of a commodity will determine the most cost effective mode or a combination of modes. For example, movement of freight by air provides fast, reliable service for low weight/high-value, time-sensitive cargo. Conversely, water and pipeline shipments provide slower, less reliable shipments and handle high-weight/low-value cargo, but at a low cost. While comprehensive freight planning includes each of these modes, the roadway network and the National Highway System is considered to be the backbone of freight movement in the United States.<sup>[7] 8</sup>

Five freight-related economic sectors produced nearly \$100 billion of output in 2007 – 25 percent of Georgia's \$380 billion of gross state product. These sectors are heavily dependent on highways, railroads, ports, and airports to receive goods from suppliers and deliver goods to customers. The growth of these freight-related sectors will be directly related to the quality of improvement to the States' freight transportation infrastructure.<sup>[8] 9</sup>

An increase in truck traffic can affect roadway capacity, due to larger vehicles and slower speeds. The trucking industry carries the vast majority of freight moved in the State, hauling 75 percent of the total freight tonnage in Georgia. This is due to its flexibility in terms of being able to handle varying shipment sizes and last-mile connectivity. As of 2007, approximately 640.8 million tons of goods traveled by truck, 35 percent of which had an origin and destination in Georgia. By 2040, the amount of truck traffic is expected to double.<sup>[9] 10</sup>

### Freight & Goods Movement - Truck

Georgia highways are the support system for the State's trucking industry. In 2008, the trucking industry provided 243,477 jobs in Georgia, which equates to 1-in-14 jobs in the State. Total trucking industry wages paid in 2008 exceeded \$11.9 billion, or an average annual salary of \$49,006. There are approximately 35,000 trucking companies currently located in Georgia and most of

them are small, locally owned businesses.<sup>[10]</sup><sup>11</sup> However, Middle Georgia is well positioned to take advantage of key truck freight corridors providing easy access to key markets within Georgia, and to key domestic markets throughout the U.S. The regional highway network and the key highways serving Middle Georgia are illustrated in Figure 11–6 (*Georgia's Statewide Designated Freight Corridors*), which are I-75, I-16 and SR 74 within the MATS area.



Figure 11-5: Tonnage of Goods Movement Throughout Georgia (2007)



Figure 11-6: Georgia's Statewide Designated Freight Corridors

Interstate and State highways are critical to the success of freight operations in Middle Georgia, such as I-75, which is a major north/south freight corridor, and I-16 which connects Middle Georgia with international markets through the Port of Savannah. Highways to the north and south of the Region are also essential, such as I-20 in Atlanta, or I-10 in Florida that establishes routes to markets to the east and west.

Table 11-2 provides a summary of Georgia's highways that should be considered for ongoing investment to support freight transportation in Middle Georgia, particularly in the MATS area, providing easy access in all directions.



Highway	Direction	Georgia Location	Description
State Route 11 (SR 11)	North/South	Center	A 375-mile-long (604 km) state highway in the U.S. state of Georgia, traveling through portions of Echols, Lanier, Berrien, Irwin, Ben Hill, Wilcox, Pulaski, Houston, Peach, Bibb, Jones, Jasper, Newton, Walton, Barrow, Jackson, Hall, White, Lumpkin, and Union counties. It runs the entire length of the state from south to north, connecting the Florida state line with the North Carolina state line, roughly bisecting the state into two equal parts. It is the longest route in the state.
Interstate 16 (I-16)	East/West	Central	Terminates near Macon, Georgia, the interchange connection with I-75 (which provides direct access to the Atlanta region, although it does not travel outside the state). The significance of this connection is the ensuing access from the Port of Savannah to the rest of Georgia, and provides linkages to national and North American markets.
State Route 49 (SR 49)	Southwest/Northeast	Diagonal	A 122.8-mile-long (197.6 km) state highway that runs southwest-to-northeast through portions of Terrell, Sumter, Macon, Peach, Houston, Bibb, Jones, and Baldwin counties, mainly in the central part of Georgia. The route connects SR 45 north of Dawson to SR 22/SR 24/SR 112 in Milledgeville.
Interstate 75 (I-75)	North/South	Center	Runs north-south along the U.S. Route 41 (US 41) corridor on the western side of the state, passing through the cities of Valdosta, Macon, and Atlanta. It is also designated—but not signed—as State Route 401 (SR 401). In downtown Atlanta, I-75 joins with I-85 as the Downtown Connector.
U.S. Route 129 (US 129)	North/South	Center	An auxiliary route of US 29, which it intersects in Athens, Georgia. US 129 currently runs for 582 miles (937 km) from an intersection with US 19/US 27 ALT/US 98 in Chief Land, Florida, to an interchange with Interstate 40 (I-40) in Knoxville, Tennessee. It passes through the states of Florida, Georgia, North Carolina, and Tennessee. It goes through the cities of Macon, Athens, Gainesville, and Knoxville.

Table 11-2: Key Truck Corridors Supporting Middle Georgia Freight

[11] 12

As illustrated in Figure 11-7, Middle Georgia's total truck freight distribution by flow and mode was 82.7 million tons in 2013 (54.5 percent of total freight). Domestic through accounted for 61.3 percent of total truck freight, domestic outbound 17.5 percent, domestic inbound 9.2 percent, domestic inbound 9.2 percent and intra-region 3.1%. International freight accounted for the remaining 8.8 percent.

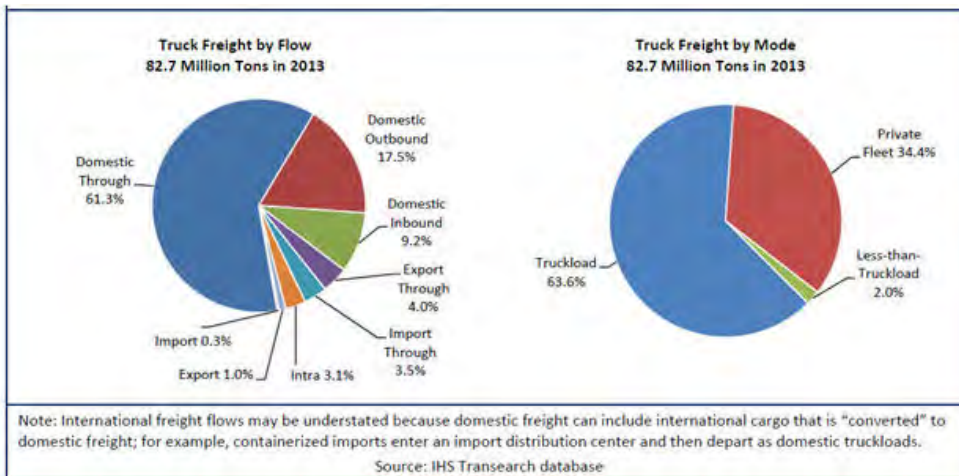


Figure 11-7: Middle Georgia Truck Freight by Flow and Mode in 2013

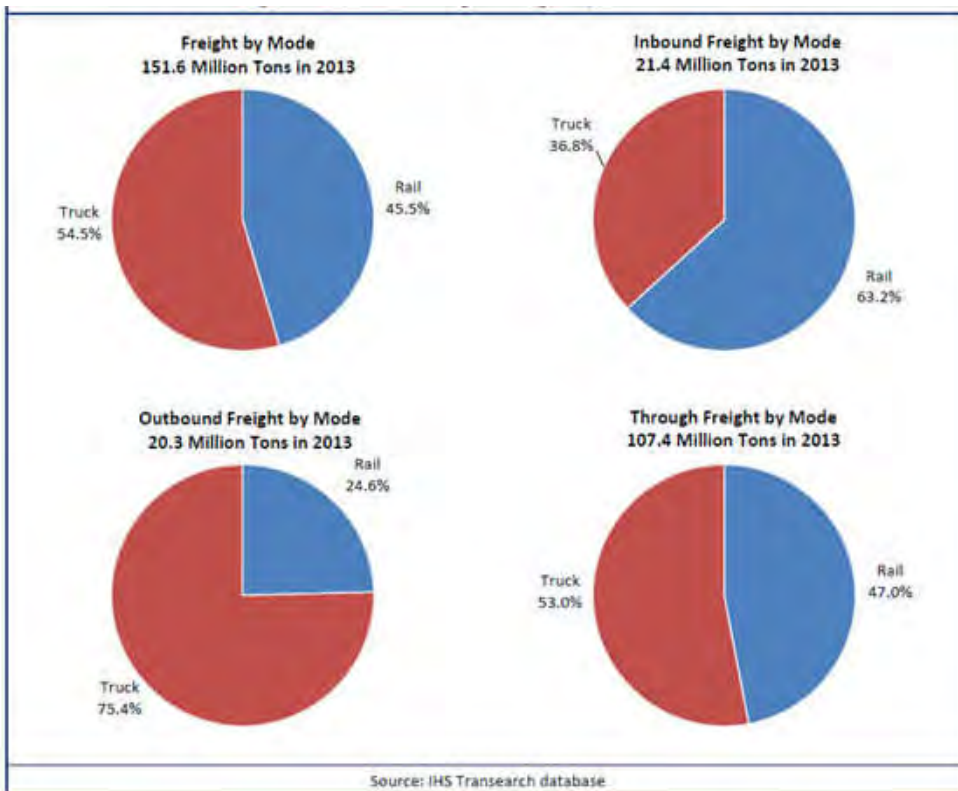


Figure 11-8: Middle Georgia Freight by Mode in 2013

Middle Georgia handled 151.6 million tons of freight in 2013, comprised of 21.4 mil tons Inbound, 20.3 mil tons outbound, and 107.4 mil tons “through”, meaning transiting the region without stopping, as illustrated in Figure 11-8. [12]<sup>13</sup>

Recognizing the key role that freight transportation plays in its region, the Macon-Bibb County Planning & Zoning Commission (MPO) developed a survey designed for the trucking industry to develop a framework for an integrated freight program for Macon-Bibb County. The MPO continues to be increasingly focused on freight transportation planning and continues to formally incorporate freight transportation issues into the traditional MPO planning process. It is the attempt of the 2040 LRTP Freight and Goods Movement Industry Outreach Initiative survey to collect data that will be used to identify the MPO's freight transportation deficiencies and issues, which will lead to the development of potential recommendations for future actions by the MPO. On October 5, 2016, approximately 43 Freight and Goods Movement Surveys were mailed to several freight companies throughout Macon-Bibb County. The survey was also made available on [www.mats2040.org](http://www.mats2040.org)<sup>14</sup>. Of the 43 surveys, 10 were returned undeliverable and 3 were returned completed that provided some usable information. As part of that effort, industry participants provided an overview of their business and identified problem areas that will assist transportation planners in improving freight flows in the region. While these suggestions have not been endorsed by the MPO, they represent the continuous step in working to develop a regional freight program by identifying and documenting the issues and concerns expressed by the system users. The following is a summary of comments and recommendations received as a result of the surveys.

\* Each asterisk represents an individual survey response to the affiliated question.

***How would you describe the primary type of facilities/industries of your company?***

- *Truck Terminal \*\**
- *Freight / Logistics Provider \*\**
- *Distribution Center \**

***What are the primary types of shipments handled at this site?***

- *Less than Truckload \*\**
- *Hazardous Materials \**
- *Truckload \**

***During what hours do you usually receive/ship deliveries of your major inbound and outbound products?***

- *6 AM - 12 Noon \*\**
- *12 Noon – 4 PM \**
- *4 PM – 8 PM \*\**
- *8 PM – 10 PM \**
- *12 Midnight – 6 AM \**
- *24 hours a day \**

***How many trucks on average does your company use on a daily basis for freight and goods movement in Macon – Bibb County?***

- *6 – 10 \**
- *11 – 25 \*\**

***What roadways are used most by your company's vehicle in the movement of freight and goods in Macon – Bibb County? This information will assist transportation planners with prioritizing future roadway improvements.***

- *I-75 \*\*\**
- *I-16 \*\*\**
- *I-475 \*\**
- *SR 247 (Pio Nono Avenue) \*\**
- *SR 49 (Shurling Drive; Industrial Highway) \*\**
- *SR 74 (Mercer University; Thomaston road) \*\**
- *US 41 (Forsyth Road; Vineville Avenue; Hardeman Avenue) \*\**
- *US 80 (Eisenhower Parkway; Jeffersonville Road) \*\**
- *US 129 (Gray Highway) \*\**

***What other routes would be preferable to use that are not identified as truck routes? None***

***Which, if any, of the following movement problems, does your truck(s) encounter on the local roadway?***

- *Narrow Roads \*\**
- *Difficult Turn Movements (particularly on Lower Poplar Street) \**
- *Other: Trees / Brush*

***Where are the specific locations/areas where truck or rail traffic causes recurring congestion in Macon – Bibb County?***

- *Allen Road \**
- *7th Street \*\**
- *5<sup>th</sup> Street \**
- *Riverside Drive \**

***What improvements could be easily made to the roadway system to improve the movement of freight and goods in Macon – Bibb County?***

- *Remove trees/bushes along Roff Avenue*
- *Improve Intersections*
- *Improve Lane Widths*

**Freight and Truck Movement improvements recommended during the public outreach phase:**

- **Joe Tamplin Blvd./Chestney Road/Riggins Mills Road:**
  - Improve with the installation of a roundabout
- **Guy Paine Road @ Broadway:**
  - Improve road due to bumpy road conditions along the road and at Broadway
- **Hawkinsville Road (Hwy 247):**
  - Redesign of Allen Road @ Kuhmo Parkway entrance (at the request of Kuhmo representatives)



Figure 11-9 shows the truck terminal locations within Macon - Bibb County and Table 11-3 shows a list of freight companies in Macon - Bibb County. Appendix F includes the “Freight & Goods Movement Industry Outreach Initiative letter”; the Freight & Goods Movement survey instrument, as well as the (3), completed surveys that are used to update this section of the 2040 LRTP.

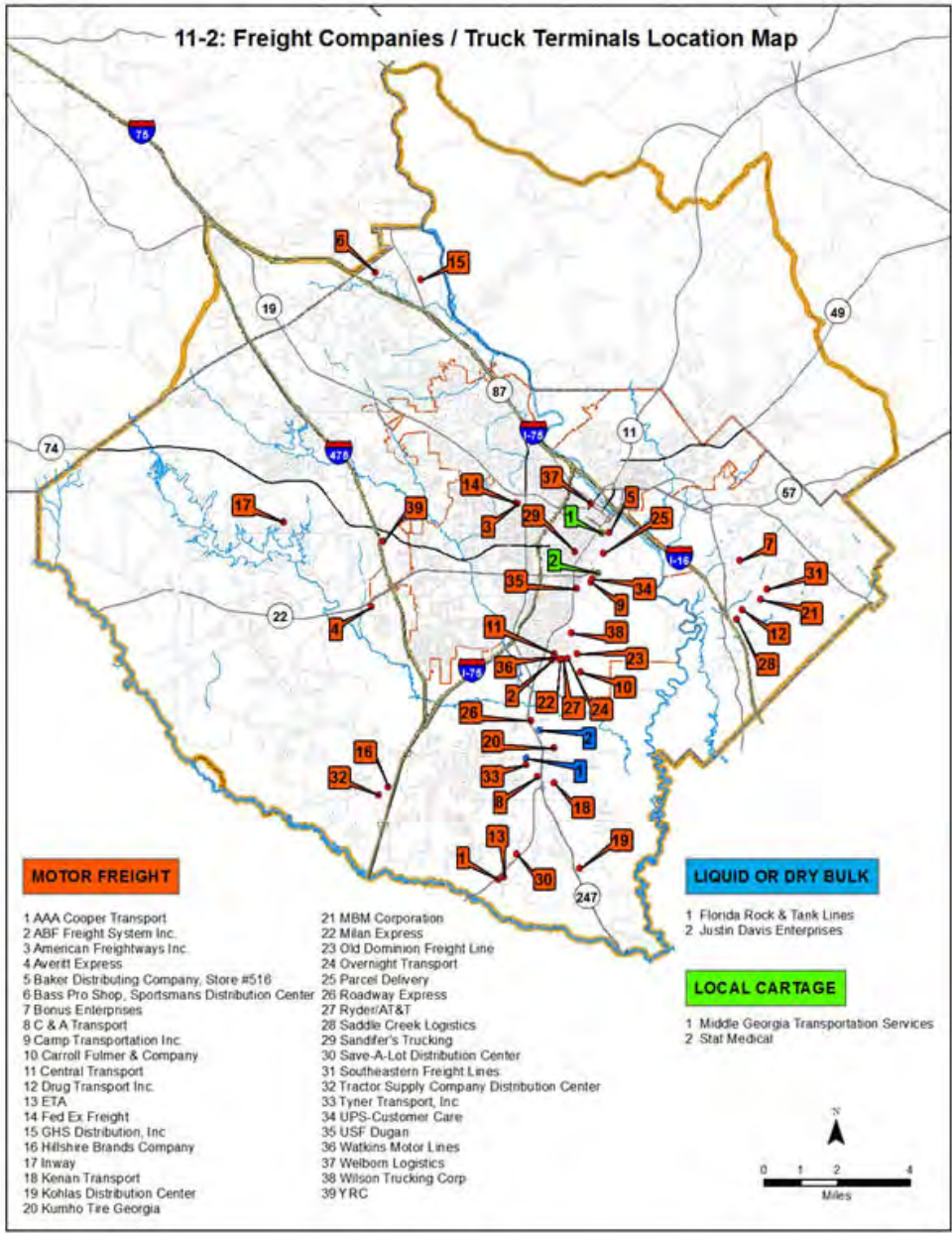


Figure 11-9: Freight Companies-Truck Terminals Location Map

Company Name	Address	Phone #
<u>Liquid or Dry Bulk</u>		
Florida Rock & Tank Lines	2532 Allen Rd. Macon, GA 31216	478.788.5113
Justin Davis Enterprises	2241 Barnes Rd. Macon, GA 31216	478.784.0570
<u>Local Cartage</u>		
Middle Georgia Transportation Services	170 Lower Bay Street Macon, GA 31206	478.742.0890
Stat Medical	455 Lower Boundary St. Macon, GA 31206	478.743.9549
<u>Motor Freight</u>		
AAA Cooper Transportation	3165 Avondale Mill Rd Macon, GA 31216	478.781.1055
ABF Freight Systems, Inc.	711 Guy Paine Rd. Macon, GA 31206	478.788.6424
American Freightways, Inc.	2750 Roff Avenue Macon, GA 31204	
Averitt Express	4750 Ivey Drive Macon, GA 31206	800.283.7488
Baker Distributing Company Store #516	125 Poplar Street Macon, GA 31201	478.742.0737
Bass Pro Shop	5100 Bass Road Macon, GA 31210	478.757.7700
Sportsman's Distribution Center		
Bonus Enterprises, Inc.	2351 Hubbard Road Macon, GA 31217	478.741.1021
C&A Transportation	2360 Spires Dr. Macon, GA 31216	478.784.8652
Camp Transportation, Inc.	2280 Seventh Street Macon, GA 31206	
Carroll Fulmer & Company	4661 Mead Rd. Macon, GA 31206	478.784.7333
Central Transport, Inc.	4430 Marion Avenue Macon, GA 31206	
Drug Transport, Inc.	501 Joe Tamplin Industrial Blvd. Macon, GA 31217	
ETA	8345 Grace Road Macon, GA 31216	478.781.9985
Fed Ex Freight	2750 Roff Avenue Macon, GA 31204	478.744.0736
GHS Distribution, Inc.	321 Corporate Parkway Macon, GA 31210	478.750.8548
Hillshire Brands Company	1075 Frank Amerson Parkway Macon, GA 31216	478.812.9130

Table 11-3: Freight Companies-Truck Terminals Operating In the MATS Region

Inway	6603 Dana Drive Macon, GA 31220	
Kenan Transport, Inc.	2131 Barnes Ferry Road Macon, GA 31216	
Kohl's Distribution Center	3030 Airport E. Parkway Macon, GA 31216	478.785.6000
Kumho Tire Georgia	3051 Kumho Parkway Macon, GA 31216	478.812.9595
MBM Corporation	704 Joe Tamplin Industrial Blvd. Macon, GA 31217	478.741.9706
Milan Express	625 Guy Paine Rd. Macon, GA 31206	
Old Dominion Freight Line	4430 Mead Road Macon, GA 31206	
Overnight Transport	475 Guy Paine Road Macon, GA 31206	
Parcel Delivery	455 Lower Bay Street Macon, GA 31206	
Roadway Express	2360 Cargill Road Macon, GA 31216	
Ryder/AT&T	587 Guy Paine Road Macon, GA 31206	478.788.9911
Saddle Creek Logistics	440 Joe Tamplin Industrial Blvd. Macon, GA 31217	478.742.8740
Sandifer's Trucking	580 Edgewood Avenue Macon, GA 31201	
Save-A-Lot Distribution Center	7595 Industrial Highway Macon, GA 31216	478.788.6811
Southeastern Freight Lines	801 Joe Tamplin Indust. Blvd. Macon, GA 31206	478.755.8859
Tractor Supply Company Distribution Center	151 Tractor Drive Macon, GA 31216	478.785.6201
Tyner Transport, Inc.	2510 Allen Road Macon, GA 31216	
UPS-Customer Care	235 South Street Macon, GA 31206	800.742.5877
USF Dugan	205 Raines Avenue Macon, GA 31206	
Watkins Motor Lines	4444 Marion Avenue Macon, GA 31206	
Welborn Logistics	195 Spring Street Macon, GA 31201	478.745.0740
Wilson Trucking Corporation	4390 Mead Road Macon, GA 31206	478.781.7170
YRC	4241 Interstate Road Macon, GA 31206	478.474.0221

Table 11-3: Freight Companies-Truck Terminals Operating In the MATS Region (continued)

#### MATS MPO Initiatives to Improve Freight & Goods Movement by Truck

Within the Macon MPO, planned improvements to highways affecting truck freight in the MATS study area are either being implemented or are planned for improvements in the future. The following projects are key projects that will improve freight and goods movement when completed.



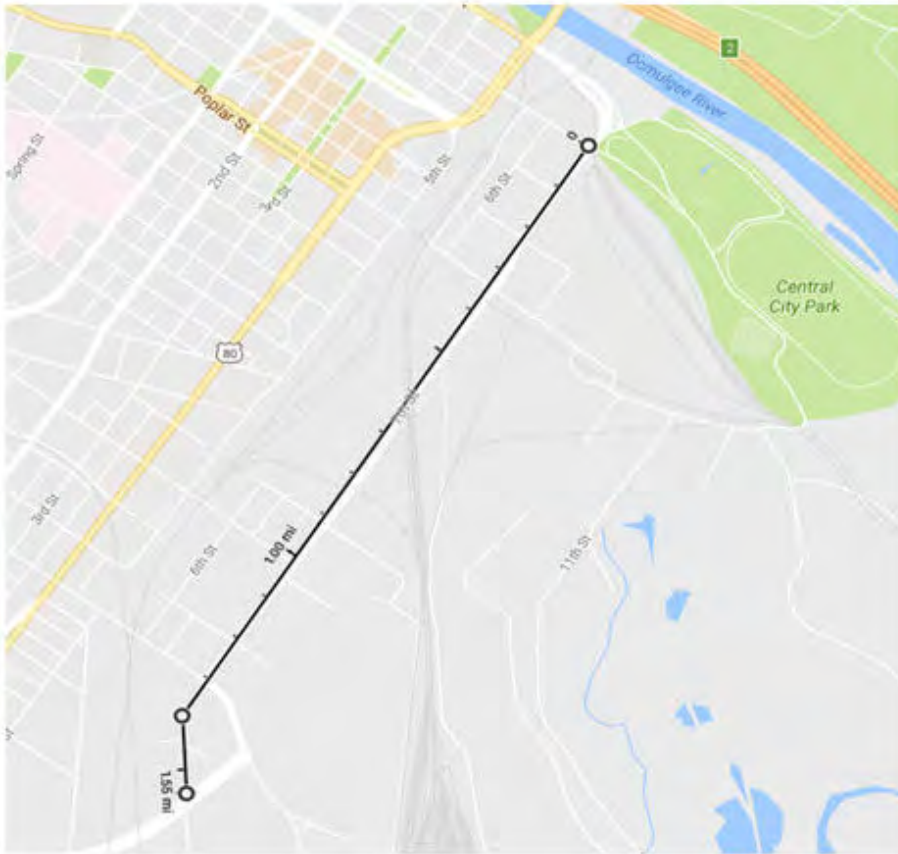


Figure 11-10: Seventh Street Truck Route

**Seventh Street Truck Route** - Currently, large trucks hauling logs, gravel, and other heavy materials currently utilize Martin Luther King, Jr. Boulevard to travel from points east and north, through the heart of Macon's downtown business district. This truck traffic creates a noisy and dangerous barrier for pedestrians attempting to visit the museum district, Macon's Historic Terminal Station and downtown restaurants, shops and other entities. Macon – Bibb County desires to create a new truck route that will direct the truck traffic away from downtown and through the existing Seventh Street Industrial District, as shown in Figure 11-10. This will result in improved access to downtown passenger vehicles and improves pedestrian safety near Cherry Street and Martin Luther King, Jr., Boulevard. The planned improvements for the proposed project will consist of a reconstructing the intersection of Walnut Street and Seventh Street by installing a roundabout and other needed improvements. This project is on the approved Roads & Bridges project list (Priority #10). See Chapter 6, Table 6-2 for budget details.

**Sardis Church Road / Sgoda Road Extension** - The Sardis Church Road Extension to I-16/Sgoda Road project is an initiative that will improve freight and goods movement throughout the MATS Study area by truck. In 2014, GDOT approved a \$53.3 million contract to begin construction improvements to Sardis Church Road to widen and extend the roadway from near Interstate 75 to Georgia State Route Highway 247. Eventually, totaling more than \$55 million, the 6.3-mile route includes construction of five bridges, a four – lane divided east-west connector with a median, 4-foot bike lanes, 5-foot sidewalks on both sides of the roadway and the installation of television monitoring systems.



Courtesy of the Telegraph: December 2016

Figure 11-11: Sardis Church Road Extension Construction

The project which is currently under construction is scheduled to be completed by May 2019. As shown in Figures 11-11 and 11-12, the proposed extension will begin near the Interstate 75 with





Sardis Church Road-Sgoda Road Extension  
Construction

widening Sardis Church Road to four lanes from Skipper Road to Goodall Mill Road. The project will then move away from the current Sardis Church Road alignment, crossing Houston Road near Nob Hill Drive and crossing U.S. 41/Industrial Highway south of Airport South Industrial Park. The extension will then tie into Avondale Mill Road at the curve near the end of the main Middle Georgia Regional Airport runway and extend to Georgia State Route Highway 247 where a new interchange will be constructed. Upon completion of this phase of the Sardis Church Road extension, future plans are to extend Sardis Church Road from Georgia State Route Highway 247 to Interstate 16 at Sgoda Road, as shown in Figure 11-13. This phase would ultimately link I-75 to I-16 as a means to improve freight and goods movements throughout the middle Georgia region. At present, a scoping study is underway to determine if a second phase of the Sardis Church Road extension is feasible from a construction standpoint and to also determine if the \$62 million estimate is financially feasible.

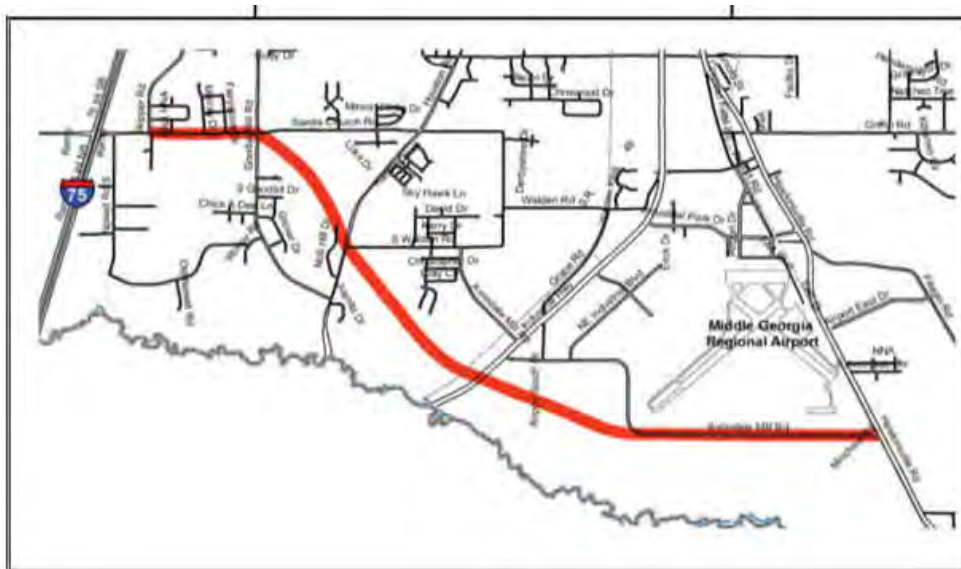


Figure 11-12: Sardis Church Road Extension Right of Way



Figure 11-13: Sardis Church Road Extension With Sgoda Road Extension Right of Way (number 37)

The proposed extension of Sardis Church Rd. to Sgoda Rd. is on the approved Roads & Bridges project list (Priority #52). See Chapter 6, Table 6-2 for budget details.

**I-16/I-75 Interchange Improvements** - The first phase of interstate improvements involves widening I-16 from I-75 to Coliseum Drive from four to six lanes.



Figure 11-14: I-16 / I-75 Interchange

The next two phases stretch from I-75 around Hardman Avenue to the I-16 interchange and the reconstruction of the interchange. There's also planned improvements to the Pleasant Hill Neighborhood as part of the interstate interchange project, to include the relocation of Little Richard Penniman's childhood residence, streetscape upgrades, construction of new parks and remodeling homes. These projects are on the Roads & Bridges projects list (Priorities 5 through 8). See Chapter 5, Table 5-2 for budget details.

#### Freight & Goods Movement - Rail

Railroads are a key feature in Georgia's freight landscape where the rail system plays an essential role in linking Georgia shippers with markets throughout North America and the world. This system serves as an important connection for freight rail, serving two large east coast Class I railroads and many intermodal hubs. There are over 6,000 miles of railroad track in the State with approximately 4,844 in active service. Norfolk Southern (NS) and CSX Transportation (CSX), operate 70 percent of this trackage. The remaining miles are operated by 23 Class III or Short-Line railroads as illustrated in Figure 11-15, Georgia Rail System Map. GDOT and the State Property Commission own 676 miles of track which is leased out to various operators. The Class I rail lines connect rail hubs in Atlanta to the Midwest and to marine ports in Georgia and Florida. The two busiest corridors are the CSX corridor between Jacksonville, Florida, and Tennessee via Waycross, Cordele, and Atlanta, and a parallel NS corridor via Cordele, Macon, and Atlanta. The primary intermodal (rail/truck) terminals are located in Atlanta and Savannah, the latter of which primarily serves marine port traffic.<sup>[13] 15</sup> Atlanta is the hub for southeast rail operations for both Classes I railroads in the eastern half of the U.S. – CSX and Norfolk Southern. For the Port of Savannah, rail is used to connect with shippers across the State. Atlanta metro is the top intermodal rail trading partner for the Port of Savannah shipping and receives 33% of the total



intermodal rail containers through the port. Roughly half of the carload rail traveling through the port connects with Georgia destinations outside of Atlanta. Carload rail includes bulk commodities such as timber/wood products, broilers (frozen chickens), peanuts, cotton, and kaolin. Increased economic activity in Georgia will drive additional demand for freight rail services. These demands will outstrip current capacity and require improvements in freight rail infrastructure to ensure that freight rail continues to be a cost-effective modal option for Georgia shippers.[14] 16

Freight rail improvement projects were considered in three categories:

- Recent and Current Investments by Class I Railroads;
- Specific projects needed to address current deficiencies; and
- Conceptual projects considered as part of a longer-term rail program to capture future growth opportunities

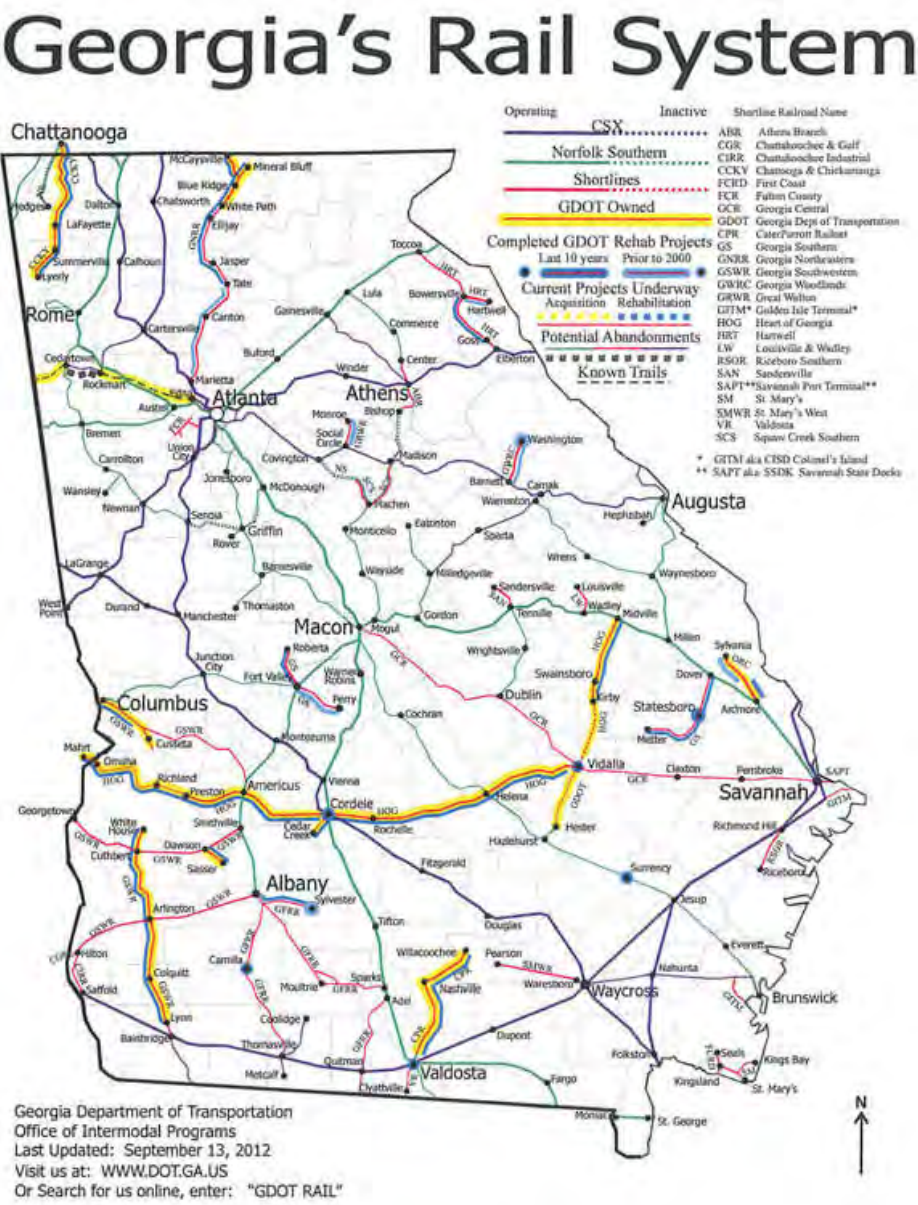
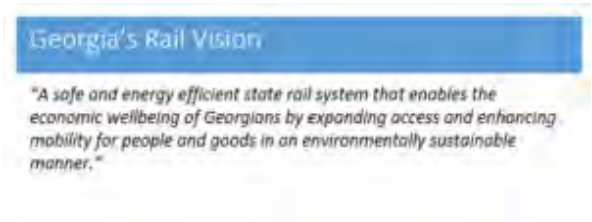


Figure 11-15: Georgia's Rail System



has always understood the importance of moving freight and people through Georgia's transportation system. Based on the collaborative efforts to develop the vision for rail transportation in Georgia, the following Rail Vision Statement and Goals were developed to address the issues and obstacles facing rail in Georgia.

- **Enhance safety and security:** Typical initiatives could include minimizing grade crossing accidents, hazmat spills, theft from trains and rail facilities, and upgrading deficient rail infrastructure;
- **Provide for a reliable, enhanced and interconnected passenger rail system:** Typical initiatives could include improvements to on-time performance and reliability for existing services, ADA compliance at rail stations, and expansion of intercity and commuter passenger services;
- **Promote and expand intermodal connectivity:** Typical initiatives could include new or improved freight intermodal facilities and highway connectors and better linkages between intercity and urban mass transit passenger services with improved access for pedestrians and cyclists;
- **Develop an energy efficient and environmentally sustainable rail system:** Typical initiatives could include the retrofitting to lower emission diesel-electric locomotives and implementing strategies and policies to encourage the diversion of passengers and freight highways to rail;
- **Preserve and improve the existing infrastructure:** Typical initiatives could include projects to accommodate the higher maximum loaded car weights on Georgia short lines (i.e., 286,000 pounds) and upgrading track and bridges to improve operating efficiency and main line capacity, and improved access to rail users through new sidings and additional car storage capacity;
- **Enhance economic development and competitiveness:** Typical initiatives could entail promoting new rail-served development to attract new rail-oriented industries and the implementation of industrial access funding aimed at lowering transportation costs for rail shippers.<sup>[15] 17</sup>



Dating back to history, Macon was known as the railroad hub of the South for passenger and freight trains. Macon was a strategic point in linking the markets in the west with the South Atlantic and the north and south route. But as air travel became the transportation mode of choice for passenger and freight movement, many railroad lines were abandoned, thus causing surface and air transportation networks to serve the Central Georgia region.

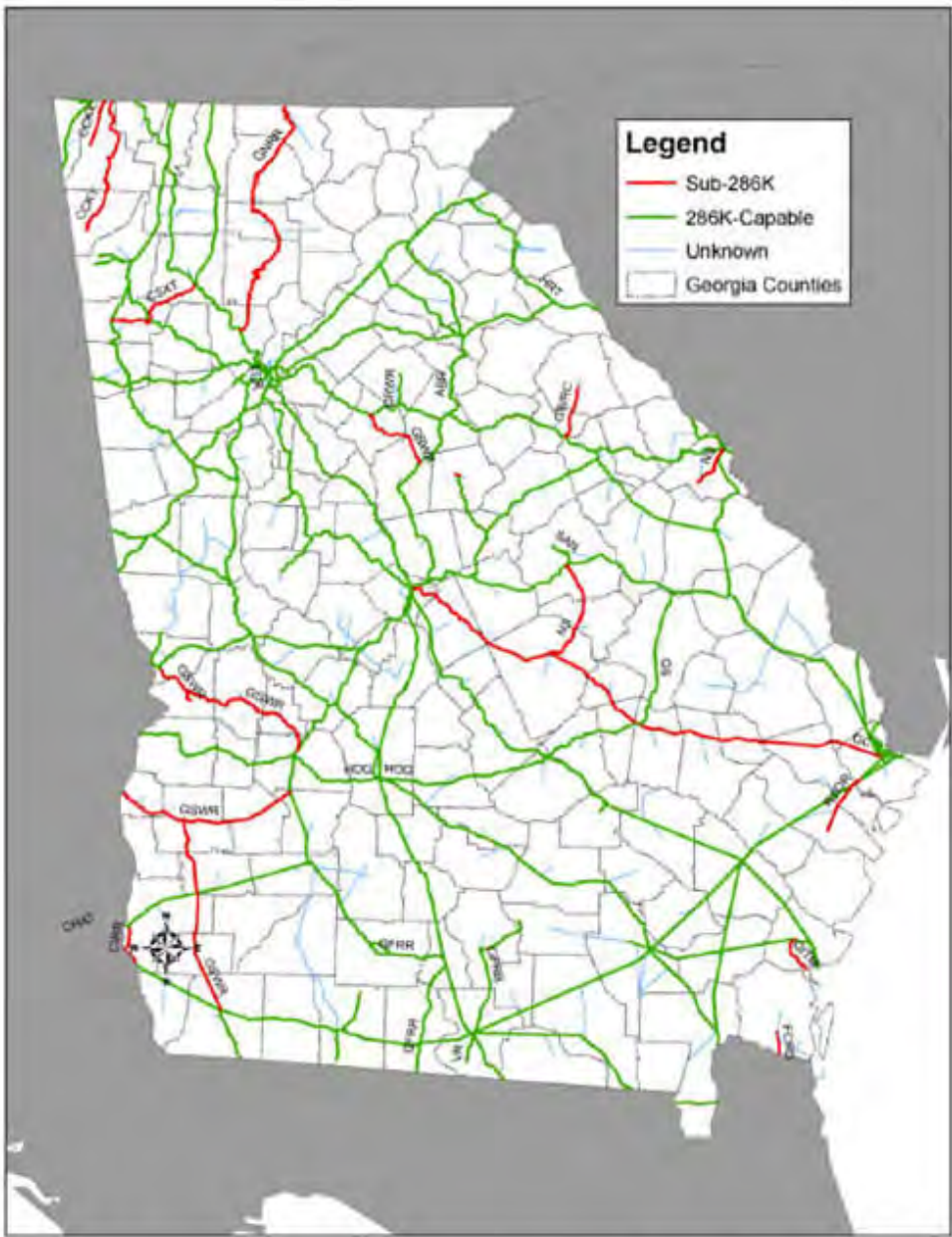


Figure 11-16: Norfolk - Southern Brosnan Railroad Yard

Home to the largest rail yards in the Central Georgia region, Brosnan Yard has been in full operation since 1966 which keeps Southern's freight moving 24 hours a day, seven days a week. The main purpose of a classification yard is to sort freight cars into groups according to their destination so that blocks of cars may be easily detached when they reach their final terminal. Brosnan yard is centrally located and has tracks running into the facility from seven major points: Atlanta, Jacksonville, Savannah, Augusta, Albany, Columbus, and Brunswick. <http://southern.railfan.net/ties/1967/67-11/bros.html><sup>18</sup>. These rail lines transport freight into the Macon-Middle Georgia region but do not provide multimodal interconnectivity with other modes of transit in the region. However, Brosnan classification yard is often viewed as a possible future intermodal terminal station for Norfolk Southern (NS). In its current capacity as a classification yard, freight and container cars are re-assigned from inbound trains, and “classified” to outbound trains based on common destinations. Middle Georgia is not likely to generate the cargo volume levels with Atlanta or Savannah freight volumes in the foreseeable future, which would likely be needed to incentivize NS to establish an additional intermodal hub. Lastly, adding the complexity and space requirements of an intermodal hub to the existing classification yard operation in Macon would be a major challenge, and not likely in the near future. Therefore, it is the intent of this section of the transportation assessment portion of the updated 2040 LRTP to examine the rail infrastructure throughout the State of Georgia and the Middle Georgia Region.

According to the *Georgia Statewide Freight and Logistics Plan 2010 - 2050*, prepared for the Georgia Department of Transportation, there are currently deficiencies in Georgia's rail network that deals primarily with substandard weight limits and

vertical clearances on the existing tracks. The plan indicates that the industry standard railcar weight for bulk commodities such as grain, lumber, coal, and paper products, has trended in recent years from 263,000 pounds to 286,000 pounds (commonly referred to in the industry as “286K”). While most of the primary Class I rail lines have achieved 286K capability, many short line railroads in Georgia are not capable of handling 286K railcars. Figure 11-17 shows the Rail Line weight limits for Georgia’s Class I and short line railroads. Upgrading lightweight rail track to 286K is a key freight rail improvement project.



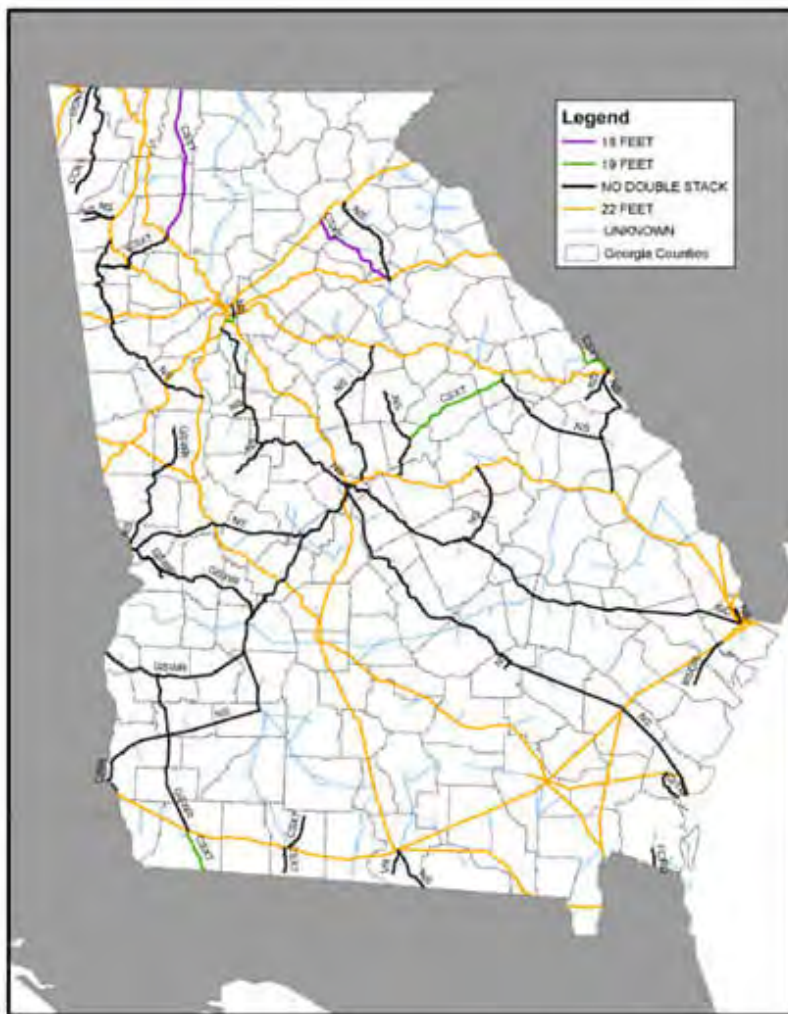
Source: Interviews with Class 1 Railroads, American Shortline Railroad Association, Project team Analysis.

Figure 11-17: Rail Line Weight Limits – Class I and Shortline Railroads

Much of Georgia's rail infrastructure was originally built to accommodate rail cars with a height of 15 feet. With the general adoption of larger railcars such as tri-level auto carriers and double-stack intermodal cars, vertical height standard industry requirements have trended to upwards of 20 feet, and the defined height for fully unrestricted clearance was raised to 22' 6". A minimum height of 20' 8" can accommodate a pair of stacked domestic containers (each 9'6" high) and has become a *de facto* minimum standard for vertical clearance for main lines handling intermodal traffic. Due to bridges and other obstructions, many rail lines in Georgia do not meet this requirement. Vertical clearances on CSXT, NS and many of the State's short line railroads are mapped in Figure 11-18. Increasing vertical height clearance to the 20' 8" minimum standard for vertical clearance is another



freight rail improvement project.



Source: Interviews with Class I railroads, American Shortline Railroad Association, Project team analysis.

Figure 11-18: Vertical Clearance Heights – Class I and Shortline Railroads

It is also noted in the *Georgia Statewide Freight and Logistics Plan 2010 - 2050*, that approximately, 95 percent of all mainline trackage, including Class I and short line railroad trackage, in the State of Georgia are single-track. Main Class I routes have passing sidings at regular intervals, which allow trains moving in opposite directions or at different rates of speed to pass one another. While this arrangement is effective for traffic volumes that have historically occurred over Georgia's main lines, as traffic increases and/or there is a greater mix of different types of trains, full double track becomes a necessity. Double tracking key rail segments in the state is a freight rail improvement project recommended as part of this Plan. In addition to the number of main line tracks, another important attribute affecting mainline capacity is the type of traffic control system. Railroads in Georgia primarily make use of three different signal systems to control traffic movements on their systems. These are Manual, Automatic Block Signals (ABS) and Centralized Train Control (CTC). CTC systems permit the dispatcher to remotely manage train movements by controlling signal indications and train routing over a geographic jurisdiction such as a subdivision or terminal area. CTC is layered on top of an ABS system, which provides occupied block protection. Implementation of CTC leads to considerable capacity improvements and is almost always taken as a first less costly step when traffic increases call for increased line capacity. The coverage of CTC systems will need to increase to manage increased volumes and increased double tracking across the state. This will increase the efficiency of rail operations in terms of average speeds and total travel times between origins and destinations. These rail improvements taken together represent a series of steps that would begin to address the rail system bottlenecks identified in the plan. The bottlenecks are shown in figure 11-19 with the rail track in red the priority rail track in need of improvements to accommodate future demand. As the Central Georgia region continues to grow, it may be necessary for the MATS area to consider the recommended rail improvements (that may apply) as stated in the *Georgia Statewide Freight*



and Logistics Plan 2010 - 2050, to efficiently move goods and services throughout the region.



Figure 11-19: Vertical Clearance Heights – Class I and Shortline Railroads

#### Middle Georgia's Rail Freight

Middle Georgia's total rail freight was 71.1 million tons in 2013 (45.5 percent of total freight). The distribution by flow and mode is illustrated in chart 11-20. Domestic through freight accounted for 65.3 percent of total rail freight, domestic inbound 19.5 percent, and domestic outbound 6.8 percent. International freight accounted for the remaining 8.4 percent. However, as stated earlier, the international share is likely understated due to international imports and exports that are partly handled as a domestic move. For example, this could apply to freight exported to Canada and Mexico that is classified as a domestic move from the U.S. origin to the border crossing. The dominant rail mode is carload (87.2 percent), which reflects the large volume shipments of bulk commodities that move in carload equipment (e.g., boxcars, hoppers, and tank cars). Carload rail excludes intermodal rail (i.e., 48-ft and 53-ft containers on rail), which accounted for the remaining 12.8 percent of rail freight tons.<sup>[16]</sup><sup>19</sup>

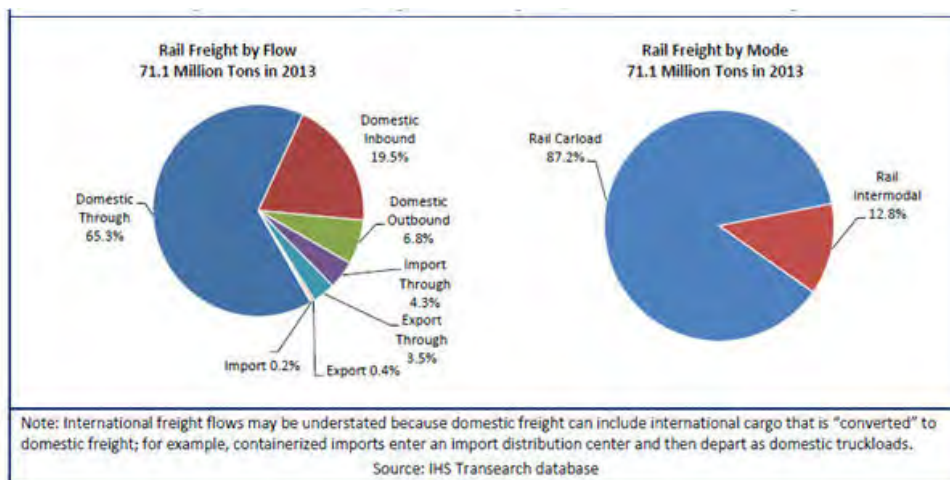


Figure 11-20: Middle Georgia Rail Freight by Flow and Mode in 2013

Rail freight associated with the Port of Savannah amounted to 6.3 million tons in 2013, 4.7 million tons moving to Savannah and 1.6 million tons flowing from Savannah. This rail freight is concentrated in the Savannah to Atlanta lane, with a 41.9 percent share of tons (Figure 11-21). The largest commodity from Savannah is Miscellaneous Mixed Shipments (intermodal commodities), accounting for 51.6 percent of rail tons (Figure 11-22). This reflects Savannah's role as a port gateway for containerized imports that move inland by intermodal rail service. Middle Georgia is the largest origin for rail freight moving to Savannah, with a 21.9 percent share, followed by Atlanta at 12.3 percent. The principal commodities moving to Savannah are Pulp, Paper or Allied Products (23.9 percent), Miscellaneous Mixed Shipments (15.7 percent) and Nonmetallic Minerals (10.9 percent).

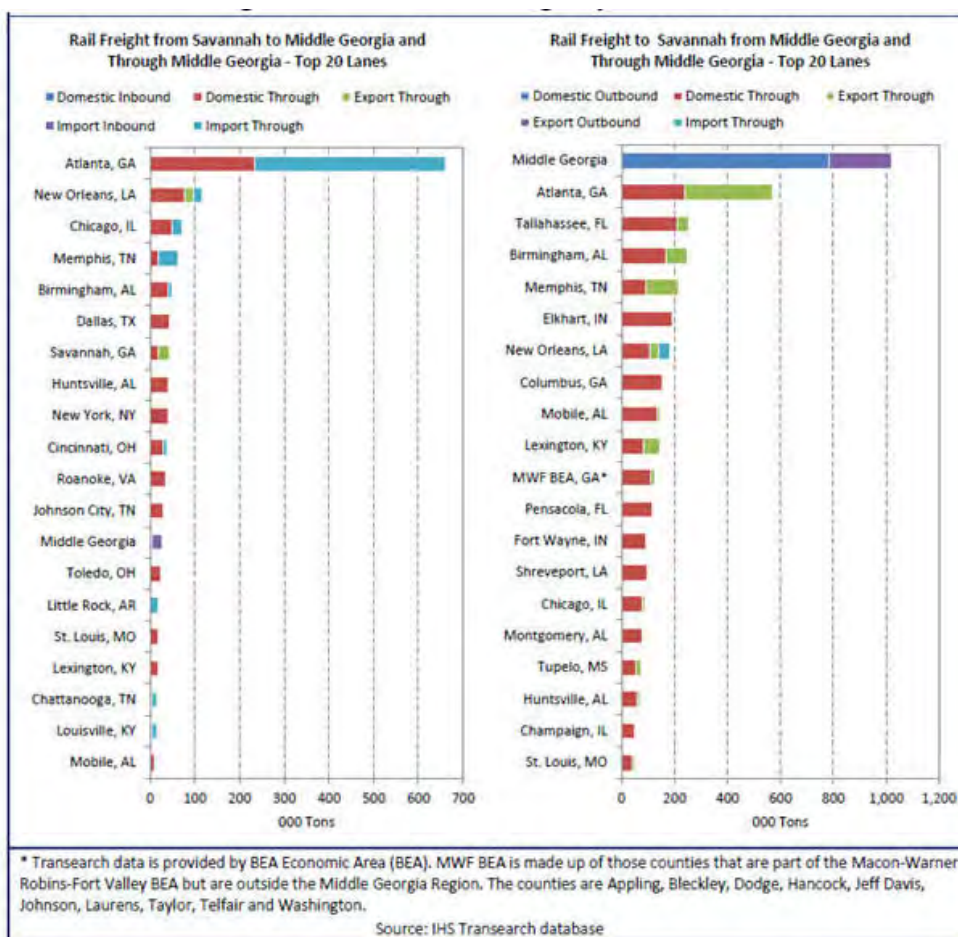


Figure 11-21: Middle Georgia – Savannah BEA Rail Freight by Lane in 2013

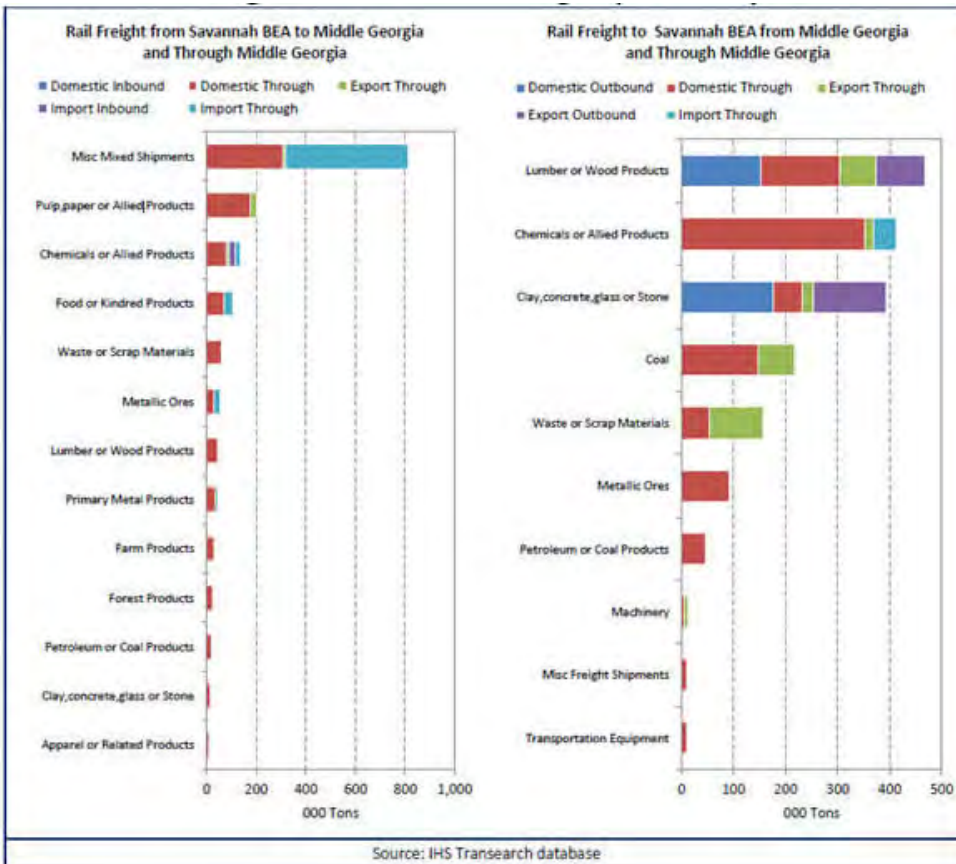


Figure 11-22: Middle Georgia – Savannah BEA Rail Freight by Commodity in 2013

The Long Range Transportation Plan project list identifies one project that will help continue to maintain freight movement throughout the MATS Study area; a project to replace a railroad bridge on SR 11/SR 49/US 41 @ Norfolk Southern RR 1.4 Miles South of Macon. This project is on the approved Roads & Bridges project list (Priority #40). See Chapter 6, Table 6-2 for budget details.

#### Freight & Goods Movement - Aviation

Georgia has approximately 104 publicly owned and used airports throughout the State, of which nine (9) offer scheduled commercial service and the remaining 95 are classified as general aviation, as illustrated in Figure 11-24. GDOT is most involved with the general aviation airports and in providing last-mile roadway access to all of the airports. Each airport is classified as a Level I (minimum standard general aviation), Level II (business airport of local impact), or Level III (business airport of regional significance and/or commercial facility) based on the role it plays in the aviation system.<sup>[17] 20</sup>



Figure 11-23: Georgia Aviation Statistics 200



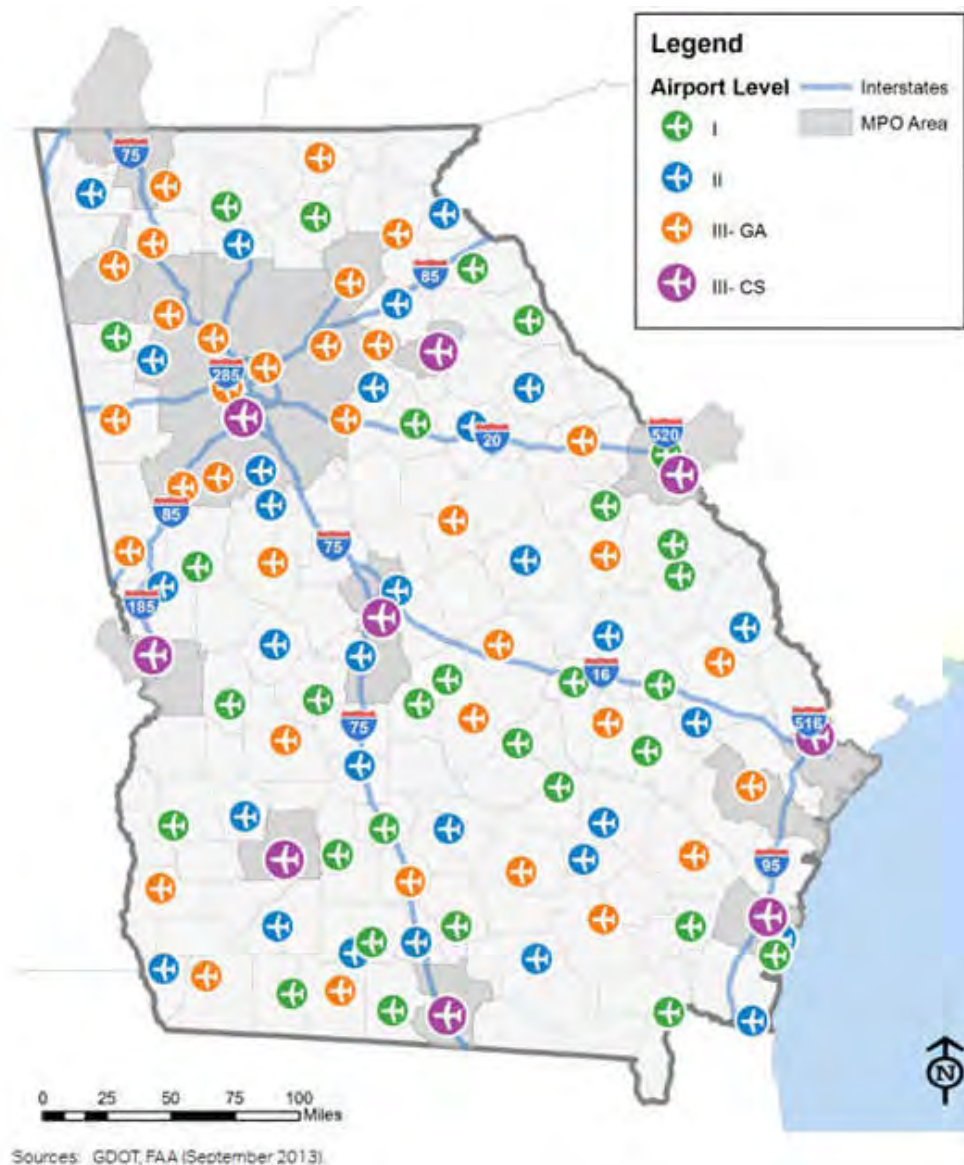


Figure 11-24: Overview of Public Airports by Level of Service

Situated in the heart of the State of Georgia, Macon – Bibb County plays host to two airports: the *Macon Downtown Airport* and the *Middle Georgia Regional Airport*. Airports are an important part of the transportation system, as well as the economy and can be characterized by two major categories:

- *Air Carrier Airports* include facilities that serve regularly scheduled passenger service. They are primarily facilities with the capacity to handle significant volumes of freight/cargo and passengers on a daily basis. The Middle Georgia Regional Airport accounts for the majority of revenue and traffic generated by airports within this classification.
- *General Aviation Airports* include smaller facilities which are normally located in counties throughout the State of Georgia. These facilities typically have paved runways 2,000 to 5,500 feet in length and are capable of accommodating small (single-engine) and medium sized (multi-engine) aircraft. These airports often provide opportunities for businesses with suitable aircraft to avoid the use of larger facilities and minimize air travel associated lag time.





### **Macon Downtown Airport**

The Macon Downtown Airport (MAC) falls within the description of a public use general aviation airport that serves private, corporate and executive jet aircraft. Macon Downtown Airport covers an area of 401 acres (162ha) at an elevation of 437 feet (133 m) above mean sea levels. It has two asphalt paved runways: 10/28 is 4,694 by 100 feet and 15/33 is 2,614 by 75 feet. The Macon Downtown Airport was originally constructed by the U.S. Government during World War II for the purpose of Army Air Force flight training. After World War II, the Airport was deeded to the City of Macon for use as a Civil Aerodrome. Commercial service was initiated by Delta Airlines and remained until the Middle Georgia Regional Airport was developed. After that, the airport was retained for general aviation use. Currently, the Macon Downtown Airport is owned and operated by Macon – Bibb County and is located approximately three (3) miles southeast of the Central Business District, Figure 11-25 provides an aerial overview of the MAC facilities. At the present time, there are no known plans to initiate the movement of freight goods and services from the Macon Downtown Airport.



Figure 11-25: Macon Downtown Airport (MAC)

### **Middle Georgia Regional Airport**

The Middle Georgia Regional Airport (MCN) is located in Macon - Bibb County, approximately nine (9) miles south of the Central Business District of Macon, Figure 11-26 provides an aerial overview of the MCN facilities. The airport is located to the east of Interstate 75 and to the south of I-16. The airport is situated on approximately 1100 acres of land. In 1940, the City of Macon donated land at the present site of the airport to the U.S. War Department. A military airfield was constructed on the site for flight training and was named Cochran Field. After World War II, the U.S. Government returned the airport with associated facilities back to the city. Commercial air service was initiated in 1948. Cochran Field was renamed Macon Municipal in 1960 and in 1966 was renamed Lewis B. Wilson Airport, honoring the former mayor, state legislator and airport manager.



Figure 11-26: Middle Georgia Regional Airport (MCN)

### Airport Role

The Middle Georgia Regional Airport operates as a public-use airport facility owned by the Macon – Bibb County government, privately managed and operated by TBI Airport Management, Inc. At the national level, it is included in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport System (NPIAS) as a non-primary airport. The NPIAS includes a total of 3,340 airports according to the last updated report (NPIAS 2017 – 2021). Middle Georgia Regional Airport is one of 99 airports in Georgia that is included in the NPIAS and one of 103 airports in Georgia classified as a commercial service airport. An airport must be included in the NPIAS to be eligible for federal funding. At the state level, the Middle Georgia Regional Airport is included in the Georgia Aviation System Plan which identifies the service area to include the counties of Bibb, Houston, Laurens, Baldwin, Peach, Jones, Dodge, Monroe, Macon, Telfair, Bleckley, Wilkinson, Dooly, Twiggs, Crawford, Pulaski, Taylor, Montgomery, Wilcox, Treutlen and Wheeler, as shown in Figure 11-27. The purpose of the System Plan is to provide a comprehensive look at each airport and the overall air transportation needs of the State for the next 20 years.<sup>[18] 21</sup>





reliable airport to meet the needs of the Macon – Bibb County and the entire Middle Georgia Region.

