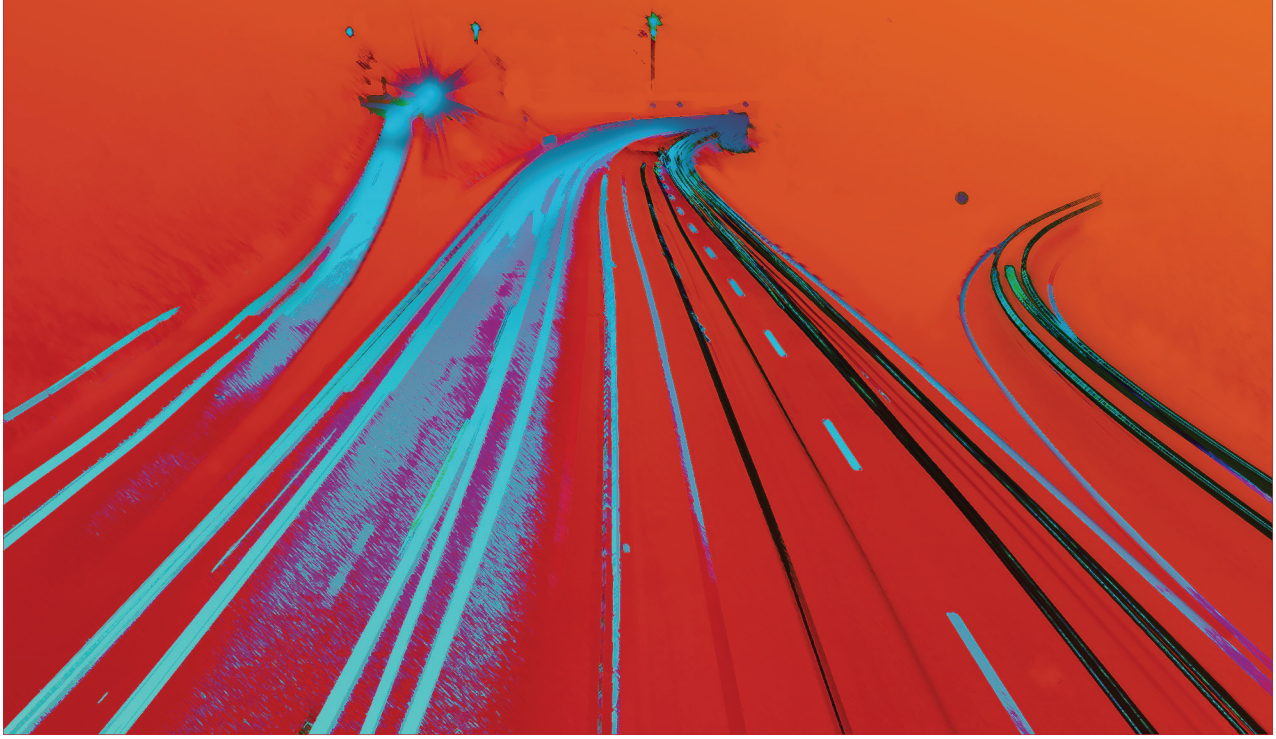
FINAL

YEAR 2035 TRANSPORTATION PLAN

HUNTSVILLE AREA TRANSPORTATION STUDY

Prepared by the City of Huntsville Planning Division
in Cooperation with the
Bureau of Transportation Planning,
Alabama Department of Transportation



Adopted by the Metropolitan Planning Organization
March 2010

Amended June 2011
June 2012
September 2012
February 2013

HUNTSVILLE AREA TRANSPORTATION STUDY

FINAL

Year 2035 Transportation Plan

This document is posted at:
http://www.hsvcity.com/Planning/mpo//docs/final2035plan.pdf

For further information, please contact the
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Huntsville, Alabama
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Adopted by the Metropolitan Planning Organization

Amended: June 2011
June 2012
September 2012
February 2013

HUNTSVILLE AREA TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION (MPO)

MPO and Advisory Committee Officers
Updated to Fiscal Year 2013

Huntsville Area Transportation Study, MPO

Tommy Battle, Chairman	Mayor, City of Huntsville

Technical Coordinating Committee (TCC)

Shane Davis, Transportation Planning Coordinator	Director, City of Huntsville Urban Development
Anne Burkett, Vice-Chairman	Director, Madison County Planning and Economic Development
Richard Grace, Secretary	Director, Madison County Public Works Department

Citizens Advisory Committee

Bill Weaver, Chairman	City of Madison

City of Huntsville Department of Urban Development - Planning Division

Serving as staff to the Huntsville Area Transportation Study (MPO)

Shane Davis	Director, Urban Development
Dennis Madsen	Manager of Urban and Long Range Planning
Connie R. Graham	Planner III
Tanjie Kling	Planner III
James Moore	Planner III
Ken Newberry	Planner III
James Vandiver	Planner II

MPO and Advisory Committee Members
Updated to Fiscal Year 2013

Huntsville Area Transportation Study, MPO

Tommy Battle	Mayor, City of Huntsville
Troy Trulock	Mayor, City of Madison
Dale Strong	Chairman, Madison County Commission
John Olshefski	Huntsville City Council
Tony Craig	Mayor, Town of Owens Cross Roads
Mary Caudle	Mayor, Town of Triana
Johnny Harris	Alabama Department of Transportation (ALDOT)
Mark D. Bartlett (non-voting)	Federal Highway Administration
Robert Jilla (non-voting)	ALDOT Bureau of Transportation Planning & Modal Programs
Bob Culver (non-voting)	Top of Alabama Regional Council of Governments

Technical Coordinating Committee

Shane Davis	Transportation Planning Coordinator
Amy Furfori	Director of Planning, City of Madison
Richard Grace	County Engineer, Madison County
Gary Chynoweth	City Engineer, City of Madison
Emmanuel Oranika	Alabama Department of Transportation
Dave Harris	Federal Highway Administration
David Mucher	Federal Transit Administration
Kathy Martin	City Engineer, City of Huntsville
Richard Kramer	Traffic Engineer, City of Huntsville
Dennis Thompson	City of Huntsville Traffic Engineering
Tommy Brown	City of Huntsville Parking and Public Transit
Peter Joffrion	City Attorney, City of Huntsville
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Daniel Shea	Director of Natural Resources & Environmental Management, City of Huntsville
Anne Burkett	Director, Madison County Planning & Economic Development
Carlen Williams	Huntsville Housing Authority
Nick Werner, Interim Director	Huntsville Marina & Port Authority
Janet Watson	Chairman, Huntsville Planning Commission
Rick Tucker	Executive Director, Huntsville-Madison Co. Airport Authority
Les Hopson	Alabama Department of Transportation
Allen Teague	Alabama Department of Transportation
Jeff Pruitt	Top of Alabama Regional Council of Governments
Tom Richardson	Redstone Arsenal
Stacy Cantrell	Huntsville Utilities
Melvin McKinstry	Marshall Space Flight Center
Diana Standridge	U.S. Space & Rocket Center
Connie R. Graham	City of Huntsville Planning Division
Karen P. Monroe	Huntsville-Madison County Railroad Authority

Citizens Advisory Committee

Michael Holderer	City of Huntsville
Vacant	City of Huntsville
Jamie Miernik	City of Huntsville
Dave Nicolas	City of Huntsville
Vacant	City of Huntsville
Charlie Wilson	City of Huntsville
Trent Griffin	City of Huntsville
Vacant	City of Huntsville
Joe Davis	Madison County
Bob Devlin	Madison County
Curtis Potts	City of Madison
Bill Weaver	City of Madison
Vacant	Town of Owens Cross Roads
Larry Furlough	Town of Owens Cross Roads
Madge Griffin	Town of Triana
George Malone	Town of Triana

RESOLUTION 10-10
HUNTSVILLE AREA TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION (MPO)
ADOPTING THE YEAR 2035 TRANSPORTATION PLAN

WHEREAS, the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) is the organization designated by the Governor of the State of Alabama as being responsible, together with the State of Alabama, for implementing the applicable provisions of amended 23 USC 134 and 135 (SAFETEA-LU 6001, August 2005); 29 USC 794; 42 USC 126, 2000d-1, 4321 et seq., 7401 et seq.; 49 USC 5303, 5304; 23 CFR 450 and 500; 40 CFR 51 and 93; 49 CFR 26 and 613; and,

WHEREAS, the U. S. Department of Transportation requires all urbanized areas, as established by the U. S. Bureau of the Census, conducting area-wide urban transportation planning, to submit a 2035 Long Range Transportation Plan as a condition for meeting the provisions of 23 USC 134 and defining principles of 23 CFR 450.322; and

WHEREAS, consistent with the declaration of these provisions, the City of Huntsville Planning Division and Huntsville Area Transportation Study (MPO) Planning Staff, in cooperation with the Alabama Department of Transportation, has prepared a Final Year 2035 Transportation Plan for the Huntsville Area; now

THEREFORE, BE IT RESOLVED by the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) that the same does hereby adopt the Final Year 2035 Transportation Plan.

Adopted this 24th day of March, 2010

Chairman, Metropolitan Planning Organization

Secretary, Metropolitan Planning Organization

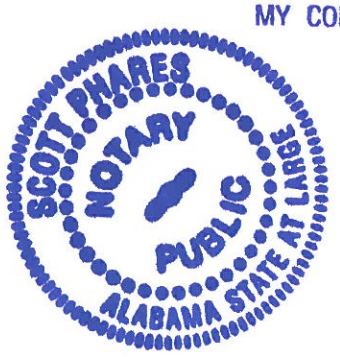
Notary Public: _____

My Commission Expires: 9-25-13

MY COMMISSION EXPIRES 9-25-2013

ATTEST:

_____ Date 3-24-10
Chairman, TCC



RESOLUTION NO. 7-11

HUNTSVILLE AREA TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION

AMENDING THE YEAR 2035 TRANSPORTATION PLAN

WHEREAS, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires MPOs to update and maintain a transportation plan with at least a 20 year planning horizon; and

WHEREAS, the MPO has adopted the Year 2035 Transportation Plan in February 2010 to meet this requirement; and

WHEREAS, the City of Huntsville has requested that the Year 2035 Transportation Plan be amended; and

WHEREAS, the City of Huntsville requests that the project: Research Park Boulevard and Interchanges from I-565 to Alabama Highway 53 be modified to add improvements to the interchanges located at I-565 and Research Park Boulevard and University Drive and Research Park Boulevard; and

WHEREAS, these project changes will alter various Sections of the Year 2035 Transportation Plan;

NOW, THEREFORE, BE IT RESOLVED by the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) that the Year 2035 Transportation Plan be amended to reflect the attached changes requested by the City of Huntsville.

ADOPTED, this the 29th day of June, 2011.

Chairman, Metropolitan Planning Organization

Secretary, Metropolitan Planning Organization

ATTEST:
Date 6/29/11
Chairman, MPO TCC

Notary Public: Lisa Leddo

My Commission Expires: _____

LISA LEDDO NOTARY PUBLIC ALABAMA STATE AT LARGE

MY COMMISSION EXPIRES 4-8-2012

RESOLUTION NO. 7-12

HUNTSVILLE AREA TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION

AMENDING THE YEAR 2035 TRANSPORTATION PLAN

WHEREAS, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires MPOs to update and maintain a transportation plan with at least a 20 year planning horizon; and

WHEREAS, the MPO has adopted the Year 2035 Transportation Plan in March 2010 to meet this requirement, and the document was amended in June 2011; and

WHEREAS, the City of Huntsville has requested that the Year 2035 Transportation Plan be further amended to add the following maintenance and operation project: Church Street Bridge at Big Spring Park; and

WHEREAS, this project change will alter various Sections of the Year 2035 Transportation Plan;

NOW, THEREFORE, BE IT RESOLVED by the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) that the Year 2035 Transportation Plan be amended to reflect the attached changes requested by the City of Huntsville.

ADOPTED, this the 6th day of June, 2012.

Chairman, Metropolitan Planning Organization

Secretary, Metropolitan Planning Organization

ATTEST:
Date 6-6-12
Chairman, MPO TCC

6-6-12

LORE CAMPBELL NOTARY PUBLIC ALABAMA STATE AT LARGE

RESOLUTION NO. 17-12

HUNTSVILLE AREA TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION

AMENDING THE YEAR 2035 TRANSPORTATION PLAN

WHEREAS, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires MPOs to update and maintain a transportation plan with at least a 20 year planning horizon; and

WHEREAS, the MPO has adopted the Year 2035 Transportation Plan in March 2010 to meet this requirement, and the document was amended in June 2011 and June 2012; and

WHEREAS, the City of Huntsville has requested that the Year 2035 Transportation Plan be further amended to indicate funding availability for the following projects: Northern Bypass from East of Pulaski Pike to US 231, Martin Road from Zierdt Road to Rideout Road, Martin Road from Zierdt Road to Laracy Drive, and I-565 from I-65 to Wall Triana Highway; and

WHEREAS, the Year 2035 Transportation Plan is further amended to indicate that the Interchange at Research Park Boulevard and Blake Bottom Road is to be funded with STP Huntsville Urbanized Funds instead of STP Any Area funds; and

WHEREAS, these project changes will alter various Sections of the Year 2035 Transportation Plan;

NOW, THEREFORE, BE IT RESOLVED by the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) that the Year 2035 Transportation Plan be amended to reflect the attached changes.

ADOPTED, this the 12th day of September, 2012.

Chairman, Metropolitan Planning Organization

Secretary, Metropolitan Planning Organization

Notary Public: Lore Campbell

My Commission Expires: 1-14-2013

ATTEST:
Chairman, MPO TCC Date 9/12/12

LORE CAMPBELL NOTARY PUBLIC ALABAMA STATE AT LARGE

RESOLUTION NO. 1-13

HUNTSVILLE AREA TRANSPORTATION STUDY METROPOLITAN PLANNING ORGANIZATION AMENDING THE 2035 TRANSPORTATION PLAN

WHEREAS, the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) is the organization designated by the Governor of the State of Alabama as being responsible, together with the State of Alabama, for implementing the applicable provisions of amended 23 USC 134 and 135 (SAFETEA-LU 6001, August 2005); 42 USC 126, 2000d-1, 4321 et seq., 7401 et seq; 23 CFR 450 and 500; 40 CFR 51 and 93; and

WHEREAS, the U. S. Department of Transportation requires all urbanized areas, as established by the U. S. Bureau of the Census, conducting area-wide urban transportation planning, to submit a 2035 Transportation Plan as a condition for meeting the provisions of 23 USC 134 and defining principles of 23 CFR 450.322; and

WHEREAS, the MPO adopted the 2035 Long Range Plan in March 2010 to meet the above requirements, and the document was amended in June 2011, June 2012, and September 2012; and

WHEREAS, the State of Alabama has requested that the 2035 Transportation Plan be further amended to add a project and indicate the funding availability for: Maysville Road Connector from Maysville Road to Epworth Drive; and

WHEREAS, the City of Huntsville has requested that the High Mountain Road Extension project be removed from the Year 2035 Transportation Plan, as it no longer a project the City of Huntsville desires to construct; and

WHEREAS, these changes will require altering various Sections of the 2035 Transportation Plan; now

THEREFORE, BE IT RESOLVED by the Huntsville Area Transportation Study Metropolitan Planning Organization (MPO) that the 2035 Transportation Plan has been amended to reflect the attached changes requested by the State of Alabama.

ADOPTED, this the 27th day of February 2013.

Chairman, Metropolitan Planning Organization

Secretary, Metropolitan Planning Organization

ATTEST:

Date 2/27/13

Chairman, MPO TCC

LORE CAMPBELL NOTARY PUBLIC ALABAMA STATE AT LARGE

MY COMMISSION EXPIRES 1-14-2017

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EXECUTIVE SUMMARY

ES 1.0 Introduction

The **Year 2035 Transportation Plan** is a vision of the future transportation needs of the Huntsville Metropolitan area. It will serve as a guide for decisions about major transportation improvements in the Huntsville urbanized area over the next 3-5 years. It addresses areawide transportation needs identified through forecasting future travel demand, developing and testing alternatives, and selecting those options which meet the mobility needs of the area. Additionally, it addresses future traffic volumes, roadway and intersection capacities, new transportation corridors, alternative transportation modes, pedestrian/bicycle trails, signalization needs, and funding alternatives.

The plan experienced a comprehensive and full update during 2005 under the provisions of the Transportation Equity Act for the 21st Century (TEA-21). The TEA-21 legislation was replaced by the Safe, Accountable, Flexible, and Efficient Transportation Equity Act (SAFETEA-LU) in August 2005. The plan was amended during August 2007 due to federal requirements which stipulate any amendment to the long range plan after July 1, 2007 requires compliance with SAFETEA-LU. A matrix of the changes required under SAFETEA-LU, and how the MPO is meeting these strategies is shown at the end of the Executive Summary in **Table ES-1**. SAFETEA-LU planning factors are also discussed in **Section 5 - Highway Project Evaluation**.

Among the continuing provisions of SAFETEA-LU is that the plan must maintain a 20-year planning perspective, air quality consistency, fiscal constraint, and public involvement. This 20-year plan exhibits all of these characteristics.

The **Year 2035 Transportation Plan** has been developed by the transportation planning staff with input and involvement of city and county officials and the public. Fiscal constraint has been a priority during the selection of the plans' proposed projects. Careful consideration has been given to projects which would reduce congestion and/or minimize trip distances in an effort to maintain air quality at current attainment standards.

As of July 1997, the U.S. Environmental Protection Agency (EPA) promulgated stringent National Ambient Air Quality Standards for particulate matter and ozone under the Clean Air Act. While Huntsville has always been an attainment area for all criteria pollutants under the Clean Air Act, these strict standards could put Madison County at risk for non-attainment status in the future. A designation of "non-attainment" would require transportation control measures to reduce vehicle emissions and could result in delays for transportation projects. Quality long range transportation plans are critical if communities are to balance the growth and development of the urban area with environmental concerns.

ES 2.0 Overview of Socio-Economic Projections

Household and employment projections of the year 2035 for the Huntsville urban area have been conducted and were vital for plan development. It is projected that households in the Huntsville urban area will increase by over 50,000 by the year 2035. Total households for the year 2035 are projected at 175,266. This growth will also impact employment. It is projected that nearly 150,000 new jobs will be added to the economy of the urban area from the year 2005, bringing total employment for the year 2035 to 407,893 jobs. The reason for such staggering employment growth is based upon a diverse economy, the direct impact of the 2008 Base Realignment and Closure (BRAC) transfers, and the area's solid foundation in aerospace and defense technology.

Community leaders envision that Cummings Research Park will continue to attract high technology jobs and the other industrial parks will continue growth as well. Huntsville's downtown as a center for employment will keep in step with market demand, and the Huntsville International Airport will become a connecting hub with a thriving intermodal center.

It is also assumed that area residents will still rely primarily on their motor vehicles for most trips, but will have more opportunities to utilize transit, walking, and cycling for shorter trips. Investment in transit, bikeways, and pedestrian ways will result in a higher level of usage of these modes. The **Year 2035 Transportation Plan** calls for continued investment in these modes of transportation. Additionally, further investment is proposed for a bypass system of roadways that will ring the city, and for Memorial Parkway to be an expressway from Walker Lane to the Tennessee River.

ES 3.0 Overview of Plan Element Updates

Based upon the latest household and employment projections and the vision for the Huntsville urban area, updates were developed for the highway element, public transit system, bicycle and pedestrian plans, traffic operations and safety plans, and multi-modal facilities. A synopsis of these updates follows, categorized per major element:

ES 3.1 Highway Element

Land use projections have been developed for the year 2035 for testing various highway alternatives. **Map 4.1**, located in **Section 4 - Highway Element**, summarizes the major highway projects selected for improvement through the year 2035. The proposals are general and do not represent specific alignments and locations. Additional preliminary engineering studies will be conducted for each project to determine specific location and right-of-way needs. In addition, the plan can be amended as needed.

Prior to the development of this plan, a special study was conducted in 2007 by the University of Alabama entitled: **Huntsville Area BRAC Transfers: Economic and Transportation Impact Assesssment.** This study was performed to better prepare for the influx of persons into the region due to the Base Realignment and Closure decisions made in 2005. An outcome of the report was the identification of several corridors that would impact

mobility on the transportation network because of projected growth. These corridors have been included in the plan. While some project descriptions in the BRAC study indicate different terminus points, the length of some projects were extended due to further study and modeling, and were incorporated into the **Year 2035 Transportation Plan.** These projects are as follows:

- Blake Bottom Road from Jeff Rd to Research Park Blvd
- Eastview Drive from Slaughter Rd to Hughes Rd
- I-565 from I-65 to Wall Triana Highway
- Martin Rd from Zierdt Rd to Rideout Rd
- Old Madison Pike from Hughes Rd to Slaughter Rd
- Patton Rd from Aerobee Rd to Redstone Rd
- Pulaski Pike from Beaver Dam Rd to Grimwood Rd
- Research Park Blvd and Interchanges from I-565 to Ardmore Highway (AL-53)
- Wall Triana Highway from Capshaw Rd to Yarbrough Rd

ES 3.2 Transit Element

Recommendations for public transportation within the MPO Study Area include:

- Expansion of fixed route service to the following areas given financial feasibility:
    1. Eastward, serving the Chapman and Blossomwood communities
    2. Space & Rocket Center/Airport
    3. West Huntsville
    4. Redstone Arsenal/NASA
    5. Northwest Huntsville, providing access to the North Huntsville Industrial Park, as the area develops.
- Expanding Handi-Ride service as fixed route service expands
- Expanding service hours for Handi-Ride and fixed routes
- Decreasing headways on fixed service routes
- Expanding the County's demand response transit service (TRAM) as necessary

ES 3.3 Congestion Management Element

The Congestion Management Element incorporates the Congestion Management Process (CMP) into **Section 8** per SAFETEA-LU. This provides opportunities for more short-term congestion relief measures to be implemented, as well as cost effective management and operational strategies.

Various traffic operation improvements which can aid in congestion management were discussed. The staff and members of the MPO's Technical Coordinating Committee:

- Identified 8 Maintenance and Operations projects, which can be further defined as 2 congestion management projects, 1 safety management project, and 5 projects that address both congestion and safety.
- Selected the top current and future congested corridors for strategy evaluations.
- Recommends execution of the strategic plan for the implementation of Intelligent

Transportation Systems (ITS) technologies for the City of Huntsville and the design and construction of a fiber optic communication system throughout the Huntsville area transportation network as funding is available.
- Identified additional safety criteria and addresses safety and security as standalone planning factors per SAFETEA-LU.

ES 3.4 Multimodal Transportation Element

Much has been done recently to expand multimodal facilities and capabilities in the area. It is recommended that monitoring of recent long-term expansions continue to be conducted, and modifications be developed as required.

- Huntsville International Airport Passenger and Cargo Hubbing: Huntsville International Airport is a prime candidate for a connecting hub and supports proposed expansion plans.
- Huntsville International Airport International Intermodal Center Expansion: the MPO supports the recent International Intermodal Center expansion, which should provide effective long-term service to users.
- A river port facility feasibility study has been conducted and a prime site for development has been procured.

ES 3.5 Bicycle/Pedestrian Element

There has been a renewed interest in the expansion of bicycle and pedestrian facilities and capabilities in the area. It is recommended that monitoring of recent long-term expansions continue to be conducted, and modifications be developed as required.

- Pedestrian/Bicycle/Greenways Plans: the MPO adopts regional pedestrian and bikeway plans. These plans are published under separate cover and are included within the Long-Range Transportation Plan, **Section 7**.
- Recent guidance from the Federal Highway Administration indicates that all projects utilizing federal funds include bike and pedestrian facilities, unless the cost to do so exceeds 20% of the total project cost or if other exceptional reasons exist. A conscious effort is being made to incorporate these facilities into new and planned projects. Refer to **Section 7** for additional information.

ES 4.0 Plan Implementation

Successful implementation of the plan is dependent primarily upon the availability of financing the improvements required. This plan identifies a total of 97 capacity adding projects, requiring over $2.05 billion in federal funds to construct. Based upon the anticipated federal revenues to be received within the next 25 years, a total of $387,587,400 of projects can reasonably be funded. This may change, depending upon the availability of other sources of revenue. A list of all projects to be financed with anticipated federal revenues is shown in **Section 10**.

Additional projects requiring a total of $1,641,183,625 of federal funds have been identified, but are unfunded. Approximately $744 million of the $1,641,183,625 is required for the Memphis to

Atlanta Highway and the Southern Bypass. The remaining $897.2 million is needed to upgrade other corridors on the transportation network, with approximately 22% of those federal funds required to upgrade minor and major collectors. Approximately 6% of federal funds will be required to construct bike routes and greenways. The financing of these "unfunded" projects is essential, as the future year network indicates that a majority of congested miles traveled on the transportation system occurs on minor and major collectors. A formal list of all unfunded projects and their estimated costs can be found in **Section 10**.

ES 5.0 Conclusion

The **Year 2035 Transportation Plan** is a comprehensive review of the area transportation network and modes of urban mobility, resulting in the identification of projects and programs to be implemented. A more detailed description of selected projects and the methodology by which they were selected is presented in the document which follows.

Table ES-1: SAFETEA-LU Transportation Planning and Programming Requirements (as Amended by SAFETEA-LU Sections 3005, 3006, and 6001)

Statutory Planning and Programming Requirements	Key Changes Between ISTEA/TEA-21 and SAFETEA-LU	How the Long Range Plan Addresses the New Requirements
UPDATE CYCLES Metropolitan transportation plans [23 U.S.C. 134/49 U.S.C 5303(i)(1)]	Metropolitan transportation plans in air quality attainment areas ➢ No key change (to be updated every five years)	Not Applicable to Huntsville Area MPO.
METROPOLITAN AND STATEWIDE TRANSPORTATION PLANNING FACTORS [23 U.S.C. 134/49 U.S.C. 5303(h)(1) AND 23 U.S.C 135/49 U.S.C. 5304(d)(1)].	➢ Added a new stand-alone factor "increase the safety of the transportation system for motorized and non-motorized users."	The State of Alabama as well as local jurisdictions maintain traffic accident data which assists them in determining which safety issues to address. As a result of ongoing data collection and analysis, these projects have been identified in **Section 8**. The MPO staff has been involved with meetings of the ITS working group, which includes law enforcement and other public safety personnel, to discuss ITS implementation and strategies for utilizing technology for increasing safety of the transportation networks within the MPO jurisdiction. Refer to **Section 8**. Huntsville Public Transit is investing in an automatic vehicle locating (AVL) system for all of its fleet. This system will enhance the safety of the transit system. Refer to **Section 8**.

Statutory Planning and Programming Requirements	Key Changes Between ISTEA/TEA-21 and SAFETEA-LU	How the Long Range Plan Addresses the New Requirements
METROPOLITAN AND STATEWIDE TRANSPORTATION PLANNING FACTORS [23 U.S.C. 134/49 U.S.C. 5303(h)(1) AND 23 U.S.C 135/49 U.S.C. 5304(d)(1)].	➢ Added a new stand-alone factor "increase the security of the transportation system for motorized and non-motorized users."	Huntsville Public Transit is investing in an automatic vehicle locating (AVL) system for all of its fleet. This system will enhance the security of the transit system. Refer to **Section 8** The Huntsville-Madison County Emergency Management Agency, which coordinates all emergency response plans with all jurisdictions represented on the MPO, has identified critical facilities and transportation system elements in its Emergency Operations Plan. Additionally, Madison County is designated as a host county for possible nuclear power plant evacuees in adjacent Morgan County. Capabilities of securing the local transportation system are exercised yearly with emergency response organizations county-wide. Refer to **Section 8**
	➢ Expanded the environmental factor by adding the phrase "promote consistency of transportation plan and transportation improvements with State and local planned growth and economic development patterns."	Environmental factors in the transportation planning process are addressed in **Section 5. Section 5** was amended to include phrasing that this activity actually occurs.
FISCAL CONSTRAINT [23 U.S.C. 134/49 U.S.C. 5303(i)(2)(C); (j)(1)(C); (j)(2)(B); and (j)(3)(D) and 23 U.S.C. 135/49 U.S.C. 5304(f)(5); (g)(4)(E); and (g)(4)(F)]	➢ No significant changes in SAFETEA-LU; however, rates of inflation must be shown for all identified projects.	Inflation rates are taken under consideration, and projects costs have been calculated for **Section 10** bearing this in mind.

Statutory Planning and Programming Requirements	Key Changes Between ISTEA/TEA-21 and SAFETEA-LU	How the Long Range Plan Addresses the New Requirements
ENVIRONMENTAL MITIGATION ACTIVITIES [U.S.C. 134/49 U.S.C. 5303(i)(2)(B) and 23 U.S.C. 135/49 U.S.C. 5304(f)(4)]	➢ Metropolitan and statewide transportation plans shall include "discussion" of environmental mitigation activities. ➢ This "discussion" shall be developed with Federal, State, and Tribal wildlife, land management, and regulatory agencies	Environmental and land use factors are considered in **Section 5**. All corridors identified for improvement are analyzed for environmental concerns so that mitigation activities can be considered during the planning phase. Transportation plans are considered and compared with other Local, State, and Federal agency generated plans, maps, and inventories. Discussions are also held with other agencies to determine any environmental concerns regarding the overall proposed future plan network. This section was updated to show that closer coordination with other agencies exists, and that potential mitigation activities and creative strategies may be developed to consider environmental protection of natural and man-made assets.
CONSULTATION AND COOPERATION Transportation Plans [23 U.S.C. 134/49 U.S.C. 5303(g) and (i)(4) and 23 U.S.C. 135/49 U.S.C. 5304(f)(2)]	➢ MPOs and State DOTs shall consult with local/State land use management, natural resource, historic and other agencies in the development of transportation plans.	Environmental and land use factors are considered in **Section 5**. Transportation plans are considered and compared with other Local, State, and Federal agency generated plans, maps, and inventories. Discussions are also held with other agencies to determine any environmental concerns regarding the overall proposed future plan network. This section was updated to show that closer coordination with other agencies exists. **Appendix B** includes a documentation spreadsheet that indicates these actions were performed.
PUBLIC TRANSIT ELEMENT	➢ Coordinated Public Transit-Human Services Transportation Plan (per 49 U.S.C. 5310, 5316, and 5317).	This has been addressed. The Huntsville Area MPO has entered into an agreement with TARCOG to include the MPO jurisdiction in its Human Services Transportation Plan. The plan has been completed and is being implemented. (See **Section 6**)

Statutory Planning and Programming Requirements	Key Changes Between ISTEA/TEA-21 and SAFETEA-LU	How the Long Range Plan Addresses the New Requirements
TRANSPORTATION FACILITIES [23 U.S.C. 134/49 U.S.C. 134/49 U.S.C. 5303(k)(3); 23 U.S.C. 135/49 U.S.C. 5304(f)(7); and 23 U.S.C. 135/49 U.S.C. 5304(i)]	➢ Operations and management strategies in metropolitan transportation plans and long-range statewide transportation plans	Performance measures for transportation system operations and management, with a focus on mobility and safety, are addressed as part of the Congestion Management Process in **Section 8**. Additionally, the Huntsville Area MPO employs Transportation System Management and Travel Demand Management strategies to not only preserve the existing network, but to increase the mobility and safety of persons and freight accessing the transportation network. All of this is addressed in **Section 8**. Capital expenditures are considered in terms of implementation of particular projects. These costs are reflected in **Section 10**.
INTERESTED PARTIES AND PARTICIPATION [23 U.S.C 134/49 U.S.C. 5303(i)(5), (i)(6), and (j)(4) and 23 U.S.C. 135/49 U.S.C. 5304 (f)(3) and (g)(3)]	➢ Definition of interested parties to be engaged in statewide and metropolitan transportation planning has been expanded. ➢ Participation Plan (required for MPOs) o Shall be developed in consultation with interested parties. o Publish or make available for public view transportation plans, STIPS, and TIPs. o Hold public meetings at convenient and accessible times and locations. ➢ Publication of statewide and metropolitan transportation plans, and TIP…to the maximum extent practicable. o Make information available in electronically accessible formats (e.g., world wide web) ➢ Use visualization techniques.	The Huntsville Area MPO updated its Public Involvement Plan during 2005 and amended it during 2007. This plan is periodically reviewed, and techniques utilized are measured for success. The plan meets all requirements of SAFETEA-LU. The updated plan is attached as **Appendix A**. The plan is currently available on the internet.

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Section 1

INTRODUCTION

1.0 Overview

Transportation planning is the process by which transportation improvements (streets, sidewalks, bikeways, etc.) are conceived, tested, and programmed for future construction. The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires that all urban areas over 50,000 population have a cooperative, comprehensive, and continuous transportation planning process in order to qualify for Federal funding for constructing improvements.

This report summarizes the highlights of the development of the **Year 2035 Transportation Plan** for the Huntsville Transportation Study Area. The City of Huntsville Planning Division conducted the study with technical assistance provided by the Alabama Department of Transportation. The City of Madison, Madison County and the City of Huntsville Engineering and the Parking and Public Transit Division and many others also contributed to this plan document.

1.1 Organization for Transportation Planning

The governing body for the Huntsville Area Transportation Study is the Metropolitan Planning Organization (MPO). The MPO is composed of elected officials from the participating local governments and a representative of the Alabama Department of Transportation. All federally funded transportation projects in the urban area must be programmed for construction by the MPO and be taken from a plan approved by the MPO.

The MPO receives technical guidance on transportation plans and programs from the Technical Coordinating Committee (TCC). The TCC consists of technical and professional members of the community. The TCC reviews procedural aspects of the transportation planning process and recommends alternate transportation plans and programs to the MPO.

The Citizens Advisory Committee (CAC) provides structured public involvement to the MPO. The CAC is comprised of a cross section of area residents appointed to serve by the MPO. Through public hearings, surveys, and regularly held open meetings, the CAC attempts to give all interested parties an opportunity to express their views on transportation related matters. Recommendations on transportation plans and programs are passed from the CAC directly to the MPO. A public involvement process has been adopted by the MPO (see **Appendix A**).

To assure an ongoing transportation planning process and to assist in the operation of the previously discussed committees, a Transportation Planning Process Coordinator is appointed by the MPO. The Director of the Huntsville City Planning Division is the transportation planning coordinator for the Huntsville Area Transportation Study. The coordinator, with support from his staff, is a liaison between agencies involved in the transportation planning process, develops and maintains reports and

records necessary for the administration of the planning process, and actively participates in recommending plans and programs for transportation improvements to the MPO.

1.2 Plan Development

One of the primary responsibilities of the Huntsville Area Transportation Study is to develop and maintain a comprehensive street and highway plan for the Huntsville area. The preparation of this plan is made possible by staff support from the Huntsville Planning Division and the Alabama Department of Transportation. These two agencies, working through the organized committees, provide the functions necessary for development of the major street and highway plan.