Specific elements of the Master Plan include the following: [19] <sup>22</sup>

- *Inventory existing airside, landside, and other support facilities and services currently at the Airport, as well as local and regional economic development and growth affecting the Airport;*
- *Update historical aviation data and develop new forecasts based on historical trends and major changes anticipated for the future;*
- *Document the methodology, findings, analysis and conclusions of the technical investigation of concepts and alternatives which were performed to develop the proposed plan;*
- *Propose a viable, phased 5, 10, and 20-year financial plan for achieving the planned airport development and implementation schedule; and*
- *Identify anticipated Airport funding needs and proposed Airport development policies for consideration by Macon – Bibb County*

The Middle Georgia Regional Airport is located in close proximity to the Warner Robins Air Force Base. Although WRAFB does not accommodate civilian aircraft operations, its location within the Middle Georgia Regional Airport's market area is notable. The proximity of this major military installation provides an important source of demand for both commercial and general aviation services provided at the Middle Georgia Regional Airport. The updated Airport Master Plan study for the Middle Georgia Regional Airport identified and recommends the following airfield improvements in an effort to improve airport capacity and freight movement.

- *Extend Runway 5/23 – 1500' x 150' Anticipated cost for this project is \$19,657,236.00, (excluding FHWA assistance) as listed in the most recent Airport Capital Improvement Plan (date: 11/18/2016). The runway underpass/tunnel for Sardis Church Road Extension and Avondale Mill Road associated with this runway extension project is listed in the Roads and Bridges project list (Priority #9). See Chapter 6, Table 6-2 for details.*
- *North Apron Rehabilitation*
- *Construct Infield Taxiways*
- *Add additional airside and landside facilities will need to be improved or expanded in order to adequately serve the anticipated increase in both aircraft and passengers utilizing the facility.*

The airports, along with the aviation related businesses and facilities, represents a vital and significant regional economic asset. In addition to the many aviation related assets, the airports also provide benefits to local businesses and industry, promotes tourism, as well as encourages additional business development and expansion throughout Macon – Bibb County, surrounding communities, and adjacent counties.

#### **Freight & Goods Movement – Ports**

There are three marine port complexes owned and operated by the Georgia Ports Authority (GPA): the Ports of Savannah, Brunswick, and Bainbridge, the largest of which is Savannah. There also are dozens of private terminals along the Georgia coast and the inland waterways, typically owned and operated by companies that exclusively ship their own products. GDOT's primary role is to provide last- mile roadway access to the ports.

The Port of Savannah is vital to the State's economy and is, overall, the fourth-largest container port in the U.S., handling about 3 million 20-foot-equivalent (TEU) container units annually. In addition, it is the second largest export port in the U.S. <sup>205</sup> has 37 weekly container ship calls, which is the second highest on the East Coast.



The Port of Savannah handles container, refrigerated, break-bulk, and roll-on/roll-off cargo such as automobiles. The Garden City Terminal, located seven miles upriver from downtown Savannah, is the largest GPA facility and the largest single terminal container operation in North America. This contributes to the large variety of commodities that are shipped through the facility, including wood pulp, food, furniture, and paper products, among many others.

The Port of Savannah's current channel depth is 42 feet; however, construction is underway to deepen that to 47 feet to consistently serve larger ships that will start traveling through the Panama Canal. This deepening of the channel also increases the efficiency and safety of cargo vessel operations. Additional landside capacity may be needed and access improvements for both trucks and trains will be critical at the Port of Savannah to accommodate future growth projections.

[20] <sup>23</sup>

### Recommendations on Network Georgia and Inland Port Development

The Georgia Ports Authority (GPA) has announced plans to establish inland ports throughout Georgia to extend Port of Savannah reach by rail to strategic areas, including a yet-to-be identified Middle Georgia location. While this presents a substantial opportunity to elevate Middle Georgia as a logistics hub, several actions should be coordinated to help ensure the success of the Network Georgia initiative:

- *The success of inland ports will depend on the formation of industry clusters and agglomerations that support each proposed site. The roles and industries that these inland ports are intended to support should be coordinated to ensure that target users do not overlap, thereby undercutting the success of all inland ports.*
- *The Middle Georgia Inland Port site selection should be in close proximity to major highways, most likely I-75, I-16, or the Fall Line Freeway when completed. A selection on I-16 would also require an upgrade to the NB I-16/I-75 interchange upgrade*

User advocacy may be an important component of the successful development of a Middle Georgia Inland Port site selection. Large volume shippers in the area or potential large volume shippers should be included in discussion to demonstrate the potential base of freight that will be required to make the development a success. Clay shippers are one obvious group, but another would be Robins Air Force Base. The existence of intermodal rail in Middle Georgia may have key implications for Robins AFB's role for Department of Defense (DoD) freight distribution in North America. A key success criterion for the Middle Georgia plan will be participation from all entities involved, including as funding sources for the project. The following representatives should be included in Network Georgia meetings:

- Economic and Development Agencies
- Commercial Retail and Manufacturing Logistics Managers
- Transportation Providers (e.g. GPA, truckers, railroads, ocean carriers, 3PL's)
- Robins AFB Representation

Source: Middle – Georgia Freight Study Final 2015



Figure 11-28: Volume by Ports in Georgia, FY 2010



Figure 11-29: Cargo Ship in Port

- [1]<sup>24</sup> U.S. Department of Transportation: Transportation.gov <https://transportation.gov/freight><sup>25</sup>
- [2]<sup>26</sup> Georgia Statewide Freight & Logistics Action Plan 2008
- [3]<sup>27</sup> U.S. Department of Transportation: Transportation.gov <https://www.transportation.gov/fastact/freight-factsheet><sup>28</sup>
- [4]<sup>29</sup> Legislation Information Institute – Cornell University School of Law: <https://www.law.cornell.edu/uscode/text/23/134><sup>30</sup>
- [5]<sup>31</sup> Transportation Performance Management: <https://www.fhwa.dot.gov/tpm/rule.cfm><sup>32</sup>
- [6]<sup>33</sup> U.S. DOT: Federal Highway Administration – FHWA Freight and Land Use Handbook April 2012
- [7]<sup>34</sup> GDOT Freight Guidebook: Interstate System Plan (technical memorandum) by Cambridge Systems, Inc.
- [8]<sup>35</sup> Georgia Statewide Freight & Logistics Action Plan
- [9]<sup>36</sup> GDOT 2040 Statewide Transportation Plan/2015 Statewide Strategic Transportation Plan January 2016
- [10]<sup>37</sup> Georgia Statewide Freight & Logistics Plan, 2010-2050 – Task 2 Report “Strategic Need for Investing” July 2015
- [11]<sup>38</sup> Middle Georgia Freight and Logistics Study, Middle Georgia Regional Commission, November 2015
- [12]<sup>39</sup> Middle Georgia Freight and Logistics Study, Middle Georgia Regional Commission, November 2015
- [13]<sup>40</sup> GDOT 2040 Statewide Transportation Plan / 2015 Statewide Strategic Transportation Plan
- [14]<sup>41</sup> GDOT Georgia Statewide Freight and Logistics Plan, 2010 – 2015 Task 5 Report “Freight Improvement Project Recommendations”
- [15]<sup>42</sup> GDOT: Georgia State Rail Plan 2015
- [16]<sup>43</sup> Middle Georgia Freight and Logistics Study, Middle Georgia Regional Commission, November 2015
- [17]<sup>44</sup> GDOT: 2040 Statewide Transportation Plan/2015 Statewide Strategic Transportation Plan – January 2016
- [18]<sup>45</sup> Airport Master Plan Update “Final Report”: Middle Georgia Regional Airport, Macon-Bibb County, Georgia November 2015
- [19]<sup>46</sup> Airport Master Plan Update “Final Report”: Middle Georgia Regional Airport, Macon-Bibb County, Georgia November 2015
- [20]<sup>47</sup> GDOT: 2040 Statewide Transportation Plan/2015 Statewide Strategic Transportation Plan – January 2016



# Chapter 12 | Plan Considerations

## Introduction

This section addresses the environmental justice and environmental mitigation review to be included as part of Long Range Transportation Plan updates, as required by federal law. This chapter provides an overview of the new Fixing America's Surface Transportation Act “FAST Act” legislation; a review of Environmental Justice, Title VI, Non-Discrimination and Equity; a review of the Title VI and Americans with Disabilities Act; a cursory review of MATS LEP (Limited English Proficiency) plan; a review of the social, natural, cultural and historic resource setting of MATS area; and a review of the proposed LRTP projects that identifies the potential environmental impacts associated with the recommended plan improvements. Environmental features such as communities of concern (e.g. environmental justice populations), historic lands, as well as wetland and floodplain areas are also considered. During the development of the original 2040 LRTP produced in 2013, the MPO carried over from the 2035 LRTP update the consultation results from several environmental agencies and the environmental mitigation strategies that were formulated. In regards to this 2040 LRTP Update, it is thought that the strategies recommended at that time can continue to be applied. These strategies should be considered to guide future transportation improvements from the planning stage to the project development stage. It is the intent of the MATS MPO to continue to be in full compliance with all federal and state environmental planning provisions required as part of the long range transportation planning process.

## FAST Act Legislation

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes \$305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, research, technology, and statistics programs. The FAST Act maintains focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery and, for the first time, provides a dedicated source of federal dollars for freight projects. With the enactment of the FAST Act, states and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.[\[1\]](#)

In regards to “*Increasing Transportation Choices and Opportunities*”, the FAST Act includes provisions that are intended to improve transportation options, redevelop communities and to expand employment opportunities, particularly for low-income individuals, minorities and persons with disabilities. Specifically, the Act:

- *Makes transit-oriented development projects* eligible for financing under the Transportation Infrastructure Finance and Innovation Act (TIFIA) and the Railroad Rehabilitation & Improvement Financing (RRIF) programs;
- *Provides \$2.2 billion for Buses and Bus Facilities formula grants and \$1.5 billion in discretionary grants for bus and bus facilities;*
- *Expands design flexibility and local control* by opening an option for certain local governments to use a design guide for their street network that differs from their State's adopted design guide;
- *Supports efforts to increase connectivity by improving bicycle and pedestrian networks;*



And even more specifically;

- *Expands access to public transportation workforce opportunities through training, educational programs, technical assistance grants.* The employment training program includes specific outreach to increase employment for veterans, women, individuals with disabilities, and minorities.
- *Establishes a Pilot Program to support projects that improve transportation coordination for the transportation disadvantaged, including seniors and individuals with disabilities.* [\[2\]](#)

The FAST Act adopted a number of proposals to further speed the permitting processes while still protecting environmental and historic treasures and also codifying the online system to track projects and interagency coordination processes. On these issues, the FAST Act does the following:[\[3\]](#)

- *Extends the environmental review process that applies to highways and public transportation to railroad and multimodal projects.* The Act provides the Secretary with the authority to extend the highway environmental review provisions (23 U.S.C. 139) to some rail and multimodal projects.
- *Improves early and substantive engagement among agencies during the environmental review process.* The Act clarifies the roles and responsibilities of the different Federal agencies involved in the environmental review process and sets up a checklist to help project sponsors to identify the environmental issues in the project area and the agencies with jurisdiction for affected natural, cultural and historic resources. See [Appendix G](#) for the Environmental Requirements and Resources checklist.
- *State Pilot Project on NEPA.* The Act establishes a pilot program to allow up to five States that have assumed Federal responsibility for the National Environmental Policy Act review process to use their State laws and regulations to conduct environmental reviews and approve projects.

### **FAST Act and Metropolitan Planning**

In many cases, the FAST Act continues all of the metropolitan planning requirements that were in effect under MAP-21:

- Support for intercity bus and commuter vanpools
  - *The FAST Act continues to require metropolitan transportation plans and transportation improvement programs (TIPs) to provide for facilities that enable an intermodal transportation system, including pedestrian and bicycle facilities. It adds to this list other facilities that support intercity transportation (including intercity buses, intercity bus facilities, and commuter vanpool providers). The FAST Act also requires that the metropolitan long-range plan includes identification of public transportation facilities and intercity bus facilities.* [23 U.S.C. 134(c)(2) & (i)(2)]
- Consultation with other planning officials
  - *The FAST Act continues to encourage MPOs to consult with officials responsible for other types of planning activities. It adds to the list of such activities tourism and the reduction of risk of natural disasters.* [23 U.S.C. 134(g)(3)(A)]
- Scope of planning process
  - *The FAST Act expands the scope of consideration of the metropolitan planning process to include—*
    - *Improving transportation system resiliency and reliability;*
    - *Reducing (or mitigating) the stormwater impacts of surface transportation; and*
    - *Enhancing travel and tourism.* [23 U.S.C. 134(h)(1)(I) & (J)]

- Capital investment and other strategies
  - *The FAST Act continues to require a metropolitan transportation plan to include strategies to meet current and projected transportation infrastructure needs. [23 U.S.C. 134(i)(2)(G)]*
- Resilience and environmental mitigation activities
  - *The FAST Act expands the focus on the resiliency of the transportation system as well as activities to reduce stormwater runoff from transportation infrastructure. In addition, it newly requires strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters. [23 U.S.C. 134(d)(3) & (i)(2)(G)]*
- Transportation and transit enhancement activities
  - *The FAST Act continues to require a metropolitan transportation plan to include transportation and transit enhancement activities. When proposing these activities, the plan must now include—*
    - *Consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner; and*
    - *Strategies and investments that preserve and enhance intercity bus systems, including those that are privately owned and operated. [23 U.S.C. 134(i)(2)(H)]*
- Participation by interested parties in the planning process
  - *The FAST Act explicitly adds public ports and certain private providers of transportation, including intercity bus operators and employer-based commuting programs to the list of interested parties that an MPO must provide with reasonable opportunity to comment on the transportation plan. [23 U.S.C. 134(i)(6)(A)]*
- Congestion management
  - *The FAST Act adds examples of travel demand reduction strategies for congestion management in a transportation management area (TMA). While retaining the requirement for a congestion management process for MPOs that serve a TMA, the law also allows an MPO that serves a TMA to develop a congestion management plan (distinct from the congestion management process) that will be considered in the MPO's transportation improvement program. Any such plan must include regional goals for reducing peak hour vehicle miles traveled and improving transportation connections, must identify existing services and programs that support access to jobs in the region, and must identify proposed projects and programs to reduce congestion and increase job access opportunities. The FAST Act specifies certain consultation requirements MPOs must use in developing the plan. [23 U.S.C. 134(k)(3)] [\[4\]](#)*

FAST Act builds on and refines many of the highways, transit, bike, and pedestrian programs and policies established in 1991. The act provides funding and procedural requirements for multimodal transportation planning in metropolitan areas and states that is cooperative, continuous and comprehensive, resulting in long-range plans and short-range programs of transportation investment priorities. Additionally, the Performance Based Planning Process established in MAP-21 continues in the FAST Act, which:

- *Requires MPOs and States to develop transportation plans and transportation improvement programs through a performance-driven, outcome-based approach to planning.*
- *Requires MPOs to establish performance targets that address both the surface transportation measures set forth in 23 U.S.C 150(c), in coordination with the state and public transportation performance measures in coordination with providers of public transportation, to ensure consistency with performance targets related to transit asset management and transit safety, as set forth in 49 U.S.C. 5326(c) and 5329(d).*

- *MPO plans must include performance targets that address performance measures and standards and a system performance report*
- *Transportation Improvement Programs (TIP) must include a description of the anticipated progress brought about by implementing the TIP toward achieving the performance targets.*
- *By October 1, 2017, DOT must submit a Report to Congress evaluating the effectiveness of performance-based planning and assessing the technical capacity of MPOs in smaller areas to undertake performance based planning.*
- *MPO's continue to develop Unified Planning Work Programs, Metropolitan Transportation Plans, Transportation Improvement Programs and Public Participation Plans.*
- *FTA and FHWA certify the metropolitan planning process in Transportation Management Areas. [\[5\]](#)*

Performance goals are not incorporated in this Long Range Transportation Plan update, but the MPO is planning to incorporate performance measures in the next update as currently required by Federal Highway Administration. The long-range plan must describe the performance measures and targets used in assessing system performance and progress in achieving the performance targets. The Transportation Improvement Program (TIP) must also be developed to make progress toward established performance targets and include a description of the anticipated achievements. [\[6\]](#)

Lastly, FAST Act continues to acknowledge the importance of access to federal and tribal lands. Recognizing the need for all public Federal and tribal transportation facilities to be treated under uniform policies similar to the policies that apply to Federal-aid highways and other public transportation facilities, FAST Act creates a unified program for Federal lands transportation facilities, Federal lands access transportation facilities and tribal transportation facilities. As with MAP – 21, FAST Act must also include a discussion of potential environmental mitigation activities as it relates to metropolitan transportation plans. This process must be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies.

Additionally, under FAST Act, Metropolitan Planning Organizations (MPO) shall consult with State and/or local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation in developing long-range transportation plans.

### **Environmental Justice, Title VI, Non-Discrimination, and Equity**

Although Environmental Justice (EJ), Title VI, Non-Discrimination, and Equity are distinct elements, collectively they can contribute to the development of an equitable transportation system. These elements are regularly mistaken and used interchangeably, thus, making it essential to understand their differences. EJ at FHWA focuses on identifying and addressing disproportionately high and adverse human health or environmental effects of the agency's programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens. This objective is to be achieved, in part, by actively adhering to the principles and practices of both Title VI and the National Environmental Policy Act (NEPA) during the development and implementation of transportation activities. The classes covered by EJ vary slightly from those covered by Title VI and other nondiscrimination statutes, as depicted in Table 12-1.

Area of Comparison	EJ	Title VI Statute	FHWA Title VI Program
<b>Authorizing source</b>	Executive Order 12898	Civil Rights Act of 1964	Title VI Program and Related Authorities: 23 CFR 200
<b>Goal</b>	Identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations	Prohibit discrimination on the basis of race, color, or national origin in programs receiving Federal assistance	Ensure that funding recipients comply with Title VI and related civil rights authorities
<b>Protected classes</b>	Minority and low-income populations	Race, color, and national origin	Race, color, national origin, sex, age, disability, low-income, and limited English proficiency
<b>Covered actions</b>	Federal programs, policies, and activities	All activities of recipients of Federal assistance	All activities of recipients of FHWA assistance
<b>FHWA Lead Office</b>	Office of Civil Rights and Office of Planning, Environment, and Realty	Office of Civil Rights	Office of Civil Rights
<b>Entities responsible for implementation</b>	FHWA offices and recipients of Federal assistance	FHWA offices and recipients of Federal assistance	FHWA offices and recipients of FHWA assistance
<b>Provides authority for private parties to initiate a lawsuit</b>	No. However, where an agency opts to examine EJ as part of its NEPA analysis, courts may review the EJ analysis under the Administrative Procedure Act.	Yes. However, there is only a private right of action in a lawsuit for claims of intentional discrimination and not disparate impact discrimination. Only the funding agency issuing the disparate impact regulation has the authority to challenge a recipient's actions under a disparate impact claim.	No

Table 12-1 Comparison of EJ, the Title VI Statue and the FHWA Title VI Program

Title VI of the Civil Rights Act of 1964 prohibits discrimination based on race, color, and national origin in programs and activities receiving Federal financial assistance. More specifically, Title VI provides that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." The use of the word "person" is important as the protections afforded under Title VI are not limited to citizens of the United States; the U.S. Supreme Court has held that undocumented immigrants are considered "persons" under the equal protection clause of the Fifth and Fourteenth Amendments.

"Nondiscrimination" is more inclusive than the Title VI statute as it covers additional classes of individuals, and, pertains to other civil rights authorities with which funding recipients must comply. Under the Title VI statute, protected classes include race, color, and national origin; limited English proficiency is included within the class of national origin. FHWA's Title VI program (in contrast to the Title VI statute) expands the covered classes to include sex, age, disability, and low-income.

Together, Title VI, EJ, and other nondiscrimination authorities protect diverse segments of the population which may be at risk of being unduly impacted by, or which have been historically underrepresented, within the transportation decision-making process. Considering the needs of and potential impacts of projects on these populations may result in greater transportation equity as benefits are likely to be more equitably distributed amongst the affected communities.



Equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members. A central goal of transportation equity is to facilitate social and economic opportunities by providing equitable levels of access to affordable and reliable transportation options based on the needs of the populations being served, particularly populations that are traditionally underserved. This population group includes individuals in at least one of the following categories: Low-Income, Minority, Elderly, Children, Limited English Proficiency, or Persons with Disabilities. It is important to note that transportation equity does not mean equal. An equitable transportation plan considers the circumstances impacting a community's mobility and connectivity needs and this information is used to determine the measures needed to develop an equitable transportation network. The graphic illustrates the differences between equality and equity. To attain an equitable transportation network, all components of Title VI, EJ, and Nondiscrimination must be considered. [7]

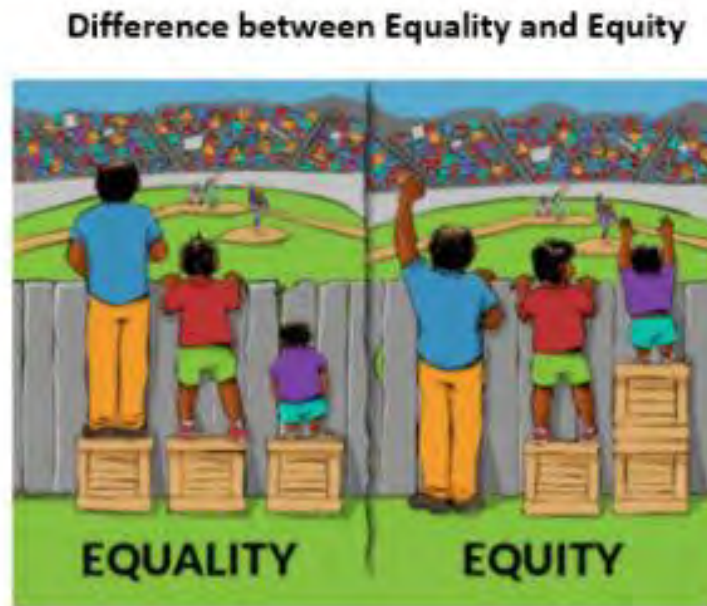


Figure 12 – 1: Equality vs. Equity

### Environmental Justice and Title VI

While Environmental Justice and Title VI concerns have most often been raised during project development, it is important to recognize that the law also applies equally to the processes and products of planning. There are three fundamental environmental justice principles:

- *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.*

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin. The Office of Management and Budget (OMB) issued Policy Directive 15, Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, in 1997, establishing five minimum categories for data on race. Executive Order 12898 and the DOT and FHWA Orders on Environmental Justice address persons belonging to any minority or low-income populations. Transportation plans for the Macon Area must show compliance with federal laws guaranteeing rights to persons of all races, color or national origins and to persons with disabilities as well. Two policies that must be taken into consideration in transportation process on the state and local levels are Executive Order 12898, (better known as Environmental Justice (EJ)) and the Americans with Disabilities Act (ADA). These policies require local transportation plans to identify and address as appropriate, disproportionately high and adverse human or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Macon's long range transportation must also comply with Title VI of the Civil Rights Act of 1964 that state, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied benefits of,

or be subject to discrimination under and program or activity receiving federal assistance”. It must also comply with the Americans with Disabilities Act (ADA) which concentrates on the physical access to services and facilities. Environmental Justice Executive Order 12898, *Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations*, calls for the identification and addressing of disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The intent of the Executive Order and the US Department of Transportation's EJ guidance is to ensure that communities of concern, defined as minority populations and low-income populations are included in the transportation planning process, and to ensure that they may benefit equally from the transportation system without shouldering a disproportionate share of its burdens.

## **Title VI and the Americans With Disabilities Act**

Compliance with Title VI of the Civil Rights Act of 1964 as well as the requirements of the Environmental Justice Orders and the Americans with Disabilities Act is of major concern to the Macon Area Transportation Planning Study. Title VI states, *“No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied benefits of, or be subject to discrimination under any program or activity receiving federal assistance”*. Further, Environmental Justice provides “each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human or environmental effects of its programs, policies, and activities on minority populations and low-income populations”. The Americans with Disabilities Act concentrates on the physical access to services and facilities.

These areas of concern were considered and addressed in the MATS procedure used to develop the Long-Range Transportation Plan (LRTP). First, access to the planning process was handled to ensure that the low-income populations and minority populations, and persons with disabilities could participate in the development of the LRTP. The Citizens Advisory Committee (CAC) was used as an instrument for identifying, discussing, and documenting diverse positions and sentiments regarding local transportation matters. Throughout the development of the LRTP, this committee was consulted in, and offered comments on the development of the Plan. The CAC has key representation to ensure these protected interests have access to the planning process. While the following does not represent the total membership of the CAC, those listed below do provide input for EJ and ADA concerns:

- One person from each Macon-Bibb County Commission District;
- One person from Jones County Commission District 4;
- One person from Monroe County Commission District 3;
- One person from the AARP (*American Association of Retired Persons*);
- One person representing the Bicycle / Pedestrian community;
- One person from the Board of Education;
- One person representing the Disabled Population;
- One person representing the Disabled Transportation User (ADA Transit Rider);
- One person representing Environmental concerns;
- One person representing the League of Women Voters;
- One person representing the Macon Housing Authority;
- One person representing Transit User

In addition, minority representation on decision-making bodies in Macon - Bibb County is in most cases substantial. The following provides a breakdown of minority representation on many of the major decision making bodies in Macon - Bibb County.

	<u>Members</u>	<u>Minority Members</u>
Jones County Board of Commissioners	5	2
Macon - Bibb County Board of Commissioners	9	4
Monroe County Board of Commissioners	4	1
Macon-Bibb County Transit Authority	7	4
Macon - Bibb County Planning & Zoning Commission	5	4
Macon Area Transportation Study <i>Policy Committee</i>	22	4
<i>Technical Coordinating Committee</i>	28	6
<i>Citizens Advisory Committee</i>	20	9

Table 12-2 Minority Representation on MATS Area Boards and Commissions

To further solicit minority participation from the general public, notices for public forums are published in a newspaper of general circulation, a minority newspaper and a Spanish language newspaper in the MATS area. Notices are also posted in the Macon – Bibb County Government Center, Washington Library, Middle Georgia Regional Commission, and the Macon – Bibb County Planning and Zoning Commission's office and website. Other forms of outreach include: announcements on social media, local television station, radio announcements, MATS E-Newsletters and other forms of electronic E-Newsletters to include “The Hub”, Middle Georgia CEO and the Greater Macon Chamber of Commerce.

#### **Limited English Proficiency [LEP] Plan and Title VI Documentation**

The Macon - Bibb County Planning and Zoning Commission serves as the MPO (*Metropolitan Planning Organization*) which has the responsibility to coordinate a comprehensive transportation planning process as required by SAFETEA-LU: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. Through the Macon Area Transportation Study (MATS), the MPO works in conjunction with local, state and federal agencies, officials and the general public to develop transportation plans and programs through a cooperative and comprehensive transportation planning process. This process provides a road map to guide the use of federal and state funds as it relates to existing and future transportation projects. The MPO also provides planning and technical assistance to the Macon Transit Authority through federal and state funding in an effort to address transit needs in the MATS Study area. As a recipient of federal and state funding, it is recommended by federal agencies that local MPOs begin to address the segment of the population that does not read, write, speak or understand English, in accordance with Title VI of the Civil Rights Act of 1964.

#### **Executive Order #13166**

On August 11, 2000, President William J. Clinton signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency". The Executive Order requires Federal agencies to examine the services they provide, identify any need for services to those with Limited English Proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The Executive Order also requires that the Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. In ensuring that the MATS MPO is in compliance with executive order 13166, the MPO will utilize U.S. DOT's Policy Guidance four - factor analysis to ensure that meaningful access is provided for LEP persons. This policy guidance sets forth the compliance standards that recipients of Federal financial assistance must follow to ensure that their programs and activities normally provided in English are accessible to LEP persons and thus do not discriminate on the basis of national origin in violation of Title VI's prohibition against national origin discrimination.

### **Who Is Considered a LEP Person?**

By definition, LEP persons are individuals who are unable to communicate effectively in English because their primary language is not English and they have not developed fluency in the English language and they may have problems reading, writing or speaking English.

### **Determining The Need For LEP Services**

As a recipient of federal financial assistance, MPO's are encouraged to take reasonable steps to ensure meaningful access to the information and services it provides. As noted in the *[Federal Register, Volume 70; Number 239 on December 14, 2005]*, there are four factors to consider when determining "reasonable steps." The MATS MPO will coordinate the U.S. DOT "four - factor" LEP analysis in determining the need for LEP services.

- **Factor 1:** *Identify the number or proportion of LEP persons eligible to be served or likely to be encountered by MATS Public Transit, MPO's programs, services or activities.*
- **Factor 2:** *Determine the frequency with which LEP individuals come in contact with MATS public transit and MPO programs, services or activities.*
- **Factor 3:** *Determine the nature and importance of the MATS public transit, MPO programs, services, or activities.*
- **Factor 4:** *Access the available resources and the overall cost to MATS public transit and the MPO.*

### **MATS Self - Assessment**

MATS MPO will seek to identify individuals of the LEP population within the MATS Study area who have limited ability to read, write, speak, or understand English. The MPO will use the U.S. Department of Transportation four factor LEP analysis to assess the area:

***Factor 1: Identify the number or proportion of LEP persons eligible to be served or likely to be encountered by MATS Public Transit, MPO's programs, services or activities.***

Table 12-3 below provides statistical data on the percentage of LEP persons in the MATS area who speak English only, as well as the percentage of those who speak a language other than English who are eligible to be served or likely to be encountered by MATS Public Transit and MPO programs, services, and activities. The MPO will monitor the release of more current data as it becomes available and make the necessary updates as needed.



	Bibb County		Jones County		Monroe County	
	Estimate	Margin of Error (90% C.I.)	Estimate	Margin of Error (90% C.I.)	Estimate	Margin of Error (90% C.I.)
Total Population 5 Years and Older:	100.00%		100.00%		100.00%	
Speak only English	95.13%	0.49%	98.79%	0.34%	96.24%	1.05%
Speak Spanish:	2.51%	0.34%	0.40%	0.21%	2.04%	0.74%
Speak English "very well"	1.39%	0.26%	0.34%	0.19%	1.08%	0.43%
Speak English "well"	0.54%	0.18%	0.05%	0.11%	0.67%	0.52%
Speak English "not well"	0.56%	0.22%	0.00%	0.13%	0.15%	0.15%
Speak English "not at all"	0.02%	0.03%	0.02%	0.09%	0.14%	0.20%
Speak other Indo-European languages:	1.20%	0.32%	0.14%	0.12%	1.24%	0.73%
Speak English "very well"	0.70%	0.27%	0.12%	0.11%	0.91%	0.70%
Speak English "well"	0.26%	0.11%	0.02%	0.09%	0.29%	0.17%
Speak English "not well"	0.23%	0.16%	0.00%	0.13%	0.04%	0.06%
Speak English "not at all"	0.01%	0.03%	0.00%	0.13%	0.00%	0.13%
Speak Asian and Pacific Island languages:	0.79%	0.18%	0.67%	0.29%	0.25%	0.30%
Speak English "very well"	0.45%	0.12%	0.41%	0.21%	0.08%	0.09%
Speak English "well"	0.24%	0.10%	0.25%	0.15%	0.08%	0.17%
Speak English "not well"	0.06%	0.04%	0.01%	0.09%	0.09%	0.18%
Speak English "not at all"	0.03%	0.04%	0.00%	0.13%	0.00%	0.13%
Speak other languages:	0.38%	0.16%	0.00%	0.13%	0.23%	0.29%
Speak English "very well"	0.30%	0.15%	0.00%	0.13%	0.23%	0.29%
Speak English "well"	0.08%	0.05%	0.00%	0.13%	0.00%	0.13%
Speak English "not well"	0.00%	0.03%	0.00%	0.13%	0.00%	0.13%
Speak English "not at all"	0.00%	0.03%	0.00%	0.13%	0.00%	0.13%

Table 12-3 Estimate of English Language Proficiency of Population in MATS Counties | Source: American Community Survey 5 Year Estimate, 2011 – 2015, Table B16005: Nativity By Language Spoken At Home By Ability to Speak English For the Population 5 Years and Over

***Factor 2: Determine the frequency with which LEP individuals come in contact with MATS public transit and MPO programs, services or activities.***

Based on the statistical data in Table 12-3, Spanish is the most significant language spoken other than English throughout the MATS Study area. To date, no requests for language assistance services have been made by LEP individuals or groups. However, while currently small, it is anticipated that the size of this LEP population in this area/region will increase and, as a result, so will the likelihood of future contact with the MPO. As the LEP program is further reviewed in the MATS area, any requests for language assistance will be monitored and used to gauge the effectiveness of the MPO's outreach to these populations. As subsequent transit and/or transportation-related plans are produced, the MPO should consider including in the Public Participation plan the need for outreach opportunities that engage populations that have traditionally been underserved and lacked involvement in the transportation planning process. Utilizing the MPO's website should be another method to make contact with the MPO and LEP persons.

***Factor 3: Determine the nature and importance of the MATS public transit, MPO programs, services, or activities.***

There is no large geographic concentration of any type of LEP individuals in the MATS area that's being served by public transit or benefits from any services, activities or MPO programs. As described in Table 12-3 above, the overwhelming majority of the population (95.13% in Bibb County; 98.79% in Jones County; 96.24% in Monroe County) speak only English. As a result, there are few social, service, professional and leadership organizations within the MPO organizational structure as well as the public transit service area that focus on outreach to LEP individuals. Services provided by public transit that is most likely to encounter LEP individuals are the fixed route (city bus) system which serves the general public and the demand response (paratransit and rural transit) systems which serve primarily senior and disabled persons.

***Factor 4: Access the available resources and the overall cost to MATS public transit and the MPO.***

As the need arise, it is recommended that MATS, the local Macon Transit Authority and the Jones County Transit System seek the services of government and institutional agencies such as the Middle Georgia Regional Commission, Mercer University, Wesleyan College, Central Georgia Technical College and Middle Georgia State University. This effort will create a partnership with foreign and international student programs on the respective campuses. Other programs throughout the county will need to be discovered and an inventory of additional available organizations that could be partnered with for outreach and translation efforts.

#### **Meeting The Requirements And Implementation (Identifying LEP Individuals Who Need Language Assistance)**

In November 2014, MATS adopted the *Title VI Documentation Update* which included the Limited English Proficiency Plan and the Participation / Involvement Plan, regarding technical planning assistance. Since the adoption of the Title VI Documentation Update, the MPO has not produced any materials to effectively communicate with LEP persons. However, several materials that can be produced to assist in this effort is, the development of:

- **Flashcards** developed by the U.S. Census Bureau (to be used in face-to-face situations). These cards have the phrase, “Mark this box if you read or speak ‘name of a language,” translated into 38 languages. They were designed for use by government and non-government agencies to identify the primary language of LEP individuals during face-to-face contacts. The Census Bureau's Language Identification Flashcard can be downloaded for free at <http://www.lep.gov/ISpeakCards2004.pdf>. The MPO plans to make them available at public meetings and the front desk of the MPO offices. Once a language is identified, the Title VI - LEP Officer or relevant point of contact will be notified to assess feasible translation or oral interpretation assistance.

#### **Language Assistance and Translation of Materials**

- Language assistance will be provided for LEP individuals through language translations and/ or oral interpretations of some key materials, upon request or as deemed necessary for effective outreach.
- The MPO will research the feasibility of the Google Translate program, <http://translate.google.com>, for its website to allow users to view HTML content in other languages. Although an imperfect system, this alternative may have the potential to provide enough information for a LEP individual or group to gain some understanding of the MPO and to initiate contact.
- A list of MPO staff who speak and or/write a language other than English and who are willing and able to act as interpreters should be identified.
- The MPO phone recording will be modified to include an option to speak to someone in Spanish.

#### **Providing Notice to LEP Persons**

It is important to notify LEP persons of services available free of charge in a language that would be understood. Where appropriate and feasible, the MPO will include the following language in English and Spanish, on meeting notifications and other informational materials, whenever this type of assistance become available. An example of such notice is below:

***Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons who require special accommodations under the Americans with Disabilities Act or persons who require translation services for a meeting (free of charge) should contact Gregory L. Brown at 478.751.7463 or [gbrown@mbpz.org](mailto:gbrown@mbpz.org) at least seven days in advance.***

***Se solicita La participación del público, sin importar la raza, color, nacionalidad, edad, sexo, religión, incapacidad o estado familiar. Personas que requieran facilidades especiales bajo el Acta de Americanos con Discapacidad (Americans with Disabilities Act) o personas que requieren servicios de traducción (sin***

*cargo alguno) deben contactar a Gregorio L. Brown al teléfono 478.751.7463 at [gbrown@mbpz.org](mailto:gbrown@mbpz.org) por lo menos siete días antes de la reunión.*

### **Staff Training**

In order to establish meaningful access to information and services for all, staff members of the MPO who interact with the public will be trained to assist LEP individuals in person and /or by telephone.

### **LEP Updates**

The MPO will consider its most recently adopted LEP Plan as an appendix to its most recently adopted Public Involvement Plan. The MPO understands that its community profile continues to change and that the four-factor analysis may reveal the need for additional LEP services in the future. As such, the MPO will annually examine its LEP Plan to ensure that it remains reflective of the community's needs.

### **Contact Information**

The MPO's intention is not to exclude anyone requiring language assistance and will make every reasonable effort to accommodate requests. As the MPO staff receives more training and become more knowledgeable, a staff person will be identified to assist those who require special language assistance.

### **Environmental Assessment of Natural / Historic Resources**

The Macon Area Transportation Study (MATS) believes that the MPO can best meet new requirements through a comparison of transportation plans with available conservation plans and maps. If available, comparisons should also be made with an inventory of historic or natural resources and, based on results of the comparison, develop a generalized discussion of potential mitigation activities at the appropriate level. During the update of the 2035 LRTP and the development of the 2040 LRTP, the MPO provided opportunities for discussion on the various topics with appropriate federal and state environmental and land management planning agencies. The agencies were consulted by way of letter correspondence that included an attached map of Long Range Transportation Plan projects (LRTP) and a CD-ROM that provided a detailed description of each project. The map contrasted LRTP projects with the locations of facilities or resources under the purview of each respective agency. The discussions intended to advance the exploration of new opportunities to protect critical areas at a regional planning level, not at the project level. The agencies that were consulted during this process were:

- Georgia Department of Community Affairs
- Georgia Department of Economic Development
- Georgia Forestry Commission
- Georgia Department of Natural Resources (DNR)
- Historic Preservation Division, DNR
- Environmental Protection Division, DNR
- Wildlife Resource Division, DNR
- State Parks & Historic Sites, DNR
- Georgia Department of Transportation
- U.S. Environmental Protection Agency Region 4
- Federal Emergency Management Agency
- U.S. Corp of Engineers
- U.S. Fish and Wildlife Service
- National Park Service

It is believed that the responses received from the consultation outreach efforts to the various environmental agencies during the 2035 and 2040 LRTP updates are substantial responses and can be applied to the current update of the 2040 LRTP. Therefore, the agency consultation responses that were received for the previous LRTP update will be included in this LRTP update. A sample copy of the agency outreach letter used for the 2035 LRTP Update, as well as the responses from the 2035 and 2040 LRTP Updates, are included in [Appendix H](#).

Many of the agencies listed provided information from their respective websites that were integral in formulating a comparison. This information came in the form of data layers that were integrated into a Geographical Information System (GIS). The MPO has identified the following information that appears to be vital to achieving an adequate comparison:

- Environmental Justice Areas
- Community Facilities
- Conservation Areas
- Watershed Areas
- Ground Water Recharge Area
- Wetlands
- Floodplains
- Cultural Resources (Archeologically significant sites)
- Protected River Corridors

The datasets were primarily acquired from state agencies; however, many originated from Federal sources. A couple of examples are floodplains and wetlands. Once all of the information was processed, maps were created by placing data into a GIS. The GIS was helpful not only in displaying LRTP projects and data provided by the agencies but more importantly in analyzing their spatial relationship to features of interest. This was instrumental in helping to determine any possible areas of conflict or concern that may require mitigation of some sort. Lastly, there are no organized tribal entities residing within MATS. Therefore, no consultation was made specifically concerning tribal lands. However, there are tribal lands that are recognized as being archaeologically significant. Moreover, they will be regarded as a cultural resource and will be appropriately considered.

Table 6-2 and Figure 6-7 in Chapter 6 identify the locations of the proposed 2040 LRTP projects in the MATS area. Figures 12-1 through 12-12 on the following pages show subsets of LRTP projects that may impact bridge & intersection improvement projects, environmental justice areas, community facilities, conservation areas, watersheds, groundwater recharge areas, wetlands, floodplains, historic resources, archaeologically sensitive areas and river/stream corridor protection.

### **Bridge and Intersection Improvements Projects**

A GIS analysis highlights the bridge and intersection improvements proposed as part of the 2040 LRTP plan update. Figure 12-2 shows the location of 20 proposed LRTP projects within the MATS study area.



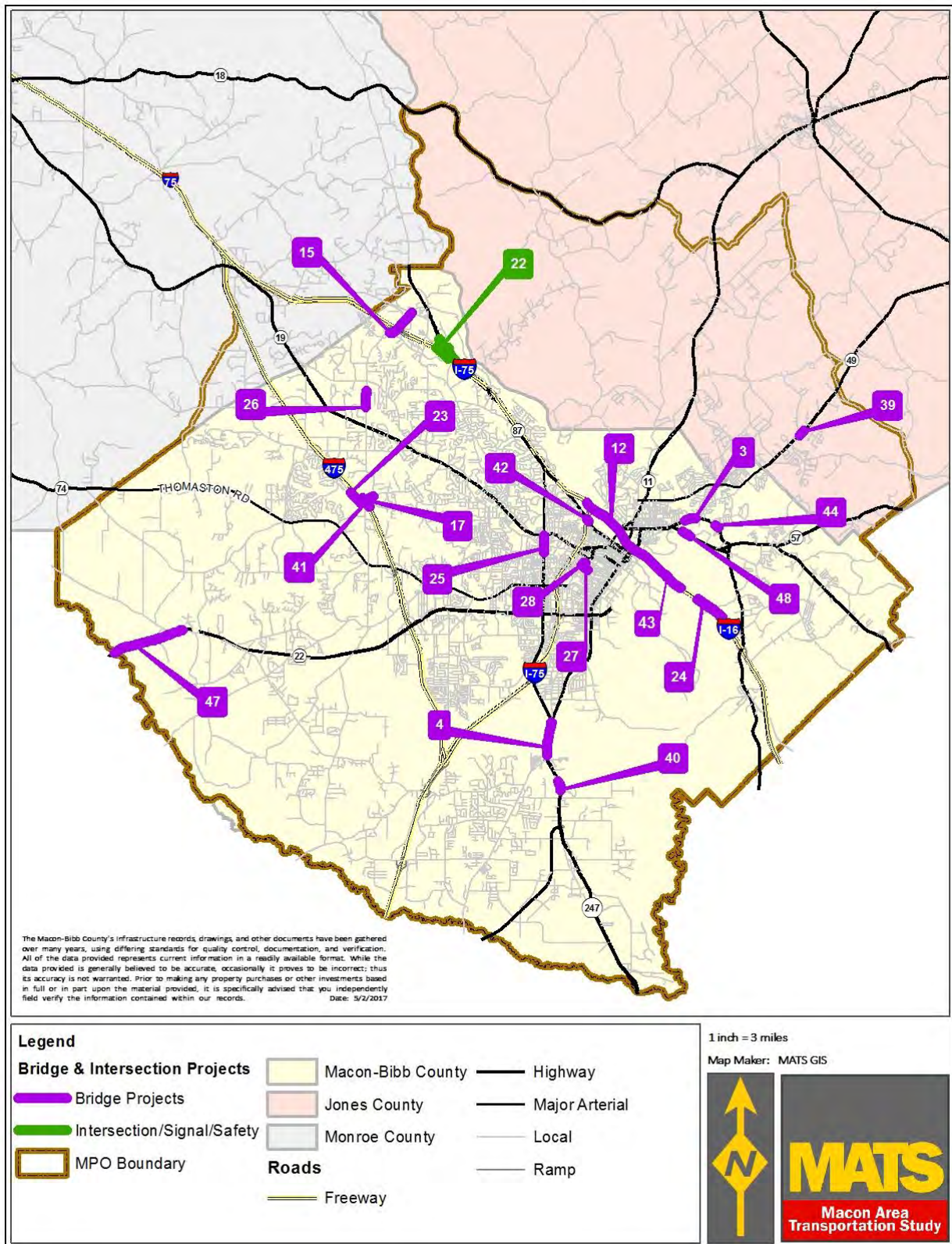


Figure 12-2: Location of Bridge and Intersection Projects Throughout MATS Area

## **Environmental Justice Areas**

Several block groups within the MATS region have a population primarily comprised of minority and/ or poor residents. These blocks are classified as Environmental Justice (EJ) areas and most are located within the urbanized areas of Macon – Bibb County. Figure 12-3 displays the location of these areas and the LRTP projects that traverse these areas.

A GIS analysis highlights the results of a spatial query and shows all LRTP projects that intersect all or part of any block group meeting EJ specifications. The query indicated that approximately 20 projects LRTP projects will impact the MPO environmental justice area. The 20 projects are also listed on the map that corresponds to its location on the map.



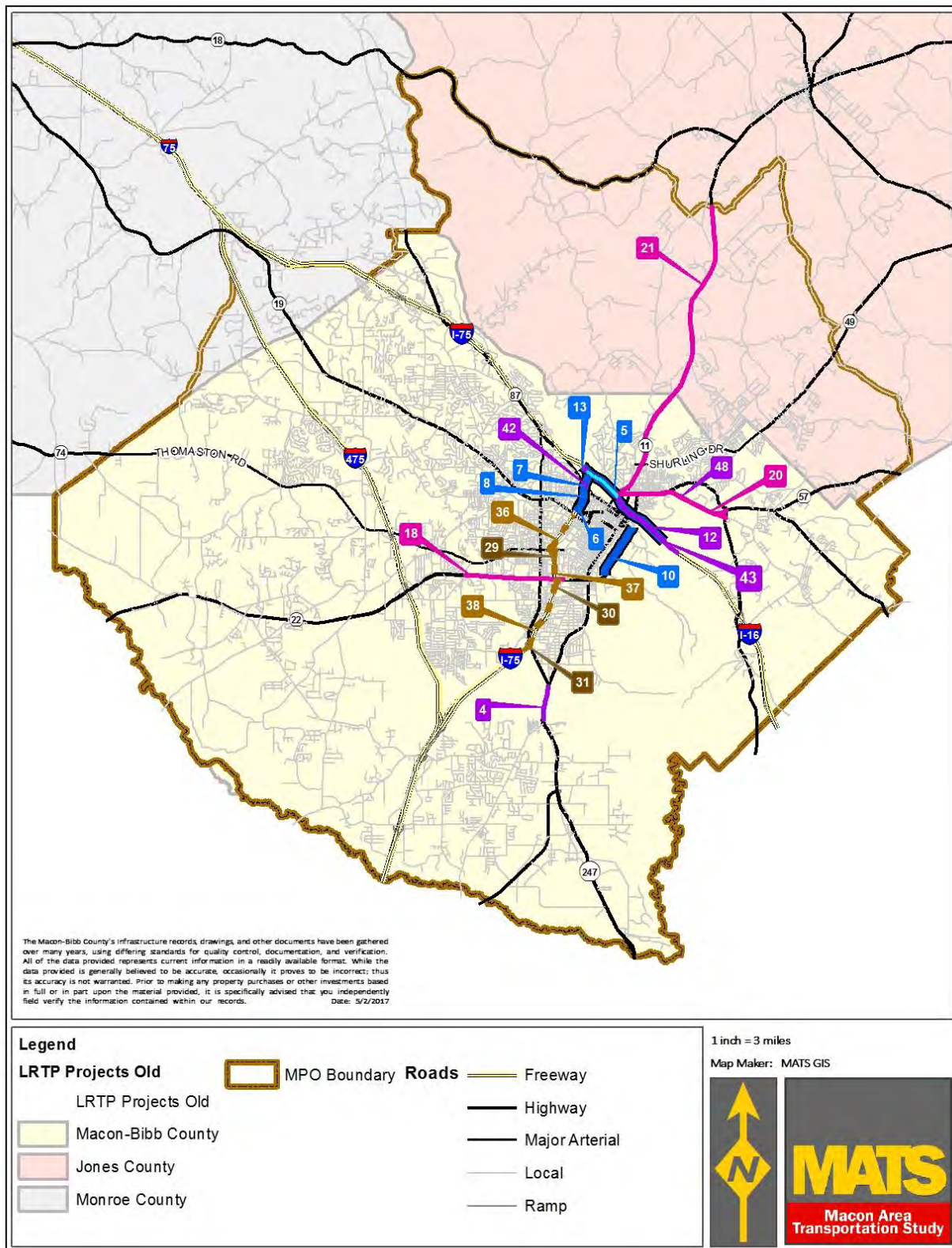


Figure 12-3: Location of LRTP Projects In Relation To Environmental Justice Areas

## **Community Facilities**

Community facilities are diverse. They include utilities such as water collection, treatment, and distribution; wastewater collection and treatment; and sometimes electrical distribution. They also include schools, parks, fire and police stations, jails, libraries, convention centers, and solid waste treatment and storage facilities, hospitals, clinics, community centers, shelters, and other public and quasi-public facilities to name a few. These facilities are a vital part of the well-being of the community; therefore, consideration in the transportation planning process must be given.

A GIS analysis highlights the results of a spatial query and shows all LRTP projects that are within 500' of a Georgia Department of Community Affairs recognized community facility. Figure 12-4 displays the approximate location of all community facilities within the MATS study area, as well as those community facilities that may be in the immediate area of a proposed LRTP project.



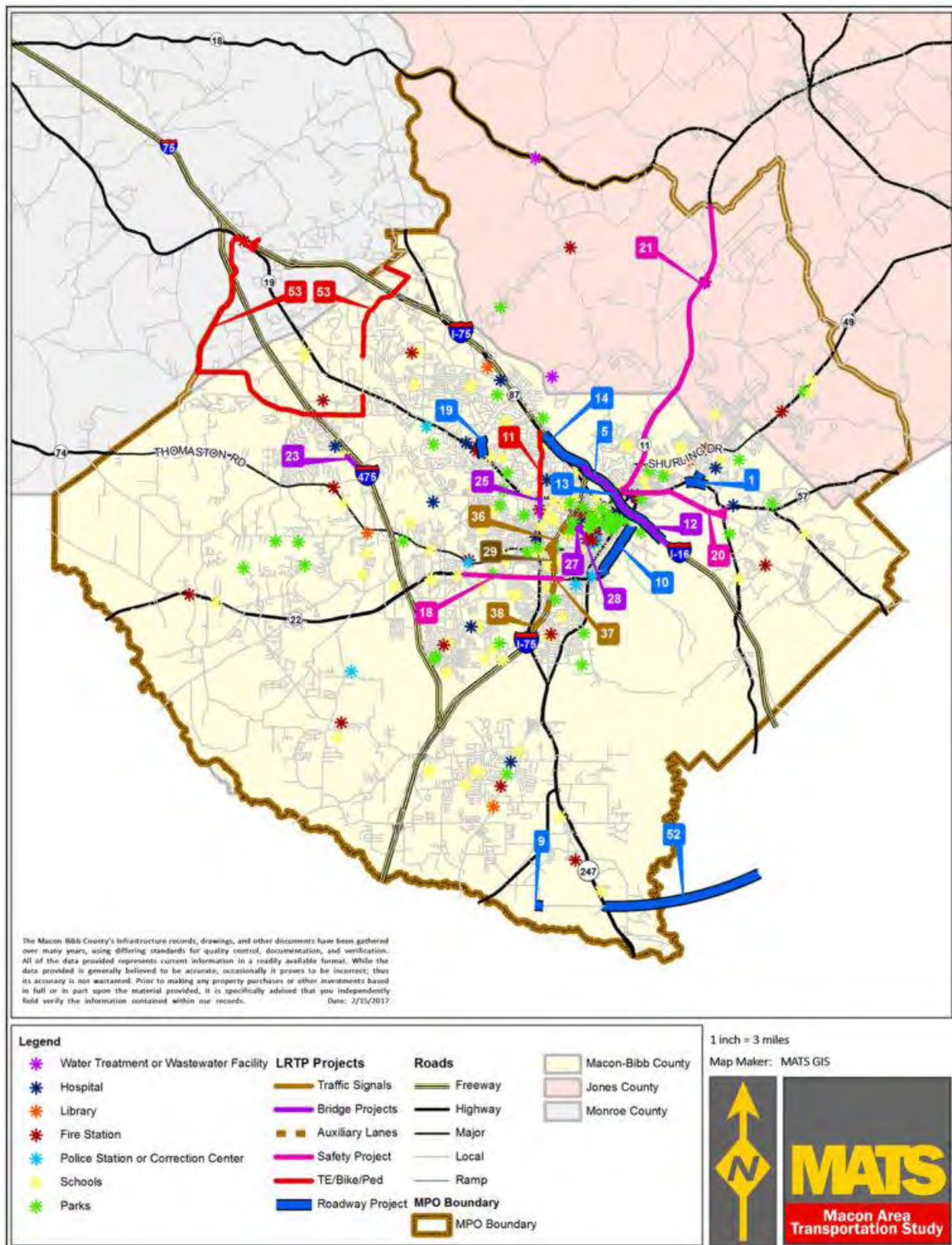


Figure 12-4: Location of LRTP Projects in Relation to Community Facilities

## Conservation Areas

There were three land areas within the MATS area that are in a state of conservation recognized by the federal government. These areas include The Ocmulgee National Monument, Bond Swamp National Wildlife Refuge, and the Echeconnee Creek reserve. Bond Swamp, as the name implies, is a protected habitat for wildlife such as endangered bald eagles. It is important that these resources are given adequate consideration to avoid any adverse encroachment.

The GIS indicated that there were one Auxiliary Lanes, five Bridge Projects, one Intersection/Signal/Safety Project, five Roadway Projects and one Safety Project that were within 500' of one or more of these areas. The 500' buffers are shaded in **green** and the affected projects are shown in Figure 12-5. The LRTP projects that met this criterion are listed below.



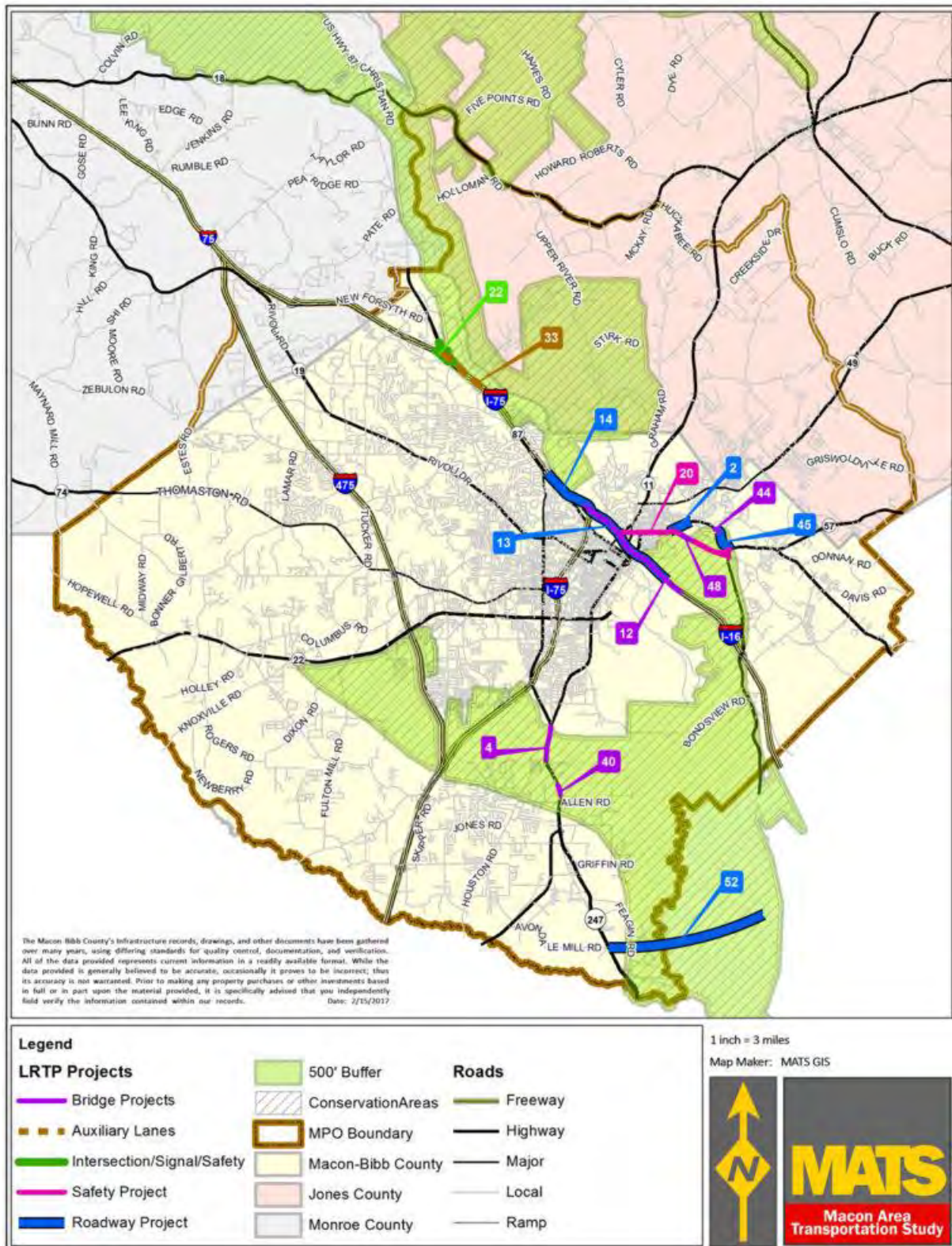


Figure 12-5: Location of LRTTP Projects in Relation to Conservation Areas

## **Watersheds**

Watershed basins are areas drained by a single watercourse such as a river. They have the basic function of converting precipitation into stream flow and ground water. Therefore; the protection of these resources are very important. There are two basins in the MATS area. The two basins are the Ocmulgee River and Oconee River watershed basins.

The GIS analysis indicated that there are a total of 13 LRTP projects that will impact one of the two basins in the MATS area. Figure 12-6 displays the LRTP projects that may impact watershed areas.



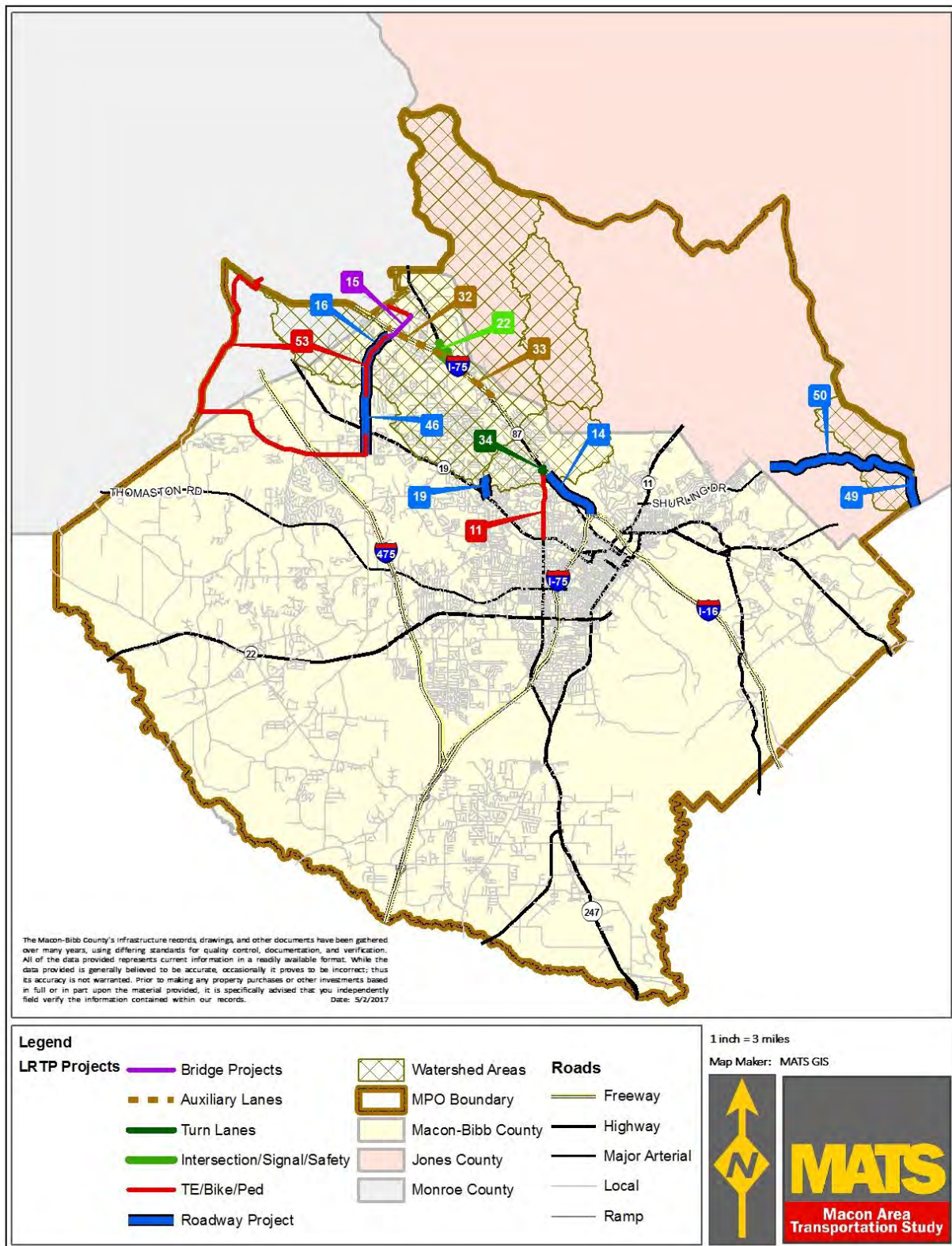


Figure 12-6: Location of LRTP Projects in Relation to Watersheds

## **Ground Water Recharge Areas**

Groundwater recharge areas are locations in which underground aquifers are replenished or recharged by rainwater. These areas typically have soils and rocks that are porous and permeable to allow ground water seepage into the underground aquifer. It is estimated that 97% of the world's supply of liquid fresh water is held in aquifers (Owen & Chiras, 1990). The protection of these areas must be taken into consideration.

GIS Data acquired from the Georgia Department of Community Affairs revealed that there are many large aquifers in the MATS region. The GIS analysis indicated that there are approximate 30 LRTP projects that may potentially be constructed on known recharge areas in MATS. Figure 12-7 displays these LRTP projects.

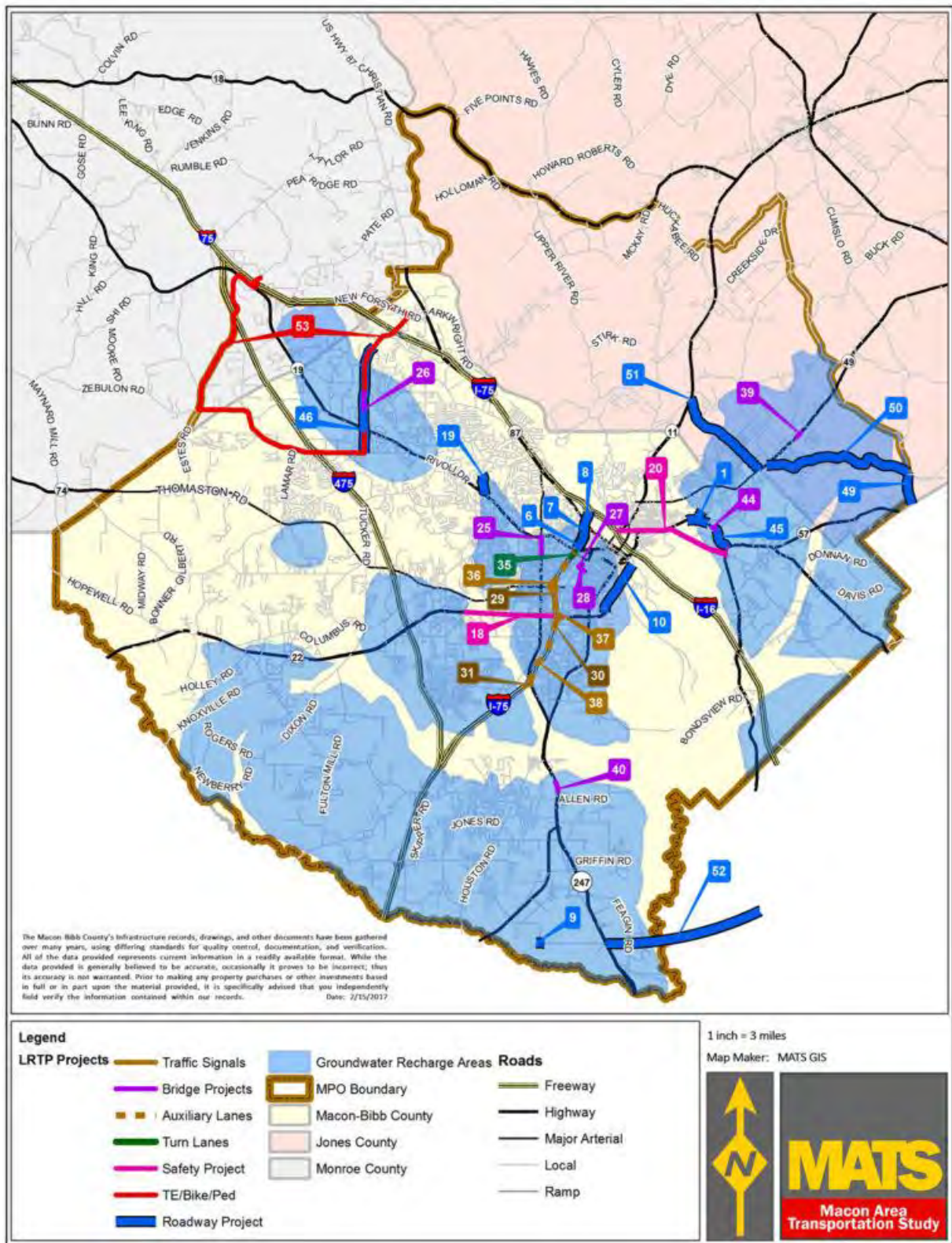


Figure 12-7: Location of LRTP Projects in Relation to Ground Water Recharge Areas

## **Wetlands**

Wetlands are lands that are considered wet for most of the year. They include swamps, bogs, salt marshes, lagoons, bays and mangrove swamps. Wetlands serve important functions to the ecosystem by acting as natural water filtration centers, animal habitats, and providing flood control to name a few.

GIS Data acquired from the Georgia GIS Clearinghouse revealed that there are many areas classified as wetlands in the MATS region. The GIS analysis indicated that there are approximately 10 LRTP projects that will encroach upon wetlands in the MATS region. The results are highlighted in Figure 12-8.



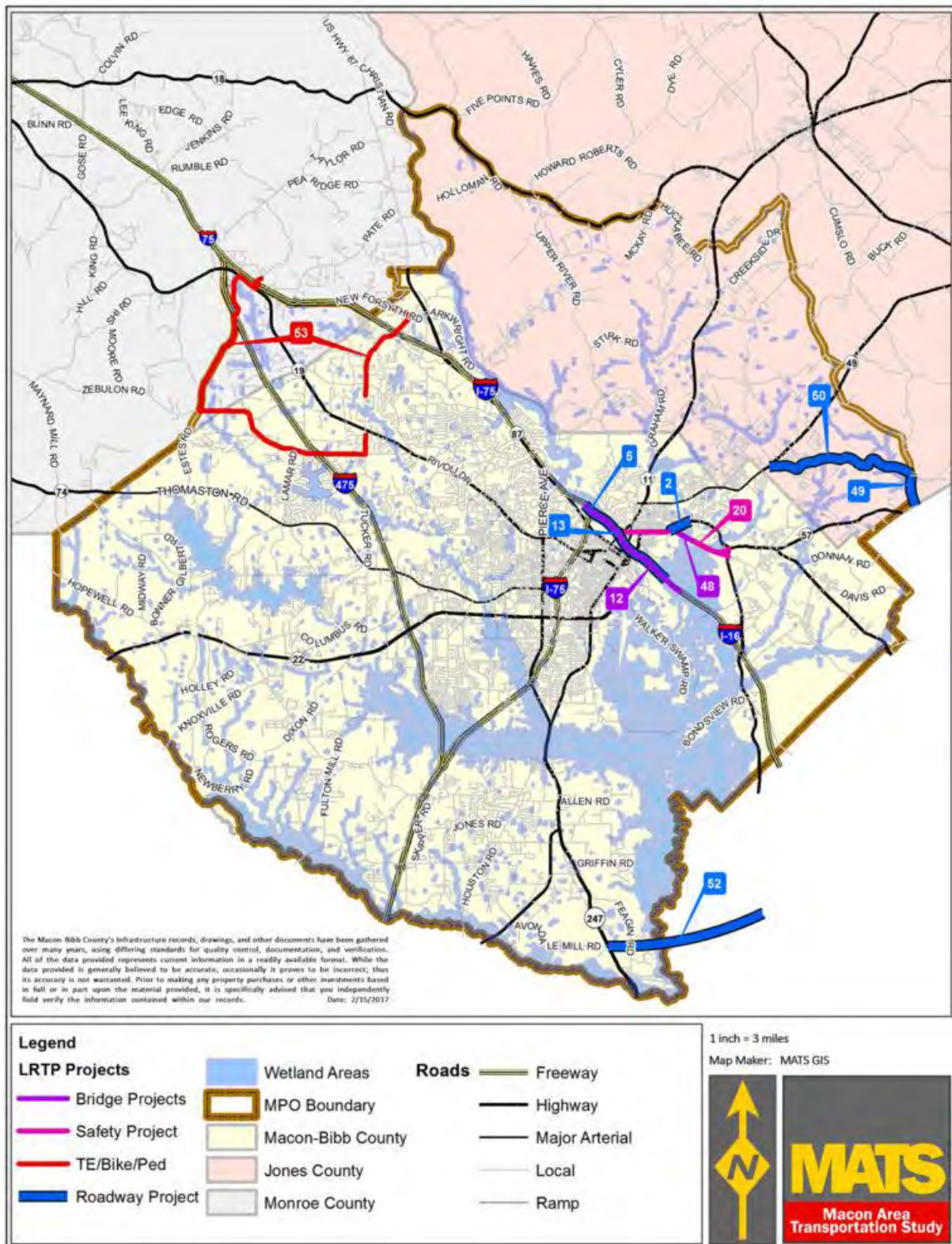


Figure 12-8: Location of LRTP Projects in Relation to Wetland Areas

## **Floodplains**

Floodplains are low-lying lands that are generally susceptible to flooding. They are usually found along with bodies of water such as rivers, lakes, and streams. However, they can be found where no substantial body of water exists. The floodplains in the MATS region are found in the same locations as wetlands. However, there are many places where a floodplain exists and no wetland exists.

GIS Data acquired from the Georgia GIS Clearinghouse revealed that there are many areas classified as floodplain in the MATS region. The GIS analysis indicated that there are approximately 31 LRTP projects that will encroach upon floodplain in the MATS region. The results are highlighted in Figure 12-9.



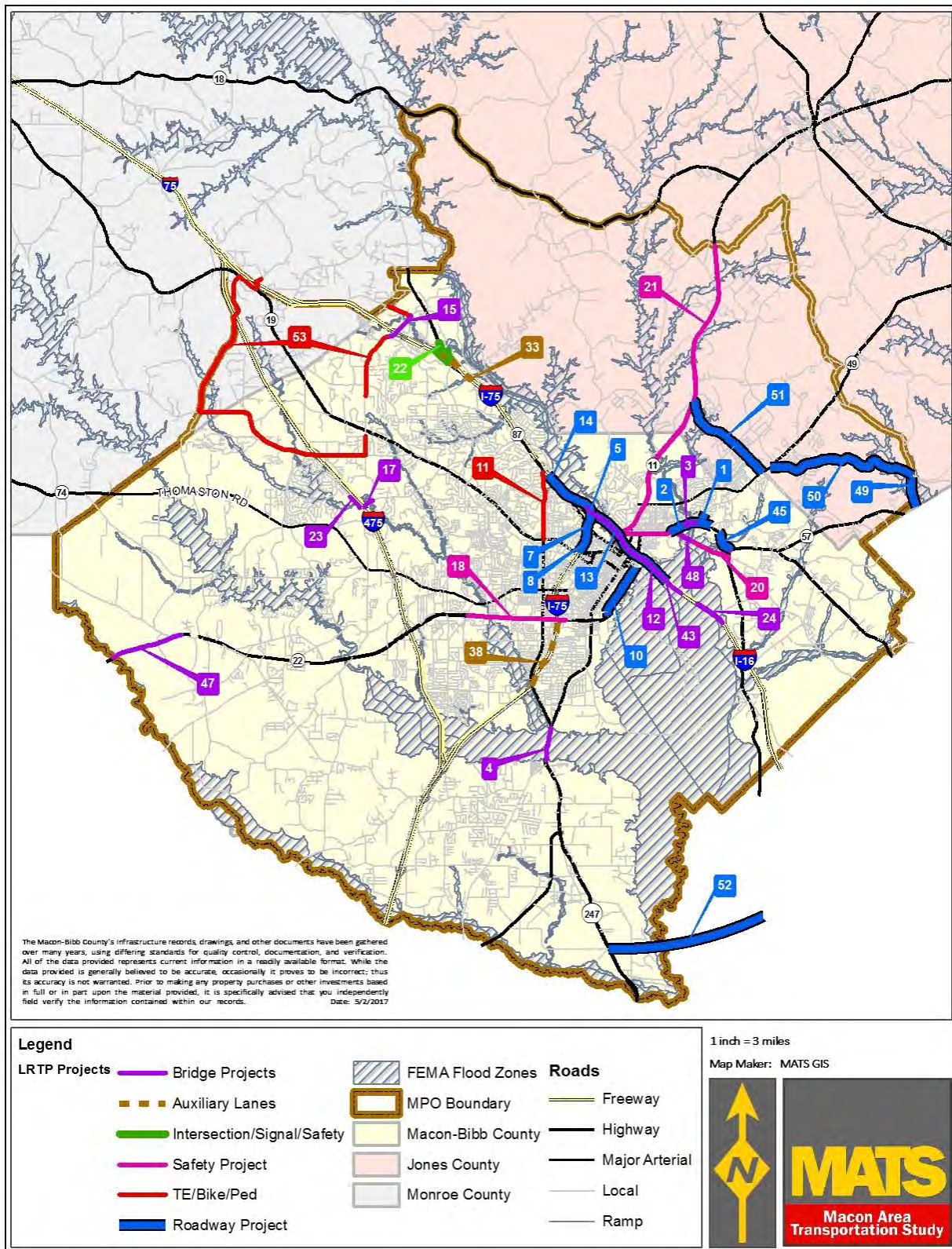


Figure 12-9: Location of LRTP Projects in Relation to Floodplain Areas Feb 13 2017

## Historic Resources

The historic resources analyzed in this section were compiled by the Historic Preservation Division of the Department of Natural Resources. The data is made available to the general public by way of the Natural, Archaeological, and Historic Resources GIS (NAHRGIS) database, which is maintained by the University of Georgia. According to NAHRGIS, most of the unrestricted resources in the database have been assessed by the Historic Preservation Division for their significance and eligibility in terms of the National Registry of Historic Places criteria evaluation.

GIS data acquired from NAHRGIS revealed that there are approximately **71 historic** resources in the MATS region. See Figure 12-10 for the downtown Macon inset map with locations of historic structures and the 4 LRTP sites. Locations of historic structures for the entire MATS study area are located on the following page on Figure 12-11. The GIS analysis indicates that, for the entire MATS region, there are 5 LRTP projects within a 500 buffer of a recognized historic structure.



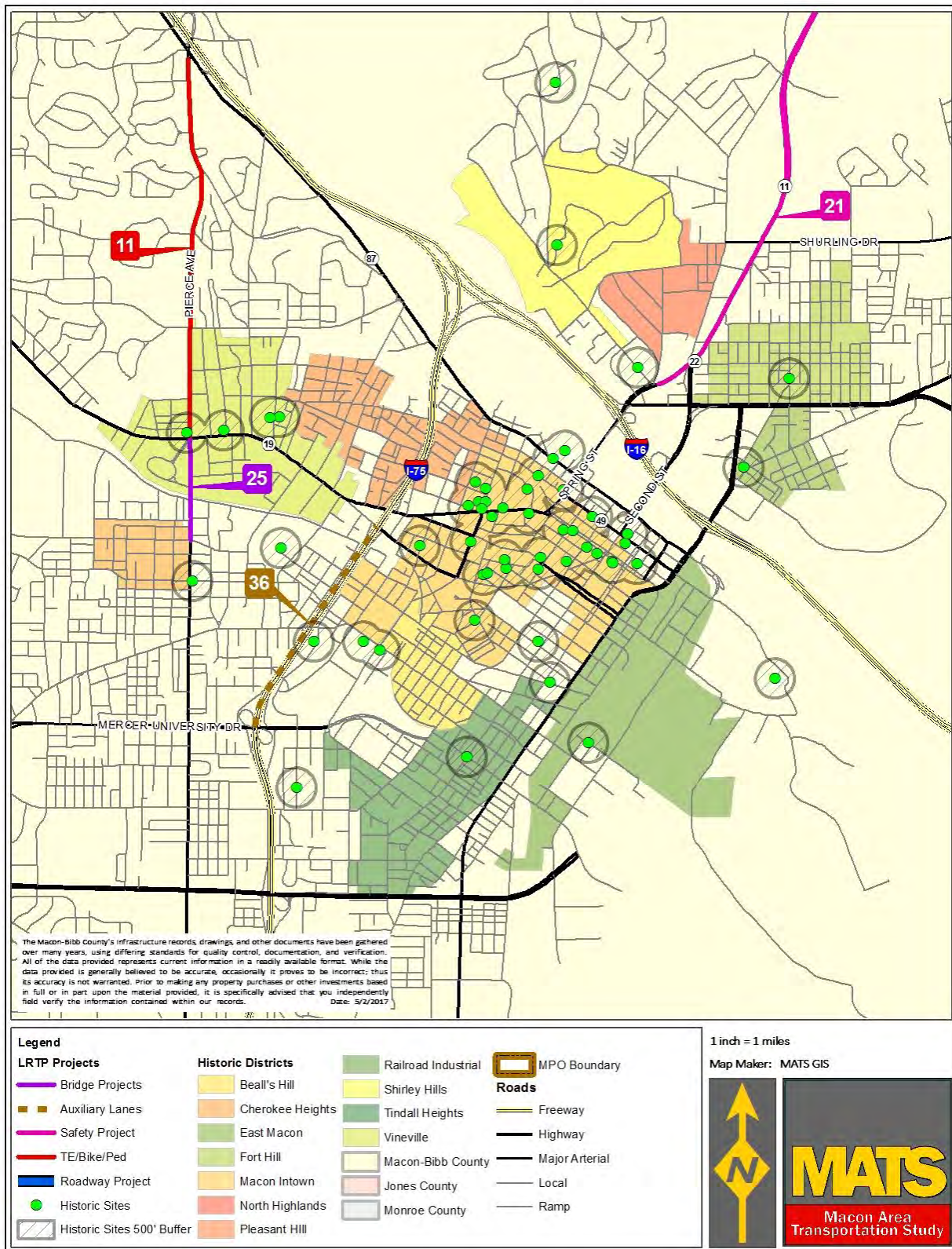


Figure 12-10: Location of LRTP Projects in Relation to Historic Resources - Macon Sites



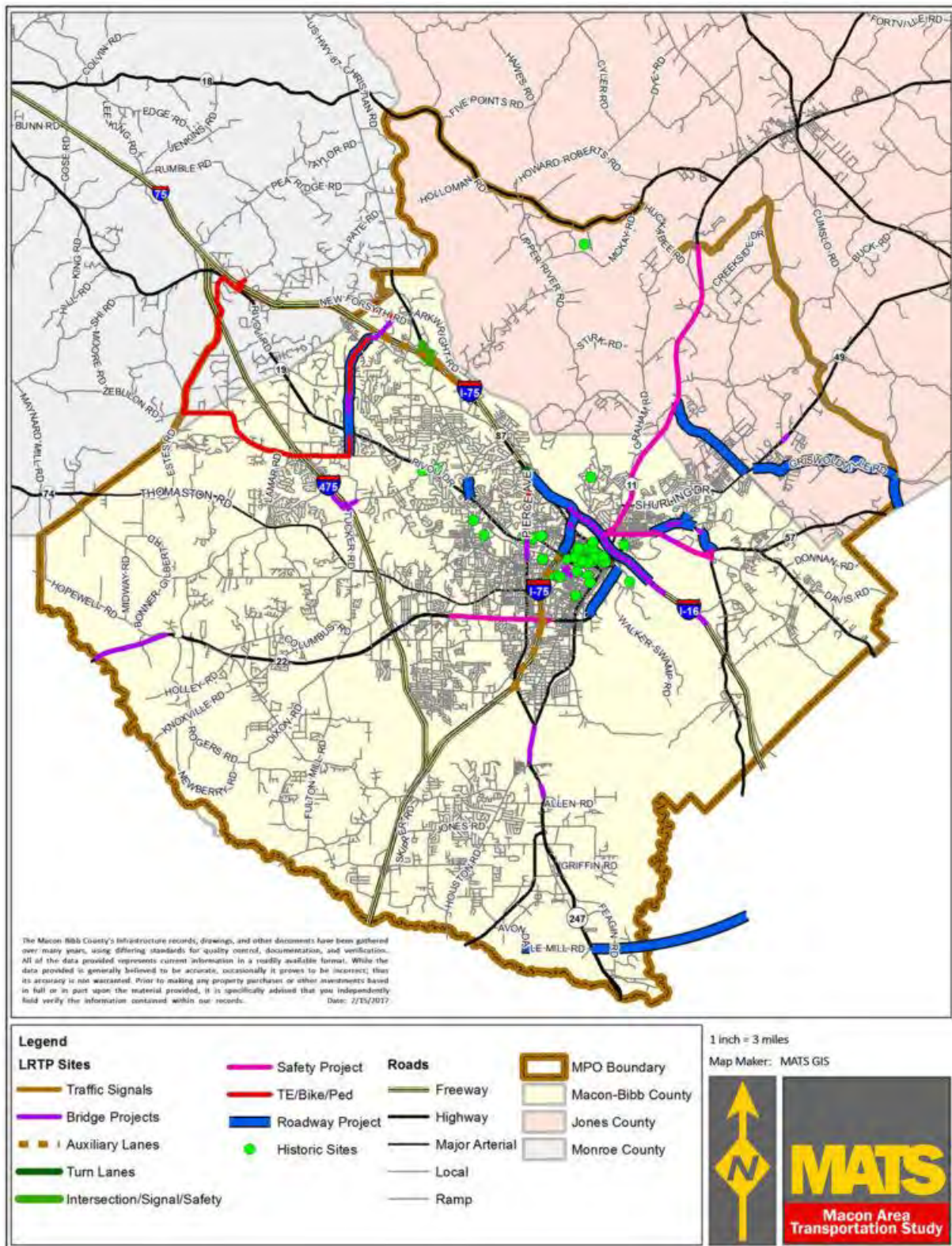


Figure 12-11: Location of LRTP Projects in Relation to Historic Resources – All Sites with MATS Area

### **Archaeologically Sensitive Areas**

The archaeological resources analyzed in this section were compiled by the Georgia Department of Natural Resources. The data is also assessable from the NAHRGIS. Unlike the historical resources, specific location information on the archaeological sites is purposefully ambiguous. This is to protect the integrity of the sites. The data is provided on the block group level.

GIS data revealed that there are approximately 150 Census Blocks in the MATS region that contain archaeological resources. The GIS analysis also revealed that approximately 13 LRTP projects will traverse through these selected block groups. It should be kept in mind that the data is at the block group level; therefore, an LRTP project could be located miles away from a sensitive area. The results are highlighted in Figure 12-12.



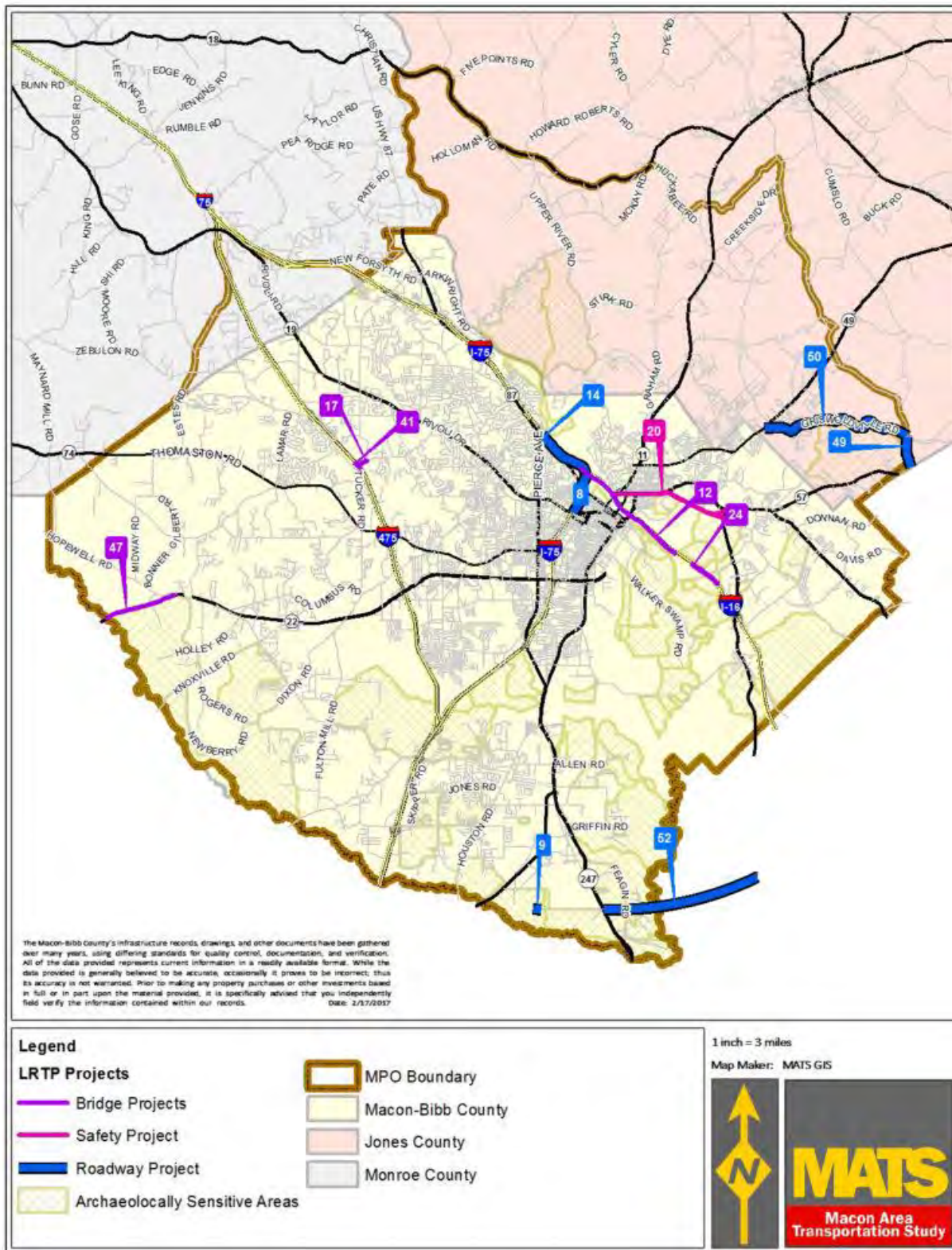


Figure 12-12: Location of LRTP Projects in Relation to Archaeologically Sensitive Areas



### **River and Stream Corridor Protection**

The Ocmulgee River is a significant part of the river system in Georgia. The Ocmulgee combines with the Oconee River to form the Altamaha River which flows into the Atlantic Ocean. This river is very important due to the fact the Ocmulgee River serves as the primary water source for the MATS region. It is important that this resource is given adequate consideration to avoid any adverse encroachment.

The GIS analysis revealed that there are 20 LRTP projects that will traverse rivers and streams in the MATS study area. These projects are shown in Figure 12-13.

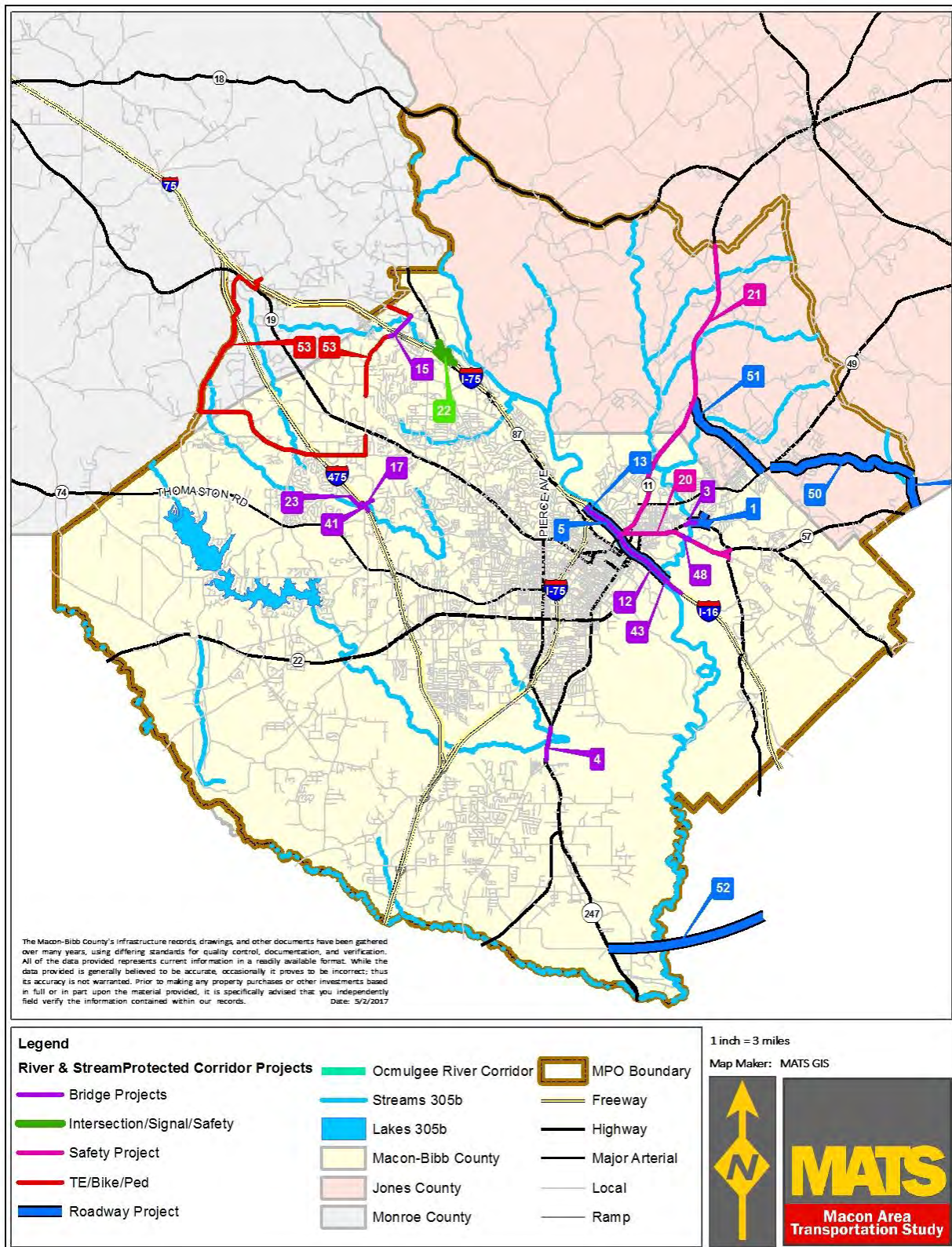


Figure 12-13: Location of LRTP Projects in Relation to River and Stream Corridor Protection

## Agency Consultation Summary

As previously mentioned, agency consultation results from previous 2035 and 2040 LRTP updates can be applied to the current LRTP update, as consultation is a very integral part of compliance with the requirements of former (*SAFETEA-LU and MAP-21*) and the current FAST Act legislation. During the update of the 2035 LRTP, contact was made via letter correspondence with nine state agencies. Approximately 14 letters were mailed to these various agencies between January 12, 2007, and February 9, 2007. A sample copy of the letter is included in [Appendix H](#). However, during the composition of the 2035 LRTP update, only (3) three agencies provided feedback, either by traditional mail or by email.

During the agency consultation process, the Environmental Protection Division of the Georgia Department of Natural Resources provided comments regarding the 2035 LRTP update. An excerpt of their response is provided below and the official response is included in [Appendix H](#). This response was received by MATS on March 6, 2007.

“EPD encourages the use of the Potential Environmental Impacts & Mitigation Measures guidance under development by the Georgia Department of Transportation. As addressed in our comments during the development of this guidance, EPD recommends the use of mitigation measures that avoid or minimize impacts rather than those that repair or restore the affected environment. Also, EPD strongly recommends compliance with best management practices for stormwater management and erosion control to protect Georgia's streams and water quality.”

The Historic Preservation Division of the Georgia Department of Natural Resources also provided comments regarding the 2035 LRTP update. An excerpt of their response is provided below and the complete copy of their official response is included in [Appendix H](#). This response was received by MATS on March 15, 2007.

“Please keep in mind that your agency may have obligations under Section 106 of the National Historic Preservation Act of 1966 as amended, and the Georgia Environmental Policy Act of 1991 (GEPA).” As you may know, these laws require consideration of historic and archaeological resources in planning for specific transportation projects that receive federal or state funding or require federal permits. As project-specific planning advances, the federal or state agency responsible for funding or permitting will consult with our office to determine if historic and archaeological resources have been appropriately considered. Our office strongly recommends similar consideration of historic resources for locally funded transportation projects.”

The U.S. Army Corp of Engineers - Savannah District provided comments regarding the 2035 LRTP update, as well. An excerpt of their email response is provided below and the complete copy of their official response is included in [Appendix H](#). This email response was received by MATS on April 16, 2007.

“A jurisdictional delineation would be required for these projects to determine if any of the proposed projects would have any jurisdictional impacts. Impacts to wetlands (herbaceous and forested) and streams (below the Ordinary High Water Mark) would require a permit from our office, and possibly also require compensatory mitigation for project impacts.”

## Potential Mitigation Measures / Environmental Mitigation Activities

SAFETEA-LU has defined Environmental Mitigation Activities as strategies, policies, programs, actions, and activities that, over time, will serve to avoid, minimize, rectify, reduce, or compensate for (by replacing or providing substitute resources) the impacts to or disruption of elements of the human and natural environment associated with the implementation of a long-range statewide transportation plan or metropolitan transportation

plan. This same definition from the SAFETEA-LU legislation can be applied to the most recent authorized FAST Act legislation. The human and natural environment includes, for example, neighborhoods and communities, homes and businesses, cultural resources, parks and recreation areas, waters of the US, forested and other natural areas, endangered and threatened species, and the ambient air. The environmental mitigation strategies and activities are intended to be regional in scope, even though the mitigation may address potential project-level impacts. The environmental mitigation strategies and activities must be developed in consultation with Federal, State, and Tribal wildlife, land management, and regulatory agencies during the statewide and metropolitan transportation planning processes and be reflected in all adopted transportation plans.

### **Suggested Mitigation Measures**

The most protective measure that can be employed in transportation planning is to avoid cultural and environmentally sensitive areas. However, many times that is not possible or feasible to do. When this is the case, the following suggestions should be considered as mitigating measures. The measures are modeled after the Georgia Department of Transportation's document entitled, *"Potential Planning Level Environmental Impacts & Mitigation Measures."*

### **Environmental Justice Impacts**

- Residential and commercial relocation;
- Efforts during project development to identify and engage; Environmental Justice populations;
- Involve community in articulating project need/project development and way to improve community

### **Community Facilities Impacts**

- Sidewalks;
- Maintain or enhance community services;
- Traffic calming measures;
- Park improvements such as upgraded pedestrian facilities and bike pathways;
- Land dedication

### **Conservation Areas/Wildlife Areas**

- Fencing to direct wildlife away from roadway;
- Modification of design;
- Preservation (via acquisition or conservation easement) of existing habitat;
- Creation of new habitats;
- Establishment of buffer areas around existing habitats

### **Watershed Basins/ Groundwater Recharge Areas**

- Provide protected designated areas for the use of construction site chemicals such as oils, gasoline, degreasers, antifreeze, concrete & asphalt products, sealers, paints and wash water associated with the products;
- Minimize the use of fertilizers to promote vegetation growth on disturbed earth to reduce the introduction of excessive nitrates and phosphates into surface waters;
- Compliance with best management practices for stormwater management and erosion control

### **Wetlands/ Floodplains**



- *Establishment (Creation)*: The development of a wetland or other aquatic resources through manipulation of the physical, chemical or biological characteristics where a wetland did not previously exist. Successful creation results in a net gain in wetland acres;
- *Restoration*: Re-establishment or restoration of a wetland or other aquatic resources with the goal of returning natural or historic functions and characteristics to a former or degraded wetland. Restoration may result in a gain in wetland function and/or wetland acres;
- *Enhancement*: Activities conducted within existing wetlands that heighten, intensify, or improve one or more wetland functions. Enhancement is often undertaken for the specific purpose such as to improve water quality, flood water retention or wildlife habitat. Enhancement results in a change in wetland function(s) but does not result in a gain in wetland acres;
- *Protection/Maintenance (Preservation)*: The protection of ecologically important wetlands or other aquatic resources into perpetuity through the implementation of appropriate legal and physical mechanisms (i.e. conservation easements, title transfers). Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure proper protection;
- Elevation of road bed onto pylons through floodplain areas

### **Historic Sites**

- Relocation of a historic property may be utilized to avoid its acquisition or minimize impacts;
- Design modification to the project to avoid or complement the property;
- Landscaping to reduce visual impacts;
- Photo documentation;
- Historic archival recording, possibly including photos, plans, historic documentation, etc., to preserve historic resource information to the public.

### **Archaeological**

- Design modifications so that impact on archaeology is avoided;
- Full excavation is used as a method of preservation by record;
- Develop educational activities to educate public about archaeology and prehistory/history

### **River and Stream Corridors**

- “Standard Operating Procedures for Compensatory Mitigation” (US Army Corps of Engineers);
- Purchase stream credit in State-owned or commercial banks-cost, dependent upon area of State;
- Stream restoration;
- Planting of vegetative buffer zones;
- Strict erosion and sedimentation control measures;
- Design features to avoid impacts (such as bridges and bottomless culverts)

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[1] <https://www.fhwa.dot.gov/fastact/>

[2] <https://www.transportation.gov/fastact/opportunities-factsheet>

[3] <https://www.transportation.gov/fastact/>

[4] <https://www.fhwa.dot.gov/fastact/factsheets/metropolitanplanningfs.cfm>

[5] [https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/5303-5304-5305\\_Program\\_Metropolitan\\_and\\_Statewide\\_Planning\\_Fact\\_Sheet\\_FINAL.pdf](https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/5303-5304-5305_Program_Metropolitan_and_Statewide_Planning_Fact_Sheet_FINAL.pdf)

[6] For details on the relationship between the LRTP and the TIP, please see Chapter 1: Introduction.

[7] [https://www.fhwa.dot.gov/environment/environmental\\_justice/equity/](https://www.fhwa.dot.gov/environment/environmental_justice/equity/)

# Chapter 13 | Performance-Based Transportation Planning and Programming

## Background

In 2012, Congress passed the Moving Ahead for Progress in the 21st Century (MAP-21) Act. MAP-21 introduced a new emphasis in the MPO transportation planning process, towards measurable performance and outcome-based metrics in the evaluation of projects and programs receiving federal support. MAP-21 focuses on 7 performance goal areas:

- Safety
- Infrastructure Condition
- Congestion Reduction
- System Reliability
- Freight Movement and Economic Vitality
- Environmental Sustainability
- Reduced Project Delivery Delays

On December 4, 2015, President Obama signed the [Fixing America's Surface Transportation \(FAST\) Act](#) into law. The FAST Act maintains the Federal Highway Authority's (FHWA) focus on safety, keeps intact the established structure of the various highway-related programs managed by FHWA, continues efforts to streamline project delivery, and, for the first time, provides a dedicated source of federal dollars for freight projects. In addition, the FAST Act continues the emphasis raised in MAP-21 on performance-based outcomes and requires federally funded transportation projects to support national goals for the nation's transportation system by focusing on projects that:

- Achieve a significant reduction in traffic fatalities and serious injuries on all public roads;
- Maintain the highway infrastructure asset system in a state of good repair;
- Achieve a significant reduction in congestion on the National Highway System;
- Improve the efficiency of the surface transportation system;
- Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development;
- Enhance the performance of the transportation system while protecting and enhancing the natural environment;
- Reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices. [23 U.S. Code § 150.

Through the federal rulemaking process, the Federal Highway Administration (FHWA) is requiring State DOTs and MPOs to monitor the transportation system using specific performance measures prescribed in MAP-21 and the FAST Act. Table 13-1 describes these national goal areas, performance areas, and performance measures. The MPO can take on additional measures beyond what is described, however, what is outlined on the next page must be addressed at a minimum.

Performance-based planning and programming refers to transportation agencies' application of performance management as standard state of the practice in the planning and programming processes. This approach results in a planning process referred to as Transportation Performance Management. The MPO is developing its TPM process to meet federal requirements and to meet the unique planning needs of the MPO.

Highway Performance Measures			
	National Goal	Performance Area	Performance Measure
PM 1	Safety- <i>To achieve a significant reduction in traffic fatalities and serious injuries on all public roads</i>	Injuries & Fatalities	<ul style="list-style-type: none"> <li>• Number of fatalities</li> <li>• Fatality rate (per 100 million vehicle miles traveled)</li> <li>• Number of serious injuries</li> <li>• Serious injury rate (per 100 million vehicle miles traveled)</li> <li>• Number of non-motorized fatalities and non-motorized serious injuries</li> </ul>
PM 2	Infrastructure Condition – <i>To maintain the highway infrastructure asset system in a state of good repair</i>	Pavement Condition	<ul style="list-style-type: none"> <li>• Percentage of pavements on the Interstate System in Good condition</li> <li>• Percentage of pavements on the Interstate System in Poor condition</li> <li>• Percentage of pavements on the non-Interstate National Highway System (NHS) in Good condition</li> <li>• Percentage of pavements on the non-Interstate NHS in Poor condition</li> </ul>
		Bridge Condition	<ul style="list-style-type: none"> <li>• Percentage of NHS bridges classified as in Good condition</li> <li>• Percentage of NHS bridges classified as in Poor condition</li> </ul>
	System Reliability - <i>To improve the efficiency of the surface transportation system</i>	Performance of the National Highway System	<ul style="list-style-type: none"> <li>• Percent of person miles traveled on the Interstate System that are reliable</li> <li>• Percent of person miles traveled on the non-Interstate NHS that are reliable</li> </ul>
PM 3	Freight Movement and Economic Vitality- <i>To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development</i>	Freight Movement on the Interstate System	<ul style="list-style-type: none"> <li>• Truck Travel Time Reliability Index</li> </ul>
	Congestion Mitigation and Air Quality Improvement – <i>To achieve a significant reduction in congestion on the National Highway System</i>	Traffic congestion	<ul style="list-style-type: none"> <li>• Annual hours of peak-hour excessive delay per capita</li> <li>• Percent of non-single-occupant vehicle travel</li> </ul>
		Air Quality Improvement	<ul style="list-style-type: none"> <li>• Emissions Reduction Targets (2 Year and 4 Year) for VOC and NOx</li> </ul>

Table 13-1: Highway Performance Measures, as Identified by FHWA



The transportation legislation and federal rules that identify performance measures also describe how states and MPOs will need to incorporate these measures into their planning processes.<sup>1</sup>

### **Targets**

- MPOs are required to establish performance targets no later than 180 days after the state or public transportation operator sets performance targets;
- For each roadway performance measure, a MPO can decide to commit to support a statewide target, or to establish a quantifiable target specific to its planning area;
- Both state and MPO targets for roadway performance measures will be set at two-year and four-year intervals;
- States, MPOs, and public transit operators must coordinate their respective targets for performance measures with each other to ensure consistency to the maximum extent practicable.

### **Reporting**

- State and MPO LRTPs must describe the performance measures and targets used to assess system performance, evaluate the performance of the transportation system with respect to the federally required performance targets, and report on progress made;
- State Transportation Improvement Programs (STIPs) and MPO TIPs must link investment priorities to the targets in their respective LRTPs and describe, to the maximum extent practicable, the anticipated effect of the program toward achieving established targets;
- MPOs must report baseline roadway transportation system condition and performance data and progress toward the achievement of targets to their respective state Departments of Transportation (DOT).

### **Assessments**

- FHWA will determine whether state DOTs have met or have made significant progress towards meeting targets for the highway system. Progress at the state level would be considered significant if an actual outcome is either equal to or better than the established target, or better than the baseline condition;
- FHWA and FTA will not directly assess MPO progress towards meeting targets for required performance measures. Instead, these agencies will review MPO performance as part of ongoing transportation planning process reviews, including Transportation Management Area certification reviews and the Federal Planning Finding associated with approval of the STIP.

### **MATS Support of GDOT Adopted Performance Measures and Targets**

The MATS 2040 LRTP Update is the first LRTP that incorporates this new emphasis on a performance-based planning process, using clearly identified goals, objectives and performance measures to identify and prioritize improvements to the region's transportation system. These goals and objectives reflect State or regional priorities and policy directions while supporting national goals specified in law.

As part of the 2040 LRTP Update, MATS staff reviewed the originally adopted 2040 LRTP goals and reconciled them with the national and state goals identified in the FAST Act and the Georgia 2040 SWTP, respectively. The MATS staff also proposed transportation related objectives for which future performance measures can be developed. Table 2-1 in the LRTP shows how the updated goals and objectives approved by the MATS Policy Committee build upon the general goals areas specified in MAP-21, FAST Act, the Georgia 2040 Statewide Transportation Plan and 2015 Statewide Strategic Transportation Plan, and the MATS specific goals and objectives adopted as part of the original 2040 LRTP.

<sup>1</sup> FHWA, Metropolitan Planning Organization Safety Performance Measures Fact Sheet, [http://safety.fhwa.dot.gov/hsip/spm/docs/mpo\\_factsheet.pdf](http://safety.fhwa.dot.gov/hsip/spm/docs/mpo_factsheet.pdf)

This Performance-Based Transportation Planning and Programming section of the MATS 2040 LRTP is meant to serve as a bridge as the MPO transitions from the traditional transportation planning process to a more strategic Transportation Performance Management (TPM). The following sections describe:

- Adopted Safety Performance Measures and targets; and,
- Next steps for the MPO to build its TPM practices, process, and policies.

### **PM 1 - Safety Performance Measures**

The Safety Performance Management is part of the overall [Transportation Performance Management](#) (TPM) program. The Safety PM Final Rule supports the Highway Safety Improvement Program (HSIP), as it establishes safety performance measure requirements for carrying out the HSIP and to assess fatalities and serious injuries on all public roads.

The Safety PM Final Rule establishes five performance measures as the five-year rolling averages to include:

- Number of Fatalities
- Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
- Number of Serious Injuries
- Rate of Serious Injuries per 100 million VMT
- Number of Non-motorized Fatalities and Non-motorized Serious Injuries

The Safety PM Final Rule also establishes the process for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to establish and report their safety targets, and the process that FHWA will use to assess whether State DOTs have met or made significant progress toward meeting their safety targets.

### **Transportation Safety in Georgia**

According to the Georgia Highway Safety Plan (2018)<sup>2</sup>, in 2015 there were 1,430 motor vehicle fatalities in the State of Georgia. This was a 22.8% increase in roadway fatalities in comparison to the previous year, but remains a reduction of 12.3% from 2005 roadway fatalities. In 2015, there were 19,405 serious injuries and 385,221 motor vehicle crashes in Georgia. The number of roadway fatalities varied from 1994 to 2014, peaking in 2005 with 1,729 fatalities, and a rate of 1.52 fatalities per 100 vehicle miles traveled (VMT). However, in 2015 Georgia experienced a rate comparable to the 2008 rate, with 1.21 fatalities per every 100 million vehicle miles traveled (VMT). The highest fatality rate occurred in 1996 with 1.76 fatalities per 100 million vehicle miles traveled (VMT) and 1,573 roadway fatalities.

There are several factors to roadway safety, many are contributed to human behaviors that are personal decisions that could only be swayed by public education and enforcement campaigns. However, there are targeted safety improvements that can be tailored to individual corridors that can provide a driver with a more forgiving roadway. These design considerations work to keep a vehicle on the road and/or allow the driver to safely recover the vehicle should it depart the roadway. By focusing scarce resources on engineering solutions, Georgia is striving to move the needle in a positive direction. The MPO is a key partner in this process.

### **Statewide Needs**

The Governor's Strategic Highway Safety Plan (SHSP) outlines the State's strategy to reduce highway crashes, injuries, and fatalities based on safety data, patterns, and trends which reveal crash and/or hot spot locations that have an overrepresented number of crashes in relation to the amount of traffic. The 2015 Georgia Strategic Highway Safety Plan can be found at <http://www.gahighwaysafety.org/highway-safety/shsp/>. The Governor's Office of Highway Safety is in the process of developing the 2018 SHSP, with a targeted completion date at the end of 2018.

<sup>2</sup> 2018 Georgia Highway Safety Plan (pg. 19)

The SHSP was developed using a data-driven process consisting of extensive analysis of fatal and severe injury collision data from 2008 to 2012. This analysis revealed the following emphasis areas for the State: Lane Departures, Roadway Departures, Vulnerable Roadway Users (Motorcyclists, Pedestrians, and Bicyclists), Intersections, Work Zones, and Older Drivers (65 or more years of age). Figure 13-1 shows the crashes attributed to each emphasis area, note a single crash may have multiple factors identified<sup>3</sup>. The problems associated with these emphasis areas, along with engineering countermeasure techniques are include in Table 13-2 below.

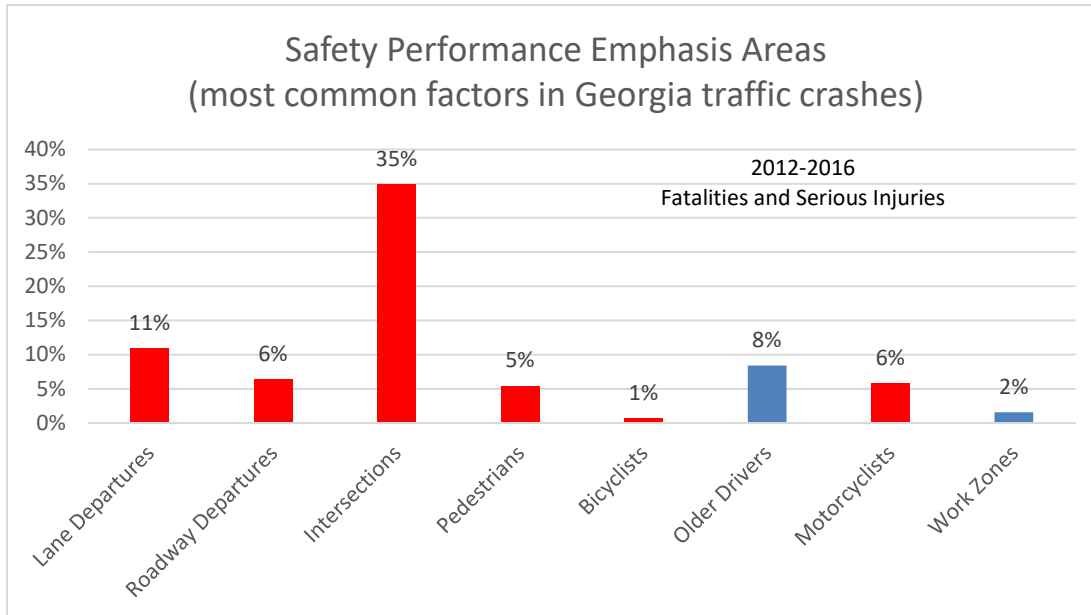


Figure 13 – 1: Emphasis Area Crash Data (Source: Georgia Highway Safety Improvement Program – 2017 Annual Report, pg. 57)

<sup>3</sup> Georgia Highway Safety Improvement Program – 2017 Annual Report

<b>Emphasis Area</b>	<b>Problem</b>	<b>Countermeasures</b>
Roadway Departure / Lane Departure	<p>17% of all fatal and serious injury crashes in the state were lane or roadway departure related.</p> <p>Roadway departure crashes are frequently severe and account for the majority of highway fatalities. A roadway departure crash is defined as a non-intersection crash which occurs after a vehicle crosses an edge line or a center line, or otherwise leaves the traveled way.<sup>4</sup></p>	<ul style="list-style-type: none"> <li>• Paved Shoulders</li> <li>• Rumble strips</li> <li>• Adequate Clear Zone</li> <li>• Cable guardrail</li> <li>• Enhanced Signing / Marking</li> <li>• Pavement Friction</li> <li>• Horizontal curve improvements</li> </ul>
Intersections	<p>35% of all fatal and serious injury crashes in the state were intersection related.</p> <p>Intersections are planned points of conflict in any roadway system. In the United States, one-quarter of traffic fatalities and roughly half of all traffic injuries are attributed to intersections.<sup>5</sup></p>	<ul style="list-style-type: none"> <li>• Roundabouts</li> <li>• Access Management</li> <li>• Alternative Intersection Designs</li> <li>• Adequate Sight Distance</li> <li>• Traffic Signals/Signs</li> <li>• Backplates with Retroreflective Borders</li> <li>• Road Diets</li> </ul>
Vulnerable Roadway Users (Bicyclists, Pedestrians, Motorcyclists)	<p>After reducing bicycle fatalities, Georgia saw a 21% increase in bicycle related deaths in 2015.<sup>6</sup></p> <p>From 2008 through 2015, there has been an increase in the percent of pedestrians killed in crashes in Georgia. Pedestrian fatalities accounted for 13.5% of all roadway fatalities in 2015, and the number of pedestrian fatalities increased by 18.4% from the previous year.<sup>7</sup></p> <p>From 2009 to 2015, there has been an unsteady and fluctuating decrease of motorcyclist fatalities in Georgia. GOHS has the goal to maintain the 5-year moving average motorcyclist fatalities under the projected 177 (2014-2018) 5-year average by December 2018.<sup>8</sup></p>	<p><b>Bicyclists</b></p> <ul style="list-style-type: none"> <li>• Separate bike lanes</li> <li>• Improve connectivity for trail systems</li> <li>• Accommodations at intersections</li> </ul> <p><b>Pedestrians</b></p> <ul style="list-style-type: none"> <li>• Sidewalks</li> <li>• Medians and pedestrian crossing islands</li> <li>• Pedestrian hybrid beacons</li> <li>• Road diets</li> </ul> <p><b>Motorcyclists</b></p> <ul style="list-style-type: none"> <li>• Drainage and shoulder improvements</li> <li>• Communication of road conditions</li> <li>• Pavement conditions</li> <li>• Traffic control devices<sup>9</sup></li> </ul>

Table 13-2: Highway Performance Emphasis Areas, Identified Problems, and Countermeasures

<sup>4</sup> FHWA, Roadway Departure Countermeasures [https://safety.fhwa.dot.gov/roadway\\_dept/rdctrm.cfm](https://safety.fhwa.dot.gov/roadway_dept/rdctrm.cfm)

<sup>5</sup> FHWA, Intersection Safety <https://safety.fhwa.dot.gov/intersection/>

<sup>6</sup> 2018 Georgia Highway Safety Plan (pg. 254)

<sup>7</sup> 2018 Georgia Highway Safety Plan (pg. 254)

<sup>8</sup> 2018 Georgia Highway Safety Plan (pg. 97)

<sup>9</sup> NCHRP, Leading Practices for Motorcyclist Safety, [http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-68A\\_09-04.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-68A_09-04.pdf)



## Safety Targets

GDOT evaluated and reported on its targets for the five required safety performance measures on August 31, 2017. This action started the 180-day clock for MPOs to evaluate and set regionally specific targets or to accept and support the State's targets.

When setting the State's safety performance targets, GDOT performed extensive analysis of the data related to each measure (traffic fatalities and severe injuries and vehicle miles traveled). Using statistical models, GDOT predicted the crash numbers for 2018. Examining current and planned education and engineering safety initiatives, expected reductions in the number of fatalities and severe injuries were estimated, resulting in the calculation of the safety performance targets for the state. Using five-year rolling averages, the following Table 13-3 shows the safety performance measure targets for the State of Georgia (5-year average 2014-2018) and the target related baseline information for the MPO (5-year average 2012-2016).

SAFETY PERFORMANCE MEASURE TARGETS					
	Number of Fatalities	Fatality Rate (per 100 million VMT)	Number of Serious Injuries	Serious Injury Rate (per 100 million VMT)	Non-motorized Fatalities and Serious Injuries
<b>GA Targets (5-yr avg. 2014-2018)</b>	<b>1,593.0</b>	<b>1.32</b>	<b>19,643.0</b>	<b>16.318</b>	<b>1027.2</b>
<b>MATS MPO Baseline (5-yr avg. 2012-2016)</b>	<b>26.4</b>	<b>1.24</b>	<b>228</b>	<b>11.13</b>	<b>30.2</b>

Table 13 – 3: GDOT Statewide Safety Performance Targets (with MATS MPO Baselines)

On November 1, 2017, the MPO Policy Committee adopted a Safety Target Resolution accepting and supporting all five safety targets established by the GDOT (the resolution is available at:

<http://mats2040.org/lrtp/wp-content/uploads/2017/11/20171101-MATS-Resolution.pdf>). The MATS MPO will demonstrate its support of the State's safety targets through our planning and programming process by:

- Addressing areas of concern for fatalities or serious injuries within the metropolitan planning area through coordination with GDOT and incorporation of safety considerations on all projects;
- Integrating safety goals, objectives, performance measures, and targets into the planning process; and
- Including the anticipated effect toward achieving the targets noted above within the MPO's LRTP, TIP and UPWP, effectively linking investment priorities to safety target achievement.

## PM 2 – Pavement and Bridge Condition Performance Measures

On January 18, 2017, the Federal Highway Administration (FHWA) published in the Federal Register rules to establish measures to assess the condition of pavements and bridges on the National Highway System (NHS) to carry out the National Highway performance program (NHPP) (82 Fed. Reg. 5886). The pavement and bridges rule addresses requirements establishing performance measures for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs), as mandated by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and reflects passage of the Fixing America's Surface Transportation (FAST) Act. On May 20, 2017, the final rule was put into effect.

The measures for bridges on the National Highway System are:

- Percentage of NHS bridges by deck area in Good condition; and
- Percentage of NHS bridges by deck area in Poor condition.

The measures for pavement on the National Highway System are:

- Percentage of Interstate pavements in Good condition;
- Percentage of Interstate pavements in Poor condition;
- Percentage of non-Interstate NHS pavements in Good condition; and,
- Percentage of non-Interstate NHS pavements in Poor condition.

On May 16, 2018, GDOT established two- and four-year Statewide Pavement and Bridge Condition performance targets for the first performance measurement period. Table 13-4 describes the initial performance targets adopted by GDOT. The targets for both the two-year and four-year time frame are identical. These performance targets are also adopted as the initial targets for roads and bridges located within the MATS area.<sup>10</sup>

ASSET	PERFORMANCE MEASURE	DESCRIPTION)	TARGET
<b>Bridge Structures</b>	Percent of NHS Bridges in <b>Good condition</b> as a percentage of total NHS bridge deck area	Bridges rated as “Good” will be evaluated as to cost to maintain Good condition. Bridges rated as “Fair” will be evaluated as to cost of replacement vs. rehabilitation to bring the structure back to a condition rating of Good.	≥ 60% (NHS) in Good Condition
<b>Bridge Structures</b>	Percent of NHS Bridges in <b>Poor condition</b> as a percentage of total NHS bridge deck area	Bridge Conditions are based on the result of inspections on all Bridge structures. Bridges rated as “Poor” are safe to drive on; however, they are nearing a point where it is necessary to either replace the bridge or extend its service life through substantial rehabilitation investments	≤ 10% (NHS) in Poor Condition
<b>Interstate NHS</b>	Percentage of NHS pavements in <b>Good condition</b>	Interstate pavement rated as good will be considered for potential pavement preservation treatments to maintain the “good” rating	≥ 50% in Good Condition
<b>Interstate NHS</b>	Percentage of NHS pavements in <b>Poor condition</b>	Pavement conditions are measured through field inspections. Pavements in “poor” condition are in need of work due to either the ride quality or due to a structural deficiency.	≤ 5% in Poor Condition
<b>Non-Interstate NHS</b>	Percentage of NHS pavements in <b>Good condition</b>	Non-Interstate NHS pavements in “good” condition will be evaluated for potential preservation treatments	≥ 40% in Good Condition
<b>Non-Interstate NHS</b>	Percentage of NHS pavements in <b>Poor condition</b>	Non-Interstate NHS pavements in “poor” condition are in need of major maintenance. These will be evaluated for potential projects.	≤ 12% in Poor Condition

Table 13 – 4: GDOT Statewide Pavement and Bridge Condition Performance Targets

### PM 3 – System Performance and Freight Performance Measures

On January 18, 2017, the Federal Highway Administration (FHWA) published in the Federal Register (82 FR 5970) rules to establish performance measures that State Departments of Transportation (DOTs) and metropolitan planning organizations (MPOs) will use to report on the performance of the Interstate and Non-Interstate National Highway System (NHS) to carry out the National Highway Performance Program (NHPP); freight movement on the Interstate system to carry out the National Highway Freight Program (NHFP); and

<sup>10</sup> FHWA, Frequently Asked Questions: Pavement and Bridge Condition Performance Measures Final Rule, <https://www.fhwa.dot.gov/tpm/pubs/PM2FAQs.pdf>

traffic congestion and on-road mobile source emissions for the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. The rule addresses requirements established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and reflects passage of the Fixing America's Surface Transportation (FAST) Act. On May 20, 2017, the final rule took effect.

On May 16, 2018, GDOT established specific Performance Measures for two- and four-year statewide targets for National Highway System Performance, Freight Movement, and Congestion Mitigation and Air Quality. Table 13-5 describes the initial performance targets adopted by GDOT. The applicable performance targets are also adopted as the initial System Performance and Freight Movement performance targets for that portion of the statewide transportation network located within the MATS area.

<b>Performance Measure</b>	<b>Geographic Extent</b>	<b>Applicable Roadways</b>	<b>2-Year Target</b>	<b>4-Year Target</b>
<b>Percent of person-miles traveled on the Interstate that are reliable</b>	Statewide	Interstate	73.0%	67.0%
<b>Percent of person-miles traveled on non-Interstate NHS that are reliable</b>	Statewide	Non-Interstate	n/a	81%
<b>Truck Travel Time Reliability Index</b>	Statewide	Interstate	1.66	1.76
<b>Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita*</b>	Atlanta Urbanized Area	Entire NHS	n/a	24.6 hour
<b>Percent of Non-Single Occupancy Vehicle (SOV) Travel*</b>	Atlanta Urbanized Area	All Roads	22.1%	22.1%
<b>Total Emissions Reduction<sup>11</sup></b>	Statewide	All Roads	VOC: 205.7 kg/day NOx: 563.3 kg/day	VOC: 386.6 kg/day NOx: 1,085.0 kg/day

Table 13 – 5: GDOT Statewide Targets for National Highway System Performance, Freight Movement, and Congestion Mitigation & Air Quality.

Note that only four of the six Performance Measures in Table 13 – 5 apply to the MATS area. Annual Hours of Peak Hour Excessive Delay Per Capita, and Percent of Non-Single Occupancy Vehicle Travel apply only to the Atlanta urbanized area. They are included here only for the sake of a comprehensive listing of the performance measures adopted by GDOT.

#### **Transit Performance Measures**

In addition to the metrics and goals identified above, MAP-21 also directed the Federal Transit Administration (FTA) to establish Performance Measures for transit service providers, focusing specifically on State of Good Repair. In July 2016, FTA issued the final rule (49 CFR 625.17) establishing Transit Asset Management (TAM) requirements for recipients and sub-recipients of federal funds. Based on the requirements established under 23 CFR 450.324 and 23 CFR 450.326, acknowledgement of this final rule also must be reflected in the MATS 2040 Long Range Transportation Plan.

<sup>11</sup> See Administrative Modifications section below for notes on updated values on this measure.

On August 24, 2018, Georgia Dept. of Transportation – Intermodal Division published finalized Group TAM Plans and targets for Tier II sub-recipients of FTA 5307 Operating Funds. The Group TAM Plan covers the four year period FY 2019 through FY 20222, and includes both a preliminary assessments relative to TAM Plan targets (Table 13 – 6), and a detailed breakdown of TAM targets by asset class and initial FY 2019 TAM Plan targets (Table 13 – 7).

<b>Asset Category</b>	<b>Performance Measure</b>	<b>Initial Target FY 2017</b>	<b>Actual Performance</b>
Rolling Stock – Revenue Vehicles by Mode	% of vehicles met or exceeded Useful Life Benchmark (ULB)	<15.0%	<b>12.4%</b>
Equipment – non-revenue support service and maintenance vehicles	% of vehicles met or exceeded ULB	<50%	<b>42.6%</b>
Facilities – maintenance and administrative facilities, passenger stations (buildings); and parking facilities	% of assets with condition rating below 3.0 on FTA TERM scale	<40%	<b>8.4%</b>

Table 13 – 6: Summary of Initial GDOT TAM Targets for Tier II Sub-Recipients of FTA 5307 Operating Funds (Source: GDOT Group Transit Asset Management Plan, Table 4.2 – Summary of Initial Performance Targets, 24 August 2018)

<b>Asset Category/Class</b>	<b>Total Number</b>	<b>Useful Life Benchmark (ULB)</b>	<b>Number Exceeding ULB/3.0 TERM Rating</b>	<b>% Exceeding ULB/3.0 TERM Rating</b>	<b>Proposed FY 2019 Targets</b>
<b>Rolling Stock</b>	<b>775</b>		<b>96</b>	<b>12.4%</b>	
BU-Bus (35' – 40')	82	14 yrs.	8	9.8%	<15%
BU-Bus (29' – 30')	54	12 yrs.	21	38.9%	<35%
CU – Cutaway Bus	593	7 yrs.	52	8.8%	<10%
MV – Minivan	1	8 yrs.	1	100.0%	<50%
SB – School bus	33	15 yrs.	8	24.2%	<50%
VN – Van	12	8 yrs.	6	50.0%	<50%
<b>Equipment</b>	<b>55</b>		<b>23</b>	<b>42.6%</b>	
AO – Automobile	18	8 yrs.	11	61.1%	<55%
Trucks and other Rubber Tire Vehicles	31	10 yrs.	11	35.5%	<55%
Equip. > \$50,000	6	14 yrs.	n/a	n/a	n/a
<b>Facilities</b>	<b>83</b>		<b>7</b>	<b>8.4%</b>	
Administration	62	n/a	2	3.2%	<25%
Maintenance	11	n/a	5	45.5%	<25%
Passenger/ Parking Facilities	10	n/a	0	0%	<10%

Table 13 – 7: Detailed Breakdown of GDOT TAM Targets for Tier II Sub-Recipients of FTA 5307 Operating Funds, and Proposed FY 2019 TAM Targets (Source: GDOT Group Transit Asset Management Plan, Table 4.1 – Summary of Asset Performance by Asset Class, 24 August 2018)

Because both Jones County Transit (JCT) and Macon-Bibb County Transit Authority (MTA) are specifically identified as being covered under the GDOT Group TAM Plan, the targets identified in that plan are applicable by reference in the MATS 2040 Long Range Transportation Plan.

Specific projects and phases which are being undertaken to support the GDOT Group TAM Plan targets and objectives are identified and discussed in the MATS FY 2018 – 2021 TIP.



**Amendment Date: 08/01/2018**

Pursuant to the adoption of Statewide Performance Management Targets by Georgia Dept. of Transportation on 5/16/2018 for PM 2 (Infrastructure Condition) and PM 3 (System Reliability, Freight Movement and Congestion Reduction), the relevant Performance Targets were adopted into the MATS 2040 Long Range Transportation Plan by formal amendment on the above mentioned date.

**Administrative Modification: 9/6/2018**

1. On 8/20/2018, Georgia Dept. of Transportation communicated to Georgia Association of MPOs new standards for PM 3 Targets related to Emissions Reductions. Pursuant to the resolution passed by the MATS Policy Committee on 8/1/2018, those updates are hereby incorporated into the MATS 2040 Long Range Transportation Plan:

<b>Performance Targets</b>	<b>2 Year Targets</b>	<b>4 Year Targets</b>
<i>Original Targets</i>		
VOC (kg/day)	764.309	748.185
NOx (kg/day)	1,429.118	1,347.270
<i>Updated Targets (8/20/2018)</i>		
VOC (kg/day)	205.7	386.6
NOx (kg/day)	563.3	1,085.0

2. On 8/24/2018, the Georgia Dept. of Transportation-Intermodal Division (GDOT Intermodal) published the final Transit Asset Management (TAM) Plan. As per guidance from GDOT Intermodal, in concert with the Federal Transit Administration and Federal Highway Administration:
  - a.) The transit performance measures in the TAM Plan must be incorporated into the MATS 2040 Long Range Transportation Plan; and
  - b.) Because the transit performance measures do not impact fiscal constraint, their incorporation into the MATS 2040 Long Range Transportation Plan may be done as an Administrative Modification.
 Following this guidance, the GDOT Intermodal TAM Plan has been incorporated by reference in this chapter, under the Transit Performance Measures section described above.

**Administrative Modification: 2/13/2019**

On July 11 2018, Georgia Dept. of Transportation submitted the State Highway Safety Improvement Program 2018 Annual Report to Federal Highway Administration. That report established new statewide targets for Safety Performance Measures, as described and identified under the FAST Act and 23 CFR 490. The new

<b>GA STATEWIDE SAFETY PERFORMANCE MEASURE TARGETS (ADOPTED JULY 11, 2018)</b>					
	<b>Number of Fatalities</b>	<b>Fatality Rate (per 100 million VMT)</b>	<b>Number of Serious Injuries</b>	<b>Serious Injury Rate (per 100 million VMT)</b>	<b>Non-motorized Fatalities and Serious Injuries</b>
<b>GA Targets (5-yr avg. 2015-2019)</b>	<b>1,655</b>	<b>1.31</b>	<b>24,324</b>	<b>18.9</b>	<b>1,126</b>

statewide safety targets are:

Pursuant to directions established by MATS Policy Committee under the resolution adopted on 8/1/2018 (referenced above), MATS MPO hereby incorporates the updated Safety Performance Measure targets into the MATS 2040 Long Range Transportation Plan. The table below demonstrates conformity with these updated targets for the MATS MPO area, using the most recent available data.