The Huntsville Planning Division coordinates the planning effort and generates local data used to predict future levels of travel. The Alabama Department of Transportation, in cooperation with the in-house staff, advises local officials on procedural aspects of the planning process.

The Metropolitan Planning Organization is responsible for official adoption of the Long-Range Transportation Plan. When deciding upon a plan for adoption, the MPO relies on public hearings, the recommendations of the two standing committees, as well as advice from the staff performing the actual planning operations. Once the plan is adopted, it may be amended as changing events may require.

1.3 Parameters of Study

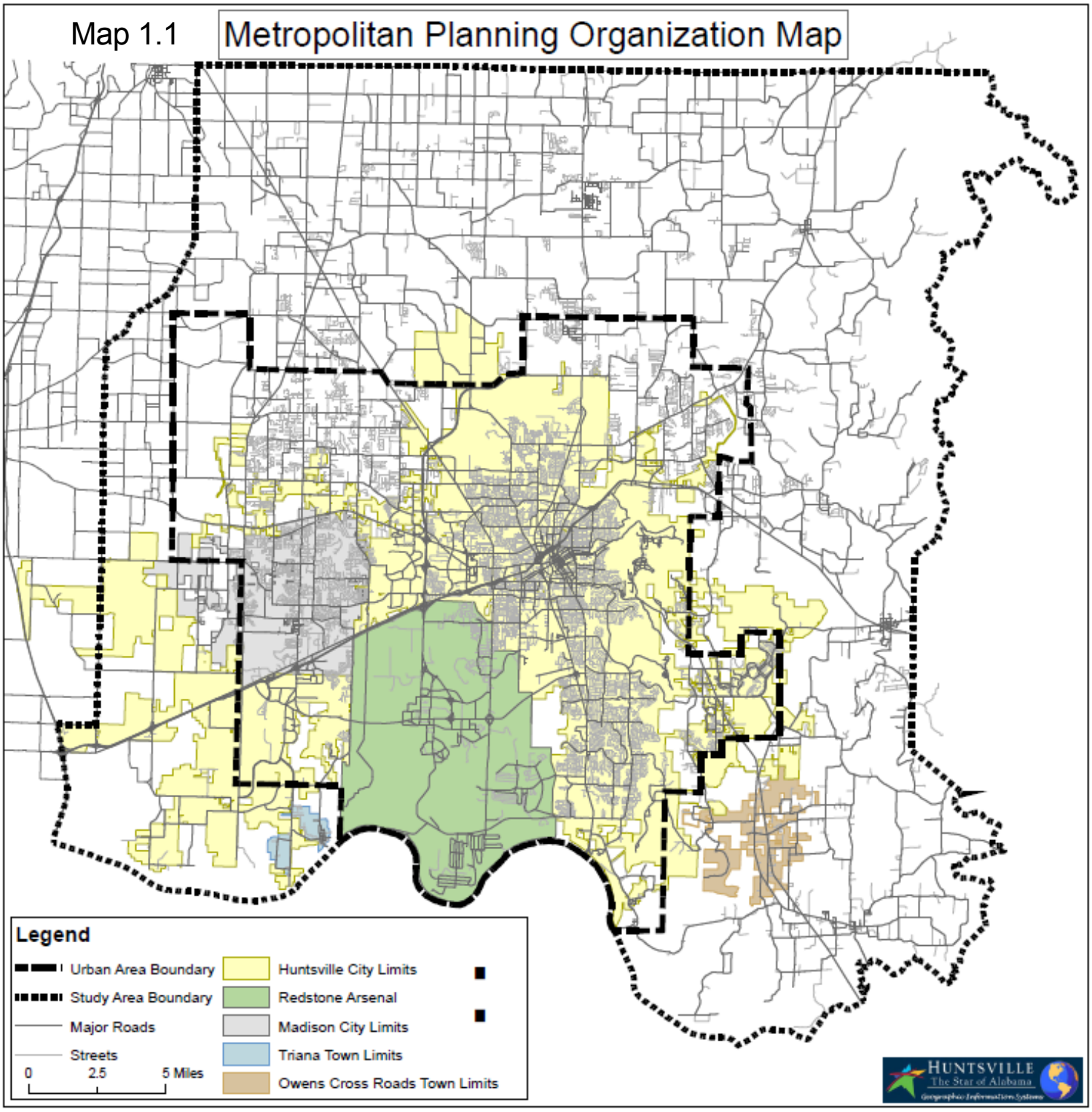
The geographic study area of the long-range transportation plan (as opposed to the "urban area") includes land that is expected to become more densely settled in urban fashion in coming years. The Census Bureau is responsible for delineating the urbanized areas. **Map 1.1** depicts the urbanized area and study area boundaries that were presented for study.

The major transportation network within the study area boundary must be analyzed, including multimodal or intermodal systems which would impact mobility within the boundaries and across the modes of transportation networks. According to **23 CFR 450.322 (b)**, the transportation plan must include both long-range and short-range strategies or actions that lead to the development of an integrated intermodal transportation system, facilitating the efficient movement of people and goods. The nation's transportation system began first with seaports and canals, then railroads, followed by a highway system and finally a network of airports. Intermodal transportation links these modes together. Intermodalism attempts to help all modes work better by providing the cross-modal connections our transportation system lacks. Intermodal or multimodal transportation facilities, services, and enhancement strategies are comprehensively addressed in **Section 9** of this plan.

1.4 Identification of Network Improvements

While multimodal enhancement strategies have been identified, the **Year 2035 Transportation Plan** primarily identifies major facilities that need to be built or widened within the study area in order to meet additional capacity needs through the year 2035. The new or widened facilities identified in the plan

will be subject to further detailed engineering, environmental, social and economic analysis before reaching the final construction phase. The current plan has been developed as an integrated system level plan addressing regional transportation problems within the study area, identified by means of transportation planning models.


Map 1.1
Metropolitan Planning Organization Map
Legend
Urban Area Boundary
Study Area Boundary
Major Roads
Streets
0
2.5
5 Miles
Huntsville City Limits
Redstone Arsenal
Madison City Limits
Triana Town Limits
Owens Cross Roads Town Limits
HUNTSVILLE
The Star of Alabama

Section 2

TRAVEL DEMAND MODELING

2.0 Introduction to the Modeling Process

The predictability of future traffic flow is complex and is best determined by a technique known as "travel demand modeling" or transportation modeling. Transportation models attempt to develop reliable mathematical relationships between socioeconomic data - i.e., number of households, household size and income, number of automobiles owned or available, school enrollment, number of people employed and the type of their employment - and trip-making. By manipulating these relationships and comparing predicted trips with known (or estimated) trip patterns, an accurate method for predicting future travel demand can be developed.

The modeling process consists of four steps; (1) trip generation, (2) trip distribution, (3) mode split and (4) trip assignment. Each of these segments will be explained in detail later except for mode-split, which is not taken into consideration. The overall accuracy of this model depends on the accuracy of trip generation (how well does the model estimate the number and kinds of trips actually made in the area, both regionally and locally). Also, model results can be affected by the accuracy of trip distribution (how well do the actual trip lengths compare to the model estimates and are actual trip patterns well duplicated).

The level of accuracy, in turn, is dependent on the quality of the input of data and the relationships developed from that data, and the way the model actually assigns the estimated trips to the road system. So while good data is required to develop a good model, it does not insure one; the model must also replicate "traffic" the way the area's street network does.

2.1 Network Development

A model network is made up of "zones" representing trip-ends, “nodes" representing intersections, and "links" representing roadways. The trips to and from zones enter the road system through nodes, which are connected by links. A set of links connecting any two zones is called a path, and a trip will always be assigned to the path with the lowest "cost" (measured as time or distance). However, depending on how much "traffic" is already on a street (path), the individual link costs - reflected by speed - are altered; therefore, paths can change. The relationship of speed and traffic volume is a function of capacity.

2.1.1 Roadway Capacity

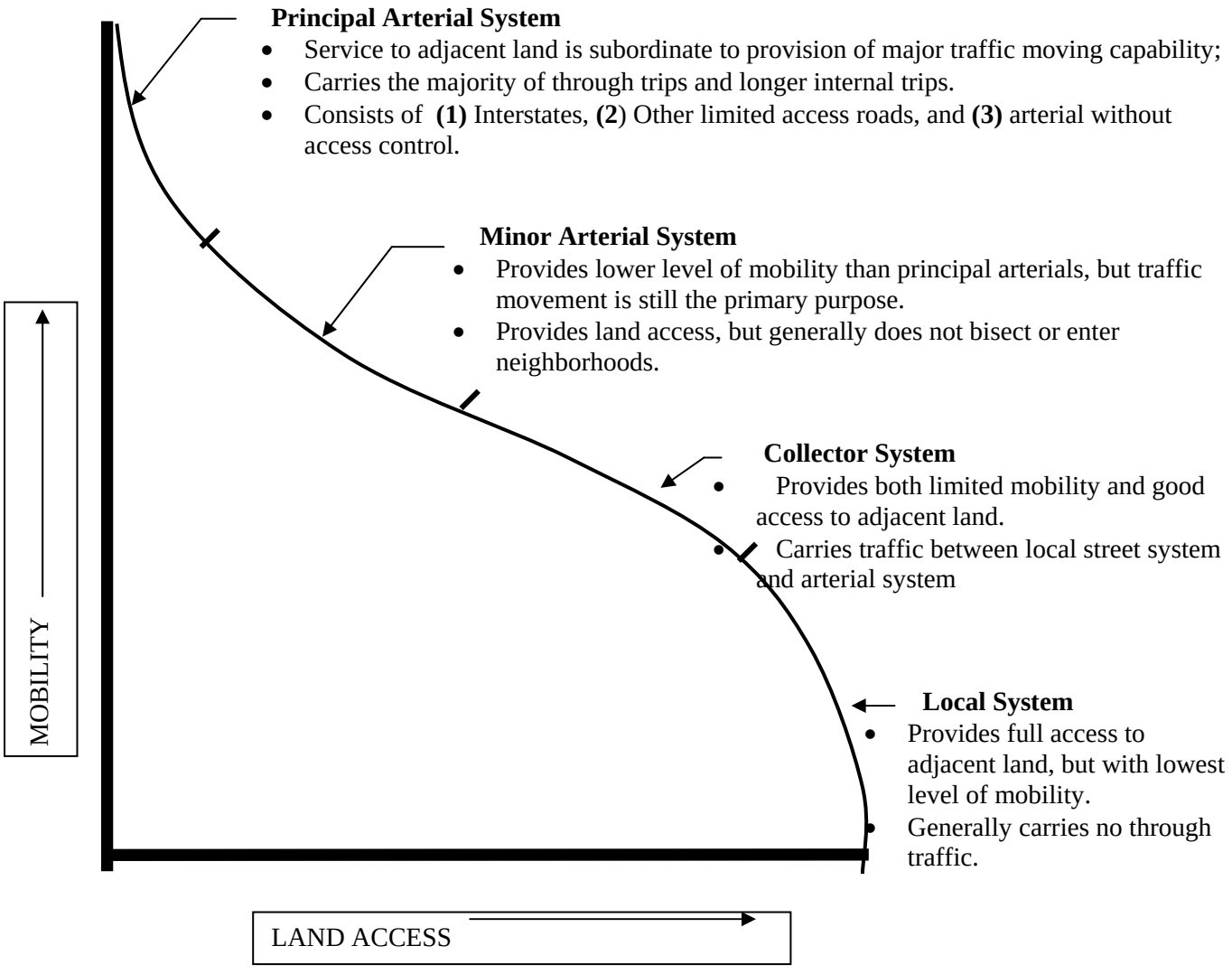
In the real world, the capacity of a road is usually determined by the capacity of its intersections and can be expressed as the capacity of each of the intersection approaches - or - links. This capacity depends on numerous factors - among them are number of through lanes, number of turn lanes, lane width, peaking characteristics, and signalization. Of these factors, several are categorized as physical characteristics and

several as operating characteristics. Models normally group links by both their physical and operating characteristics.

2.1.2 Roadway Classification

Different types of streets provide different types of service. The hierarchy of streets and roads ordered by the type of service each provides is called "functional classification". Generally, roads within each functional class will exhibit similar operating characteristics which will, in turn, vary between classifications. Since operating characteristics will to a large degree determine roadway capacity, it is extremely important that links are correctly classified in any travel model. The functional classification system used in urban areas is summarized in the following figure.

Figure 2.1
Functional Classification and Mobility vs. Access



The principal use of functional classification in modeling is to stratify roads throughout a system by primary purpose, thus allowing the development of a single set of general values to describe the operating characteristics of all roads of a given type. Two of the most important of these characteristics are speed and capacity - and the relationship between the two. Since most traffic assignment models operate on the premise that as traffic volumes approach capacity, speed decreases, the model will adjust link speed in some predetermined manner based on the relationship between a given load and coded capacity. This speed adjustment will affect the paths taken between zones.

2.1.3 Network Speed

To successfully replicate real-world trip patterns, the speeds coded in the model network must have some relationship to reality. When testing future networks, however, speeds will need to be coded for roads that are not yet constructed, so the coding criteria must also be defined by some tangible characteristic that can be applied in a uniform manner. Therefore, link speeds are determined by either the physical features of the road and its surroundings (such as number of lanes, its physical design characteristics, or the type of adjacent development), the road's functional classification (operational characteristics), or a combination of the two. The number of lanes is the dominant factor in determining free speeds for arterials and collectors, but all else being equal, principal arterials are usually coded faster than lower level arterials.

2.1.4 Level of Service

The "level of service" (LOS) concept is used to define the operational characteristics of roads at various traffic volumes. LOS can be used to establish the most severe conditions acceptable to the public. This is not to say or imply that the limits of acceptability are desirable - but simply they are tolerable. Levels-of-service range from A through F, with A being the best (least amount of traffic) and F being the worst (capacity, unstable flow). Abbreviated definitions of the levels-of-service as stated in the **2000 Highway Capacity Manual** follow:

LOS A is free flow. Drivers are virtually unaffected by others; freedom to select desired speed and maneuverability is high. Level of comfort/convenience is excellent.

LOS B marks the point at which freedom to maneuver begins to decline. Ability to select speed is still good, but presence of others begins to affect driver behavior. Comfort and convenience are good.

LOS C indicates that individual drivers are significantly affected by interaction with other vehicles. Selection of speed and maneuverability are both affected by the traffic stream. Noticeable decline in comfort and convenience levels.

LOS D is high-density, but stable, flow. Speed and maneuverability are severely restricted. Small traffic increases will cause operational problems. Comfort and convenience levels are poor.

LOS E is operation at or just below capacity. Speeds are reduced to low levels. Virtually no room exists for maneuverability without forcing another vehicle to yield. Operation is usually unstable, as any traffic increase causes breakdown. Comfort and convenience levels are extremely poor and driver frustration is high.

LOS F is forced, or breakdown, flow. Operation is characterized by stop-and-go waves that are very unstable. The amount of traffic approaching a point is greater than the amount that can pass the point.

2.2 Trip Generation

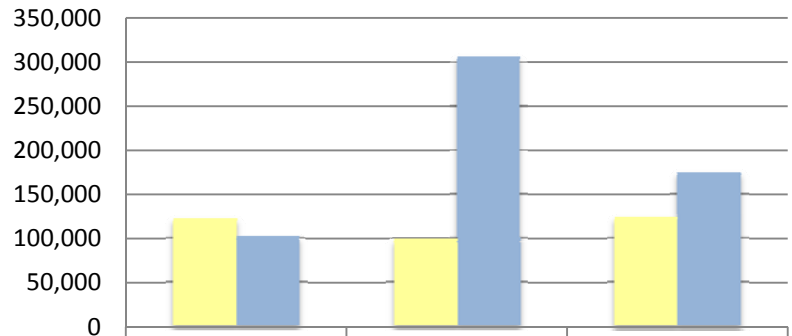
Trip generation is the initial step in the travel demand modeling process. Trip generation models translate estimates of land use activity into trips by a procedure which converts socioeconomic data and study area traffic counts to trip-ends. The median household income of a traffic zone is then used to determine an approximate vehicle-trip rate for each household in that zone; the trip rate times the number of households yields the estimated trips "produced" by the zone. College dormitories are also treated as households, but the trip rate used is the areawide rate for one-auto households as opposed to an income-dependent rate.

2.2.1 Land Use and Socioeconomic Characteristics

The number, type and length of trips made in any area, whether urban or rural, large or small, depends primarily on the land use found in that area and the socioeconomic characteristics of the population. Factors such as the number of households, median household income, school enrollment, and retail and non-retail employment are the basic determinants of trip making. Socioeconomic data is vitally important to trip generation and land use patterns are strongly linked to trip distribution, thus their respective importance to the transportation plan development. **Figure 2.2** shows the projected increase in several of these categories for the Huntsville study area. More detailed socioeconomic data is available at **Section 3**.

Total retail employment is projected to decrease from 122,644 jobs in 2005 to 101,493 total jobs in future year 2035. Total non-retail employment also increased from 98,882 jobs to 306,400. There is also an increase in the number of households projected. In 2005 there were 123,692 households in the study area. By the year 2035 the projected number of households increase by 42% or 175,266 households.

Figure 2.2
Socioeconomic Projections
Year 2005 vs. 2035



	Total Retail Employment	Total Non-Retail Employment	Total Households
Base Year 2005	122,644	98,882	123,692
Future Year 2035	101,493	306,400	175266

2.2.2 Traffic Analysis Zones

The socioeconomic conditions have changed somewhat since the last census in 2000. Changes in both terms of the scope and the distribution of growth by sub-area have occurred. This redistribution of projected growth resulted in changes in projected travel patterns and traffic volumes on certain roadways. Demands on the future transportation facilities must be reevaluated. The study area is broken into numerous small areas for detailed analysis. These areas are called Traffic Analysis Zones (TAZ). Refer to **Section 3, Map 3.1** for the map depicting the TAZs and **Section 3, Table 3.1** for the supporting socioeconomic data at the TAZ level.

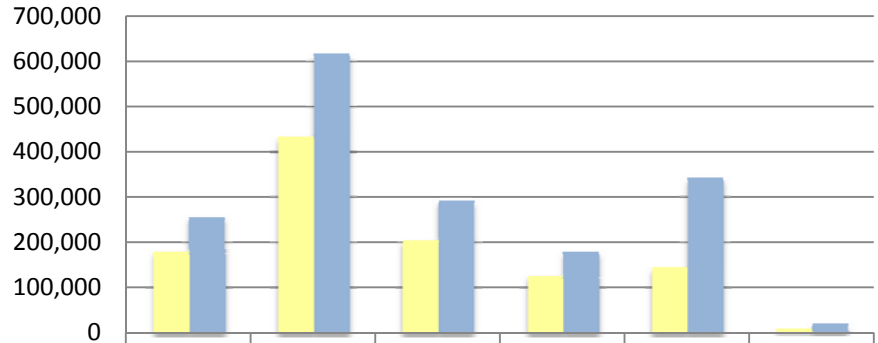
TAZs are usually smaller than census tracts, but are larger than individual neighborhoods or blocks; for ease of data collection and manipulation, several TAZs normally aggregate to census tracts. The Huntsville study area is divided into 525 traffic analysis zones, 508 internal and 17 external. Automobile trips are divided into six purposes based on the location of each end of trip: (1)Home-Based (HBW), trips with the "production" end at home, the "attraction" end at work; (2) Home-Based Other (HBO), trips with the production at home, the attraction anywhere except work; (3)Non-Home Based (NHB), trips with neither end at home; (4) Internal-External (IE), trips that have one end inside the study area and one end outside the study area; (5) External-External (EE), trips that pass through the study area but do not have destination inside the study area; and (6) Truck and Taxi (TT), trips that have no set origin or destination.

2.2.3 Trip Generation Results

Two types of calculations are made independently during trip generation: trip productions by purpose by zone and trip attractions by purpose by zone. **Figure 2.3** shows the number of trips that existed in the base year of 2005 and the number of

projected trips by purpose for the year 2035. According to **Figure 2.4**, total purpose trips will increase from 1,028,294 to 1,811,998 by the year 2035.

Figure 2.3
Projected Trips by Trip Purpose
Base Year 2005 vs. Future Year 2035



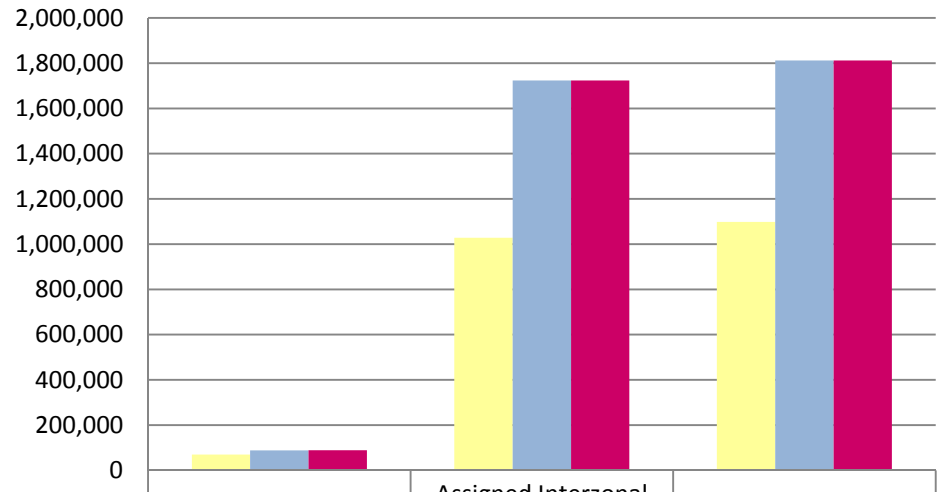
	Home-Based Work	Home-Based Other	Non-Home Based	Truck and Taxi	External-Internal	Local External
Base Year 2005	180,446	434,700	204,723	126,309	143,736	8,319
Future Year 2035	256,786	618,551	292,341	179,736	343,410	20,634

2.3 Trip Distribution

Trip distribution is the second step in the travel demand modeling process. It consists of matching the production end of each trip with an attraction end, i.e., connecting trip-ends together. The "gravity model" is the mathematical expression used to construct these trips. The number of trips between two zones increases as the activity (trip ends) in the zones increases and decreases as the separation of the zones increases. Three basic data elements are needed as input to the gravity model: (1) productions and attractions for each trip purpose for each zone, (2) the impedance values for trips between each pair of zones, and (3) a set of friction factors for each trip purpose covering the range of impedance values found in the network.

The development of zonal productions and attractions has already been discussed. Determination of zone-to-zone impedance values involves some assumptions that should be documented for later reference. Impedance has at least three components, and some models use more. At a minimum, impedance includes the costs "skimmed" from the paths through the network between each zone pair, the costs incurred by trips with both ends inside a single traffic zone ("intrazonal" trips), and terminal costs, also called "excess" costs, which are incurred at the beginning and end of any trip (finding parking, walking to a final destination, etc.). **Figure 2.4** shows the number of assigned interzonal and intrazonal trips for the Base Year, the E+C Network, and for the 2035 Future Year Network.

Figure 2.4
Comparison of Interzonal-Intrazonal Trips
Among Established Networks



	Intrazonal Trips	Assigned Interzonal Trips	Total Trips
Base Year	69,951	1,028,294	1,098,245
2035 E+C	88,211	1,723,800	1,812,011
Year 2035	88,673	1,723,325	1,811,998

Terminal time (cost) varies considerably as a function of land use at the trip-end, or more generally by geographic location of the traffic zone. Intrazonal times are determined by the size and development characteristics of a given zone, as are the terminal times and friction factors. The output of the gravity model is a matrix for each trip purpose which records the trips from each zone to each other zone. These five matrices are combined into one matrix - showing all trips from each zone to each other zone - and later assigned to the network.

2.4 Traffic Assignment

Traffic assignment is the fourth and final step in the modeling process. It is basically the product of the entire modeling procedure; all prior steps in developing the model are brought together at this point. Traffic assignment refers to placing the trip matrix (the trips from each zone to each other zone) on the individual facilities that make up the highway network. The models use one of three types of assignment: all-or-nothing, capacity restraint, or equilibrium. The traffic assignment model used in this update was equilibrium user-specified weightings and parameters.

2.4.1 Equilibrium Assignment Techniques

Equilibrium assignment techniques are based on similar concepts used in the previous two methods mentioned above. In an equilibrium assignment, there are usually

several equally good paths through the network for each origin-destination pair. These extra paths help produce a more accurate assignment, and they also have an important benefit during calibration. The extra paths buffer the effect of link speeds on link volumes, that is, a small change in speed will cause a small change in volume. Many of the adjustments and refinements mentioned in previous portions of this Section cannot actually be made until after at least one assignment is completed, allowing a rough estimate of the trip movements and traffic patterns produced by the model and its empirical assumptions.

2.5 Model Validation

The process of comparing a model's estimate of traffic to the traffic counts actually taken in the field is called "validation". Validation allows the error of the model to be minimized and its confidence limits to be established. Validation includes verification of network and facility assumptions, checks on area wide trip movement, and ultimately, the accuracy of assignments on individual links.

Validation is thus an iterative process of model development whereby the entire model chain is repeated numerous times as individual model parameters are modified and the assignment results compared - to each other as well as to actual conditions. This process will produce a simulated computer version of the projected base year (2005) network with traffic volumes. These volumes are then compared to actual counts of traffic and adjustments are made until the model produces an assignment reasonably close to actual volumes.

The models are calibrated with the base year (2005) data to duplicate travel for the base year and then used for the year 2035 trips. The models subsequently test demands on alternative transportation systems.

2.6 Statewide Conformity

The travel demand model used by the Huntsville Area MPO in the development of this plan is derived through "TranPlan" software. This modeling software, endorsed by the Alabama Department of Transportation, is uniformly utilized and managed by all MPOs in the State of Alabama. This conformity system wide provides the State of Alabama with complementary transportation plans and Statewide plans.

Section 3

GROWTH FORECASTS

3.0 Introduction

Planning transportation facilities for urban areas requires research, analysis, and projections of population, economic activity, and land use. These elements are the basic determinants of travel.

The future growth of travel demand in the Huntsville Transportation Study Area is directly related to increases in residential, commercial and industrial construction. For example, trips are "produced" from residential areas in proportion to the number of persons, households, income or autos. Trips are "attracted" to various commercial and industrial locations for purposes such as work or shopping. Therefore, it is important to analyze the expected growth of land use activities to aid in the determination of future travel demands.

The Huntsville Transportation Study Area projections for 2035 show major growth in both households and employment. Between 2005 and 2035 the number of households will increase by 30 percent and total employment will increase by 83 percent. The basis of this growth is a diversifying economy, the direct impact of the 2008 Base Realignment and Closure (BRAC) transfers and the area's solid foundation in aerospace and defense technology.

3.1 Employment

Cummings Research Park, which is the second largest research and technology park in the United States and the fourth largest in the world, is the center of business activity in the Huntsville Transportation Study Area. The park occupies over 3,800 acres and approximately 500 acres of land is currently available for development. With a vibrant mixture of Fortune 500 companies, local and high-tech enterprises, U.S space and defense agencies, a thriving business incubator, and competitive higher-education institutions, Cummings Research Park will continue to be the hub of the areas economy for many years.

The study area also has eight additional industrial parks and one applied technology park. There are over ten thousand acres, each one dedicated to business and industrial activity. Parks include; Chase Industrial Park, I-565 Business Park, Jetplex Industrial Park, Lowe Industrial Park, Peebles Industrial Park, SouthPoint Industrial Park and Triana Industrial Park.

Employment in the Huntsville Transportation Study Area is also greatly supported by Redstone Arsenal. Redstone is home to the U.S. Army Aviation and Missile Command (AMCOM), the Space and Missile Defense Command, numerous Program Executive Offices (PEO), and major components of the Defense Intelligence Agency and the Missile Defense Agency. Additionally, Marshall Space Flight Center; the FBI; and the Bureau of Alcohol, Tobacco, and Firearms are located on Redstone Arsenal. The Base Realignment and Closure (BRAC) will directly affect personnel on Redstone Arsenal and these jobs will have indirect influence on employment in the

study area for numerous years. One example of this direct and indirect impact is contractor jobs are certain to accompany the jobs that are transferred and spending by contract workers will provide jobs and increase business activity in other areas in the economy.

3.2 Households

Households in the Huntsville Transportation Study Area are expected to increase by over 50,000 units by the year 2035. A strong economy with low employment rate will be the driving force behind residential development for the area. With most of the major employers being located in the city limits of Huntsville, households will likely be built in the outer portions of the study area. While the eastern portion of the study area is surrounded by mountains and flood ways and the southern portion borders the Tennessee River, the northern and western portions are limitless in developable land.

3.3 Projection Methods

Factors such as zoning, historical patterns and professional judgment were used in projecting employment and occupied housing for year 2035.

The base year for the socioeconomic factors used in this model is 2005. Households, Income, Retail and Non-Retail Employment and School Enrollment data are all variables used in determining trip generation by populations. A straight line linear regression analysis was used to project employment and occupied housing through 2035. Total employment is divided into retail and non-retail. Once a total for each variable was obtained, the difference between 2005 and 2035 was divided into traffic analysis zones (TAZ) for the Huntsville Transportation Study Area travel demand model. The TAZ level data was formatted for entry into the Trip Generation software, which was developed by Dr. Anderson at the University of Alabama in Huntsville. The TAZ level data is available by referencing **Table 3.1**, and the corresponding map of the traffic analysis zones is available by referring to **Map 3.1.**

Table 3.1: Huntsville Transportation Study Area Socioeconomic Data by Traffic Zone

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-Ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
1	42	90343	219	315	0	534	44	1044	2864	0	3908
2	34	41250	721	543	0	1264	35	2134	6646	0	8780
3	34	41250	721	543	0	1264	35	334	564	0	898
4	42	90343	219	315	0	534	44	530	179	0	709
5	34	41250	721	543	0	1264	35	212	39	0	250
6	34	41250	721	543	0	1264	35	19	79	0	97
7	51	11597	101	79	0	180	54	2	8	0	9
8	51	11597	101	79	0	180	54	109	106	0	215
9	51	11597	101	79	0	180	54	22	25	0	47
10	51	11597	101	79	0	180	54	0	0	0	0
11	51	11597	101	79	0	180	54	142	94	0	236
12	51	11597	101	79	0	180	54	57	8	0	65
13	51	11597	101	79	0	180	54	83	5	30	87
14	34	90343	721	543	0	1264	35	134	18	0	152
15	42	90343	219	315	0	534	44	12	0	0	12
16	16	6200	809	0	0	809	16	712	86	0	798
17	16	6200	809	0	0	809	16	2971	0	0	2971
18	16	6200	809	0	0	809	16	605	117	30	722
19	34	6200	721	543	0	1264	35	350	1205	0	1555
20	145	16136	302	99	0	401	150	381	915	0	1296
21	145	34688	302	99	1024	401	150	278	242	1591	520
22	170	16136	458	183	0	641	180	499	222	0	721
23	376	49583	24	27	0	51	395	459	139	0	597
24	351	49583	574	881	0	1455	379	1447	454	0	1901
25	273	21563	531	231	0	762	261	295	79	0	373
26	130	21563	266	198	0	464	133	954	763	0	1716
27	130	21563	266	198	304	464	133	382	347	262	729
28	238	10200	210	301	0	511	239	172	173	0	344
29	123	9238	30	33	0	63	151	217	52	0	269
30	123	9238	30	33	0	63	151	258	649	0	907
31	238	10200	210	301	456	511	239	593	399	377	992
32	146	31071	38	34	1139	72	153	282	80	671	362
33	797	21897	282	142	200	424	863	248	37	212	285
34	205	18125	166	168	524	334	217	436	39	581	474
35	541	7703	109	52	474	161	584	313	109	392	422
36	372	36343	274	212	0	486	397	737	185	0	922
37	372	36343	274	212	0	486	397	298	847	0	1145

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
38	282	38393	138	0	564	138	298	399	160	501	559
39	446	37292	39	14	0	53	475	73	83	0	157
40	242	28913	19	0	0	19	255	4	65	0	69
41	168	11750	93	136	0	229	174	97	148	0	245
42	168	11750	93	136	0	229	174	231	154	0	385
43	287	29931	155	167	346	322	352	321	425	228	746
44	287	29931	155	167	0	322	352	227	166	0	394
45	287	29931	155	167	0	322	352	625	456	0	1081
46	163	25789	45	84	0	129	175	146	140	0	286
47	282	23250	69	4	0	73	288	196	609	0	804
48	229	45592	90	0	919	90	242	111	89	794	201
49	339	25595	227	338	0	565	337	318	840	0	1158
50	163	25789	45	84	0	129	175	71	75	0	147
51	64	8438	273	378	19	651	66	870	641	0	1510
52	64	8438	273	378	0	651	66	90	632	0	721
53	199	8438	374	258	0	632	192	275	384	0	658
54	867	16115	147	133	250	280	921	416	439	150	855
55	314	27022	66	3	0	69	319	774	210	0	983
56	332	45682	23	13	0	36	347	12	17	0	29
57	671	57528	97	77	793	174	797	225	92	563	318
58	470	39011	8	6	0	14	487	17	37	0	54
59	1216	31343	287	250	0	537	1277	16	14	0	30
60	369	60385	65	39	0	104	388	10	26	0	36
61	123	9238	30	33	0	63	151	178	29	0	207
62	484	58056	434	846	365	1280	514	102	32	494	134
63	170	54375	458	183	0	641	180	16	37	0	53
64	379	115907	130	20	0	150	408	15	15	0	30
65	379	115907	130	20	750	150	408	34	77	907	111
66	119	89850	85	93	0	178	123	136	34	0	170
67	119	89850	85	93	0	178	123	352	29	0	381
68	475	97245	360	290	0	650	546	79	86	0	165
69	475	97245	360	290	450	650	546	1011	259	502	1270
70	457	51875	34	47	0	81	488	22	8	0	29
71	301	37100	1409	518	0	1927	338	658	989	150	1647
72	301	37100	1409	518	0	1927	338	2301	1225	0	3526
73	274	51378	26	18	0	44	294	350	99	435	448
74	711	48500	84	0	944	84	809	716	80	935	796
75	301	27899	329	275	0	604	295	162	185	0	347

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
76	1255	23144	3467	103	0	3570	1320	339	445	0	784
77	266	18125	640	192	0	832	271	757	2248	0	3005
78	266	18125	640	192	0	832	271	152	45	0	196
79	718	49583	556	449	0	1005	744	375	8	0	383
80	718	17351	556	449	0	1005	744	375	277	0	652
81	718	17351	556	449	0	1005	744	1085	880	7	1965
82	266	18125	640	192	0	832	271	433	354	0	788
83	219	38750	138	205	0	343	231	172	1309	0	1481
84	1965	23715	584	100	424	684	2048	292	146	416	439
85	309	27826	216	205	493	421	323	244	162	391	406
86	566	27826	27	14	0	41	642	630	887	0	1518
87	536	19659	368	232	0	600	585	412	1237	0	1649
88	294	21429	43	30	409	73	337	279	62	228	341
89	196	46518	1403	828	0	2231	205	154	9	0	163
90	225	33507	62	62	0	124	250	198	6068	0	6266
91	225	33507	62	62	0	124	250	141	14	0	155
92	196	46518	1403	828	500	2231	205	183	48	352	231
93	128	49563	2033	1104	0	3137	133	312	11312	0	11624
94	566	40357	142	138	0	280	591	97	584	0	681
95	370	40357	56	206	105	262	391	1358	3291	0	4648
96	128	49563	2033	1104	0	3137	133	4755	2869	0	7624
97	128	49563	2033	1104	0	3137	133	346	417	0	763
98	128	49563	2033	1104	230	3137	133	873	2362	317	3234
99	128	49563	2033	1104	0	3137	133	2196	1562	0	3758
100	493	24141	571	158	0	729	533	1169	1416	0	2585
101	67	62865	71	76	300	147	73	172	180	190	352
102	1430	22880	677	584	730	1261	1520	439	1239	379	1678
103	295	15565	1080	197	0	1277	297	418	573	0	991
104	367	42292	248	191	0	439	380	25	65	0	89
105	313	47292	105	58	618	163	325	330	165	438	494
106	209	46500	21	19	0	40	221	17	69	0	86
107	209	46500	21	19	0	40	221	29	74	0	103
108	462	37135	14	4	0	18	483	2	66	0	68
109	246	40938	52	8	0	60	259	21	251	0	272
110	448	37135	101	11	0	112	507	87	85	0	171
111	279	44145	24	34	447	58	295	272	75	314	347
112	836	42891	87	10	914	97	882	60	6	752	67
113	361	38864	70	1	0	71	383	118	96	0	214

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
114	493	36089	188	0	0	188	511	53	77	0	130
115	956	31378	790	1193	556	1983	1021	67	6	392	73
116	468	43056	35	21	0	56	473	6	65	0	71
117	549	27502	77	56	437	133	591	239	117	378	356
118	415	39922	672	36	0	708	434	73	182	0	255
119	274	16399	123	144	0	267	257	43	257	0	301
120	185	16399	150	448	0	598	177	337	236	0	573
121	616	34688	7001	2639	0	9640	629	551	109	0	660
122	356	30000	4	5	0	9	364	16	39	0	55
123	103	24554	171	553	333	724	105	217	969	276	1186
124	35	38438	18	32	0	50	35	0	8	0	8
125	35	38438	18	32	0	50	35	38	82	0	120
126	35	38438	18	32	0	50	35	211	5	0	216
127	127	60645	64	111	0	175	164	155	462	0	618
128	103	24554	171	553	0	724	105	0	0	0	0
129	127	60645	64	111	0	175	164	682	462	0	1144
130	127	60645	64	111	0	175	164	102	60	0	162
131	217	53056	37	17	0	54	282	246	125	0	371
132	192	102230	39	13	0	52	361	68	0	0	68
133	203	54688	26	17	0	43	273	132	79	0	211
134	205	18125	166	168	0	334	217	251	54	0	305
135	203	54688	26	17	0	43	273	53	0	0	53
136	1245	80916	262	58	196	320	1360	104	203	215	307
137	379	115907	130	20	0	150	408	3	6	0	9
138	203	54688	26	17	0	43	273	9	0	0	9
139	192	102230	39	13	0	52	361	0	0	0	0
140	120	61458	63	79	0	142	198	283	231	0	514
141	120	61458	63	79	0	142	198	258	245	0	503
142	59	32193	19	13	0	32	69	0	12	0	12
143	124	40583	21	29	0	50	146	5	49	0	54
144	124	40583	21	29	0	50	146	8	15	0	23
145	1247	91642	103	56	0	159	1377	46	15	0	62
146	513	78344	142	56	0	198	546	13	0	0	13
147	513	78344	142	56	0	198	546	36	40	0	76
148	679	70625	252	114	0	366	742	161	48	0	209
149	679	70625	252	114	1980	366	742	5	188	2015	193
150	570	69479	447	527	0	974	582	364	43	0	407
151	184	61528	159	50	0	209	196	11	6	0	17

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
152	184	61528	159	50	0	209	196	431	225	0	656
153	184	61528	159	50	0	209	196	431	322	0	753
154	419	47344	206	15	0	221	446	101	86	0	187
155	419	47344	206	15	0	221	446	193	157	0	351
156	993	62212	94	13	0	107	1121	248	324	0	571
157	353	69589	262	0	1422	262	86	326	91	1309	417
158	1077	69589	299	384	0	683	1127	19	26	0	46
159	408	69589	71	34	0	105	28	614	738	0	1352
160	120	31528	50	65	0	115	123	855	390	0	1245
161	120	31528	50	65	0	115	123	337	573	0	910
162	844	68049	174	171	0	345	969	181	40	0	221
163	292	58500	119	97	0	216	327	11	8	0	19
164	508	62727	19	16	0	35	558	47	6	0	53
165	292	58500	119	97	1377	216	327	2	123	1198	125
166	642	50595	20	20	0	40	722	132	548	0	681
167	120	31528	50	65	0	115	123	8	5682	0	5689
168	120	31528	50	65	0	115	123	14	502	0	516
169	124	45917	21	29	0	50	146	32	402	0	434
170	268	45917	66	150	0	216	343	19	26	0	46
171	268	45917	66	150	490	216	343	63	501	350	564
172	268	70722	66	150	0	216	343	177	29	0	206
173	1184	62222	354	719	0	1073	1381	875	137	0	1012
174	385	62222	311	446	330	757	412	278	140	347	419
175	385	23571	311	446	0	757	412	14	46	0	60
176	145	23571	166	170	0	336	170	14	46	0	60
177	145	50486	166	170	0	336	170	189	6363	0	6551
178	286	50486	2156	1417	0	3573	590	278	9072	0	9351
179	286	102409	2156	1417	0	3573	590	87	203	0	291
180	254	50486	404	313	0	717	676	4089	7728	0	11817
181	286	102409	215	1417	0	1632	590	24	3326	0	3350
182	286	38125	2156	1417	0	3573	590	430	442	0	872
183	391	11597	528	425	0	953	714	83	25	0	107
184	64	55670	273	378	596	651	66	460	527	517	986
185	601	54074	227	25	609	252	1031	429	531	472	961
186	336	41847	170	112	0	282	583	429	382	0	811
187	428	41847	296	371	0	667	601	429	382	0	811
188	428	54074	296	371	0	667	601	429	445	0	875
189	336	45081	170	112	0	282	583	187	1228	0	1415

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
190	87	45081	322	93	850	415	90	77	3554	825	3631
191	87	45081	322	93	0	415	90	0	2784	0	2784
192	87	45081	322	93	0	415	90	93	2014	0	2106
193	87	45081	322	93	0	415	90	232	434	0	667
194	87	83378	322	93	0	415	90	446	401	0	846
195	425	83378	120	51	0	171	966	0	12	0	12
196	425	60665	120	51	0	171	966	429	382	0	811
197	1195	55670	1456	1368	1784	2824	1575	429	818	2101	1247
198	601	83378	227	25	0	252	1031	494	382	751	876
199	425	78659	120	51	0	171	966	429	382	944	811
200	337	50400	111	33	0	144	704	0	0	0	0
201	209	58382	121	172	761	293	399	0	120	850	120
202	372	61563	134	24	974	158	726	14	142	1419	156
203	292	38750	712	321	0	1033	771	30	0	130	30
204	67	62865	71	76	0	147	73	12	9	0	22
205	167	75271	27	14	0	41	285	218	102	58	320
206	328	66172	56	35	1631	91	511	31	253	2422	284
207	1700	31071	179	68	0	247	2606	429	42	0	470
208	146	45806	38	34	0	72	153	0	0	0	0
209	195	63750	33	20	0	53	509	0	0	0	0
210	96	75271	21	13	0	34	129	22	89	0	111
211	167	42589	27	14	0	41	285	463	958	0	1421
212	315	38063	72	177	0	249	335	254	9	0	263
213	384	48302	63	3	0	66	390	68	18	0	87
214	397	48302	88	17	0	105	446	0	3	0	3
215	397	48302	88	17	896	105	446	32	148	776	180
216	397	44457	88	17	0	105	446	7	1391	0	1398
217	116	53611	10	8	0	18	147	42	0	0	42
218	606	44457	47	58	722	105	1156	19	162	986	180
219	116	67031	10	8	0	18	147	0	0	0	0
220	103	34545	72	103	0	175	131	100	351	0	451
221	512	52795	24	16	0	40	596	3247	291	0	3538
222	409	52795	95	81	0	176	498	86	69	0	155
223	409	53694	95	81	0	176	498	622	444	0	1066
224	1252	45081	250	265	0	515	1748	77	379	0	456
225	87	45081	322	93	0	415	90	16	9575	0	9591
226	87	45081	322	93	200	415	90	2414	2388	116	4802
227	87	45081	322	93	0	415	90	401	3204	0	3606

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
228	87	45081	322	93	0	415	90	696	6481	0	7177
229	87	45081	322	93	0	415	90	334	3810	0	4144
230	87	45081	322	93	0	415	90	73	2120	0	2193
231	87	45081	322	93	0	415	90	0	2784	0	2784
232	87	6200	322	93	0	415	90	13	25	0	38
233	16	45081	809	0	0	809	16	153	8848	0	9001
234	87	45081	322	93	0	415	90	0	1644	892	1644
235	87	45081	322	93	0	415	90	0	6266	0	6266
236	87	35435	322	93	359	415	90	600	2736	299	3336
237	38	35435	780	2280	0	3060	38	61	6800	0	6861
238	358	64118	49	0	0	49	380	31	15	0	46
239	38	35435	780	2280	0	3060	38	4	8276	0	8280
240	38	35435	780	2280	0	3060	38	5	2730	0	2735
241	192	102230	39	13	462	52	361	8	75	1437	83
242	192	102230	39	13	0	52	361	0	0	0	0
243	145	34688	302	99	0	401	150	643	48	0	691
244	209	50400	121	172	0	293	399	0	0	0	0
245	286	50486	2156	1417	705	3573	590	70	71	686	141
246	337	78659	111	33	693	144	704	429	553	1084	982
247	64	8438	273	378	0	651	66	145	558	0	702
248	889	93447	119	41	0	160	1516	121	37	0	158
249	292	38750	712	321	0	1033	771	8	42	885	49
250	172	48750	33	20	0	53	223	188	1668	0	1856
251	217	53056	37	17	0	54	282	0	0	0	0
252	38	35435	780	2280	0	3060	38	0	8276	0	8276
253	38	35435	780	2280	0	3060	38	0	8276	0	8276
254	38	35435	780	2280	0	3060	38	0	5195	0	5195
255	38	35435	780	2280	0	3060	38	11	5216	0	5227
256	38	35435	780	2280	0	3060	38	0	8276	0	8276
257	38	35435	780	2280	0	3060	38	18	8368	0	8386
258	38	35435	780	2280	0	3060	38	15	8279	0	8295
259	38	35435	780	2280	0	3060	38	0	8276	0	8276
260	38	35435	780	2280	0	3060	38	0	2853	0	2853
261	38	35435	780	2280	0	3060	38	17	2733	0	2750
262	131	35691	14	19	0	33	153	0	0	0	0
263	131	35691	14	19	0	33	153	0	0	0	0
264	131	35691	14	19	0	33	153	0	0	0	0
265	72	21625	48	53	0	101	75	31	0	0	31

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
266	235	50234	28	33	507	61	286	0	116	633	116
267	205	46346	27	25	0	52	275	14	46	0	60
268	233	41042	85	13	0	98	306	12	43	0	55
269	87	41042	322	93	0	415	90	406	2607	0	3013
270	16	6200	809	0	0	809	16	0	0	0	0
271	42	90343	219	315	0	534	44	51	3	0	54
272	42	90343	219	315	0	534	44	0	0	0	0
273	16	6200	809	0	0	809	16	5	6	0	12
274	42	90343	219	315	0	534	44	83	65	0	147
275	16	6200	809	0	0	809	16	159	72	0	231
276	16	6200	809	0	0	809	16	533	257	0	790
277	671	57528	97	77	0	174	797	8	0	0	8
278	34	41250	721	543	0	1264	35	46	57	0	103
279	34	41250	721	543	0	1264	35	184	758	0	942
280	34	41250	721	543	0	1264	35	163	97	0	260
281	51	11597	101	79	0	180	54	388	280	0	669
282	34	41250	721	543	0	1264	35	778	1294	0	2072
283	34	41250	721	543	185	1264	35	39	34	137	73
284	98	60645	26	71	0	97	244	343	203	0	547
285	127	60089	64	111	0	175	164	7	32	0	39
286	264	60645	61	17	0	78	407	197	924	0	1122
287	98	60089	26	71	1615	97	244	555	374	1714	929
288	127	60645	64	111	0	175	164	12	28	0	39
289	264	46346	61	17	1422	78	407	39	43	1892	82
290	127	50234	64	111	0	175	164	0	0	0	0
291	233	50234	85	13	0	98	306	0	23	0	23
292	205	21625	27	25	0	52	275	31	15	0	46
293	235	21625	28	33	560	61	286	0	92	441	92
294	72	21625	48	53	0	101	75	31	31	0	62
295	72	50234	48	53	0	101	75	0	23	0	23
296	72	34250	48	53	0	101	75	0	11	0	11
297	235	46346	28	33	0	61	286	19	846	0	864
298	228	35081	68	6	0	74	277	0	12	0	12
299	205	35081	27	25	0	52	275	0	12	0	12
300	294	39028	36	37	0	73	357	2	0	0	2
301	294	35081	36	37	0	73	357	0	0	0	0
302	191	39028	21	28	0	49	252	0	0	0	0
303	294	43333	36	37	0	73	357	0	11	0	11

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
304	191	43333	21	28	420	49	252	0	20	558	20
305	156	34250	15	25	0	40	186	2	0	0	2
306	156	43333	15	25	0	40	186	0	0	0	0
307	228	43333	68	6	0	74	277	0	0	0	0
308	156	37386	15	25	379	40	186	0	31	294	31
309	156	37386	15	25	0	40	186	0	0	0	0
310	348	39406	46	32	2080	78	441	0	123	2150	123
311	348	39028	46	32	0	78	441	0	0	0	0
312	501	39406	210	159	0	369	674	0	0	0	0
313	191	36000	21	28	0	49	252	0	0	0	0
314	16	36000	809	0	0	809	16	19	0	0	19
315	501	49100	210	159	0	369	674	0	0	0	0
316	159	36000	69	72	0	141	203	0	0	0	0
317	159	42258	69	72	0	141	203	111	0	0	111
318	501	42258	39	14	0	53	677	0	0	0	0
319	159	49100	69	72	0	141	456	0	0	0	0
320	209	67031	12	16	0	28	262	0	0	0	0
321	209	67031	12	16	725	28	262	0	162	728	162
322	501	67031	39	14	0	53	677	0	0	0	0
323	103	52204	72	103	0	175	131	0	0	0	0
324	103	44457	72	103	0	175	131	0	0	0	0
325	103	44457	72	103	0	175	131	0	0	0	0
326	616	40547	98	84	0	182	778	0	0	0	0
327	116	40547	10	8	0	18	147	0	0	0	0
328	116	37400	10	8	0	18	147	0	0	0	0
329	113	37400	14	9	0	23	143	5	0	0	5
330	113	33917	14	9	0	23	396	0	0	0	0
331	198	33917	32	22	0	54	495	0	0	0	0
332	198	33917	32	22	0	54	495	0	0	0	0
333	209	33917	17	20	0	37	520	0	0	0	0
334	209	44918	17	20	0	37	520	16	0	0	16
335	209	44918	17	20	0	37	520	0	0	0	0
336	209	37400	17	20	0	37	520	0	0	0	0
337	160	44918	28	25	0	53	472	0	0	0	0
338	160	40547	28	25	0	53	472	0	0	0	0
339	198	40547	32	22	0	54	495	0	0	0	0
340	160	37400	28	25	662	53	472	0	66	1055	66
341	113	40547	14	9	0	23	396	0	0	0	0

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
342	113	40547	14	9	0	23	396	0	0	0	0
343	198	40547	32	22	0	54	495	3	0	0	3
344	113	66172	14	9	0	23	396	23	108	0	131
345	113	66172	14	9	0	23	143	23	108	0	131
346	113	66172	14	9	772	23	143	0	108	1511	108
347	328	66172	56	35	0	91	511	23	108	0	131
348	117	45806	56	30	0	86	153	23	108	0	131
349	117	45806	56	30	0	86	153	28	108	0	136
350	117	45806	56	30	0	86	153	3	0	0	3
351	195	66172	33	20	0	53	256	23	120	0	143
352	195	63750	33	20	0	53	256	23	108	0	131
353	195	66750	33	20	0	53	509	0	0	0	0
354	328	63750	56	35	0	91	511	0	0	0	0
355	96	40547	21	13	0	34	129	12	9	0	22
356	96	66172	21	13	0	34	129	23	108	0	131
357	96	44918	21	13	0	34	129	18	45	0	62
358	113	44918	14	9	0	23	396	0	0	0	0
359	328	44918	56	35	0	91	511	0	45	0	45
360	160	33917	28	25	0	53	472	0	0	0	0
361	160	41544	28	25	0	53	472	9	0	0	9
362	160	41544	28	25	0	53	472	9	6	602	15
363	209	41544	17	20	0	37	520	9	6	0	15
364	189	41544	38	46	350	84	519	0	46	0	46
365	189	45806	38	46	0	84	519	0	0	0	0
366	189	42130	38	46	0	84	519	0	8	0	8
367	189	42130	38	46	0	84	519	0	8	0	8
368	195	40893	33	20	0	53	509	0	8	0	8
369	244	42130	13	23	0	36	696	0	6	0	6
370	244	42130	13	23	0	36	696	0	6	0	6
371	58	42130	0	5	0	5	395	0	6	0	6
372	363	40893	54	22	0	76	758	0	601	0	601
373	363	40893	54	22	0	76	758	0	0	0	0
374	244	55265	13	23	780	36	696	0	85	975	85
375	58	55265	0	5	850	5	395	0	80	1171	80
376	58	52604	0	5	0	5	395	9	6	0	15
377	214	52604	31	54	0	85	730	9	6	0	15
378	214	29837	31	54	0	85	730	7	11	0	18
379	225	54141	24	74	0	98	632	7	11	0	18

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
380	225	54141	24	74	0	98	632	7	11	0	18
381	98	54141	26	71	0	97	497	7	0	0	7
382	149	29837	40	20	0	60	562	7	4632	0	4639
383	149	54141	40	20	0	60	562	0	11	0	11
384	149	29837	40	20	0	60	562	12	935	0	947
385	98	54141	26	71	0	97	244	0	0	0	0
386	149	29837	40	20	0	60	562	0	0	0	0
387	149	54141	40	20	0	60	562	0	0	0	0
388	149	29837	40	20	0	60	562	42	14	0	56
389	98	35542	26	71	0	97	497	0	924	0	924
390	29	35542	52	48	0	100	37	0	0	0	0
391	29	35542	52	48	0	100	37	0	924	0	924
392	29	35542	52	48	0	100	37	0	938	0	938
393	29	35542	52	48	0	100	37	0	0	0	0
394	29	35542	52	48	0	100	37	0	0	0	0
395	29	35542	52	48	0	100	37	0	0	0	0
396	29	35542	52	48	0	100	37	0	12	0	12
397	29	35542	52	48	0	100	37	0	12	0	12
398	29	35542	52	48	0	100	37	0	14	0	14
399	29	41042	52	48	0	100	37	0	0	0	0
400	233	35542	85	13	0	98	306	0	14	0	14
401	29	35542	52	48	0	100	37	0	14	0	14
402	29	50486	52	48	0	100	37	0	0	0	0
403	286	61458	2156	1417	0	3573	590	251	231	0	482
404	120	34688	63	79	0	142	198	184	15	0	200
405	334	102409	32	39	0	71	389	0	0	0	0
406	254	38125	404	313	0	717	676	993	897	0	1889
407	391	75197	528	425	0	953	714	430	382	0	812
408	420	55670	139	2	0	141	1000	430	382	0	812
409	601	54074	227	25	788	252	1031	0	193	525	193
410	336	74175	170	112	0	282	583	430	382	0	812
411	840	41847	134	26	0	160	1206	794	1122	0	1916
412	428	6200	296	371	663	667	601	75	66	640	141
413	337	78659	111	33	642	144	704	430	541	1022	971
414	337	78659	111	33	0	144	704	430	382	0	812
415	337	78659	111	33	0	144	704	430	382	0	812
416	337	50400	111	33	0	144	704	0	0	0	0
417	209	50400	121	172	0	293	399	0	9	0	9

TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
418	209	50400	121	172	0	293	399	0	0	0	0
419	225	52604	24	74	0	98	379	13	0	0	13
420	214	55265	31	54	0	85	477	0	0	0	0
421	962	58382	165	74	0	239	1378	25	114	0	139
422	372	61563	134	24	0	158	726	23	120	961	143
423	372	61563	134	24	1383	158	726	244	213	558	457
424	167	62865	27	14	0	41	285	43	25	0	68
425	67	75271	71	76	0	147	73	23	111	0	134
426	67	62865	71	76	0	147	73	261	325	0	586
427	67	62865	71	76	0	147	73	91	652	25	742
428	67	62865	71	76	0	147	73	11	45	0	56
429	87	62865	322	93	0	415	90	0	3546	0	3546
430	67	62865	71	76	0	147	73	11	339	0	350
431	493	24141	571	158	0	729	533	45	54	0	99
432	292	38750	712	321	0	1033	771	1169	186	0	1355
433	292	38750	712	321	0	1033	771	3784	274	0	4058
434	493	24141	571	158	0	729	533	176	225	58	401
435	246	40938	52	8	0	60	259	22	77	0	99
436	119	89850	85	93	0	178	123	15	18	0	34
437	192	102230	39	13	0	52	361	0	0	0	0
438	120	61458	63	79	0	142	198	306	231	0	537
439	59	32193	19	13	0	32	69	0	0	0	0
440	131	35691	14	19	0	33	153	0	0	0	0
441	120	61458	63	79	0	142	198	251	231	0	482
442	120	61458	63	79	0	142	198	262	231	0	493
443	131	35691	14	19	0	33	153	31	0	0	31
444	192	102230	39	13	0	52	361	0	0	0	0
445	192	102230	39	13	0	52	361	0	0	0	0
446	131	35691	14	19	0	33	153	0	0	0	0
447	59	32193	19	13	0	32	69	0	0	0	0
448	59	32193	19	13	0	32	69	0	0	0	0
449	99	36827	21	15	0	36	110	0	12	0	12
450	59	32193	19	13	0	32	69	0	0	0	0
451	59	32193	19	13	437	32	69	101	62	322	162
452	59	32193	19	13	0	32	69	0	0	0	0
453	59	32193	19	13	0	32	69	0	0	0	0
454	59	32193	19	13	0	32	69	0	0	0	0
455	59	37857	19	13	0	32	69	0	12	0	12

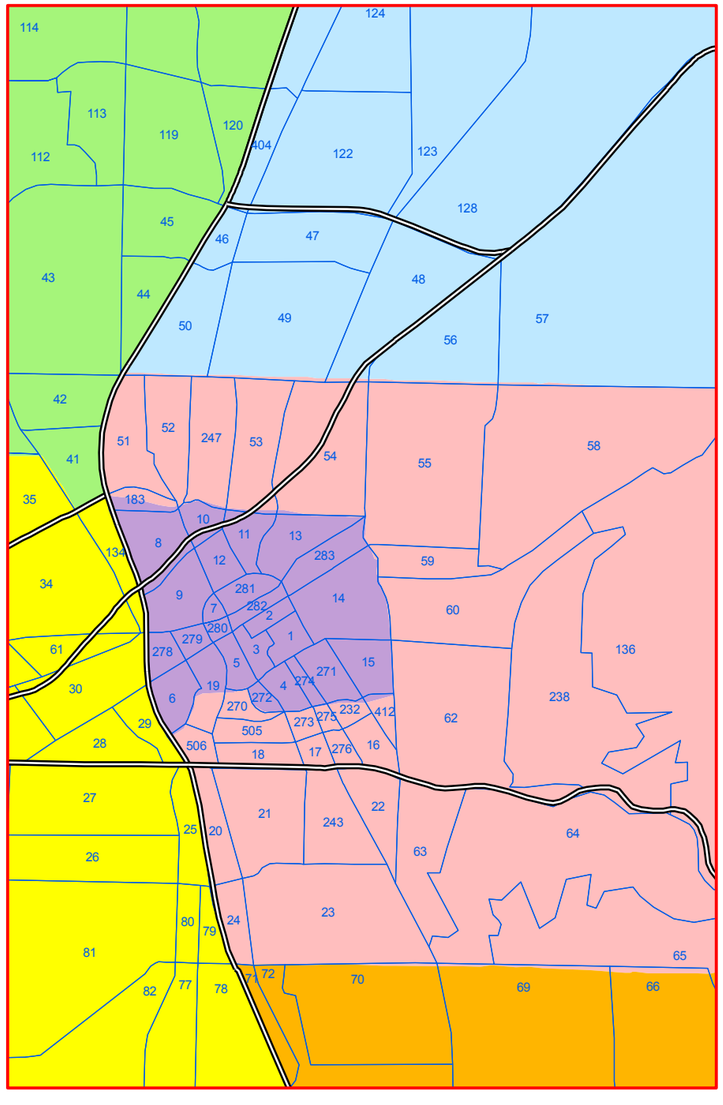
TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
456	59	32193	19	13	0	32	69	101	0	0	101
457	116	32193	17	15	0	32	139	0	0	0	0
458	116	29896	17	15	0	32	139	167	18	0	186
459	116	29896	17	15	0	32	139	14	31	0	45
460	116	29896	17	15	0	32	139	0	12	0	12
461	161	29896	40	5	0	45	215	0	12	0	12
462	120	37857	50	65	0	115	123	3	31	0	34
463	161	37857	40	5	0	45	215	2	31	0	32
464	116	29896	17	15	0	32	139	5	12	0	17
465	116	29896	17	15	0	32	139	0	12	0	12
466	116	29896	17	15	890	32	139	0	99	1055	99
467	69	41023	11	9	0	20	71	0	0	0	0
468	69	41023	11	9	0	20	71	0	0	0	0
469	69	41023	11	9	0	20	71	0	0	0	0
470	69	41023	11	9	0	20	71	0	0	0	0
471	69	41023	11	9	0	20	71	0	0	0	0
472	69	41023	11	9	0	20	71	0	0	0	0
473	69	41023	11	9	0	20	71	0	0	0	0
474	99	36827	21	15	0	36	110	0	0	0	0
475	99	36827	21	15	0	36	110	0	0	0	0
476	69	41023	11	9	0	20	71	0	0	0	0
477	131	35691	14	19	0	33	153	0	0	0	0
478	59	32193	19	13	0	32	69	0	0	0	0
479	124	40583	21	29	0	50	146	0	0	0	0
480	124	40583	21	29	0	50	146	0	0	0	0
481	424	70722	167	12	0	179	437	329	29	0	358
482	301	27899	329	275	0	604	295	545	405	0	951
483	209	22000	121	172	0	293	399	0	0	0	0
484	159	36000	69	72	0	141	203	0	0	0	0
485	116	52795	10	8	0	18	147	26	14	0	39
486	420	75271	139	2	710	141	1000	0	174	989	174
487	391	38125	528	425	0	953	714	0	0	0	0
488	217	53056	37	17	0	54	282	0	0	0	0
489	172	48750	33	20	0	53	223	37	217	0	254
490	217	53056	37	17	740	54	282	0	162	710	162
491	103	24554	171	553	0	724	105	736	4993	0	5729
492	428	41847	296	371	0	667	601	430	382	0	812
493	98	29837	26	71	0	97	244	0	11	0	11

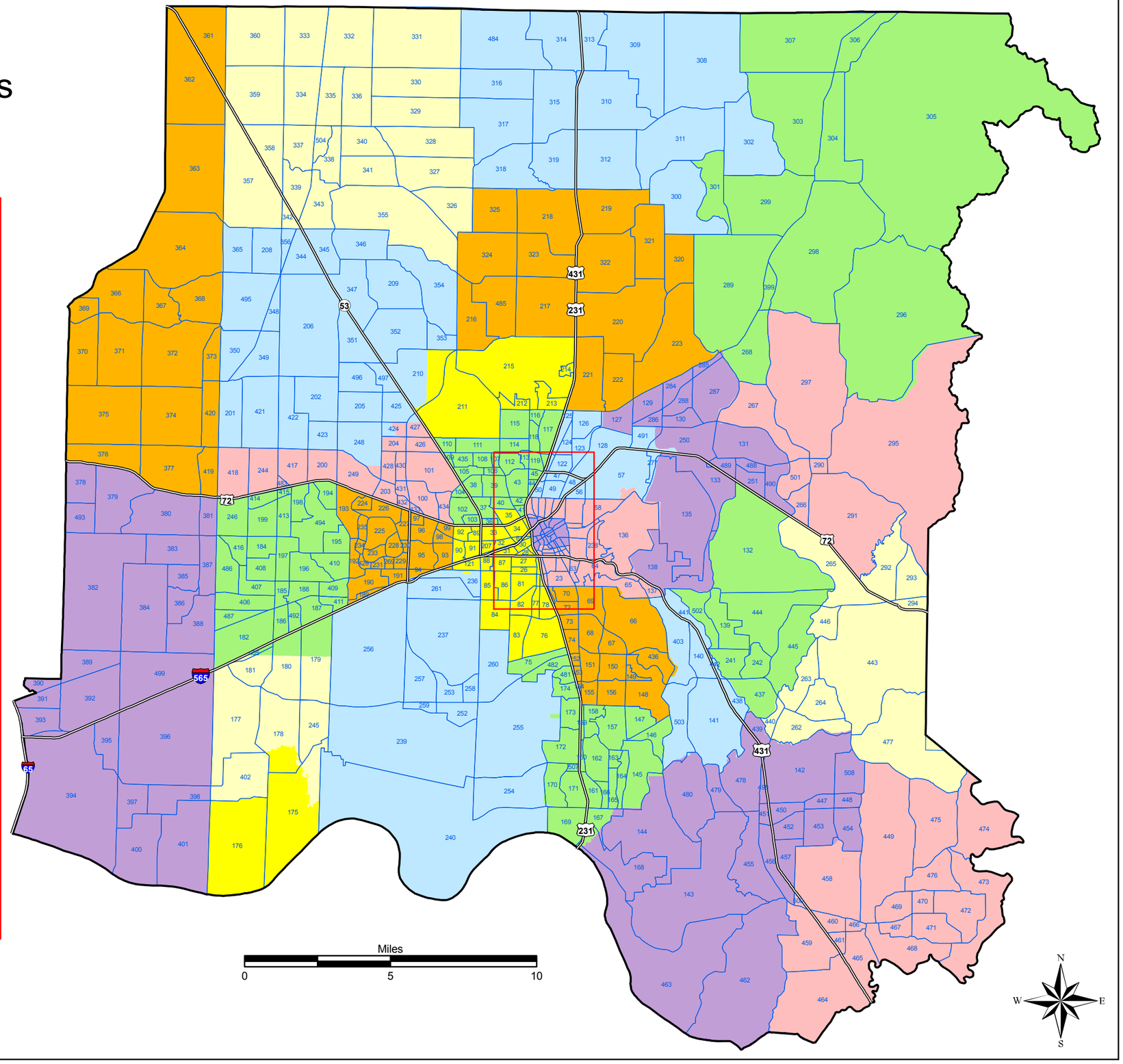
TAZ ZONE	2005 Households	2005 Income	2005 Retail	2005 Non-Retail	2005 School Enroll-ment	2005 Total Employ-ment	2035 Households	2035 Retail	2035 Non-Retail	2035 School Enroll-ment	2035 Total Employ-ment
494	425	83378	120	51	0	171	966	430	382	0	812
495	195	45806	33	20	0	53	509	0	0	0	0
496	167	75271	27	14	0	41	285	71	108	0	179
497	167	75271	27	14	0	41	285	23	92	0	116
498	59	32193	19	13	0	32	69	0	0	0	0
499	29	35542	52	48	0	100	37	7	938	0	945
500	116	29896	17	15	0	32	139	0	0	0	0
501	205	49563	27	25	0	52	275	0	0	0	0
502	192	102230	39	13	0	52	361	0	0	0	0
503	120	61458	63	79	0	142	198	2	0	0	2
504	160	44918	28	25	0	53	472	0	0	0	0
505	16	6200	809	0	0	809	16	357	9	0	367
506	16	6200	809	0	0	809	16	196	96	0	291
507	268	32193	66	150	0	216	343	196	8	0	203
508	59	45917	19	13	0	32	69	0	0	0	0
Total	**123,692**	**N/A**	**122,644**	**98,882**	**50,614**	**221,526**	**174,574**	**101,490**	**306,398**	**58,445**	**407,881**

Source: Bureau of Economic Analysis, U.S. Department of Commerce and the U.S. Census Bureau

Map 3-1:
Year 2005 Traffic Analysis Zones

Downtown and Surrounding Area





*The various colors used depict "subareas" within the MPO Study Area.
The map displayed on page 8-22 further defines the subareas by name.

Section 4

HIGHWAY ELEMENT

4.0 Introduction

The plan development process involved building and testing alternate street plans until an acceptable plan evolved for adoption. This process basically followed three steps:

1. Alternate Plan Development or Modification;
2. Assignment of Year 2035 Traffic; and
3. Alternate Plan Evaluation Based on Future Traffic Assignment.

This procedure was repeated for each alternate considered. The selected plan includes expansion of arterial and collector systems, upgrading some existing arterial highways to expressways, and constructing new freeways and expressways.

4.1 The Adopted Highway Plan

The Huntsville Long-Range Highway Plan is shown on **Map 4.1** and at **Table 4.1.** The maps are further divided into quadrants. **Maps 4.1A, 4.1B, 4.1C,** and **4.1D** provide a closer snapshot of proposed road projects. All roads, interchanges, and maintenance & operations projects that are indicated on the map in red are visionary projects. This means that no funding has been identified for the projects. All roads, interchanges, and maintenance & operations projects that are indicated on the map in blue are classified as financially constrained projects, and funding has been identified for these projects. More information concerning the financial status of the projects can be found in **Section 10**.