<b>MATS SAFETY PERFORMANCE MEASURES</b>					
	<b>Number of Fatalities</b>	<b>Fatality Rate (per 100 million VMT)</b>	<b>Number of Serious Injuries</b>	<b>Serious Injury Rate (per 100 million VMT)</b>	<b>Non- motorized Fatalities and Serious Injuries</b>
<b>MATS MPO Baseline - 2019 (5-yr avg. 2013-2017)</b>	<b>30.4</b>	<b>1.19</b>	<b>212</b>	<b>8.40</b>	<b>27.0</b>

# Appendix A

## Appendix A

### Supplemental U.S. Census 2010 Tables for Bibb, Jones and Monroe Counties, and MATS Sub-Areas

	African American	American Indian/ Alaskan Native	Asian	Hawaiian/ Pacific Islander	White	Other	2 or more races	Age Group Total	Hispanic/ Latino (Subset)
<b>Male</b>									
Under 5	3,637	9	75	5	1,756	141	238	5,861	300
Age 5 to 9	3,413	12	110	9	1,778	106	165	5,593	229
Age 10 to 14	3,497	8	82	3	1,740	79	130	5,539	183
Age 15 to 17	2,281	7	42	2	1,149	55	70	3,606	98
Age 18 to 19	1,333	3	50	2	830	36	52	2,306	98
Age 20 to 24	2,639	16	87	18	2,311	146	89	5,306	271
Age 25 to 29	2,365	7	97	8	2,231	161	65	4,934	290
Age 30 to 34	2,319	11	102	12	1,916	124	56	4,540	226
Age 35 to 39	2,178	13	116	12	2,145	95	51	4,610	185
Age 40 to 44	2,171	9	98	3	2,054	79	47	4,461	165
Age 45 to 49	2,451	8	72	4	2,433	56	50	5,074	130
Age 50 to 54	2,464	13	98	3	2,520	35	40	5,173	91
Age 55 to 59	2,078	19	52	2	2,501	21	24	4,697	63
Age 60 to 64	1,679	9	53	1	2,137	13	23	3,915	38
Age 65 to 66	427	2	9	-	678	1	5	1,122	10
Age 67 to 69	543	8	17	-	927	4	8	1,507	13
Age 70 to 74	681	5	13	-	1,198	4	7	1,908	11
Age 75 to 79	444	-	8	-	951	-	9	1,412	14
Age 80 to 84	243	-	1	-	762	2	3	1,011	5
Age 85 and Over	172	-	-	-	537	-	2	711	5
<b>Female</b>									
Under 5	3,505	8	83	-	1,673	146	189	5,604	265
Age 5 to 9	3,362	9	106	2	1,614	105	140	5,338	203
Age 10 to 14	3,360	9	69	2	1,682	79	93	5,294	166
Age 15 to 17	2,113	6	41	-	1,017	45	62	3,284	96
Age 18 to 19	1,510	7	66	2	916	29	51	2,581	68
Age 20 to 24	3,429	23	165	7	2,424	85	98	6,231	215
Age 25 to 29	3,153	12	84	14	2,187	93	86	5,629	192
Age 30 to 34	3,006	16	125	3	1,793	76	66	5,085	177
Age 35 to 39	2,828	13	120	1	1,971	70	54	5,057	132
Age 40 to 44	2,730	13	102	2	1,994	35	43	4,919	97
Age 45 to 49	3,027	14	98	-	2,347	40	35	5,561	87
Age 50 to 54	3,051	13	88	2	2,605	27	37	5,823	83
Age 55 to 59	2,563	8	75	-	2,568	15	32	5,261	61
Age 60 to 64	2,026	8	63	1	2,437	6	35	4,576	46
Age 65 to 66	574	4	10	-	762	-	12	1,362	5
Age 67 to 69	812	1	21	-	1,077	1	20	1,932	21
Age 70 to 74	1,063	2	16	-	1,533	1	16	2,631	26
Age 75 to 79	813	3	6	-	1,436	2	11	2,271	7
Age 80 to 84	566	3	7	-	1,320	1	11	1,908	10
Age 85 and Over	610	1	4	-	1,289	-	10	1,914	7
<b>Grand Total</b>	<b>81,116</b>	<b>332</b>	<b>2,531</b>	<b>120</b>	<b>67,199</b>	<b>2,014</b>	<b>2,235</b>	<b>155,547</b>	<b>4,389</b>

Source: U.S. Census SF 1 Dataset, Tables P12A Through P12I: Sex By Age < Name of Individual Ethnic Category>

Table A-1 Macon-Bibb County 2010 Population Breakdown By Gender, Ethnicity and Age

**Table A-2: Jones County 2010 Population Breakdown By Gender, Ethnicity and Age, for County Overall and MATS Sub Area**

	African American		American Indian/ Alaskan Native		Asian		Hawaiian/ Pacific Islander		White		Other		2 or more races		Age Group Total		Hispanic/ Latino (Subset)	
	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Jones County Overall	MATS Area	Overall	MATS Area
Male																		
Under 5	212	121	3	3	7	6	-	-	685	265	9	4	33	15	949	414	30	15
Age 5 to 9	219	123	1	1	6	2	-	-	742	238	6	3	25	10	999	377	13	5
Age 10 to 14	278	156	1	1	4	1	-	-	774	265	9	7	19	12	1,085	442	12	5
Age 15 to 17	190	107	-	-	5	4	-	-	523	195	3	2	11	7	732	315	12	6
Age 18 to 19	83	40	1	-	1	1	-	-	280	120	4	-	1	1	370	162	9	3
Age 20 to 24	199	98	1	-	2	2	-	-	526	235	3	2	1	1	732	338	9	5
Age 25 to 29	163	74	2	-	5	2	-	-	590	258	3	-	6	2	769	336	7	3
Age 30 to 34	186	92	2	1	8	3	-	-	609	206	2	2	6	1	813	305	11	3
Age 35 to 39	198	107	2	-	7	4	-	-	669	205	4	1	9	2	889	319	12	3
Age 40 to 44	228	125	1	1	9	5	-	-	771	293	2	1	7	3	1,018	428	7	2
Age 45 to 49	305	141	3	2	6	6	-	-	831	333	5	1	5	2	1,155	485	12	5
Age 50 to 54	256	133	1	-	4	1	-	-	793	314	1	1	7	2	1,062	451	8	2
Age 55 to 59	238	118	4	1	5	1	-	-	654	268	-	-	6	5	907	393	8	5
Age 60 to 64	194	87	2	-	8	5	-	-	594	250	4	-	7	2	809	344	8	2
Age 65 to 66	51	25	1	-	2	1	-	-	213	84	-	-	-	-	267	110	1	-
Age 67 to 69	79	38	-	-	2	2	-	-	259	96	-	-	1	1	341	137	2	2
Age 70 to 74	97	46	-	-	1	-	-	-	340	125	-	-	1	-	439	171	2	-
Age 75 to 79	61	22	-	-	2	-	1	-	225	92	-	-	1	-	290	114	-	-
Age 80 to 84	20	10	1	1	-	-	-	-	132	46	-	-	1	1	154	58	1	1
Age 85 and Over	18	7	-	-	-	-	-	-	72	23	-	-	-	-	90	30	-	-
Female																		
Under 5	223	118	1	1	7	5	-	-	673	239	2	-	35	16	941	379	18	3
Age 5 to 9	244	126	4	1	6	2	-	-	739	246	10	3	25	9	1,028	387	22	5
Age 10 to 14	292	164	3	1	7	1	-	-	783	280	6	3	21	10	1,112	459	15	9
Age 15 to 17	187	103	-	-	-	-	-	-	428	145	1	1	11	6	627	255	5	2
Age 18 to 19	98	55	-	-	4	2	-	-	265	105	-	-	7	2	374	164	3	1
Age 20 to 24	187	87	-	-	3	3	-	-	545	246	2	1	6	4	743	341	5	2
Age 25 to 29	147	77	2	1	4	3	-	-	602	230	4	-	8	6	767	317	11	3
Age 30 to 34	205	120	4	3	11	7	-	-	663	198	5	3	13	6	901	337	12	3
Age 35 to 39	277	157	3	-	9	6	-	-	761	266	4	1	8	4	1,062	434	10	6
Age 40 to 44	240	129	1	-	14	7	-	-	777	294	4	1	5	3	1,041	434	12	4
Age 45 to 49	329	165	2	1	9	7	-	-	808	335	4	3	6	1	1,158	512	12	7
Age 50 to 54	306	146	4	1	9	4	1	-	791	327	5	1	6	4	1,122	483	10	2
Age 55 to 59	269	128	5	4	6	2	1	-	693	284	-	-	6	3	980	421	5	3
Age 60 to 64	220	116	4	-	8	8	-	-	698	262	1	-	7	3	938	389	3	1
Age 65 to 66	65	27	-	-	1	1	-	-	207	80	-	-	1	-	274	108	1	-
Age 67 to 69	93	39	1	1	3	-	-	-	269	97	-	-	-	-	366	137	3	-
Age 70 to 74	124	54	1	-	-	-	-	-	388	161	-	-	1	-	514	215	1	1
Age 75 to 79	98	44	2	1	-	-	-	-	228	96	-	-	3	2	331	143	2	1
Age 80 to 84	58	19	-	-	1	-	-	-	186	69	-	-	-	-	245	88	1	1
Age 85 and Over	71	13	-	-	1	1	-	-	203	54	-	-	-	-	275	68	-	-
	7,008	3,557	63	26	187	105	3	-	20,989	7,925	103	41	316	146	28,669	11,900	315	121

Source: U.S. Census SF 1 Dataset, Tables P12A Through P12I: Sex By Age < Name of Individual Ethnic Category>

**Table A-2 Jones County 2010 Population Breakdown By Gender, Ethnicity and Age, for County Overall and MATS Sub Area**



**Table A-3: Monroe County 2010 Population Breakdown By Gender, Ethnicity and Age, for County Overall and MATS Sub Area**

	African American		American Indian/ Alaskan Native		Asian		Hawaii/ Pacific Islander		White		Other		2 or more races		Age Group Total		Hispanic/ Latino (Subset)	
	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Overall	MATS Area	Monroe County Overall	MATS Area	Overall	MATS Area
Male																		
Under 5	172	3	2	1	7	1	-	-	527	29	10	-	23	-	741	34	26	-
Age 5 to 9	180	3	3	2	6	1	-	-	598	47	10	2	17	1	814	56	25	3
Age 10 to 14	202	4	1	-	3	-	-	-	636	42	22	2	25	1	889	49	37	4
Age 15 to 17	163	1	-	-	4	1	-	-	418	34	8	-	7	1	600	37	19	-
Age 18 to 19	154	1	-	-	1	-	-	-	218	11	6	-	8	-	387	12	14	-
Age 20 to 24	319	5	2	-	4	-	-	-	488	23	12	-	10	-	835	28	30	-
Age 25 to 29	249	2	1	-	10	-	-	-	529	21	11	-	8	-	808	23	30	-
Age 30 to 34	171	1	-	-	8	-	-	-	515	26	8	-	7	1	709	28	21	-
Age 35 to 39	193	2	1	1	8	-	-	-	617	40	10	-	1	-	830	43	20	1
Age 40 to 44	207	2	6	1	13	4	1	-	672	41	17	1	6	-	922	49	30	1
Age 45 to 49	219	5	3	-	4	1	-	-	798	73	11	1	6	-	1,041	80	16	1
Age 50 to 54	221	2	2	-	10	1	-	-	877	75	3	-	8	1	1,121	79	10	1
Age 55 to 59	220	3	3	-	4	1	-	-	803	80	5	-	4	-	1,039	84	8	-
Age 60 to 64	181	-	-	-	8	1	-	-	684	55	1	-	4	-	878	56	8	-
Age 65 to 66	51	-	2	-	2	-	-	-	224	22	-	-	1	-	280	22	3	-
Age 67 to 69	65	1	1	-	-	-	-	-	285	26	2	-	1	-	354	27	3	-
Age 70 to 74	84	-	2	-	1	-	-	-	357	31	2	-	4	1	450	32	3	-
Age 75 to 79	52	1	-	-	1	-	-	-	219	19	1	-	1	-	274	20	5	1
Age 80 to 84	30	-	-	-	1	-	-	-	149	19	-	-	1	-	181	19	1	-
Age 85 and Over	16	1	-	-	1	-	-	-	100	11	1	-	-	-	118	12	1	-
Female																		
Under 5	178	2	-	-	5	-	-	-	492	24	10	-	35	-	720	26	23	-
Age 5 to 9	212	3	-	-	12	3	-	-	589	40	3	1	15	-	831	47	18	1
Age 10 to 14	185	3	1	1	11	4	1	-	606	48	16	2	14	2	834	60	25	2
Age 15 to 17	157	2	1	-	2	1	-	-	350	26	4	1	10	-	524	30	11	2
Age 18 to 19	80	-	2	-	1	-	1	-	214	15	7	-	4	1	309	16	6	-
Age 20 to 24	209	3	3	-	8	-	-	-	486	26	5	-	7	1	718	30	16	1
Age 25 to 29	175	1	1	-	6	-	-	-	468	32	3	-	8	-	661	33	13	-
Age 30 to 34	167	1	2	2	14	1	-	-	524	25	10	-	3	-	720	29	19	-
Age 35 to 39	189	4	3	-	13	4	-	-	613	48	6	1	2	-	826	57	11	1
Age 40 to 44	215	2	4	-	11	-	1	-	668	50	7	1	8	-	914	53	19	2
Age 45 to 49	254	4	5	-	8	-	-	-	804	64	10	1	5	2	1,086	71	19	1
Age 50 to 54	255	3	7	-	7	3	-	-	851	99	1	-	11	-	1,132	105	12	-
Age 55 to 59	240	2	6	-	7	-	-	-	752	76	2	-	2	-	1,009	78	10	-
Age 60 to 64	173	1	2	-	5	-	-	-	673	53	1	-	3	-	857	54	7	1
Age 65 to 66	54	1	2	-	-	-	-	-	195	18	-	-	2	-	253	19	1	-
Age 67 to 69	72	2	-	-	2	-	-	-	309	28	-	-	3	-	386	30	1	-
Age 70 to 74	101	1	1	-	4	-	-	-	331	39	-	-	2	-	439	40	3	-
Age 75 to 79	82	2	-	-	2	-	-	-	269	38	1	-	-	-	354	40	5	-
Age 80 to 84	59	3	-	-	-	-	-	-	212	20	2	-	-	-	273	23	2	-
Age 85 and Over	62	4	-	-	-	-	-	-	245	72	-	-	-	-	307	76	4	-
	6,268	81	69	8	214	27	4	-	19,365	1,566	228	13	276	12	26,424	1,707	535	23

Source: U.S. Census SF 1 Dataset, Tables P12A Through P12I: [Sex By Age < Name of Individual Ethnic Category>](#)

**Table A-3 Monroe County 2010 Population Breakdown By Gender, Ethnicity and Age, for County Overall and MATS Sub Area**

**Table A-4: Housing Characteristics of 2010 Population for Bibb, Jones and Monroe Counties, and MATS Sub-Areas, by Ethnic Group**

	Bibb County	Jones County		Monroe County	
Total Population		Overall	MATS Area	Overall	MATS Area
Population in Occupied Hsg. Units	149496	28348	11800	25216	1578
Total Number of Occupied Hsg. Units	60295	10586	4416	9662	614
Avg. Occupied Hh Size - Overall	2.48	2.68	2.67	2.61	2.57
Population in Owner Occupied Hsg. Units	84199	23070	9734	19778	1464
Total Number of Owner Occupied Hsg. Units	33537	8530	3660	7494	568
Avg. Owner Occupied Hh Size - Overall	2.51	2.70	2.66	2.64	2.58
Population in Renter Occupied Hsg. Units	65297	5278	2066	5438	114
Total Number of Renter Occupied Hsg. Units	26758	2056	756	2168	46
Avg. Renter Hh Size - Overall	2.44	2.57	2.73	2.51	2.48
<b>White</b>					
Population in Occupied Hsg. Units	64721	20953	8030	18904	1449
Total Number of Occupied Hsg. Units	28750	7892	3086	7342	578
Avg. Occupied Hh Size - White	2.25	2.65	2.60	2.57	2.51
Population in Owner Occupied Hsg. Units	48013	17219	6666	15539	1343
Total Number of Owner Occupied Hsg. Units	20245	6398	2551	5966	534
Avg. Owner Occupied Hh Size - White	2.37	2.69	2.61	2.60	2.51
Population in Renter Occupied Hsg. Units	16708	3734	1364	3365	106
Total Number of Renter Occupied Hsg. Units	8505	1494	535	1376	44
Avg. Renter Hh Size - White	1.96	2.50	2.55	2.45	2.41
<b>African American</b>					
Population in Occupied Hsg. Units	78599	6887	3541	5690	67
Total Number of Occupied Hsg. Units	29478	2536	1263	2117	19
Avg. Occupied Hh Size - Afr. American	2.67	2.72	2.80	2.69	3.53
Population in Owner Occupied Hsg. Units	33211	5457	2884	3858	63
Total Number of Owner Occupied Hsg. Units	12379	2011	1053	1405	18
Avg. Owner Occupied Hh Size - Afr. American	2.68	2.71	2.74	2.75	3.50
Population in Renter Occupied Hsg. Units	45388	1430	657	1832	4
Total Number of Renter Occupied Hsg. Units	17099	525	210	712	1
Avg. Renter Hh Size - Afr. American	2.65	2.72	3.13	2.57	4.00
<b>American Indian/Alaskan Native</b>					
Population in Occupied Hsg. Units	355	61	26	51	8
Total Number of Occupied Hsg. Units	134	22	9	22	2
Avg. Occupied Hh Size	2.65	2.77	2.89	2.32	4.00
Population in Owner Occupied Hsg. Units	185	42	20	35	8
Total Number of Owner Occupied Hsg. Units	68	16	8	14	2
Avg. Owner Occupied Hh Size	2.72	2.63	2.50	2.50	4.00
Population in Renter Occupied Hsg. Units	170	19	6	16	0
Total Number of Renter Occupied Hsg. Units	66	6	1	8	0
Avg. Renter Hh Size	2.58	3.17	6.00	2.00	0.00
<b>Asian</b>					
Population in Occupied Hsg. Units	2332	162	93	194	28
Total Number of Occupied Hsg. Units	797	49	27	65	8
Avg. Occupied Hh Size	2.93	3.31	3.44	2.98	3.50
Population in Owner Occupied Hsg. Units	1385	147	90	117	24
Total Number of Owner Occupied Hsg. Units	418	43	26	37	7
Avg. Owner Occupied Hh Size	3.31	3.42	3.46	3.16	3.43
Population in Renter Occupied Hsg. Units	947	15	3	77	4
Total Number of Renter Occupied Hsg. Units	379	6	1	28	1
Avg. Renter Hh Size	2.50	2.50	3.00	2.75	4.00

Table A-4 Housing Characteristics of 2010 Population for Bibb, Jones and Monroe Counties, and MATS Sub-Areas, by Ethnic Group



**Table A-4 (Continued): Housing Characteristics of 2010 Population for Bibb, Jones and Monroe Counties, and MATS Sub-Areas, by Ethnic Group**

	Bibb County	Jones County		Monroe County	
Native Hawaiian/Pacific Islander		Overall	MATS Area	Overall	MATS Area
Population in Occupied Hsg. Units	104	2	0	6	0
Total Number of Occupied Hsg. Units	34	1	0	1	0
Avg. Occupied Hh Size	3.06	2.00	0.00	6.00	0.00
Population in Owner Occupied Hsg. Units	49	2	0	0	0
Total Number of Owner Occupied Hsg. Units	17	1	0	0	0
Avg. Owner Occupied Hh Size	2.88	2.00	0.00	0.00	0.00
Population in Renter Occupied Hsg. Units	55	0	0	6	0
Total Number of Renter Occupied Hsg. Units	17	0	0	1	0
Avg. Renter Hh Size	3.24	0.00	0.00	6.00	0.00
Other Race					
Population in Occupied Hsg. Units	1794	81	25	221	18
Total Number of Occupied Hsg. Units	522	24	8	57	4
Avg. Occupied Hh Size	3.44	3.38	3.13	3.88	4.50
Population in Owner Occupied Hsg. Units	559	59	14	130	18
Total Number of Owner Occupied Hsg. Units	158	16	4	33	4
Avg. Owner Occupied Hh Size	3.54	3.69	3.50	3.94	4.50
Population in Renter Occupied Hsg. Units	1235	22	11	91	0
Total Number of Renter Occupied Hsg. Units	364	8	4	24	0
Avg. Renter Hh Size	3.39	2.75	2.75	3.79	0.00
2 or More Races					
Population in Occupied Hsg. Units	1591	202	85	150	8
Total Number of Occupied Hsg. Units	580	62	23	58	3
Avg. Occupied Hh Size	2.74	3.26	3.70	2.59	2.67
Population in Owner Occupied Hsg. Units	797	144	60	99	8
Total Number of Owner Occupied Hsg. Units	252	45	18	39	3
Avg. Owner Occupied Hh Size	3.16	3.20	3.33	2.54	2.67
Population in Renter Occupied Hsg. Units	794	58	25	51	0
Total Number of Renter Occupied Hsg. Units	328	17	5	19	0
Avg. Renter Hh Size	2.42	3.41	5.00	2.68	0.00
Hispanic SubGroup					
Population in Occupied Hsg. Units	3821	233	76	452	25
Total Number of Occupied Hsg. Units	1192	73	25	131	7
Avg. Occupied Hh Size	3.21	3.19	3.04	3.45	3.57
Population in Owner Occupied Hsg. Units	1463	157	45	281	25
Total Number of Owner Occupied Hsg. Units	451	53	17	85	7
Avg. Owner Occupied Hh Size	3.24	2.96	2.65	3.31	3.57
Population in Renter Occupied Hsg. Units	2358	76	31	171	0
Total Number of Renter Occupied Hsg. Units	741	20	8	46	0
Avg. Renter Hh Size	3.18	3.80	3.88	3.72	0.00

Sources: U.S. Census 2010 SF 1 Dataset, Tables

H11 – Total Population in Occupied Housing Units By Tenure

H11A through H11H - Total Population in Occupied Housing Units By Tenure, < Name of Individual Ethnic Category>

H14 – Tenure by Race of Householder

H15 – Tenure by Hispanic or Latino Origin of Householder

Table A-4 (Continued): Housing Characteristics of 2010 Population for Bibb, Jones and Monroe Counties, and MATS Sub-Areas, by Ethnic Group

# **General Summary of Recommended Travel Demand Model Development Procedures for Consultants, MPOs and Modelers**

Prepared for

# **GDOT**

The logo for Atkins, featuring the word "ATKINS" in a bold, blue, sans-serif font. The letter "A" is stylized with a blue triangle pointing upwards.

May 2013



**This document is subject to change without notice. Please verify with GDOT staff to confirm that this is the most current version.**

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# 1 Introduction

This document provides a general summary of the recommended key procedures to develop travel demand models for the Georgia Department of Transportation (GDOT). This document also briefly describes the format of the input data sets required for the development of a travel demand model such as socio-economic data, traffic analysis zones, and highway networks. The purpose of this document is to provide the Georgia MPOs and consultants with information about the Georgia regional travel demand models, as well as to provide assistance and direction on the preparation of socio-economic data and highway networks, which is vital to the development and application of the travel demand models. In addition, naming conventions for the model output files and a folder structure are described.

If MPOs and/or their Consultants are building their own travel demand model that may be used for the development of a Long Range Transportation Plan (LRTP), GDOT requests that the MPOs/consultants follow this guide as closely as possible.

## 2 Highway Network

GDOT has recently established naming conventions for the attributes in the highway networks for all of the models. Table 2-1 summarizes the primary highway network link field names. There have been some variations in the field names from one MPO network to another in the past. As each model is updated, fieldname/attributes must be revised. There is a list in the Appendix that outlines a set of network checks that GDOT recommend be utilized. There are some network variables that may no longer be needed when creating a new network. These variables have been included in previous networks through the years, such as the 1990 functional classification and previous calibration year traffic counts.

Table 2-2 provides general descriptions of the GDOT facility types and Table 2-3 provides common characteristics of each.

**Table 2-1 - Highway Network Variables**

<b>Attribute Name</b>	<b>Description</b>	<b>Comment</b>
DISTANCE	Roadway Link Length in miles	Calculated automatically in Cube
COUNTY	County FIPS Code	County FIPS Code
ROADNAME	Roadway Name	
FTYPE	1 - Interstate 2 - Freeway 3 - Expressway 4 - Parkway 6 - Freeway to Freeway Ramp 7 - Freeway Entrance Ramp 8 - Freeway Exit Ramp 11 - Principal Arterial - Class I 12 - Principal Arterial - Class II 13 - Minor Arterial - Class I 14 - Minor Arterial - Class II 15 - One Way Arterial 21 - Major Collector 22 - Minor Collector 23 - One Way Collector 30 - Local Road 32 - Centroid Connector	Facility Type
LANES	Number of Lanes	
LANESAM	Number of Lanes in AM Peak Direction	
LANESPM	Number of Lanes in PM Peak Direction	
HPMS2000	1 - Rural Interstate 2 - Rural Principal Arterial 6 - Rural Minor Arterial 7 - Rural Major Collector 8 - Rural Minor Collector 9 - Rural Local 11 - Urbanized Interstate 12 - Urban Freeway 14 - Urbanized Principal Arterial 16 - Urbanized Minor Arterial 17 - Urbanized Collector 19 - Urbanized Local	HPMS Functional Classification Code, 2000 Census Geography
HPMS2010	1 - Rural Interstate 2 - Rural Principal Arterial 6 - Rural Minor Arterial 7 - Rural Major Collector 8 - Rural Minor Collector 9 - Rural Local 11 - Urbanized Interstate	HPMS Functional Classification Code, 2010 Census Geography

Attribute Name	Description	Comment
	12 - Urban Freeway 14 - Urbanized Principal Arterial 16 - Urbanized Minor Arterial 17 - Urbanized Collector 19 - Urbanized Local	
CSTATION	Traffic Count Station Number	Zero if not a count station
TCOUNT <sub>year</sub>	Year AADT - Two Way - Both Directions (from GDOT QA/QC Database)	Zero if not a count station
COUNT <sub>year</sub>	Year AADT - One Way (Directional)	Zero if not a count station
SCREENLINE	Screenline ID	0 if not on a screenline
CUTLINE	Cutline ID	0 if not on a cutline
UAB2010	Urbanized Area Code, 2010 Census Geography	
GDOT_PI	GDOT Project Identification Number	Numeric
LOCAL_PI	Local Project Identification Number	If no GDOT PI number is available - Numeric values are required
OPEN_DATE	Model Year Open to Traffic - Construction Completed	
TOLL (OPTIONAL)	Cost of toll in dollars (if applicable)	Converted to time penalty during model run (not in all models)
MODEL YEAR (OPTIONAL)	Open to Construction	Required for air quality analysis
AADT_####	Current Year Traffic Count- Two Way	Zero if not a count station

**Table 2-2 - Facility Type Descriptions**

Facility Type	Description
Interstate - Freeway	Limited Access Highway Mainline (includes Interstates) - Serves trips traveling longer distances. These facilities are not intended or designed to provide direct access to land use activities. Access is limited to interchange points.
Expressway	Controlled Access Highway - Serves trips traveling longer distances but usually not as long as freeways and within an urban area. These facilities are not designed to provide direct access to land use activities. Access is managed to minimize the degradation to capacity while providing access to abutting land uses. The separation of traffic is usually by concrete barriers.
Parkway	Controlled Access Highway -These facilities are usually not designed to expressway and/or interstate standards. There may be traffic

Facility Type	Description
	signals where these facilities may have access to land use activities at a limited number of points. The separation of traffic is usually by grass medians.
Principal Arterial Class I	Major road with a higher emphasis on serving thru trips and less emphasis on providing access to adjacent property. Common characteristics include fewer curb cuts, raised medians and limited signal density. Class I arterials should have a divided median. Class I Principal Arterials have higher speeds and/or more lanes than Class II Principal Arterials.
Principal Arterial Class II	Major road with a higher emphasis on serving thru trips and less emphasis on providing access to adjacent property. Common characteristics include fewer curb cuts, raised medians and limited signal density. Class II Principal Arterials do not have to have a divided median.
Minor Arterial Class I	Major road with a balance of serving thru trips and providing access to adjacent property. Often Class I Minor Arterials provide movement between the Collector and Principal Arterial Systems. Class I Minor Arterials have higher speeds and/or more lanes than Class II Minor Arterials.
Minor Arterial Class II	Major road with a balance of serving thru trips and providing access to adjacent property. Access to Minor Arterials is primarily from the Collector system.
Collector Class I	Minor road with a primary purpose of providing connectivity to/from arterial highways and/or to serve property. These facilities provide connectivity between arterial highways and commercial areas. Class I Collectors have higher speeds and/or more lanes than Class II Collectors.
Collector Class II	Minor road with a primary purpose of providing connectivity to/from arterial highways and/or to serve property. These facilities provide connectivity between arterial highways and residential areas.
Local Roads	A local street is intended to provide direct property access and is not intended to serve through traffic.
Freeway Ramp	System-to-system ramps (includes Collector-Distributor Roads)
On-Ramp	On-Ramp from a controlled intersection
Off-Ramp	Off-Ramp to a controlled intersection
Centroid Connector	Connects Traffic Analysis Zone (TAZ) centroids to the modeled network. A centroid connector is a fictitious facility representing local streets and access points to the network within the zone. The Connectors should connect so that they reasonably reflect load points of the actual system. Typically there can be 1 to 4 connectors for each zone, but additional ones may be added if necessary. The number of Connectors depends on the size and shape of the TAZ as well as the location of local facilities and activity in the zone. Centroid connectors should not connect directly to intersections but rather to mid-block locations.



**Table 2-3 - Facility Type Characteristics**

<u>Characteristics</u>	Interstates & Freeways	Expressways	Parkways	Principal Arterial		Minor Arterial		Collector	
				Class I	Class II	Class I	Class II	Class I Commercial	Class II Residential
Through Lanes	4-8	4-8	2-6	4-8	2-6	2-4	2-4	2-4	2
Speed Limit (mph)	>=50	>=50	>=50	>=45	40-45	35-40	30-35	25-35	20-30
AADT Range	40,000 +	35,000+	20,000+	30,000+	20,000 - 60,000	15,000 - 35,000	10,000 - 30,000	< 25,000	< 5,000
<u>Median Type</u>									
Barrier	X	X							
Divided	X	X	X	X					
Raised	X	X	X	X	X				
TWLTTL*					X	X	X	X	
Undivided w/LT Lanes						X	X	X	X
Undivided							X	X	X
<u>Access Control</u>									
Full	X	X	X	X					
Partial			X	X	X	X			
Signals per Mile (Urban)			6	7	8	9	9	9	9
Signals per Mile (Suburban)			2	3	4	5	6	7	8
Left Turn Bays				Y	Y	Y	N	N	N
<u>Corridor Length (miles)</u>	>8	>8	>4	>8	>6	4-6	2-4	<2	<1

Note: \*Two Way Left Turn Lane or Flush Median

Source: Parsons, Brinckerhoff, Quade and Douglas and PBS&J, 2005-2006

## 2.1 Levels of Links (Screenlines, Cutlines and Cordon Lines)

Screenlines and cutlines are imaginary lines that are used to assess model validation. Comparison of modeled versus counted traffic across cordons or screenlines provides an indication of how well a travel demand model performs in replicating major trip patterns and movements throughout the network. The screenline or cordon will usually correspond with a recognized visible boundary feature (a river or major transportation facility) or a well-delineated political boundary (a county or city border). Screenlines typically encompass all facilities that serve the same definable travel corridor to allow for the fact that the model may not perfectly represent competition between parallel facilities. These are described below and shown in the Figures 2.1 through 2.3 below:

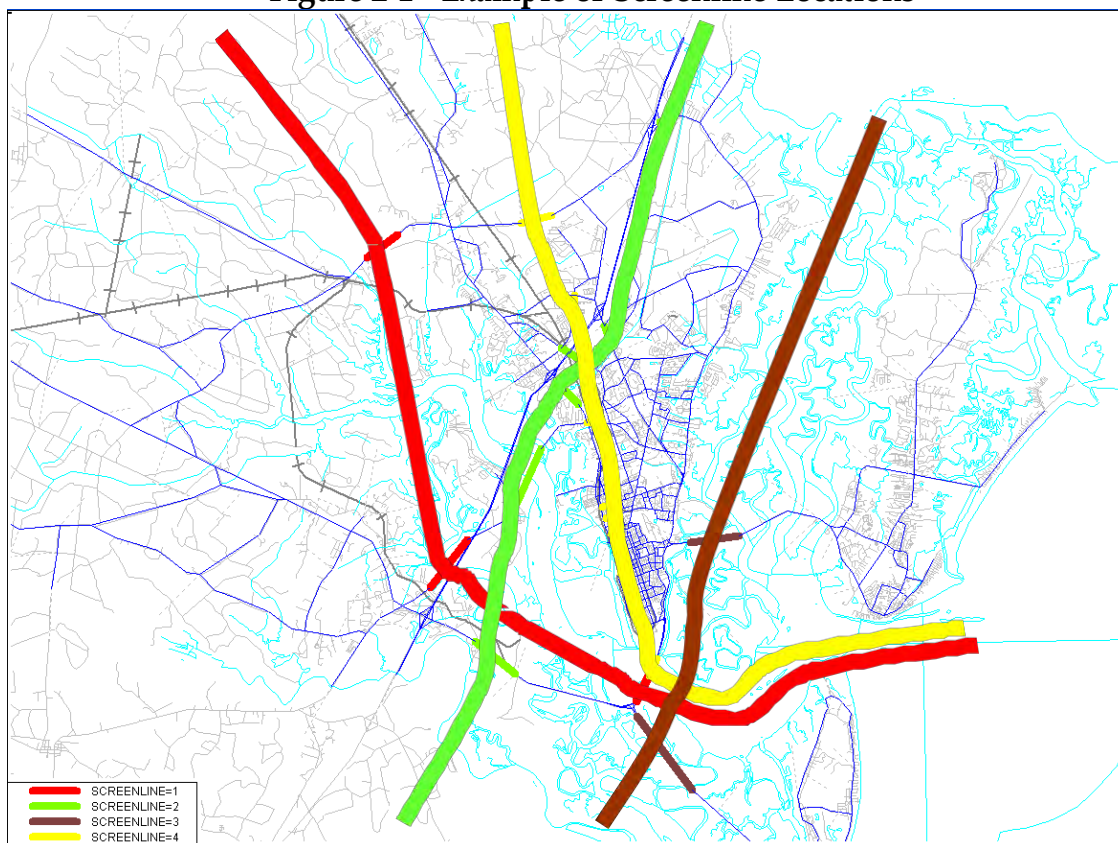
*Screenlines* typically extend completely across the modeled area and go from boundary cordon to boundary cordon. Screenlines capture cross-regional travel flows. For example, a river that passes completely through the area makes an excellent screenline. Travel demand that goes from one side of the river to the other must cross this river screenline within the study area boundary. Screenlines are most often associated with physical barriers such as interstates, rivers or railroads and serve as Traffic Analysis Zone (TAZ) boundaries.

*Cutlines* extend across a corridor containing multiple facilities. They should be used to intercept travel along only one axis. Screenlines usually cover “major” regional travel patterns, but as major destinations become more dispersed, the major travel patterns also become more dispersed, and at that point, cutlines may be employed to look at particular locations and corridors.

*Cordon lines* completely encompass a designated area. Cordon lines are typically associated with the boundary of the area being modeled. However, for model validation purposes, it is also helpful to develop internal cordon lines or boundaries. For example, a cordon around the central business district is useful in validating the “ins and outs” of the CBD related traffic demand. Over or under estimates of trips bound for the CBD could indicate errors in the socioeconomic data (employment data for the CBD) or errors in the trip distribution or mode choice model.

An example of screenlines for a Georgia MPO is illustrated in Figure 2-1, an example of cutlines in Figure 2-2 and an example of a cordon line in Figure 2-3.

**Figure 2-1 - Example of Screenline Locations**



**Figure 2-2 - Example of Cutline Locations**

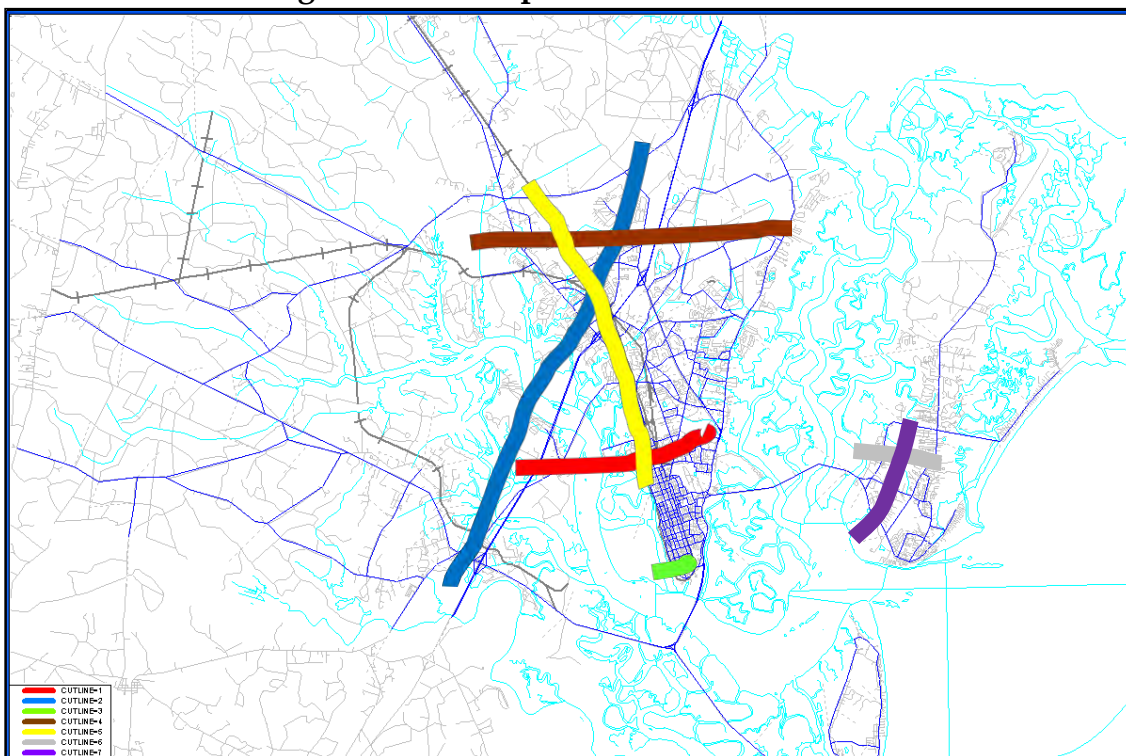
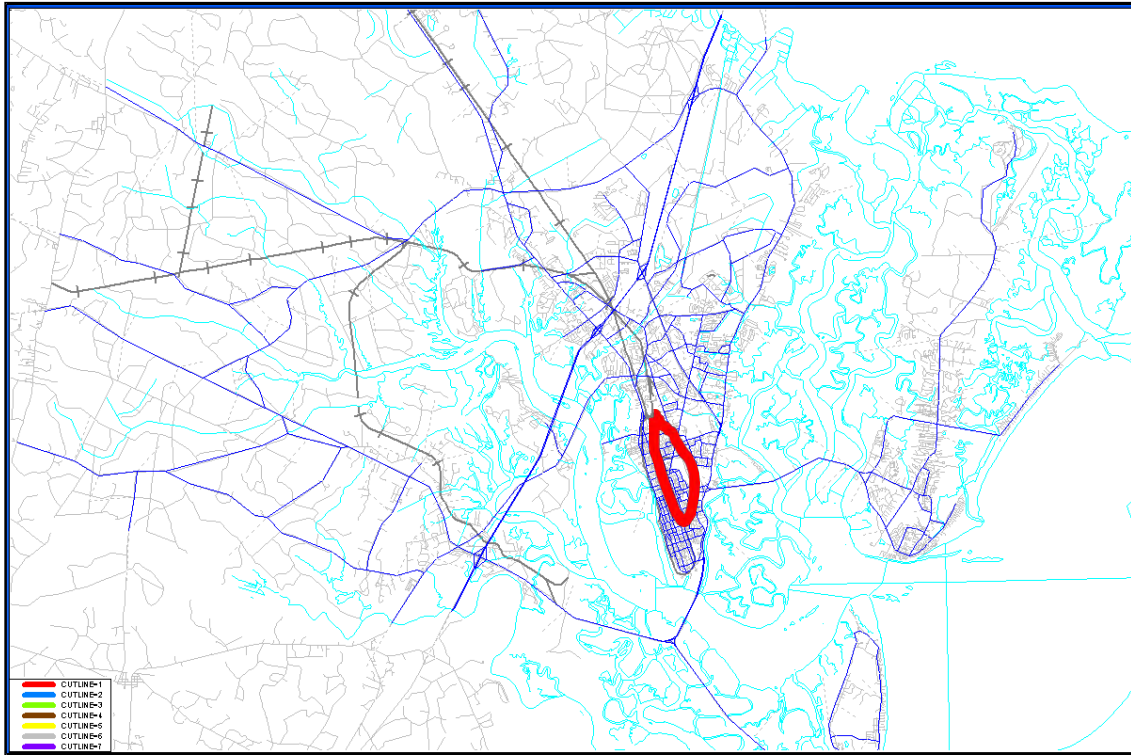


Figure 2-3 - Example of Cordon Location



## 2.2 Additional Variables

**Area Type:** Area Type should be automatically added to the highway network links. Auto-coded results needs to be reviewed for appropriateness during model preparation. Area types should be based on a “floating zone” methodology where acreage and socio-economic data is accumulated for each zone within a specified radius, typically between one-half to one mile, from the centroid of the zone. The data is then used to calculate the population and employment density for that TAZ. Using the floating zone methodology provides a smoother transition between area types for links. Table 2-4 displays area type definitions.

Table 2-4 - Area Type Definitions

Code	Area Type
1	High Density Urban
2	High Density Urban Commercial
3	Urban Residential
4	Suburban Commercial
5	Suburban Residential
6	Exurban
7	Rural

In general, when employing a floating zone technique, both population and employment densities are combined to determine the area type for an individual



zone. GDOT models have historically employed an approach that develops separate floating zone population and employment densities, then area types are obtained from a two-dimensional lookup table. Table 2-5 shows an example two-dimensional area type lookup table. Population and employment density ranges used in the lookup table are typically selected percentiles of the calculated floating zone results. Particular percentile values are chosen by evaluating the resulting area types to determine if expected results are being produced. If not, then different percentile range values are selected, until acceptable results are produced.

**Table 2-5 – Example Area Type Lookup Table**

Population Density (per acre)		Employment Density (per acre)							
Low	High	Low	0.00	0.01	0.31	2.00	6.76	9.43	25.17
		High	0.01	0.31	2.00	6.76	9.43	25.17	∞
0.00	0.05		7	7	6	4	3	3	1
0.05	0.22		7	6	6	4	3	3	1
0.22	0.59		6	6	5	4	3	2	1
0.59	0.83		6	6	5	4	3	2	1
0.83	3.73		5	5	5	4	3	2	1
3.73	5.57		5	5	4	3	3	2	1
5.57	∞		5	5	4	3	2	2	1

Future GDOT models can use another method to combine the population and employment densities. This alternate approach combines the two density values with a weighting factor giving more weight to the employment density. The following is a formula can be used:

$$TAZ \text{ Combined Density} = TAZ \text{ Population Density} + K * TAZ \text{ Employment Density}$$

A value of three (3) is recommended for the weight on employment density (K).

These TAZ combined densities are then stratified into ranges to define the TAZ area types using a single dimension lookup table. Table 2-6 shows an example single dimension area type lookup table using a TAZ combined density.

**Table 2-6 - Example Area Type Lookup (Combined Densities)**

Area Type Code	Lower Limit Combined Density	Upper Limit Combined Density
1	60.01	∞
2	21.51	60.00
3	11.51	21.50
4	5.61	11.50
5	2.41	5.60
6	1.01	2.40
7	0.00	1.00

Both approaches yield reasonable results and facilitate objectively determining TAZ area types that reflect changes in the development patterns of an urban area

over time (base year to horizon year). The single dimension lookup using combined densities is the recommended method because it is generally more straight-forward to implement and is more easily understood. Area type lookup tables will vary for each MPO.

**Link Capacities:** Facility type and area type are used in combination to determine free-flow speeds and capacities. Link capacities for the model network are obtained from a lookup table of per-lane hourly capacities based on facility type and area type. The final link capacity is calculated by multiplying the hourly capacity per lane by the number of lanes, which is automatically added to the links during the model application. The following table displays the hourly capacities per lane.

**Table 2-7 - Hourly Capacities per Lane**

Code	Facility Type	Area Type						
		1	2	3	4	5	6	7
1	Interstate	1900	1950	2000	2050	2100	2060	2020
2	Freeway	1600	1660	1730	1790	1850	1820	1780
3	Expressway	1300	1380	1450	1530	1600	1570	1540
4	Parkway	1170	1240	1310	1370	1440	1410	1380
6	Freeway to Freeway Ramp / CDs	1400	1530	1650	1780	1900	1860	1820
7	Freeway Entrance Ramp	900	1030	1150	1280	1400	1370	1340
8	Freeway Exit Ramp	800	810	810	820	820	810	790
11	Principal Arterial - Class I	1000	1030	1050	1080	1100	1080	1060
12	Principal Arterial - Class II	900	900	900	900	900	880	860
13	Minor Arterial - Class I	800	810	810	820	820	810	790
14	Minor Arterial - Class II	630	630	640	640	640	630	610
15	One Way Arterial	760	760	770	770	770	760	740
21	Major Collector	520	530	540	550	560	550	540
22	Minor Collector	380	390	390	400	400	390	380
23	One Way Collector	460	470	470	480	480	470	460
30	Local Road	340	350	360	370	380	370	360
32	Centroid Connector	0	0	0	0	0	0	0

**Link Speeds:** Link speeds in the model network are derived from a speed lookup table based on facility type and area type. Assumed free-flow speed are approximately five mph faster than typical speed limits for the various roadway classes and area types, taking into consideration control delay (i.e. traffic signals), if applicable. Peak and off-peak free-flow speeds were evaluated using observed speeds obtained from a travel time study conducted in the Augusta area. Based on the initial study of the speeds, a revised speed table was developed. An analysis of the Augusta data determined that Augusta's characteristics and data results are appropriate for use in the other Georgia MPO models. Final free-flow calibrated speeds are shown in the matrix below.

**Table 2-8 - Free-Flow Speed Matrix**

Code	Facility Type	Area Type						
		1	2	3	4	5	6	7
1	Interstate	55	60	60	60	60	70	70
2	Freeway	50	55	55	55	55	60	60
3	Expressway	50	50	50	50	55	55	55
4	Parkway	45	50	50	50	50	55	55
6	Freeway to Freeway Ramp / CDs	55	55	55	55	55	55	55
7	Freeway Entrance Ramp	45	50	50	50	50	55	55
8	Freeway Exit Ramp	22	23	30	31	34	40	47
11	Principal Arterial - Class I	25	28	33	34	37	47	52
12	Principal Arterial - Class II	23	26	31	32	35	45	49
13	Minor Arterial - Class I	22	23	30	31	34	40	47
14	Minor Arterial - Class II	21	22	27	30	32	38	45
15	One Way Arterial	23	26	30	32	35	42	48
21	Major Collector	17	18	21	27	29	34	42
22	Minor Collector	14	15	18	24	26	30	40
23	One Way Collector	17	18	21	27	29	34	42
30	Local Road	14	14	17	18	22	28	35
32	Centroid Connector	14	14	17	18	22	28	35

### 2.2.1 Turn Prohibitors

**Turn Prohibitors:** GDOT modeling procedures can include the addition of impedances to travel time and movement where the travel movement is prohibited (turn prohibitor). Turn penalties should be avoided and only used where necessary after exhausting system-level adjustments or network coding methods. Turn prohibitors are coded in a separate turn penalty text file which lists the node numbers for the intersection and the applicable upstream and downstream nodes.

Each record in the text file designates a specific movement (a-b-c), a set identifier for the movement, the penalty to be assessed and a comment noting the location. The penalty may be a prohibition, a fixed unit penalty, or a reference to a function in the function section. A prohibition is designated as the constant -1. **It is the user's responsibility to make sure that the penalty values are in the proper scale and units as the paths to which they are being applied.**

Sample Turn Penalty File:

```
4100 1421 4102 1 0.3 ;Spring Street Bridge
4102 1421 4100 1 0.3 ;Spring Street Bridge
1717 1719 1744 0 -1 ;Emery Highway Median at Fort Hill
1760 1759 1789 0 -1 ;Emery Highway Median near Coliseum
1891 1776 1879 0 -1 ;Emery Highway at Spring St
1762 1785 1763 0 -1 ;Emery Highway at Second St
2007 1945 2027 0 -1 ;Spring Street to WB I-16
1945 2007 1900 0 -1 ;I-75 at Mercer Univ. Drive
2778 2738 4648 0 -1 ;Mercer Univ. Drive at Montpelier
4648 2738 2778 0 -1 ;Mercer Univ. Drive at Montpelier
2950 2952 2025 0 -1 ;I-75 at Mercer Univ. Drive
3426 3428 2406 1 -1
```

## 2.2.2 Identifying Facilities for Network Coding

There are several criteria used in the identification of facilities to be included in the highway networks. The functional road classification, the density of urban development, judgment and a thorough knowledge of how the network is to be used are the major criteria for the selection of facilities to be included in the highway network. In building the network, the street classification map, a proposed list of projects, and a general knowledge of the area are needed. It is very important that there is compatibility between the TAZs and the roadway network system. For example, zones should not have roads cutting through them as it makes accurate traffic assignments difficult. Major roadway facilities should be used as the boundaries for the zone system. See Section 3 for more information on defining TAZs.

The HPMS functional classification of the highway system plays an important role in network definition, calibration, and in emissions modeling. A Highway Performance Monitoring System (HPMS) street classification map is available from the Office of Transportation Data. **For all travel demand models, all facilities functionally classified as minor collector and above should be included in the highway networks.** Roads classified below minor collector (local roads) are added if it is necessary for:

- Connectivity
- Defining an external station



- It is known that a widening project or major development of regional impact (DRI) is planned in the future
- “Regionally significant” facilities based on Interagency Consultation Process (used for Conformity Determination Reports)
- A facility needed to load traffic out of a TAZ

For future improvements, the projects typically come from the MPO’s planning process, but often additional projects will be outlined in SPLOST/1% Tax programs. Contact GDOT and the local governments to ensure that all planned transportation improvements are included in your project list.

### 3 Defining Traffic Analysis Zones

A fine Traffic Analysis Zone (TAZ) structure, provided the associated socio-economic data is accurate, helps to produce more accurate travel estimates at smaller geographic scales. But, the ability to accurately allocate socio-economic data to zones diminishes as zone size decreases (particularly for future forecasts). Refinement of TAZs is an important model component. Consultants working in these areas or developing models elsewhere in the state are suggested to coordinate with GDOT for any proposed changes or when defining TAZs for new models.

#### 3.1 Creating Traffic Analysis Zones

Most urban areas in Georgia have established TAZ boundaries, but when conducting a model update, existing boundaries should be evaluated and modified if needed. Areas that do not currently have travel demand models will need to establish TAZ boundaries, in cooperation with GDOT, during the model development process.

##### 3.1.1 How to Select Appropriate TAZ Boundaries

It is important to establish zone boundaries that are appropriate for the purpose of the model. For example, appropriate zones for a statewide model may be census tracts, counties, or larger areas. A model for a corridor study may use very small zones. Urban area model zones generally fall somewhere in between.

The ideal zone would serve:

- The transportation planner as a suitable area for:
  - Travel demand modeling and analyses (including trip generation, trip distribution, mode split, if applicable, and traffic assignment).
  - Quality control of demographics provided by planning agency (zones aggregated to Census-defined units such as Block Groups, Tracts, and Census TAZs).
- The planning agency:

- As a suitable statistical unit for maintaining historical data.
- As a unit of sufficient size to enable relatively accurate projection.
- Preparation & quality control of demographics (zones aggregated to Census units).
- As an enumeration unit to be provided to the Census Bureau for the next Census.
- Other uses by planning agency or participating units of government

Balancing these potentially competing desires leads to the need to establish priorities. As a result, GDOT recommends the following prioritized list of steps, which will be explained in more detail, for defining initial TAZ boundaries:

1. Ensure compatibility with appropriate US Census Bureau boundaries (preferably those formed by roadways).
2. Include major topographic barriers as zone boundaries, such as large rivers or major railroad lines. (These can be used in the determination of screenlines).
3. Use the modeled highway network when possible as zone boundaries, except where undesirable zone boundaries would result (e.g. parallel screenlines).
4. Check for general zonal homogeneity (similar land use, density, socio-economic attributes, etc.) and trip generating potential.

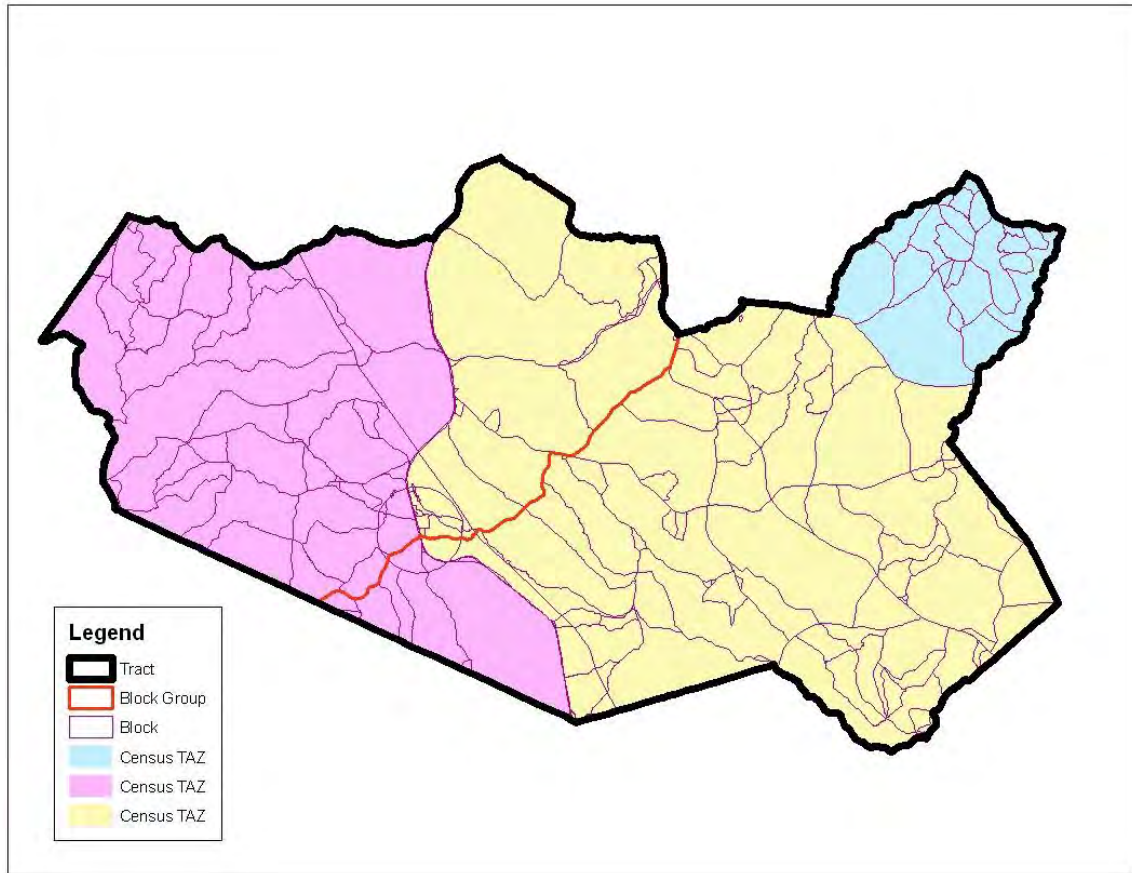
In the case of mixed use development, zonal homogeneity is not possible. If the development is large enough, it should be considered a single zone in order to properly capture the intrazonal trips generated within the development. If the above priorities are observed, errors in traffic assignments are less likely to be attributable to zone boundary definitions. Although uncommon, it may be necessary to revise initial TAZ boundaries during model calibration and validation if isolated poor traffic assignments can be attributed to zone definitions.

### **3.1.2 Use of Census Information**

In most areas, the only historical data for areas smaller than a political subdivision is that obtained through the Census Bureau. Because of this, geographic boundaries used by the Census Bureau have usually been used as the starting point for defining TAZ boundaries. This has facilitated updating and validating planning information using subsequent Census data.

Figure 3-1 displays an example of the most common Census Bureau geographic units: Blocks, Block Groups, and Tracts. Census Blocks are the lowest level of Census geography. Blocks are combined to produce Block Groups. Block Groups are combined to produce Tracts.

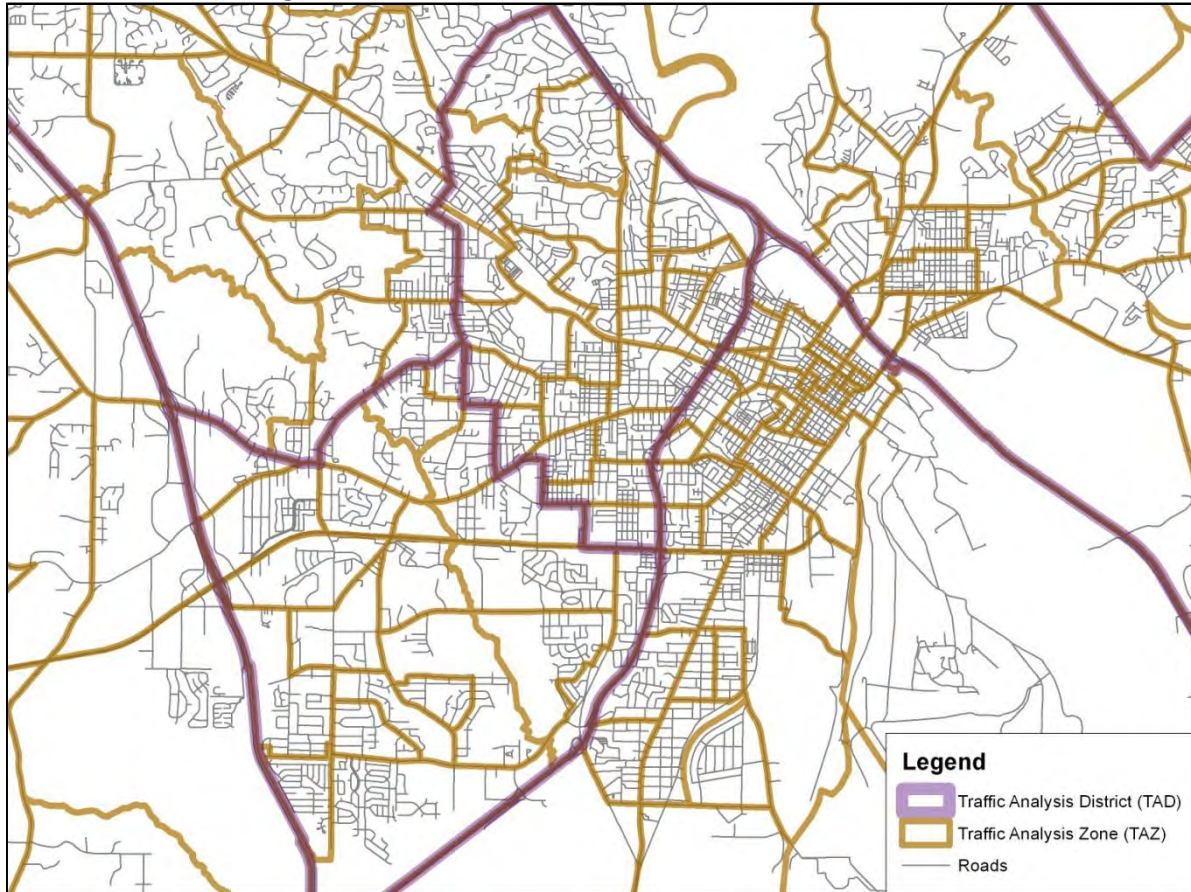
**Figure 3-1 - US Census Bureau Geography**



Historically GDOT has recommended that TAZ boundaries be defined as subdivisions of Census Tracts where each Census Block could be associated with one TAZ. Roads and other major geographic features were used as the basis for assigning blocks to a TAZ. Block Groups were not a major consideration in defining zone boundaries.

Beginning with the 2010 Census, new geographic units called Traffic Analysis Districts (TAD) were introduced through the Census Transportation Planning Package (CTPP) program. TAD boundaries were defined using a population threshold of 20,000 to ensure that CTPP tabulations from the American Community Survey (ACS) can be produced for the entire nation without data suppression due to disclosure rules. New Census TAZ boundaries were also defined in Georgia, where each Census TAZ falls within one Census TAD. Figure 3-2 displays an example of Census TAD and Census TAZ boundaries.

**Figure 3-2 - Census TAD and TAZ boundaries**

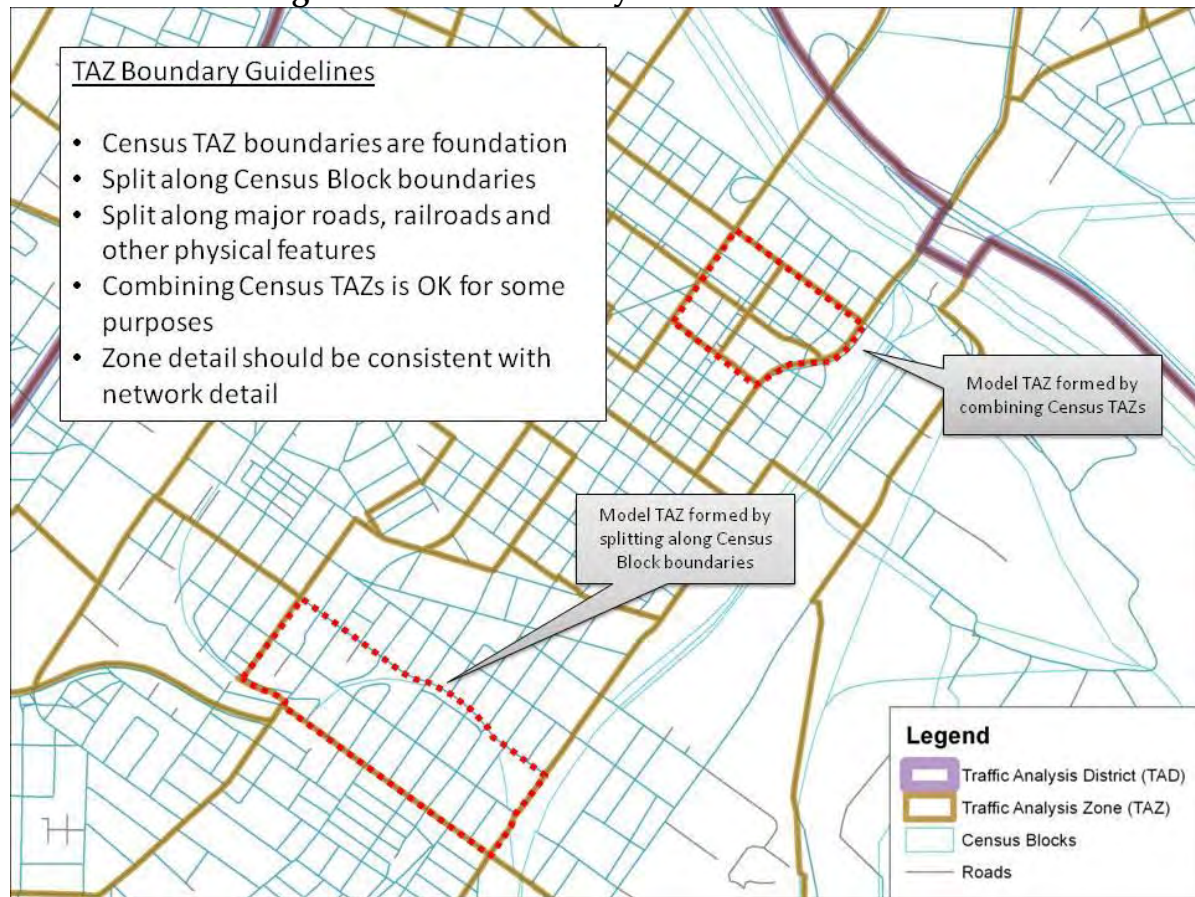


Since the most reliable CTPP tabulations are expected to be based on TAD boundaries and each Census TAZ falls within only one TAD, GDOT recommends using Census TAZ boundaries as the foundation for defining travel demand model TAZ boundaries. It is important to note that it may be desirable to define travel demand model zones that are created by subdividing Census TAZs or by combining Census TAZs. For MPO travel demand models, it is more likely that travel demand model zones would be Census TAZs or smaller. If Census zones are subdivided to create more detailed model zones, GDOT highly recommends that Census Blocks be used as the basis for the splits, so that zone splits follow Census Block boundaries and do not split Census Blocks. If zones are defined by combining Census TAZs, GDOT highly recommends that zones fall within one and only one Census TAD.

Figure 3-3 summarizes the general guidelines for defining TAZ boundaries.



**Figure 3-3 - Traffic Analysis Zone Guidelines**



Local Geographic Information Systems (GIS) make it increasingly likely for local planning agencies to propose zones with boundaries NOT recognized by the U. S. Census Bureau. This is the case with most political subdivisions and with parcel-based mapping. To ensure consistency with the Census, GDOT recommends that zone boundary mapping conform to that recognized by the Census Bureau as previously described. Since Census Block Groups most often split tracts along streams rather than highways, they often do not form good TAZ boundaries for traffic assignment purposes and should be avoided.

### 3.1.3 Major Topographic Barriers

Screenlines should be identified using natural or constructed physical barriers, such as rivers, lakes, railroads, etc. These must cross the entire study area and may do so using combinations of barrier types. Barrier is the key here. These screenlines will be central to validating several modeling steps. Second only to Census TAZs, screenlines will form TAZ boundaries.

TAZ boundaries should follow tangible physical features such as major roads, railroads, or rivers/streams. Major roads and railroads should be used as zone boundaries when possible (i.e., considering other guidelines such as not splitting Census Tracts).

### **3.1.4 Modeled Highway Network**

It is desirable for the network to reflect, as much as possible, the area's federal-aid functionally classified roadway system. Once the modeled highway network is defined, zones should be split progressively based on a hierarchy of roadway types until zone-network compatibility<sup>1</sup> is achieved. The following hierarchy is recommended:

- Define the Interstates/Freeways/Expressways as zone boundaries except where such divisions produce undesirable zones (e.g. bounded on three sides by railroads and on the fourth by a freeway, with no direct access).
- Define the arterials as zone boundaries except where such divisions produce undesirable zones (e.g. narrow strip of right-of-way between a previously defined boundary such as a railroad serving as a screenline and a parallel major arterial).
- Define the collectors as zone boundaries except where such divisions produce undesirable zones.
- Define new location roadways under construction or having completed the environmental phase as zone boundaries. Although such roadways will not be reflected in the base year network, they will be in future system networks. Using these as zone boundaries will improve traffic assignment results. Boundaries along new location roadways should also be reflected in the next Census and will likely serve as a Census boundary in the future.