All projects have accommodations for bicycle and pedestrian facilities, except where noted in **Table 4.1.** Certain locations cannot accommodate pedestrians and/or bicycles because the corridor is a limited access or controlled access roadway, such as I-565, Memphis to Atlanta Highway, Southern Bypass, Research Park Boulevard, and the Weatherly Road Extension to the Southern Bypass. Some corridors identified for improvement, such as Memorial Parkway/U.S. 231, U.S. 72 East, and U.S. 72 West are U.S. routes and carry high volumes of traffic. The cost of constructing the *appropriate* bicycle and pedestrian facilities for these corridors is cost prohibitive at the present time. All City of Huntsville projects will include right of way, curbs, gutters, and sidewalks in accordance with the city's subdivision regulations. Refer to **Section 7** for additional information and policies concerning the accommodation of bicyclists and pedestrians in regard to the long range transportation plan.

Map 4.1

Year 2035 Transportation Plan Corridor Improvement Projects

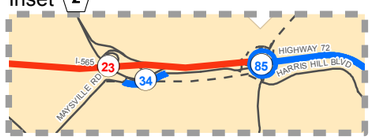
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Huntsville Area Transportation Study

Inset 1



Inset 2



Maintenance & Operation Projects
- Financially Constrained
- Visionary

Capacity Projects
- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
A	Four Mile Post Rd @ Whitesburg Dr	Signal & major geometric improvements to Four Mile Post Rd approach
B	Enterprise Way @ University Dr*	Reduce island width or eliminate to construct additional north bound approach lane to University Dr.
C	Caldwell Ln @ Hwy 431	Construction of west to north right turn lane and acceleration lane on Hwy 431
D	Old Madison Pike @ Research Park Blvd*	Construct joint use pedestrian & bicycle bridge and sidewalk approaches across Research Park Blvd
E	Explorer Dr @ Pegasus Rd	New traffic signal installation
F	Enterprise Way: Moore Farm to University Dr*	Add signal, left turn restrictions island at shopping center exits, a sidewalk, plus 3rd left turn lane to University Dr
G	County Line Rd @ Hwy 72	Upgrade displays, phasing and timings, and geometric improvements
H	Church St Bridge @ Big Spring Park	Construct bridge to improve pedestrian access to Big Spring Park and reduce vehicular & pedestrian conflicts

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CAPACITY PROJECTS

	ROADWAY	FROM	TO
1	Ardmore Hwy-AL 53	Research Park Blvd	Jeff Rd
2	Ardmore Hwy-AL 53	Jeff Rd	North of Harvest Rd
3	Ardmore Hwy-AL 53	North of Harvest Rd	Tennessee State Line
4	Balch Rd	Browns Ferry Rd	Gooch Ln
5	Balch Rd	Capshaw Rd	Gooch Ln
6	Balch Rd Extension	Browns Ferry Rd	Madison Blvd
7	Beadle Ln	Swancott Rd	Zierdt Rd
8	Blake Bottom Rd	Jeff Rd	Research Park Blvd
9	Brock Rd	U.S. 72 East	Ryland Pike
10	Browns Ferry Rd	Mooresville Rd	County Line Rd
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd
12	Church St	Monroe St	Oakwood Ave
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431
14	Eastern Bypass (PH 2)	Quarter Ln	U.S. 72 East
15	Eastview Dr	Slaughter Rd	Hughes Rd
16	Eastview Dr Extension	Hughes Rd	Sullivan St
17	Greenbrier Rd/Powell Rd Ext	North of I-565	U.S. 72 West
18	Hobbs Island Rd	U.S. 231	U.S. 431
19	Homer Nance Rd	Jordan Rd	Winchester Rd
20	Hughes Rd	Old Madison Pike	U.S. 72 West
21	Hughes Rd Extension	U.S 72 West	Wall Triana Hwy
22	I 565	Interstate 65	Wall Triana Hwy
23	I 565	Oakwood Ave	High Mtn Road
24	I-565 Interchange*	County Line Rd	
25	I-565 Interchange*	Greenbrier Rd	
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd
27	Jeff Rd (Ph 2)	Capshaw Rd	AL 53
28	Johns Road	Plummer Road	University Dr
29	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East
30	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd
31	King Drake Rd - 431 Connector	King Drake Rd	US 431
32	Martin Rd	Zierdt Rd	Laracy Dr.
33	Martin Rd	Zierdt Road	Rideout Rd
34	Maysville Rd Connector	Maysville Rd	Epworth Dr
35	Memorial Pkwy Interchange*	N. of Whitesburg-S. of Golf Rd	
36	Memorial Pkwy Interchange	Mastin Lake Rd	
37	Memorial Pkwy Interchange	Winchester Rd	
38	Memorial Pkwy Interchange	Meridianville Bottom Rd	
39	Memorial Pkwy Interchange	Patterson Ln	
40	Memorial Pkwy Interchange	Walker Ln	
41	Memorial Pkwy Interchange*	Mtn. Gap Rd/Hobbs Rd	
42	Memorial Pkwy Interchange	Green Cove Rd	
43	Memorial Pkwy Interchange	Hobbs Island Rd	
44	Memphis to Atlanta Highway	I-65	I-565
45	Memphis to Atlanta Highway	Southern Bypass	Marshall County Limits
46	Meridian St	Winchester Rd	Memorial Pkwy
47	Meridian St (PH 1)	Oakwood Ave	Pratt Ave
48	Mill Road	County Line Rd	Hughes Rd
49	Moontown Rd	Ryland Pike	U.S. 72 East
50	Moores Mill Rd	Winchester Rd	Northern Bypass
51	Mt Lebannon	Grimwood Rd	Northern Bypass
52	Nance Rd	University Dr	Capshaw Rd
53	Northern Bypass (PH 2)	East of Pulaski Pike	U.S. 231
54	Northern Bypass (PH 3)	U.S. 231	Moores Mill Rd
55	Northern Bypass (PH 4)	Moores Mill Rd	Winchester Rd
56	Northern Bypass (PH 5)	Winchester Rd	U.S. 72 East
57	Oakwood Rd	Adventist Blvd	Research Park Blvd
58	Old 431 Hwy	Highway 431	Wilson Mann Rd
59	Old Big Cove Rd	Hwy 431	Sutton Rd
60	Old Big Cove Rd	South Green Mountain Rd	Highway 431
61	Old Hwy 20	Greenbrier Rd	County Line Rd
62	Old Madison Pike	Thornton Industrial Park	Slaughter Rd
63	Old Madison Pike	Hughes Rd	Slaughter Rd
64	Old Railroad Bed Rd (PH 1)	U.S. 72 West	Capshaw Rd
65	Old Railroad Bed Rd (PH 2)	Capshaw Rd	AL Hwy 53
66	Patton Rd	Aerobee Rd	Redstone Rd
67	Plummer Rd	Research Park Blvd	Indian Creek Rd
68	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension
69	Powell Rd	Powell Rd	Browns Ferry Rd
70	Research Park Blvd & Interchanges	I-565	Ardmore Hwy - AL 53
71	Ryland Pike	U.S. 72 East	Northern Bypass
72	Shelton Rd	Madison Blvd	1/4 mi N. of Madison Blvd
73	Shields Rd	Jordan Rd	Winchester Rd
74	Slaughter Road	Madison Blvd	U.S. 72 West
75	Southern Bypass (PH 1)	I-565	Martin Rd
76	Southern Bypass (PH 2)	Martin Rd	Weatherly Rd Extension
77	Southern Bypass (PH 3)	Weatherly Rd Extension	U.S. 231
78	Sullivan St	Royal Dr	Front St
79	Swancott Rd	I-565	County Line Rd
80	U.S. 72 East/ARC Corr V Interchange*	Moores Mill Rd & Shields Rd	
81	U.S. 72 East/ARC Corr V Interchange	Jordan Rd Extended	
82	U.S. 72 East/ARC Corr V Interchange	Moontown Rd	
83	U.S. 72 East/ARC Corr V Interchange	Brock Rd	
84	U.S. 72 East/ARC Corr V Interchange	Eastern Bypass	
85	U.S. 72 East/ARC Corr V Interchange	High Mountain Rd	
86	U.S. 72/University Dr*	Providence Main Blvd	County Line Rd
87	U.S. 72/University Dr	County Line Rd	Mooresville Rd
88	Wall Triana Hwy	Mill Rd	U.S. 72 West
89	Wall Triana Hwy	U.S. 72 West	Capshaw Rd
90	Wall Triana Hwy	Capshaw Rd	Yarborough Rd
91	Weatherly Rd Extension	Memorial Pkwy	Southern Bypass
92	Winchester Rd (PH 2)	Dominion Cir	Naugher Rd
93	Winchester Rd (PH 3)	Naugher Rd	Bell Factory Rd
94	Winchester Rd (PH 4)	Bell Factory Rd	State Line
95	Zierdt Rd (PH 1)*	Madison Blvd	South of Martin Rd
96	Zierdt Rd (PH 2)	South of Martin Rd	Beadle Ln
97	Zierdt Rd Extension	1/4 mi N. of Madison Blvd	Old Madison Pike

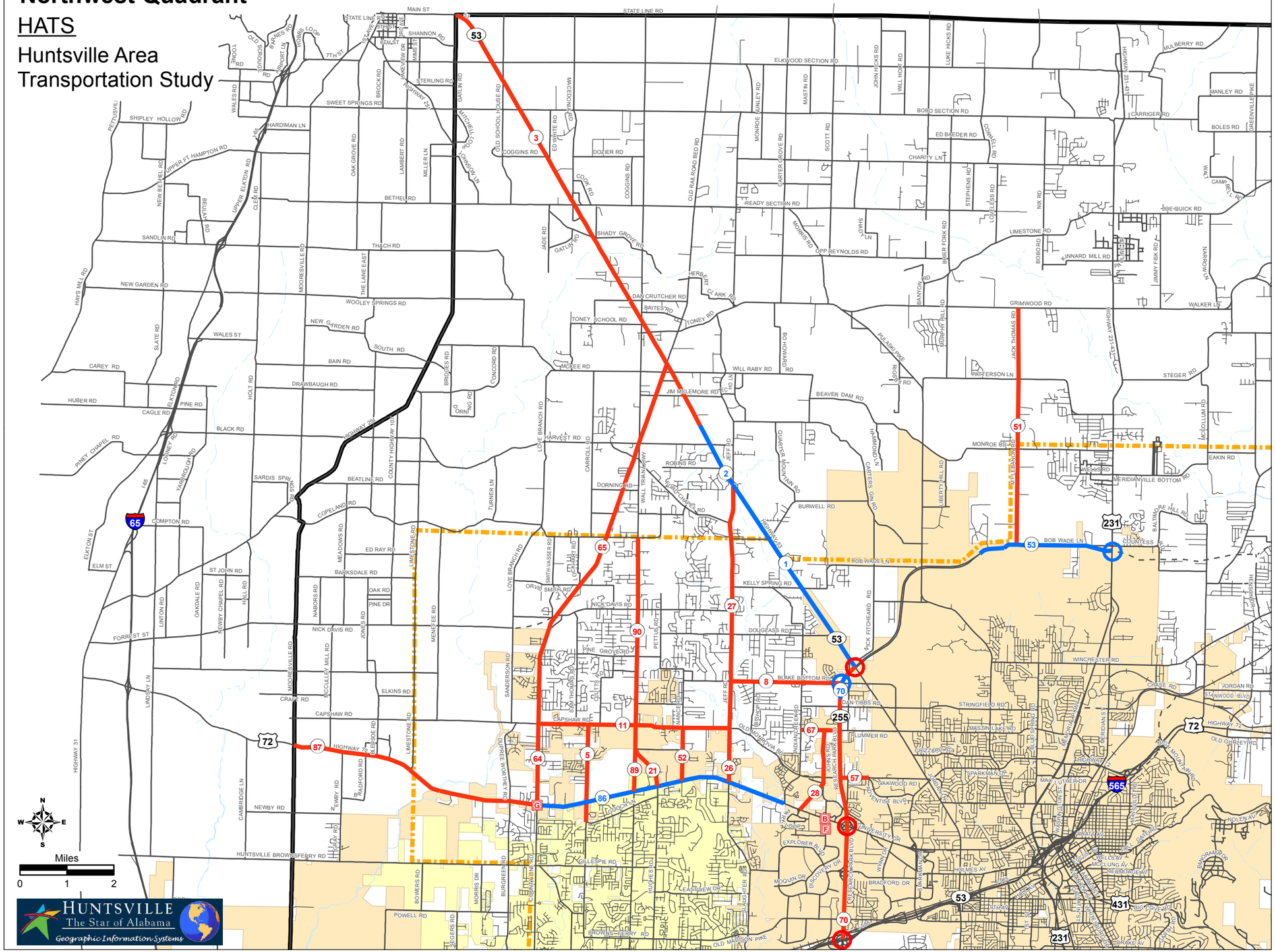
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1A

Year 2035 Transportation Plan
Corridor Improvement Projects
Northwest Quadrant

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Huntsville Area
Transportation Study



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- Visionary Maintenance & Operation Projects

Capacity Projects

- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Streets
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

VISIONARY MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
B	Enterprise Way @ University Dr*	Reduce island w idth or eliminate to construct additional north bound approach lane to University Dr.
F	Enterprise Way: Moore Farm to University Dr*	Add signal, left turn restrictions island at shopping center exits, a sidew alk, plus 3rd left turn lane to University Dr
G	County Line Rd @ Hw y 72	Upgrade displays, phasing and timings, and geometric improvements

CAPACITY PROJECTS

	ROADWAY	FROM	TO
1	Ardmore Hw y-AL 53	Research Park Blvd	Jeff Rd
2	Ardmore Hw y-AL 53	Jeff Rd	North of Harvest Rd
3	Ardmore Hw y-AL 53	North of Harvest Rd	Tennessee State Line
5	Balch Rd	Capshaw Rd	Gooch Ln
8	Blake Bottom Rd	Jeff Rd	Research Park Blvd
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd
21	Hughes Rd Extension	U.S 72 West	Wall Triana Hw y
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd
27	Jeff Rd (Ph 2)	Capshaw Rd	AL 53
28	Johns Road	Plummer Road	University Dr
51	Mt Lebannon	Grimw ood Rd	Northern Bypass
52	Nance Rd	University Dr	Capshaw Rd
53	Northern Bypass (PH 2)	East of Pulaski Pike	U.S. 231
57	Oakw ood Rd	Adventist Blvd	Research Park Blvd
64	Old Railroad Bed Rd (PH 1)	U.S. 72 West	Capshaw Rd
65	Old Railroad Bed Rd (PH 2)	Capshaw Rd	AL Hw y 53
67	Plummer Rd	Research Park Blvd	Indian Creek Rd
70	Research Park Blvd & Interchanges	I-565	Ardmore Hw y - AL 53
86	U.S. 72/University Dr*	Providence Main Blvd	County Line Rd
87	U.S. 72/University Dr	County Line Rd	Mooresville Rd
89	Wall Triana Hw y	U.S. 72 West	Capshaw Rd
90	Wall Triana Hw y	Capshaw Rd	Yarborough Rd

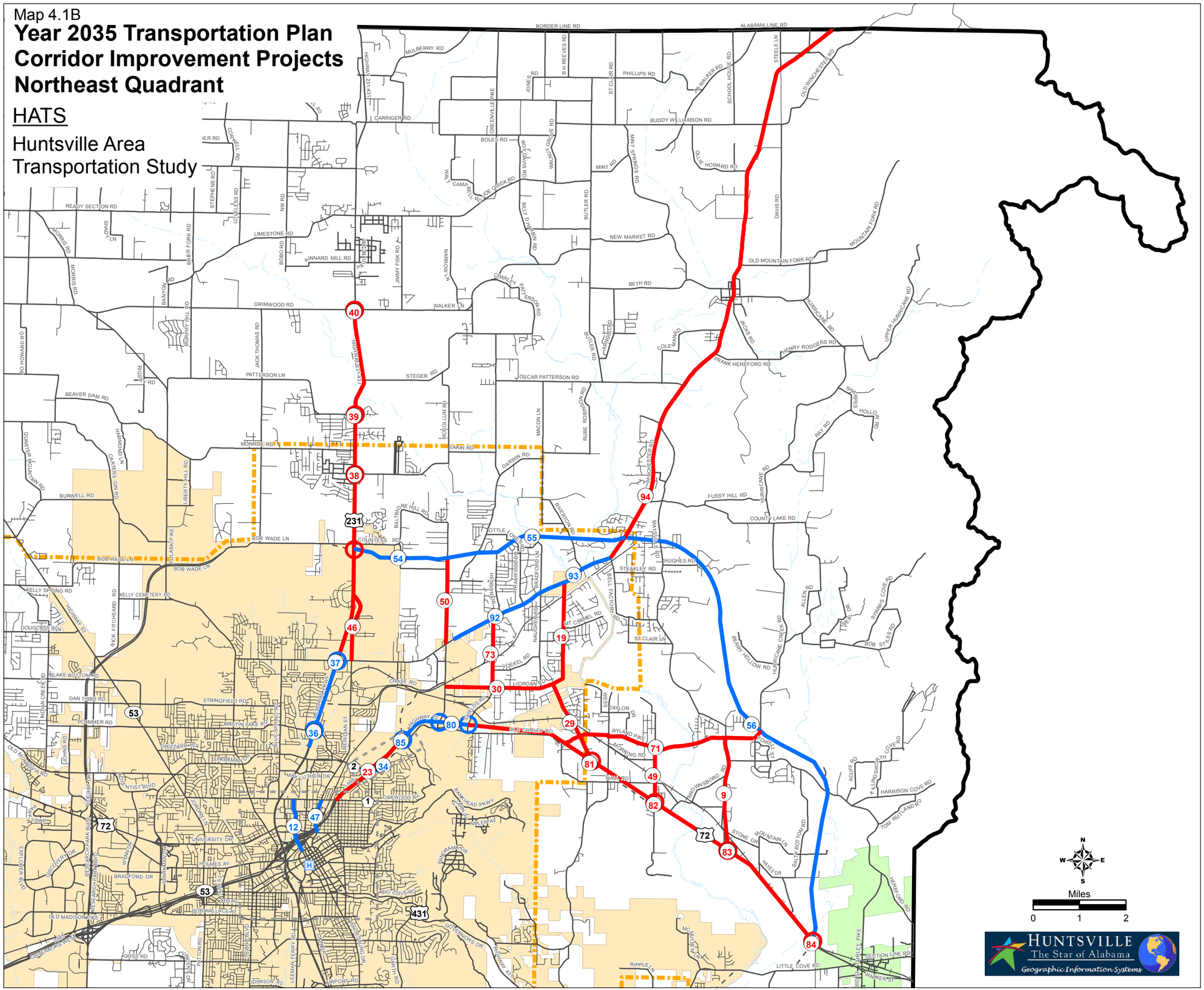
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

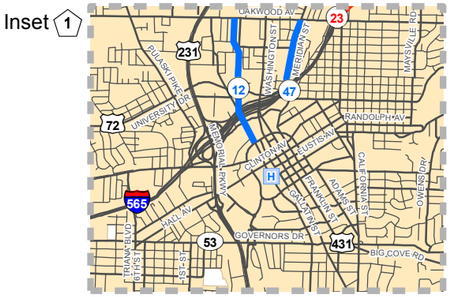
Map 4.1B

Year 2035 Transportation Plan
Corridor Improvement Projects
Northeast Quadrant

HATS

Huntsville Area
Transportation Study







Financially Constrained Maintenance & Operation Projects

Capacity Projects

- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

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CAPACITY PROJECTS			
	ROADWAY	FROM	TO
9	Brock Rd	U.S. 72 East	Ryland Pike
12	Church St	Monroe St	Oakwood Ave
19	Homer Nance Rd	Jordan Rd	Winchester Rd
23	I565	Oakwood Ave	High Mtn Road
29	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East
30	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd
34	Maysville Rd Connector	Maysville Rd	Epworth Dr
36	Memorial Pkwy Interchange	Mastin Lake Rd	
37	Memorial Pkwy Interchange	Winchester Rd	
38	Memorial Pkwy Interchange	Meridianville Bottom Rd	
39	Memorial Pkwy Interchange	Patterson Ln	
40	Memorial Pkwy Interchange	Walker Ln	
46	Meridian St	Winchester Rd	Memorial Pkwy
47	Meridian St (PH 1)	Oakwood Ave	Pratt Ave
49	Moontown Rd	Ryland Pike	U.S. 72 East
50	Moores Mill Rd	Winchester Rd	Northern Bypass
54	Northern Bypass (PH 3)	U.S. 231	Moores Mill Rd
55	Northern Bypass (PH 4)	Moores Mill Rd	Winchester Rd
56	Northern Bypass (PH 5)	Winchester Rd	U.S. 72 East
71	Ryland Pike	U.S. 72 East	Northern Bypass
73	Shields Rd	Jordan Rd	Winchester Rd
80	U.S. 72 East/ARC Corr V Interchange*	Moores Mill Rd & Shields Rd	
81	U.S. 72 East/ARC Corr V Interchange	Jordan Rd Extended	
82	U.S. 72 East/ARC Corr V Interchange	Moontown Rd	
83	U.S. 72 East/ARC Corr V Interchange	Brock Rd	
84	U.S. 72 East/ARC Corr V Interchange	Eastern Bypass	
85	U.S. 72 East/ARC Corr V Interchange	High Mountain Rd	
92	Winchester Rd (PH 2)	Dominion Cir	Naugher Rd
93	Winchester Rd (PH 3)	Naugher Rd	Bell Factory Rd
94	Winchester Rd (PH 4)	Bell Factory Rd	State Line

MAINTENANCE AND OPERATION PROJECTS		
	LOCATION	PROJECT DESCRIPTION
H	Church St Bridge @ Big Spring Park	Construct bridge to improve pedestrian access to Big Spring Park and reduce vehicular & pedestrian conflicts

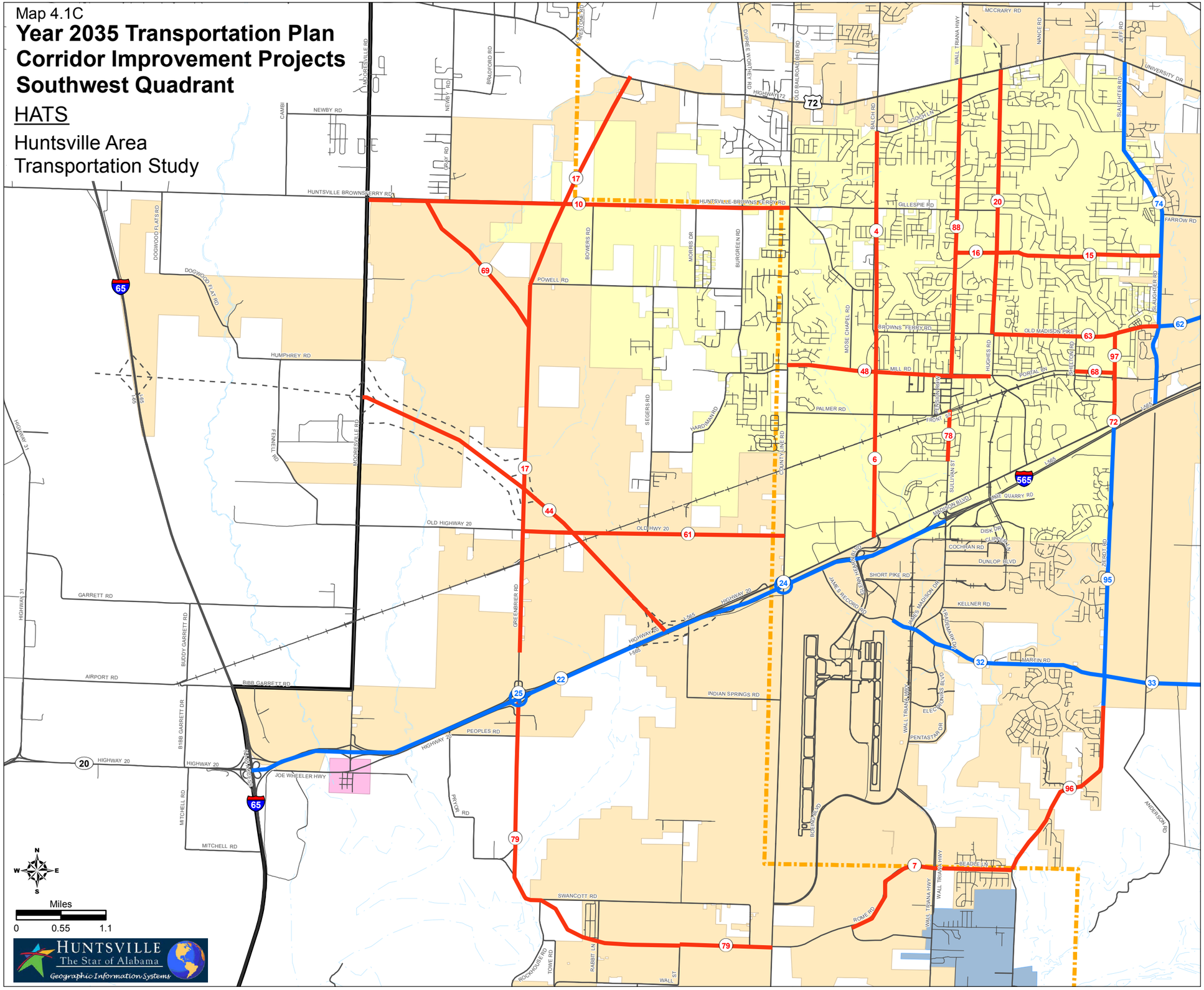
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1C

Year 2035 Transportation Plan
Corridor Improvement Projects
Southwest Quadrant

HATS

Huntsville Area
Transportation Study



HUNTSVILLE
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Geographic Information Systems

- Visionary Maintenance & Operation Projects

Capacity Projects

- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Streets
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

VISIONARY MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
D	Old Madison Pike @ Research Park Blvd*	Construct joint use pedestrian & bicycle bridge and sidew alk approaches across Research Park Blvd
E	Explorer Dr @ Pegasus Rd	New traffic signal installation

CAPACITY PROJECTS

	ROADWAY	FROM	TO
4	Balch Rd	Brow ns Ferry Rd	Gooch Ln
6	Balch Rd Extension	Brow ns Ferry Rd	Madison Blvd
7	Beadle Ln	Sw ancott Rd	Zierdt Rd
10	Brow ns Ferry Rd	Mooresville Rd	County Line Rd
15	Eastview Dr	Slaughter Rd	Hughes Rd
16	Eastview Dr Extension	Hughes Rd	Sullivan St
17	Greenbrier Rd/Pow ell Rd Ext	North of I-565	U.S. 72 West
20	Hughes Rd	Old Madison Pike	U.S. 72 West
22	I 565	Interstate 65	Wall Triana Hw y
24	I-565 Interchange*	County Line Rd	
25	I-565 Interchange*	Greenbrier Rd	
32	Martin Rd	Zierdt Rd	Laracy Dr.
33	Martin Rd	Zierdt Road	Rideout Rd
44	Memphis to Atlanta Highw ay	I-65	I-565
48	Mill Road	County Line Rd	Hughes Rd
61	Old Hw y 20	Greenbrier Rd	County Line Rd
62	Old Madison Pike	Thornton Industrial Park	Slaughter Rd
63	Old Madison Pike	Hughes Rd	Slaughter Rd
68	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension
69	Pow ell Rd	Pow ell Rd	Brow ns Ferry Rd
72	Shelton Rd	Madison Blvd	1/4 mi N. of Madison Blvd
74	Slaughter Road	Madison Blvd	U.S. 72 West
78	Sullivan St	Royal Dr	Front St
79	Sw ancott Rd	I-565	County Line Rd
88	Wall Triana Hw y	Mill Rd	U.S. 72 West
95	Zierdt Rd (PH 1)*	Madison Blvd	South of Martin Rd
96	Zierdt Rd (PH 2)	South of Martin Rd	Beadle Ln
97	Zierdt Rd Extension	1/4 mi N. of Madison Blvd	Old Madison Pike

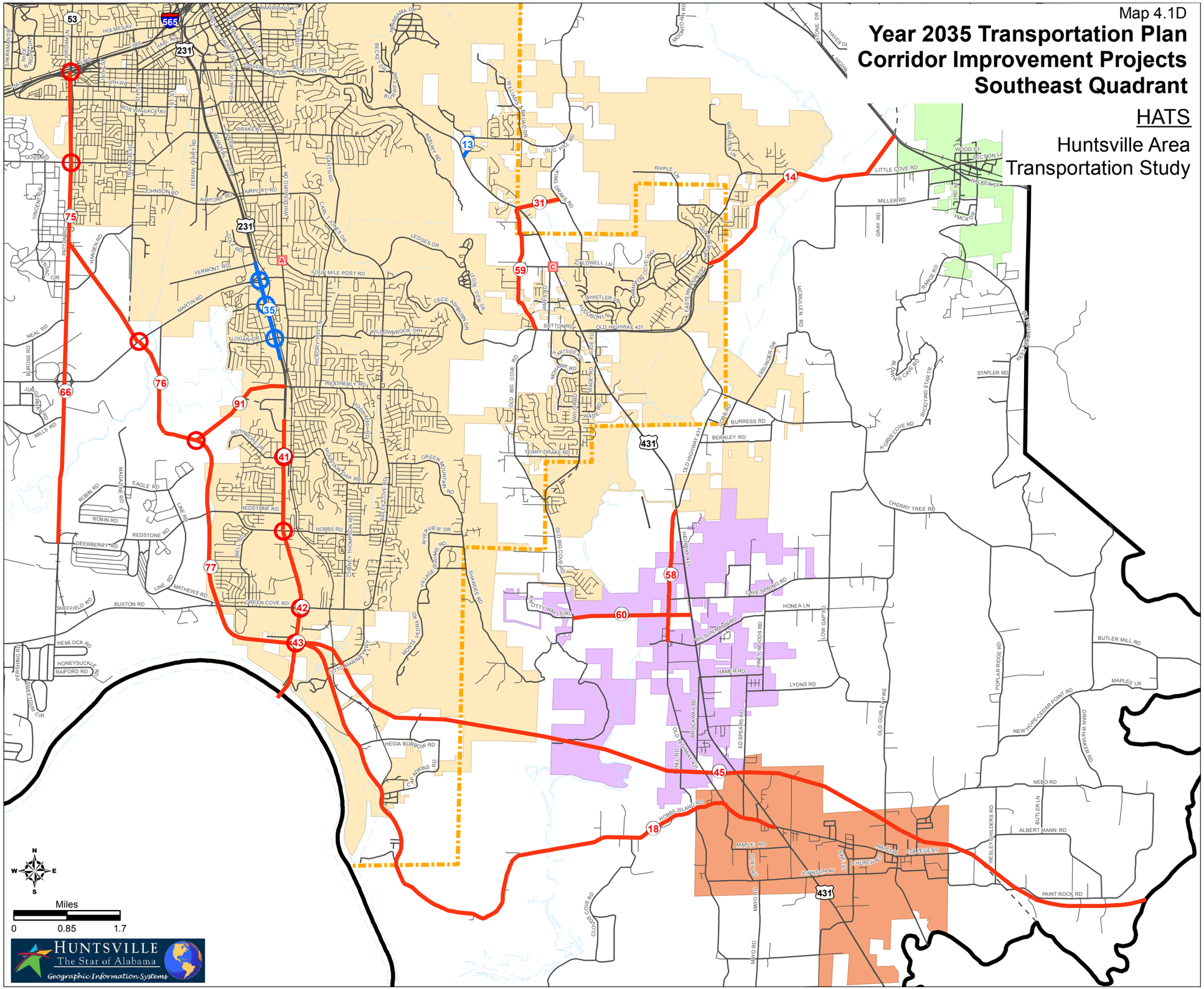
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1D

Year 2035 Transportation Plan Corridor Improvement Projects Southeast Quadrant

HATS

Huntsville Area Transportation Study



Visionary Maintenance & Operation Projects

Capacity Projects

- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Streets
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

VISIONARY MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
A	Four Mile Post Rd @ Whitesburg Dr	Signal & major geometric improvements to Four Mile Post Rd approach
C	Caldwell Ln @ Hwy 431	Construction of west to north right turn lane and acceleration lane on Hwy 431

CAPACITY PROJECTS

	ROADWAY	FROM	TO
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431
14	Eastern Bypass (PH 2)	Quarter Ln	U.S. 72 East
18	Hobbs Island Rd	U.S 231	U.S. 431
31	King Drake Rd - 431 Connector	King Drake Rd	US 431
35	Memorial Pkwy Interchange*	N. of Whitesburg-S. of Golf Rd	
41	Memorial Pkwy Interchange*	Mtn. Gap Rd/Hobbs Rd	
42	Memorial Pkwy Interchange	Green Cove Rd	
43	Memorial Pkwy Interchange	Hobbs Island Rd	
45	Memphis to Atlanta Highway	Southern Bypass	Marshall County Limits
58	Old 431 Hwy	Highway 431	Wilson Mann Rd
59	Old Big Cove Rd	Hwy 431	Sutton Rd
60	Old Big Cove Rd	South Green Mountain Rd	Highway 431
66	Patton Rd	Aerobee Rd	Redstone Rd
75	Southern Bypass (PH 1)	I-565	Martin Rd
76	Southern Bypass (PH 2)	Martin Rd	Weatherly Rd Extension
77	Southern Bypass (PH 3)	Weatherly Rd Extension	U.S. 231
91	Weatherly Rd Extension	Memorial Pkwy	Southern Bypass

HUNTSVILLE The Star of Alabama Geographic Information Systems

* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Table 4.1: Year 2035 Long Range Transportation Plan
Capacity Projects

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
*1	Ardmore Hwy–AL 53	Research Park Blvd	Jeff Rd	5	MjA	2	C	A	PBL	The purpose of this project is to improve traffic flow, LOS, and enhance regional connectivity.
*2	Ardmore Hwy-AL 53	Jeff Rd	North of Harvest Rd	2.4	MjA	2	C	A	PBL	The purpose of this project is to improve traffic flow, LOS, and enhance regional connectivity.
3	Ardmore Hwy-AL 53	North of Harvest Rd	Tennessee State Line	5.7	MjA	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow, LOS, and enhance regional connectivity.
4	Balch Rd	Browns Ferry Rd	Gooch Ln	0.75	MjC	2	C	C	PGSP	The purpose of this project is to reduce travel delay.
5	Balch Rd	Capshaw Rd	Gooch Ln	2.2	MjC	2	C	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
6	Balch Rd Extension	Browns Ferry Rd	Madison Blvd	2.5	MnA	0	N/A	A	PBR, SW	The purpose of this project is to improve traffic flow and provide needed connectivity/access in the City of Madison.
7	Beadle Ln	Swancott Rd	Zierdt Rd	2	MnC	2	D	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
8	Blake Bottom Rd	Jeff Rd	Research Park Blvd	.8	MnC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
9	Brock Rd	U.S. 72 East	Ryland Pike	2.5	MnC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
10	Browns Ferry Rd	Mooresville Rd	County Line Rd	5	MnC	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd	2	MjC	2	C	C	PBL, SW	The purpose of this project is to reduce travel delay.
12	Church St	Monroe St	Oakwood Ave	1.3	MjC	2	C	B	BR, SW	The purpose of this project is to improve traffic flow and LOS.
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431	1.5	MjC	2	B	A	BR, SW	The purpose of this project is to improve traffic flow and LOS.
14	Eastern Bypass (Ph 2)	Quarter Ln	U.S. 72 East	3.7	MjA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
15	Eastview Dr	Slaughter Rd	Hughes Rd	.5	MjC	2	A	C	PGSP	The purpose of this project is to add corridor capacity to handle increased traffic flow.
16	Eastview Dr Extension	Hughes Rd	Sullivan St	2	MnC	0	N/A	D	PGSP	The purpose of this project is to improve traffic flow and provide needed connectivity/access in the City of Madison.
17	Greenbrier Rd/Powell Rd Extension	North of I-565	U.S. 72 West	8	MnA	2	A	A	PBL, SW	The purpose of this project is to add corridor capacity and provide connectivity to U.S. 72 West.
18	Hobbs Island Rd	U.S. 231	U.S. 431	11.5	MjA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
19	Homer Nance Rd	Jordan Rd	Winchester Rd	2	MjC	2	B	A	PBR, SW	The purpose of this project is to improve traffic flow and LOS.
20	Hughes Rd	Old Madison Pike	U.S. 72 West	3.2	MnA	3	C	A	PBR, SW	The purpose of this project is to improve traffic flow and LOS.
21	Hughes Rd Extension	U.S 72 West	Wall Triana Hwy	0.5	MnA	0	N/A	A	PBL, SW	The purpose of this project is to add connectivity and improve traffic flow by dispersing traffic along an alternate route.
22	I-565	Interstate 65	Wall Triana Hwy	9.1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
23	I-565	Oakwood Ave	High Mountain Rd	2	InT	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
Δ 24	I-565 Interchange	County Line Rd	I-565	1	InT	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
Δ 25	I-565 Interchange	Greenbrier Rd	I-565	0.5	InT	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd	1.1	MjC	2	B	B	PBL, SW	The purpose of this project is to reduce travel delay.
27	Jeff Rd (Ph 2)	Capshaw Rd	AL 53	5.2	MjC	2	B	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
28	Johns Rd	Plummer Rd	University Dr	2	MnC	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
29	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East	2	MnC	2	C	B	PBR, SW	The purpose of this project is to improve traffic flow and LOS.
30	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd	2.3	MnC	2	C	C	PBR, SW	The purpose of this project is to reduce travel delay.
31	King Drake Rd - 431 Connector	King Drake Rd	U.S. 431	0.6	MjC	0	N/A	A	PBL, SW	The purpose of this project is to add connectivity and improve traffic flow by dispersing traffic along an alternate route.
32	Martin Rd	Zierdt Rd	Laracy Dr	2.76	MnA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
33	Martin Rd	Zierdt Rd	Rideout Rd	2.5	MjA	2	C	D	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.
34	Maysville Rd Connector	Maysville Rd	Epworth Dr	.32	MnC	2	N/A	A	PRB, SW	The purpose of this project is to add connectivity and improve traffic flow.
Δ 35	**Memorial Parkway Interchange	No. of Whitesburg-So.of Golf Rd	At U.S. 231 South	1.5	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing interchanges and service roads to reduce travel delay.
36	**Memorial Parkway Interchange	Mastin Lake Rd	At U.S. 231 North	0.67	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
37	**Memorial Parkway Interchange	Winchester Rd	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
38	**Memorial Parkway Interchange	Meridianville Bottom Rd	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
39	**Memorial Parkway Interchange	Patterson Ln	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
40	**Memorial Parkway Interchange	Walker Ln	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
Δ 41	**Memorial Parkway Interchange	Mtn. Gap Rd/Hobbs Rd	At U.S. 231 South	2	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing interchanges and service roads to reduce travel delay.
42	**Memorial Parkway Interchange	Green Cove Rd	At U.S. 231 South	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
43	**Memorial Parkway Interchange	Hobbs Island Rd	At U.S. 231 South	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
44	Memphis to Atlanta Highway	I-65	I-565	8	MjA	0	N/A	N/A		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
45	Memphis to Atlanta Highway	Southern Bypass	Marshall County Limits	15	MjA	0	N/A	N/A		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
46	Meridian St	Winchester Rd	Memorial Parkway	1.5	MnA	2	B	A	PGSP	The purpose of this project is to improve traffic flow and LOS.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
47	Meridian St (Ph 1)	Oakwood Ave	Pratt Ave	0.7	MnA	2	B	B	PBL, SW	The purpose of this project is to reduce travel delay.
48	Mill Rd	County Line Rd	Hughes Rd	2.5	MnC	2	B	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
49	Moontown Rd	Ryland Pike	U.S. 72 East	1.2	MnC	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
50	Moores Mill Rd	Winchester Rd	Northern Bypass	4.5	MnA	2	N/A	D	PBL, SW	The purpose of this project is to reduce travel delay.
51	Mt. Lebanon/Jack Thomas Rd	Grimwood Rd	Northern Bypass	4.5	MnC	2	A	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.
52	Nance Rd	University Dr	Capshaw Rd	1.1	MnC	2	N/A	A	PBL, SW	The purpose of this project is to reduce travel delay.
53	Northern Bypass (Ph 2)	East of Pulaski Pike	U.S. 231	3.3	MjA	2	N/A	A	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
54	Northern Bypass (Ph 3)	U.S. 231	Moores Mill Rd	2.6	MjA	0	N/A	A	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
55	Northern Bypass (Ph 4)	Moores Mill Rd	Winchester Rd	3	MjA	0	N/A	B	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
56	Northern Bypass (Ph 5)	Winchester Rd	U.S. 72 East	11	MjA	0	N/A	A	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
57	Oakwood Rd	Adventist Blvd	Research Park Blvd	1	MnC	2	N/A	C	PBL, SW	The purpose of this project is to reduce travel delay.
58	Old 431 Highway	Highway 431	Wilson Mann Rd	2	MjC	2	A	A	PBL, SW	The purpose of this project is to add corridor capacity and enhance regional connectivity.
59	Old Big Cove Rd	Highway 431	Sutton Rd	2	MjC	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
60	Old Big Cove Rd	South Green Mtn Rd	Highway 431	2	MjC	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
61	Old Hwy 20	Greenbrier Rd	County Line Rd	3	MnA	2	N/A	A	PBL, SW	The purpose of this project is to reduce travel delay.
*62	Old Madison Pike	Thornton Industrial Park	Slaughter Rd	0.5	MnA	2	E	D	PBL	The purpose of this project is to improve traffic flow and LOS.
63	Old Madison Pike	Hughes Rd	Slaughter Rd	2	MjA	3	F	C	PBR, PGSP	The purpose of this project is to improve traffic flow and LOS.
64	Old Railroad Bed Rd (Ph 1)	U.S. 72 West	Capshaw Rd	1.8	MnA	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
65	Old Railroad Bed Rd (Ph 2)	Capshaw Rd	AL Highway 53	8.5	MnA	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
66	Patton Rd	Aerobee Rd	Redstone Rd	5	MjA	4	D	D	PBL, SW	The purpose of this project is to reduce travel delay.
67	Plummer Rd	Research Park Blvd	Indian Creek Rd	0.8	MjC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
68	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension	0.5	MnC	0	N/A	A	PGSP	The purpose of this project is to improve traffic flow and provide needed connectivity/access in the City of Madison.
69	Powell Rd	Powell Rd	Browns Ferry Rd	1.5	MnA	0	N/A	C	PBL, SW	The purpose of this project is to improve traffic flow and provide needed connectivity/access to the area.
70	Research Park Blvd and Interchanges	I-565	Ardmore Highway – AL53	5.9	MjA	4	C	E		The purpose of this project is to add corridor capacity and enhance regional connectivity.
71	Ryland Pike	U.S. 72 East	Northern Bypass	3.75	MjC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
72	Shelton Rd	Madison Blvd	¼ mile No. of Madison Blvd	0.25	MnC	2	N/A	A	PGSP	The purpose of this project is to reduce travel delay.
73	Shields Rd	Jordan Rd	Winchester Rd	1.5	MnC	2	B	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.
74	Slaughter Rd	Madison Blvd	U.S. 72 West	5	MnA	2	C	B	PBL, SW	The purpose of this project is to improve traffic flow and LOS.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
75	Southern Bypass(Ph 1)	I-565	Martin Rd	6.5	MjA	0	N/A	C		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
76	Southern Bypass(Ph 2)	Martin Rd	Weatherly Rd Extension	2	MjA	0	N/A	B		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
77	Southern Bypass(Ph 3)	Weatherly Rd Extension	U.S. 231	4.5	MjA	0	N/A	B		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
78	Sullivan St	Royal Dr	Front St	0.5	MjC	3	E	D	PGSP	The purpose of this project is to improve traffic flow and LOS.
79	Swancott Rd	I-565	County Line Rd	5.5	MnA	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
Δ 80	**U.S. 72 East/ARC Corridor V	Moores Mill & Shields Rd	U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
81	**U.S. 72 East/ARC Corridor V	Jordan Rd Extended	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
82	**U.S. 72 East/ARC Corridor V	Moontown Rd	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
83	**U.S. 72 East/ARC Corridor V	Brock Rd	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
84	**U.S. 72 East/ARC Corridor V	Eastern Bypass	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
85	**U.S. 72 East/ARC Corridor V	High Mountain Rd	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
Δ 86	U.S. 72/University Drive	Providence Main Blvd	County Line Rd	5	MjA	4	C	D		The purpose of this project is to add corridor capacity and enhance regional and national connectivity and access for various modes of transportation.
87	U.S. 72/University Dr	County Line Rd	Mooresville Rd	5.2	MjA	4	C	C		The purpose of this project is to add corridor capacity and enhance regional connectivity and access for various modes of transportation.
88	Wall Triana Highway	Mill Rd	U.S. 72 West	3.6	MjC	2	B	B	PGSP	The purpose of this project is to reduce travel delay.
89	Wall Triana Highway	U.S. 72 West	Capshaw Rd	1.4	MjC	2	B	B	PBL, SW	The purpose of this project is to reduce travel delay.
90	Wall Triana Highway	Capshaw Rd	Yarborough Rd	4	MnA	2	C	C	PBL, SW	The purpose of this project is to reduce travel delay.
91	Weatherly Rd Extension	Memorial Parkway	Southern Bypass	1.5	MjC	0	N/A	D		The purpose of this project is to improve traffic flow and provide needed connectivity/access to the area.
92	Winchester Rd (Ph 2)	Dominion Cr	Naugher Rd	2	MnA	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
93	Winchester Rd (Ph 3)	Naugher Rd	Bell Factory Rd	1.5	MnA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
94	Winchester Rd (Ph 4)	Bell Factory Rd	State Line	9.5	MnA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
Δ 95	Zierdt Rd (Ph 1)	Madison Blvd	South of Martin Rd	3	MjC	2	C	D	PGSP	The purpose of this project is to add corridor capacity to handle increased traffic flow.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
96	Zierdt Rd (Ph 2)	South of Martin Rd	Beadle Ln	3	MjC	2	C	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
97	Zierdt Rd Extension	¼ mile No. of Madison Blvd	Old Madison Pike	0.8	MnC	0	N/A	A	PGSP	The purpose of this project is to improve traffic flow and provide needed connectivity/access to the area.

**=Bridge Overpass Construction
Ex LOS = Existing Level of Service
Proj LOS = Projected Level of Service

Δ = These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked as the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

*= These projects were under design prior to FHWA policy regarding the construction of bike/ped facilities.

MnC = Minor Collector
MjC = Major Collector
MnA = Minor Arterial
MjA = Major Arterial

PBR = Proposed Bike Route
PBL= Proposed Bike Lane
PGSP=Proposed Greenway/Shared Path (These facilities include bike lanes)
SW= Sidewalk
BR = Existing Bike Route

Level of Service
A = .60 - .69
B = .70 - .79
C = .80 - .89
D = .90 - .99
E = 1.00 – 1.10
F = 1.11 >

Projects highlighted "blue" are limited access or controlled access facilities, and do not include bicycle/pedestrian accommodation due to these special exceptions.

Projects highlighted "green" are State or U.S. routes, and as such carry high volumes of traffic. The cost of constructing ***appropriate*** facilities for bicycle/pedestrian use is cost prohibitive . US 72 East is planned as an expressway or limited access corridor.

ALL CITY OF HUNTSVILLE ROADS WILL HAVE R/W, CURBS, GUTTERS, AND SIDEWALKS IN ACCORDANCE WITH SUBDIVISION REGULATIONS.

4.2 The "No Build" and Other Alternatives Evaluation of the Adopted Plan

The previous chapters of this document explained the estimation and forecasting procedure and the data required as input. The development scenario used in the Huntsville Area 2035 update was explained in **Section 2**. This section will examine and explain in detail the procedure used to simulate trips under either present or future conditions.

Future road needs are determined by assigning the forecast trips to a road network with the model structure developed and validated for the base year, or known conditions. There are two types of deficiencies that need to be addressed in formulating the alternate transportation plan, capacity and mobility. Capacity deficiencies occur when the traffic volume exceeds the design capacity of a roadway facility i.e., Memorial Parkway and Governors Drive. Mobility deficiencies occur when travel is impeded by topographical barriers because of a lack of roadway, i.e., Tennessee River or Huntsville Mountain.

The next step in the process is to assign trips to the existing and committed or E+C network using the projected socioeconomic data for the future year. The E+C system is the system of roads now open to traffic plus those recently opened, currently under construction or under contract for preliminary engineering. In the MPO area, some of these major additional projects on the E+C network include:

- Memorial Parkway @ Whitesburg/Weatherly Road
- Memorial Parkway @ Sparkman/Max Luther Drive
- Memorial Parkway from north of Whitesburg Drive to south of Golf Road
- Memorial Parkway @ Mastin Lake Road
- Memorial Parkway, additional lanes, from Tennessee River Bridge to Hobbs Island Road
- Widening Meridian Street from Oakwood Drive to Monroe Street
- Old Madison Pike widening from Slaughter Road to Thornton Industrial Park
- Widening Church Street from Oakwood Drive to Monroe Street
- Dug Hill Road from US 431 to King Drake Road
- Moores Mill Road overpass @ US 72 - including overpass @ Moores Mill Road
- Pulaski Pike from Liberty Hill Road to Bob Wade Lane
- Downtown Connector from Memorial Parkway to Williams Avenue

The next step is to evaluate the alternate plans. The build alternates involves expansion of arterial and collector systems including upgrading of some arterials, expressways and constructing new freeways and expressways. The evaluation is undertaken for each type of highway facility: (a) interstate, (b) freeway, (c) expressway, (d) major arterial, (e) minor arterial, (f) collector type of facility, with the following data summarized for each network:

1. Network Street Mileage - Linear miles of street
2. Lane Miles - major street mileage multiplied by lanes in the street
3. Vehicle Miles - The number of vehicle miles traveled on the network
4. Vehicle Hours - The number of vehicle hours of travel on the network
5. Average Network Speed – The average speed on each system

4.3 Network Analysis

In forecasting the future population growth for the Huntsville Metro Area and its impact on its road and highway system, it is necessary to look at alternate scenarios within the long range transportation plan to ensure that traffic congestion remains at a most a minimal issue. **Table 4.2** shows three different scenarios and its impact on the network.

Alternate 1 displays the results of the Existing + Committed network which involves only projects that are currently under construction or design. The end result of this scenario increases the number of vehicle miles driven in the study area by almost 104 percent from 9.3 million miles to over 19.5 million miles daily. The available lane-miles to accommodate this increase would only be about 136 miles greater than today, representing an increase capacity of only about 2 percent. The travel time increases nearly to 400 percent from 289,473 hours to over 1,682,042 hours.

Alternate 2 constructs all of the future projects except the Southern Bypass which was designated as being a major north-south corridor through Redstone Arsenal connecting Interstate 565 to US 231 south at the Tennessee River. While this scenario does improves traffic flow, the average speed of the network only increases from 11.61 mph to 20.25 mph. Travel time increases an additional 25 percent while total vehicle distance increases almost 11 percent over the E+C network to 18.2 million miles. The operating conditions on these alternate networks would be totally unacceptable, with overcrowded conditions and level of service at E and F on most of the major arterials in the study area. The ultimate result of this network scenario would be a deterioration of air quality along with heavy congestion and the continuing need for additional highway capacity throughout the study area with Memorial Parkway, University Drive and Governors Drive possibly requiring the most attention. **Figures 4.1** and **4.2** summarize the projected characteristics and operating condition of all alternates in detail.

Alternate 3 constructs all future projects in addition to the Southern Bypass and the Memphis to Atlanta highway. This scenario is preferred due to the reduction in travel time and increase in overall network speed.

A synopsis of the statistics for each network as projected by the travel models is shown in **Table 4.2.** Note that the average speed on the 2005 base year network is 32.22 mph compared with that of Alternate 1 and 2 that have an average network speed of 15 mph, which is a reduction of 19.1 mph or 64 percent – evidently a sign of traffic congestion. By comparison, the average speed on the 2035 future network decreases about 41 percent or to 18.8 mph and even increases slightly from the Alternate 1 and 2 networks.

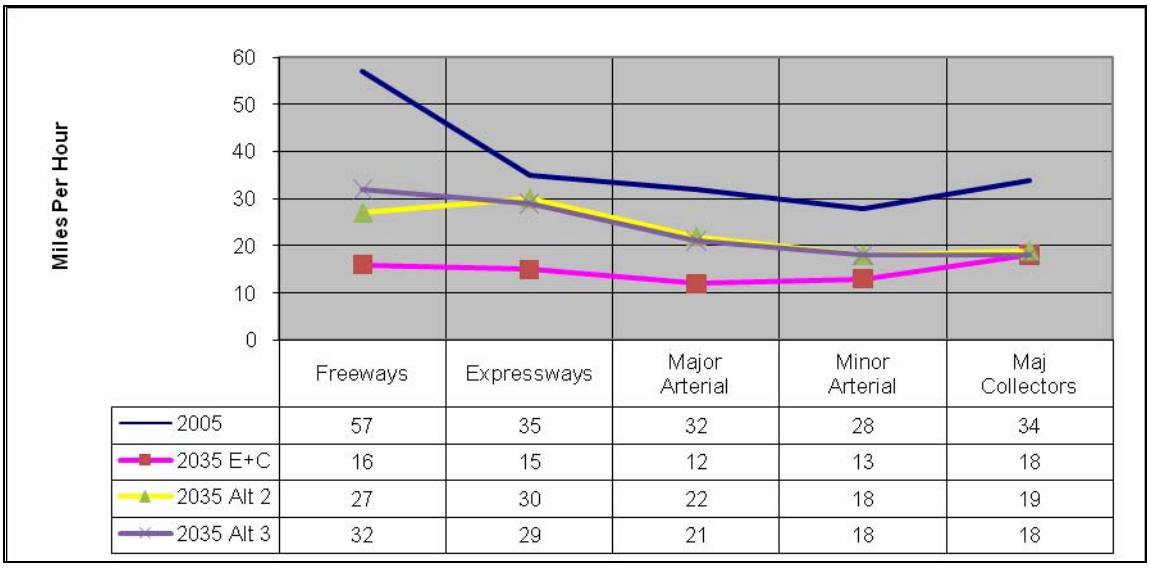
Table 4.2: Comparison of Modeled Alternatives

	Base Year 2005	Alt 1 2035 E+C No Build	Alt 2 2035 Plan No Southern Bypass	Alt 3 2035 Adopted Plan
Total Network Distance	2,455	2,456	2,566	2,621
Lane Miles	6,321	6,457	6,696	7,088
Total Vehicle Distance	9,326,964	19,528,558	18,246,166	20,385,408
Total Vehicle Travel Time (hours)	289,473	1,682,042	901,039	1,080,981
Average Network Speed	32.22	11.61	20.25	18.86

Figure 4.1 demonstrates the comparison of the network average speed among the different classification of roads and alternative network scenarios. **Figure 4.2** graphically demonstrates the relationship of each network to the other in the category of projected daily vehicle miles traveled and its impact on the roadway system. In comparing the 2005 base year network with the other networks, the amount of VMT increased dramatically on the overall comparison but especially on arterials and expressways.

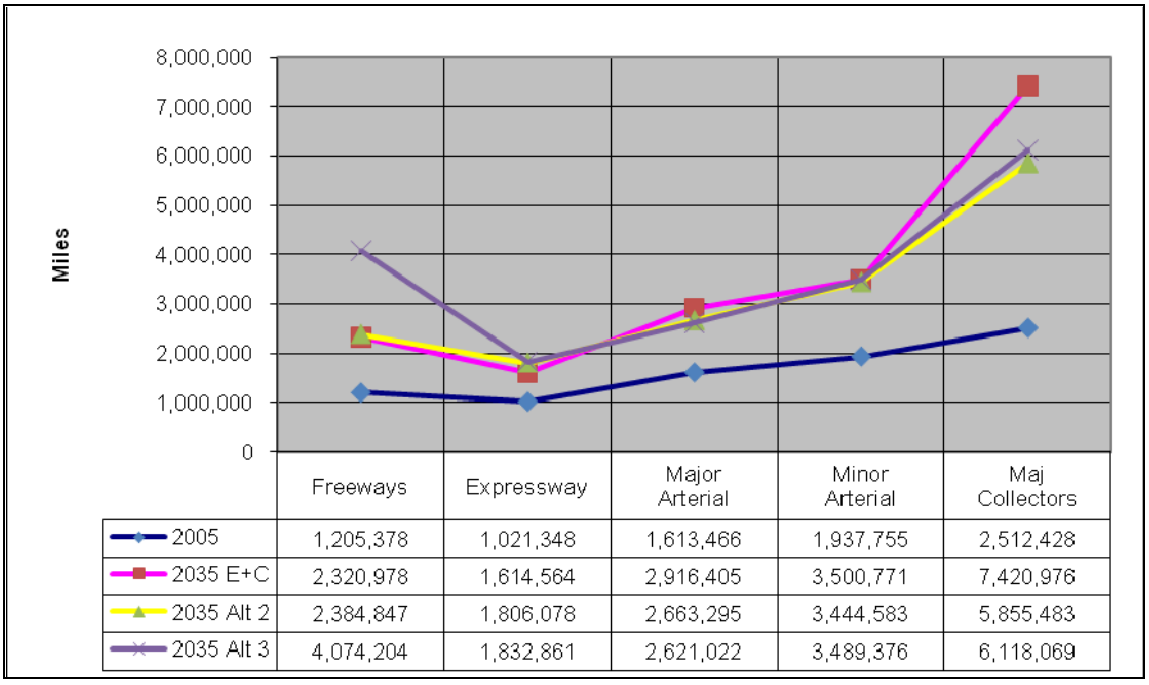
Further analysis indicates an increase of nearly 42 percent of vehicle miles traveled on arterials when comparing the 2035 build network to the 2005 base year network. Collectors and Expressways also significantly increased nearly 59 percent and 44 percent respectively.

Figure 4.1: Average Modeled Speed per Classification



	Freeways	Expressways	Major Arterial	Minor Arterial	Maj Collectors
2005	57	35	32	28	34
2035 E+C	16	15	12	13	18
2035 Alt 2	27	30	22	18	19
2035 Alt 3	32	29	21	18	18

Figure 4.2: Vehicle Miles Traveled on Modeled Network



4.4 Volume/Capacity Projections for the National Highway System

Table 4.3 indicates the volume to capacity (V/C) ratios as projected in the 2035 build alternate for major corridors on the National Highway System (NHS).

Table 4.3: Volume/Capacity Ratios for NHS System

Functional Class	Location	2005 Capacity	2005 ADT	2005 V/C Ratio	2035 Capacity	2035 ADT	2035 V/C Ratio
Arterial	**I-565**						
	East of Wall Triana Hwy	102,000	52,900	0.52	102,000	126,300	1.24
	West of Research Park Blvd.	102,000	76,000	0.74	102,000	162,000	1.20
	East of Research Park Blvd.	136,000	85,200	0.62	136,000	151,000	1.11
	East of Sparkman	136,000	89,700	0.65	136,000	107,000	0.79
	East of Governors Dr	136,000	75,500	0.56	136,000	100,000	0.72
	West of 72 E	68,000	36,200	0.53	102,000	59,000	0.59
Arterial	**U.S. 72 E**						
	East of Interstate 565	33,900	36,200	1.07	50,000	59,300	1.14
	West of Moores Mill Rd	33,900	41,000	1.21	50,000	56,600	1.13
	*East of Moores Mill Rd	33,900	25,000	0.74	50,000	52,000	1.01

Table 4.3: Volume/Capacity Ratios for NHS System							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Arterial	**U.S. Hwy 72 W**						
	East of Hughes Rd	33,900	51,000	1.50	50,000	72,600	1.45
	West of Slaughter Rd	33,900	45,000	1.33	50,000	61,400	1.23
	East of Slaughter Rd	33,900	43,000	1.27	50,000	61,600	1.23
	West of Enterprise Dr	33,900	41,000	1.21	50,000	61,700	1.24
	East of Enterprise Dr	33,900	59,000	1.18	50,000	51,700	1.04
	West of Sparkman Dr	50,000	47,200	0.94	50,000	48,400	0.97
	West of Jordan Ln	50,000	44,500	0.89	50,000	54,800	1.10
	East of Jordan Ln	50,000	44,200	0.88	50,000	49,400	.99
Arterial	**U.S. 231 S**						
	South of Governors Dr	75,000	108,900	1.45	125,000	112,700	0.90
	North of Airport Rd	75,000	94,000	1.25	125,000	110,800	0.88
	South of Airport Rd	75,000	71,500	0.95	125,000	101,300	0.81
	South of Weatherly Rd	75,000	53,000	1.06	125,000	84,300	0.67
	North of Redstone Rd	75,000	41,500	0.83	125,000	49,100	0.39
	South of Hobbs Rd	75,000	22,700	0.30	125,000	59,800	0.48
Arterial	**U.S. 231 N**						
	North of Meridian St	33,900	29,200	0.86	125,000	79,700	1.07
	*South of Winchester Rd	33,900	31,300	0.92	125,000	77,000	0.62
	*North of Mastin Lake Rd	33,900	33,000	0.97	125,000	94,000	0.75
Arterial	**U.S. 431**						
	West of Memorial Pkwy	50,000	21,300	0.43	50,000	37,400	0.75
	East of Memorial Parkway	33,900	34,200	0.68	50,000	42,700	0.85
	East of California St	33,900	24,200	0.71	50,000	29,300	0.49
	West of Monte Sano Blvd	33,900	27,900	0.82	33,900	30,300	0.90
	East of Monte Sano Blvd	33,900	20,000	0.59	33,900	31,600	0.93
Arterial	**Southern Bypass**						
	South of I-565	N/A	N/A	N/A	102,000	70,000	0.80
	North of Martin Rd	N/A	N/A	N/A	102,000	59,160	0.58
	North of Weatherly Rd	N/A	N/A	N/A	102,000	76,100	0.75
	South of Weatherly Rd	N/A	N/A	N/A	102,000	60,100	0.59

*Includes frontage roads

4.5 Volume/Capacity Projections for Other Roadways

The Surface Transportation Program (STP) includes all roads not on the NHS. A number of arterial and collector roads in the Huntsville urban area are included in this category. **Table 4.4** includes the V/C ratio for a number of local roadways in the study area.

Table 4.4: Volume/Capacity Ratios For Local Roads and Streets

Functional Class	Location	2005 Capacity	2005 ADT	2005 V/C Ratio	2035 Capacity	2035 ADT	2035 V/C Ratio
Arterial	**Bob Wallace**						
	Intersection at I-565	31,900	20,200	0.63	31,900	39,800	1.25
	West of Triana Blvd	31,900	20,200	0.63	31,900	30,500	0.96
	East of Triana Blvd	31,900	19,000	0.59	31,900	18,500	0.58
	West of Leeman Ferry Rd	31,900	20,800	0.65	31,900	22,500	0.71
Arterial	**California St**						
	North of Adams St	28,000	17,500	0.62	28,000	23,500	0.89
	North of Governors Dr	28,000	19,500	0.69	28,000	27,500	0.98
Arterial	**California St**						
	North of Bob Wallace Ave	28,000	18,000	0.64	28,000	27,200	.97
Arterial	**Carl T. Jones Bailey Cove Rd**						
	East of Whitesburg Dr	31,900	23,000	0.72	45,600	25,800	0.81
	North of Four Mile Post Rd	31,900	23,500	0.74	31,900	28,500	0.89
	North of Weatherly Rd	31,900	20,600	0.65	31,900	20,800	0.65
	South of Mountain Gap Rd	31,900	12,000	0.38	31,900	22,600	0.71
Arterial	**County Line Rd**						
	North of Hwy 20 W	13,700	12,400	0.91	31,900	26,700	0.83
	So. of 72W Brownsferry Rd	27,400	12,500	0.51	31,900	32,600	1.15
Arterial	**Hughes Rd**						
	South of Hwy 72 W	14,800	17,400	1.18	31,900	35,700	1.12
	North of Hwy 20 W	31,900	25,300	0.79	31,900	29,600	0.93
Arterial	**Martin Rd**						
	East of Memorial Pkwy	13,700	5,000	0.36	31,900	19,700	0.62
	West of Memorial Pkwy	27,400	10,500	0.38	31,900	28,400	0.89

Table 4.4: Volume/Capacity Ratios For Local Roads and Streets							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Arterial	**Meridian St**						
	North of Winchester Rd	14,800	6200	0.41	31,900	13,400	0. 64
	S of Max Luther & U.S. 72	31,900	17,400	0.55	31,900	21,700	0.68
	South of Oakwood Ave	13,700	6,000	0.44	17,500	20,100	.96
Arterial	**Northern Bypass**						
	Nick Fitcheard N. of Hwy 53	50,000	9200	0.18	50,000	24,600	0.49
	Bob Wade Ln W. of U.S. 231	16,600	3500	0. 21	50,000	31,600	0.62
Arterial	**Old Madison Pike**						
	East of Slaughter Rd	13,700	13,700	1.00	31,900	21,300	0.74
	West of Research Park Blvd	31,900	14,300	0.45	31,900	50,800	1.59
	East of Research Park Blvd	31,900	18,900	0.59	31,900	31,600	0.99
Arterial	**Patton Rd/Jordan Ln**						
	South of Drake Ave	31,900	12,900	0.40	33,900	31,500	0.92
	South of Bob Wallace Ave	31,900	24,600	0.77	33,900	33,000	0.99
	South of Oakwood Ave	31,900	23,500	0.73	31,900	28,800	0.85
Arterial	**Pulaski Pike**						
	South of Sparkman Dr	31,900	19,700	0.54	31,900	25,800	0.81
	South of Winchester Rd	31,900	17,400	0.55	31,900	15,300	0.48
	North of University Dr	31,900	17,200	0.62	31,900	24,300	0.76
Arterial	**Research Park Blvd**						
	North of Oakwood Rd	50,000	23,600	0.47	50,000	44,200	0.85
	North of Interstate 565	50,000	47,000	0.94	75,000	62,400	0.86
	South of University Dr	50,000	44,500	0.89	75,000	67,500	0.91
Arterial	**Slaughter Rd**						
	South of University Dr	13,700	8900	0.65	31,900	36,200	1.14
	North of Hwy 20	13,700	8000	0.58	31,900	32,443	1.02

Table 4.4: Volume/Capacity Ratios For Local Roads and Streets							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Arterial	**Whitesburg Dr**						
	South of Drake Ave	31,900	26,300	0.82	45,600	31,900	0.70
	South of Airport Rd	31,900	19,600	0.61	31,900	24,700	0.81
Collector	**Blue Springs Rd**						
	North of Oakwood Ave	28,500	8000	0.28	28,500	9,400	0.33
	North of Sparkman Dr	28,500	20,500	0.72	28,500	26,400	0.93
	South of Winchester Rd	28,500	12,800	0.45	28,500	13,200	0.47
Collector	**Chaney Thompson Rd**						
	South of Mountain Gap Rd	16,600	3500	0.21	20,800	18,400	0.84
	North of Green Cove Rd	16,600	1,700	0.08	20,800	6,200	0.30
Collector	**Drake Ave**						
	East of Jordan Ln	28,500	20,200	0.71	26,200	26,000	0.99
	East of Memorial Pkwy	28,500	22,700	0.80	28,500	12,400	0.44
Collector	**Drake Ave**						
	East of Whitesburg Dr	16,600	11,300	0.68	16,600	15,900	0.96
Collector	**Dug Hill Rd**						
	North of Hwy 431	16,600	2400	0.14	20,800	3,900	0.24
	South of Hwy 72 E	16,600	2,200	0.13	16,600	7,200	0.44
Collector	**Four Mile Post Rd**						
	East of Garth Rd	20,800	2,300	0.11	20,800	9,900	0.48
	East of Whitesburg Dr	20,800	5400	0.26	20,800	11,700	0.71
	East of Bailey Cove	28,500	11,100	0.39	28,500	26,700	0.94
Collector	**Holmes Ave**						
	West of Pulaski Pike	20,800	10,900	0.52	20,800	14,500	0.70
	West of Triana Blvd	20,800	9500	0.46	20,800	19,100	0.92
	West of Jordan Ln	20,800	11,000	0.39	20,800	21,600	1.04

Table 4.4: Volume/Capacity Ratios For Local Roads and Streets							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Collector	**Moores Mill Rd**						
	North of U.S. 72 E.	31,900	21,000	0.66	31,900	22,800	0.72
	South of Winchester Rd	31,900	21,000	0.66	31,900	18,500	0.58
	North of Winchester Rd	16,600	10,900	0.66	31,900	22,600	0.71
Collector	**Mountain Gap Rd**						
	East of Memorial Pkwy	28500	6500	0.23	28,500	17,500	0.62
	West of Bailey Cove Rd	28500	5900	0.21	28,500	9,200	0.32
Collector	**Oakwood Ave**						
	East of Jordan Ln	28,500	15,000	0.53	28,500	21,900	0.77
	East of Pulaski Pike	28,500	20,000	0.70	28,500	22,200	0.78
	W of Andrew Jackson Way	28,500	18,800	0.66	28,500	20,300	0.78
Collector	**Pratt Ave**						
	E of Andrew Jackson Way	20,800	5,200	0.25	20,800	12,700	0.61
	East of Meridian St	26,200	13,000	0.50	26,200	13,100	0.50
	West of Washington St	28,500	21,500	0.75	26,200	21,600	0.79
Collector	**Sullivan St (Madison)**						
	South of U.S. Hwy 72 W	20,800	12,000	0.58	28,500	24,300	0.85
	South of Old Madison Pike	28,500	23,700	0.83	28,500	29,600	1.04
Collector	**Weatherly Rd**						
	East of S Memorial Pkwy	28,500	16,200	0.57	28,500	25,600	0.90
	East of Todd Mill Rd	28,500	14,900	0.52	28,500	14,800	0.52
Collector	**Wynn Dr**						
	South of University Dr	28,500	17,000	0.60	28,500	27,300	0.96
	South of Bradford Dr	28,500	13,500	0.47	28,500	26,100	0.92
	North of University Dr	28,500	5,200	0.18	28,500	23,100	0.81

4.6 Traffic Assignment and Volume/Capacity Maps

Maps 4.2 – 4.17, located at the end of this Section, display the traffic assignment and the volume capacity ratio maps for the 2005 base year network, the 2035 E+C network, 2035 future network without the Southern Bypass or the Memphis to Atlanta Highway, and the adopted 2035 future network which includes the Southern Bypass as well as the Memphis to Atlanta Highway. All of the maps are color coded to display the different levels and volumes of traffic. This information is used to display where traffic congestion occurs in each network and show where the need for improvement in a facility is necessary.