### **3.1.5 Zonal Homogeneity**

Once zones are defined based on the modeled highway network, planners may further divide zones with socio-economic homogeneity as a goal. Areas that have similar trip-making characteristics (similar land uses, incomes, auto ownership levels, etc.) should be grouped together. This supports the statistical validity of several aspects of the travel demand modeling process. Generally, zonal homogeneity will not be attainable in the instance of mixed use developments. The following are typical factors in splitting zones for homogeneity purposes:

- Population per acre (if possible, low density and high density areas should be in separate zones).
- Occupied dwellings per structure (if possible, apartment areas should be separated from single unit areas).

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<sup>1</sup> Zone-Network Compatibility is generally achieved when no modeled roadways significantly bisect zones, except to avoid other undesirable modeling results. To do otherwise is not consistent with GDOT's acceptable modeling procedures.

- Household income (if possible, low, middle, and high income areas should be separated).
- Special major traffic generators, such as hospitals, shopping centers, etc., should be isolated into individual zones for specialized analysis.
- Traffic zones with existing or future potential for generating a very high number of trips should be avoided. Zones that produce or attract too many trips can cause unreasonable spikes in loaded volumes where centroid connectors tie into the network.

Zone splits for homogeneity purposes should be along streets or along non-screenline topographic features such as streams or railroads. TAZ boundaries should not be assigned to dynamic jurisdictional lines such as city limits that do not abut other city limits. Fixed jurisdictional boundaries such as county lines or abutting city limits can be used, but are generally discouraged. Assigning TAZ boundaries to intangible arbitrary lines (e.g. property line defined solely by surveyed points) is highly discouraged and not supported by Census boundary parameters.

### 3.1.6 Other General Guidelines

A zone should have a symmetrical shape, avoiding narrow elongated, or “L” shapes. Elongated or “L” shaped zones make it difficult to properly assign trips onto the network with centroid connectors. Normally, zones are smaller in dense urban areas and larger in the outlying areas.

### 3.1.7 Estimated Number of Zones

The number of zones should be proportionate to the population. A rule-of-thumb that can be used to estimate the approximate number of TAZs for an urban area model is to take the square root of the study area population. Another commonly used rule of thumb recommends the number of zones be equal to the base year population divided by five-hundred. Table 3-1 displays the estimated number of zones for different population levels using these rules-of-thumb:

**Table 3-1 - Rules of Thumb for Estimating Number of Traffic Zones**

Study Area Population	Estimated # Zones Pop <sup>0.5</sup>	Estimated # Zones Pop/500
50,000	224	100
75,000	274	150
100,000	316	200
150,000	387	300
200,000	447	400
250,000	500	500
500,000	707	1000
750,000	866	1500
1,000,000	1000	2000

### 3.1.8 Procedure for Numbering

A systematic methodology for numbering zones is desirable. Such a system enables the user to quickly locate a particular zone based on its number and relationship to the numbering pattern. It is recommended that the numbering system be prepared in consultation between the MPO and GDOT. Systematically numbered zones tend to:

- Result in closer proximity of contiguously numbered zones;
- Enable the planner to more easily locate zones by proximity; and
- Improve the efficiency of network related computer processing.

Once the zones and external stations have been numbered, it is often desirable to insert a buffer between the last external station number and the first node number used in defining the roadway (traffic assignment) network. This buffer allows for future expansion of the study area and/or future subdivision of zones.

Typically zone number one (1) is located in the CBD. It is recommended that planners develop a systematic numbering pattern for the rest of the study area's zones. Using the predetermined pattern, assign a consecutive number to each traffic analysis zone.

A common numbering pattern is to divide the study area into sectors or quadrants (e.g., CBD, NE, SE, SW, and NW). Once all of the zones in the CBD have been numbered, the modeler would move to the NE sector and begin number zones in a systematic manner, starting adjacent to the CBD. Once all the zones in the NE sector are numbered, the modeler would proceed in a clockwise direction to the SE sector and continue numbering zones beginning at the CBD and using consecutive numbers. This repeats, moving clockwise around the study area until all zones are numbered.

A second zone numbering pattern is based on the geographical areas formed by the screenlines (which should be zone boundaries). One could concentrate numbering TAZs on one side of a screenline before moving to the other side with consecutive numbering. This would simplify identification of TAZ ranges for topographical penalties – if needed.

A third numbering pattern is to number all the TAZs within a Census TAZ. Then move to the next TAZ within the same County. Continue this process until all TAZs in the County have been assigned a number.

Later, external station numbers are assigned to the network's roadways as they enter and exit the study area boundary. Although this cannot be done until the



roadway network is defined, the numbering of external stations is dependent on the numbering of traffic analysis zones. Although not required, the first external station is often the next consecutive number following the last number used for traffic analysis zones. If a buffer of zones is desired between the last internal zones and the first external zone, it is advisable to insert “dummy<sup>2</sup>” zones in the network or specific steps taken in model scripts to ensure the gaps in TAZ numbering are properly treated. If the “clockwise” numbering procedure described above is used, the first external station to be numbered would be located in the northern part of the study area, near the last traffic analysis zone.

## 4 Socio-Economic Data

This section is intended to serve as a guide for preparing socio-economic data for Georgia’s regional travel demand models. This guide is intended for consultants or planners in MPOs that may not have established methodologies or are considering revising their current methodologies. Base year data produced by MPOs is critical for the calibration of the regional travel demand model.

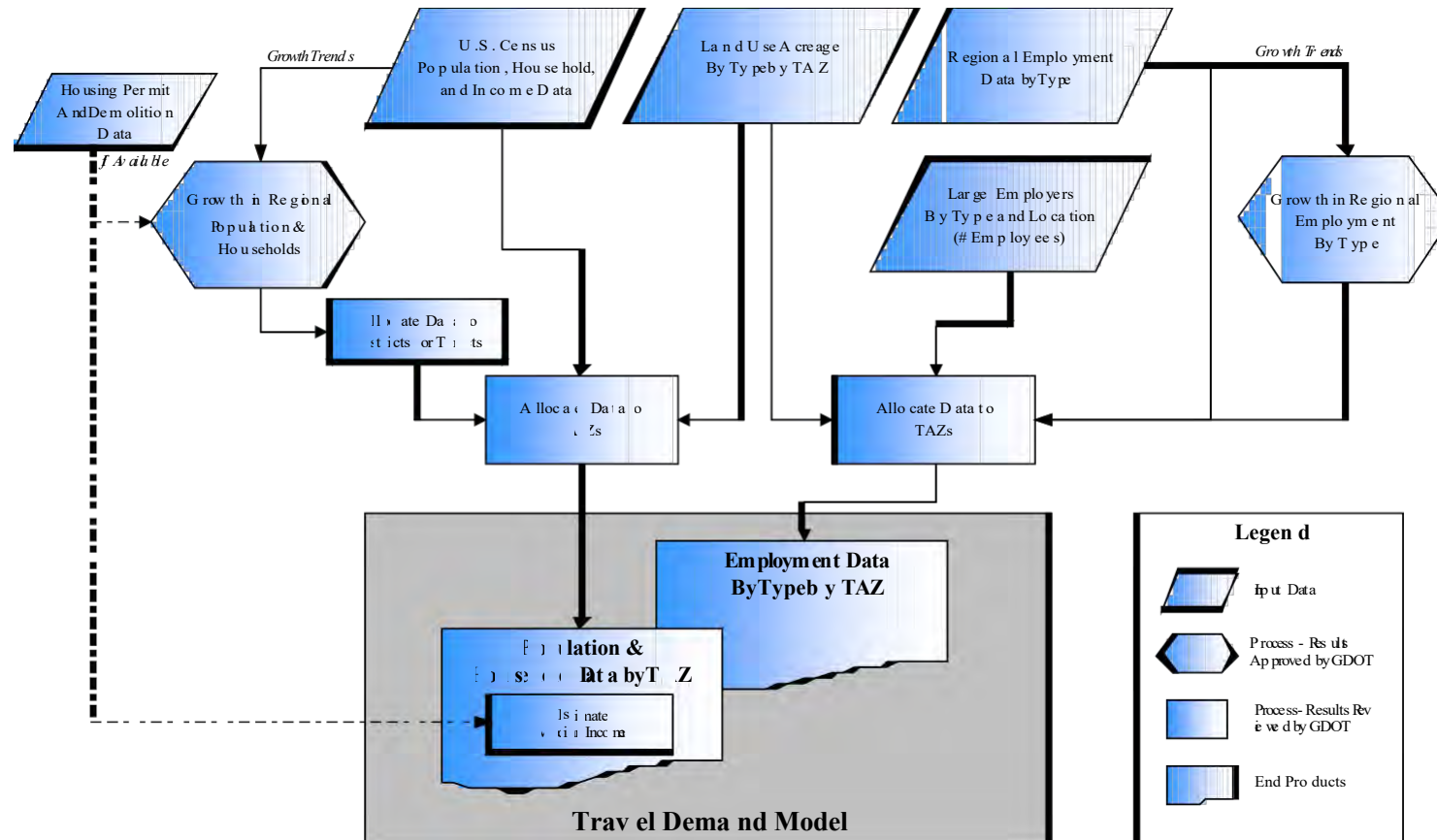
Figure 4-1 displays a generalized socio-economic data development process that is recommended by GDOT. This process can be applied in developing base year and future year data, although specific steps in the process may differ. This section provides an overview of a generalized data development process.

To support the development and review of socioeconomic data, a review panel (i.e., MPO’s Transportation Coordinating Committee (TCC) and/or other local government technical personnel) should be formed. The purpose of the panel is to provide another level of review of control totals and the socio-economic data for reasonableness.

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<sup>2</sup> A “dummy” zone is a centroid in the network without associated socioeconomic data that is added to facilitate splitting zones for future corridor studies or adding zones for study area expansion. The zone must be added to the network and socio-economic files so that the modeling steps will run.

**Figure 4-1 – Generalized Travel Model Socio-Economic Data Development Process**



## 4.1 Base Year Data

The data required for each TAZ and potential data sources are shown below.

**Table 4-1 - Socio-Economic and General Data Required by TAZ**

Data Variables	Potential Data Sources
Population	U.S. Census block-level data ( <a href="http://www.census.gov">www.census.gov</a> ) and local building and demolition permits
Households	
Median Income	
Total Employment	U.S. Census, Georgia Department of Labor ( <a href="http://www.dol.state.ga.us">www.dol.state.ga.us</a> ), commercial sources (such as Dun & Bradstreet), local county building permit data, and local employment data Bureau of Economic Analysis ( <a href="http://www.bea.gov">www.bea.gov</a> ) Census Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES)
Retail Employment	
Service Employment	
Manufacturing Employment	
Wholesale Employment	
School Enrollment	Georgia Department of Education, County/Municipalities Boards of Education, Georgia Independent Schools Association, local school systems, private schools, and Georgia Board of Regents
Acres	Geographic Information Systems

### 4.1.1 Population, Households, and Income

U.S. Census data is the primary source for developing population and household data at the TAZ level. Population and household totals are available at the Census block level in

the Decennial Census. TAZ boundaries should not cross Census block boundaries, so estimation of population and household data are usually aggregation processes.

Growth or decline that occurs between Census counts must be reflected in base year data (for base years between Census years). American Community Survey (ACS) provides 1 year, 3 year and 5 year estimates. TAZ specific adjustments can usually be made using local building and demolition permit data, supplemented by local knowledge of building activity. If building activity data is unavailable, planners should use a step-down estimation process. Begin by estimating the regional growth in population, then allocate that growth to planning districts (perhaps based on discussions with people who are knowledgeable of local building patterns), then further disaggregate the growth to TAZs. Existing land uses can be used as a basis for TAZ level allocation.

Adjustments to population and households need to be taken for instances where group quarters exist. Common examples of this type of housing include prisons, hospitals, nursing homes and dormitories. While these group quarters have a distinct population, residents do not make trips in a typical fashion. For prisons and hospitals, the population should be removed from the socioeconomic data used in the modeling process. In other examples, a more representative population should be used to model the population utilizing the transportation network. In all of these examples, these group quarters should also correspond to a certain level of employment, e.g., hospital staff. In the case of a hospital, this employment will generate trips to the TAZ that is more representative of true conditions.

Income data is available at the Census Tract (and Block Group) level. Since detailed income data is not available for smaller geographic areas, TAZ income data can be estimated from its associated Census Tract's (or Block Group's) data. Relatively large changes in development patterns (e.g., high cost homes constructed in a low income area) are usually necessary to produce significant changes in median income at the Census tract level. Such changes often occur slowly, so most TAZs will not require adjustments from Census income data. However, if specific TAZs have experienced considerable changes in development patterns since the last Census (e.g., new residential areas in a rural tract), some adjustments to income data are recommended.

#### **4.1.2 Employment by Type**

There are multiple sources of employment data. The Georgia Department of Labor (GDOL) provides county profiles and other reports that include county employment totals by employment class<sup>3</sup>. The US Census Bureau produces County Business Patterns reports, which provide employment by type at the county level. The US Department of Commerce Bureau of Economic Analysis (BEA) produces county employment estimates by North American Industry Classification System (NAICS) categories that should be used as control totals for Georgia MPO models. County level employment data can be downloaded from

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<sup>3</sup> <http://explorer.dol.state.ga.us/mis/profiles.htm>



the BEA website<sup>4</sup>. BEA data serves as a good source for control totals because the estimates include employment for industries that are not covered, or not fully covered, by unemployment insurance programs, where most other data sources exclude a significant amount of employment. Table 4-2 summarizes how NAICS employment data should be grouped to produce the required GDOT control totals for employment by type.

**Table 4-2 - GDOT NAICS Employment Equivalency Table**

<b>NAICS Employment Category</b>	<b>GDOT Employment Category</b>
Farm employment	Service Employment
Forestry, fishing, and related activities	Service Employment
Mining	Service Employment
Utilities	Service Employment
Construction	Service Employment
Manufacturing	Manufacturing Employment
Wholesale trade	Wholesale Employment
Retail trade	Retail Employment
Transportation and warehousing	Wholesale Employment
Information	Service Employment
Finance and insurance	Service Employment
Real estate and rental and leasing	Service Employment
Professional, scientific, and technical services	Service Employment
Management of companies and enterprises	Service Employment
Administration and waste services	Service Employment
Educational services	Service Employment
Health care and social assistance	Service Employment
Arts, entertainment, and recreation	Service Employment
Accommodation and food services	Retail Employment
Other services, except public administration	Service Employment
Government and government enterprises	Service Employment

If geocoded GDOL data is available for a base year it can be allocated to TAZ using a GIS system such as ArcGIS. This is a good option for assigning employment to TAZs because it represents relatively accurate estimates of small area employment by type and offers a systematic method to allocate employment to TAZs. GDOL data and even private vendor data sources (e.g. Dun & Bradstreet) often experience common issues that should be considered when used, including:

- Some employer headquarters may be outside the county in which the employment is actually located.
- Some employer records are not geocoded.

<sup>4</sup> <http://www.bea.gov> [GDP by State and Metropolitan Area > Local Area Personal Income & Employment > Total full-time and part-time employment by industry (CA25, CA25N) > NAICS (2001 forward) > County > Georgia > Select applicable counties > Select year > then download]

- Some records may be grouped to an arbitrary location within the county when the address could not be geocoded.
- There may be some duplication of records.
- GDOL data does not include sole proprietorships or other classes of employment that are not covered by unemployment compensation through the state.

In each instance these items will need to be checked to determine if the GDOL data or geocoding need to be modified to correctly represent the amount and location of employment within the county. Employment for large employers and the geocoded location of large employers should be verified because they have significant potential influence on work trips. Employment for school districts should be checked to ascertain that it represents employment at individual schools rather than just the school district headquarters location.

Census Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) serves as a useful source for employment by type for small areas, when DOL data is unavailable. LODES employment data is available at the Census Block level, but it should not be used or applied at such small geographies due to methods that are employed to produce the data. It is reasonable to accumulate LODES data for all Census Blocks that are within a TAZ to estimate TAZ level employment data, however. As with all small area employment data sources, LODES data summarized at the TAZ level should be reviewed for reasonableness, including the issues previously described regarding GDOT and private vendor data.

If small area employment data is unavailable, TAZ estimates should be developed using a step-down process. The largest employers in a county should be identified and employment totals (by category) assigned to their respective TAZ. Employment is then allocated to TAZs based on each TAZ's share of the county's corresponding land use category<sup>5</sup>. Retail employment can be allocated based on a TAZ's share of the county's commercial land use acreage. Service employment can be allocated based on a TAZ's share of the commercial and residential acreage. Manufacturing employment can be allocated based on a TAZ's share of the county's industrial land use acreage. Wholesale employment can be allocated based on a TAZ's share of the county's industrial and commercial acreage. Residential acreage can be used in conjunction with Census data to allocate county population to TAZs (particularly in future allocation). Rural/vacant developable acreage and un-developable acreage is useful in determining developable acreage for each TAZ (i.e., subtracting from total acreage). Developable acreage can serve as a weighting factor for data allocation (growth from the base year to the future year). A step-down process can also begin with exogenously estimated district-level employment control totals. Then the previously described step-down process could be applied within each district separately, instead of the county-level.

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<sup>5</sup>Future data development can be supported by similar land use acreage assignments based on proposed future land use plans.

**Table 4-3 - Potential TAZ Land Use Database Variables**

Total Acres
Existing Commercial Acres
Existing Residential Acres (best if stratified into density classes)
Existing Industrial Acres
Existing Rural/Vacant Developable Acres
Undevelopable Acres
Future Commercial Acres
Future Residential Acres (best if stratified into density classes)
Future Industrial Acres
Future Rural/Vacant Developable Acres

#### **4.1.3 School Enrollment**

It is preferable to obtain enrollment totals for each school in the study area (Elementary, Middle, High School, Private Schools, Technical Schools, Colleges, and Universities). If individual enrollments are not available, then system-wide totals by type of school could be an option. When combined with a comprehensive list of schools, an average school size could be calculated and allocated to each school (by type) equally. School enrollments should be available from school systems or through directly contacting individual schools. However, other potential data sources also exist, such as the State Board of Education, the Georgia Department of Technical and Adult Education, or the State Board of Regents.

#### **4.1.4 Acres**

TAZ acreage can be estimated best using GIS. MPOs should each maintain a GIS layer for TAZ boundaries. A regularly maintained land use database would also assist in developing consistency in socio-economic data estimates.

### **4.2 Future Year Projections**

All MPOs are encouraged to consider future land use plans and significant infrastructure changes (sewer extensions, new highway access, economic development plans, etc.) into future long-range socio-economic forecasts.

The first step in developing future year projections is estimating regional population growth. Control totals for other forecast variables can be estimated based on the projected growth rate in population. For example, future total employment can be estimated by multiplying the base year ratio of employment and population to the projected population. The socio-economic data committee could provide guidance on shifts in the employment base that may need to be applied to future employment totals by type (e.g., reflect national trends of shifting to a more service oriented economy). Future school enrollment control

totals (by type of school) can be estimated using the base year ratio of enrollment and population. Average enrollments can then be allocated to schools by type. Unless significant changes in unemployment rates and age distributions are expected, assuming employment and school enrollments follow the growth in population should be sufficient for transportation planning purposes.

There are many methods (and assumptions) for projecting population. Each MPO is responsible for developing future population forecasts. GDOT is responsible for ensuring that growth forecasts are reasonable. **Prior to allocating future projections to TAZs, MPOs should provide GDOT documentation of the process and assumptions for their growth forecasts.** GDOT conducts reasonableness checks on county population growth forecasts. Reasonableness checks will compare MPO forecasts to population projections using various methods (linear, exponential, share, etc.). If MPO forecasts are substantially different from GDOT's expectations, GDOT will work with the MPO to resolve any disparities.

There are many approaches to developing socio-economic data for travel demand models. This section provides relatively simple approaches for developing data. Provided below are simplified descriptions of the approaches that have been presented.

#### **4.2.1 Population and Households**

- Primary data source: Existing US Census block-level data for distribution
- Assign each block to a TAZ
- Aggregate block-level data to produce TAZ-level Census data
- If the base year is different than the Census:
  - Estimate growth in population & households since the last Census
  - Allocate the growth in population & households using share of residential acreage (perhaps weighted by district or area type) or some other rational process
- Collect county growth forecasts from the Georgia Office of Planning and Budget (OPB) to use as a potential guide or MPO growth forecasts from GDOT's REMI model
- Socio-economic data review panel reviews data and recommends appropriate modifications
- Submit base year population and households data for use in developing the travel demand model to GDOT for review (if GDOT is responsible for building the model)
- Develop and document the future regional projection methodology
- Socio-economic data review panel reviews methodology and projections and recommends appropriate modifications
- Submit projection methodology and proposed control totals to GDOT
- GDOT concurs or works with the MPO to reach an agreement on the methodology and control totals
- Allocate future population growth to TAZs



- Socio-economic data review panel reviews data and recommends appropriate modifications (may include multiple growth scenarios – at the discretion of the MPO and the data review panel)
- Submit future year data for developing the future year travel models to GDOT for review (if GDOT is responsible for building the model)

#### **4.2.2 Median Income**

- Primary source: US Census Tract or Block Group level data
- Assign each TAZ to a Tract or Block Group
- Assign the Census median income to each TAZ
- If the base year is different than the Census (or for future data):
  - Estimate the share of new households that fall within each income group (likely based on tract or planning level assumptions and/or local knowledge of specific new developments).
  - Estimate the median income by calculating a weighted average of the Census data and the assumed distribution of new households.
  - Income should be reported in 2010 dollars.

#### **4.2.3 Employment by Type**

- Primary data sources:
  - Bureau of Economic Analysis (BEA)
  - Georgia Department of Labor (supplemented with County Business Patterns, private vendor sources, etc.)
  - Census Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES)
- Assign the employment data to their respective TAZs based on the latitude and longitude coordinates, if available (i.e. geocode)
- Geocode or aggregate small area employment data to TAZs and review for reasonableness
- Identify the area's largest employers, determine employment levels for them, and categorize the employment by type
- Assign the largest employers' data to their respective TAZs
- Subtract the largest employers from the county-level data
- If small area employment data is unavailable, allocate the remaining employment using the share of appropriate land-use acreage (perhaps weighted by district or area type) or some other rational process
  - Employment Class and Potential Associated Land Use Categories
    - Retail – Commercial
    - Service – Commercial & Residential
    - Manufacturing – Industrial
    - Wholesale – Industrial & Commercial
- Socio-economic data review panel reviews data and recommends appropriate modifications

- Submit base year employment data for use in developing the travel demand model to GDOT for review (if GDOT is responsible for building the model)
- Estimate future employment control totals as a function of projected population growth and projected shifts in the economic base of the region
- Socio-economic data review panel reviews employment projections and recommends appropriate modifications
- Submit employment projection assumptions and proposed control totals to GDOT
- GDOT concurs or works with the MPO to reach an agreement on the assumptions and control totals
- Allocate future employment growth to TAZs
- Socio-economic data review panel reviews data and recommends appropriate modifications (may include multiple growth scenarios – at the discretion of the MPO and the data review panel)
- Submit future year data for GDOT review and use in developing the future year travel models

#### **4.2.4 School Enrollment**

- Primary data sources: Local school boards, private schools, State Board of Education, State Board of Regents, and the Georgia Department of Technical and Adult Education.
- Manually assign school enrollment data to TAZs
- If specific school enrollments are unavailable:
  - Obtain school system total enrollments by type of school
  - Obtain lists of schools and assign each school to its appropriate TAZ
  - Determine the number of schools by type and calculate an average school size by type
  - Assign the average number of students in each school by type to each school's TAZ
- Ensure TAZ service employment is reasonable for zones with schools to account for employment at schools

#### **4.2.5 Acres**

- Develop a GIS-based TAZ layer and calculate total acres using the geography of the zones (if possible determine and report the total acreage that is developable and undevelopable)

### **4.3 Procedures to Check the Socio-Economic Data**

#### **4.3.1 Population per Household Ratio**

- Generally does not exceed 7 persons per household.
  - Anything over 7 persons per household should be explainable by some form of group housing within the TAZ.
  - Do not include population in hospitals, nursing homes, and prisons since the people who reside in these facilities are not making trips on the network.

These populations are removed from the TAZ. For these types of businesses, the employment alone will reasonably generate the trips associated with these facilities.

- Will decrease gradually over time, but not more than a few tenths. A drop of more than 0.5 persons per household over a 20 year span is significant.
- Will typically be greater in suburban counties than in the center of a city.
- Is not less than 1.0 – this would correspond to a household that has no population which by definition does not exist (household is a populated home).

#### **4.3.2 Households (Occupied)**

- **Do not decrease** from existing to future projections without an explainable reason (e.g., redevelopment of a residential area into a commercial property – not a common occurrence).
- Change in households should show a similar pattern to change in population.

#### **4.3.3 Households per Acre**

- Over 4 households per acre would represent multifamily housing. Multifamily housing is typically located nearby a higher functional classification road (i.e., they are not generally located in rural or isolated areas).
- Over 6 households per acre would signify multistory buildings. Again, check location for reasonableness.

#### **4.3.4 Employment**

- About half of the available land can generally be considered for the building. Use the following to see if the size of the building is in line with the acreage of the TAZ. Include households as well (4 households per acre unless it is multifamily).
  - Office 250 square feet per employee
  - Retail 300 square feet per employee
  - Wholesale 700 square feet per employee
  - Manufacturing 700 square feet per employee

#### **4.3.5 Workforce Utilization**

- Ratio of Population to Employees generally stays constant. There should not be a significant change.

#### **4.3.6 Income**

- Generally does not change. Keep in similar dollars for future forecasts. Do not adjust for inflation.

#### **4.3.7 School Enrollment**

- School enrollment is generally around 20% of population. This number may be higher if there are large universities within the region.
- The ratio of school enrollment to population should remain relatively similar from the base to future year.

## 5 External Model Development

The following list briefly outlines some of the key steps recommended by GDOT to create a new external trip model for a base year model.

1. Identify the external stations for the model. Include all federal and state routes and also include other significant county and city routes. Also review adjacent MPO or model boundaries for consistency between facilities.
2. Identify the GDOT coverage count station that is closest to the boundary of the model for each external station. The coverage count station identified for each external station may or may not be located in the same county as the model.
3. Obtain the base year average daily traffic (ADT) for each external station from the GDOT coverage count database. If an external station does not have a coverage count, assume an appropriate daily volume based on functional classification and location.
4. Identify the functional classification for each external station facility, as defined by GDOT.
5. Based on the functional classification of the external station facility, assume a truck percentage. If available, use percent trucks from recent vehicle-classification counts. Truck percentages, where available are listed on GDOT's web site.
6. Assume a percentage of external-external trips for each external station. The remainder of the trips at the external station will be internal-external trips.
7. Check the results of the fratar model to confirm that there was adequate closure for each of the external stations (i.e. the fratar volumes match the desired volumes). Also, list the top ten external-external trip exchanges for both the passenger car and truck trip tables and check to make sure that these trip exchanges make sense.

## 6 Trip Generation

GDOT maintains a default trip generation process. The process uses the following trip purposes for estimation of internal person trips:

- Home Based Work (HBW)
- Home Based Other (HBO)
- Home Based Shopping (HBS)
- Non-Home Based (NHB)

In regions with a significant level of college and university enrollment, GDOT recommends also including a separate trip purpose for university trips.



- Home Based University (HBU)

The following additional purposes are used for estimation of other vehicle trips:

- Trucks (Commercial Vehicles)
- Internal-External Passenger Cars
- Internal-External Trucks (Commercial Vehicles)

## 6.1 Traffic Analysis Zone Data

GDOT's trip generation process requires the following socio-economic data to be compiled at the TAZ level:

- Population: The total number of individuals that reside in each TAZ.
- Households: Total number of occupied households in a given TAZ.
- Median Income: Median household income in TAZ (constant dollars, typically using the recent Decennial Census year).
- Retail Employment: The number of employees working for a retail business in a given TAZ where the business is located.
- Service Employment: The number of employees working for service based business in a given TAZ where the business is located.
- Manufacture Employment: The number of employees working for a manufacturing business in a given TAZ where the business is located.
- Wholesale Employment: The number of employees working for a wholesale business in a given TAZ where the business is located.
- Total Employment: The total number of employees in a given TAZs (at the work location).
- School Enrollment: The total number of enrolled students in a given TAZ where educational facilities are located.
- Acres: Developable area of a TAZ in acres.

## 6.2 Production Model

GDOT's internal daily person trips are estimated using trip rates that are cross-classified by household size and autos available. The rates, shown in Table 6-1, are based on NCHRP Report 365. Trip rates from NCHRP Report 716 Appendix C can also be used.

**Table 6-1 - Default GDOT Daily Trip Production Rates**  
Population 50,000 – 199,999

HH	0	1	2	3+
Size	Autos	Auto	Autos	Autos
Home Based Work				
1	0.520	0.800	0.800	0.800

HH Size	0 Autos	1 Auto	2 Autos	3+ Autos
2	1.056	1.474	1.782	1.848
3	1.406	1.748	2.014	2.261
4+	1.800	2.160	2.520	2.880
Home Based Other				
1	0.918	1.605	1.872	1.600
2	1.834	2.444	3.401	3.612
3	3.947	4.521	5.295	5.537
4+	5.600	6.224	7.673	8.294
Home Based Shopping				
1	0.486	0.555	0.288	0.560
2	0.758	1.174	0.973	0.924
3	0.197	0.631	0.641	1.127
4+	0.400	0.976	0.727	1.306
Non-Home Based				
1	0.676	1.040	1.040	1.040
2	1.152	1.608	1.944	2.016
3	1.850	2.300	2.650	2.975
4+	2.200	2.640	3.080	3.520

Population 200,000-499,999

HH Size	0 Autos	1 Auto	2 Autos	3+ Autos
Home Based Work				
1	0.420	0.860	0.860	0.860
2	0.920	1.449	1.725	1.725
3	1.320	1.936	2.332	2.860
4+	1.350	2.160	2.520	2.880
Home Based Other				
1	0.769	1.790	2.087	1.784
2	1.500	2.255	3.091	3.165
3	3.086	4.170	5.106	5.832
4+	4.200	6.224	7.673	8.294
Home Based Shopping				
1	0.407	0.618	0.321	0.624
2	0.620	1.084	0.884	0.810
3	0.154	0.582	0.618	1.188
4+	0.300	0.976	0.727	1.306
Non-Home Based				
1	0.504	1.032	1.032	1.032
2	0.960	1.512	1.800	1.800
3	1.440	2.112	2.544	3.120

HH Size	0 Autos	1 Auto	2 Autos	3+ Autos
Home Based Work				
4+	1.650	2.640	3.080	3.520

Population 500,000 – 999,999

HH Size	0 Autos	1 Auto	2 Autos	3+ Autos
Home Based Work				
1	0.575	1.058	1.058	1.058
2	1.056	1.608	1.872	1.872
3	1.288	2.024	2.392	2.783
4+	1.425	2.280	2.660	3.040
Home Based Other				
1	0.883	1.846	2.153	1.840
2	1.650	2.398	3.215	3.292
3	2.880	4.170	5.010	5.429
4+	4.200	6.224	7.673	8.294
Home Based Shopping				
1	0.467	0.638	0.331	0.644
2	0.682	1.153	0.919	0.842
3	0.144	0.582	0.606	1.105
4+	0.300	0.976	0.727	1.306
Non-Home Based				
1	0.575	1.058	1.058	1.058
2	1.012	1.541	1.794	1.794
3	1.288	2.024	2.392	2.783
4+	1.575	2.520	2.940	3.360

Population 1,000,000+

HH Size	0 Autos	1 Auto	2 Autos	3+ Autos
Home Based Work				
1	0.713	1.058	1.058	1.058
2	1.225	1.675	1.950	1.950
3	1.650	2.050	2.325	2.625
4+	1.600	2.200	2.600	3.000
Home Based Other				
1	1.014	1.710	1.993	1.704
2	1.803	2.353	3.154	3.229
3	3.269	3.742	4.314	4.536
4+	4.480	5.705	7.125	7.776

HH Size	0 Autos	1 Auto	2 Autos	3+ Autos
Home Based Shopping				
1	0.536	0.590	0.307	0.596
2	0.745	1.131	0.902	0.827
3	0.163	0.522	0.522	0.924
4+	0.320	0.895	0.675	1.224
Non-Home Based				
1	0.837	1.242	1.242	1.242
2	1.127	1.541	1.794	1.794
3	1.518	1.886	2.139	2.415
4+	1.600	2.200	2.600	3.000

#### 6.2.1.1 Household Stratification Sub-Model

To apply cross-classified trip rates, the number of households in each cross-classification cell must be estimated. The household stratification model subdivides the total number of households by TAZ into 16 household strata defined by household size and the number of automobiles available. Stratification is done using TAZ median income, data from the Census Transportation Planning Package (CTPP), and data from the Augusta household survey. The model distributes the total households in a TAZ to each cross-classification cell by calculating a relative probability that a household will be a particular size with a particular number of automobiles. The relative probability is calculated with the following equation:

$$P(i, j) = S \times I \times CF$$

where

$P(i, j)$  = Relative probability that a household will be size  $i$  and own  $j$  autos

$S$  = Household size factor from a lookup table

$I$  = Income factor from a lookup table

$CF$  = Composite household factor from Augusta household survey lookup table

An estimate of the number of households in a particular cross-classification cell is then calculated by multiplying the total number of households in the TAZ by the corresponding relative probability. The final number of households in each cross-classification cell is calculated by applying a normalizing factor to each calculated value. The normalizing factor is applied to ensure that the sum of resulting disaggregated households equals the original aggregate number of households. This process is represented mathematically with the following equations:

$$HH_{ij}(est.) = HH \times P(i, j)$$

where

$HH_{ij}(est.)$  = Estimated number of households of size  $i$  that own  $j$  autos

$HH$  = Total number of households in the TAZ

$HH_{ij} = HH_{ij}(est.) \times F$

where

$HH_{ij}$  = Final number of households of size  $i$  that own  $j$  autos

$F = HH / \sum HH_{ij}(est.)$ , control total normalizing factor

Examples of the three lookup tables used in the household stratification model are shown on the following pages. The current recommended lookup tables for household size and income were developed using CTPP 2000 data. In the future GDOT may update the lookup tables using newer Census data, but this is not urgent because the lookup tables follow logical progressions that are unlikely to change substantially. The current lookup tables have been reviewed to ensure that logical inconsistencies or discontinuities are not present.

### Household Size Distribution

#### Summary of All Georgia Traffic Analysis Zones (CTPP 2000)

Computed Persons/HH Ranges (<=)		Household Size			
		1	2	3	4+
0.0	1.0	1.0000	0.0000	0.0000	0.0000
1.0	1.2	0.7812	0.2056	0.0133	0.0000
1.2	1.4	0.6898	0.2568	0.0331	0.0203
1.4	1.6	0.5752	0.3128	0.0687	0.0433
1.6	1.8	0.4839	0.3511	0.1021	0.0630
1.8	2.0	0.4141	0.3537	0.1279	0.1043
2.0	2.2	0.3487	0.3563	0.1464	0.1486
2.2	2.4	0.2872	0.3471	0.1689	0.1968
2.4	2.6	0.2389	0.3274	0.1879	0.2458
2.6	2.8	0.1939	0.3140	0.1985	0.2935
2.8	3.0	0.1553	0.2947	0.2076	0.3424
3.0	3.2	0.1253	0.2749	0.2074	0.3924
3.2	3.4	0.1152	0.2489	0.1996	0.4363
3.4	3.6	0.1119	0.2116	0.1932	0.4832
3.6	3.8	0.1038	0.2042	0.1688	0.5232
3.8	4.0	0.1028	0.2032	0.1608	0.5332



**Typical Household Median Income Distribution**  
**Summary of All Georgia Traffic Analysis Zones (CTPP 2000)**

TAZ-level Median HH Income Range		Income Group 1	Income Group 2	Income Group 3	Income Group 4
		<\$20,000	\$20,000- \$39,999	\$40,000- \$59,000	>=\$60,000
\$0	\$2,500	0.8835	0.1165	0.0000	0.0000
\$2,500	\$5,000	0.8549	0.1168	0.0232	0.0050
\$5,000	\$7,500	0.8300	0.1318	0.0300	0.0081
\$7,500	\$10,000	0.7585	0.1468	0.0427	0.0521
\$10,000	\$12,500	0.6933	0.1826	0.0718	0.0523
\$12,500	\$15,000	0.6311	0.2131	0.0802	0.0756
\$15,000	\$17,500	0.5771	0.2465	0.0894	0.0870
\$17,500	\$20,000	0.5031	0.2938	0.1046	0.0985
\$20,000	\$22,500	0.4326	0.3321	0.1257	0.1096
\$22,500	\$25,000	0.3927	0.3387	0.1449	0.1236
\$25,000	\$27,500	0.3316	0.3581	0.1702	0.1401
\$27,500	\$30,000	0.3071	0.3488	0.1824	0.1617
\$30,000	\$32,500	0.2734	0.3395	0.1945	0.1926
\$32,500	\$35,000	0.2399	0.3356	0.2152	0.2093
\$35,000	\$37,500	0.2108	0.3322	0.2254	0.2316
\$37,500	\$40,000	0.1825	0.3143	0.2418	0.2615
\$40,000	\$42,500	0.1655	0.2840	0.2612	0.2893
\$42,500	\$45,000	0.1501	0.2688	0.2676	0.3134
\$45,000	\$47,500	0.1391	0.2550	0.2663	0.3396
\$47,500	\$50,000	0.1207	0.2387	0.2649	0.3758
\$50,000	\$52,500	0.1188	0.2142	0.2569	0.4101
\$52,500	\$55,000	0.1016	0.2012	0.2566	0.4407
\$55,000	\$57,500	0.0945	0.1894	0.2480	0.4682
\$57,500	\$60,000	0.0901	0.1853	0.2256	0.4990
\$60,000	\$62,500	0.0844	0.1684	0.2102	0.5371
\$62,500	\$65,000	0.0766	0.1598	0.2025	0.5612
\$65,000	\$67,500	0.0688	0.1510	0.1948	0.5854
\$67,500	\$70,000	0.0653	0.1416	0.1926	0.6004
\$70,000	\$72,500	0.0601	0.1271	0.1833	0.6295
\$72,500	\$75,000	0.0535	0.1218	0.1698	0.6549
\$75,000	\$77,500	0.0512	0.1087	0.1636	0.6765
\$77,500	\$80,000	0.0485	0.1042	0.1551	0.6922
\$80,000	\$82,500	0.0446	0.0991	0.1465	0.7099
\$82,500	\$85,000	0.0405	0.0939	0.1455	0.7202
\$85,000	\$87,500	0.0364	0.0889	0.1359	0.7387
\$87,500	\$90,000+	0.0350	0.0839	0.1238	0.7573

## Household Size/Income/Auto Ownership Distribution

### Augusta Household Survey

Income Group	Persons Per Household	Autos Available			
		0	1	2	3+
1	1	0.30628	0.66893	0.02479	0.00000
	2	0.09778	0.65778	0.22222	0.02222
	3	0.07326	0.69093	0.16279	0.07302
	4+	0.10000	0.56941	0.17647	0.15412
2	1	0.25483	0.47759	0.22586	0.04172
	2	0.04000	0.21400	0.63200	0.11400
	3	0.11111	0.12556	0.60333	0.16000
	4+	0.09000	0.10797	0.59420	0.20783
3	1	0.18333	0.60560	0.15775	0.05332
	2	0.02740	0.16767	0.63425	0.17068
	3	0.09000	0.10500	0.50333	0.30167
	4+	0.06000	0.04381	0.38619	0.51000
4	1	0.05769	0.66539	0.20000	0.07692
	2	0.06944	0.10444	0.53222	0.29389
	3	0.02000	0.05814	0.50977	0.41209
	4+	0.01892	0.04054	0.54054	0.40000

### 6.3 Attraction Model

Person trip attractions are estimated using regression equations that were estimated from the 1997 Augusta Household Travel Survey. The default trip attraction equations are:

HBW:  $1.196 * \text{Total Employment}$

HBO:  $0.5077 * \text{Population} + 0.967 * \text{Total Employment} + 1.5258 * \text{School Enrollment}$

HBS:  $2.655 * \text{Retail Employment}$

HBU:  $2.5 * \text{off-campus students}$

NHB:  $0.293 * \text{Population} + 2.82108 * (\text{Retail Employment} + \text{Wholesale Employment}) + 0.6984 * \text{Service Employment}$

These trip rates can be adjusted within reasonable range as necessary during the model calibration and validation stage.

### 6.4 Trucks

Internal truck trips include both large trucks and smaller commercial vehicles (delivery, commercial vans, etc.). Truck trip generation rates are based on trip rates from the *Quick Response Freight Manual (Federal Highway Administration - Travel Model Improvement Program)*. The following equation is used for truck trip productions and attractions:

Truck Trips:  $1.362 * (\text{Manufacturing Employment} + \text{Wholesale Employment}) + 1.206 * \text{Retail Employment} + 0.514 * \text{Service Employment} + 0.388 * \text{Households}$

## 6.5 External Trips

Traffic counts on highways that serve external trips (i.e., external stations) control the overall magnitude of external trips. Traffic at each external station is split into E-E passenger cars, E-E trucks, I-E passenger cars and I-E trucks. Assumed shares for external trip types are based on logical assignments. The share of E-E trips primarily depends on the facility type of the highway and its continuity with major highways that serve thru trips. Higher class roads with good thru trip connectivity will have higher E-E trip shares than lower class roads with lesser connectivity. Classification counts or typical vehicle type distributions are used to set passenger car and truck percents. It is possible using E-E trip shares and passenger car and truck shares to determine control totals for all external trip types.

E-E trips are allocated to other external stations based on the magnitude of external trips at the potential destination and the distance between the stations. The higher the traffic count, the more likely it will attract E-E trips. The external trip estimation process assumes that the larger the distance between external stations, the higher the probability that trip interchange will serve E-E trips (i.e., since E-E trips travel completely thru the region, they are usually long distance trips).

For I-E trips, it is necessary to estimate the internal location for the trip ends. This is done using the following regression equations:

*I-E Cars:*         $0.331 * \text{Households} + 0.724 * \text{Total Employment}$

*I-E Trucks:*     $0.078 * \text{Retail Employment} + 0.228 * \text{Manufacturing Employment} + 2.149 * \text{Wholesale Employment}$

## 6.6 Trip Generation Calibration/Validation

GDOT calibrates and/or validates model components by comparing model outputs to expected targets. Targets for various model parameters have been compiled from a number of sources. The following documents serve as the primary sources for checking the reasonableness of model parameters and results:

- *National Household Travel Survey (NHTS) 2009 - Georgia Add-On data*
- *National Cooperative Highway Research Program (NCHRP) Report 365 Travel Estimation Techniques for Urban Planning*
- *NCHRP Report 716 Travel Demand Forecasting: Parameters and Techniques*
- *Model Validation and Reasonableness Checking Manual, TMIP, FHWA*
- *Travel Model Validation and Reasonability Checking Manual Second Edition, Travel Model Improvement Program (TMIP), Federal Highway Administration (FHWA)*
- *Calibration and Adjustment of System Planning Models, USDOT, FHWA*
- *Quick Response Freight Manual, FHWA*
- *Quick Response Freight Manual II, FHWA*

The primary targets GDOT uses for validating the trip generation process are outlined below:

Validation Measure	Target Range / Value
Person Trips Per Household	8.5 - 9.2
Person Trips Per Person	3 - 4
HBW Trips / Employee	< 2
Shopping Trips / Retail Employment	-
P/A Ratio Before Balancing (HBW)	0.9 - 1.1
P/A Ratio Before Balancing (HBO)	0.9 - 1.1
P/A Ratio Before Balancing (HBShop)	0.9 - 1.1
P/A Ratio Before Balancing (NHB)	0.9 - 1.1

## 6.7 Final Documentation

The following model parameters, at a minimum, should be included in the final trip generation documentation:

- CTPP Household Income and Household Size Lookup Tables
- Trip Production Rates and Equations
- Trip Attraction Rates and Equations
- Special Generators and/or Purposes
- Comparison to Expected Targets
- Detailed explanation of any modifications that were made to the standard GDOT trip generation process.

## 7 Trip Distribution Calibration/Validation

GDOT calibrates and/or validates model components by comparing model outputs to expected targets. Targets for various model parameters have been compiled from a number of sources. The following documents serve as the primary sources for checking the reasonableness of model parameters and results:

- *National Household Travel Survey (NHTS) 2009 - Georgia Add-On data*
- *American Community Survey (ACS) Journey to Work Summaries & Census Transportation Planning Package (CTPP) Tabulations*
- *National Cooperative Highway Research Program (NCHRP) Report 365 Travel Estimation Techniques for Urban Planning*
- *NCHRP Report 716 Travel Demand Forecasting: Parameters and Techniques*
- *Model Validation and Reasonableness Checking Manual, TMIP, FHWA*
- *Travel Model Validation and Reasonability Checking Manual Second Edition, Travel Model Improvement Program (TMIP), Federal Highway Administration (FHWA)*
- *Calibration and Adjustment of System Planning Models, USDOT, FHWA*
- *Quick Response Freight Manual, FHWA*

- *Quick Response Freight Manual II, FHWA*

The primary targets GDOT uses for validating the trip distribution process are outlined below:

Validation Measure	Target Range / Value
Average Trip Length (HBW)	Average Work Trip Time (CTPP / ACS) +/- 5%
Average Trip Length (HBO)	Set relative to the HBW target
Average Trip Length (HBSshop)	
Average Trip Length (NHB)	
Average Trip Length (Truck)	N/A
% Intrazonal Trips	< 10%

GDOT uses average work trip length as the pivotal measure for calibrating distribution models. Target trip lengths for all internal person trip purposes are set based on the CTPP or ACS average work trip length. <sup>6</sup> Target non-work trip lengths are estimated using equations from *Calibration and Adjustment of System Planning Models, NCHRP Report 365 and NCHRP Report 716. Calibration and Adjustment of System Planning Models* includes equations to estimate average trip lengths based on the urban area population. *NCHRP Report 365* includes an equation to estimate average work trip length based on the geographic size of the modeled area. *NCHRP Report 365* and *NCHRP Report 716* both provide common trip lengths for work and non-work trips which provides the relative length of non-work and work trips.

## 7.1 Final Documentation

The following model parameters, at a minimum, should be included in the final trip distribution documentation:

- CTPP Average Travel Time to Work
- Derivation of adjusted target average trip length targets
- Distribution parameters and resulting friction factor graphs
- Intrazonal time calculation methodology
- Terminal time assumptions
- Screenline maps and summaries
- Internal and external travel pattern spider webs
- Detailed explanation of any modifications that were made to the standard GDOT trip distribution process.

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<sup>6</sup> If a significant share of external work trips is present in the census data, analysis of the census journey to work data may be necessary to estimate the intra-study area work trip length.



## 8 Mode Choice

The mode choice process determines the share of trips by travel mode between zones. In GDOT models, the mode choice process is typically omitted and person trips are converted to vehicle trips, using auto occupancy rates, before trip assignment. In small or medium urban areas, transit patronage is often low relative to the number of person trips occurring in the region. The transit share is typically less than one percent of all person trips, so omitting the mode choice step has little effect on the resulting vehicle trip table.

GDOT's trip generation process estimates person trips for internal trip purposes (HBW, HBO, HBS and NHB), so it is necessary to convert person trips to vehicle trips before trip assignment. Average auto occupancy rates by purposes are used to do this. Common sources for the occupancy rates are U.S. Census Journey-to-Work data, national travel surveys (e.g., National Household Travel Survey), *NCHRP Report 365* and *NCHRP Report 716*.

## 9 Trip Assignment

Trip Assignment estimates the number of trips that choose specific alternative travel paths between any given pair of zones. Trip assignment can include highway trips, transit trips or any other mode for which a transportation network can be developed. However, trip assignment in GDOT travel demand models is limited to highway vehicle trips. Both passenger cars and trucks are assigned to potential highway paths. GDOT uses equilibrium assignment methods. A passenger car equivalency of 1.5 is used for trucks. Individual volumes are stored for passenger cars by purpose, I-E, E-E and trucks for each link.

### 9.1 Highway Assignment Calibration/Validation

GDOT calibrates and/or validates model components by comparing model outputs to expected targets. Targets for various model parameters have been compiled from a number of sources. The following documents serve as the primary sources for checking the reasonableness of model parameters and results:

- *Model Validation and Reasonableness Checking Manual, TMIP, FHWA*
- *Travel Model Validation and Reasonability Checking Manual Second Edition, Travel Model Improvement Program (TMIP), Federal Highway Administration (FHWA)*
- *Calibration and Adjustment of System Planning Models, USDOT, FHWA*

The primary targets GDOT uses for validating the trip assignment process are outlined below:

Validation Measure	Target Range / Value
VMT	Based on HPMS VMT Reports
VMT - Interstates	$\pm 6\%$ - $\pm 7\%$

Validation Measure	Target Range / Value
VMT-Principal Arterials	<u>+10%</u> - <u>+15%</u>
VMT-Minor Arterials	<u>+10%</u> - <u>+15%</u>
VMT-Collectors	<u>+15%</u> - <u>+25%</u>
VMT-Total	<u>+5%</u>
VMT / Household	
VMT/ Person	
Screenlines	
All Counts	Maximum Desirable Deviation for Screenlines & Individual Links (NCHRP Report 255)
Screenline 1	
Screenline 2	
Screenline 3	
Screenline 4	
Screenline 5	
RMSE = Root Mean Squared Error (Vol)	< 30%
AADT Volume Group: 0 - 5,000	< 100%
AADT Volume Group: 5,001 - 10,000	< 75%
AADT Volume Group: 10,001 - 15,000	< 50%
AADT Volume Group: 15,001 - 20,000	< 30%
AADT Volume Group: 20,001 - 30,000	< 30%
AADT Volume Group: > 30,000	< 30%

GDOT recommends sensitivity tests be performed on the traffic assignment process. This can be done by comparing the assigned volumes before and after minor network modifications (e.g. adding a minor road widening or a single freeway ramp) are made. If minor network changes result in relatively significant fluctuations in volumes on links far from the network modifications, then the equilibrium assignment process has not reached an acceptable level of closure. Such hypersensitivity can usually be resolved by using more stringent closure criteria. GDOT recommends using a relative gap of 0.001 as the measure for equilibrium closure.

#### 9.1.1 Poor Calibration Practices – What Not to Do

Although it is important to investigate why a travel demand model is poorly replicating individual counts, making isolated adjustments of individual link speeds, capacities or distances is usually inappropriate. Network corrections are appropriate, but artificial link-level adjustments are highly discouraged.

Representing actual turn prohibitions in turn penalty files is appropriate. However, GDOT highly **discourages** the use of turn penalties to improve assignment results. Turn penalties can make a base year assignment appear to be valid, but many situations arise when it is

unclear how turn penalties should be represented in future year applications. Liberal use of turn penalties also tends to create a less reliable traffic assignment process because problems that are more likely related to poor assignment parameters or network coding errors are masked by manual turn penalty adjustments.

Model developers should focus model calibration efforts on using accurate data inputs (network coding, socio-economic data, etc.), reasonable model parameters and appropriate modeling procedures. If isolated traffic counts are poorly modeled, then model developers should ask why the model is not representing the situation well. Often such problems are a result of the size of zones, isolated high trip generators, the location of centroid connectors, incorrect socio-economic data, or any number of factors that should be investigated. Sometimes it is better to accept that the model cannot represent particular situations well rather than inserting ill-advised model adjustments just to make the assignment appear to be better.

### **9.1.2 Final Documentation**

The following model parameters and results should be included in the final trip assignment documentation:

- Speed and Capacity Assumptions
- Traffic Assignment scripts and a description of the parameters (closure criteria, volume sets, link prohibitions, cost parameters, etc.) and characteristics (number of iterations to reach closure, iteration weights, etc.)
- Volume-Delay Functions and Assignment Errors by Volume-Capacity Ratio Range Plots (for each Link Class)
- Description of Turn Prohibitions
- VMT, Screenline and RMSE results
- Volume Bandwidth Plots (Maximum Desirable Deviation and Volume-Capacity Ratios)
- Maximum Desirable Deviation Plot
- Volume versus Count Scatter Plot
- Plot(s) of congested speeds

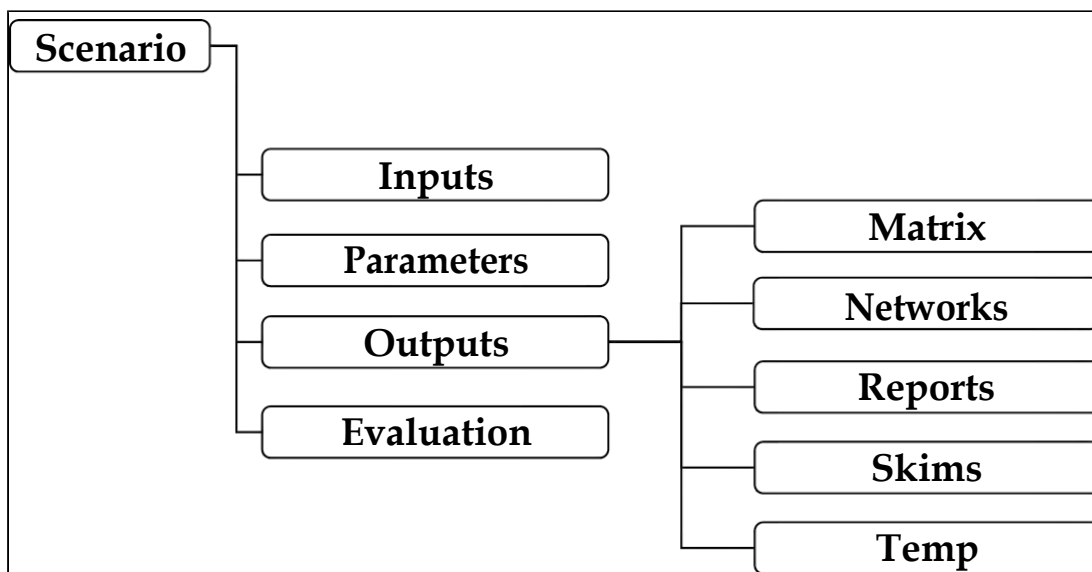
## **10 Review of MPO Model Development Activities**

If an MPO or a Consultant hired by an MPO is building a travel demand model that may be used in the development of the Long Range Transportation Plan (LRTP), GDOT recommends that the procedures discussed in the previous sections be used. If so desired, GDOT will review key steps in the development process to ensure that the model and model components meet GDOT's recommended standards and guidance. GDOT review and/or the panel review is required on both the base and future year socio-economic data sets. It is recommended that two weeks being allowed for the review of each of the socio-economic data sets.

## 11 File Naming Conventions

GDOT has instituted a file naming and folder protocol for the input and output files of the travel demand model set. The purpose of this effort is to ensure that there is consistency among MPOs with the various files and model runs. In addition, it assists with easy identification of the purpose or type of model file being reviewed. For example, a file with the extension of \*.VTT is a vehicle trip table, whereas a file with the extension of \*.PTT is a person trip table. The folder structure is displayed in Figure 11-1 while the file extensions protocols and folders are listed in Table 11-1.

**Figure 11-1 - Model Folder Structure**



**Table 11-1 - Model File Naming Protocols**

Folder	File Content	File Name
Root	Model script	<i>mpo</i> {scenario}main.s
	Network display setting	Default.vpr
Inputs	Input network	<i>mpo</i> {scenario}.net
	SE data	<i>mpo</i> {scenario}.dbf
	Turn penalty	<i>mpo</i> turns{scenario}.pen
	External station	<i>mpo</i> {scenario}.dbf
Parameters	Base year vehicle trip table	tvt2006.vtt
	Base year estimated vehicle trip table from matrix estimation	estimate.vtt
Evaluation	Screenline volume summary script	Scrnlne.s
	Cutline volume summary script	Cutline.s

Folder	File Content	File Name
	VMT summary script	vmt.s
	Maximum desired deviation summary script	MaxDev.s/MaxDev.vpr (Base year only)
Outputs\Matrix	Gravity model vehicle trip table	gmvol{scenario}.vtt
	External-external passenger car vehicle trip table	ee{scenario}.vtt (Table 1)
	External-external truck vehicle trip table	ee{scenario}.vtt (Table 2)
	Total person trip table	ptt{scenario}.ptt
	Total vehicle trip table	ttt{scenario}.vtt
Outputs\Network	Final loaded network	mpo{scenario}_fin.lod
Outputs\Reports	Program report files	*.rpt
	Turn output file	turnmove{scenario}.trn
Outputs\Skims	Travel time skim	time.skm
Outputs\Temp	Model temporary files	*.txt/*.hwy/*.lod

Note: *mpo* refers to the mpo such as BATS for Brunswick

## 12 Potential Treatment of Military Bases

There are two potential methods for estimating the impact of military bases on regional travel. One method is to treat the military base as a special generator and the other method is to create a separate trip purpose for the military employment. It is recommended that a separate trip purpose should be established for large military bases.

### 12.1 Treatment of Military Bases as Special Generators

#### 12.1.1 Trip generation

One trip rate is usually applied to the military bases based on the military personnel on the base. It doesn't differentiate between military and civilian population.

#### 12.1.2 Trip distribution

Military trips are usually combined into the regular trip purposes such as, home-based work and home-based other for distribution. The distinct characteristics related to the travel pattern of the military personnel are not reflected. It is assumed that the civilian travel pattern also apply to military personnel. This might not always be true.

### 12.2 Treatment of Military Bases as a Separated Trip Purpose

#### 12.2.1 Trip generation

Separate trip rates can be applied to military and civilian related activities based on the difference in the nature of the activities.



### **12.2.2 Trip distribution**

A separate gravity model can be applied to military purpose, providing a better handle on the trip distribution process. Military related personnel will go to military based employment, for example. The military personnel travel pattern can be represented in the distribution process.

SE data requirement:

- Military population and living quarters on the base
- Civilian population and households
- Military employment on the base
- Civilian employment on the base

# APPENDIX

## **A-1: Socio-Economic Data Preparation Checklist and Review Guidelines**

The following guide is intended to assist Georgia MPOs with socioeconomic data forecasts for travel demand modeling purposes. These guidelines should be referred to after the MPO has projected future year socioeconomic data for the study area. The checks given below will help ensure that future year projections are consistent with base year conditions. Reliable socioeconomic data forecasts will contribute to a travel demand model that most accurately reflects future travel patterns and help the MPO develop sound long- and short-range plans.

Some of these calculations are based on a traffic analysis zone (TAZ) level analysis, and others may be performed for the MPO as a whole.

### **TAZ Level Analysis**

#### **1. Population to Household Ratio**

*Calculation: Population / Number of Households*

Normally, the population to household ratio in each TAZ should not exceed 6.00 or 7.00. Ratios exceeding this amount should correspond to some type of group housing in the area – i.e., nursing home, dormitory, military barracks. The standard population to household ratio for each TAZ may be in the range of 2.00-3.00, but this may vary between each area.

#### **2. Households per Acre**

*Calculation: Number of Households / Acre*

Do not decrease number of households from existing to future projections without a reasonable explanation (e.g., redevelopment of a residential area into a commercial property-not a common practice). The number of households per acre in most TAZs should be less than 6.00. A value of 6.00 typically corresponds to a three-story multifamily building. Values exceeding 6.00 should accordingly correspond to larger or denser multifamily housing.

#### **3. Population Relative to Acres Available**

*Calculation: Population / Acre*

In each TAZ, the ratio of population to acres should not exceed 10.00.

#### **4. Look for TAZs where households increase by greater than 500%.**

This percentage corresponds to a large increase in development activity. Ensure that TAZs that exceed this guideline are suitable for intense development. Examine suitability characteristics of the land, including flood hazard areas, wetlands, groundwater recharge, access to transportation networks, and access/proximity to future water and sewer services.

5. Note locations where **wholesale employment** is being allocated. Make sure that these TAZs support this type of planned development.

## 6. Service Employment

In TAZs that contain schools, there is typically one service employee to every 12 students. Divide the number of students (school enrollment) by the number of service employees allocated to the area and check whether the ratio is roughly equal to 12.00. If the ratio is significantly larger, then adequate service employment may not be allocated to that TAZ.

7. For each TAZ, the **number of households should not decrease** between the base year and the future year. There are exceptions to this rule, for example, in areas undergoing urban renewal.
8. In each TAZ, make sure that the **households have corresponding populations greater than zero**.

## Area Analysis

### 9. Employment Acres

*Calculation: Acres Available for Employment = [# acres – (# households / 4)] \* 0.25*

This calculation ensures that the projected number of acres needed for future employment will not be consumed by other uses. The equation first account for acreage taken up by future households, and it assumes that the remaining acreage is available for employment. The evaluation assumes that each household is comprised of a single-family home on a quarter-acre lot.

Once you have found the number of acres needed for employment (according to the equation above), calculate how much acreage the future employment will consume. Allocate 0.00573921028 (250 square feet) acres of work space for each employee with the following equation:

*Acres Needed for Employment = (0.00573921028 acres / employee) \* (# employees)*

The acres needed for employment should be less or equal to the acres available for employment. If this is not the case, then there may be certain TAZs (such as in downtown) that support multi-story office buildings and high density housing.

If the value of acres available for employment (first calculation) is negative, this may be explained by denser housing (greater than 4 households per acre) or multifamily housing throughout the area.

If either of the calculations produce negative numbers, make sure the figure is justified by higher densities of employment and/or housing than those that are assumed (4 households per acre and 250 square feet per employee).

## **10. School Enrollment**

*School enrollment / population  $\approx$  20%*

Overall, the ratio of school enrollment to total population should be approximately 20%. This ratio may be higher due to universities or colleges in the area.

- 11.** Make sure that the total number of households in the area is not decreasing between the base year and the future year. An exception to this rule may be a large-scale urban renewal.
- 12.** Note trends in future employment and changes in the types of households in the area. For example, the center city is likely built out, so that drastic change is more difficult to accommodate.
- 13.** The population to job ratio should be fairly constant over time (between the base and future years).
- 14.** Based on national trends, the population to household ratio in the area should decrease slightly between the base and future years, with a future year value in the range of 2.8 – 2.9.
- 15.** Note high-growth sectors in the study area, where population and households are increasing by a large percentage. Examine the growth trend – is it consistent? See whether any TAZs are “skipped” along the trend area. Make sure that high growth areas are not already built out with housing and/or employment, and there is enough land to support the projected growth (examine parameters such as # households per acre).

What are the justifications for the high growth rate in these areas? These may include planned or emerging development in the area. Support the justifications with an examination of land suitability.



## A-2: Checklist for Preparing Highway Networks

### Update Previous Base Year Network Tasks

- Review the GDOT construction lists (TransPI), consult with local jurisdictions and review aerials to determine highway improvements completed since the previous LRTP's base year.
- Review previous "Do-Nothing" and "E+C" networks to determine which network will serve as the best network from which to start creating the new base year network. Note that the "E+C" network may reflect several completed projects appropriate for the new base year, but might also require uncoding or removing some project improvements that were not complete at the time of the base year.
- Add the completed highway improvements (projects) to whichever network is selected to serve as the basis for the new base year network.
- Make sure that all functionally classified facilities minor collector and above are coded in the network. Use HPMS codes assigned by GDOT to each functionally classified roadway.
- Make sure that if a road is used as a TAZ boundary the road is coded in the network.
- If a road is not a TAZ boundary and functionally classified, this should send a red flag that either the road or the TAZ boundary needs review - (Ideally all functionally classified roads should be a TAZ boundary but sometimes that is not the case for a variety of reasons)
- Update or add the functional classification (HPMS). If necessary, rename the old FCLASS or HPMS field to HPMS2000. New or newer models may need to have a HPMS2010 field added. Nonattainment Areas will most likely have both HPMS2000 and HPMS2010 fields.
- Make sure if the road is being used a screenline/cutline, that the SCREENLINE and/or CUTLINE field(s) continues to be populated, if applicable.
- Review traffic count station locations for accuracy and QA/QC the base year traffic count numbers
- Add a new field and add the new traffic counts for the new base year that have undergone QA/QC. If necessary, rename the old traffic counts to Count {year} where {year} represents the 2 digit year of the last counts.
- Use TIGER files as a background layer to improve the location of nodes and links
- Add road names if possible. Some of the older models may not have the field ROADNAME populated.
- Add centroid connectors for new TAZs and revise existing centroid connector where TAZs have been changed.
- When adding a new facility – the following attributes have to be populated for the base year network.
  - Number of Lanes
  - Facility type

- Road Name
- HPMS2000 and/or HPMS2010
- Screenline
- Cutline
- Road Name
- County FIPS code
- Traffic count station (if available)
- Traffic count (if available)
- Review centroid connectors and TAZ boundary

### **Double Check Draft Base Year Network Tasks**

- Double check the functional class (HPMS) – it may have changed or have been corrected from the previous base year network. Roads may be added or removed from the functional class system so make sure to use the latest system data (check with OTD).
- Double check the number of lanes – Compare against aerials – (Don't automatically assume that the number of lanes were correct in the previous base year – should perform a cursory review)
  - Check for facilities that have 0 lanes that are not centroid connectors
  - Check a facility where the number of lanes varies or jumps around
  - Check for facilities with a high number of lanes >3
  - Check the number of lanes by direction
- Double check the facility type definition -FTYPE - (based on a highway improvement or number of lane correction, the facility type definition may change) – (Don't automatically assume that the facility types were correct in the previous base year – should perform a cursory review)
  - Check where the facility type changes in a corridor. Changes should only occur at a logical terminus
- Check for stub links – links that are only connected at one end
- Double check the link distances - (Don't automatically assume that the link distances were correct in the previous base year – should perform a cursory review)
  - Links with 0 distance
  - Links with large distances
- Double check the direction of the link and that the applicable 1-way FTYPE code is reflected – (Don't automatically assume that the link directions were correct in the previous base year – should perform a cursory review)
  - One way links going the wrong direction
  - Two way links coded as one way
  - One way links coded as two way links
- Review centroid connector locations – add, remove or move to reflect the actual zonal access
- Check road names

### A-3: Level of Service V/C Ratio Breakpoints

This section documents the Volume-Capacity ratio (V/C) breakpoints utilized for determining Level of Service (LOS) in the GDOT travel demand models. The breakpoints are not based on a single technical data source because there is no widely accepted source for breakpoints that uses V/C as the primary measure of LOS. The recommended values are based on professional judgment with some connection to older Highway Capacity Manual tables. The Highway Capacity Manual (HCM) is the most widely recognized source for determining LOS, but HCM primarily uses density to measure LOS rather than V/C. Density is not produced by traditional traffic assignments, which is why V/C is a commonly used alternative for determining LOS for planning purposes.