The volume/capacity ratio is needed to determine the level of operation or service for each facility or road segment. The volume of the roadway is divided by its capacity to determine how close the facility is to reaching its maximum capacity. There are six levels of operation by which roads and highways are classified specifically A to F which were discussed in chapter 3.

In the Huntsville study the ratios ranged from 0.03 which is level A to 1.34 which is level F. The standard operating level at which is considered normal is level C or 0.80 –0.89. As traffic continues to build upon the network, the ratios increase and as it approaches and exceeds 1.0 congestion becomes a problem thus the need for improvements to those facilities are examined.

4.7 Model Validation

The base 2005 model was reviewed against existing available traffic counts to check and validate the accuracy of the model. Traffic counts on numerous road segments within the Huntsville Urbanized area, as designated from the U.S. Census Bureau, were obtained from several data sources including the City of Huntsville, Madison County Engineering and the State of Alabama Department of Transportation. The traffic counts that were used were collected between 2004 and 2005. Network links were categorized by functional classification and evaluated by each of these classes for acceptable accuracy. The accuracy of the model against actual traffic counts varies on different road segments. The deviations are, however, within the nominal parameters as stated by the Federal Highway Administration.

Table 4.5
Network Assignment by Functional Class

Facility Type	Links with Counts	Mean Count	Mean Load	% Difference	FHWA Target	Average Congested Speed
Freeway	18	28,608	27,412	4.1%	+/- 7%	57.1
Principle Arterial	116	19,558	18,642	4.6%	+/- 10%	35.4
Minor Arterial	161	7,941	7,540	5.0%	+/- 15%	28.7
Collector	271	3,874	4,251	8.9%	+/- 22%	34.1
All Links	566	9,781	9,510	2.7%	n/a	32.24

Table 4.6
Network Assignment by Volume Group

Volume Group	Links with Counts	Mean Count	Mean Load	% Difference	FHWA Target
1000 -2000	88	2228	4175	46.6	+-47%
2001- 5000	129	6650	9118	27.6	+/-36%
5001 – 10,000	194	14757	13780	6.6	+/- 29%
10,001 - 25,000	150	17441	16996	2.5	+/- 25%
>25000	46	38075	30748	19.2	+/-22%

Trip Assignment Summary

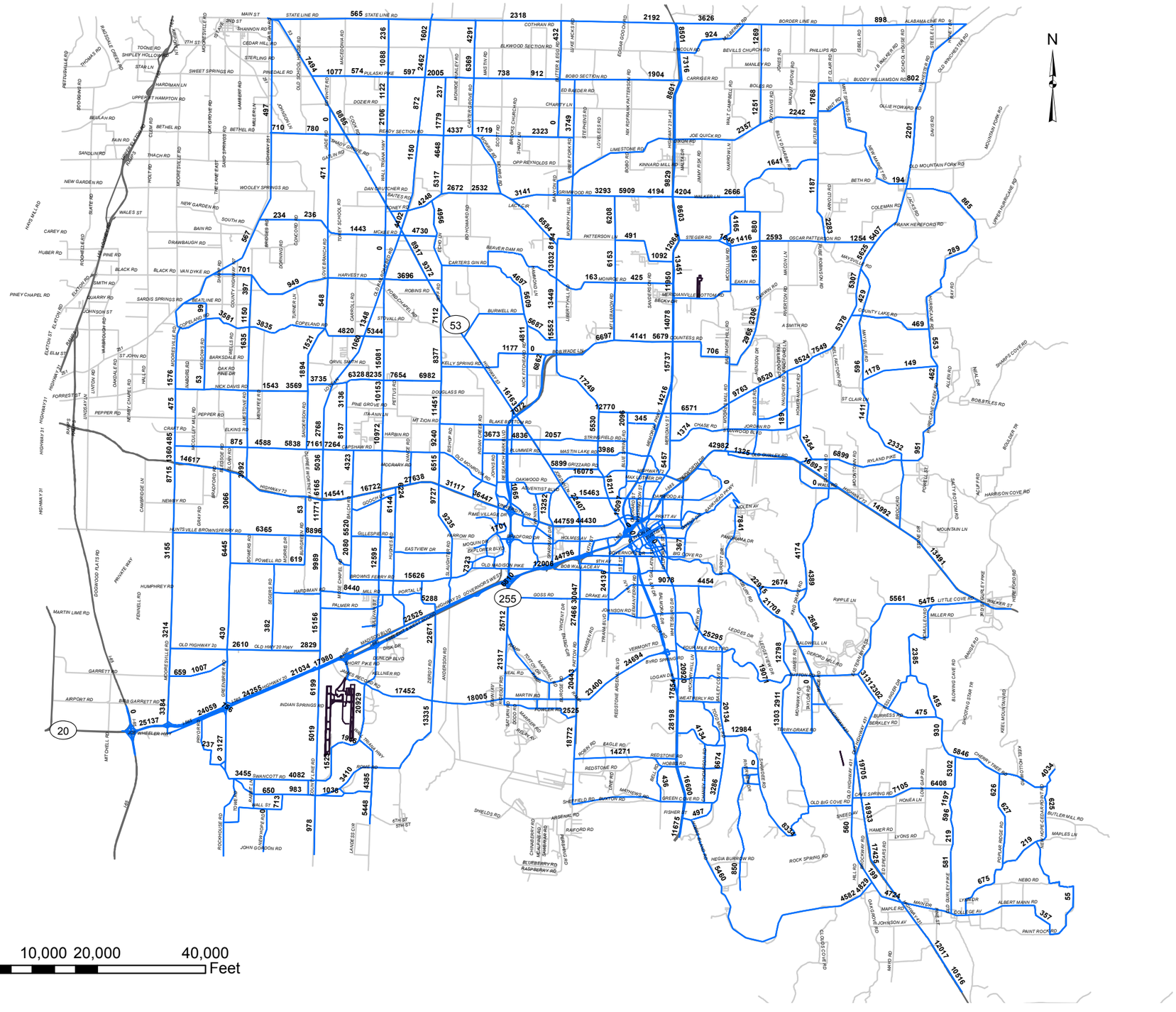
Assigned Interzonal Trips = 942,140

Unassigned Interzonal Trips = 0

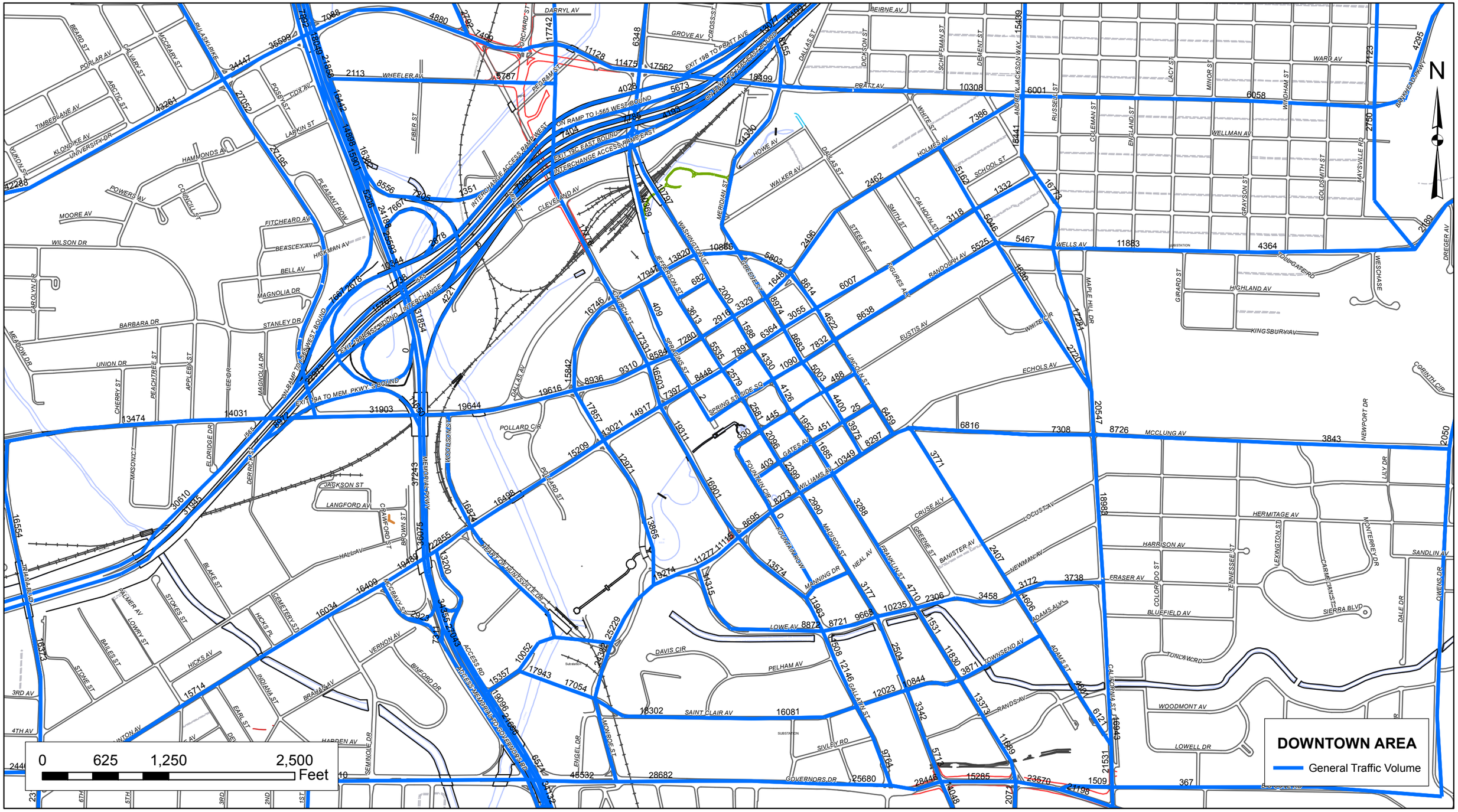
Intrazonal Trips = 59,829

Total Trips = 1,001,969

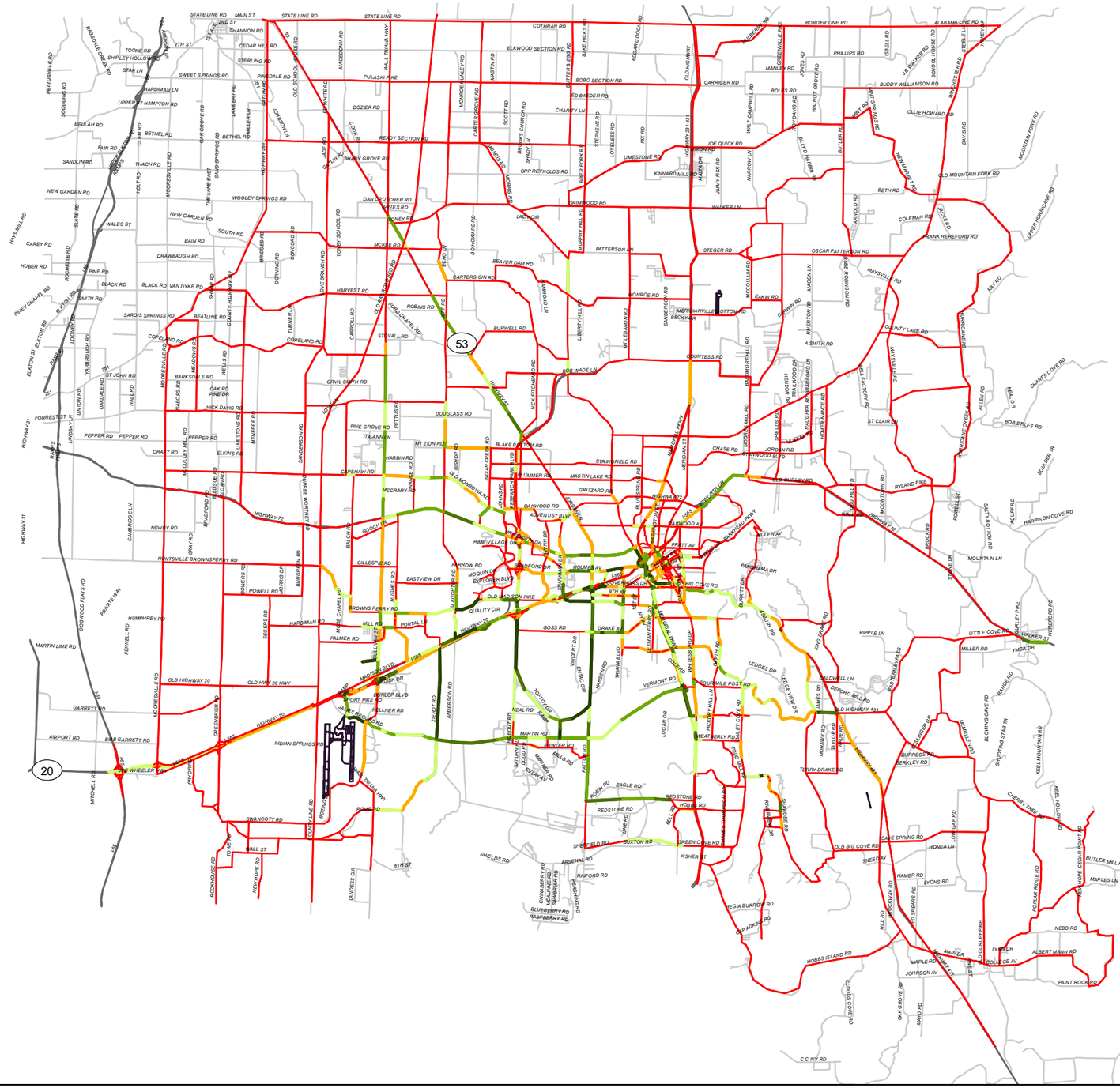
MAP 4-2
2005 BASE YEAR NETWORK
TRAFFIC VOLUME MAP



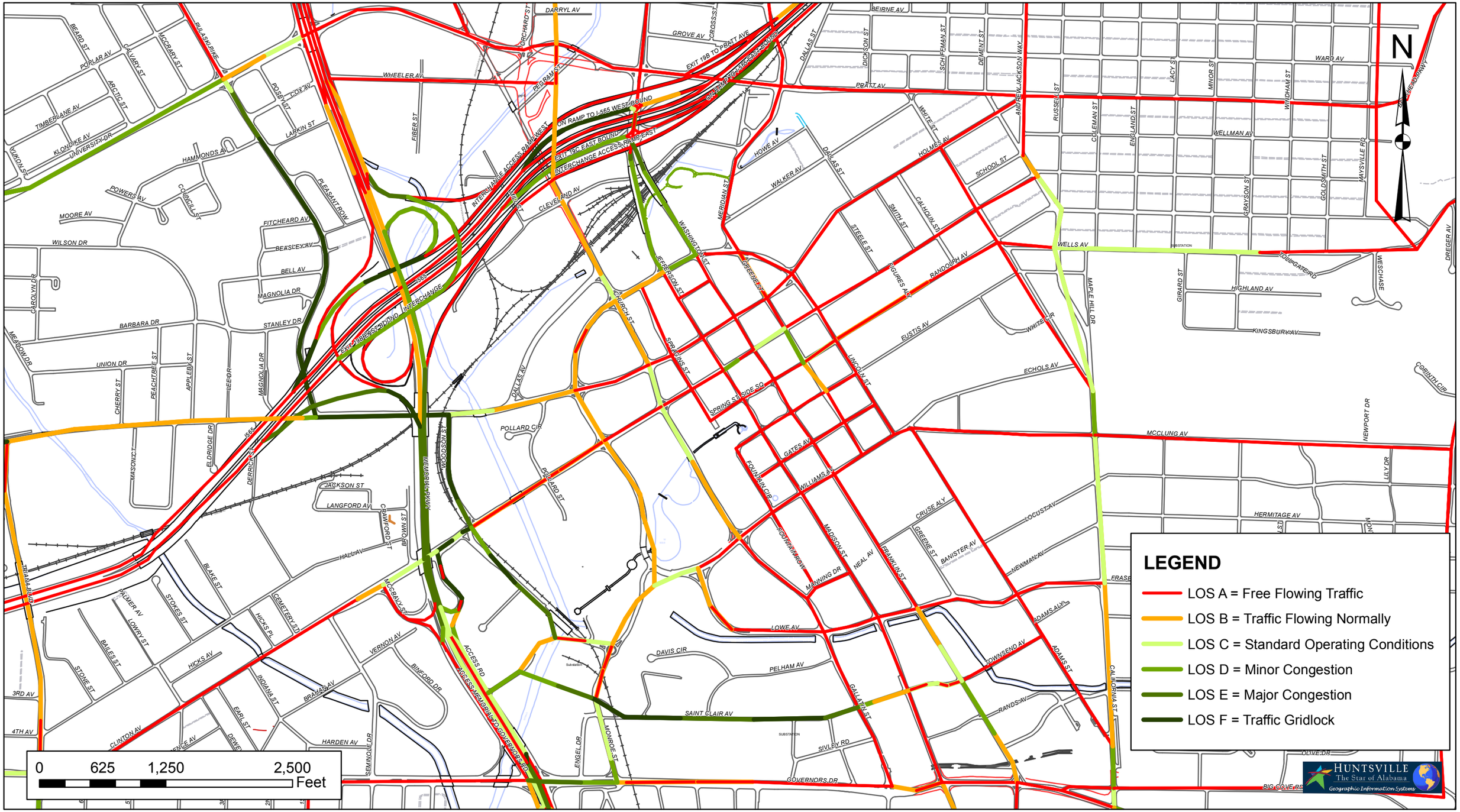
MAP 4-3
2005 BASE YEAR NETWORK
TRAFFIC VOLUME MAP



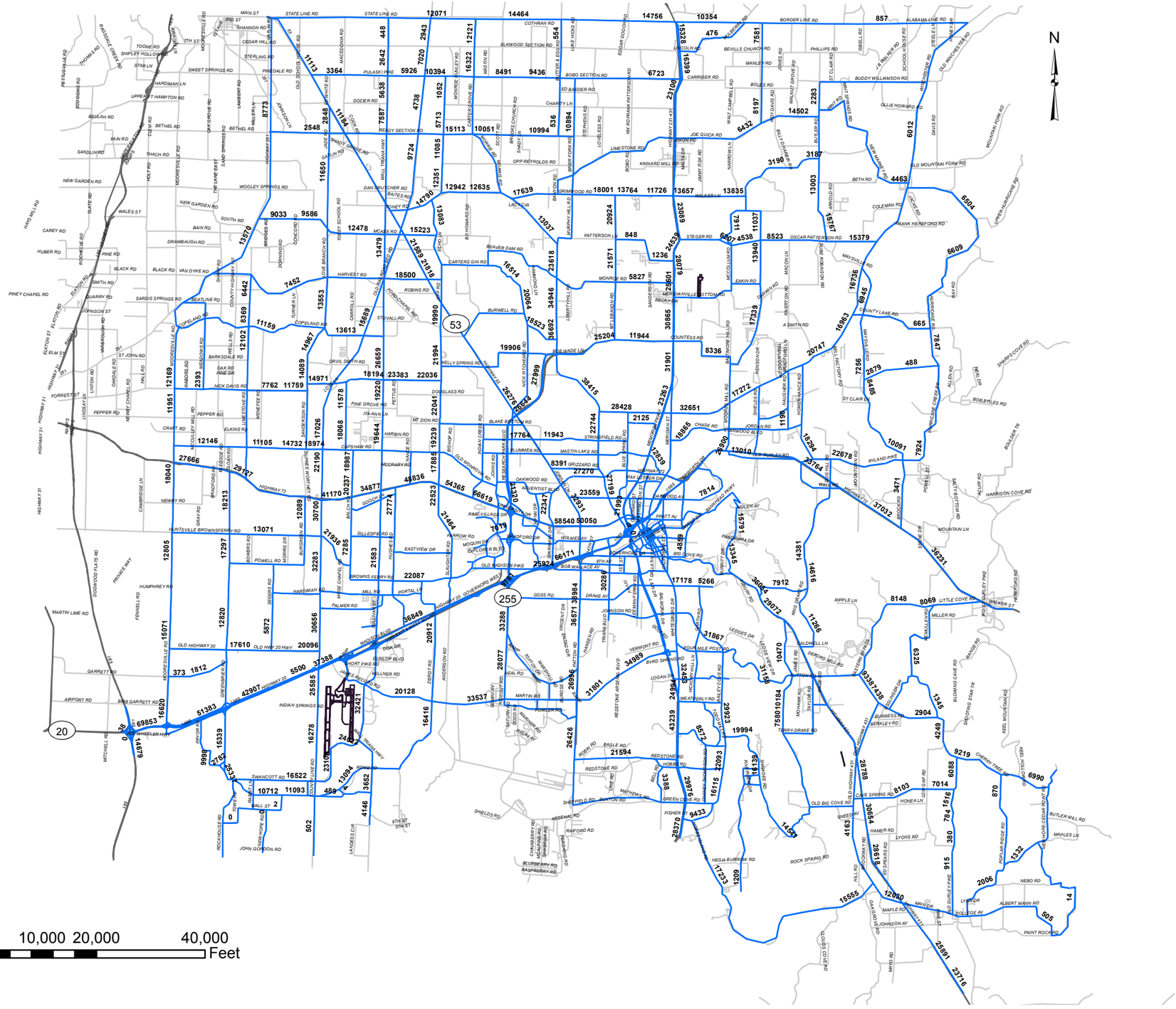
MAP 4-4
2005 LEVEL OF SERVICE MAP



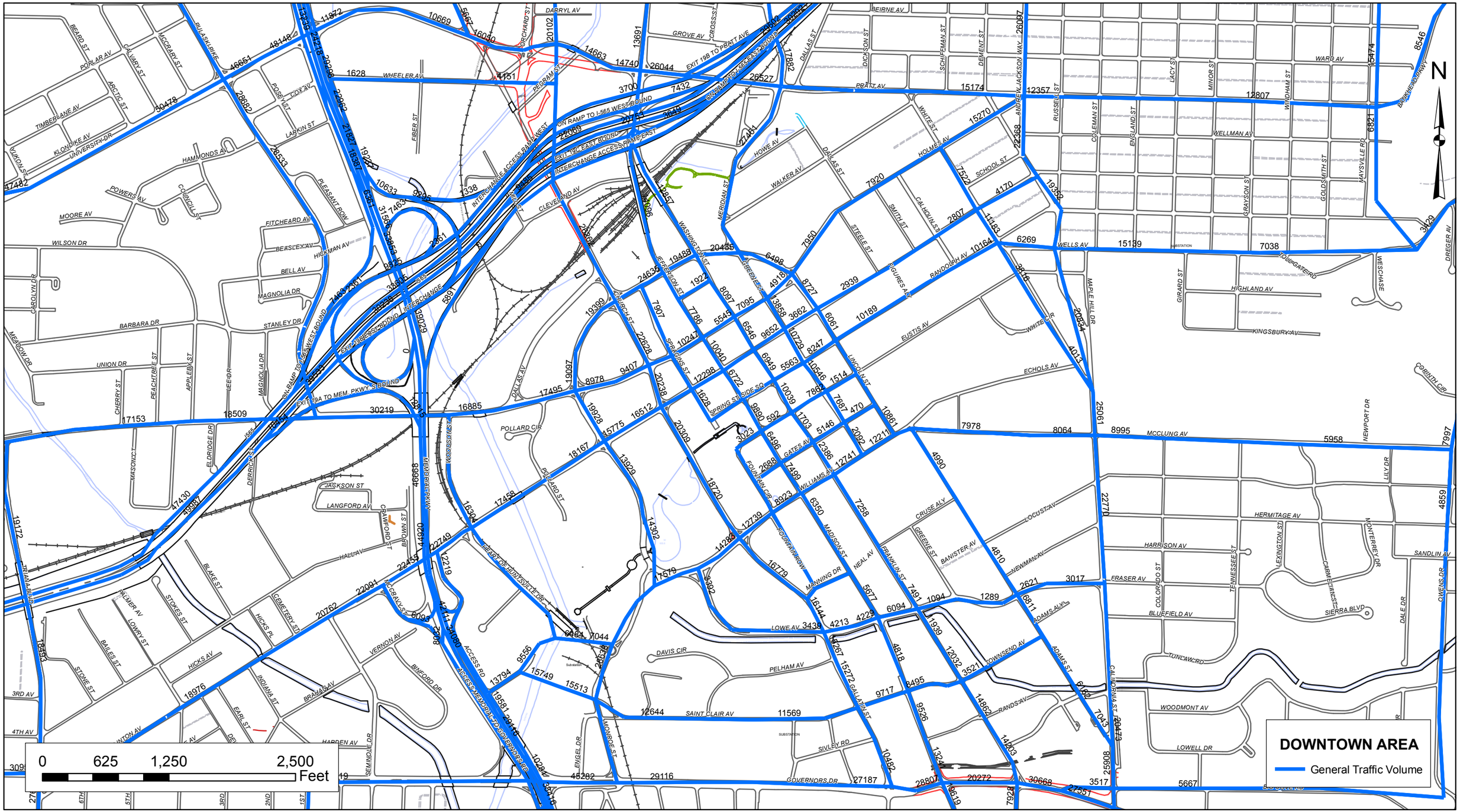
MAP 4-5
2005 LEVEL OF SERVICE MAP



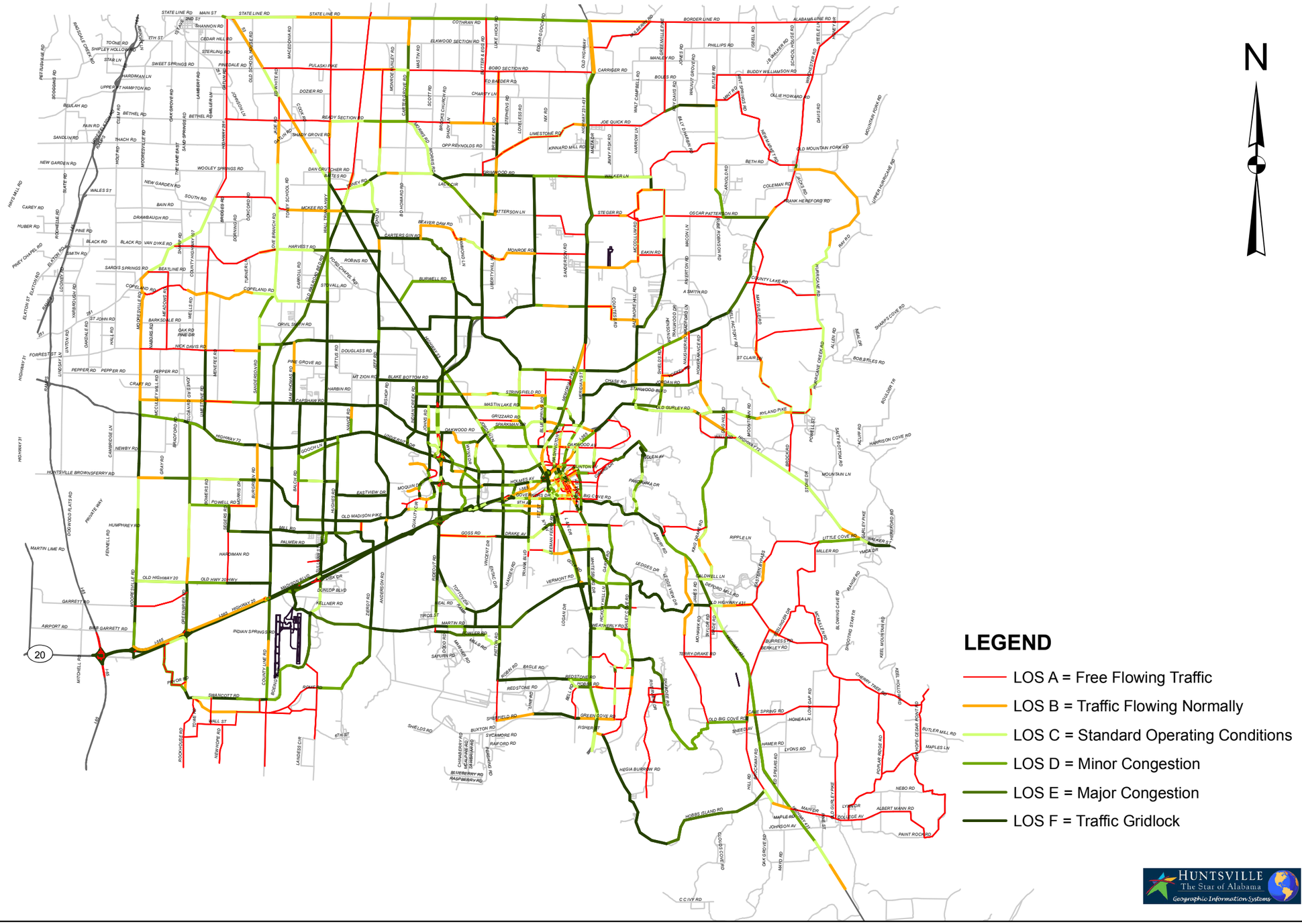
MAP 4-6
2035 EXISTING + COMMITTED NETWORK
TRAFFIC VOLUME MAP



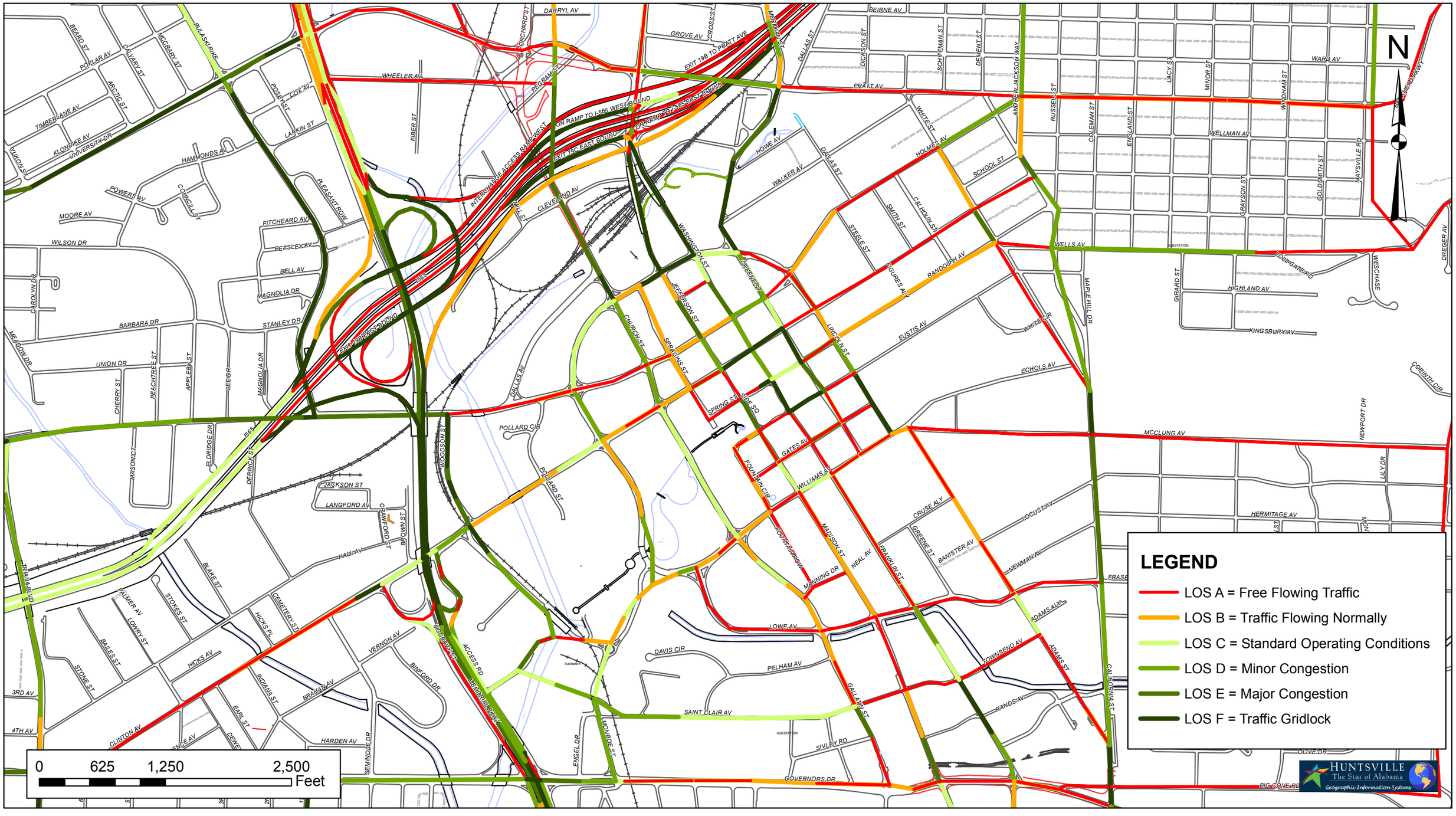
MAP 4-7
2035 EXISTING + COMMITTED NETWORK
TRAFFIC VOLUME MAP



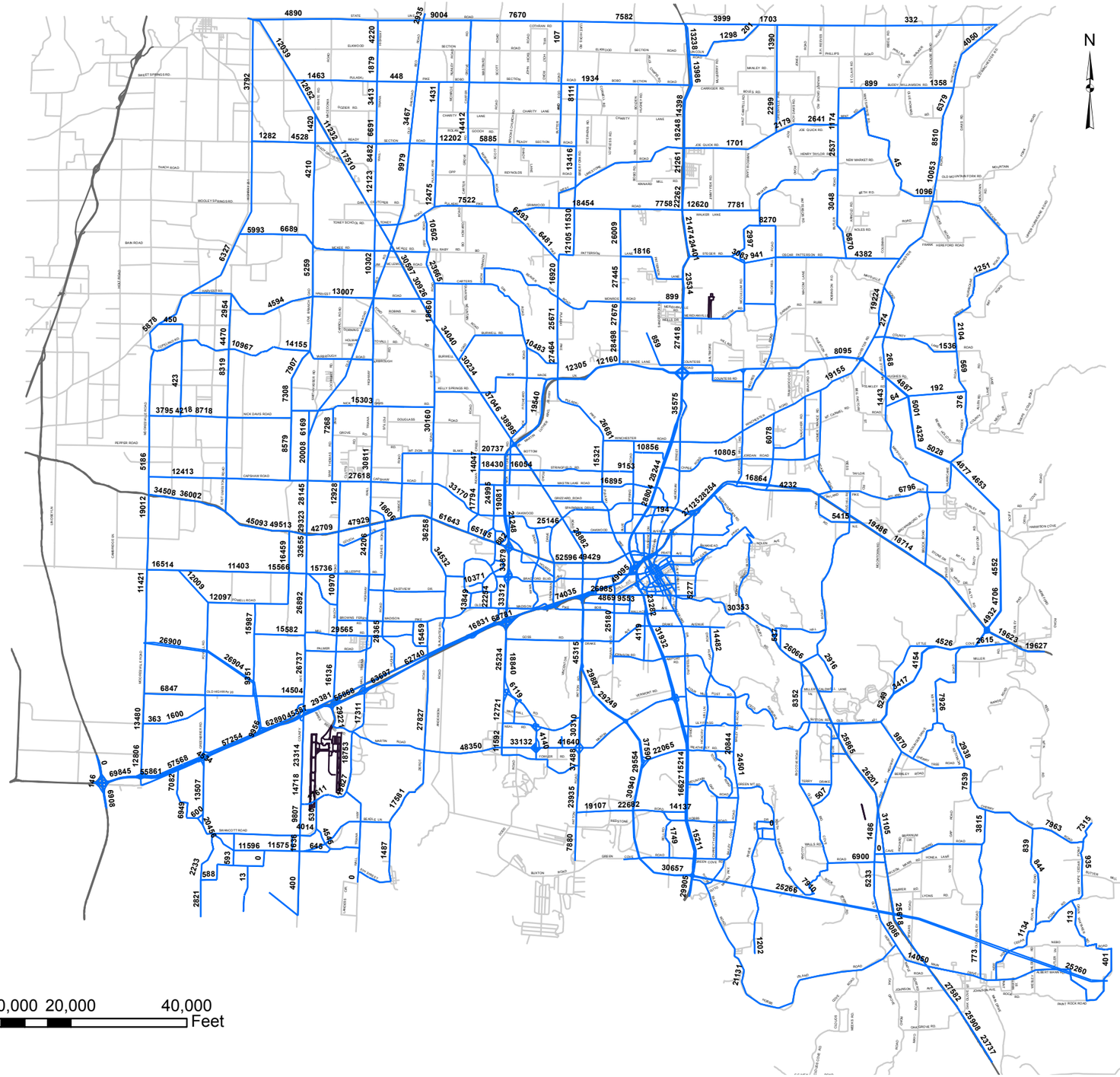
MAP 4-8
2035 EXISTING + COMMITTED NETWORK
LEVEL OF SERVICE MAP



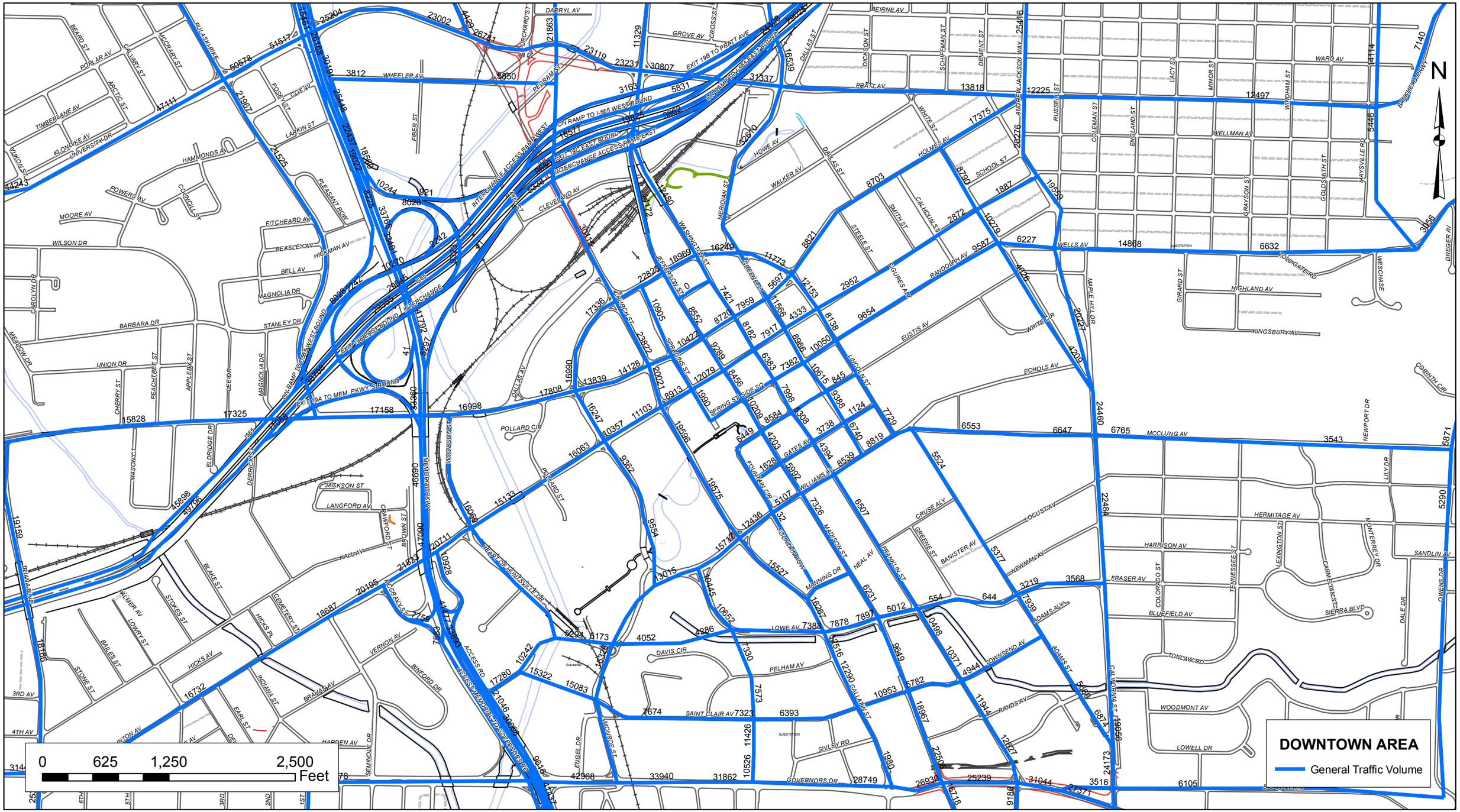
MAP 4-9
2035 EXISISTING + COMMITTED NETWORK
LEVEL OF SERVICE MAP



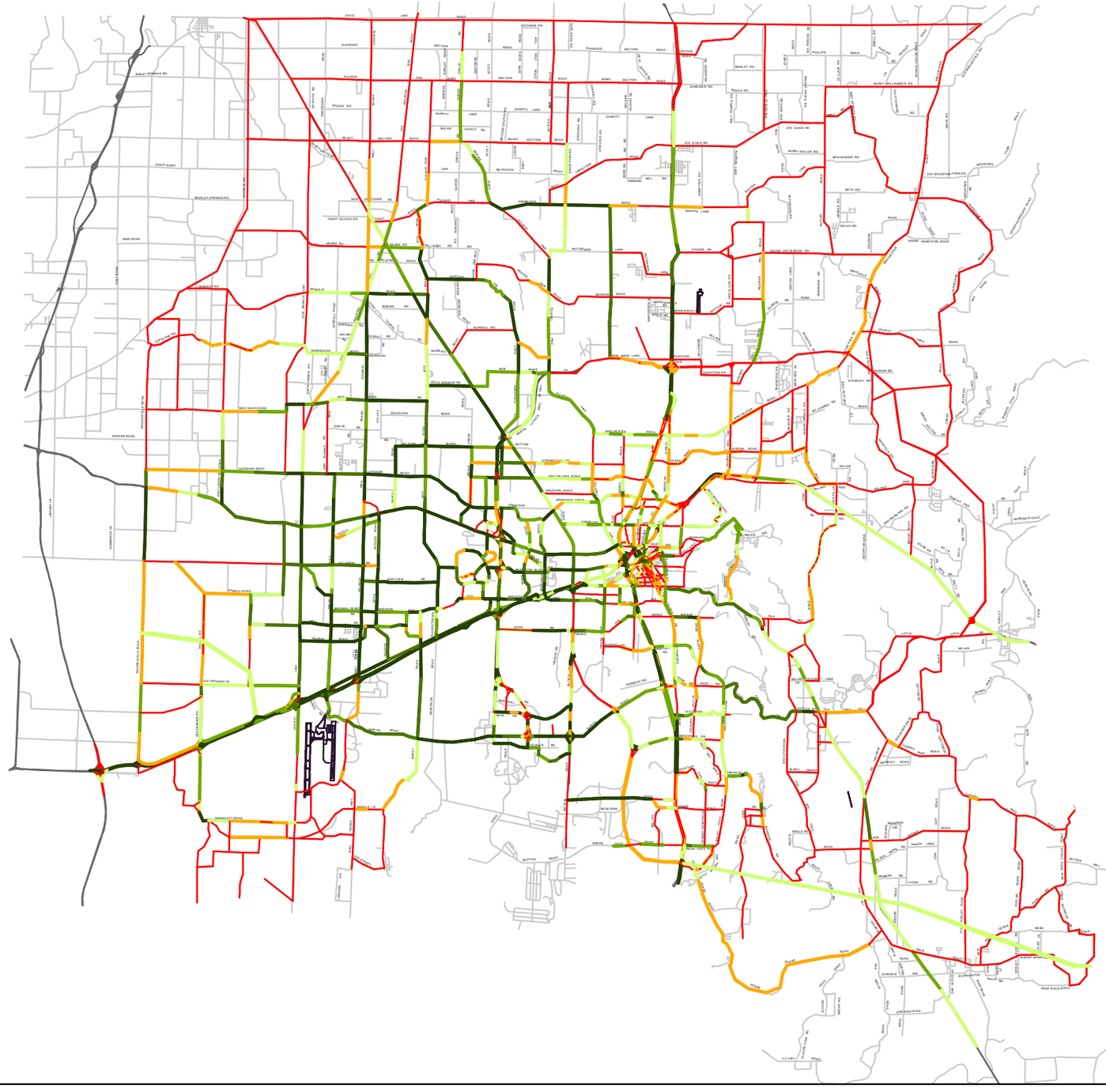
MAP 4-10
2035 NETWORK W/O SOUTHERN BYPASS
TRAFFIC VOLUME MAP



MAP 4-11
2035 NETWORK W/O SOUTHERN BYPASS
TRAFFIC VOLUME MAP



MAP 4-12
2005 NETWORK W/O SOUTHERN BYPASS
LEVEL OF SERVICE MAP



N

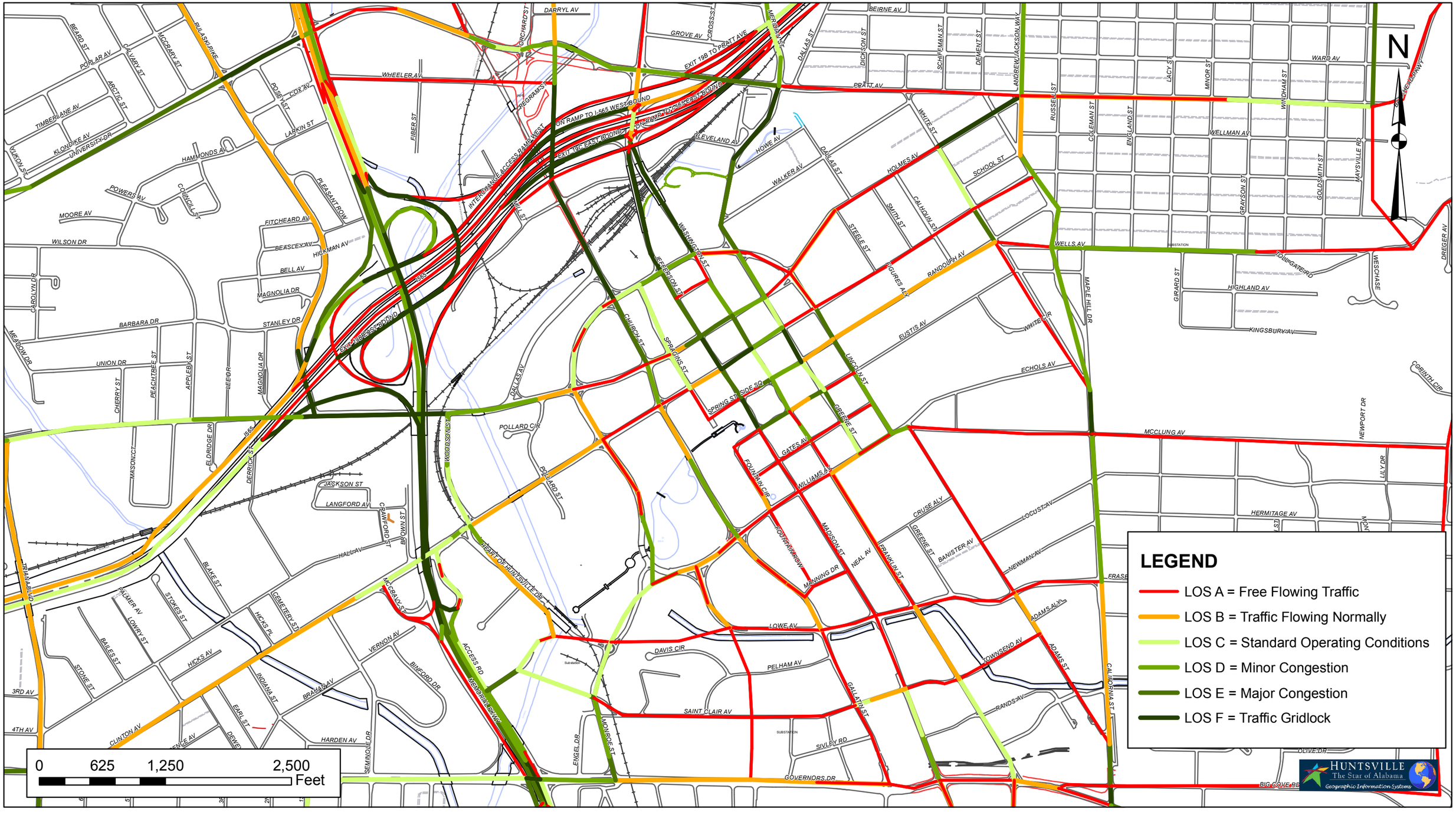
LEGEND

- LOS A = Free Flowing Traffic
- LOS B = Traffic Flowing Normally
- LOS C = Standard Operating Conditions
- LOS D = Minor Congestion
- LOS E = Major Congestion
- LOS F = Traffic Gridlock

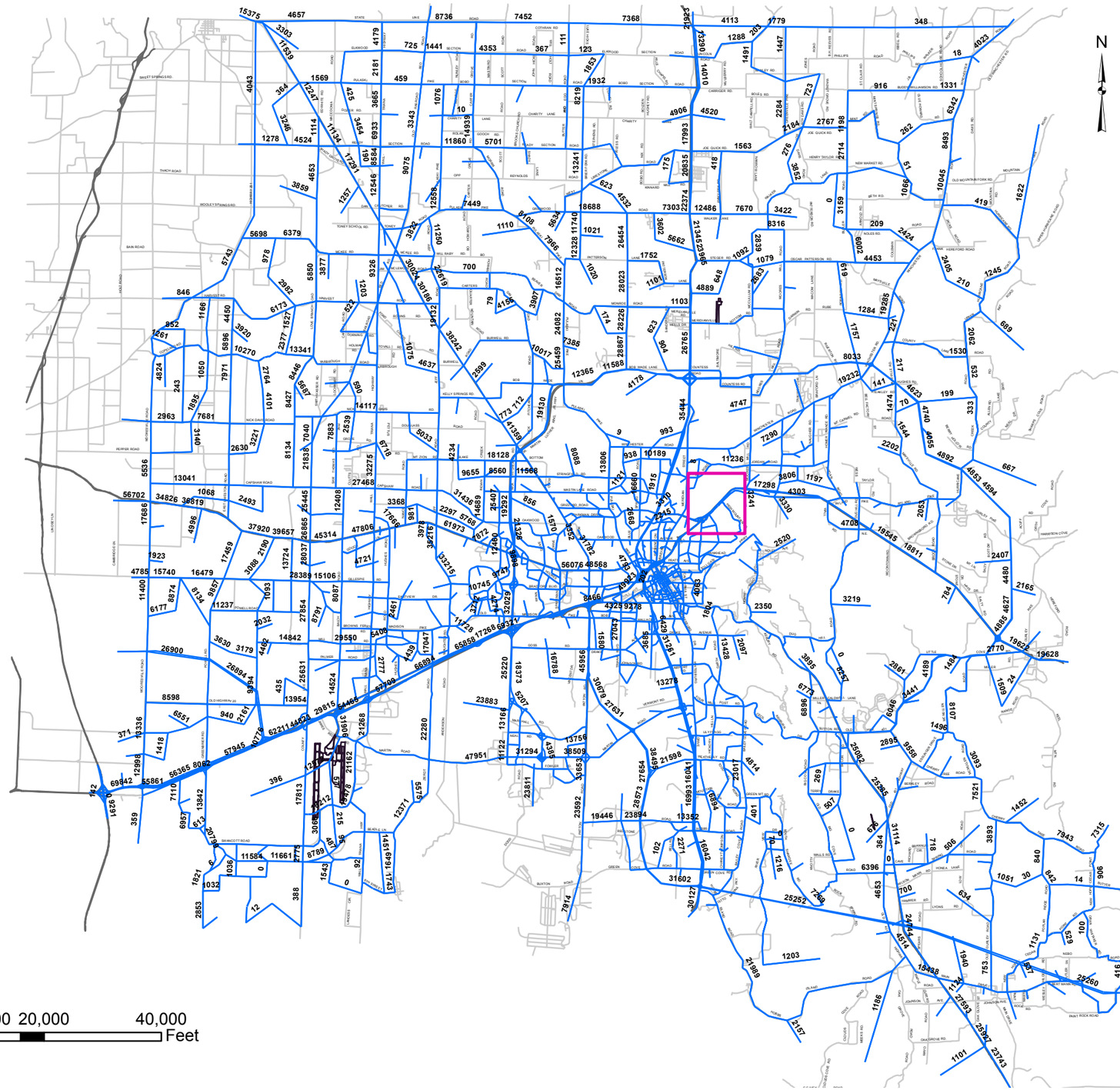
0 10,000 20,000 40,000 Feet

HUNTSVILLE The Star of Alabama Geographic Information Systems

MAP 4-13
2035 NETWORK W/O SOUTHERN BYPASS
LEVEL OF SERVICE MAP



MAP 4-14
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
TRAFFIC VOLUME MAP



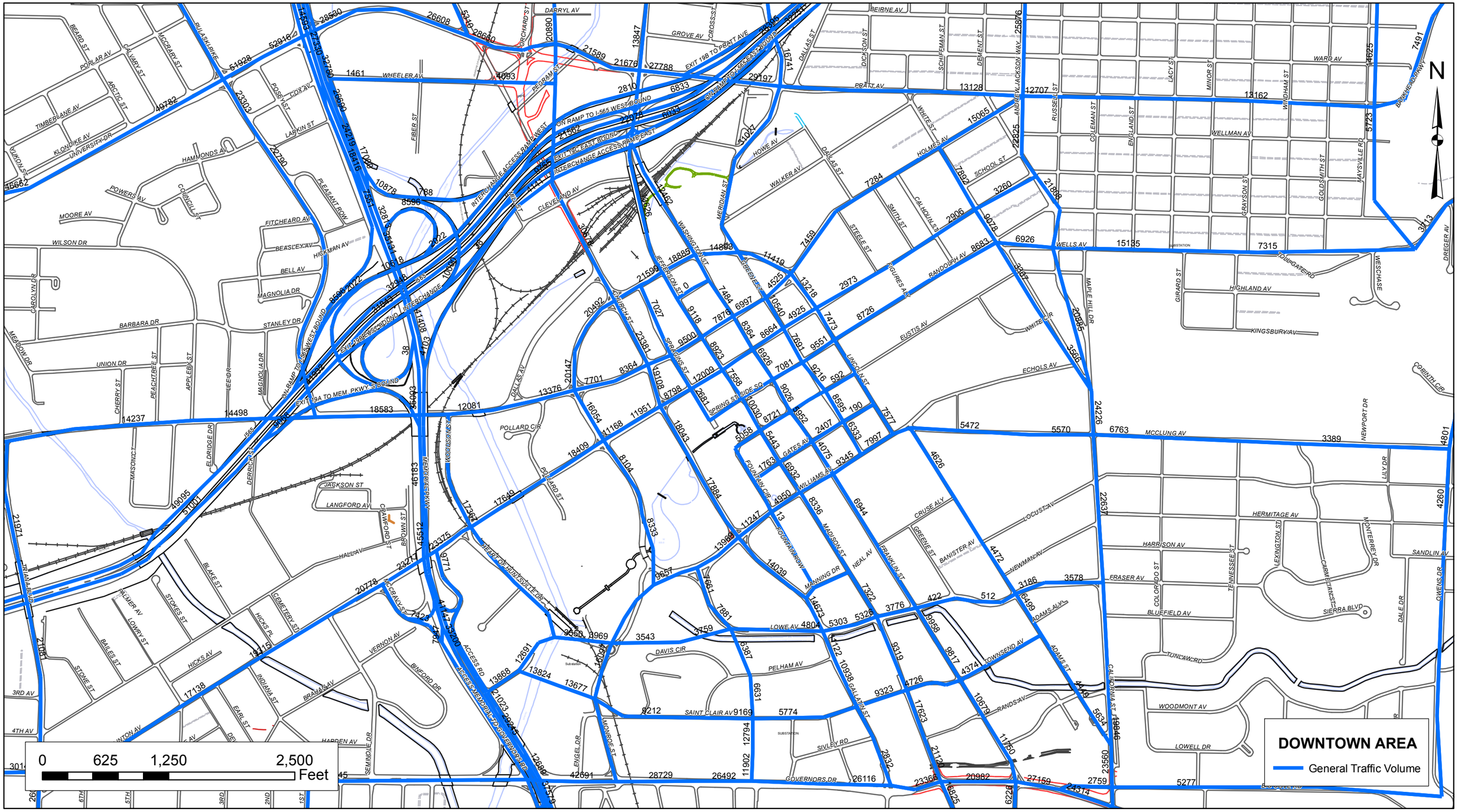
HUNTSVILLE STUDY AREA

12345 General Traffic Volume

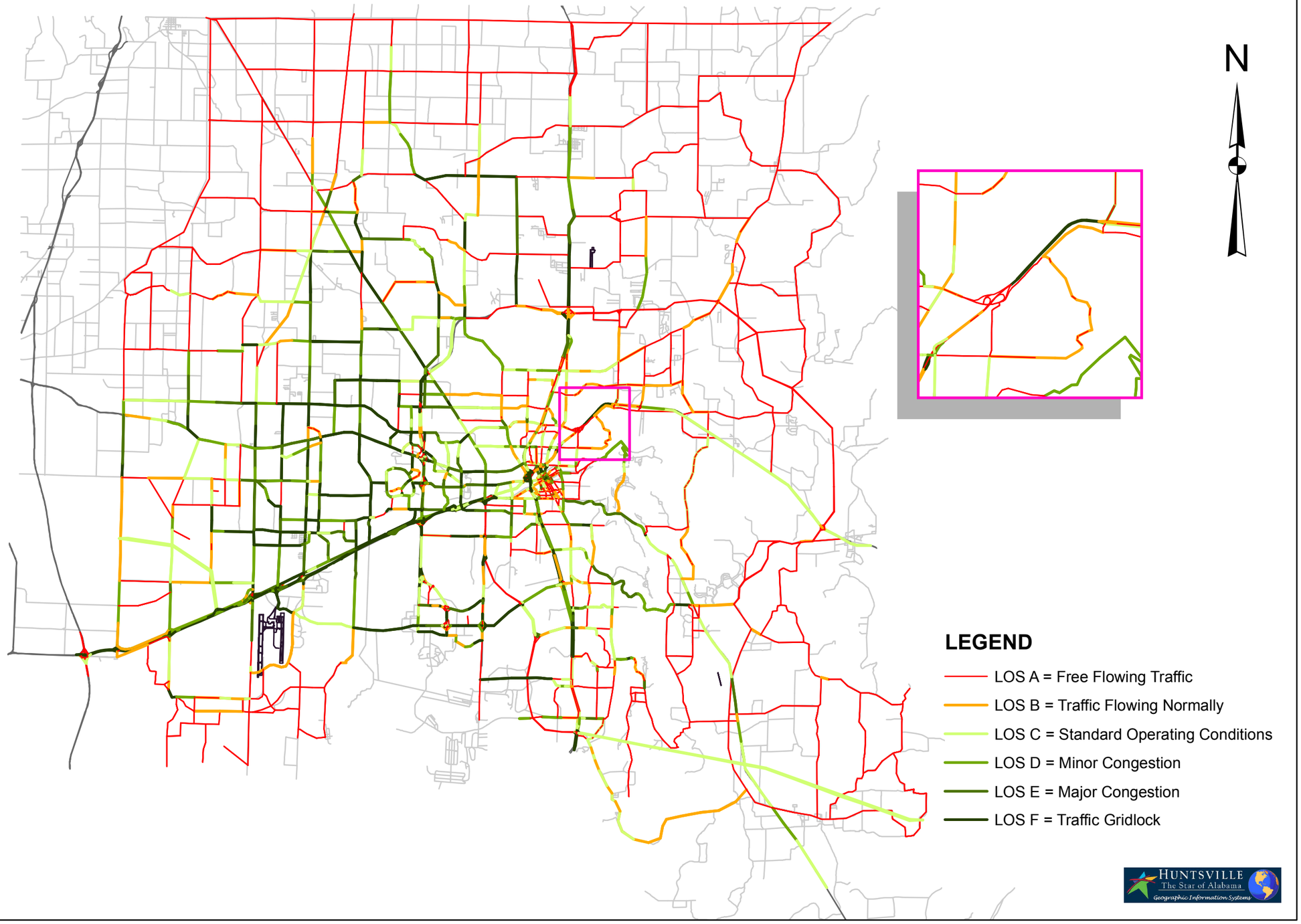
0 10,000 20,000 40,000 Feet

HUNTSVILLE The Star of Alabama Geographic Information Systems

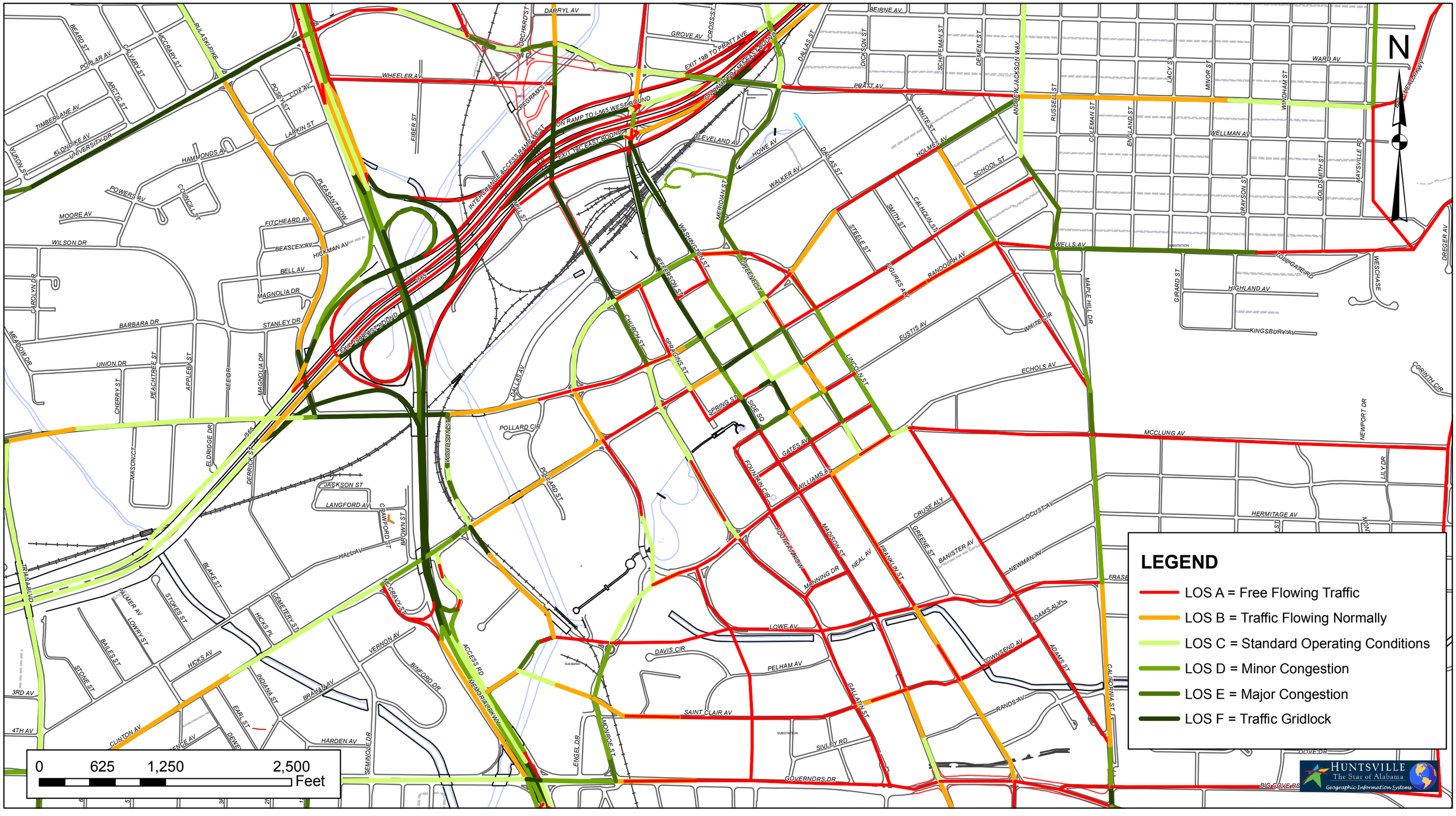
MAP 4-15
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
TRAFFIC VOLUME MAP



MAP 4-16
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
LEVEL OF SERVICE MAP



MAP 4-17
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
LEVEL OF SERVICE MAP



Section 5

HIGHWAY PROJECT EVALUATION

5.0 SAFETEA-LU Planning Factors

The SAFETEA-LU legislation centers on the growing importance of operating, managing, and increasing the safety and security of the transportation system. This focus has been translated into eight broad "areas" to be considered, analyzed as appropriate, and reflected in the planning process. Table 5.1 lists the eight factors and explains how each factor is addressed in the Plan.

Table 5.1: SAFETEA-LU Planning Factors

Factor	How It Is Considered
1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency	Access to industrial parks, ports, airports, intermodal transportation facilities and military installations is provided by interstate highways and other local, state, and federal highways; all of which are included in the Long Range Plan (LRP) highway network. Projects are included in the LRP to reduce congestion and increase accessibility to these locations.
2. Increase the safety of the transportation system for motorized and non-motorized users	Safety projects are addressed in terms of transportation facilities used by all modes of transportation: motor vehicle, transit, bicycles, and pedestrian. Safety projects are included in the Congestion Management, Safety Management, and Security Element of the Plan. Additionally, transit safety is addressed. ITS and its application for network safety is also addressed. Safety is also addressed in the Plan under the Bicycle and Pedestrian/Greenways Element, in terms of the identification of projects dedicated for bike/ped purposes.
3. Increase the security of the transportation system for motorized and non-motorized users	Security of the transportation system is addressed in the Congestion Management, Safety Management, and Security Element of the plan. Transit security is also addressed. ITS and its application for network security is addressed.
4. Increase the accessibility and mobility of people and for freight	The Highway Element and the Congestion Management, Safety Management, and Security Element of the plan provide relief to traffic congestion. More accessibility and mobility options are provided through the Bicycle and Pedestrian/Greenway Facilities Element and Transit Element. Freight issues are being explored.
5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	The Plan includes Transportation Enhancement Activities. These are projects that improve the quality of life through funding bicycle, pedestrian, historic preservation and other projects that make communities more livable. The quality of life afforded by these projects encourages and enhances local planned growth and economic development.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight	Better integration of modes is addressed throughout the Plan. The International Intermodal Center, railroad, and trucking issues are included. In addition, the transit system operates from a transfer station.

Table 5.1: SAFETEA-LU Planning Factors *(Continued)*

Factor	How It Is Considered
7. Promote efficient system management and operation	The Plan promotes ITS as a means to encourage efficient management and operation of the transportation system.
8. Emphasize the preservation of the existing transportation system	Preservation of the existing transportation system is accomplished through upgrading and improving substandard and deficient facilities.

5.1 Consistency With Other Plans

There are general and specific directions under SAFETEA-LU (Section 6001) for the consistency requirement. 23 USC 134, Section 6001(a)(g)(3) states "The secretary shall encourage each metropolitan planning organization to consult with officials responsible for other types of planning activities……economic development, environmental protection, airport operations, and freight movements….to coordinate its planning process….with such planning activities. Under the metropolitan planning process, transportation plans and TIPs shall be developed with due consideration of other related planning activities…"

The MPO addresses this requirement by including planning, economic development, engineering, and other technical personnel from various levels of government on the Technical Coordinating Committee (TCC). In addition, the MPO consults with agencies and officials responsible for other planning activities within the Study Area that are affected by transportation when developing the long range transportation plan and Transportation Improvement Program (TIP). This includes Federal, State and Local agencies responsible for:

- Economic growth and development
- Environmental protection
- Airport operations
- Freight movement
- Land use management
- Natural resources
- Conservation
- Historic preservation
- Human service transportation providers

A contact list of these officials and agencies has been developed and is maintained, per the MPO's **Participation Plan for Transportation Planning in the Huntsville Urbanized Area,** found in **Appendix A, Policy 5** and **Policy 6** of this document. **Policy 5** specifically discusses consultation with other agencies and organizations to determine plan consistency, and **Policy 6** specifically discusses consultation with other agencies and organizations concerning environmental impacts.