The current recommended breakpoints are intended to provide a simple means of assigning a reasonable LOS to highway segments of all types, keeping in mind that LOS is a subjective topic. Some agencies use separate breakpoints for different facility types, which to some degree adds the illusion of stringent objective breakpoints. For example, although the LOS breakpoints shown in the HCM for density are often based on specific speed breakpoints, the speed breakpoints are chosen by a technical committee at 5 or 10 mph increments that approximately represent subjective LOS levels. By using a single set of breakpoints, it is recognized that there is considerable subjectivity involved.

To gauge the reasonableness of the recommended V/C breakpoints, the LOS breakpoint data from several sources was summarized. In order to compare breakpoints that are based on different LOS measures (density, volume, etc.) ratios relative to the LOS E value were calculated. For example, if a source defines LOS C at a density of 25 and LOS E at a density of 50, the LOS C breakpoint is 0.5 (25 divided by 50). The table below summarizes the average breakpoints computed from multiple tables for different facility types from the data sources. A complete table of the source values is included at the end of this section.

Data Source	Average LOS				
	LOS A	LOS B	LOS C	LOS D	LOS E
GDOT models	0.30	0.50	0.70	0.85	1.00
All data sources	0.29	0.49	0.70	0.88	1.00
HCM 2010 & FDOT Q/LOS	0.27	0.48	0.65	0.87	1.00
Other Online Sources	0.43	0.58	0.80	0.90	1.00

The recommended breakpoints are reasonable and close to the relative relationships between different LOS levels observed in the selected data sources. Comparisons to the primary sources (HCM and FDOT) are close for all LOS levels, but these breakpoints have a slightly higher LOS C threshold.

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	Podlity lyp,	LOS -.....	LOSA	LOS 1	LO SC	IOSD	IM«		LOSA	LOS II	IOSC	LOS D	IOSF
Hc n ofaEx,ttit lIH &11-5	FrUWJYI	Oersiv	Jl	IB	25	3	45		0.2	15.0	0.58	0.78	1.00
MCM 2 010 bcM:h 11 17	EntewJy:	810	1.10	175-0-	1110	1A00			0.58	0.58	0.31	0.18	1.00
H<Ml OI-J W11bt U -11	Freewiv,	no	lbO	Jfr-K	21130	2400			0.2	0.112	aJO	0.87	1.00
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## A-4: MPO Model Daily Capacity Measure

This section addresses how capacities are computed in GDOT's MPO models and how those capacities approximate peak hour volume-over-capacity (V/C) ratios. The V/C ratio represents link volumes divided by the link capacity. Since GDOT MPO models assign daily volumes and capacities based on hourly capacities, computing V/C ratios requires a conversion to a common time scale (daily or hourly). This could be done by factoring daily volumes to compute an estimated peak hour volume or alternatively by deriving a "daily" capacity. GDOT models use the latter option, such that V/C ratios are computed as the daily volume divided by a daily capacity. Daily capacities are derived using the same concepts that would be used to estimate a peak hour volume, which enables the daily V/C ratios to approximate peak hour conditions.

Peak hour V/C ratios are commonly computed as peak hour volume divided by an hourly highway capacity as shown in the equation (1).

$$V/C \text{ (peak)} = \frac{V}{C \times N} \quad (1)$$

Where:

V = peak hourly volumes

C = per lane hourly capacity

N = number of lanes

If we used the approach of converting daily volumes to estimate peak hour volumes, this would be done by multiplying the daily volume by an assumed peak hour share factor (K) and an assumed directional split factor (D) as shown in equation (2).

$$V/C \text{ (peak)} = \frac{AADT \times K \times D}{C \times N} \quad (2)$$

Where:

AADT = Average Annual daily traffic counts (two-way)

K = peak hour share factor

D = directional split factor

GDOT models compute daily capacities by dividing hourly capacities by the same assumed peak hour share factors (K) and directional split factors (D), as shown in equation (3).



$$\text{Daily Capacity} = \frac{V}{C} \quad (3)$$

When daily volumes are divided by daily capacities that are computed this way, the resulting V/C ratio is equivalent to a peak hour V/C ratio as shown in equation (4).

$$V/C(\text{peak}) = \frac{\text{daily volume}}{\text{daily capacity}} = \frac{V}{C} \quad (4)$$

Equations (2) and (4) both result in the same computed V/C ratios for the same daily volume. Equation (2) converts daily volumes to an hourly scale, where equation (4) converts hourly capacities to a daily scale. GDOT models use the equation (4) approach, because daily traffic assignments can be performed without the additional computation burden of converting daily volumes to represent peak hour conditions within volume delay functions.

## GLOSSARY

**Average Annual Daily Traffic (AADT)** - The total amount of traffic observed, counted or estimated in both directions during a 24-hour period which has been averaged over the year. GDOT's 445 reports summarize AADT by county.

**Average Daily Traffic (ADT)** - The total amount of traffic observed, counted or estimated in both directions during a 24-hour period.

**Calibration** - Process of adjusting constants and other model parameters in the development of the models so that the models replicate observed data for a base (calibration) year.

**Capacity** - The maximum volume of travel that a transportation facility can accommodate during a specified time period such as hour, period or day.

**Centroid** - A point that represents a TAZ that loads traffic onto the model network via centroid connectors. Centroids are typically placed so that they represent the approximate "center of mass" for trips generated by the TAZ.

**Cordon Lines** - Lines that completely encompass a designated area. Cordon lines are typically associated with the boundary of the area being modeled. Usually used to validate travel movements. Frequently used to assess travel within the Central Business District (CBD).

**Cube Software** - A travel demand modeling software package that GDOT uses.

**Cutlines** - Cutlines extend across a corridor containing multiple facilities. They should be used to intercept travel along only one axis. Cutlines are used to look at particular locations and corridors.

**Equilibrium Highway Assignment** - a method of traffic assignment where trips select the shortest path while considering the impacts of congestion, impedances and costs on travel time.

**Friction Factors** - Parameters used in the Trip Distribution step of the model process. These are variables that quantify the impedance or measure of separation between two traffic analysis zones. Friction factors are inversely related to the spatial separation of zones, decreasing as impedance increases. The gravity model used in trip distribution method originally generated from an analogy with Isaac Newton's gravitational law. This analogy posits that the interaction between two locations declines with increasing impedance (distance, time, and cost) between them, but is positively associated with the amount of activity at each location.

**Geographic Information Systems (GIS)** - Computer software and databases that allow for the storage, retrieval and analysis of spatial information.

**High-Occupancy / Toll (HOT)** - Policies that provide designated lanes on arterials and freeways that gives motorists in single-occupant vehicles access to high-occupancy vehicle lanes (or "HOV lanes").

**High-Occupancy Vehicle (HOV)** - Vehicles with a driver and one or more passengers. Policies are in place in some localities that provide dedicated arterial and freeway lanes that are reserved for vehicles with at least two occupants (driver and one or more passengers).

**Impedance** - Various measures of cost (distance, time, transit fare, parking cost, etc.) used to estimate the interaction between two locations.

**K-Factors** - A parameter used in trip distribution to adjust trip making interchanges between two subareas of the region, often thought of as a "socioeconomic" adjustment that cannot otherwise be represented in the model. GDOT recommends that these parameters be used as a last resort in model development. (not to be confused with a peak hour share k-factor)

**Level of Service (LOS)** - A qualitative measure of intersection or road segment operating condition. A grading scale of A through F is used to characterize traffic operating conditions. The scale is based on the ability of an intersection or street segment to accommodate the amount of traffic using it, and can be used for both existing and projected conditions. The scale ranges from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion.

**MPO (Metropolitan Planning Organization)** - A required planning unit that all urban areas over 50,000 in population must have.

**Mode Choice** - This step determines the mode of a trip based on socioeconomic characteristics of the traveler or households, auto occupancy and availability of modal options such as HOV lanes, Managed lanes and transit options. The characteristics of the travel network include level of service variables such as time, cost, and the number of transit transfers. Mode choice is usually modeled separately for each trip or tour purpose and is usually the third step in the modeling process.

**O-D (Origin-Destination)** - refers to the beginning and ending of a trip.

**Root Mean Square Error (RMSE)** - A measure of the differences between traffic volumes predicted by a model and the observed traffic counts.

**P-A (Production – Attraction)** - Similar to O-D except that it refers to the trip ends. Trips are not linked by origin and destination zones.

**Percent Error** - Shows the relative error between an observed traffic count and a model estimated traffic volume as a percentage.

**Person Trip** - A one-way trip made by a person by any mode from an origin to a destination zone. Person trips are the usual units in transit assignment but person trips are converted to vehicle trips for highway assignment.

**Screenlines** - Represent imaginary lines that are used to divide the study area into large sections to assess model validation. They extend completely across the modeled area from boundary cordon to boundary cordon and capture cross-regional travel flows. Screenlines are often associated with physical barriers such as rivers or railroads, although jurisdictional boundaries such as county lines that extend through the study area may also be used as screenlines. Comparison of modeled versus counted traffic across screenlines provides an indication of how well a travel demand model performs in replicating major trip patterns and movements throughout the network.

**Skim Matrix** - A matrix with a measure of the shortest path between each pair of centroids or zones using either free-flow time, congested time or distance.

**Traffic Analysis Zones (TAZ or zone)** - Basic unit of geography used in transportation planning models. The spatial extent of zones or TAZs varies in models based on area type with very large zones in rural or exurban areas while the size of the zones decrease as population and employment density increase. Socio-economic or demographic data such as population, number of households, number of automobiles per household, household income and employment by zone are prepared at this level.

**Trip Assignment** - This involves assigning traffic to a transportation network which consists of roadways and in some cases, transit routes using a mathematical algorithm that determines the amount of traffic as a function of time, volume, capacity or impedance factor. This is usually the fourth step in the modeling process.

**Trip Attraction** - The trip end of a home-base trip that occurs at the non-home location, or the destination end of a non-home-based trip.

**Trip Distribution** - This step links tripmaker's origins with their destinations by TAZ. It determines where people work, shop and perform other daily activities such as school, errand, entertainment etc. The trips are estimated based on a function of the attractiveness of a zone and the travel impedance between zones. This is usually the second step in the traditional four-step transportation modeling process.

**Trip Generation** – The step in the modeling process where daily travel is estimated by zone which includes the trip purpose and amount of travel. Trips are estimated on the socioeconomic characteristics of the zone. This is usually the first step in the traditional four-step transportation modeling process.

**Trip Length Frequency Distribution** – This is a curve that shows the distribution of model-estimated trip lengths by trip purpose.

**Trip Production** – The trip end of home-based trip that occurs at the home, or the origin end of a non-home-based trip.

**Topo Penalty** – A perceived value of time that is added to travel times between zones that cross physical barriers such as rivers, lakes, railroads.

**Turn Prohibitor** – These are flags coded on intersections in the highway network that add impedances to travel time and movement where the travel movement is prohibited, such as the prohibition of a left-hand turn.

**V/C Ratio (Volume/Capacity Ratio)** - Represents the vehicle flow on a roadway divided by the maximum flow capacity. If this equals one, the roadway is at capacity.

**Validation** – Application of the calibrated models and comparison of the results with observed data in order to determine how well the models are replicating observed data for the base year.

**Vehicle Trip** – A trip made by a motorized vehicle from an origin to a destination such as a passenger car, commercial vehicle or heavy duty truck. Vehicle trips are the usual units in highway assignments.

**VHT (Vehicle Hours Traveled)** - A measure of vehicle travel time on a roadway or network of roadways. It is the sum of the vehicle travel time of all vehicles for a segment of roadway. For a given roadway  $VHT = \text{Daily Volume} * \text{Time (in Minutes)}$ .

**VMT (Vehicle Miles Traveled)** - A measure of vehicle travel on a roadway or network of roadways. It is the sum of the mileage driven of all vehicles for a segment of roadway. For a given roadway  $VMT = \text{Daily Volume} * \text{Length (in Miles)}$ .



## **Appendix C**

### **Data Development Methodology Notes for:**

- **MATS 2010 Baseline Population and  
Employment Estimates**
- **MATS 2040 Population and  
Employment Forecasts**

### **General Notes on MATS Preliminary 2010 Base Year Data Assembly**

1. All GIS and data assembly tasks were performed using the following software packages:
  - a. Spatial Analysis/GIS – ArcGIS 10.2.2, ArcINFO license
  - b. Tabular data organization:
    - i. Microsoft Access 2013
    - ii. Microsoft Excel 2013
2. All GIS and Spatial Analysis tasks were standardized to the NAD 1983 Georgia State Plane West coordinate system. Measurement units are in Feet.
3. All variable names listed below are underlined
4. Contact information/questions regarding data development:

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478-751-7472; FAX 478-751-7467  
[MGreenwald@mbpz.org](mailto:MGreenwald@mbpz.org)

## Data Assembly Notes v. 9/2/2015

### GIS Methodology

#### *Census Blocks*

Census blocks were assigned to a specific TAZ based on which TAZ the Census Block centroid fell within; centroids for convex polygons were assigned to a location inside the interior of the polygon boundary (using ArcGIS 10.2.2 Feature to Point tool, with “Inside” option selected).

Census blocks with multi-part polygons either had no households and no population associated with them (n=6), or were editing errors associated with neighboring counties not within the jurisdictional boundaries covered by this project (i.e., Crawford County blocks on the border with Bibb and/or Monroe County; Jasper and/or Putnam County blocks bordering Jones County; n=11)

Original Data Source: N=6,457 Census Blocks across Bibb, Jones and Monroe Counties

Final Dataset: N=5,277 Blocks, comprising 139 block groups across 495 Transportation Analysis Zones spanning all of Bibb County, all of Jones County, and the portion of Monroe County with TAZs in the MATS MPO jurisdiction.

#### *Primary and Secondary Schools, Universities and Technical Colleges*

Primary and secondary school locations were obtained from the Bibb County School District (private schools operating in Macon-Bibb County), Macon-Bibb County Planning & Zoning Department archives (public schools only), and the Middle Georgia Regional Commission (public schools only). According to the Jones County School District there were no private schools operating in Jones County in 2010. Only one private school was located in that portion of Monroe County covered by the MATS MPO jurisdiction, and that was identified through the data provided by the Bibb County School District.

Locations for private schools were geocoded using the multi-phasic composite geocoder maintained by the Macon-Bibb County GIS Manager. These results were then validated against Google Earth satellite imagery to ensure proper placement in the TAZ system. Jones County locations were similarly validated. Finally, all records were consolidated into a single, MPO region wide, school location point file. This master file was then edited to remove closed or ineligible sites, and then spatially joined to the TAZ system map layer.

Original Data Source: Macon-Bibb County Primary and Secondary Public School Archive (N = 58)  
Macon-Bibb County Primary and Secondary Private School List (N = 25)  
Jones County Public Schools (N = 11)

Final Data Set: N = 84 primary and secondary school locations (public and private) across Bibb, Jones and Monroe Counties (73 in Bibb County, 9 in Jones County (+1 additional site opening in 201516 school year), 1 in Monroe County)

University and technical college campuses were collected individually, and then geocoded using the same data assembly and spatial validation procedures as for primary and secondary schools.

Final Data Set: N = 8 university and technical college campuses across Bibb, Jones and Monroe Counties (7 in Bibb County, 1 in Jones County)

## Variable Definitions

TAZ\_NEW – The Transportation Analysis Zone for which the data is being collected. TAZ indexing reflects the zone system developed for mats\_2040\_lrt\_p\_taz\_Aug272015\_New TAZ set, developed by GDOT and HNTB.

Acres – The total acreage of the TAZ, as provided by GDOT and HNTB.

TtlPop2010 – The total number of persons identified as living in the specific TAZ, as of April 1, 2010. Values are based on U.S. Census 2010 counts reported at the block group level of geography, summed up to the TAZ level.

TtlHh2010 – The total number of households identified as living in the specific TAZ, as of April 1, 2010. Values are based on U.S. Census 2010 counts reported at the block group level of geography, summed up to the TAZ level.

### *Household Income Data Source*

Household income information was collected from the American Community Survey 5 Year Estimate data release for 2008-2012 (ACS0812), at the Census Block Group level of geographic detail. This data source and version release was chosen because:

1. American Community Survey replaces the Summary File 3 file in fulfilling the U.S. Census Bureau mission of providing local demographic data;
2. Census Block Group is the highest level of geographic detail (i.e., the smallest geographic area) at which household income estimates are provided;
3. The 2010 base year falls exactly in the middle of the 2008-2012 time period covered by the ACS0812 data release;
4. The 2008-2012 time period was a time of fairly constant economic activity in the region. Since the ACS dataset is a moving average over the 5 year period, a more constant level of economic activity would suggest inputs to the source data would have fewer outliers (i.e., extremely high or low values not consistent with the rest of the source data). Fewer outliers would result in more stable/accurate estimates.

Dollar values from the ACS0812 are reported in 2012 constant adjusted dollars. To adjust for inflation back to the 2010 base year, all ACS0812 estimates were adjusted using the U.S. Dept. of Labor, Bureau of Labor Statistics Consumer Price Index Report, Table 24: Historical Consumer Price Index for All Urban Consumers (CPI-U): U. S. city average, All Items (see <http://www.bls.gov/cpi/cpid1507.pdf>, pg. 68). These adjustments to the ACS0812 estimates were incorporated before any additional steps were applied to create the variables described below.

AvgHhInc2010Adj – The average household income for the Census Block Groups covering the TAZ. Because TAZs and Census Block Groups are not necessarily fully encapsulated, the following rules were developed to estimate average household income:

1. If a TAZ has no households in 2010, the average household income assigned to it is \$0;
2. If a TAZ is fully covered by a single Census Block Group, the average household income assigned to it is the average household income of the Census Block Group.  
Block Group average household income is calculated by dividing the Aggregate Household

Income Estimate (ACS0812, Table B19025) by the Total Number of Households (ACS0812, Table B11001);

3. If a TAZ spans more than one Census Block Group, the average household income is assigned using the following formula

$$\sum_{b=1}^B \frac{\text{Households in Specific Block Group and TAZ}}{\text{ALL Households in TAZ}} \times (\text{ACS0812 Block Group Household Avg. Income}) \times \Gamma$$

where:

$B$  = set of all block groups intersecting a specific TAZ

$\Gamma$  = constant adjustment factor based on CPI-U to adjust ACS0812 Household Income values to 2010 constant dollars

MOEAvgHhInc2010Adj – The margin of error for the 90% confidence interval (i.e., 1.645 x Standard Error of the Estimate (aka Root Mean Squared Error)) surrounding the AvgHhInc2010Adj estimate. Because TAZs and Census Block Groups are not necessarily fully encapsulated, the following steps were applied:

1. Estimate margin of error for average household income for each block group, using the Aggregate Household Income (ACS0812, Table B19025) and Total Number of Households (ACS0812, Table B11001) as inputs to the recommended formula for calculation derived ratios described in the American Community Survey State and Local Government Handbook (<https://www.census.gov/content/dam/Census/library/publications/2009/acs/ACSstateLocal.pdf>, pg. A-15)
2. Estimate proportional contribution of each block group to household income Margin of Error squared using the following formula:

$$\sum_{b=1}^B \left( \frac{\text{Households in Specific Block Group and TAZ}}{\text{ALL Households in TAZ}} \times \left( \frac{\text{ACS0812 Block Group Household Avg. Income}}{\text{Margin of Error}} \right) \times \Gamma \right)^2$$

where:

$B$  = set of all block groups intersecting a specific TAZ

$\Gamma$  = constant adjustment factor based on CPI-U to adjust ACS0812 Household Income values to 2010 constant dollars

3. Take square root of Step #2

EstMedHhInc2010Adj – The estimated median household income for the TAZ, as computed from ACS0812, Table B19001 and Table B19013. Because TAZs and Census Block Groups are not necessarily fully encapsulated, the following rules were developed to estimate average household income:

1. If a TAZ has no households in 2010, the median household income assigned to it is \$0;
2. If a TAZ is fully covered by a single Census Block Group, the median household income assigned to it is the median household income of the Census Block Group. Block Group median household income is taken from ACS0812, Table B19013
3. If a TAZ is covered by multiple Census Block Groups, the median household income is estimated using the frequency distribution of all the composite Block Groups intersecting the TAZ.



Categorical frequencies for individual Block Groups are obtained from ACS0812, Table B19001. The method of TAZ median income estimation is as follows:

- a. Aggregate the total number of households per income category, across all Census Block Groups intersecting the TAZ
- b. From a.), use the following formula to estimate the median of the frequency distribution:

$$L_{u-1} + (N/2 - F_{u-1})/f_u * i$$

where:

$L_{u-1}$  = the upper limit of the category immediately prior to the one containing the median of the distribution (e.g., for a distribution with a median income between \$20,000 - \$29,999, this value would be \$19,999);

$N/2$  = the total number of aggregated households across all income categories and census block groups within the TAZ (i.e., the estimated position of the median for the TAZ specific income distribution);

$F_{u-1}$  = the cumulative frequency of households across all income categories and census block groups within the TAZ, *up to the category immediately preceding the one containing the median observation*;

$f_u$  = the number of observations in the category containing the median income value;

$i$  = the width of the category containing the median income (e.g., for a distribution with a median income between \$20,000 - \$29,999, the category width would be \$9,999)

School2010 – The total primary and secondary school enrollment, as of Fall 2010, in the TAZ. Source data for enrollment values come from the Georgia Governor’s Office of Student Achievement (for public schools in Macon-Bibb County and Jones County), and the Macon-Bibb County School District (for private schools; according to Jones County Board of Education staff, no private primary or secondary schools existed in the Jones County area in 2010).

The only school facility in the portion of Monroe County covered by the MATS MPO area was a private school with 10 students in 2010.

#### *Employment Data Sources*

All employment data for the 2010 base year are collected from the National Establishment Time-Series Database, 2012 Release (NETS 2012), produced by Walls & Associates. This data was obtained as part of a purchase through Dun & Bradstreet. The particular version of the NETS 2012 obtained covers all economic activities in Macon-Bibb, Jones, and Monroe counties from 1990 through 2012, and includes the total employment at the particular establishment, along with the 8 digit Standard Industrial Classification (SIC) Code (version 1987) for up to six economic activities at a particular establishment.

The SIC 1987 indexing system was replaced with the North American Industrial Classification System (NAICS) in the mid 1990s. Therefore, a translation table was provided by Dun & Bradstreet between the

SIC 1987 and the latest version of the NAICS (NAICS 20102). The NAICS 2012 translation table was joined to the core establishment location data before applying the GDOT economic activity categories to the source employment data (See Table 4-2 in *General Summary of Recommended Travel Demand Model Development Procedures for Consultants, MPOs and Modelers*, Atkins, May 2013).

Summary statistics for the NETS 2012 data are as follows:

NETS 2012 Geospatial Data		NETS Employment Estimates	
Total number of Establishments in MATS Counties:	42,240	Actual Employment Figure	21647
Within TAZs covering MATS MPO area:	32,999	Bottom of Range of Values	127
With valid Block or Street Level Geocoding:	27,971	(i.e., conservative estimate)	
		Dun & Bradstreet Estimate	4666
Percent of business establishments in NETS 2012 within MPO boundary and having valid geocoding:	<b>84.76%</b>	Walls & Associates Estimate	1531
		<b>Total:</b>	<b>27,971</b>

TtlEmp2010 – The total employment in the TAZ in 2010 identified in the NETS 2012 database, summed across all categories classified by GDOT.

UnclassifiedEmp10 – The amount of 2010 employment in the NETS 2012 database located in the TAZ that did not otherwise fall into one of the GDOT specified categories

RetailEmp10 – The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Retail according to GDOT classification standards.

ServiceEmp10 - The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Service according to GDOT classification standards.

ManufEmp10 - The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Manufacturing according to GDOT classification standards.

WholeSaleEmp10 - The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Wholesale according to GDOT classification standards.

#### *College Enrollment and On-Campus Housing Estimates*

Estimates for university and technical college enrollments and on-campus housing estimates for Fall 2010 were collected by contacting the individual campus registrar offices. For the MATS MPO region, there were eight (8) institutions identified:

1. Central GA Technical College – Jones County Campus
2. Central GA Technical College – Macon Campus
3. Georgia College & State University Graduate Program (i.e., satellite of Milledgeville campus)
4. Macon State College (recently renamed/reclassified as Middle GA State University)
5. Mercer University
6. Mercer University Medical School
7. Mercer University Law School
8. Wesleyan College

Institutions were geocoded according to their respective campus addresses, verified with Google Earth satellite imagery, then joined to their respective TAZs. Special note should be taken of the following:

- a. Estimates for Macon State College/Middle GA State University on campus housing are not fully validated. The 2010-11 academic year was the first year that campus housing was offered as an option, and the staff person in charge of keeping those records has since left the institution.
- b. Mercer University Medical School is on the same campus as the main Mercer University campus. However, the entire campus has been segmented into 3 distinct TAZs.

ColgEnrol2010 – The total college population across all undergraduate, graduate and/or professional programs attending classes at campuses located within the TAZ.

OnCampSelfRept – The total number of students living in on-campus housing (i.e., dormitories) in Fall 2010, as reported by the university or technical college.

*\*Special Note: For TAZ 158, the value is based on number of “cottage residents” for GA Academy for the Blind. This is NOT a university or technical college, so the ColgEnrol2010 value remains zero. The actual enrollment at this facility in 2010 is 111; that enrollment value has been incorporated into the School2010 value for TAZ 158*

OnCampusCensus – The total number of people living in dormitory group quarters *according to the 2010 U.S. Census* (U.S. Census 2010, Table P42-Group Quarters Population by Group Quarters Type). This number may be slightly different than the OnCampSelfRept value, due to the fact that U.S. Census 2010 asks where the individual was living as of April 1, 2010 (i.e., during the Spring 2010 semester).

OffCampSelfRept – An estimate of the number of college students across all undergraduate, graduate and/or professional programs not living in on campus housing, using the university/technical college self reported figures. This figure is calculated by the formula:

$$\text{OffCampSelfRept} = \text{ColgEnrol2010} - \text{OnCampSelfRept}$$

*\*Special Note: For TAZ 158, the value is based on number of “cottage residents” for GA Academy for the Blind. This is NOT a university or technical college. Because of the special nature of this facility, the formula for estimating the OffCampSelfRept value for TAZ 158 is:*

$$\begin{aligned} \text{GA Academy for the Blind Total Enrollment in 2010} &- \text{GA Academy for the Blind Cottage Residency} \\ &= 111 - 69 \\ &= 42 \end{aligned}$$

OffCampusCensus - An estimate of the number of college students across all undergraduate, graduate and/or professional programs not living in on campus housing, using values reported by the U.S. 2010 Census. This figure is calculated by the formula:

$$\text{OffCampCensus} = \text{ColgEnrol2010} - \text{OnCampCensus}$$

### **List of Non Local Supplemental Data Sets Used**

1. American Community Survey 2008-2012 5 Year Averages (Block Group Geography)
  - a. Table B11001 – Household Type (Including Living Alone)
  - b. Table B19001 - Household Income In The Past 12 Months (In 2012 Inflation Adjusted Dollars)
  - c. Table B19013 – Median Household Income
  - d. Table B19025 – Aggregate Household Income In The Past 12 Months (In 2012 Inflation Adjusted Dollars)
2. U.S. 2010 Census, Summary File 1, Table P42 - Group Quarters Population by Group Quarters Type
3. U.S. Dept. of Labor, Bureau of Labor Statistics Consumer Price Index Report, Table 24: Historical Consumer Price Index for All Urban Consumers (CPI-U): U. S. city average, All Items (<http://www.bls.gov/cpi/cpid1507.pdf>)
4. National Establishment Time-Series Database, 2012 Release, produced by Walls & Associates
5. Georgia Governor's Office of Student Achievement: Enrollment By Grade Level 2011 Through Jan. 15<sup>th</sup> 2015 (<https://gosa.georgia.gov/2010-11-downloadable-data-files>)

### **TAZ Errata and Future Year Conditions**

1. Bibb County
  - a. Attribution Errors for population and housing (i.e., population>0, but households=0):
    - i. TAZ #46 – Topology rule misattributes 889 inmates from Law Enforcement Center to this TAZ. Jail inmates should be counted as group quarters residents in TAZ #56
    - ii. TAZ #45 – Residents appear to be part of Dismas re-integration facility (i.e., halfway house).
    - iii. TAZ 41 – Loaves & Fishes Ministry: Possible homeless shelter
    - iv. TAZ 14 – Mulberry St. Methodist Church: Possible homeless shelter
    - v. TAZ 2 – No residential structures in this area. Possible attribution error?
  - b. New student housing opening in TAZ 80 in Fall 2015. Housing for approximately 1044 graduate students
  - c. Mercer Medical School split between TAZ 67 and TAZ 66. Recommend re-drawing/consolidating this TAZ to avoid artificially splitting student allocations.
2. Jones County
  - a. Gray Elementary School moves from TAZ 542 to TAZ 543 starting in 2015/16 school year

### **General Notes on MATS 2040 Forecast Year Data Assembly**

1. All GIS and data assembly tasks were performed using the following software packages:
  - a. Spatial Analysis/GIS – ArcGIS 10.2.2, ArcINFO license
  - b. Tabular data organization:
    - i. Microsoft Access 2013
    - ii. Microsoft Excel 2013
2. All GIS and Spatial Analysis tasks were standardized to the NAD 1983 Georgia State Plane West coordinate system. Distance measurement units are in Feet.
3. All variable names listed below are underlined
4. Contact information/questions regarding data development:

Mike Greenwald  
Planning Director/MPO Technical Coordinator  
Macon-Bibb Co Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, GA 31201  
478-751-7472; FAX 478-751-7467  
[MGreenwald@mbpz.org](mailto:MGreenwald@mbpz.org)



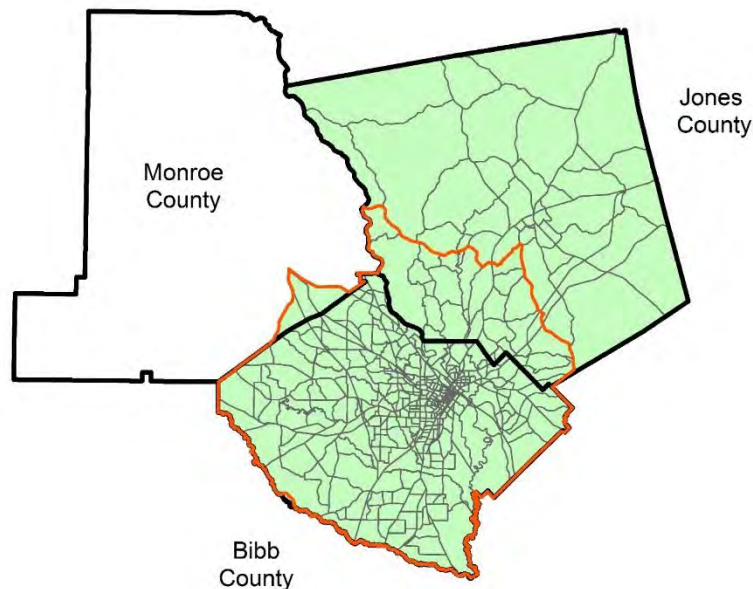
### Continuity with 2010 Base Year Data Assembly

This forecast data uses the same TAZ zone system and base year data as the 2010 Base Year data assembly for the Macon Area Transportation Study (MATS) 2040 Long Range Transportation Plan Update (2040 LRTP Update).

Estimates in this data set are expressed as marginal changes (i.e., increases or decreases) over the 2010 Base Year estimate. In many cases, the corresponding original 2010 Base Year estimate is included as a frame of reference. IN those cases where the original 2010 Base Year is included in this data set, these base year values are the same (and therefore follow the same definitions and data assembly methodology) as those delivered on September 25, 2015. For full details on base year variables see LRTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx, or contact Dr. Michael J. Greenwald, AICP at the Macon-Bibb County Planning and Zoning Commission (see contact information on previous page).

#### *Sources for Population Growth Estimation*

The jurisdiction of the MATS area covers the entirety of Bibb County, and portions of neighboring Jones and Monroe Counties (see orange outline in Fig. 1, below)



Population forecasts for Bibb, Jones and Monroe Counties were obtained from the Georgian Governor's Office of Planning and Budget on 1/4/2016. Marginal changes for each county were calculated by the following formula:

Est. population growth 2010 through 2040 = Est. County 2040 Population – 2010 U.S. Census Population

Because Jones and Monroe County are only partially covered by the MATS service area, marginal population growth was apportioned based on the individual county proportion of population in the 2010 Census covered by the MATS boundaries. Table 1 provides an overview of the calculation steps:

**Table 1: Marginal Growth Apportionment for MATS Areas**

	Population 2010	Population 2040	Change 2010 through 2040	Pop Pct Within MATS Area 2010	Anticipated Pop Growth Within MATS Area
Bibb	155,547	160,526	4,979	100.00%	4,979
Jones	28,669	33,262	4,593	65.87%	3,026
Monroe	26,424	34,417	7,993	6.46%	517

Step by step calculations can be retraced/examined in the Excel spreadsheet

**CensusPopulationCountsAndGAOPBEstimates19602040v02092016.xlsx**, attached to this documentation.

#### *Population Growth and Household Increase Apportionment*

Using the county marginal totals from Table 1 as upper limits of anticipated growth in each county, population was assigned to households based on the following rules:

1. TAZs where future growth is anticipated were identified by conversations with Macon-Bibb Planning & Zoning Commission Staff, and Jones County Planning & Zoning Director. Households were assigned to net available residential land, as identified in the latest land use plan for the county in question covering the period of time in question. By county, the calculation was:

- a. Bibb County – By future growth TAZ,

All residential acreage in the 2040 Future Land Use Plan

– Residential acres located in 100 Year Flood Plain

– Residential Acres Already Encumbered in 2010 (determined by finding at least 1 person on parcel)

**Anticipated Net residential Acreage Available in 2040 for Macon-Bibb County**

**Dwelling Unit Density in 2010 = Total Housing Units in 2010 Census (Table H3, U.S. Census 2010) /Encumbered Acres in 2010**

$$\text{Vacancy Rate 2010} = \frac{\text{Vacant Units in 2010 Census (Table H3, U.S. 2010 Census)}}{\text{Total Housing Units in 2010 Census (Table H3, U.S. Census 2010)}}$$

$$\text{New Households in TAZ 2040}_{\text{Macon-Bibb County}} = \text{Anticipated Net Residential Acreage Available in 2040} \\ \times \\ \text{Dwelling Unit Density in TAZ in 2010} \\ \times \\ (1 - \text{Vacancy Rate})$$

- b. Jones County – By future growth TAZ,  
 All residential acreage in the Future Land Use Plan, v. 2007  
 – Residential acres located in 100 Year Flood Plain  
 – Residential Acres Already Encumbered in 2010 (determined by finding residential lots located in non-zero population Census Block)  
**Anticipated Net residential Acreage Available in 2040 for Jones County**

$$\text{Dwelling Unit Density in 2010} = \frac{\text{Total Housing Units in 2010 Census (Table H3, U.S. Census 2010)}}{\text{Encumbered Acres in 2010}}$$

$$\text{Vacancy Rate 2010} = \frac{\text{Vacant Units in 2010 Census (Table H3, U.S. 2010 Census)}}{\text{Total Housing Units in 2010 Census (Table H3, U.S. Census 2010)}}$$

$$\text{New Households in TAZ 2040}_{\text{Jones County}} = \text{Anticipated Net Residential Acreage Available in 2040} \\ \times \\ \text{Dwelling Unit Density in TAZ in 2010} \\ \times \\ (1 - \text{Vacancy Rate})$$

- c. Monroe County – Conversations with Anita Cauthen in Monroe County Planning & Zoning Office indicated they anticipate the future marginal population increases in the three MATS TAZs located in Monroe County (i.e., TAZs 600, 601 and 602) to be allocated according to the proportions of 40%, 40% and 20%, respectively. Using these proportions, the dwelling unit density recommended for the area by the Monroe County Planning & Zoning Office, and the average household size in the TAZ, future population and household estimates were applied to each TAZ.
2. Population was estimated for each TAZ by calculating the Average Household Size for each TAZ in 2010, and then multiplying that by the number of anticipated new households from Step 1. The calculation steps were as follows:

- a. Census Block Population Size = **Average Hh Size for Occupied Housing Units (Table H12, US 2010 Census)**  

$$\times$$
  
**Total Number of Occupied Housing Units (Table H4, US 2010 Census)**
- b. TAZ Population in Households in 2010 =  $\sum_{i=0}^n$  **Census Block Population Size**  
where  $i$  = Index of all Census Block Groups within a particular TAZ
- c. TAZ Occupied Housing Units in 2010 =  
 $\sum_{i=0}^n$  **Census Block Occupied Housing Units (Table H3, US 2010 Census)**  
where  $i$  = Index of all Census Block Groups within a particular TAZ
- d. Avg Household Size for TAZ in 2010 =  $\frac{\text{TAZ Population in Households in 2010}}{\text{TAZ Occupied Housing Units in 2010}}$
- e. Est. Population Growth for TAZ in 2040 =  $\frac{\text{Avg Household Size for TAZ in 2010}}{\times}$   
**New Households in TAZ 2040**

#### *Employment Growth Apportionment*

Future year employment estimates were generated by Dun & Bradstreet, using a proprietary time series estimation model based on the updated 2014 version of the National Establishment Time-Series Database (NETS 2014), produced by Walls & Associates. For further details on the regional scope and properties of the NETS database used for the 2040 LRTP Update, please see the data documentation for the 2010 base year data set (**LRTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**).

The model estimated future employment, by two digit SIC code, using existing individual establishments with non-zero employment for 2011 and 2012. The model assumes growth at existing establishments, as opposed to generation of new business entities at greenfield or infill locations. Therefore, while the total employment growth estimate is presumed to be accurate in the aggregate, the future location is subject to revisions.

#### *Public School Enrollment Changes, College/University Enrollments and On Campus Housing Growth*

All estimates of 2010 student enrollment and on-campus housing estimates are carried over from the 2010 base year data set; please see **LRTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx** for full details.

Student growth at the elementary and secondary levels were deconstructed into components based on:

- a) how much growth could be anticipated from population growth; plus
- b) how much change could be anticipated based on anticipated facility expansions and/or closures

School growth anticipated by population growth was estimated in a two step process:

1. Calculate the anticipated growth in school age population in each TAZ with anticipated growth, based on the following formula:  
**Total anticipated population growth**  
**x**  
**Proportion of students that fell into elementary, middle or high school population brackets, based on 2010 Census proportions (as estimated from Table P14, U.S. 2010 Census)**
2. Allocate students to destination TAZs, based individual student category (elementary, middle or high school) and appropriate school district service areas covering the TAZ growth areas.

Where more than one school option of a particular student grouping was available, the student growth was allocated to the corresponding TAZs according to the proportion of the latest enrollment in each destination TAZ (e.g., where more than two or more elementary schools were a viable option to serve given growth area, the proportion of new elementary school students assigned to each destination TAZ was based on the proportion of total elementary school enrollment across all candidate zones).

Changes in school facility expansions or closures were obtained by contacting the Bibb County School District, and the Jones County School District, then applying those figures to the associated TAZs.



## Variable Definitions

**TAZ\_NEW** – The Transportation Analysis Zone for which the data is being collected. TAZ indexing reflects the zone system developed for mats\_2040\_lrtptaz\_Aug272015\_New TAZ set, developed by GDOT and HNTB.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

**GrowthPriority** – An ordinal classification of which TAZs are anticipated for future development. A value of “0” indicates that the TAZ is not targeted for growth between the 2010 base year and the 2040 plan target year.

This variable only applies within its respective county (e.g., A value of “1” in Macon-Bibb (TAZ<=499) does not correspond to contemporaneous development of a TAZ with a value of “1” in Jones (TAZ between 500 and 599, inclusive) or a TAZ with a value of “1” in Monroe County (TAZ 600,601,602)) and it does not indicate precise year for future development

**TtlPop2010** – The total number of persons identified as living in the specific TAZ, as of April 1, 2010.

Values are based on U.S. Census 2010 counts reported at the block group level of geography, summed up to the TAZ level.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

**PopGrowth2040** – The marginal change in population anticipated to occur in the TAZ between the 2010 base year and the 2040 plan year, based on the calculation methodologies described in the previous section.

**TtlHh2010** – The total number of households identified as living in the specific TAZ, as of April 1, 2010.

Values are based on U.S. Census 2010 counts reported at the block group level of geography, summed up to the TAZ level.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

**HhGrowth2040** – The marginal change in households anticipated to occur in the TAZ between the 2010 base year and the 2040 plan year, based on the calculation methodologies described in the previous section.

**AvgHhInc2010Adj** – The average household income for the Census Block Groups covering the TAZ, in 2010 constant dollars.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

**TtlEmp10** – The total employment in the TAZ in 2010 identified in the NETS 2012 database, summed across all categories classified by GDOT.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

FrcstTtlEmp2040 – The total employment forecast for the TAZ in 2040, as estimated by Dun & Bradstreet (methods described in the previous section). This variable is the aggregate of the variables FrcstUnclassifiedEmp2040, FrcstManufEmp2040, FrcstWholesaleEmp2040, FrcstRetailEmp2040, and FrcstServiceEmp2040 (see descriptions below)

TtlEmpChg20102040 – The marginal change in total employment in the TAZ from the 2010 base year through the 2040 plan year. Calculated as  $FrcstTtlEmp2040 - TtlEmp10$ .

UnclassifiedEmp2010 – The amount of 2010 employment in the NETS 2012 database located in the TAZ that did not otherwise fall into one of the GDOT specified categories

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

FrcstUnclassifiedEmp2040 – The amount of employment forecast for the TAZ in 2040, not otherwise fall into one of the GDOT specified categories, as estimated by Dun & Bradstreet (methods described in the previous section).

UnclassifiedEmpChg20102040 – The marginal change in employment in the TAZ, which did not otherwise fall into one of the GDOT specified categories, from the 2010 base year through the 2040 plan year. Calculated as  $FrcstUnclassifiedEmp2040 - UnclassifiedEmp2010$ .

ManufEmp2010 - The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Manufacturing according to GDOT classification standards.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

FrcstManufEmp2040 – The amount of employment forecast for the TAZ in 2040, as estimated by Dun & Bradstreet (methods described in the previous section) classified as Manufacturing according to GDOT classification standards.

ManufEmpChg20102040 – The marginal change in employment in the TAZ from the 2010 base year through the 2040 plan year, classified as Manufacturing according to GDOT classification standards. Calculated as  $FrcstManufEmp2040 - ManufEmp2010$ .

WholeSaleEmp2010 - The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Wholesale according to GDOT classification standards.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

FrcstWholeSaleEmp2040 – The amount of employment forecast for the TAZ in 2040, as estimated by Dun & Bradstreet (methods described in the previous section) classified as WholeSale according to GDOT classification standards.

WholeSaleEmpChg20102040 – The marginal change in employment in the TAZ from the 2010 base year through the 2040 plan year, classified as Manufacturing according to GDOT classification standards. Calculated as  $FrcstWholeSaleEmp2040 - WholeSaleEmp2010$ .

RetailEmp2010 – The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Retail according to GDOT classification standards.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

FrcstRetailEmp2040 – The amount of employment forecast for the TAZ in 2040, classified as Retail according to GDOT classification standards, as estimated by Dun & Bradstreet (methods described in the previous section).

RetailEmpChg20102040 – The marginal change in employment in the TAZ, classified as Retail according to GDOT classification standards, from the 2010 base year through the 2040 plan year. Calculated as FrcstRetailEmp2040 – RetailEmp2010.

ServiceEmp2010 - The amount of 2010 employment in the NETS 2012 database located in the TAZ and categorized as Service according to GDOT classification standards.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

FrcstServiceEmp2040 – The amount of employment forecast for the TAZ in 2040, as estimated by Dun & Bradstreet (methods described in the previous section) classified as Service according to GDOT classification standards.

ServiceEmpChg20102040 – The marginal change in employment in the TAZ from the 2010 base year through the 2040 plan year, classified as Service according to GDOT classification standards. Calculated as FrcstServiceEmp2040 – ServiceEmp2010.

School2010 – The total primary and secondary school enrollment, as of Fall 2010, in the TAZ.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

TtlsSchoolChg20102040 – The total change in school enrollment attributable to each TAZ between the 2010 base year and the 2040 forecast year, based on anticipated population growth, . Total values are segmented by the amount that is attributable to population growth, as compared to changes due known reallocation of existing school resources (i.e., openings, closures, consolidations of campuses).

SchoolDistReorgChg20102040 – The amount of change in student population growth attributable to school closures, openings and campus consolidations. Verified by contacting Bibb County School District and Jones County School District (no public schools or large educational institutions in Monroe County were identified in the MATS study area).

StudentGrowthChg20102040 - The amount of change in student population growth attributable to new residential development, based on formula described in previous section.

CollegeEnroll2010 - The total college population across all undergraduate, graduate and/or professional programs attending classes at campuses located within the TAZ.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

OnCampSelfRept2010 - The total number of students living in on-campus housing (i.e., dormitories) in Fall 2010, as reported by the university or technical college.

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

OnCampusCensus2010 - The total number of people living in dormitory group quarters *according to the 2010 U.S. Census* (U.S. Census 2010, Table P42-Group Quarters Population by Group Quarters Type).

This number may be slightly different than the OnCampSelfRept value, due to the fact that U.S. Census 2010 asks where the individual was living as of April 1, 2010 (i.e., during the Spring 2010 semester).

This variable carries over from the 2010 Base Year file submitted on 9/25/2015. For specific details on how it was developed, please see **L RTPBaseYear2010TAZDataDocumentationUPDATE09252015.docx**

OnCampusResGrowth - The total change in group quarters housing associated with universities, attributable to each TAZ between the 2010 base year and the 2040 forecast year, based on anticipated growth in student enrollment. Values were obtained by contacting Mercer University, Wesleyan University and Middle Georgia State University campus housing departments.

#### **TAZ Errata and Future Year Conditions**

##### **1. Jones County**

- a. MATS area growth population proportion was overestimated due to erroneous inclusion of TAZs neighboring MATS border area. Correct value of anticipated population growth is 1,891 persons.

GDOT Office of Planning notified of error by e-mail on 1/9/2017. Based on subsequent telephone conversations with GDOT staff, decision was mutually reached between GDOT and MATS that error would result in no significant alterations or adjustments to future year network modeling.

Corrected anticipated population growth totals for Jones County were applied to demographic forecasting, and have been incorporated into results presented in Chapter 3 of the MATS 2040 Long Range Transportation Plan Update.

## Appendix D

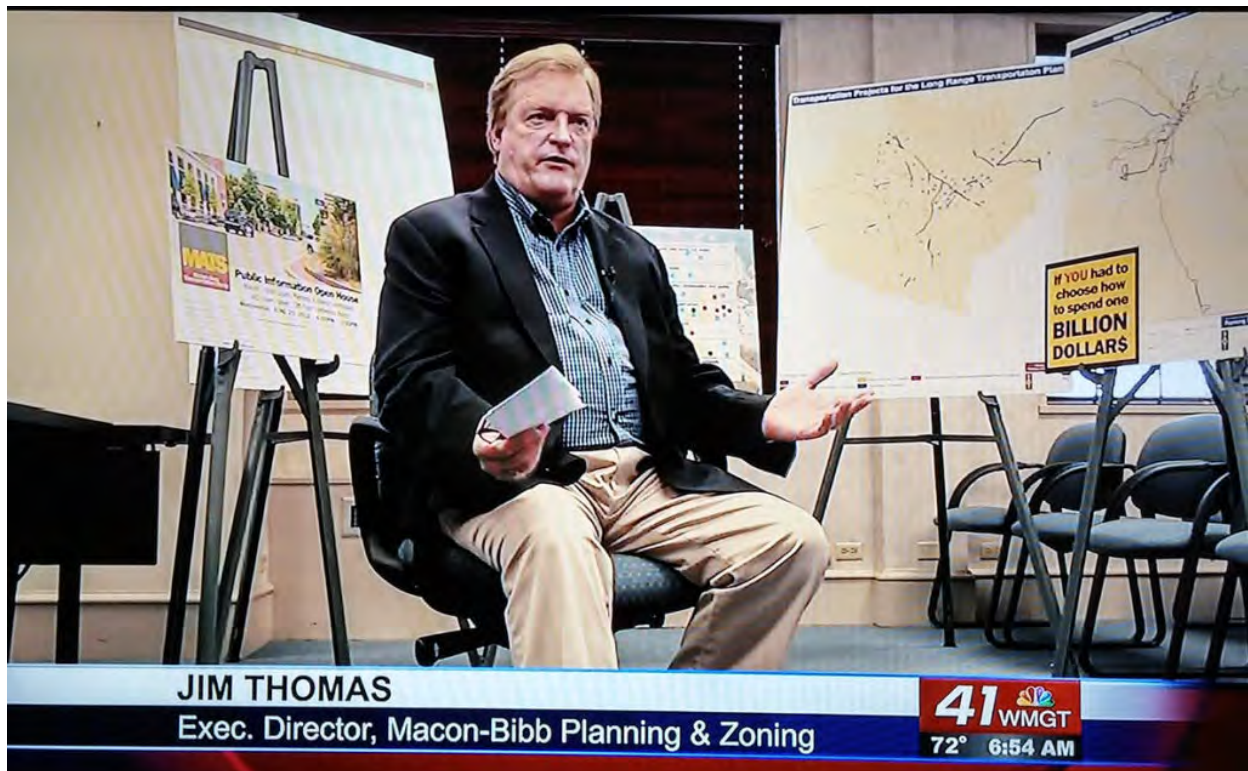


Channel 13 WMAZ: July 18, 2016



Channel 41 NBC: June 29, 2016





Channel 41 NBC: June 29, 2016-Interview with Jim Thomas

## MACON-BIBB P&Z ASKING FOR PUBLIC INPUT ON ROAD, TRANSPORTATION PROJECTS



By: [Skyler Henry](#)

Submitted: 06/28/2016 - 7:03pm

Tags: [Macon-Bibb County Planning & Zoning](#), [road improvements](#)



MACON, Georgia (41NBC/WMGT) – Macon-Bibb's Planning and Zoning Commission is asking residents what would they do with a billion dollars to spend.

A likely reality over the course of the next 25 years according to leaders with the commission.

The list is long for Jim Thomas.

He's the executive director for Macon-Bibb County's Planning and Zoning Commission.

"You can see that you've got a lot of interest here in improving public transportation," Thomas said.

Thomas has markers, posters, diagrams, and maps targeting areas where the county can spend money on road improvements.

"Any project that uses federal dollars has to come through this process," he said.

From bike lanes to road expansions, it's part of a process to evaluate possible projects every four years in a 25 year span.

This time Thomas predicts a budget of nearly a billion dollars from federal, state, and local funding over that time.

"We have huge projects like 16/75 interchange. It's huge, it's actually seven separate projects. Then we have the smaller projects that are a lot more safety improvements," Thomas said.

Safety improvements residents want.

see addressed.

"There's a lot of desire for improved transit and improved pedestrian bicycle facilities," he said.

...moving the topics up on the list — setting a blueprint for years to come.

"Using accurate data and making those projections, we can get a pretty good idea of what's going to happen in the next 25 years," Thomas said.

There's an open house Wednesday where planning and zoning staff is looking for feedback on road improvements. It's at the Willie C. Hill Government Center Annex Building.

Share:



June 15, 2016 mulberry farmers Market  
Tatnell Square Park, Macon, GA

## Macon Area Transportation Study - E-Newsletter

### STAY UP TO DATE WITH TRANSPORTATION PLANNING IN THE MACON AREA

NAME	COUNTY	PHONE	EMAIL	COMMENTS
L. Putkowski	Washington	706.973.8164	FarmForest@procc@gmail	
Amber Higgins	Bibb	478-832-2832	amberhiggins@mail.com	
Natalie Chambliss Beach	Bibb	4783902212	chambliss.beach@yahoo.com	
Amanda Giles	Bibb		amandaegayward@hotmail.com	
Carthral Jones	Bibb	6783681878	carthraljones@yahoo.com	
Shannon Fickling	Bibb	478-737-8873	shannon@shannonficklingarchitect.com	
Jim Beall	Bibb	478 743-9023	jim@beallsp.com	
Kerry Turner	Bibb	478 737 9138	Kamjas@yahoo	
Janeen Brown	Bibb	4788323952	naq.brown2@yahoo.com	
Georgia Informer			gaifformer@yahoo.com	
Cornelia Walker			Cornelia - Walker2002@yahoo.com	
William Pollard			Pollardjr.william@yahoo.com	
Ralph Clark, 137 Parkwood Ave, 31210		478-731-3308	JRclark08@aatt.net	
Gregory L. Brown	P&Z Staff			
Brad Belo	P&Z Staff			
Ken North	P&Z Staff			

Sign Up Sheet LRTP Update E-Newsletter: June 15, 2016 at Mulberry Farmer's Market





## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Macon Terminal Station, Bus Transfer Area, (200 Cherry Street, Macon, Georgia)

Friday, June 24, 2016, 10:00AM – 2:00PM

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. Richard Glover	Bibb	478-512-1203	Glover18@gmail.com	Yes
2. Ron Shipman	Bibb	478-784-5700	RSHIPMAN@SOUTHERNECO.COM	Y
3. Danny Glover	Bibb	401-654-7472	dannydglover13@gmail.com	Y
4. Forrest Edwards	Bibb	<del>478-512-1203</del>	oldgoat1964@yahoo.com	Y
5. Newton Collier	Bibb	478-501-2404	NewtCollier@battman.com	Y
6. James E. Collier	Bibb	478-508-2858	ChefJamesCollier49@gmail.com	Y
7. Conterma A. Lester	Bibb	478-718-0379	ContermaA.Lester@yahoo.com	Y
8. Emanuel Harris	Bibb	478-321-3091	Spunkyndee@gmail.com	Y
9. Elam D. Bryant	Bibb	478-978-2789	Elagbry@gmail.com	Yes
10. Billy Waters	Bibb		Watersb1286@gmail.com	Yes
11. Karla Foy	Bibb		Torrey20@gmail.com	Yes
12. Mary Ingram	Bibb			
13. Willie Mowatt	Bibb	478-9030		
14. Kimitel Charles	Bibb			
15. David Bell	Bibb			
16. Russell Bush	Bibb	478-411-1111		Yes
17. Amy Carlson	Bibb			
18. E. Howard	Bibb			
19. James D. Adams	Bibb			
20. April Burton	Bibb		buthafles3@gmail.com	Yes

Gregory L. Brown  
Brad Belo, P&Z staff  
Weston Stroud, Planning Intern

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[www.mats2040.org](http://www.mats2040.org)



## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Macon Terminal Station, Bus Transfer Area, (200 Cherry Street, Macon, Georgia)

Friday, June 24, 2016, 10:00AM – 2:00PM

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. Freddie Pearson	Bibb	478 361 7509	Freddie.Pittman1957@gmail.com	
2. Sherita Rhodes	Bibb	478 388-0116 501-406	Sherita.Rhodes40@gmail.com	yes
3. Tavoris Clark	Bibb		tavorisclark55155@gmail.com	yes
4. Johnny Royal	Bibb	478 262-2369	Johnny.Royal28@gmail.com	yes
5. Larry Cromer	Bibb	478 258-0433	St Pauls Village 1355 Verseph St Apt E7	yes
6. Juan Cosby	Bibb	478-8329463	Juan Cosby of Iq...	yes
7. (M) Mervin Mather		404-839-7384	9 mil. com	
8. 1481 Forest Hill, Rd				
9. Andrew Malcolm	Bibb	478 962-0012		
10. Jalethia Braville	Bibb	478-788-5569	j.braville85@gmail.com	yes
11. Quivious Ritz	Bibb	478-788-5569	QuiviousRitz@gmail.com	yes
12. Malcolm X Steele	Bibb	404-540762	MalcolmXSteele@yahoo.com	yes
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MACON-BIBB COUNTY  
Planning & Zoning

Macon-Bibb Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, Georgia 31201 · MBPZ.org

## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Special Called MATS Citizens Advisory Committee Meeting

Public Information Open House

Macon – Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Macon, Georgia)

Wednesday, June 29, 2016, 6:00PM – 8:00PM

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. DONALD L. DRAITTSR	macon-Bibb	478 391-2406	donald.draitte@gmail.com	YES
2. Dr John Swint	Bibb	478 261-2188	drjohnswint@gmail.com	yes
3. Bobby Komlo	"	257.6592	yankees958@msn.com	Yes
4. Louis Joseph	Bibb	478 747 2571	louisjoseph@att.net	yes
5. Rev. Ben R Wells	Bibb	478-477-4616	ben@stfrancisMacon.org	yes
6. Lawrence Mink	Bibb	474-0971	lbmink@cox.net	YES
7. LINDSAY HILLARY	"	742-8699	Teeth@MindSpring.com	yes
8. Margaret Zell	Bibb	478 743-4882	mzell12@cox.net	Yes
9. TSAR SEARA	BIBB	478 461 4624	tsarina.legmail.com	Yes
10. Jalea Robinson	Bibb			
11. Anthony Jack	Bibb	478 797 2018		yes
12. Ken North	Bibb	751-7462	knorth@mbpz.org	
13. Arthur Hight	Bibb	788-7427	arthurhight@att.net	Yes
14. Carrie Barber	Bibb	478 731-7054	madbutterfly@att.net	
15. Gregory L. Brown				
16. Bob Belo	Bibb	800-263-6641	bbelo@mbpz.org	Yes
17. Michael Greenwald	Bibb	478-751-7472	mgreenwald@mbpz.org	
18. Jim Thomas	Bibb	478 751-7460	jp.thomas@mbpz.org	
19. Stanley Dunlap		Telegraph		
20.				

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Attendance Sheet for LRTP Special Call Citizen's Advisory Committee Meeting: June 29, 2016



MACON-BIBB COUNTY  
Planning & Zoning

Macon-Bibb Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, Georgia 31201 MBPZ.org

## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Macon – Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Macon, Georgia)

**Tuesday, July 12, 2016, 10:00AM – 7:00PM**

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. Anita Johnston	Bibb			
2. Prosalyn Perce	Bibb			
3. Kathy Shindolster	Jones		kshindolster@gmail.com	
4. Tonya Clay	Bibb		tclay@gmail.com	
5. Gregory L. Brown				
6. James P. Thomas				
7. Mike Greenward				
8. Brad Belo				
9. Ken North				
10. Weston Stroud				
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**MACON-BIBB COUNTY PLANNING AND ZONING COMMISSION**  
682 CHERRY ST., SUITE 1000, MACON, GEORGIA 31201

**MATS CITIZENS ADVISORY COMMITTEE MEETING - MINUTES SUMMARY**

**Meeting Description:** MATS Citizens Advisory Committee – Regular Meeting

**Date:** 07.13.16      **Time:** 6:00PM      **Location:** Macon-Bibb County P & Z Commission, 10<sup>th</sup> Floor Conference Room

NAME		REPRESENTING	Absent / Present
James P. Thomas		Macon-Bibb Planning & Zoning Commission	Present
Mike Greenwald		Macon-Bibb Planning & Zoning Commission	Present
Gregory L. Brown		Macon-Bibb Planning & Zoning Commission	Present
Ken North		Macon-Bibb Planning & Zoning Commission	Absent
Brad Belo		Macon-Bibb Planning & Zoning Commission	Present
Lynn Farmer		CAC/Commission District 1	Absent
Sherry L. Moore		CAC/Commission District 2	Present
Arthur Hubbard		CAC/Commission District 3	Present
Bob Komlo		CAC/Commission District 4	Present
John Swint		CAC/Commission District 5	Present
Vacant		CAC/Commission District 6	-----
Shelvy Neal		CAC/Commission District 7	Present
Amber Jones		CAC/Commission District 8	Absent
Ivy N. Cadle		CAC/Commission District 9	Absent
David Gault		CAC/Jones County Representative (Dist. 4)	Absent
Cliff Howard		CAC/Monroe County Representative (Dist. 3)	Absent
Louis Frank Tompkins		CAC/AARP Volunteer	Present
Michael Brown		CAC/Bike-Pedestrian Representative	Present
Anthony Jackson		CAC/Board of Education Transportation Division	Absent
Tina Hopper		CAC/Disabled Population Representative	Absent
Ella Mumphery		CAC/Disabled Transportation User	Absent
Rachel Hollar		CAC/Environmental Representative	Present
Mary Lou Ezell		CAC/League of Women Voters	Present
Michael Colbert		CAC/Macon Housing Authority	Present
Jada Robinson		CAC/Transit User	Present
Donald L. Druitt		Visitor	Present
Jim Lidstone		Visitor	Present
Lawrence Mink		Visitor	Present
<b>AGENDA</b>			
1	Call to Order		
2	Adoption of Agenda – Action Item		
3	Public Comment Period (5 Minutes)		
4	Approval of previous MATS CAC Minutes (April 13, 2016) – Action Item		
5	2040 Long Range Transportation Plan Update		
6	Old/Unfinished Business		
	• Citizens Advisory Committee (CAC) Vacant Positions		
7	New Business		

	<ul style="list-style-type: none"> <li>• Notification of FHWA / FTA Proposed Rulemaking: Consolidation of MPO's (Metropolitan Planning Organizations)</li> <li>• Smart Growth America</li> </ul>
8	Project Status Report – Agenda Item
9	Next meeting dates
10	Announcements
11	Adjourn

#### MINUTES

1. **Called to Order:** 6:10PM by John Swint, CAC Chair
2. **Prayer:** Louis F. Tompkins, CAC Member
3. **Adoption of Agenda – Action Item:** Approved with the recommendation to add the “Smart Growth” discussion under new business.
4. **Public Comment Period (5 Minutes):** Members of the general public were offered 5 minutes to address the committee. Mr. Mink addressed the committee and indicated that he’s observing the meeting and taking notes on SPLOST projects or any planned road projects to share with residents along the Bass Road area. Mr. Lidstone spoke about a childhood obesity prevention program called Live Healthy Baldwin to encourage residents to become physically active, as well as, a 33-mile Central Georgia Rail Trails project which is an option for a healthy form of transportation.
5. **Approval of previous MATS CAC Minutes (April 13, 2016) – Action Item:** A motion was made and properly seconded to approve the minutes as presented with the necessary correction under agenda item #5 “Mr. Michael Brown instead of Ms. Michael Brown”. Approved
6. **2040 Long Range Transportation Plan Update – Agenda Item:**
  - **Draft Goals & Objectives:** Brad Belo presented a summary chart of the goals, objectives and performance measures. Goals are categorized under 3 areas: FAST Act National Goals, State Goals and MATS LRTP Regional Goals. The goals from these categories were combined to draft the MATS LRTP Update Goals. Mr. Belo also described how each MATS LRTP Goal connects with the MATS 2040 LRTP Update Regional Performance Measures.
  - **Draft Revenue Projections:** Mike Greenwald described the various color coded network years (Blue 2020 Network Year; Peach 2030 Network Year; Orange 2040 Network Year). These network years are important because they are the sorting categories for each of the project as to how GDOT will evaluate each project. Green colored projects were recommended to the MPO by GDOT. Red colored projects relate to Bass Road. The Purple colored projects were recommended to the MPO as part of the comments received from public outreach activities dating back to June 15, 2016. Mike Brown asked that “In reference to cycling and pedestrian specific projects, what guidelines are in place when these projects get to the engineering phase”. The response was that the engineering process happens when the projects are included in the TIP. Mike Greenwald suggested to the committee to focus on projects in the 2030 network year (Project priority #21 – 60). Project priority #34 -35 relates to Bass Road. The Seventh Street Truck Route project was moved to Priority #36 at the recommendation of the County Engineer. It was mentioned that this is a project that the Mayor campaigned on and this project may need to be reconsidered regarding the movement of network years. Forest Hill Road project was moved to the 2030 network. Project #'s 39, 40, 41 and 42 were added to this list based on comments received during the public engagement activities. The total cost of overall projects is over \$1



billion dollars. A question was asked, what improvements could be made to Coliseum Drive in conjunction with the I-16/I-75 improvements, i.e., (Rear entrance/exit access to Second Street near the Chamber of Commerce). It was also mentioned that transit projects will have its own list. Mike Greenwald mentioned that revenue projections are suggesting that we're not where we need to be to pay for all the projects, however, the projections may balance once local revenue estimates from Jones & Monroe counties are provided. Additionally, this is based on whether or not GDOT (Georgia Department of Transportation) decides to totally fund some projects that don't require local match. Anticipated estimated revenue is calculated at a 1% inflation or 2% inflation recommended by GDOT (Conservative estimate or relaxed estimate). SPLOST Funds and LMIG (Local Maintenance Improvement Grants) are another source of revenue for projects. The CAC recommends that MATS staff calculate the revenue projections with the 2% inflation across the board for cost and revenues regarding the proposed LRTP project list.

- **Draft Project List:** The CAC recommends to move the Seventh Street Truck Route Project back into network 2020. A motion was made and properly seconded to approve the two recommendations suggested by the CAC to forward to the MATS TCC and Policy Committees.
7. **Old/Unfinished Business:**
- **Citizens Advisory Committee (CAC) Vacant Positions:** Commission District 6 remains vacant. Additionally, Amber Jones, Commission District 8 submitted a letter of resignation. By majority vote, the CAC voted to declare Commission District 8 vacant.
8. **New Business:**
- **Notification of FHWA / FTA Proposed Rulemaking: Consolidation of MPO's (Metropolitan Planning Organizations):** Mike Greenwald indicated that on Monday, June 27, 2016 U.S. DOT released a notice explaining that there's an effort to combine MPO's that serves multiple urbanized areas which has to make justification as to why the MPO's should remain separate entities (Macon and Warner Robins) and not consolidate. The CAC **voted to oppose** the idea of any proposed rulemaking regarding the consolidation of MPO's. MATS staff will share a link with the CAC to read and learn more about the proposed rulemaking.
  - **Smart Growth America:** Ms. Mary Lou Ezell suggested that MATS staff should research more information regarding Smart Growth America shared by Lee Martin and bring the information to the next meeting in October 2016.
  - **Planning 101 Orientation:** It was mentioned that an orientation should be done once all positions are filled on the MATS CAC.
9. **Project Status Report – Agenda Item:** The GDOT project status report was distributed to meeting attendees for information.
10. **Next meeting dates:** The next meeting of the CAC is scheduled to be held on Wednesday, October 12, 2016 at 6:00PM as a regular meeting.
11. **Announcements:**
- Macon – Bibb County Pedestrian Safety Stakeholder Summit, Tuesday, August 16, 2016, 8:30AM – 12Noon at the Macon – Bibb County Government Center, 700 Poplar Street, Macon, GA.;
  - 2040 LRTP public outreach schedule remaining dates; and
  - A "Planning 101" session will be scheduled for new and current CAC members
12. **Adjourn:** The meeting was adjourned at 8:13PM





## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Washington Memorial Library (1180 Washington Avenue, Macon, Georgia)

Monday, July 18, 2016, 6:00PM – 8:00PM

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. Shenalla Rivers	Bibb	478-714-5182	Shenalla.rivers@gmail.com	yes
2. Blake Wood	Bibb	478-471-0839	wood.blake@hcdma.com	yes
3. Bob Komla	11	757-6592	Got it	Yes
4. MELTON + THERESA MCKINNEY	BIBB	788-3857	melmacjr@a4t.net	YES
5. Camara Fontenot	BIBB		lager88@gmail.com	yes
6. Mike Benton	Monroe	478-471-0259	mbenton156@gmail.com	yes
7. Chris Jackson	Bibb	478-1172-7817	raybellu31@yahoo.com	yes
8. Samuel Knox				
9. Terrie Denson	Jones	478		
10. Muriel Jackson	Bibb	744-0821	jacksonm@bibbinfo.org	Yes
11. Shudra Burr	BIBB	745-0367	bshudra@yahoo.com	NO
12. Gregory L. Brown				
13. Ken North				
14. Brad Belo				
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# MATS TECHNICAL COMMITTEE ATTENDANCE

July 20, 2016

Name	Representing
1. David Fortson*	Director, Macon-Bibb Co. Engineering Dept.
2. Morgan Simmons*	Tom McQueen, Georgia D.O.T. Planning Office
3. Robert Ryals*	Director, Macon-Bibb Facilities Management
4. Jack Reed*	Adam Smith, Georgia D.O.T.
5. Stephen Adams*	Director, Macon-Bibb Industrial Authority
6. Ken North*	Macon-Bibb Planning & Zoning Commission
7. Jim Thomas*	MATS Project Director
8. Daniel Dobbins*	Middle GA Regional Comm.
9. Mike Greenwald*	Planning Director, Macon-Bibb Planning & Zoning Comm.
10. Brad Belo	Macon-Bibb Co. Planning & Zoning Comm.
11. Nigel Floyd*	Macon-Bibb Traffic Engineer
12. Krystal Stovall-Dixon	Georgia D.O.T.
13. William Johnson	Macon-Bibb Fire Dept.
14. Charles Brooks	Macon-Bibb Co. Engineering Dept.
15. Greg Brown	Macon-Bibb Co. Planning & Zoning Comm.
16. Tim Pitrowski*	Director, Jones County Zoning
17. Michel Wanna*	Tony Rojas, Macon Water Authority Director
18. Kevin Poss	Macon-Bibb Traffic Management
19. Opie Bowen*	Judd Drake, Macon-Bibb Attorney
20. Brenda Thomas*	Chief, Macon-Bibb Fire Dept.
21. Jason Smith	Macon-Bibb Facilities Management
22. Rick Jones*	Director, Macon Transit Authority
23. Alex Morrison*	Director, Macon-Bibb Urban Dev. Authority

\*Voting member

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MATS Technical Meeting  
July 20, 2016

A meeting of the MATS Technical Committee was held on July 20, 2016 at the Macon-Bibb Co. Planning & Zoning Office. There were 16 voting members present, thereby establishing a quorum. The minutes from the previous meeting were introduced and approved. The first item discussed on the agenda was the 2040 LRTP Goals & Objectives. Brad Belo reviewed the Goals & Objectives and commented that performance measures are a new concept that have been introduced in the LRTP. He discussed the regional goals and the attempt to consolidate these goals with the national and MATS goals. He also reviewed the individual goals for the MATS 2040 LRTP and their related objectives and performance measures. Rick Jones from the MTA inquired about the availability of funding for future projects such as transit. Currently, funding is not available for some important transit services.

The next item discussed as part of the 2040 LRTP update were the revenue estimates by Mike Greenwald. He reviewed the amount of revenues estimated for the highway capital and maintenance programs based on revenue patterns from the last 10 years. The estimates presented were for both a straight average and rolling average with 1% and 2% inflation rates. This information was the same that was presented to the CAC which preferred the straight average estimates with the 2% inflation rate. Alex Morrison remarked that the rolling average alternative would make more sense and Mike Greenwald also recommended it with the 2% inflation rate. However, Jim Thomas stated the LRTP project list would have to be shortened because the revenue estimate would be less with the rolling average. Tim Pitrowski inquired if future funding would be jeopardized as a result of using the lower estimates and it was explained that it would not be. Morgan Simmons commented that the TCC needed to make a recommendation in regards to the revenue estimation method. A motion was then made by Nigel Floyd to choose the rolling average method with the 2% inflation rate; however, the motion failed due to the lack of a second. Subsequently, a motion was made by Dave Fortson to choose the straight average method with the 2% inflation rate which was then seconded by Rick Jones. The motion was then approved by the members of the Technical Committee.

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The Project Status Report was the next item that was discussed on the agenda. Jack Reed reviewed the status of the various road projects. He mentioned that Phases 1-3 of the I-16/I-75 project are scheduled for letting in the fall/winter of 2016. It was also mentioned that the Jeffersonville Rd. project was behind schedule due to utility conflicts. The new bridge replacement projects were also presented which are currently in long range in terms of construction. Jim Thomas also mentioned that funding for the earmark projects from GDOT have been redirected to the I-16/I-75 projects so those projects will be taken off of the long range project list.

Under New Business, Mike Greenwald discussed the proposed new rule from the U.S. Dept. of Transportation (DOT) that could affect the Macon and Warner Robins MPOs. According to the U.S. DOT, there must be consolidation between adjacent MPOs if they can't demonstrate their urbanized areas are of sufficient size to warrant separate MPOs. If the MPOs remain separate, there still must be coordination in the production of the TIP and LRTP. However, Daniel Dobbins stated that if there are separate Metropolitan Planning Areas that exist then no merger is required which could apply in this case. Jim Thomas stated that local officials are against any consolidation and the comment period is open until August 26<sup>th</sup>. Morgan Simmons commented that Georgia D.O.T. does not have a formal position on this matter but it is a good idea to keep people informed about this. Mike Greenwald stated that if there is consolidation there will be no anticipated increase in funding as a result of the merger. Finally, Greg Brown reviewed the public outreach schedule for the 2040 LRTP. Being no further business to discuss, the meeting was then adjourned.



MATS Project Director



MACON-BIBB COUNTY  
Planning & Zoning

Macon-Bibb Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, Georgia 31201 | MBPZ.org

## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Jones County Government Center (166 Industrial Boulevard, Gray, Georgia)

Thursday, July 21, 2016, 6:00PM – 8:00PM

	Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1.	Chris Weidner	Jones	478-986-0870	Weidnerfam@gmail.com	YES
2.	Sam Kitchens	Jones	478-808-9218	skitchens@macombibb.us	YES
3.	Daylon Martin	Jones	478-256-9832	daylonm@hotmail.com	YES
4.	Michael Underwood	Jones	478-808-8219	MikeUnderwood@briarclay.net	yes
5.	Debbie J. Smith	Jones	478-808-7867	debsmith@jchens.com	yes
6.	M. John Wood	Jones	478-714-9504	MacombFarm@GMAIL.com	yes
7.	Jonathan Pitts	Jones	478-906-5149	thepittsgroup@aol.com	YES
8.	Gregory L. Brown				
9.	Mike Greenwood				
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MACON-BIBB COUNTY  
Planning & Zoning

Macon-Bibb Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, Georgia 31201 MBPZ.org

## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Macon Terminal Station (Department of Driver Services, 200 Cherry Street, Macon, Georgia)

Tuesday, July 26, 2016, 10:00AM – 2:00PM

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. Wayne Henderson	Cochise	478-578-1022		No
2. Erika Allen	Bibb	478-747-4281	eallen910913@gmail.com	Yes
3. Michael Smith	Bibb	478-719-5973	mt5909709@gmail.com	Yes
4. Wayne McCree	Macon	994 2811		
5. Mark W. Wilkerson	Bibb	757 6597	markwilkerson@gmail.com	
6. Wendell Crowder	Bibb	736 880		
7. Bryce Inman	Bibb	478 841-1989		
8. Pamela Bailey	Bibb	478-703-3141		
9. Gregory L. Brown				
10. Weston Stroud				
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MATS: Macon Area Transportation Study

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MACON-BIBB COUNTY  
Planning & Zoning

Macon-Bibb Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, Georgia 31201 MBPZ.org

## 2040 LONG RANGE TRANSPORTATION PLAN UPDATE / COMPREHENSIVE PLAN UPDATE

### Public Information Open House

Macon – Bibb County Planning and Zoning Commission, (682 Cherry Street, Suite 1000 . 10<sup>th</sup> Floor, Macon, Georgia)

Wednesday, July 27, 2016, 10:00AM – 7:00PM

Name	County	Phone	Email	Join MATS E-Newsletter? Yes / No
1. Chris Lawrence	Bibb	478-471-5749	christopher.lawrence@mgarc.org	Yes
2. Dr. C. Pietigak	Bibb	478-972-5399	cpietigak@cox.net	Yes
3. Michelle Sands	Bibb	478 803 2631	michelle.sands@mail.house.gov	Yes
4. Stephen Adams	Bibb	478-960-1378	sadams@mbria.com	Yes
5. Tim Thornton	Bibb	478-745-1677	tdthornton@bellsouth.net	Yes
6. GEORGE CARRETT	Bibb	870 253 3825	lmcsc1960@yahoo.com	No
7. TARY MOORE	Bibb	478-474-8895	TARYMOORE@COX.NET	Yes
8. KEVIN HAYWOOD	Bibb	478-254-4442	TRAILMAPPER@YAHOO	Yes
9. Kimberly Lowe	Bibb	478-751-6660	klowe@mg-rc.org	Yes
10. Kayleigh Sullivan	Bibb	478-751-6660	ksullivan@mg-rc.org	No
11. Christina Echols	Bibb	478-751-6660	cechols@mg-rc.org	Yes
12. Robert Cullum/SR	Bibb	478-474-4545	SOLDIER259@GMAIL.COM	Yes
13. John Evans	Bibb	478-743-7061	JLEVINLA@YAHOO.COM	Yes
14. Gregory L. Brown				
15. Ken North				
16. James P. Thomas				
17. Brad Belo				
18. Mike Greenwald				
19. Weston Stroud				
20.				

MATS: Macon Area Transportation Study

[www.mats2040.org](http://www.mats2040.org)

**MATS POLICY COMMITTEE MEETING  
ATTENDANCE LIST  
August 3, 2016**

**Committee Members**

<b>Name</b>	<b>Representing</b>	<b>Voting Status</b>	<b>Attendance</b>
Robert Reichert <i>Chairman</i>	Mayor, Macon-Bibb County	Voting	Present
Scotty Shepherd <i>Vice-Chairman</i>	Macon-Bibb Commission	Voting	Present
Al Tillman	Macon-Bibb Commission	Voting	Absent
Mallory Jones	Macon-Bibb Commission	Voting	Absent
Preston Hawkins, <i>represented by Daylon Martin</i>	Chairman, Jones Co. Commission	Voting	Present
Sam Hart,	Chairman, Macon Water Authority	Voting	Present
Craig Ross	Chairman, Macon Transit Authority	Voting	Present
Mike Bilderback	Chairman, Monroe Co. Commission	Voting	Absent
Kamal Azar	Chairman, Macon-Bibb Co. Planning & Zoning Commission	Voting	Absent
John Swint	Chairman, MATS Citizen's Advisory Committee	Voting	Absent
Butch Hall, <i>represented by Daniel Dobbins</i>	Chairman, Middle Georgia Regional Commission	Voting	Present
Russell McMurry, <i>represented by Morgan Simmons</i>	Commissioner, Georgia Department of Transportation	Voting	Present
Clifford Whitby	Chairman, Macon-Bibb Co. Industrial Authority	Voting	Present
Jim Thomas	Executive Director, Macon-Bibb Co. Planning & Zoning Comm.	Non-Voting	Absent
Dale Walker	County Manager, Macon-Bibb Co.	Non-Voting	Absent
David Fortson	Director, Macon-Bibb Co. Engineering	Non-Voting	Present
Chris Sheridan	Chairman, Macon-Bibb County Urban Development Authority	Non-Voting	Absent
Ralph Nix	Executive Director, Middle Georgia Regional Commission	Non-Voting	Absent
Tim Golden	8th District Representative, Ga. State Transportation Board	Non-Voting	Absent
Johnny Floyd	2nd District Representative, Ga. State Transportation Board	Non-Voting	Absent
Rodney Barry	Division Administrator, FHWA	Non-Voting	Absent

**Non-Committee Members in Attendance**

Greg Brown	Ray Shell
Mike Greenwald	Charles Brooks
Chuck Howard	Don Tussing
Brad Belo	Nigel Floyd
Ken North	Clinton Ford
Weston Stroud	Jessica Bird
Michel Wanna	Tim Pitrowski
Mitchell Greenway	Mark Strozier
Stanley Dunlap	Greg Tapley

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**MATS POLICY MEETING MINUTES**  
August 3, 2016

A quorum of the MATS Policy Committee met starting at 9:30 a.m. on August 3, 2016 at Bibb Co. Engineering Annex. Air quality standard changes and a proposed MPO coordination rule was added to the agenda. The amended agenda and June 8, 2016 Policy Committee meeting minutes were introduced and approved (1<sup>st</sup>: S. Shepherd; 2<sup>nd</sup>: D. Martin).

**Committee Reports:**

Greg Brown, MATS Planner, summarized the discussion at the Citizen Advisory Committee meeting held on July 13, 2016. The CAC reviewed and approved draft goal and objectives; 2% inflation factor for revenue projections; recommended 7<sup>th</sup> Street Truck Route project be moved into 2020 network year. Voted to recommend that MATS oppose the FHWA's proposed rule that may result in consolidation of adjacent MPOs. District 8 position vacant needs new appointment.

**Public Comment:**

Mr. Don Tussing commented on his experience with the LRTP update process.

**Goals, Objectives and Performance Measures:**

Brad Belo, MATS Planner, reviewed the proposed goals, objectives and performance measures for inclusion in the LRTP update. Clifford Whitby raised concerns about the public involvement process. The Committee members discussed the goals, objectives and performance measures and challenges of gathering data to accurately collect and analyze performance measures.

***Motion Approved:*** The Policy Committee directs staff to investigate possibility of adding intercity passenger rail as an objective to the proposed goals and report back to the Policy Committee at the next meeting (1<sup>st</sup>: R. Reichert, 2<sup>nd</sup>: C. Ross ).

***Motion Approved:*** The Policy Committee adopted the proposed 2040 MATS Update goals and objectives, but deferred the adoption of performance measures to another time (1<sup>st</sup>: R. Reichert, 2<sup>nd</sup>: C. Whitby).

**LRTP Revenue Estimates:**

Mike Greenwald, MATS Technical Coordinator, discussed the proposed inflation estimates for use in the LRTP update. Only highway revenue projections are included. Transit revenue estimates will be discussed at a future meeting.

***Motion Approved:*** The Policy Committee approved the use of a relaxed estimates with a 2% inflation calculation for use in the LRTP Update revenue estimates. (1<sup>st</sup>: D. Martin, 2<sup>nd</sup>: S. Shepherd).

**Agenda Item – Project Status Report (information only):**

Dave Fortson, Macon-Bibb County Engineer, reviewed GDOT's list of "Projects in Current TIP and Maintenance Projects" for the MATS region.

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**Agenda Item – Old Business**

**Public Participation Activities of LRTP (information only):**

Greg Brown, MATS Planner, summarized ten public engagement activities for the LRTP Update between June 15, 2016 - July 27, 2016 .

**LRTP Update Schedule (information only):**

Mike Greenwald, MATS Technical Director, reviewed the upcoming LRTP schedule.

**Agenda Item – New Business**

**Update on Air Quality (information only):**

Mike Greenwald, MATS Technical Director, discussed the 1997 national ambient air quality standard. The 1997 standard will be eliminated October 24, 2016, which will end the “maintenance” status for the MATS region. The MATS region will be in conformity under the 2012 national ambient air quality standard.

**New MPO Guidelines (information only):**

Mike Greenwald, MATS Technical Director, discussed the MPO Coordination and Planning Area Reform rule proposed by FHWA and FTA. Comments about the rule change are due by August 26, 2016. Chairman Reichert stated that he believes MATS and WRATS would do well to coordinate and work more closely together. Chairman Reichert reserved the right to submit his own comments separate from the MATS comments.

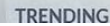
***Motion Approved:*** The Policy Committee authorizes the Chairman to submit comments opposing the proposed MPO Coordination and Planning Area Reform rule (1<sup>st</sup>: R. Reichert, 2<sup>nd</sup>: C. Whitby).

There being no further discussion, the meeting concluded at approximately 11:30 a.m.

  
MATS Policy Chairman



BY ERIC MOCK | WEDNESDAY, JULY 27TH 2016



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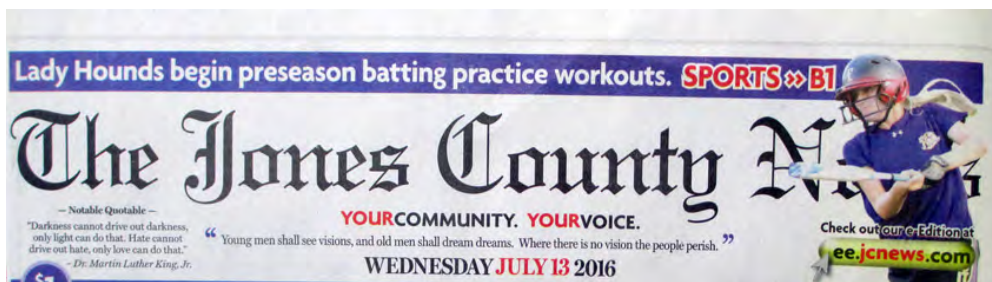
*The catch is you have to benefit the most  
people and you can only spend it on our  
local transportation projects.*

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# **MATS**

**Macon Area Transportation Study**

MATS-ad



# PUBLIC NOTICE

Seeking public input about future transportation plans for the southern portion of Jones County

## Public Information Open House

Thursday, July 21, 2016, 6:00PM – 8:00PM, Jones County Government Center – Charlotte C. Wilson Conference Room, (166 Industrial Boulevard, Gray Georgia 31032)

To view the current list of proposed projects, please visit [www.mats2040.org](http://www.mats2040.org)

Jones County News: Public Advertisement July 13, 2016



JULIO 2016

# ¿QUÉ PASA?

EDITORIAL

EL PERIÓDICO INFORMATIVO

JULIO 2016

## Macon esta buscando la opinión pública acerca de los futuros planes de transporte para el área

El personal de (Macon Area Transportation Study) MATS un grupo de la Comisión de Planificación y Zonificación del Condado Macon-Bibb que está buscando la participación de la comunidad y la recopilación de información de la opinión pública durante el plan la actualización de transporte de largo alcance de 2040 esto incluye el proceso de planificación, así como la actualización del plan integral del proceso de planificación. Necesita tu opinión.

El Plan de transporte de largo alcance incluirá aproximadamente un billón de dólares, en proyectos de transporte en los próximos 25 años y la opinión del público es de vital importancia para ayudar a establecer prioridades. Este plan se orienta a el futuro de las mejoras en el transporte en el condado Macon-Bibb y una porción de los condados Jones y Monroe e incluye nuevas carreteras, nuevas instalaciones para bicicletas y peatones, nuevas oportunidades de tránsito, así como mejoras de la infraestructura de transporte existente.

El LRTP (el plan de largo alcance) se actualiza cada cuatro años y su impacto puede ser visto en la zona de Macon en proyectos de carreteras que se encuentran actualmente en construcción, al igual que la extensión Sardis Church Road y el ensanchamiento, de Forrest Hill Road y la planificación de proyectos como la expansión e intercambio de la I-16, el J ensanchamiento de Jeffersonville Road nuevas rotondas, y los nuevos puentes sobre vías férreas y vías navegables.

El Plan Integral es un plan obligatorio del estado y requerido por el Departamento de Asuntos de la comunidad y es un plan de 20 años que, además de transporte, describe la visión de una comunidad en las áreas de desarrollo de la comunidad, el uso de la tierra y la vivienda, la recreación, el cual es actualizado cada 10 años.

La actualización tanto del Plan de Transporte a Largo Plazo y el proceso del Plan Integral se basa en gran medida en la opinión del público. Usted tiene una oportunidad única para expresar sus opiniones para ayudar a moldear el futuro de Macon - Bibb; ayuda a determinar el carácter, la magnitud y la calidad del desarrollo y la reconstrucción de nuestra zona; ayuda a formular las metas y objetivos de nuestros futuros sistemas de transporte; ayuda a priorizar una lista de proyectos y propuestas de transporte; y proponer proyectos de transporte que le gustaría ver en el área de estudio MATS.

Su participación tendrá un impacto en las políticas de planificación del condado Macon - Bibb y juntos vamos a crear un plan para el futuro de nuestra comunidad. Exhortamos y animamos a todos a compartir ideas y proporcionar comentarios en una o más de las próximas reuniones de puertas abiertas, eventos de alcance comunitario, o de las reuniones de la comisión de MATS:

Si deseas dar tu opinión sobre el tópico de transportacion y como puede ser mejorada puedes ir a cualquiera de estas reuniones o ir la pagina de internet MATS2040.org

- Tuesday, July 12, 2016, 10:00AM – 7:00PM, Public Information Open House, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)
- Wednesday, July 13, 2016, 6:00PM – 8:00PM, MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex

Building, Macon, Georgia)

- Monday, July 18, 2016, 6:00PM – 8:00PM, Washington Memorial Library, (1180 Washington Avenue, Macon, Georgia)

- Wednesday, July 20, 2016, 9:00AM – 11:00AM, MATS Technical Coordinating Committee meeting (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

- Wednesday, July 27, 2016, 10:00AM – 7:00PM, Public Information Open House, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

Para obtener más información con respecto a MATS, el proceso LRTP, la lista de proyectos actuales de transporte en la zona y el horario de difusión pública, por favor visite nuestro sitio web regularmente para cualquier cambio / actualizaciones en [www.mats2040.org](http://www.mats2040.org). También puede presentar sus comentarios el último día será el lunes 1º de agosto de 2016 envíe su comentario a Gregory L. Brown, Planificador, 682 Cherry Street, Suite 1000, Macon, Georgia 31201, o por correo electrónico a [gbrown@mbpz.org](mailto:gbrown@mbpz.org)

**Usted tiene voz en decidir que su  
sucederá con la transportación  
en el condado Macon-Bibb  
PARTICIPE**

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**Si Tú pudieras  
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BILLON  
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Debe alcanzar y beneficiar a la mayor cantidad de personas y solamente lo puedes gastar en proyectos de transportacion local.

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**MATS**  
Macon Area Transportation Study  
[www.mats2040.org](http://www.mats2040.org)



## Seeking Public Input About Future Transportation Plans For The Macon Area

The MATS staff of the Macon-Bibb County Planning & Zoning Commission is seeking engagement from the community and gathering information from the public during the update of the 2040 Long Range Transportation Plan planning process, as well as the update of the Comprehensive Plan planning process. The *Long Range Transportation Plan* will include approximately a billion dollars of transportation projects over the next 25 years and public input is vitally important to help set priorities. This plan guides future transportation improvements in Macon-Bibb County and a portion of Jones and Monroe Counties and includes new roadways, new pedestrian and bike facilities, new transit opportunities, as well as upgrades of existing transportation infrastructure. The L RTP is updated every four years and its impact can be seen around the Macon area in road projects that are currently under construction, like the Sardis

Church Road extension and the Forest Hill Road widening, and planned projects like the I-75/I-16 interchange expansion, Jeffersonville Road widening, new roundabouts, and new bridges over rail lines and waterways. The *Comprehensive Plan* is a state mandated plan required by the Georgia Department of Community Affairs and is a 20-Year plan which, in addition to transportation, outlines the vision of a community in areas of community development, land use, recreation, and housing which is updated every 10 years.

The update of both the Long Range Transportation Plan and the Comprehensive Plan process relies heavily on input from the public. You have a unique opportunity to voice your opinions to help shape the future of Macon - Bibb County; help determine the character, scale and quality of development and redevelopment of our area; help formulate the goals and objectives of our future transportation systems; help prioritize a

list of proposed transportation projects; and propose transportation projects that you would like to see in the MATS study area. Your involvement will impact planning policies for Macon - Bibb County and together we will create a blueprint for the future of our community. Everyone is encouraged to share ideas and provide comments at one or more of the upcoming open houses, community outreach events, or MATS committee meetings:

• **Wednesday, June 15, 2016, 3:30PM - 6:30PM**, Mulberry St. Farmer's Market (Tattnall Square Park, Macon, Georgia)

• **Friday, June 24, 2016, 10:00AM - 2:00PM**, Public Information Open House at Macon Terminal Station, Bus Transfer Area, (200 Cherry Street, Macon, Georgia)

• **Wednesday, June 29, 2016, 6:00PM - 8:00PM**, Special Called MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)



### MACON-BIBB COUNTY Planning & Zoning

• **Tuesday, July 12, 2016, 10:00AM - 7:00PM**, Public Information Open House, Macon-Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

• **Wednesday, July 13, 2016, 6:00PM - 8:00PM**, MATS Citizens Advisory Committee meeting (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

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Washington Avenue, Macon, Georgia)

• **Wednesday, July 20, 2016, 9:00AM - 11:00AM**, MATS Technical Coordinating Committee meeting (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

• **Thursday, July 21, 2016, 6:00PM - 8:00PM**, Jones County Government Center - Charlotte C. Wilson Conference Room, (166 Industrial Boulevard, Gray Georgia 31032)

• **Wednesday, July 27, 2016, 10:00AM - 7:00PM**, Public Information Open House, Macon-

Bibb County Planning & Zoning Commission, (682 Cherry Street, Suite 1000, 10<sup>th</sup> Floor, Willie C. Hill Government Center Annex Building, Macon, Georgia)

For more information regarding MATS, the L RTP process, the list of current transportation projects in the area and the public outreach schedule, please visit our website regularly for any changes / updates at [www.mats2040.org](http://www.mats2040.org). You may also submit comments by Monday, August 1, 2016 to Gregory L. Brown, Senior Planner, 682 Cherry Street, Suite 1000, Macon, Georgia 31201 or via email at [gbrown@mbpz.org](mailto:gbrown@mbpz.org).



## REGIONAL GOALS

# Transportation meeting focuses on future growth

DEBBIE LURIE-SMITH  
debbie@jcnews.com

The Macon Area Transportation Study (MATS) staff of Macon-Bibb County Planning & Zoning recently had a meeting with the citizens of Jones County to receive input for future transportation projects.

New ideas for future projects in Jones County that were brought up at the July 21 meeting included bike lanes, signage, widening of Upper River and Stage Coach roads, completion of the Rails to Trails project – possibly changing it to a

mountain bike trail, a connector for the northern and southern counties, and even a train.

The meeting was facilitated by Gregory Brown, who is a senior planner for the Macon-Bibb County Planning & Zoning Commission. He explained that Jones County is included in Macon's urbanized zone, which means it is a part of the Macon-Bibb Metropolitan Planning Organization when it comes to receiving federal transportation improvement dollars.

MORE GROWTH ► A6



◀ Jones County Commission candidate John Wood (left), Commissioner Jonathan Pitts (second right), and chairman-elect Chris Weidner (far right) share ideas at the MATS meeting.

DEBBIE LURIE-SMITH/  
EDITOR

Jones County News: August 12, 2016

# GROWTH

★ CONTINUED FROM A3

He said Macon's MPO currently includes approximately 185,000 people, and MATS projects can be funded up to 80 percent by federal funds.

Jones County already has four road improvement projects and one bridge replacement project on the MATS list. Those projects are the widening to four lanes Joycliff Road from Highway 49 to Highway 129, Griswoldville Road from Henderson Road to Highway 49, Henderson Road from Highway 57 to Griswoldville Road, and Highway 49 from Griswoldville Road to Highway 18.

The bridge replacement project is the bridge at Old Garrison Road.

Georgia has been growing rapidly, as has its traffic. In 2010, Georgia had 9.6 million people and it is on pace to grow to 14.7 million by 2030. That's over 50 percent more people in the next 20 years.

Brown said the MATS information gathering process is part of its 2040 Long

Range Transportation Plan (LRTP) and part of the update to its Comprehensive Plan. According to a press release about the long-range plan, it includes a billion dollars of transportation projects over the next 25 years.

The planner said the Rails to Trails project was discussed at the last MATS meeting and was on the list to be considered for addition to the LRTP this year.

The plan includes new roadways, new pedestrian and bike facilities, new transit opportunities, as well as upgrades of existing transportation infrastructure. The LRTP is updated every four years. The Comprehensive Plan is a state mandated plan required by the Georgia Department of Community Affairs and is a 20-year plan, which includes community development, land use, recreation, and housing. The Comprehensive Plan is updated every 10 years.

The updates of both the plans rely heavily on input from the public.

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# The Telegraph

MACON.COM

## MATS STUDY

# Macon transportation planners want residents' feedback

Public's assistance sought for long-range planning

20 to 25 years of development in the works

Open house coming up Friday morning

BY AVERY BRAXTON  
abraxton@macon.com

The transportation planning agency for the Macon area is seeking the public's help to shape long-range thinking.

The Macon Area Transportation Study staff is updating the 2040 Long Range Transportation Plan, and residents can comment on or propose transportation projects they'd like to see in their communities. There's an open house at the Terminal Station on Cherry

Street at 10 a.m. Friday.

The public's input is essential in the overall progress of Macon transportation efforts, said Greg Brown, a senior planner and MATS spokesman.

"It helps significantly because one of our requirements to update the transportation plan is gather public input on the front end," Brown said. "The general public can help us prioritize projects — where money should and shouldn't go."

Suggestions from residents help the agency

make recommendations to the Georgia Department of Transportation to improve public roads, get projects funded and create new transit opportunities in Macon. The long-range plan helps guide how transportation dollars are spent for the next 20 to 25 years.

The plan, updated every four years, involves improvement on all kinds of initiatives — from the current Forest Hill Road widening to plans down the road to expand the Interstate 75/16 interchange.

Residents expressed concerns about the I-75/I-16 interchange at the last such feedback request, Brown said. Since then, progress has been made and the project is in its fifth phase, with roadway plans and construc-

tion slated for 2020.

Brown said input makes for real change.

"A lot of citizen input went into adding bike lanes to some of our roadways and also improving pedestrian infrastructure," he said. "We need (the public's) input prioritizing projects and formulating goals and objectives."

After the suggestions, ideas will be sent through a collection of committees within the organization to sketch out details.

A second and third public information open house will be held July 12 and July 27 at the Willie C. Hill Government Center Annex Building in downtown Macon.

The Macon Area Transportation Study group was established in 1964, in response to the Federal Aid Highway Act of 1962. All urban areas with populations exceeding 50,000 people are required to maintain a transportation planning process. It is the Macon area's metropolitan planning organization and comprises Macon-Bibb County, the southwest portion of Jones County and a small portion of southern Monroe County.

Avery Braxton:  
478-744-4326,  
@Ave\_Braxton



## Seeking public input about future

The MATS staff of the Macon-Bibb County Planning & Zoning Commission is seeking engagement from the community and gathering information from the public during the update of the 2040 Long Range Transportation Plan (LRTP) planning process, as well as the update of the Comprehensive Plan planning process.

The LRTP will include approximately a billion dollars of transportation projects over the next 25 years and public input is vitally important to help set priorities. This plan guides future transportation improvements in Macon-Bibb County and a portion of Jones and Monroe counties and includes new roadways, new pedestrian and bike facilities, and new transit opportunities, as well as upgrades of existing transportation infrastructure.

The LRTP is updated every four years and its impact can be seen around the Macon area in road projects that are currently under construction, like the Sardis Church Road extension and the Forest Hill Road widening, and planned projects like the I-75/I-16 interchange expansion, Jeffersonville Road widening, new roundabouts, and new bridges over rail lines and waterways.

The Comprehensive Plan is a state-mandated plan required by the Georgia Department of Community Affairs and is a 20-year plan which, in addition to transportation, outlines the vision of a community in areas of community development, land use, recreation, and housing, which is updated

every 10 years.

The update of both the LRTP and the Comprehensive Plan process relies heavily on input from the public. You have a unique opportunity to voice your opinions to help shape the future; help determine the character, scale, and quality of development and redevelopment of the area; help formulate the goals and objectives of future transportation systems; help prioritize a list of proposed transportation projects; and propose transportation projects that you would like to see in the MATS study area.

Your involvement will impact planning policies. Everyone is encouraged to share ideas and provide comments at one or more of the upcoming open houses, community outreach events, or MATS committee meetings:

- Tuesday, July 12, 10:00 a.m. - 7:00 p.m., Public Information Open House, Macon-Bibb County Planning & Zoning Commission, 682 Cherry St., Suite 1000, 10th Floor, Willie C. Hill Government Center Annex Building, Macon;

- Wednesday, July 13, 6:00 p.m. - 8:00 p.m., MATS Citizens Advisory Committee meeting, same location as July 12 open house;

- Monday, July 18, 6:00 p.m. - 8:00 p.m., Washington Memorial Library, 1180 Washington Ave., Macon;

- Wednesday, July 20, 9:00 a.m. - 11:00 a.m., MATS Technical Coordinating Committee meeting, same location as July 12 open house;

- Wednesday, July 27, 10:00 a.m. - 7:00 p.m., Public Information Open House, same location as July 12 open house.

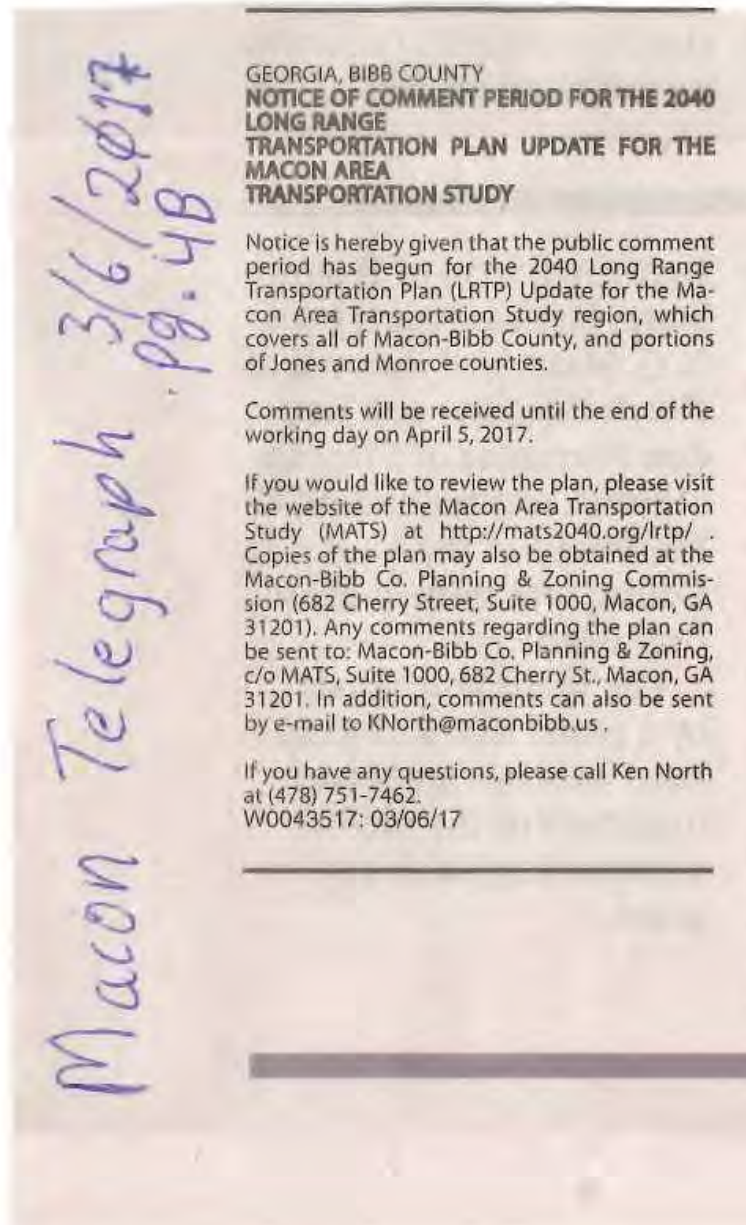
For more information regarding MATS, the LRTP process, the list of current transportation projects in the area, and the public outreach schedule, please visit the website regularly for any changes/updates at [www.mats2040.org](http://www.mats2040.org).

You may also submit comments by Monday, Aug. 1, to Gregory L. Brown, senior planner, 682 Cherry St., Suite 1000, Macon, GA 31201, or via email at [gbrown@mbpz.org](mailto:gbrown@mbpz.org).

## Appendix E

### Legal Advertisements for Public Comments on MATS 2040 LRTP Update

Macon Telegraph 3/6/2017



Macon Telegraph 3/6/2017 Legal Ad



**PUBLIC NOTICE**

**NOTICE OF COMMENT PERIOD FOR THE  
2040 LONG RANGE TRANSPORTATION PLAN  
UPDATE FOR THE MACON AREA  
TRANSPORTATION STUDY**

Notice is hereby given that the public comment period has begun for the 2040 Long Range Transportation Plan (LRTP) Update for the Macon Area Transportation Study region, which covers all of Macon-Bibb County, and portions of Jones and Monroe counties.

Comments will be received until the end of the working day on April 5, 2017.

If you would like to review the plan, please visit the website of the Macon Area Transportation Study (MATS) at <http://mats2040.org/lrtp/> . Copies of the plan may also be obtained at the Macon-Bibb Co. Planning & Zoning Commission (682 Cherry Street, Suite 1000, Macon, GA 31201). Any comments regarding the plan can be sent to: Macon-Bibb Co. Planning & Zoning, c/o MATS, Suite 1000, 682 Cherry St., Macon, GA 31201. In addition, comments can also be sent by e-mail to [KNorth@maconbibb.us](mailto:KNorth@maconbibb.us) .

If you have any questions, please call Ken North at (478) 751-7462.

Middle Georgia Informer 3/6/2017

**Public Comments Received Prior to April 5, 2017**

A 30 day public review period was held for the 2040 LRTP Update between March 6, 2017 and April 5, 2017. There was only one comment received for the document from the general public. The comment and the subsequent response are contained below.

1. COMMENT: On March 17, 2017, there was a comment submitted by telephone call, inquiring if the section of Hartley Bridge Rd. between Houston Rd. and I-75 was on the list of projects for the 2040 LRTP Update. There was concern that the increased traffic on this roadway should be addressed.

RESPONSE: Hartley Bridge Rd. is not on the list of road projects for the 2040 LRTP Update. However, the traffic on this roadway will continued to be examined and monitored in the future in order to determine if any

future improvements are needed. Subsequently, the list of road projects could be amended to add this project or any additional project in the future if needed.

### Partner Agency Contact E-mail List, by Planning Topic Area

Planning Area	State	Local
<i>Airport Operations</i>	Charles Ryan Walker <crwalker@dot.ga.gov>	Erick D'Leon <erick.dleon@tbi.am.aero>
<i>Economic Development</i>	Candace Scott <CScott@georgia.org>	Cliffard Whitby <cwhitby@mbcia.com> Wanzina Jackson <WJackson@maconbibb.us>
<i>Environmental Protection</i>	Gil Grodzinsky, Georgia EPD <Gil.Grodzinsky@dnr.state.ga.us>	
<i>Freight Movements</i>	Tom McQueen <tmcqueen@dot.ga.gov>	
<i>Natural Disaster Risk Reduction</i>	Cam Yearty, Georgia DCA <cam.yearty@dca.ga.gov>	Spencer Hawkins <shawkins@maconbibb.us>
<i>State and Local Planned Growth</i>	Cam Yearty, Georgia DCA <cam.yearty@dca.ga.gov>	Anita Cauthen, Monroe County <abuice@monroecountygeorgia.com> Tim Pitrowski, Jones County <Tim@jonescountyga.org>
<i>Tourism</i>	Cindy Eldson <CEldson@georgia.org>	
<i>Transit</i>	Charles Ryan Walker <crwalker@dot.ga.gov>	Rick Jones <rjones@mta-mac.com>  Jason Rizner <jason.rizner@jonescountyga.org>
<b>Additional Agency Contacts</b>		
<i>Middle Georgia Regional Commission</i>	Greg Boike <gboike@mg-rc.org>	
<i>Federal Contacts</i>		
<i>Federal Highway Administration</i>	Ann-Marie Day <ann-marie.day@dot.gov>; Andy Edwards <andrew.edwards@dot.gov>	
<i>Federal Transit Administration</i>	Keith Melton <Keith.Melton@dot.gov>	
<i>Environmental Protection Agency</i>	Louis Egide <Louis.Egide@epa.gov>	
<i>National Park Service</i>	James David <jim_david@nps.gov>	

Partner Agency Contact E-mail List, by Planning Topic Area

## Partner Agency E-mail Distribution, sent March 2, 2017

Good afternoon,

You are receiving this message because the Macon Area Transportation Study (MATS) is seeking your agency's comments on the draft of the 2040 Long Range Transportation Plan update. Draft chapters can be found at <http://www.mats2040.org/lrtp/>. Your comments may be submitted in a standard written correspondence or via e-mail. Comments should be submitted to both Mike Greenwald ([mgreenwald@mbpz.org](mailto:mgreenwald@mbpz.org)) and Ken North ([knorth@mbpz.org](mailto:knorth@mbpz.org)). MATS would like all comments submitted by 5:00 p.m. on April 5, 2017.

MATS is the Metropolitan Planning Organization (MPO) for Bibb County, and portions of Jones and Monroe Counties in Middle Georgia.

Pursuant to 23 CFR 450.316(b), MPOs must implement a consultation process with state and local resource agencies in developing long-range transportation plans and transportation improvement programs. Specifically, "...the MPO should consult with agencies and officials responsible for other planning activities within the MPA that are affected by transportation (including State and local planned growth, economic development, tourism, natural disaster risk reduction, environmental protection, airport operations, or freight movements) or coordinate its planning process (to the maximum extent practicable) with such planning activities." MATS recognizes your agency as one such entity which has an interest in the topic areas described.

Please take a few moments to carefully review the information provided at the link above and make appropriate comments regarding any concerns your agency may have related to your agency's area of interest. Thank you in advance for your time in this matter, and we look forward to hearing your thoughts.

Yours truly,

Mike Greenwald

---

**Michael J. Greenwald, Ph.D., AICP**  
MPO Technical Coordinator



**Macon Area Transportation Study**  
682 Cherry Street, Suite 1000  
Macon, GA 31201 | 478-751-7472  
[MATS2040.org](http://MATS2040.org)

Partner Agency E-mail Distribution, sent March 2, 2017



## Partner Agency Comments Received Prior to April 5, 2017

*Received from Georgia Department of Community Affairs on March 3, 2017*

See below for your records.

Sent from my iPhone

Begin forwarded message:

**From:** Annette Henson <[Annette.Henson@dca.ga.gov](mailto:Annette.Henson@dca.ga.gov)>  
**Date:** March 3, 2017 at 9:59:37 AM EST  
**To:** CDD Office of Planning & Environmental Management <[cdd.opem@dca.ga.gov](mailto:cdd.opem@dca.ga.gov)>, Corinne Thornton <[Corinne.Thornton@dca.ga.gov](mailto:Corinne.Thornton@dca.ga.gov)>, Tonya Mole <[Tonya.Mole@dca.ga.gov](mailto:Tonya.Mole@dca.ga.gov)>, Cherie Bennett <[Cherie.Bennett@dca.ga.gov](mailto:Cherie.Bennett@dca.ga.gov)>  
**Subject:** FW: MATS 2040 LRTP Update Partner Agency Comment Solicitation

See the full message at the bottom of this e-mail string:

Give your comments to Mike Greenwald ([mgreenwald@mbpz.org](mailto:mgreenwald@mbpz.org)) **and** Ken North ([knorth@mbpz.org](mailto:knorth@mbpz.org)). MATS would like all comments submitted by 5:00 p.m. on April 5, 2017.

You are receiving this message because the Macon Area Transportation Study (MATS) is seeking your agency's comments on the draft of the 2040 Long Range Transportation Plan update. Draft chapters can be found at <http://www.mats2040.org/lrtp/>.

### Annette Henson

Planning Coordinator  
Georgia Department of Community Affairs  
Direct 404-679-3119  
Fax 404-679-0646  
[Annette.Henson@dca.ga.gov](mailto:Annette.Henson@dca.ga.gov)

**From:** Cam Yearty  
**Sent:** Friday, March 03, 2017 7:19 AM  
**To:** Annette Henson <[Annette.Henson@dca.ga.gov](mailto:Annette.Henson@dca.ga.gov)>  
**Cc:** Brian Johnson <[Brian.Johnson@dca.ga.gov](mailto:Brian.Johnson@dca.ga.gov)>  
**Subject:** FW: MATS 2040 LRTP Update Partner Agency Comment Solicitation  
**Importance:** High

Good Morning Annette,

I am forwarding a request for comment from the Macon Area Transportation Study. Their Planning Director sent this to me in order to fulfill their partner agency review requirements; since you sent out the previous LRTP for review, would you be able to direct this to whomever we usually send these things to within the Department?

Thanks,

**Cam Yearty**

Community Development Specialist  
Georgia Department of Community Affairs  
Direct 404-679-1721  
[Cam.Yearty@dca.ga.gov](mailto:Cam.Yearty@dca.ga.gov)

**From:** Greenwald, Michael [<mailto:MGreenwald@mbpz.org>]  
**Sent:** Thursday, March 02, 2017 4:56 PM  
**To:** [CScott@georgia.org](mailto:CScott@georgia.org); [Gil.Grodzinsky@dnr.state.ga.us](mailto:Gil.Grodzinsky@dnr.state.ga.us); [tmcqueen@dot.ga.gov](mailto:tmcqueen@dot.ga.gov); Cam Yearty <[Cam.Yearty@dca.ga.gov](mailto:Cam.Yearty@dca.ga.gov)>; [CEidson@georgia.org](mailto:CEidson@georgia.org); [crwalker@dot.ga.gov](mailto:crwalker@dot.ga.gov); [erick.dleon@tbiam.aero](mailto:erick.dleon@tbiam.aero); [cwhitby@mbcia.com](mailto:cwhitby@mbcia.com); Jackson, Wanzina <[WJackson@maconbibb.us](mailto:WJackson@maconbibb.us)>; Hawkins, Spencer <[SHawkins@maconbibb.us](mailto:SHawkins@maconbibb.us)>; [abuice@monroecountygeorgia.com](mailto:abuice@monroecountygeorgia.com); [Tim@jonescountyga.org](mailto:Tim@jonescountyga.org); [rjones@mta-mac.com](mailto:rjones@mta-mac.com); [jason.rizner@jonescountyga.org](mailto:jason.rizner@jonescountyga.org); [ann-marie.day@dot.gov](mailto:ann-marie.day@dot.gov); [andrew.edwards@dot.gov](mailto:andrew.edwards@dot.gov); [Keith.Melton@dot.gov](mailto:Keith.Melton@dot.gov); [Louis.Egide@epa.gov](mailto:Louis.Egide@epa.gov); Greg Boike <[gboike@mg-rc.org](mailto:gboike@mg-rc.org)>  
**Subject:** MATS 2040 LRTP Update Partner Agency Comment Solicitation  
**Importance:** High

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Please take a few moments to carefully review the information provided at the link above and make appropriate comments regarding any concerns your agency may have related to your agency's area of interest. Thank you in advance for your time in this matter, and we look forward to hearing your thoughts.

Yours truly,

Mike Greenwald

---

**Michael J. Greenwald, Ph.D., AICP**

MPO Technical Coordinator



**Macon Area Transportation Study**

682 Cherry Street, Suite 1000

Macon, GA 31201 | 478-751-7472

[MATS2040.org](http://MATS2040.org)

*Received from Georgia EPD on March 7, 2017*

Hi Michael:

Attached are my edits/comments. Most are finding typos, missed sentences, misidentified figures/tables. Some are general comments. Also, the comments EPD made in the past that you refer to in your document likely are not changed today, although those comments came from one of our other branches (I am air, likely the comment came from land and/or water).

Hope all these comments are helpful. Feel free to disregard any of these or ask any questions about them.

Have a good day!

Gil

Gil Grodzinsky, Ph.D.

Supervisory Modeler (MOVES)

Emissions and Control Strategies Unit

Air Protection Branch

GA EPD

404-363-7123

[gil.grodzinsky@dnr.state.ga.us](mailto:gil.grodzinsky@dnr.state.ga.us)

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#### Comments on LRTP Macon-Bibb

1. Introduction, paragraph 2, third line: after “things we make out to customers” need a period not a comma. Seems like with the next word capitalized (“But,”) and a new thought that we are starting a new sentence.
2. Introduction, paragraph 3, third line: “Metropolitan Planning Organization” not “Organizations”.....it is referred to in the singular with “This organization is called a” before it. Also first line of paragraph 3: no comma needed after “The solution is”.
3. Introduction, end of paragraph 4: “as of 2012” needs to end in a period.
4. “How did the MATS MPO get started?” section, last paragraph, second line: “the most recent change” should read “the most recent changes”
5. “What Does the MATS MPO do?” section, first line: “Federal regulations call for an MPO carry out a process” should read “Federal regulations call for an MPO to carry out a process” (add a “to” before “carry”).
6. “How is MATS Funded?” section: Be consistent, Georgia DOT should stay Georgia DOT throughout the document if that is used (or Georgia Department of Transportation. In paragraph 1 in this section Georgia DOT is referred to as Georgia Dept. of Transportation. Choose one name or the other. Also, “federal” is sometimes lower case, sometimes upper case in this section (e.g, “federal funding” vs. “Federal funding”).
7. “How is MATS Funded?” section, paragraph 2: Figure 1-3 reference should instead be a reference to Figure 1-4. Figure 1-3 is a diagram of “LRTP-TIP-UPWP” and is not identified in the text directly, just indirectly as “the diagram below”.
8. “Who Runs MATS?” section, end of paragraph 1: “Appendix A:” no colon needed, just period.
9. Same section, under Policy Committee (PC), under “voting members”, “Government agency representatives”: Chairman, Citizens’ Advisory Committee is followed by empty parentheses. Does that need to be removed or filled in with the “CAC” acronym?

10. Same section, under voting members of TCC: Some in the list are followed by a half colon and others are not for no clear reason, probably would recommend removing the semi-colons.
11. "Organization of This Document" section, "Chapter 9" and "Chapter 10" need to be underlined and under "Chapter 10", third line "identification populations" should read "identification of populations".
12. Discussion of air quality history; Make sure to clarify which NAAQS you are referring to. For instance "2012 NAAQS" should be "2012 annual PM2.5 NAAQS"). Also, the 1997 8-hr ozone NAAQS was revoked first (April 6, 2015 (80 FR 12264), 1997 annual PM2.5 NAAQS later (effective October 24, 2016, 81 FR 58010).
13. Chapter 2, under "Fixing America's Surface Transportation Act (FAST Act)", paragraph 2: Have opening quotation marks before "shall", but no closing quotes.
14. Chapter 2, "The 2040 Statewide Transportation Plan & 2015 Statewide Strategic Transportation Plan" section: can you add (SWTP) and (SSTP) acronyms next to the first time you all mention this (SWTP and SSTP are referenced later without acronyms defined). Also, are these the same as the "Long Range State Transportation Plan (LRSTP)"?
15. Chapter 2, under "2040 LRTP Update – Goals and Objectives", paragraph 2, 6 lines from bottom: "build upon both the goals areas", need to remove "both" since you are listing 4 plans with goal areas and also "goal" instead of "goals".
16. Chapter 2, under "Goal: Ensure Equity": "The MATS 2040 Update focuses on the transportation needs of the region's most vulnerable populations is a critical element of the MATS 2040 Update." Change "focuses" to "focusing" or else sentence is incomplete.
17. Same chapter, general comment: When listing "Objectives", need to be consistent whether each listing ends in a period or not.
18. Table 2.1: Looks good, just decide if spell storm water "storm water" or "stormwater" and the last row is cut off.
19. Table 2.2: "Improve Air Quality, Protect the Environment, Improve Quality of Life, Ensure Equity" row in table: Seems like there is a formatting error in this row with some lines of info hidden or partly cut out in the middle.



20. Chapter 3 introduction, second paragraph: Says MATS, 2040 LRTP, drop the comma. Also, under this paragraph, item 1 “Updated MATS Boundaries” you state “under 23 CFR 450.104 that and MPO boundary....”. Need to replace “and” with “an”. Also end of item 1 needs to have a period.
21. Chapter 3, under “Historic population trends”: “Figures 3-2 through 3-4. ...and continuing through projected the plan year of 2040”. Need to replace the word “projected” with “to”. The next sentence addresses projections.
22. Figure 3-2 is labeled “Table 3-13”, needs to be replaced with “Figure 3-2”.
23. Paragraph below Figure 3-10: First sentence: Need to remove “in” after “distribution”. Also, last sentence replace “appears” with “appearing”.
24. Paragraph before Table 3-7, line 8, “update” should be replaced with “updated”.
25. Table 3-7, pink area: “Transportation/Communications/Utilities” cut off and only reads “Transportation/Commu”.
26. Paragraph above Table 3-8: “Planning & Budge” should read “Planning & Budget”. Also, remove “However,” in second to last line.
27. Paragraph before “Estimated Land Use Impacts of Employment Growth”, line 5: “There is also road and runway infrastructure projects”, should read “There are also...”
28. Paragraph before Table 3-15, last sentence: “The estimated number of area”, just drop “number of”.
29. Chapter 4, Introduction, first paragraph, first line: “This chapter describes the public engagement efforts undertaken public comment opportunities provided as part of the update to the MATS 2040 Long Range Transportation Plan (LRTP) Update.” Need to add an “and” between “undertaken” and “public comment”.
30. Very minor edit: Chapter 4, “Public Outreach Strategies”, bullet points after first paragraph: “Interactive board...”, change to “boards” and end this point with a colon not period.
31. First table in Chapter 4: Should it be labeled 4-1, not 7-1.
32. Chapter 4, “Public Outreach Press/Media Products”, first paragraph: Need to add a period between “opportunities” and “MATS”. The first sentence is really two



sentences. Also, a minor note...in the bullet listing, no need for a semi colon after "41NBC" unless want to put one after every bullet point except the last one.

33. Chapter 5, "Road and Bridge Projects", first line of first paragraph: "Table 5-2 below lists the formally road and bridge projects adopted by the MATS Policy Committee." Need to move "formally" to between "below" and "lists".

34. Chapter 5, "Road and Bridge Projects", "Third Priority": Listed as "Third Priority – New projects identified by public input and recommendations elected officials", need to add "by" after "recommendations"

35. Chapter 5, "Costs and Revenue Estimation", first paragraph: Table XX is Table 5-2.

36. Chapter 5, under "Special Purpose Local Options Sales Tax", line 7: "To the extent that projects already on the road and bridges projects list for this 2040 LRTP Update, these projects can have..." need to add "are" before "already".

37. Chapter 5, under "Georgia Transportation Infrastructure Bank", line 2, first paragraph: "qualified infrastructure projects eligible projects" should be rewritten to say "eligible infrastructure projects". Also, last sentence states "This has a less intense impact fiscal on the local government" which should read "This has a less intense fiscal impact on the local government".

38. Chapter 5, under "Projects for Future Study and the LRTP Amendment Process", first paragraph needs to end with a period, and third paragraph, list item 1: "Updating LRTP reflect the new projects and associated cost changes": Need to add a "to" before "reflect".

39. Chapter 9: Where is Figure 9-1? I only see Figure 9-1A labeled.

40. Chapter 4: "Compilation of Public Comments": You use the \* to indicate multiple responses. What does \*\* mean? One case had \*\*\*\*, what does that mean? Similarly unexplained meaning of the use of \*'s is seen in Chapter 9 survey questions under section "Freight & Goods Movement – Truck (two paragraphs after "Chart 9-2").

41. Chapter 6, under "Macon-Bibb", first paragraph, line 7: "The station ceased rail operations in 1975 and sold to private interests", add "was" before "sold".

42. Chapter 6, Table 6-2: This is a table? Isn't it a figure/map, like Figure 6-1?

labeled “tables”, some are labeled “figures”. Could get confusing. In none of these cases are the figures and tables ever referenced in the text.

52. Chapter 7, “Factor- Street Design”, second paragraph, first sentence: Could add a comma between “fast moving traffic” and “unprotected pedestrian crossings”. Usually adding a comma is not worth commenting on, but in this case without it I wasn’t sure how to read this.

53. Chapter 7, “Complete Streets”, first line of second paragraph: “ a Complete Streets Policies”, remove the “a”.

54. Chapter 7, “Complete Streets on State Roads – GDOT’s Design Policy Manual”, list of principles: Within listing number 1, there is “2. The design and construction of new facilities should .....”. This needs to be separately listed as item 2 and then the rest of the numbers listed should be increased by 1 (e.g., “3. The design of intersections and interchanges...”).

55. Chapter 7, under “Developing Complete Streets Policies for Local Roads”, listing of 10 ideal elements, item 2: “The policy specifies that “all modes” includes walking, bicycling riding public transportation, driving trucks, buses and automobiles and “all users” includes people of all ages and abilities.”, should there be a comma between “riding” and “public”? Also, it says “Sidebar” at the end, but don’t see any this time.

56. Chapter 7, under “Macon-Bibb County Pedestrian Safety Review Board”, last paragraph: “While the Board is working to become an organizing focal point for many pedestrian improvement efforts it building upon community master plans like the Macon Action Plan and the College Hill Corridor Master Plan”, replace “it building” with “it can build”.

57. Footnote (16) of Chapter 7: “Blood alcohol content equal to our greater than 0.08”, replace “our” with “or”

58. Footnote (18) of Chapter 7, second sentence: “Two crashes that killed on bicyclist...”, replace “on” with “one”.

59. Chapter 8, under “Personal Health”, last sentence: “running errands...taking the kids to school” instead of “run errands...take the kids to school”.

60. Chapter 8, table above “Pedestrian and Bicycle Facilities” section, footnote (5) is superscripted.

61. Chapter 8, second bullet point in “National Guidance for Pedestrian and Bicyclist Transportation Options”: “S. Department of Transportation”, should read “U.S. Department of Transportation”. The next paragraph uses “DOT” as the acronym, while bullet point used “USDOT”. Which is it?
62. Chapter 8, under “Sidewalks”, third sentence: “Some sidewalks are directly adjacent to busy travel lanes without and lack a buffer or barrier, while others are buffered and separated from traffic by landscaping, parking, seating, or other physical means”, change “busy travel lanes without and lack a buffer or barrier” to “busy travel lanes lacking a buffer or barrier”.
63. Chapter 8, under “Landscaping & Street Furniture”: “The County should include the following inappropriate streetscape designs”, need to change “inappropriate” to “appropriate”.
64. Chapter 8, under “Traffic Signal & Warning Beacon Considerations”, minor edit: “Typical concerns that pedestrians experience at signalized crossings includes...”, replace “includes” with “include”.
65. Chapter 8, Table 8-2: There is a table before this one, but is not labeled “Table 8-1”. Either label the table at the beginning of the chapter as “Table 8-1” or relabel this on as “Table 8-1”.
66. Chapter 8, under “Downtown Bikeway”, paragraph 3 (Macon Connects Pop-Up Bike Network), second sentence: “The Macon Connects downtown bikeway (5 miles) connected College Street, Walnut Street, Cherry Street, Poplar Street, Second Street, Third Street, Fifth Street, Oglethorpe Street and Forsyth Street and temporarily installed a variety bicycle facilities on all of these streets, including:”, need to add “of” after “variety”.
67. Chapter 8, under “Columbus Road Bikeway”, last sentence: “To travel this bikeway safely, most, if not all, the bicyclist would have to use the 5-ft. sidewalks on Mercer University Drive, which were not designed to be and do not meet GDOT’s minimum width or road separation requirements for a multi-use trail.”, need to replace “most, if not all, the bicyclist would have to use” to “most, if not all bicyclists would have to use”.
68. Chapter 8, “Proposed Actions Items”: should read “Proposed Action Items”.

69. Chapter 10, "Introduction", near bottom of paragraph: "In regards to this update of the 2040 LRTP, it is thought that the same strategies are substantially similar and can be applied to this update."; remove "same" before "strategies".

70. Chapter 10, "Fast Act and Metropolitan Planning" under seventh bullet "Transportation and transit enhancement activities", last "sub-bullet": Need a closed parenthesis at end of the statement "Strategies and investments...."

71. Chapter 10, under "Fast Act and Metropolitan Planning", last bullet: "Any such plan must include regional goals for reducing peak hour vehicle miles traveled and improving transportation connections must identify existing services and programs that support access to jobs in the region, and must identify proposed projects and programs to reduce congestion and increase job access opportunities." This sentence is awkward, maybe instead "Any such plan must include regional goals for reducing peak hour vehicle miles traveled and improving transportation connections through identifying existing services and programs that support access to jobs in the region. It also must identify proposed projects and programs to reduce congestion and increase job access opportunities".

72. Chapter 10, under "Environmental Justice and Title VI", line 20: "Macon's long range transportation must also comply with Title VI of the Civil Rights Act of 1964 that state, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied benefits of, or be subject to discrimination under and program or activity receiving federal assistance". Replace "and program" with "any program". Also, add "plan" after "Macon's long range transportation".

73. Chapter 10, under "Title VI and the Americans With Disabilities Act": Same error is made as in item 72 I listed above in stating Title VI. Replace "and program" with "any program".

74. Chapter 10, under "MATs Self-Assessment", first line: "who have limited ability" not "who has limited ability".

75. Chapter 10, under "MATs Self-Assessment", Table 10-2: Already have Table 10-2, need to label this "Table 10-3" and reference in previous and following paragraphs to "Table 10-2" in this section needs to be referred to as "Table 10-3".

76. Chapter 10, under "Meeting The Requirements And Implementation (Identifying LEP Individuals Who Need Language Assistance)", "Contact Information": "The MPO does not intend that its LEP Plan excludes anyone



69. Chapter 10, "Introduction", near bottom of paragraph: "In regards to this update of the 2040 LRTP, it is thought that the same strategies are substantially similar and can be applied to this update." remove "same" before "strategies".
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76. Chapter 10, under "Meeting The Requirements And Implementation (Identifying LEP Individuals Who Need Language Assistance)", "Contact Information": "The MPO does not intend that its LEP Plan excludes anyone



requiring language assistance and will make every reasonable effort to accommodate requests. As the Macon MPO staff receives more training and become more knowledgeable, a staff person will be identified to assist those who requires special language assistance.” Better if read like this at the beginning: “The MPO’s intension is to not exclude anyone requiring language assistance”. Also, replace “requires” with “require”.

77. Chapter 10, under “Environmental Assessment of Natural / Historic Resources”, first paragraph, second to last line; ends with “at a regional plan level, not at the project level”, need to modify so says “at a regional planning level, not just at the project level”. Also, the following bullet list has a bunch of “S.” when it should be “U.S.”.

78. Chapter 10, under “Environmental Assessment of Natural / Historic Resources”, final paragraph before “Bridge and Intersection Improvements Projects”; Refers to “Figures 10-1 through 0-12”, that should be “Figures 10-1 through 10-12”.

79. Figure 10-1, the previous paragraph says how it identifies 20 proposed projects, but I only see 19 identified on the map. Are there more than one project at each location? If so, disregard this comment.

80. Figure 10-2, the previous paragraph states: “The query indicated that approximately 20 projects LRTP projects will impact the MPO environmental justice area.” you need to remove the first “projects” (the one after “20”). Again, I only count 19 projects on the map. If because more than one project at a location, disregard this comment.

81. Chapter 10, under “Conservation areas”, last sentence, first paragraph: need to replace “adequate” with “adequately so it reads: “are adequately given consideration”.

82. Chapter 10, figure 10-4: sentence above figure has “Figure 10-4 The LRTP project”, needs to be a period after the “4” and before the “The”.

83. Figures 10-1 through 10-12: They need to be labelled as such below the figure.

84. Figure 10-5 “Watersheds”: previous paragraph says 13 LRTP projects on map, I only see 12. Is this because of more than one project at one of these locations, if so, disregard this comment. I see this also for Figure 10-11&10-12, possibly again due to more than one project in one location?

85. Above figure 10-12 “River and Stream Corridor Protection”, first sentence of paragraph above figure: “The GIS analysis revealed that are 20 LRTP projects that will traverse rivers and streams in the MATS study area.”, need to add “there” between “that” and “are”.

86. Chapter 10, under “Suggested Mitigation Measures”, first paragraph, third sentence: “When this is the case, the following suggestions should consider as mitigating measures”, replace “should consider” with “should be considered”.

87. Chapter 10, under “Suggested Mitigation Measures”, under “Historical Sites”, second bullet: “complement”, not “compliment”. Also, last bullet “possibly” not “possible”.

88. Same as 87 except under “River and Stream Corridors”, second bullet: “dependent upon” not “depended on”.

89. Last general note on listing at the end of chapter 10, try to have the list consistent, some end in semi-colons, others periods, others nothing.

90. Nitpicky detail: Appendix C, under “Data Assembly Notes v. 9/2/2015 GIS Methodology

Census Blocks”: fourth line, says “(using ARGIS...”, there is no matching closed parenthesis.

91. Appendix C; under “Total anticipated population growth x”: says “Allocate students to destination TAZs, based individual student category”. Need to add “on before “individual”.

92. Appendix C, at the end under “Variable Definitions”, under “School2010 = The total primary and secondary school enrollment, as of Fall 2010, in the TAZ.”: “Total values are segmented by the amount that is attributable to population growth, as compared to changes due known reallocation of existing school resources” need to add “to” between “due” and “known”.

93. Chapter 6, last section about amending the LRTP project list steps: Under item 2, you accidentally have “a.” and “b.” double typed.

*Received from Federal Highway Administration on March 24, 2017*

The revised documentation looks fine. Please revise the Table of Content in the LRTP as well to include a section for this Financial Plan.

As a reminder, the Macon MPO will need to amend the LRTP's project listing and financial section during update of the TIP as the TIP is a subset of the LRTP.

FHWA already provided the Macon MPO's staff with an example.

Thank you,

**From:** Greenwald, Michael [<mailto:MGreenwald@mbpz.org>]

**Sent:** Thursday, March 23, 2017 7:31 PM

**To:** Edwards, Andrew (FHWA); Day, Ann-Marie (FHWA); Thomas, James

**Cc:** Eastin, William; McQueen, Thomas ([tmcqueen@dot.ga.gov](mailto:tmcqueen@dot.ga.gov)); Luxenberg, Steve (FHWA)

**Subject:** RE: FHWA Comments \_ MATS 2040 LRTP Update-DRAFT

**Importance:** High

Ann-Marie/Andy,

Pursuant to the conversation thread below, please find attached the draft fiscal chapter requested for the 2040 Long Range Transportation Plan Update. To facilitate the review of this document, a summary fiscal assessment can be found in Table 7-8: MATS MPO Transportation Program Fiscal Summaries for 2017-2040 (i.e., pg. 10).

Please provide any comments on this document by 5:00 p.m. on April 5, 2017, so that MATS may address any questions/incorporate any changes you may have as part of our regular response to comments. Thanks in advance for your comments, and I look forward to hearing from you soon.

Yours truly,

Mike Greenwald

---

**Michael J. Greenwald, Ph.D., AICP**

MPO Technical Coordinator



**Macon Area Transportation Study**

682 Cherry Street, Suite 1000

Macon, GA 31201 | 478-751-7472

[MATS2040.org](http://MATS2040.org)

**From:** Edwards, Andrew (FHWA) [<mailto:andrew.edwards@dot.gov>]  
**Sent:** Tuesday, February 28, 2017 12:07 PM  
**To:** Greenwald, Michael <[MGreenwald@mbpz.org](mailto:MGreenwald@mbpz.org)>; Day, Ann-Marie (FHWA) <[ann-marie.day@dot.gov](mailto:ann-marie.day@dot.gov)>; Thomas, James <[jpthomas@mbpz.org](mailto:jpthomas@mbpz.org)>  
**Cc:** Eastin, William <[weastin@dot.ga.gov](mailto:weastin@dot.ga.gov)>; McQueen, Thomas ([tmcqueen@dot.ga.gov](mailto:tmcqueen@dot.ga.gov)) <[tmcqueen@dot.ga.gov](mailto:tmcqueen@dot.ga.gov)>; Luxenberg, Steve (FHWA) <[Steve.Luxenberg@dot.gov](mailto:Steve.Luxenberg@dot.gov)>  
**Subject:** RE: FHWA Comments \_ MATS 2040 LRTP Update-DRAFT

Mike,

FHWA will not recognize the updated Macon LRTP as having a valid financial plan, a required element, in its current format or approve any TIPs drawn from it.

There are good financial plan section examples in the Valdosta, Werner Robbins and Atlanta MPO long range plans.

The MPO may adopt the updated LRTP with any content.

If you'd like we can discuss our direction and lack of appropriate disposition at the policy committee tomorrow.

Thanks.

Andy

**From:** Greenwald, Michael [<mailto:MGreenwald@mbpz.org>]  
**Sent:** Tuesday, February 28, 2017 11:16 AM  
**To:** Day, Ann-Marie (FHWA); Thomas, James  
**Cc:** Edwards, Andrew (FHWA); Eastin, William  
**Subject:** RE: FHWA Comments \_ MATS 2040 LRTP Update-DRAFT  
**Importance:** High

Good morning Ann-Marie,

Thank you very much for your comments below. I have reviewed 450.324(g)(11) as suggested and, while I do see that it requires "A financial plan that demonstrates how the adopted transportation plan can be implemented," it does not appear to *require* that that the Financial Plan be incorporated as a separate chapter. Our GDOT Office of Planning partner came to that same conclusion this morning, without any prior conversation with us.

The MATS Citizen Advisory Committee and Technical Coordinating Committee approved the draft at the web link cited in the 2/8/2017 e-mail, with full knowledge that the financial plans for roads and bridges vs. transit planning had been incorporated into their respective project chapters.



With all that said, MATS staff believes the requirements of 450.324(g)(11) are currently met. As this is a draft, we will obviously be incorporating any comments and changes we receive from our partners and the general public after the close of the public comment periods.

Should you have any additional questions, please feel free to contact us.

Yours truly,

Mike Greenwald

**Michael J. Greenwald, Ph.D., AICP**  
MPO Technical Coordinator



**Macon Area Transportation Study**  
682 Cherry Street, Suite 1000  
Macon, GA 31201 | 478-751-7472  
[MATS2040.org](http://MATS2040.org)

**From:** Day, Ann-Marie (FHWA) [<mailto:ann-marie.day@dot.gov>]

**Sent:** Tuesday, February 28, 2017 7:23 AM

**To:** Greenwald, Michael <[MGreenwald@mbpz.org](mailto:MGreenwald@mbpz.org)>; Thomas, James <[jpthomas@mbpz.org](mailto:jpthomas@mbpz.org)>

**Cc:** Edwards, Andrew (FHWA) <[andrew.edwards@dot.gov](mailto:andrew.edwards@dot.gov)>; Eastin, William <[weastin@dot.ga.gov](mailto:weastin@dot.ga.gov)>

**Subject:** RE: FHWA Comments \_ MATS 2040 LRTP Update-DRAFT

Mike:

The comment FHWA provided on the Macon MPO's LRTP Financial Plan is a requirement. For your convenience, I have attached an electronic version of 23 CFR 450.

[http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=23:1.0.1.5.11#se23.1.450\\_1324](http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=23:1.0.1.5.11#se23.1.450_1324)

Please pay particular attention to items of a LRTP outlined in 450.324(g) and elements of a Financial Plan outlined in 450.324(g)(11). I recommend a checklist to ensure the Macon's LRTP contains all elements outlined in 450.324 prior to FHWA's review.

As you incorporate these changes, please ensure that the Financial Plan is a separate chapter in the document.

Thank you,



Ann-Marie Day  
Community Planner,  
Federal Highway Administration  
61 Forsyth Street, Suite 17T100  
Atlanta, GA 30303  
Office (404) 562-3639  
Fax (404) 562-3703  
[ann-marie.day@dot.gov](mailto:ann-marie.day@dot.gov)

**From:** Greenwald, Michael [<mailto:MGreenwald@mbpz.org>]  
**Sent:** Monday, February 27, 2017 6:42 PM  
**To:** Day, Ann-Marie (FHWA); Thomas, James  
**Cc:** Edwards, Andrew (FHWA); Eastin, William  
**Subject:** RE: FHWA Comments \_ MATS 2040 LRTP Update-DRAFT  
**Importance:** High

Good morning Ann-Marie,

Thanks very much for your suggestion. While I can see the point that you are making, I am concerned about an unintended consequence of your recommendation. In reviewing the original MATS LRTP, the narrative about funding sources and fiscal balancing was confusing. Consolidating the financial discussions about roads and transit into a single chapter left the reader with an impression that highway and transit funding sources are interchangeable. As GDOT, FHWA and FTA all know, this is clearly not the case.

Therefore, in this LRTP Update, the financial assessments and the project lists for roads and bridges vs. transit were separated in order to facilitate an "apples to apples" comparison. Fiscal constraint is demonstrated in both the Roads & Bridges and Public Transportation chapters.

That said, I think there is a point that we could do a better job calling out the fact in the chapter titles that the fiscal balancing is happening. Would the following meet your needs?

"Chapter 5 | Roads and Bridges Projects (Including Financial Planning)"

"Chapter 6 | Public Transportation (Including Financial Planning)"

Thanks very much for your insights, and I look forward to hearing from you again soon.

Yours truly,

Mike Greenwald

Ann-Marie Day  
Community Planner,  
Federal Highway Administration  
61 Forsyth Street, Suite 17T100  
Atlanta, GA 30303  
Office (404) 562-3639  
Fax (404) 562-3703  
[ann-marie.day@dot.gov](mailto:ann-marie.day@dot.gov)

**From:** Greenwald, Michael [<mailto:MGreenwald@mbpz.org>]  
**Sent:** Monday, February 27, 2017 6:42 PM  
**To:** Day, Ann-Marie (FHWA); Thomas, James  
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Mike Greenwald

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**Michael J. Greenwald, Ph.D., AICP**

MPO Technical Coordinator



**Macon Area Transportation Study**

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[MATS2040.org](http://MATS2040.org)

**From:** Day, Ann-Marie (FHWA) [<mailto:ann-marie.day@dot.gov>]

**Sent:** Monday, February 27, 2017 9:38 AM

**To:** Greenwald, Michael <[MGreenwald@mbpz.org](mailto:MGreenwald@mbpz.org)>; Thomas, James <[jpthomas@mbpz.org](mailto:jpthomas@mbpz.org)>

**Cc:** Edwards, Andrew (FHWA) <[andrew.edwards@dot.gov](mailto:andrew.edwards@dot.gov)>; Eastin, William <[weastin@dot.ga.gov](mailto:weastin@dot.ga.gov)>

**Subject:** FHWA Comments \_ MATS 2040 LRTP Update-DRAFT

**Importance:** High

Good Morning Mike/Jim:

For the Macon MPO's LRTP update, please have a separate Financial Planning section. This section must include highway and transit revenues and expenditures as well as identifying all revenue and source.

Thank you,

Ann-Marie Day

Community Planner,

Federal Highway Administration

61 Forsyth Street, Suite 17T100

Atlanta, GA 30303

Office (404) 562-3639

Fax (404) 562-3703

[ann-marie.day@dot.gov](mailto:ann-marie.day@dot.gov)

**From:** Edwards, Andrew (FHWA)

**Sent:** Monday, February 27, 2017 7:26 AM

**To:** Day, Ann-Marie (FHWA)

**Subject:** FW: MATS 2040 LRTP Update-DRAFT

**Importance:** High

---

**Michael J. Greenwald, Ph.D., AICP**

MPO Technical Coordinator



**Macon Area Transportation Study**

682 Cherry Street, Suite 1000  
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**Cc:** Edwards, Andrew (FHWA) <[andrew.edwards@dot.gov](mailto:andrew.edwards@dot.gov)>; Eastin, William <[weastin@dot.ga.gov](mailto:weastin@dot.ga.gov)>

**Subject:** FHWA Comments \_ MATS 2040 LRTP Update-DRAFT

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Thank you,

Ann-Marie Day

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Federal Highway Administration

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Atlanta, GA 30303

Office (404) 562-3639

Fax (404) 562-3703

[ann-marie.day@dot.gov](mailto:ann-marie.day@dot.gov)

**From:** Edwards, Andrew (FHWA)

**Sent:** Monday, February 27, 2017 7:26 AM

**To:** Day, Ann-Marie (FHWA)

**Subject:** FW: MATS 2040 LRTP Update-DRAFT

**Importance:** High

**From:** North, Ken

**Sent:** Wednesday, February 08, 2017 6:17 PM

**To:** Adam Smith <[adsmith@dot.ga.gov](mailto:adsmith@dot.ga.gov)>; Morrison, Alex <[AMorrison@maconbibb.us](mailto:AMorrison@maconbibb.us)>; Andy Casey <[acasey@dot.ga.gov](mailto:acasey@dot.ga.gov)>; Anita Cauthen <[abuice@monroecountygeorgia.com](mailto:abuice@monroecountygeorgia.com)>; Ann-Marie Day <[ann-marie.day@dot.ga.gov](mailto:ann-marie.day@dot.ga.gov)>; Audrey Connely <[aconnely@maconchamber.com](mailto:aconnely@maconchamber.com)>; Daniel Dobbins <[ddobbins@mg-rc.org](mailto:ddobbins@mg-rc.org)>; Davis, David <[DDavis@maconbibb.us](mailto:DDavis@maconbibb.us)>; Drake, Judd <[jdrake@maconbibb.us](mailto:jdrake@maconbibb.us)>; Erick D'Leon <[erick.dleon@tbiam.aero](mailto:erick.dleon@tbiam.aero)>; Floyd, Nigel <[NFloyd@maconbibb.us](mailto:NFloyd@maconbibb.us)>; Fortson, David <[DFortson@maconbibb.us](mailto:DFortson@maconbibb.us)>; Greenwald, Michael <[MGreenwald@mbpz.org](mailto:MGreenwald@mbpz.org)>; Jackson, Wanzina <[WJackson@maconbibb.us](mailto:WJackson@maconbibb.us)>; Jamie Cochran <[JaCochran@dot.ga.gov](mailto:JaCochran@dot.ga.gov)>; John Swint <[drjohnswint2@gmail.com](mailto:drjohnswint2@gmail.com)>; Kraig Collins <[krcollins@dot.ga.gov](mailto:krcollins@dot.ga.gov)>; Laura Mathis <[lmathis@mg-rc.org](mailto:lmathis@mg-rc.org)>; Robinson, Marcus <[MLRobinson@maconbibb.us](mailto:MLRobinson@maconbibb.us)>; Rick Jones <[rjones@mta-mac.com](mailto:rjones@mta-mac.com)>; Ryals, Robert <[RRyals@maconbibb.us](mailto:RRyals@maconbibb.us)>; Rodney Barry <[Rodney.Barry@fhwa.dot.gov](mailto:Rodney.Barry@fhwa.dot.gov)>; Stephen Adams <[sadams@mbcia.com](mailto:sadams@mbcia.com)>; Thomas, Brenda <[BrThomas@maconbibb.us](mailto:BrThomas@maconbibb.us)>; Thomas, James <[jpthomas@mbpz.org](mailto:jpthomas@mbpz.org)>; Tim Pitrowski <[tim@jonescountyga.org](mailto:tim@jonescountyga.org)>; Tony Rojas <[tonyr@maconwater.org](mailto:tonyr@maconwater.org)>; William Eastin <[weastin@dot.ga.gov](mailto:weastin@dot.ga.gov)>

**Subject:** MATS Technical Meeting

**Importance:** High

The next MATS Technical Committee meeting will be held on Wed., February 22, 2017 at 10 a.m. in the 10<sup>th</sup> floor Conference Room of the Macon-Bibb Co. Planning & Zoning Commission Office, 682 Cherry St., Macon, GA. The enclosed attachment contains the meeting agenda as well as information from the previous meeting. At the meeting, we will be discussing the final Unified Planning Work Program (UPWP) contained in the second attachment and the draft Long Range Transportation Plan (LRTP). If you would like to review the LRTP before the meeting, please click on the link enclosed below. If you have any questions concerning the meeting, please contact our office.

<http://mats2040.org/lrtp/>

Thanks,

---

**Ken North**

planner



**Macon-Bibb Planning & Zoning Commission**  
682 Cherry Street, Suite 1000  
Macon, GA 31201 | 478-751-7462  
[MBPZ.org](http://MBPZ.org) | [@mcnbibbpz](https://twitter.com/mcnbibbpz)



## Partner Agency Comments Received After April 5, 2017

*Received from Georgia Department of Transportation on April 10, 2017*

Good Afternoon Mike,

Below are my comments for the draft LRTP.

As you can see, they are fairly basic. This draft was very good.

Chapter 1:

Significant Changes Section

- ? SIP is mentioned, but no definition as to what it is.

Chapter 3:

Historic Population Trends -

- ? Figure 3-13 should be Figure 3-2
- ? No population figure for Macon-Bibb County?

Chapter 5:

Projects Lists -

- ? The table showing the top ranked projects should be listed first.
- ? In regards to the project at the airport (#9), have you looked into FAA funding? I believe they may have funds for projects such as these.

That's all I have. Thank you for giving me the opportunity to review.

-William

**William Eastin**

**Southeast Georgia Branch Chief**

[weastin@dot.ga.gov](mailto:weastin@dot.ga.gov) | 404-631-1810

Georgia Department of Transportation - Office of Planning

600 West Peachtree Street NW, 5<sup>th</sup> Floor

Atlanta, Georgia 30308



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Georgia DOT observes **National Work Zone Awareness Week** Apr. 3-7 to bring attention to the dangers of driving in roadway work zones. 59 GDOT workers have died in work zones since 1973. And many

more drivers as well. Check out our work zone safety video at [www.dot.ga.gov/WZS](http://www.dot.ga.gov/WZS). Remember - work zone safety is in your hands.

# **NOTICE**

## **SPECIAL CALLED MEETING OF THE MACON AREA TRANSPORTATION STUDY POLICY COMMITTEE**

**DATE: Wednesday, May 3, 2017**

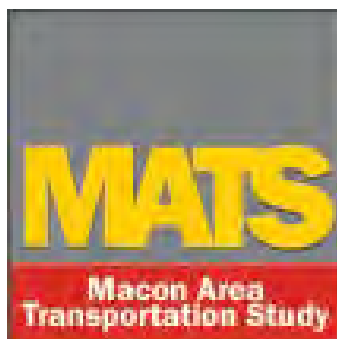
**TIME: 9:30 a.m.**

**PLACE: Bibb Co. Engineering Annex, 760 Third St., Macon, GA**

### **Agenda Items**

1. FY 2014 – 2017 Transportation Improvement Program (TIP) –  
Review of Amendments
2. 2040 Long Range Transportation Plan (LRTP) Update –  
Approval of Final LRTP

--Old Business  
--New Business  
--Adjournment





## Macon Area Transportation Study

### **Macon – Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update**

If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463 or [gbrown@mbpz.org](mailto:gbrown@mbpz.org). Please use additional sheets as needed! We genuinely desire your input by Friday, November 4, 2016. This survey can also be found online @ <http://www.mats2040.org/wp-content/uploads/2016/10/Website-Freight-Movement-Cover-Letter-and-Survey-2040-LRTP-Update.pdf>

October 5, 2016

Re: Request for input into the 2040 LRTP Update: Freight & Goods Movement  
Macon Area Transportation Study

Greetings:

As part of its Freight and Goods Movement Study, the Macon-Bibb County Planning & Zoning Commission (MPO) is currently updating the freight and goods movement component of the 2040 Long Range Transportation Plan (LRTP) update for the Macon Area Transportation Study (MATS). The MPO has previously undertaken goods movement studies and research in previous LRTP updates and the completion of the *"Goods Movement Study, June 1995"*. The completion of the Freight and Goods Movement Study by the MPO represents a continued effort in developing an integrated freight-planning program for the Macon Area Transportation Study.

Therefore, we respectfully request your assistance in completing the enclosed survey that will assist transportation planners with prioritizing future roadway improvements. Your assistance in providing information on activities and needs regarding freight and goods movement in Macon-Bibb County is greatly appreciated. Please feel free to use additional sheets for your responses, if needed.

If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463. Please find enclosed a stamped return envelope for your convenience, or you may fax your completed survey to 478.751.7467 or by email to [gbrown@mbpz.org](mailto:gbrown@mbpz.org). We genuinely desire your input by Friday, November 4, 2016.

Thank you for being a part of this study!

Sincerely,

Gregory L. Brown, Senior Planner  
Macon – Bibb County Planning and Zoning Commission





## Macon Area Transportation Study

### Macon - Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update

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1. Please provide the following demographic information. The name of your organization will not be listed in the results of the survey. However, it will be used solely for informational purposes of future Macon's MPO Long Range Transportation Plan updates:

• Name: Casey Smack  
• Company Name: Fedex Freight  
• Address: 2750 Ruff Avenue  
• City: Macon State: GA Zip: 31204  
• Country: USA  
• Email Address: Casey.Smack@Fedex.com  
• Phone Number: 478-464-1014

2. How would you describe the primary type of facilities / industries of your company? (Check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Truck Terminal               | <input type="checkbox"/> Distribution Center      |
| <input type="checkbox"/> Manufacture                             | <input type="checkbox"/> Retail / Wholesale Trade |
| <input type="checkbox"/> Warehouse                               | <input type="checkbox"/> Liquid or Dry Bulk       |
| <input checked="" type="checkbox"/> Freight / Logistics Provider | <input type="checkbox"/> Other: (please specify)  |

3. What are the primary types of shipments handled at this site? (Check all that apply)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Less than truckload        | <input type="checkbox"/> Shipping containers     |
| <input type="checkbox"/> Truckload                             | <input type="checkbox"/> Waste materials         |
| <input type="checkbox"/> Parcels                               | <input type="checkbox"/> Hazardous materials     |
| <input type="checkbox"/> Mail                                  | <input type="checkbox"/> Other: (please specify) |
| <input type="checkbox"/> Bulk commodity shipments in rail cars |  |

4. During what hours do you usually receive/ship deliveries of your major inbound and outbound products? (Check all that apply)

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> 6AM - 12 Noon | <input checked="" type="checkbox"/> 8PM - <sup>2200</sup> 12 Midnight |
| <input checked="" type="checkbox"/> 12 Noon - 4PM | <input checked="" type="checkbox"/> 12 Midnight - 6AM                 |
| <input checked="" type="checkbox"/> 4PM - 8PM     | <input type="checkbox"/> 24 hours a day                               |

5. How many trucks on average does your company use on a daily basis for freight and goods movement in Macon - Bibb County?

- |                                      |   |
|--------------------------------------|---|
| <input type="checkbox"/> Less than 5 | <input checked="" type="checkbox"/> 11 - 25 |
| <input type="checkbox"/> 6 - 10      | <input type="checkbox"/> 25 or More         |



## Macon Area Transportation Study

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6. What roadways are used most by your company's vehicle in the movement of freight and goods in Macon – Bibb County? This information will assist transportation planners with prioritizing future roadway improvements. (Check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> I-75                                       | <input checked="" type="checkbox"/> US 41 (Forsyth Road; Vineville Avenue; Hardeman Avenue) |
| <input checked="" type="checkbox"/> I-16                                       | <input checked="" type="checkbox"/> US 80 (Eisenhower Parkway; Jeffersonville Road)         |
| <input type="checkbox"/> I-475   | <input checked="" type="checkbox"/> US 129 (Gray Highway)                                   |
| <input checked="" type="checkbox"/> SR 247 (Pio Nono Avenue)                   | <input type="checkbox"/> Other (please specify) _____                                       |
| <input checked="" type="checkbox"/> SR 49 (Shurling Drive; Industrial Highway) |   |
| <input checked="" type="checkbox"/> SR 74 (Mercer University; Thomaston road)  |   |

7. What other routes would be more preferable to use that are not identified as truck routes?

- Highway Names: Unknown

8. Which, if any, of the following movement problems does your truck(s) encounter on the local roadway? (Check all that apply)

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Narrow Roads  | <input type="checkbox"/> Width of Bridges                                     |
| <input type="checkbox"/> Rail Crossings           | <input checked="" type="checkbox"/> Other (please specify) <u>Trees/Brush</u> |
| <input type="checkbox"/> Difficult Turn Movements |   |

9. Where are the specific locations / areas where truck or rail traffic causes recurring congestion in Macon – Bibb County?

- Please Name: 2nd Street

10. What improvements could be easily made to the roadway system to improve the movement of freight and goods in Macon – Bibb County?

- Please List: Trees/Brush off Ave. Updated Intersections  
Upgrade lane width

**Thank You!**





## Macon Area Transportation Study

### **Macon – Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update**

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Therefore, we respectfully request your assistance in completing the enclosed survey that will assist transportation planners with prioritizing future roadway improvements. Your assistance in providing information on activities and needs regarding freight and goods movement in Macon-Bibb County is greatly appreciated. Please feel free to use additional sheets for your responses, if needed.

If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463. Please find enclosed a stamped return envelope for your convenience, or you may fax your completed survey to 478.751.7467 or by email to [gbrown@mbpz.org](mailto:gbrown@mbpz.org). We genuinely desire your input by Friday, November 4, 2016.

Thank you for being a part of this study!

Sincerely,

Gregory L. Brown, Senior Planner  
Macon – Bibb County Planning and Zoning Commission



## Macon Area Transportation Study

### Macon - Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update

If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463 or [gbrown@mbpz.org](mailto:gbrown@mbpz.org). Please use additional sheets as needed! We genuinely desire your input by Friday, November 4, 2016. This survey can also be found online @ <http://www.mats2040.org/wp-content/uploads/2016/10/Website-Freight-Movement-Cover-Letter-and-Survey-2040-LRTP-Update.pdf>

1. Please provide the following demographic information. The name of your organization will not be listed in the results of the survey. However, it will be used solely for informational purposes of future Macon's MPO Long Range Transportation Plan updates:
  - Name: Will Butts
  - Company Name: ABF
  - Address: 711 Guy Paine Road
  - City: MACON State: GA Zip: 31206
  - Country: USA
  - Email Address: wbutts@freight.abf.com
  - Phone Number: 478-788-6424
2. How would you describe the primary type of facilities / industries of your company? (Check all that apply)
  - ☒ Truck Terminal
  - ☐ Manufacture
  - ☐ Warehouse
  - ☒ Freight / Logistics Provider
  - ☐ Distribution Center
  - ☐ Retail / Wholesale Trade
  - ☐ Liquid or Dry Bulk
  - ☐ Other: (please specify)
3. What are the primary types of shipments handled at this site? (Check all that apply)
  - ☒ Less than truckload
  - ☐ Truckload
  - ☐ Parcels
  - ☐ Mail
  - ☐ Bulk commodity shipments in rail cars
  - ☐ Shipping containers
  - ☐ Waste materials
  - ☒ Hazardous materials
  - ☐ Other: (please specify)
4. During what hours do you usually receive/ship deliveries of your major inbound and outbound products? (Check all that apply)
  - ☒ 6AM - 12 Noon
  - ☐ 12 Noon - 4PM
  - ☒ 4PM - 8PM
  - ☐ 8PM - 12 Midnight
  - ☐ 12 Midnight - 6AM
  - ☐ 24 hours a day
5. How many trucks on average does your company use on a daily basis for freight and goods movement in Macon - Bibb County?
  - ☐ Less than 5
  - ☒ 6 - 10
  - ☐ 11 - 25
  - ☐ 25 or More





## Macon Area Transportation Study

### Macon – Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update

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6. What roadways are used most by your company's vehicle in the movement of freight and goods in Macon – Bibb County? This information will assist transportation planners with prioritizing future roadway improvements. (Check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> I-75                                       | <input checked="" type="checkbox"/> US 41 (Forsyth Road; Vineville Avenue; Hardeman Avenue) |
| <input checked="" type="checkbox"/> I-16                                       | <input checked="" type="checkbox"/> US 80 (Eisenhower Parkway; Jeffersonville Road)         |
| <input checked="" type="checkbox"/> I-475                                      | <input checked="" type="checkbox"/> US 129 (Gray Highway)                                   |
| <input checked="" type="checkbox"/> SR 247 (Pio Nono Avenue)                   | <input type="checkbox"/> Other (please specify) _____                                       |
| <input checked="" type="checkbox"/> SR 49 (Shurling Drive; Industrial Highway) |   |
| <input checked="" type="checkbox"/> SR 74 (Mercer University; Thomaston road)  |   |

7. What other routes would be more preferable to use that are not identified as truck routes?

- Highway

Names: NONE

8. Which, if any, of the following movement problems does your truck(s) encounter on the local roadway? (Check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Narrow Roads                        | <input type="checkbox"/> Width of Bridges             |
| <input type="checkbox"/> Rail Crossings                      | <input type="checkbox"/> Other (please specify) _____ |
| <input checked="" type="checkbox"/> Difficult Turn Movements |   |

9. Where are the specific locations / areas where truck or rail traffic causes recurring congestion in Macon – Bibb County?

- Please

Name: ALLEN ROAD, 7TH STREET, 5TH STREET

10. What improvements could be easily made to the roadway system to improve the movement of freight and goods in Macon – Bibb County?

- Please

List: NONE

**Thank You!**



## Macon Area Transportation Study

### **Macon – Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update**

If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463 or [gbrown@mbpz.org](mailto:gbrown@mbpz.org). Please use additional sheets as needed! We genuinely desire your input by Friday, November 4, 2016. This survey can also be found online @ <http://www.mats2040.org/wp-content/uploads/2016/10/Website-Freight-Movement-Cover-Letter-and-Survey-2040-LRTP-Update.pdf>

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October 5, 2016

Re: Request for input into the 2040 LRTP Update: Freight & Goods Movement  
Macon Area Transportation Study

Greetings:

As part of its Freight and Goods Movement Study, the Macon-Bibb County Planning & Zoning Commission (MPO) is currently updating the freight and goods movement component of the 2040 Long Range Transportation Plan (LRTP) update for the Macon Area Transportation Study (MATS). The MPO has previously undertaken goods movement studies and research in previous LRTP updates and the completion of the *"Goods Movement Study, June 1995"*. The completion of the Freight and Goods Movement Study by the MPO represents a continued effort in developing an integrated freight-planning program for the Macon Area Transportation Study.

Therefore, we respectfully request your assistance in completing the enclosed survey that will assist transportation planners with prioritizing future roadway improvements. Your assistance in providing information on activities and needs regarding freight and goods movement in Macon-Bibb County is greatly appreciated. Please feel free to use additional sheets for your responses, if needed.

If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463. Please find enclosed a stamped return envelope for your convenience, or you may fax your completed survey to 478.751.7467 or by email to [gbrown@mbpz.org](mailto:gbrown@mbpz.org). We genuinely desire your input by Friday, November 4, 2016.

Thank you for being a part of this study!

Sincerely,

Gregory L. Brown, Senior Planner  
Macon – Bibb County Planning and Zoning Commission





## Macon Area Transportation Study

### Macon - Bibb County MPO Freight & Goods Movement Survey 2040 Long Range Transportation Plan Update

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1. Please provide the following demographic information. The name of your organization will not be listed in the results of the survey. However, it will be used solely for informational purposes of future Macon's MPO Long Range Transportation Plan updates:

Name: Rico Ferriman  
Company Name: SAVE-A-LOT  
Address: 7595 Industrial Hwy  
City: MACON State: GA Zip: 31216  
Country: USA  
Email Address: Rico.D.Ferriman@SaveALot.com  
Phone Number: 478-788-6811

2. How would you describe the primary type of facilities / industries of your company? (Check all that apply)

<input type="checkbox"/> Truck Terminal	<input checked="" type="checkbox"/> Distribution Center
<input type="checkbox"/> Manufacture	<input type="checkbox"/> Retail / Wholesale Trade
<input type="checkbox"/> Warehouse	<input type="checkbox"/> Liquid or Dry Bulk
<input type="checkbox"/> Freight / Logistics Provider	<input type="checkbox"/> Other: (please specify)

3. What are the primary types of shipments handled at this site? (Check all that apply)

<input type="checkbox"/> Less than truckload	<input type="checkbox"/> Shipping containers
<input checked="" type="checkbox"/> Truckload	<input type="checkbox"/> Waste materials
<input type="checkbox"/> Parcels	<input type="checkbox"/> Hazardous materials
<input type="checkbox"/> Mail	<input type="checkbox"/> Other: (please specify)
<input type="checkbox"/> Bulk commodity shipments in rail cars	

4. During what hours do you usually receive/ship deliveries of your major inbound and outbound products? (Check all that apply)

<input type="checkbox"/> 6AM - 12 Noon	<input type="checkbox"/> 8PM - 12 Midnight
<input type="checkbox"/> 12 Noon - 4PM	<input type="checkbox"/> 12 Midnight - 6AM
<input type="checkbox"/> 4PM - 8PM	<input checked="" type="checkbox"/> 24 hours a day

5. How many trucks on average does your company use on a daily basis for freight and goods movement in Macon - Bibb County?

<input type="checkbox"/> Less than 5	<input checked="" type="checkbox"/> 11 - 25
<input type="checkbox"/> 6 - 10	<input type="checkbox"/> 25 or More





## Macon Area Transportation Study

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If you have any questions or concerns about this survey, please contact Gregory L. Brown @ 478.751.7463 or [gbrown@mbpz.org](mailto:gbrown@mbpz.org). Please use additional sheets as needed! We genuinely desire your input by Friday, November 4, 2016. This survey can also be found online @ <http://www.mats2040.org/wp-content/uploads/2016/10/Website-Freight-Movement-Cover-Letter-and-Survey-2040-LRTP-Update.pdf>

6. What roadways are used most by your company's vehicle in the movement of freight and goods in Macon – Bibb County? This information will assist transportation planners with prioritizing future roadway improvements. (Check all that apply)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> I-75                            | <input type="checkbox"/> US 41 (Forsyth Road; Vineville Avenue; Hardeman Avenue) |
| <input checked="" type="checkbox"/> I-16                            | <input type="checkbox"/> US 80 (Eisenhower Parkway; Jeffersonville Road)         |
| <input checked="" type="checkbox"/> I-475                           | <input type="checkbox"/> US 129 (Gray Highway)                                   |
| <input type="checkbox"/> SR 247 (Pio Nono Avenue)                   | <input type="checkbox"/> Other (please specify) _____                            |
| <input type="checkbox"/> SR 49 (Shurling Drive; Industrial Highway) | _____  |
| <input type="checkbox"/> SR 74 (Mercer University; Thomaston road)  | _____  |

7. What other routes would be more preferable to use that are not identified as truck routes?

- Highway

Names: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Which, if any, of the following movement problems does your truck(s) encounter on the local roadway? (Check all that apply)

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Narrow Roads  | <input type="checkbox"/> Width of Bridges             |
| <input type="checkbox"/> Rail Crossings           | <input type="checkbox"/> Other (please specify) _____ |
| <input type="checkbox"/> Difficult Turn Movements | _____   |

9. Where are the specific locations / areas where truck or rail traffic causes recurring congestion in Macon – Bibb County?

- Please

Name: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. What improvements could be easily made to the roadway system to improve the movement of freight and goods in Macon – Bibb County?

- Please

List: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Thank You!**

## **U.S. DEPARTMENT OF TRANSPORTATION ENVIRONMENTAL REVIEW CHECKLIST**

The Fixing America's Surface Transportation Act (FAST Act) requires the U.S. Department of Transportation (DOT or Department) and other Federal agencies of jurisdiction likely to have substantive review or approval responsibilities on transportation projects to develop a checklist to help project sponsors identify potential natural, cultural, and historic resources in the area of a proposed project.<sup>1</sup> The checklist, however, is intended to generally help project sponsors with the following: (1) identify agencies of jurisdiction and cooperating agencies; (2) develop the information needed for the purpose and need and alternatives for analysis; and (3) improve interagency collaboration to help expedite the permitting process for the lead agency and agencies of jurisdiction.<sup>2</sup>

Accordingly, DOT has created the checklist below. In Section I, the project sponsor should provide general information about the project, including a project description and location. Section II provides a series of questions to help the Department, lead agencies, project sponsors, and other interested parties identify potential natural, cultural, and historic resources in the area of a proposed project in order to help determine the requirements applicable to the proposed project and what permits, approvals or consultations may be required.<sup>3</sup> The following categories of resources that a proposed project may impact include: (1) air quality; (2) water resources and wetlands; (3) wildlife; (4) historic and cultural resources; (5) social and economic impacts; (6) environmental justice; (7) hazardous and other contaminated materials; (8) greenhouse gas emissions and climate change; (9) noise and vibration; and (10) land. Section II also identifies potential agency or agencies of jurisdiction to facilitate the identification of cooperating or participating agencies. Early identification of these agencies will help facilitate interagency collaboration and outreach as well as expedite any required permitting processes. In particular, the Department can work with these agencies to help develop the National Environmental Policy Act (NEPA) purpose and need, and identify reasonable alternatives.<sup>4</sup> For complex projects where multiple alternatives are under consideration, the Department may complete this checklist for each alternative to facilitate comparison of impacts.

Appendix A provides a list of acronyms and legal resources for the different types of proposed transportation projects.

<sup>1</sup> Pub. L. 112-141, § 1313(a) (codified at 49 U.S.C. § 310(c)). This section does not apply to any project subject to 23 U.S.C. § 139. 49 U.S.C. § 310(g)).

<sup>2</sup> 49 U.S.C. § 310(c)(2).

<sup>3</sup> Note, however, that because this checklist is intended to apply to a broad range of transportation projects, certain requirements that are specific to a proposed project may not be included; therefore, it is important to refer to the legal authorities and available guidance documents as well to ensure full compliance.

<sup>4</sup> NEPA serves as the umbrella review process to achieve compliance with all environmental requirements.

**I.     PROJECT**

<b>Proposed Project Name:</b>
<b>Project Sponsor (Name, Address, Phone Number, and Point of Contact):</b>
<b>Project Location (<i>e.g.</i>, City(ies), State(s); if available, include a map):</b>
<b>Project Description (A brief description of the proposed project (1-2 sentences)):</b>

## II. PERMITS, APPROVALS, CONSULTATIONS, AND OTHER REQUIREMENTS

### 1. Air Quality

Requirement	Whether Requirement Applies (Check all that apply)	Potential Cooperating (C) or Participating (P) Agencies (Identify the type by (C) or (P) next to the Agency's name)	Comments (Identify any potentially applicable programmatic agreements, merger agreements, etc. or other relevant notes.)
<b>1.1 <u>Conformity Determination:</u></b> Under the Clean Air Act, is a conformity determination required to show that the project conforms to the applicable State or Tribal Implementation Plan?	<input type="checkbox"/> Yes, General Conformity <input type="checkbox"/> Yes, Transportation Conformity <input type="checkbox"/> No	<input type="checkbox"/> EPA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

### 2. Water Resources and Wetlands

<b>2.1. <u>Section 401 State Certification:</u></b> Under the Clean Water Act, is a Section 401 State Certification potentially required to show that the project will not cause or contribute to a violation of relevant State water quality standards?	<input type="checkbox"/> Yes, State/Commonwealth of _____ <input type="checkbox"/> No	<input type="checkbox"/> EPA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.2 <u>Section 402 National Pollutant Discharge Elimination System (NPDES) Permit:</u></b> Under the Clean Water Act, is an EPA or State Section 402 permit required for the discharge of pollutants into the waters of the United States?	<input type="checkbox"/> Yes, EPA <input type="checkbox"/> Yes, State/Commonwealth of _____ <input type="checkbox"/> No	<input type="checkbox"/> EPA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.3 <u>Section 404 Permit:</u></b> Under the Clean Water Act, is a USACE Section 404 Permit required for the discharge of dredge and fill material?	<input type="checkbox"/> Yes, Individual <input type="checkbox"/> Yes, General—Nationwide <input type="checkbox"/> Yes, General—Regional <input type="checkbox"/> Yes, General—State <input type="checkbox"/> No	<input type="checkbox"/> USACE ( ) <input type="checkbox"/> EPA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.4 <u>Coastal Zone Management Act (CZMA) Federal Consistency Certification:</u></b>	<input type="checkbox"/> Yes, Consistency Certification to be submitted to the	<input type="checkbox"/> NOAA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

Will the proposed project activities potentially occur within a coastal zone or affect any coastal use or natural resource of the coastal zone, requiring a Consistency Determination and Certification?	State/Commonwealth of _____ <input type="checkbox"/> No		
<b>2.5 <u>Bridge Acts:</u></b> Under Section 9, Rivers and Harbors Appropriations Act of 1899, as amended (33 USC 401); the Act of March 23, 1906, amended (33 USC 491), the General Bridge Act of 1946, amended (33 USC 525); or the International Bridge Act of 1972 (33 USC 535), is a USCG Bridge Permit required for construction or reconstruction or modification of a bridge or causeway in or over navigable waters of the United States?	<input type="checkbox"/> Yes <input type="checkbox"/> No, exempt pursuant to 23 U.S.C. § 144(c). <input type="checkbox"/> No	<input type="checkbox"/> USCG (____) <input type="checkbox"/> USACE (____) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.6 <u>Section 10 Permit:</u></b> Under the Rivers and Harbors Act, is a USACE Section 10 Permit required for the building of a structure (e.g., wharf, pier, or jetty) or excavation or fill within any navigable waters of the United States?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> USCG (____) <input type="checkbox"/> USACE (____) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.7 <u>Coastal Barrier Resources Act Consultation:</u></b> Will the proposed project potentially occur within the boundaries of a designated coastal barrier unit of the Coastal Barrier Resources System, requiring consultation with FWS?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS (____) <input type="checkbox"/> Other _____ <input type="checkbox"/> N/A	
<b>2.8 <u>Wild and Scenic Rivers Act Determination/Coordination:</u></b> Will the proposed project occur on a designated national wild and scenic river, a congressionally authorized study river, or upstream, downstream or on a tributary of such river, requiring coordination with, or a determination about potential adverse	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NPS (____) <input type="checkbox"/> BLM (____) <input type="checkbox"/> FWS (____) <input type="checkbox"/> USFS (____) <input type="checkbox"/> Other _____ <input type="checkbox"/> N/A	



effects on free-flow, water quality, and outstandingly remarkable river values by, BLM, FWS, NPS, or USFS?			
<b>2.9 <u>Nationwide Rivers Inventory:</u></b> Are the proposed project actions likely to preclude future National Wild and Scenic River designation of a river included on the Nationwide Rivers Inventory requiring consultation with NPS?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NPS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.10 <u>Section 103 Permit:</u></b> Under the Marine Protection, Research, and Sanctuaries Act of 1972 (Ocean Dumping Act), is an EPA permit potentially required to release materials into ocean waters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> EPA ( ) <input type="checkbox"/> USCG ( ) <input type="checkbox"/> DOI ( ) <input type="checkbox"/> DOC ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.11 <u>Section 408 Evaluation and Determination:</u></b> Under the Rivers and Harbors Act, is USACE Section 408 permission potentially required to make alterations to, or temporarily or permanently occupy or use, any USACE federally authorized civil works project?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> USACE ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.12 <u>Floodplains (E.O. 11988, as amended by E.O. 13690):</u></b> Will the proposed project be located within a floodplain, potentially requiring a detailed analysis of the risks and impacts of the project and any proposed mitigation and alternatives?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FEMA ( ) <input type="checkbox"/> HUD ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.13 <u>Wetlands (E.O. 11990)</u></b> Will the proposed project be located in wetlands or affect wetlands, potentially requiring an alternatives analysis?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>2.14 <u>National Marine Sanctuaries:</u></b> Are the proposed project actions likely to destroy, cause the loss of, or injure a sanctuary resource, requiring interagency	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NOAA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

consultation with NOAA?			
-------------------------	--	--	--

### 3. *Wildlife*

<b>3.1 <u>Section 7 Consultation and Biological Opinion (Endangered Species Act):</u></b> Is there an endangered or threatened species that the proposed action may affect, requiring, at a minimum, an informal consultation with FWS and NMFS?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> NMFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.2 <u>Bald and Golden Eagle Protection Individual or Programmatic Take Permit:</u></b> Will the proposed project potentially take (e.g., would kill or disturb) any bald or golden eagle, any bald or golden eagle on a recurring basis across a range of times and conditions of locations, or nest(s) (active or inactive) of such eagles, requiring an FWS permit?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.3 <u>Migratory Bird Treaty Act:</u></b> Will the proposed project potentially take migratory birds, nests, or eggs, requiring an FWS permit?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.4 <u>Fish and Wildlife Coordination—Consultation:</u></b> Will the proposed project potentially deepen a channel or impound, divert, or otherwise control or modify the waters of any stream or other body of water; therefore, requiring consultation with FWS and the appropriate State wildlife agency?	<input type="checkbox"/> Yes, State/Commonwealth of _____ <i>(List State and Agency Name)</i> <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> NOAA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

<b>3.5 <u>Magnuson-Stevens Fishery Conservation and Management Essential Fish Habitat (EFH) Consultation:</u></b> Will the proposed project potentially adversely affect Essential Fish Habitat, requiring a consultation with NMFS?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> NMFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.6 <u>Marine Mammal Protection Consultation:</u></b> Will the proposed project potentially take (e.g., harass, injure, kill) a marine mammal(s), requiring, at a minimum, an NMFS or FWS consultation?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> NMFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.7 <u>National Park Service Special Use Permit:</u></b> Will the proposed project potentially involve a short-term activity that takes place in a park area, requiring an NPS permit?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NPS ( ) <input type="checkbox"/> USFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.8 <u>Fish and Wildlife Special Use Permit:</u></b> Will the proposed project action(s) potentially occur on or affect a national wildlife refuge, requiring an FWS Special Use Permit?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>3.9 <u>Right of Way Authorization (Refuge Lands):</u></b> Will the proposed project actions potentially occur on refuge lands, requiring a FWS compatibility determination?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FWS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

#### 4. *Historic and Cultural Resources*

<b>4.1 <u>Section 106 of the National Historic Preservation Act:</u></b> Is there the potential to affect resources eligible for or listed on the National Register of Historic Places that may require consultation with ACHP, SHPO, and THPO?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> ACHP ( ) <input type="checkbox"/> SHPO ( ) <input type="checkbox"/> THPO ( ) <input type="checkbox"/> Other: _____	
--	---	--	--

<p><b>4.2 <u>Native American Graves Protection and Repatriation Act Compliance:</u></b>  Will the proposed project potentially affect Native American burial sites, Native American human remains, funerary objects, sacred objects, and items of cultural patrimony on Federal and tribal lands?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NPS ( ) <input type="checkbox"/> BIA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>4.3 <u>Archeological and Historic Preservation:</u></b>  Will the proposed project potentially result in the irreparable loss or destruction of significant scientific, prehistoric, historical, or archeological data, requiring notification to NPS?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NPS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

## 5. *Social and Economic Impacts*

<p><b>5.1 <u>Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act):</u></b>  Will the proposed project potentially result in the displacement of persons or businesses?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>5.2 <u>American Indian Religious Freedom Act:</u></b>  Will the proposed project potentially affect places of religious significance to American Indians, Eskimos, Aleuts, and Native Hawaiians?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DOI ( ) <input type="checkbox"/> NPS ( ) <input type="checkbox"/> BIA ( ) <input type="checkbox"/> USFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>5.3 <u>Consultation and Coordination With Indian Tribal Governments (E.O. 13175):</u></b>  Will the proposed project potentially have tribal implications, requiring coordination and DOT consultation with tribal officials?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BIA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

### 6. *Environmental Justice (E.O. 12898)*

Will the proposed project potentially result in a disproportionately high and adverse human health or environmental effects on minority and low-income populations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> HUD (____) <input type="checkbox"/> EPA (____) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
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### 7. *Hazardous and Other Contaminated Materials*

Will the proposed project potentially involve a site(s) contaminated by hazardous waste?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> EPA (____) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
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### 8. *Greenhouse Gas Emissions and Climate Change*

<b>8.1</b> Will the proposed project potentially impact greenhouse gas emissions and climate change that would require a detailed analysis?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<b>8.2</b> Will the proposed project be affected by climate change impacts, potentially requiring an adaptation and/or resiliency analysis?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

### 9. *Noise and Vibration*

Will the proposed project potentially impact noise or vibration (or both types of) emissions that would require a detailed analysis?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> EPA (____) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
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## 10. Land

<p><b>10.1 Section 4(f):</b> Under section 4(f), would there be a permanent, temporary, or constructive use of a 4(f) resource (park, recreation area, wildlife and waterfowl refuge, or historic site) that would not be considered de minimis?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DOI ( ) <input type="checkbox"/> NPS ( ) <input type="checkbox"/> BLM ( ) <input type="checkbox"/> FWS ( ) <input type="checkbox"/> USDA ( ) <input type="checkbox"/> USFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.2 National Trails System Act Coordination:</b> Is the proposed project likely to have a direct and adverse effect on legislatively designated or potentially designated National Scenic and/or National Historic Trails, requiring coordination with DOI (NPS, BLM, and FWS) or USDA (USFS)?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DOI ( ) <input type="checkbox"/> NPS ( ) <input type="checkbox"/> BLM ( ) <input type="checkbox"/> FWS ( ) <input type="checkbox"/> USDA ( ) <input type="checkbox"/> USFS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.3 Section 6(f):</b> Will the proposed project involve a conversion of land or facilities funded under Section 6(f) of the Land and Water Conservation Fund Act?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> NPS ( ) <input type="checkbox"/> DOI ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.4 BIA Lease:</b> Will the project potentially include possession of Indian land, requiring a BIA lease?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DOI, BIA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.5 Service Line Agreement:</b> Will the proposed project potentially require the construction of a service line across Indian tribal land, requiring an agreement with the landowner or other legally authorized occupant or user?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BIA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

<p><b>10.6 <u>Right of Way Authorization</u> (Tribal Lands):</b></p> <p>Will the proposed project potentially require or include access, crossing, or providing services and utilities on Indian lands, requiring BIA authorization?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BIA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.7 <u>Right of Way Authorization</u> (Public Lands):</b></p> <p>Will the proposed project potentially require a right-of-way over, upon, under, or through public lands?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BLM ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.8 <u>Right of Way Authorization</u> (Federal Lands):</b></p> <p>Will the proposed project activities potentially occur on Federal property, requiring BOR authorization?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BOR ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.9 <u>Notice of Proposed Construction:</u></b></p> <p>Will the proposed project potentially involve construction or alteration of structures that may affect air commerce (14 CFR 77.9), requiring submission of a Notice of Proposed Construction to FAA (Form 7460)?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FAA ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	
<p><b>10.10 <u>Aeronautic Study Determination:</u></b></p> <p>Will the proposed project potentially involve construction or alterations of structures that may interfere with air commerce (14 CFR 77.9), requiring an Aeronautical Study Determination?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> FAA ( ) <input type="checkbox"/> DOD ( ) <input type="checkbox"/> DHS ( ) <input type="checkbox"/> Other: _____ <input type="checkbox"/> N/A	

### III. Other Potentially Impacted Resources

*Include any other potentially impacted resources and potentially required permit(s) or other approval(s) not otherwise listed above (e.g., health impacts that may require disclosures and discussion of possible mitigation; the introduction and spread of invasive species; NPS lands; Prevention of Significant Deterioration permit):*

## **APPENDIX A: ABBREVIATIONS AND LEGAL RESOURCES**

### **I. List of Agency Abbreviations**

Advisory Council on Historic Preservation (ACHP)  
Council on Environmental Quality (CEQ)  
State Historic Preservation Officer (SHPO)  
Tribal Historic Preservation Officer (THPO)  
United States (U.S.)  
U.S. Army Corps of Engineers (USACE)  
U.S. Bureau of Reclamation (BOR)  
U.S. Department of Agriculture (USDA)  
    - Forest Service (Forest Service or USFS)  
U.S. Department of Commerce (DOC)  
    - National Oceanic and Atmospheric Administration (NOAA)  
        o National Marine Fisheries Service (NMFS)  
U.S. Department of Housing and Urban Development (HUD)  
U.S. Department of the Interior (DOI)  
    - Bureau of Indian Affairs (BIA)  
    - Bureau of Land Management (BLM)  
    - Bureau of Reclamation (BOR)  
    - Fish and Wildlife Service (FWS)  
    - National Park Service (NPS)  
U.S. Department of Homeland Security (DHS)  
    - Federal Emergency Management Agency (FEMA)  
    - U.S. Coast Guard (USCG)  
U.S. Department of Transportation (DOT or Department)  
    - Federal Aviation Administration (FAA)  
    - Federal Highway Administration (FHWA)  
    - Federal Motor Carrier Safety Administration (FMCSA)  
    - Federal Railroad Administration (FRA)  
    - Federal Transit Administration (FTA)  
    - Pipeline and Hazardous Materials Safety Administration (PHMSA)  
U.S. Environmental Protection Agency (EPA)

## **II. Legal Resources**

### **A. APPLICABILITY**

1. Fixing America's Surface Transportation Act (FAST Act), Pub. L. 112-141.
2. National Environmental Policy Act (NEPA), 42 U.S.C. 4321–4347.
  - NEPA Implementing Regulations, 40 CFR parts 1500–1508.
  - Clean Air Act, Section 309, 42. U.S.C. § 7609.

### **B. AIR QUALITY**

1. Clean Air Act (CAA), Section 176(c), 42 U.S.C. 7506(c)
  - 40 CFR part 51 subpart T and part 93 subpart A (Transportation Conformity).
  - (b) 40 CFR part 51 subpart W and part 93 subpart B (General Conformity).

### **C. WATER RESOURCES AND WETLANDS**

1. Clean Water Act (CWA), 33 U.S.C. 251–1387.
  - Section 401, 33 U.S.C. 1341.
  - Section 402, 33 U.S.C. 1342.
    - 23 CFR part 650, subpart B.
    - 33 CFR parts 209, 320–330, 332, 335–338.
    - 40 CFR parts 121–125, 129–133, 135–136, and 230–233.
  - Section 404, 33 U.S.C. 1344
    - 33 CFR part 320
    - 40 CFR part 230.
2. Coastal Barrier Resources Act, 16 U.S.C. 3501–3510.
3. Coastal Zone Management Act, 16 U.S.C. 1451–1466.
  - 15 CFR parts 923 and 930.
4. Rivers and Harbors Act of 1899, 33 U.S.C. 401, 403, 404, 406–409, 411–416, 418, 502, 549, 686, and 687.
  - Section 9, 33 U.S.C. 401.
    - 33 CFR parts 114–116.
  - Section 10, 33 U.S.C. 403.
    - 33 CFR parts 320–322, 325–326, and 329–330.
5. Wild and Scenic Rivers Act, 16 U.S.C. 1271–1287.
  - 36 CFR part 297 (Forest Service).
  - 43 CFR part 8350 (BLM).
6. Emergency Wetlands Resources Act of 1986, 16 U.S.C. 3921–3932.
7. Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. 1401-1445.
  - 33 CFR parts 320, 324–327, 330 and 335–336 (USACE).
  - 40 CFR parts 220–225, 227–229, and 230–231 (EPA).
8. National Marine Sanctuaries Act, 16 U.S.C. 1431–1445c.
  - 15 CFR part 922.
9. Executive Order 11988, “Floodplain Management” (May 24, 1977), as amended by Executive Order 13690 “Establishing a Federal Flood Risk Management Standard” (Jan. 30, 2015).
  - DOT Order 5650.2, “Floodplain Management and Protection.”



10. Executive Order 11990, “Protection of Wetlands” (May 24, 1977).
11. Nationwide Rivers Inventory, Presidential Directive (August 2, 1979); Council on Environmental Quality Procedures for Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory (August 10, 1980).

#### D. WILDLIFE

1. Endangered Species Act (ESA), 16 U.S.C. 1531–1544.
  - Section 4, 16 U.S.C. 1533.
  - Section 7, 16 U.S.C. 1536.
  - Section 9, 16 U.S.C. 1538.
  - Section 10, 16 U.S.C. 1539.
    - 50 CFR parts 17, 223, 224, and 402.
2. Fish and Wildlife Conservation Act, 16 U.S.C. 2901–2912.
  - 50 CFR part 83.
3. Fish and Wildlife Coordination Act, 16 U.S.C. 661–667d.
4. Marine Mammal Protection Act, 16 U.S.C. 1361–1423h.
  - 15 CFR part 904 (NOAA).
  - 50 CFR parts 10, 18 and 82 (FWS).
  - 50 CFR parts 216, 217, 222, 229, and 230 (NMFS).
  - 50 CFR part 403 (FWS, NMFS, and NOAA joint regulation).
5. Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801–1884.
  - 50 CFR part 600.
6. The Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. 668–668d.
  - 50 CFR parts 13 and 22.
7. National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd–668ee.
  - 50 CFR parts 25, 26, and 29.
8. Executive Order 13112, “Invasive Species” (Feb. 3, 1999).
9. Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” (Jan. 10, 2001).

#### E. HISTORIC AND CULTURAL RESOURCES

1. Section 4(f), 23 U.S.C. 138 and 49 U.S.C. 303 23 CFR part 774.
  - FHWA Section 4(f) Policy Paper, 77 FR 42802, July 20, 2012.
2. National Historic Preservation Act, 54 U.S.C. 300101 et seq. (formerly 16 U.S.C. 470–470x-6).
  - Section 106, 54 U.S.C. 306108 (formerly 16 U.S.C. 470f).
  - 36 CFR part 800.
  - 36 CFR part 60.
  - 36 CFR part 63.
3. Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa–470mm.
  - 43 CFR parts 7 and 79.
4. Archeological and Historic Preservation Act, 54 U.S.C. 312102–312107 (formerly 16 U.S.C. 469–469c).

- 43 CFR part 7.
- 5. Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001–3013; 18 U.S.C. 1170.
  - 43 CFR part 10.
- 6. Executive Order 13007, “Indian Sacred Sites” (May 24, 1996).
- 7. Executive Order 13287, “Preserve America” (Mar. 3, 2000).

#### F. SOCIAL AND ECONOMIC IMPACTS

1. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), 42 U.S.C. 4601–4655.
  - 49 CFR part 24.
2. American Indian Religious Freedom Act, 42 U.S.C. § 1996.
  - 43 CFR part 7 (DOI).
  - 36 CFR part 296 (USFS).
3. Executive Order 13175, “Consultation and Coordination With Indian Tribal Governments” (Nov. 6, 2000).
  - DOT Order 5301.1, “Department of Transportation Programs, Policies, and Procedures Affecting American Indians, Alaska Natives, and Tribes.
4. Executive Order 13045, “Protection of Children from Environmental Health Risks and Safety Risks (April 23, 1997).

#### G. CIVIL RIGHTS AND ENVIRONMENTAL JUSTICE

1. Civil Rights Act of 1964, Title VI, 42 U.S.C. 2000d et seq.
2. Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (Feb. 11, 1994).
  - DOT Order 5610.2(a), 77 FR 27534, May 10, 2012, updating Order 5610.2, 62 FR 18377, Apr. 15, 1997.
  - FHWA Order 6640.23A (June 14, 2012).
  - FTA Circular 4703.1 (Aug. 15, 2012).

#### H. HAZARDOUS AND OTHER CONTAMINATED MATERIALS

1. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601–9675.
  - 40 CFR parts 300–374.
  - 40 CFR part 300.
  - 43 CFR part 11.
  - 40 CFR part 35, Subpart O.
  - 40 CFR 35.6000-35.6820.
2. Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. 9671-9675).
  - 42 U.S.C. 11001–11050.
    - 40 CFR parts 302, 350, 355, 370, and 374.
3. Small Business Liability Relief and Brownfields Revitalization Act, 42 U.S.C. 9601, 9604, 9605, 9607, 9628.
4. Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901–6992k.

- 40 CFR parts 260–282.

#### I. GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

1. Executive Order 13693, “Planning for Federal Sustainability in the Next Decade (Mar. 19, 2015).

#### J. NOISE AND VIBRATION

1. Federal-Aid Highway Act of 1970, 23 U.S.C. 109.
  - 23 CFR part 772.
2. Noise Control Act of 1972, 42 U.S.C. 4901–4918.
  - 40 CFR parts 201-202 (EPA).
  - 49 CFR part 210 (FRA).
  - 49 CFR part 325 (FMCSA).
  - “Transit Noise and Vibration Impact Assessment” (May 2006) (FTA).
3. Airport Noise and Capacity Act of 1990, 49 U.S.C. 47521–47533.
  - 14 CFR part 161.
4. Aviation Safety and Noise Abatement Act of 1979, 49 U.S.C. 47501–47510.
  - 14 CFR part 150.

#### K. LAND

1. Section 6(f) of the Land and Water Conservation Fund Act of 1965, 54 U.S.C. 200301 et seq.
  - 36 CFR part 59.
2. Leases and Permits (BIA), 25 CFR part 162.
3. Federal Land Policy and Management Act of 1976, as amended, Title V, 43 U.S.C. 1763.
  - 43 CFR 2800.
4. Structures interfering with air commerce, 49 U.S.C. 44718.
  - 14 CFR part 77.
5. Sovereignty & Use of Airspace, 49 U.S.C. 40103.
6. NPS Organic Act, 54 U.S.C. 100101 et seq. (formerly codified at 16 U.S.C. 1a-1 et seq.)



www.MBPZ.org

## MACON-BIBB COUNTY PLANNING & ZONING COMMISSION

682 Cherry Street, Suite 1000, Macon, Georgia 31201

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Public Information Officer

Planning Office  
478-751-7460

Zoning Office  
478-751-7450

Fax 478-751-7448

January 17, 2007

Becky Kelley, Director  
State Parks & Historic Sites Division  
Georgia Department of Natural Resources  
2 MLK Jr. Drive  
Suite 1352 East  
Atlanta, Georgia 30334

RE: SAFETEA-LU Consultation Process

Dear Mrs. Kelley:

As a result of the enactment of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Metropolitan Planning Organizations (MPOs) must implement a consultation process with state and local resource agencies by July 1, 2007. Specifically, Section 6001 [G], requires each MPO to consult "as appropriate" with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation" in developing long-range transportation plans and transportation improvement programs.

The Macon Area Transportation Study (MATS) is the MPO for Bibb and Jones Counties in Middle Georgia. MATS recognizes your agency as one such entity in which to consult. Please take a moment to carefully review the information provided in this packet and make appropriate comments regarding any concerns your agency may have.

Your comments may be submitted in a standard written correspondence or by electronic means via e-mail. Please endeavor to have your comments submitted by February 19, 2007. Thank you for your time in this matter.

Sincerely,

Gregory T. Floyd  
Planner  
478-751-7464  
[gfloyd@mbpz.org](mailto:gfloyd@mbpz.org)

Enclosures (3) and 1 CD-ROM  
cc: Vernon B. Ryle III, Executive Director  
James P. Thomas, Assistant Executive Director

## Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, S.E., Suite 1152 East, Atlanta, Georgia 30334-9000

Noel Holcomb, Commissioner

Environmental Protection Division

Carol A. Couch, Ph.D., Director

404/656-4713

March 6, 2007

Gregory T. Floyd  
Macon-Bibb County Planning & Zoning Commission  
682 Cherry Street  
Suite 1000  
Macon, Georgia 31201

Dear Mr. Floyd:

This is in reply to your letter, dated February 9, 2007, to Dr. Carol Couch, Director of the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources. Your letter solicits comment on the Macon Area Transportation Study's (MATS) approach to meeting SAFETEA-LU environmental mitigation and consultation requirements and the MATS long-range transportation plan (LRTP). EPD appreciates the opportunity to make the following comments.

The maps and spreadsheets included with your letter describing LRTP projects do not provide sufficient detail to enable EPD to identify specific project-level environmental issues and concerns. Rather, EPD urges MATS to implement the action plan described in the MATS approach to meeting SAFETEA-LU environmental mitigation and consultation requirements. Specifically, in addition to the comparison of LRTP projects with inventories of historic and natural resources, EPD encourages the use of the Potential Environmental Impacts & Mitigation Measures guidance under development by the Georgia Department of Transportation (contact Angela Alexander at 404-656-5411). As addressed in our comments during the development of this guidance, EPD recommends the use of mitigation measures that avoid or minimize impacts rather than those that repair or restore the affected environment. Also, EPD strongly recommends compliance with best management practices for stormwater management and erosion control to protect Georgia's streams and water quality.

Thank you, again, for the opportunity to provide comments on the MATS approach to meeting SAFETEA-LU environmental mitigation and consultation requirements and on the projects in the LRTP. If you have any questions or need additional information, please contact me at 404-657-5419 or at [marlin\\_gottschalk@dnr.state.ga.us](mailto:marlin_gottschalk@dnr.state.ga.us).

Sincerely,

Marlin R. Gottschalk, Ph.D.  
Chief of Policy Coordination

MRG:sc



Noel Holcomb, Commissioner

## Georgia Department of Natural Resources

### Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer  
34 Peachtree Street, N.W., Suite 1600, Atlanta, Georgia 30303  
Telephone (404) 656-2840 Fax (404) 657-1040 <http://www.gashpo.org>

March 12, 2007

Gregory T. Floyd, Planner  
Macon-Bibb County Planning & Zoning Commission  
682 Cherry Street, Suite 1000  
Macon, GA 31201

RECEIVED  
MAR 15 2007  
MBCP&ZC

RE: SAFETEA-LU Consultation Process

Dear Mr. Gregory:

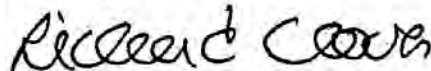
Thank you for the information you recently submitted to our office concerning MPO consultation with resource agencies as mandated by the Safe, Accountable, Flexible, Efficient Transportation Act: A Legacy for Users (SAFETEA-LU). This information will be useful to us in better understanding the larger planning framework for individual transportation projects in your area. Due to the highly generalized nature of this information, we are unable to make project-specific comments at this time.

Please keep in mind that your agency may have obligations under Section 106 of the National Historic Preservation Act of 1966, as amended, and the Georgia Environmental Policy Act of 1991 (GEPA). As you may know, these laws require consideration of historic and archaeological resources in planning for specific transportation projects that receive federal or state funding or require federal permits. As project-specific planning advances, the federal or state agency responsible for funding or permitting will consult with our office to determine if historic and archaeological resources have been appropriately considered. Our office strongly recommends similar consideration of historic resources for locally funded transportation projects.

We would like to note that our office maintains extensive paper files and electronic databases documenting historic and archaeological resources in the state which should be taken into account in assessing the environmental impacts of proposed transportation projects. Our files are readily available for use by your agency and its agents as needed.

Please contact Amanda Schraner, Transportation Projects Coordinator, at (404) 463-6687 if you have questions.

Sincerely,



Richard Cloues  
Deputy State Historic Preservation Officer

RC:als

Greg Floyd

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**From:** Blocker, Shaun L SAS [Shaun.L.Blocker@sas02.usace.army.mil]

**Sent:** Monday, April 16, 2007 2:18 PM

**To:** Greg Floyd

**Subject:** Response to your MATS request

Gregory,

In response to your letter dated March 28, 2007, we regulate Section 404 of the Clean Water Act (fill in wetlands and streams). A jurisdictional delineation would be required for these projects to determine if any of the proposed projects would have any jurisdictional impacts. Impacts to wetlands (herbaceous and forested) and streams (below the Ordinary High Water Mark) would require a permit from our office, and possibly also require compensatory mitigation for project impacts. I am going to encourage you to visit our web-site at <http://www.sas.usace.army.mil/permit.htm> and read the information within the site.

*Shaun L. Blocker*

Project Manager, Piedmont Branch  
U.S. Army Corps of Engineers, Savannah District  
1590 Adamson Parkway, Suite 200  
Morrow, Georgia 30260-1777  
(678) 422-6570 / Fax (678) 422-2734