A listing of all agencies and organizations contacted during this plan update and their responses are recorded in **Appendix B**. A formal request to these agencies is made to compare the draft long range transportation plan with their plans, maps, and inventories. Incorporating these key individuals in the transportation planning process allows for broad acknowledgement of

transportation planning and land use development activities at the local and regional level which can afford opportunities for cooperation and coordination. The spirit and intent of SAFETEA-LU 6001 are clear. In accordance with Public Law 109-59 policy provisions and subsequent agency interpretation, the metropolitan plan should acknowledge consistency with other plans that include transportation and land use components: Regional, Long Range, municipal and county Comprehensive and Master Plans (Airport, Multimodal, Transit, and Utility), Congestion Management Plans, Air Quality Conformity Determination, Freight, Bicycle/Pedestrian, Public Participation Process, and Environmental Plans.

5.2 SAFETEA-LU Requirements for Consultation and Environmental Mitigation

SAFETEA-LU requires State transportation agencies to consult with other agencies in order to eliminate or minimize conflicts with activities that could impact or be impacted by transportation. Furthermore, transportation decisionmakers must take into account the potential environmental impacts associated with a transportation plan or plan update, in order to mitigate those impacts. Locally, the actions to be taken concerning environmental mitigation and determining environmental impacts as related to the long range transportation plan is discussed in **Appendix A, Policy 6**.

Mitigation as defined by the National Environmental Policy Act (NEPA) is really a three-level concept. The first level is avoidance, and for transportation agencies, this could be as simple as choosing an alternative that avoids a sensitive resource, such as an historic site or a wetlands area.

The second level is minimization, which means that if avoidance is not possible, then the transportation agency takes action to minimize impact to the sensitive resource. For example, spanning a stream or wetlands area would have considerably less impact than re-channeling the stream or filling the wetlands.

The third level is mitigation, which means impact to a resource can't be avoided. Examples here include maintaining records of a historic structure that must be demolished and compensation for filled wetlands by debits from a wetlands "bank" either on-site or at some other location.

A few examples may illustrate how this hierarchy operates. Please note that for these resources there may be many more possible options to avoid, minimize or mitigate.

5.2.1 Wetlands

Wetland impacts require avoidance, minimization, or mitigation by Executive Order 11990, to the extent practical.

For these resources we first try to avoid by shifting alignments. When the wetlands are narrow, for example, stream bank wetlands, we may avoid by spanning both the stream and the wet areas adjacent. That assumes a reasonable cost to avoid.

We may minimize by such actions as:
- narrowing medians,
- constructing fill slopes as steep as warranted by geotechnical investigation,
- alignment shift that may not entirely miss the wetland, but lessen the impact, or
- partial bridging

While mitigation for State projects in Alabama can utilize credits purchased from an established wetland bank, on-site mitigation may be possible by, for example, enhancing the remaining portion of the wetland to function at a higher level. Restoration/enhancement efforts for isolated wetlands are usually successful only when involving simple actions like restoring water flow to a former wetland that has been drained.

5.2.2 Historic Property

Historic properties are protected by both Section 4(f) of the DOT Act of 1966 (as amended) and Section 106 of the Historic Preservation Act. Section 4(f) in particular creates a high standard to pass before we can say we cannot avoid ("use") the resource. Other resources, notably publicly owned recreational lands are also protected by Section 4(f).

Therefore we mandate fairly detailed consideration of shifts to either side of each individual resource as well as all protected resources. The costs and impacts associated with these avoidance alternatives must be substantial before FHWA can agree to use the resource.

Minimization for historic property can take the form of planting to screen the view of a modern facility, restoring (e.g.) a stone wall taken by the ROW, even moving a building that is historic for architectural reasons and restoring it in an appropriate location..

Mitigation of historic property taken can be in the form of archival quality (i.e. long-lasting) photographs or line drawings of the structure to be taken. A researched, written narrative of the historical importance of the resource may also be developed. In some cases parts of the structure (e.g. approach spans to a longer bridge) may be reused in another application.

5.2.3 Resources for Consultation and Environmental Mitigation

Considerations of potential environmental impacts associated with transportation projects include but are not limited to the following resources/issues, listed in **Table 5.2**:

Table 5.2: Resources for Consultation and Environmental Mitigation

Resource/Issue	Why Important	Regulatory Basis	Contact
HAZMAT Sites	Health hazards, costs, delays, liability for both State & federal projects on either existing or acquired right-of-way	State & federal law; Guidelines for Ops; ASTM E-1527	Phase-I: Design Bureau/ETS, phone 334-242-6154 Phase-II & III: Materials & Tests Bureau, phone 334-206-2284
Air Quality	Public health, welfare, productivity, and the environment are degraded by air pollution	Clean Air Act of 1970; 40 CFR Parts 51 & 93; State Implementation Plan	Design Bureau/ETS, phone 334-242-6147; PM-2.5 – Design Bureau/ETS, phone 334-242-6315
Noise	Noise can irritate, interrupt, and disrupt, as well as generally diminish the quality of life	Noise Control Act of 1972; ALDOT's highway Traffic Noise Analysis Policy and Guidance	Design Bureau/ETS, phone 334-242-6147 or 6828 or 6710
Wetlands	Flood control, wildlife habitat, water purification; applies to both State and federally funded projects	Clean Water Act of 1977; Executive Order 11990; 23 CFR 777	Design Bureau/ETS, phone 334-242-6145; US Army Corps of Engineers, phone 251-690-2658
Threatened and Endangered Species	Loss of species can damage or destroy ecosystems, to include the human food chain	Endangered Species Act of 1973; 7 CFR 355	Design Bureau/ETS, phone 334-242-6132; US Fish & Wildlife Service, phone 251-441-5181
Floodplains	Encroaching on or changing the natural floodplain of a water course can result in catastrophic flooding of developed areas	Executive Order 11988; 23 CFR 650; 23 CFR 771	Design Bureau/ETS, phone 334-242-6145; Bridge Bureau, phone 334-242-6598
Farmlands	Insure conversion compatibility with State and local farmland programs and policies	Farmland Protection Policy Act of 1981; 7 CFR 658	Design Bureau/ETS, phone 334-242-6150; Natural Resources Conservation Service (NRCS), phone 334-887-4500
Recreation Areas	Quality of life; neighborhood cohesion	Section 6(f) of the Land and Water Conservation Fund Act; Section 4(f) of the DOT Act of 1966 (when applicable); 23 CFR 771	Design Bureau/ETS, phone 334-242-6143 or 6152; Alabama Department of Economic and Community Affairs, phone 334-242-5363

Table 5.2: Resources for Consultation and Environmental Mitigation *(Continued)*

Resource/Issue	Why Important	Regulatory Basis	Contact
Historic Structures	Quality of life; preservation of the national heritage	National Historic Preservation Act of 1966 (Section 106); the DOT Act of 1966 [Section 4(f)]; 23 CFR 771; 36 CFR 800	Design Bureau/ETS, phone 334-242-6144 or 6225; Alabama Historical Commission, phone 334-230-2667
Archaeological Sites	Quality of life; preservation of national and Native American heritage	National Historic Preservation Act of 1966 (Section 106); the DOT Act of 1966 [Section 4(f)]; 23 CFR 771; Executive Order 13175	Design Bureau/ETS, phone 334-242-6144 or 6225; Alabama Historical Commission, phone 334-230-2667
Environmental Justice	To avoid, minimize, or mitigate disproportionately high impacts on minorities and low-income populations; basic American fairness	Title VI, Civil Rights Act of 1964; Executive Order 12898	Design Bureau/ETS, phone 334-242-6529 or 6576; right-of-way office in each respective ALDOT Division

In each of the examples given above, the first contact listed is the ALDOT's Design Bureau Environmental Technical Section (ETS), not because it is a "resource agency" as defined by federal regulations, but because it has the multidisciplinary experts who can guide the MPO through the early identification of impacts in the initial project planning and development stage. The sooner a potential environmental impact is identified, the more likely it can be avoided, minimized, or mitigated. Early contact with the ETS can insure timely consultation with all potentially affected stakeholders and compliance with provisions of the National Environmental Policy Act (NEPA) and its enforcing regulations.

5.3 Environmental Factors and Land Use

An overview of environmental factors and land use must be conducted to determine the viability of proposed projects. In order to assess the impacts of the planned transportation improvements in the area, the following environmental/land use factors were considered:

5.3.1 Air Quality

The Huntsville urban area is presently classified as an attainment area for all criteria pollutants [pollutants for which EPA has promulgated National Ambient Air Quality Standards (NAAQS) under the Clean Air Act]. In 2008, EPA lowered the ambient standard for ozone to 75 ppb (parts per billion) and Madison County was included on the list of recommended non-attainment areas submitted by the State of Alabama to EPA in March 2009. However, as of September 2009, it appeared that Madison County would attain the standard prior to designations being made with the inclusion of the data from the 2009 ozone season. EPA was scheduled to make the designations under the 2008 standard in March 2010, but has delayed the designation process pending further revisions to the ozone standard. In all likelihood the standard will be tightened further, and EPA has

indicated their intention to publish proposed revisions to the standard in December 2009, promulgate a final rule in August 2010, and designate areas as attainment or non-attainment under the revised standard in August 2011. Depending on the stringency of the revised standard, the Huntsville area could be designated as a non-attainment area in 2011.

The latest **Air Quality Report** (February 2009) published by the City of Huntsville's Department of Natural Resources, indicates that nearly 70% of the ozone precursor emissions (oxides of nitrogen and volatile organic compounds) in the area comes from mobile sources. While substantial reductions in emissions from individual vehicles have occurred due to Federal limitations on fuel volatility and national tailpipe emissions standards, increases in VMT (Vehicle Miles Traveled) have partially offset these reductions in many parts of the country. With stricter tail-pipe standards taking effect in 2004, and with imposition of tighter 2007 and 2010 diesel emissions standards, on-road emissions of ozone precursors should decrease in the coming years as a result of fleet turnover. However, further improvements in the transportation network to reduce congestion and improve connectivity are necessary to ensure these air quality benefits are actually realized.

5.3.1.1 Transportation Conformity

Transportation conformity is an analytical process required of MPOs in non-attainment and maintenance areas as a result of the Clean Air Act Amendments of 1990. SAFETEA-LU links compliance with conformity requirements to continued funding of transportation plans, programs and projects. States and MPOs must demonstrate, through the conformity process, that the transportation investments, strategies and programs they choose, taken as a whole, have air quality impacts consistent with the State Implementation Plan (SIP). Emissions from mobile sources may not exceed the SIP targets.

The State and MPO are responsible for deciding what transportation investments the area will make to attain the standards. Emissions reduction targets for mobile sources can be achieved through programs that address vehicle emissions (use of reformulated gasoline, implementation of inspection/maintenance programs), by changing how we travel (ridesharing or use of transit) or congestion mitigation programs (traffic signal synchronization).

5.3.1.2 CMAQ Funds

The Congestion Management and Air Quality (CMAQ) Program was reauthorized in SAFETEA-LU. The primary purpose of the CMAQ is to fund transportation projects and programs in non-attainment and maintenance areas which reduce transportation-related emissions. Over $8.61 billion dollars will be authorized nationwide over the 5-year program (2005-2009), with annual authorization amounts increasing each year during this period.

5.3.2 Cemeteries/Historic Properties

Cemeteries (public and private) were located using information from United States Geological Survey (USGS) Quad Maps and from a cemetery inventory map. Copies of the

USGS Quad Maps are kept on file in the City of Huntsville Planning Division Facility Inventory Data Base. A copy of the cemetery inventory map is located in the Huntsville/Madison County Public Library.

Historic properties are properties listed on or eligible for the National Register of Historic Places, and/or are designated as National Historic Landmarks and/or are located in a Locally Designated Historic District. This information is kept on file in the City of Huntsville Planning Division Facility Inventory database; however, information concerning eligible properties must be determined by field investigations conducted by qualified personnel.

5.3.3 Potential Protected and Protected Lands/Champion Trees

Potentially Protected and Protected Lands are from an inventory of properties that have been acquired by, or have been designated as having the potential to be acquired by, the non-profit Huntsville Land Trust.

Champion Trees are those trees that are considered to be of state and/or national significance due to their outstanding size. This information is available from the Alabama Forestry Commission.

5.3.4 Parks and Recreation/Landfills

The parks and recreation facilities inventoried include City of Huntsville neighborhood and community park and recreation facilities as well as Madison County park and recreation facilities. This information is kept on file in the City of Huntsville Planning Division Facility Inventory database.

The locations of the known landfills (licensed and unlicensed) were provided by the Environmental Services Division of the Madison County Health Department.

5.3.5 Topography

The topographical features of the study area (including slopes, mountains and depressions) were derived from USGS Quad Maps. Copies of these maps are kept on file in the City of Huntsville Planning Division Facility Inventory database.

5.3.6 Floodplains

The locations of the floodplains are designated by the Federal Emergency Management Agency (FEMA). Copies of the maps depicting the locations of the floodplains are kept on file in the City of Huntsville Planning Division Facility Inventory database.

5.3.7 Wetlands

The U.S. Fish and Wildlife Service designate the location of wetlands. Copies of the maps depicting the locations of the wetlands are kept on file in the City of Huntsville Planning Division Facility Inventory database.

5.3.8 Other

The locations of utility delivery points, universities, public properties, industrial parks, hospitals, water treatment plants, sewage treatment plants, and Redstone Arsenal facilities are found in this category. This information is kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

5.4 Environmental Mitigation and Climate Change

5.4.1 Federal Assessment

"According to the FHWA report Integrating Climate Change into the Transportation Planning Process, there is general scientific consensus that the earth is experiencing a long-term warming trend and that human-induced increases in atmospheric greenhouse gases (GHGs) may be the predominant cause. The combustion of fossil fuels is by far the biggest source of GHS emissions. In the United States, transportation is the largest source of GHG emissions, after electricity generation. Within the transportation sector, cars and trucks account for a majority of emissions.

Opportunities to reduce GHG emissions from transportation include switching to alternative fuels, using more fuel efficient vehicles, and reducing the total number of miles driven. Each of these options requires a mixture of public and private sector involvement. Transportation planning activities, which influence how transportation systems are built and operated, can contribute to these strategies. In addition to contributing to climate change, transportation will likely also be affected by climate change. Transportation infrastructure is vulnerable to predicted changes in sea level and increases in severe weather and extreme high temperatures. Long-term transportation planning will need to respond to these threats."

Introduction to Integrating Climate Change into the Transportation Planning Process - Federal Highway Administration, Final Report, July 2008

5.4.2 Local Assessment

All corridors identified for improvement have been analyzed for environmental concerns, so that mitigation activities can be considered during the planning phase. Discussions are also held with other agencies as applicable to determine any environmental concerns regarding the overall proposed future plan network. It is hoped that through close coordination with the appropriate entities, that creative environmental mitigation strategies may be developed prior to the project design phase. The aggressive screening of projects, as shown in **Table 5.3**, can lead to various mitigation strategies that may achieve a balance between economic concerns and environmental stewardship. **Table 5.3** illustrates the proposed transportation improvements in relation to the environmental and land use factors listed in the previous section. While a more detailed study, such as the Environmental Assessment, is required once a project is selected for design and construction, the overview presented in this plan is only a brief synopsis of preliminary findings.

Table 5.3: Environmental and Land Use Factors per Project

	PROJECT	FROM	TO	WETLANDS	TOPOGRAPHY	FLOODPLAINS	FARMLANDS	RECREATION AREAS	HISTORIC STRUCTURES	NOISE	ENVIRONMENTAL JUSTICE
1	Ardmore Hwy-AL 53 (PH 1)	Research Park Blvd	Robins Rd	■		■	■			■	
2	Ardmore Hwy-AL 53 (PH 2)	Jeff Rd	McKee Rd	■							
3	Ardmore Hwy-AL 53 (PH 3)	North of Harvest Rd	Tennessee State Line	■							
4	Balch Rd	Browns Ferry Rd	Gooch Ln			■					
5	Balch Rd	Capshaw Rd	Gooch Ln			■					
6	Balch Rd Extension	Browns Ferry Rd	Madison Blvd			■					
7	Beadle Lane	Swancott Rd	Zierdt Rd	■		■	■				
8	Blake Bottom Road	Jeff Rd	Research Park Blvd.	■		■					
9	Brock Rd	U.S. 72 East	Ryland Pike								
10	Browns Ferry Rd	Mooresville Rd	County Line Rd	■							
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd			■					
12	Church St	Monroe St	Oakwood Ave								
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431								
14	Eastern Bypass (PH 2)	Quarter Ln	U.S. 72 East	■		■				■	
15	Eastview Dr	Slaughter Rd	Hughes Rd								
16	Eastview Dr Extension	Hughes Rd	Sullivan St								
17	Green Brier Rd/Powell Rd Ext	North of I-565	U.S. 72 West			■	■				
18	Hobbs Island Rd	U.S. 231	U.S. 431			■					
19	Homer Nance Rd	Jordan Rd	Winchester Rd								
20	Hughes Road	Old Madison Pike	U.S. 72 West								
21	Hughes Road Extension	U.S. 72 West	Wall Triana Rd								
22	I-565	Interstate 65	Wall Triana Hwy								
23	I-565	Oakwood Ave	High Mtn Road		■						
24	I-565 Interchange	County Line Rd					■				
25	I-565 Interchange	Greenbrier Rd									
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd			■					
27	Jeff Rd (Ph 2)	Capshaw Rd	AL Hwy 53	■							
28	Johns Road	Plummer Rd	Old Monrovia Rd	■			■				
29	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East								
30	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd			■					
31	King Drake Rd - 431 Connector	King Drake Rd	U.S. 431								
32	Martin Rd	Zierdt Rd	Laracy Dr	■							
33	Martin Rd	Zierdt Rd	Rideout Rd								
34	Maysville Rd Connector	Maysville Rd	Epworth Dr								
35	Memorial Parkway	N. of Whitesburg-S. of Golf Rd								■	
36	Memorial Parkway	Mastin Lake Rd								■	
37	Memorial Parkway	Winchester Rd								■	
38	Memorial Parkway	Meridianville Bottom Rd								■	
39	Memorial Parkway	Patterson Ln								■	
40	Memorial Parkway	N. of Whitesburg-S. of Golf Rd								■	
41	Memorial Parkway	Mtn. Gap Rd/Hobbs Rd								■	
42	Memorial Parkway	Green Cove Rd				■				■	
43	Memorial Parkway	Hobbs Island Rd		■		■				■	
44	Memphis to Atlanta Hwy	I-65	I-565								
45	Memphis to Atlanta Hwy	Southern Bypass	Marshall County Limits	■	■	■					
46	Meridian St (PH 1)	Winchester Rd	Memorial Parkway								
47	Meridian St (PH 2)	Oakwood Ave	Pratt Ave								
48	Mill Rd	County Line Rd	Hughes Rd	■							
49	Moontown Rd	Ryland Pike	U.S. 72 East								
50	Moores Mill Rd	Winchester Rd	Northern Bypass								
51	Mt Lebannon	Grimwood Rd	Northern Bypass								
52	Nance Rd	University Dr	Capshaw Rd								
53	Northern Bypass (PH 2)	East of Pulaski Pike	U.S. 231		■		■			■	
54	Northern Bypass (PH 3)	U.S. 231	Moores Mill Rd		■		■			■	
55	Northern Bypass (PH 4)	Moores Mill Rd	Winchester Rd		■		■			■	
56	Northern Bypass (PH 5)	Winchester Rd	U.S. 72 East		■		■			■	
57	Oakwood Rd	Adventist Blvd	Old Monrovia Rd			■					
59	Old 431 Hwy	Highway 431	Wilson Mann Rd						■		
59	Old Big Cove Rd	Hwy 431	Sutton Rd	■	■	■	■				
60	Old Big Cove Rd	South Green Mountain Rd	Hwy 431				■				
61	Old Hwy 20	Greenbrier Rd	County Line Rd								
62	Old Madison Pike	Thornton Industrial Park	Slaughter Rd		■	■					
63	Old Madison Pike	Hughes Rd	Slaughter Rd								
64	Old Railroad Bed Rd (PH 1)	U.S. 72 West	Capshaw Rd				■				
65	Old Railroad Bed Rd (PH 2)	Capshaw Rd	AL Hwy 53				■				
66	Patton Rd	Aerobee Rd	Redstone Rd								
67	Plummer Rd	Research Park Blvd	Indian Creek Rd			■					
68	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension								
69	Powell Rd	Powell Rd	Brownsferry Rd	■			■				
70	Research Blvd and Interchanges	I-565	Ardmore Hwy - AL 53								
71	Ryland Pike	U.S. 72	Northern Bypass								

	PROJECT	FROM	TO	WETLANDS	TOPOGRAPHY	FLOODPLAINS	FARMLANDS	RECREATION AREAS	HISTORIC STRUCTURES	NOISE	ENVIRONMENTAL JUSTICE
72	Shelton Rd	Madison Blvd	1/4 mi N. of Madison Blvd			■					
73	Shields Rd	Jordan Rd	Winchester Rd			■					
74	Slaughter Road	Madison Blvd	U.S. 72 West	■					■		
75	Southern Bypass (PH 1)	I-565	Martin Rd	■							
76	Southern Bypass (PH 2)	Martin Rd	Weatherly Rd Ext			■					
77	Southern Bypass (PH 3)	Weatherly Rd Ext	U.S. 231								
78	Sullivan St	Royal Dr	Front St							■	
79	Swancott Rd	I-565	County Line Rd								
80	U.S. 72 East/ARC Corr V	Moores Mill Rd & Shields Rd								■	
81	U.S. 72 East/ARC Corr V	Jordan Rd Extended		■			■			■	
82	U.S. 72 East/ARC Corr V	Moontown Rd		■			■			■	
83	U.S. 72 East/ARC Corr V	Brock Rd		■			■			■	
84	U.S. 72 East/ARC Corr V	Eastern Bypass		■						■	
85	U.S. 72 East/ARC Corr V Interchange	High Mountain Rd			■						
86	U.S. 72/University Dr	Providence Main Blvd	County Line Rd								
87	U.S. 72/University Dr	County Line Rd	Mooresville Rd	■							
88	Wall Triana Hwy	Mill Rd	U.S. 72 West								
89	Wall Triana Hwy	U.S. 72 West	Capshaw Rd				■				
90	Wall Triana Hwy	Capshaw Rd	Yarborough Rd			■					
91	Weatherly Rd Extension	Memorial Parkway	Southern Bypass	■		■					
92	Winchester Rd (PH 2)	Dominion Cr	Naugher Rd								
93	Winchester Rd (PH 3)	Naugher Rd	Bell Factory Rd				■				
94	Winchester Rd (PH 4)	Bell Factory Rd	State Line		■						
95	Zierdt Rd (PH 1)	Madison Blvd	South of Martin Rd			■					
96	Zierdt Rd (PH 2)	South of Martin Rd	Beadle Ln	■		■					
97	Zierdt Rd Ext	1/4 mi N. of Madison Blvd	Old Madison Pike			■					

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Section 6

PUBLIC TRANSPORTATION ELEMENT

6.0 Transit Systems Serving the MPO

SAFETEA-LU places emphasis on the expansion, enhancement, and increased use of public transportation to help address traffic congestion problems. To fully address the existing and future traffic congestion problems in the Huntsville urbanized area, alternative solutions to single occupancy vehicles must be maximized to the extent feasible.

Transit services in the urbanized area are provided by Madison County, the City of Madison, and the City of Huntsville. Madison County operates demand response transit through its program: Transportation for Rural Areas of Madison County (TRAM). There are no service restrictions to the county's service, such as age or income; however, riders must reside in the rural communities of Madison County. Funding for this program is provided by federal transit monies funneled through the State of Alabama's rural transit program.

The City of Madison operates the Madison Assisted Ride System (MARS) through the City of Madison Department of Recreation. The program is fully funded by the City of Madison, and its client base is restricted to those persons residing in the City of Madison that are eligible for paratransit services under ADA guidelines. The service primarily provides trips for medical and employment purposes for those that are qualified as disabled. Transportation service is limited to the Madison City limits; however, exceptions are made for essential services that are available in Huntsville such as medical appointments and employment. The City of Huntsville provides assistance to this program by providing scheduling and dispatch services.

The City of Huntsville Public Transit Division currently operates a variety of services targeted to specific community transportation needs. The City of Huntsville's program is funded directly through the Federal Transit Administration. The stated goal of the Public Transit Division is to "provide adequate and efficient community transportation services for the disabled community, senior citizens, commuters, individuals with limited transportation alternatives, and the general public".

The City of Huntsville currently provides these services through several programs. Major emphasis and resources are currently directed to the fixed route Shuttle service and the Handi-Ride paratransit program which serves senior citizens and the disabled community. Community volunteers and human service transportation programs serve other specialized needs. A Rideshare program provides matching services for commuters and encourages carpooling and vanpooling on a local and regional basis.

The City of Huntsville Public Transit Division also provides transportation brokerage to assist citizens, groups, and agencies to find or help provide transportation for other specialized needs. Taxicab and Limousine support is also provided. This support includes inspections, advocacy, and other assistance as needed or required by local privately owned and operated taxicab

companies.

Since the service's inception, programs have been modified, refined, and improved based on actual experience and customer needs. Since the last update of this transportation plan, the Shuttle service expanded its routes by adding 2 routes: One to Research Park and the other to South Huntsville.

The future needs for public transportation services for the City of Huntsville will be dependent on several factors. It is generally believed that a mix of the currently offered services will meet community needs for the next several years. Advances in technology and service delivery may dictate how and in what quantities these services are provided. Expansion of current Handi-Ride and Shuttle services for general transportation needs of the city coupled with maintenance of other programs to meet specific needs will be essential to meet future anticipated growth in demand for service. Of particular concern will be the increasing number of persons over 65 and disabled citizens that will continue to be active. As the population continues to age, services targeted to their needs will have to be enhanced and expanded.

6.1 Current Transit Services

Madison County's demand response service (TRAM) operates Monday through Friday from 7:00 a.m. until 3:00 p.m., excluding official county holidays. The service operates 8 vehicles that are wheelchair lift equipped. Fares for TRAM services are provided by contracts, subscription services, and donations. TRAM service must be scheduled at least 24 hours in advance.

The City of Madison's demand response service (MARS) operates Monday through Friday from 7:00 a.m. until 5:00 p.m., excluding official City of Madison holidays. The service operates 2 vehicles, which are also wheelchair lift equipped. One van runs full time, with the other van running part time on Mondays, Wednesdays, and Fridays. Fares for MARS service are $2.00 for each one-way trip. MARS service must be scheduled at least 24 hours ahead of time, and persons wishing to ride must be subscribers of the program.

The Huntsville Shuttle is a fixed route transportation program currently operating along thirteen (13) fixed routes utilizing nineteen (19) buses. A map is included in this section depicting the transit routes. Hours of operation are 6:00 AM to 6:00 PM, Monday through Friday excluding official City of Huntsville holidays. There is currently no evening service and weekend service is limited to the tourist loop that serves the major tourist attractions throughout the city during summer months, and a free downtown loop that operates on the week-ends from 7 p.m. until 2:00 a.m.

Stops are located liberally along each route and benches or shelters are provided at a few of the high ridership locations. There is a central transfer point in the downtown area where all routes connect. There are also several additional transfer points where routes cross and connections can be made.

System headways vary by routes with the longest being one hour, the shortest being 30 minutes. Fares are $1.00 for regular and $.50 for senior citizens and disabled riders. The half fare

provision for seniors and the disabled is in effect for all hours of service and is not currently limited to off peak times. There are also half fare provisions for students traveling to and from classes. A monthly fare card is available and discounted books of single ride tickets are sold in the Public Transportation office.

The Handi-Ride program provides door-to-door Paratransit service for senior citizens and persons with disabilities. This service operates with 20 vehicles, 18 of which are wheelchair lift equipped. Operating hours are 6:00 AM until 6:00 PM, Monday through Friday excluding official City of Huntsville holidays. Riders must call to request a trip. This service gives priority to A.D.A. eligible riders while serving the entire City of Huntsville. Fares for Handi-Ride are $2.00 per trip with no discounted tickets or passes. Trips are for medical, employment, rehabilitation, and personal business.

The Community Volunteer and Human Service Agency programs provide specialized transportation for their clients. They are usually operated by volunteer groups or Human Service agencies to serve their more specialized transportation needs that can not be met by the fixed route or Handi-Ride service.

The Rideshare program is an employee based program that surveys local employers and matches riders together for carpools and vanpools. This service is also promoted through signs located throughout the city. Commuters are matched together and encouraged to form carpools or vanpools.

6.2 Factors Affecting Future Public Transportation Plans

The City of Huntsville, City of Madison, as well as rural Madison County, has experienced an erratic growth pattern over the last 50 years. Huntsville's population increased dramatically during the space race and subsequent defense buildup. This growth placed heavy demands on the public infrastructure during these peak growth times.

A result of many persons working in the military and space industries in Huntsville is that significant numbers that moved to other areas are returning to Huntsville and the surrounding area to retire. This coupled with the aging of the Baby Boom generation over the next 25 years should mean significant increases in senior citizens and disabled residents. It is anticipated that services utilized by these populations will need to be expanded and enhanced to meet the demand.

Services provided by TRAM and MARS have limitations. Additionally, service provided by the Huntsville Shuttle is currently limited and does not cover all areas of the city. There are significant requests for service in these areas and requests will increase over the next few years.

Also, there are several area roadways that will reach their capacity over the next few years. Growth in the western and eastern areas of the City of Huntsville should continue. Specific roadways that will become heavily congested are identified in another element of this plan. Shuttle routes and ridesharing activities should be targeted in those areas also.

As roadways near their capacity, efforts to encourage alternative modes of commuting, such as the Shuttle and Ridesharing programs, will become essential. When used effectively, these programs can assist in reducing peak hour congestion and increasing existing roadway capabilities for the future. Increased hours of operation and Saturday service, along with reduced headways will be important in making the system more appealing to commuters.

Welfare reform and efforts to provide opportunities for productive youth and children's activities will significantly affect the need for public transportation over the next 25 years. One of the key elements in effective reform will be the provision of low cost transportation alternatives for employment opportunities, job training, and related requirements for gainful employment. Effective public transportation services in Huntsville will be essential in helping to provide these opportunities as the needs continue to increase.

Finally, the increasing Federal requirements to reduce air pollution due to automobile usage will necessitate more reliance on alternative transportation. Ridesharing, vanpooling, and public transit will all play an increasing role in meeting these goals. With the changing status of environmental laws, Huntsville may become a nonattainment area for ozone. If this occurs, additional resources and efforts in the area of Ridesharing services will be necessary.

6.3 25 Year Need for Transportation Services

The City of Huntsville Public Transit Division typically conducts ridership surveys annually, with the latest survey completed during July 2008. The results of the survey coupled with general phone requests and requests from social service agencies form additional support for the factors stated earlier. This information will also serve as the basis for future plans for additional Shuttle routes and Handi-Ride service to meet growing demands.

To help determine an overall strategy for future expansion, a **Huntsville Public Transportation Study** will be conducted in the future.

There are several areas of concern most often cited by users of the fixed route service. The first is the expansion of existing service hours and days of service. A total of 32% of respondents indicated they were dissatisfied with the days and hours of operation and the frequency of schedules. Service later at night, Saturday service, and decreased route headways continue to be the most frequently requested system improvement. Headways are currently one (1) hour on most routes. An ideal headway goal system-wide is for service each half hour and 20 minutes on the more heavily utilized routes. Such a reduction would provide better service to existing routes.

Shuttle route expansion over the next 25 years will also be necessary to meet increasing demands for transit services. Areas of particular concern for route expansion are westward to the Huntsville International Airport, and eastward toward the Chapman and Blossomwood areas. Additional areas of potential route expansion should include west Huntsville that currently provides the highest ridership. A link should be considered to Redstone Arsenal and NASA facilities linking them with other destinations such as shopping, eating, and entertainment areas as security issues permit. Since the last update of this plan, service has been expanded to Research Park and South

Huntsville. Additional service linking the local universities and junior and technical colleges will need to be evaluated. These institutions are growing and have expressed the need to be connected to shopping, medical, and housing areas.

The northwest area of the city experiences growth in light of the development of the North Huntsville Industrial Park. Additional transit services may be needed to support this growth. This development should bring additional support industries and residential growth to the area.

As the City of Huntsville grows, and employment and housing patterns emerge, the Shuttle routing system must be flexible enough to expand where needed and reduce service in areas that decline in population and ridership. This will be necessary to balance needs and resources and be responsive to the riding public that depends on our services.

With the aging of the population, an increase in services provided for senior citizens and disabled residents is also anticipated. Mandates such as the Americans with Disabilities Act and other efforts to provide access to jobs, health care, and other activities for those with disabilities will make this additional service necessary.

The cost of providing the resources to keep persons active, productive, and independent are far less than those required for institutionalization or other primary care alternatives. The Handi-Ride service must expand to continue to meet A.D.A. requirements and provide access to senior citizens services. The demand for this service is high, but has begun to stabilize as Handi-Ride fares have increased, shifting more senior trips to the less expensive fixed route Shuttle. However, it is anticipated that ten (10) to fifteen (15) additional lift equipped vehicles to serve Handi-Ride passengers city-wide will be required over the next 25 years.

Recently, the City of Huntsville Public Transit Division relocated to a new facility that centrally provides administrative and operational services, and transfer space at the same location. The facility is located in a high traffic area frequented by tourists that are unfamiliar with the area, as well as out of town tour and school buses. This facility includes space for minor maintenance and bus cleaning, and has been constructed to allow for additional expansion of transit services over the next 25 years.

It is believed that a reasonable expansion of the current services provided by the City of Huntsville Public Transit Division will meet needs and demands for service over the time period. Adjustments for travel patterns and roadway capacities will also dictate the services necessary over the next 25 years. New technologies and delivery systems will be considered as appropriate. Targeted implementation of expanded services will help to minimize budgetary impacts and allow for planned and orderly growth.

At the present time, TRAM services as well as MARS services are expected to maintain level, with expansion occurring as funding is available to accommodate demand. Future expansion of MARS service will be considered as additional funding for the program becomes available. The City of Madison recently created the Madison City Advocacy Board, and one of its missions is to identify and determine the feasibility of federal funding sources or other grant programs that may be available to enhance current services provided by MARS.

6.4 Financing of Services

Financing of public transportation services for Madison County and the City of Huntsville include funding from the Federal Transportation Administration, local sources, and fare revenues. The financing of Madison's paratransit program is dependant upon local revenues. A general cost projection of the area's only fixed route transit services for the next 25 years is provided as follows:

Table 6.1
Future Funding Needs for Fixed Route Service - City of Huntsville

YEARS	OPERATING COSTS	CAPITAL COSTS
2010-2014	$0	$12,172,603
2015-2019	$0	$14,607,123
2020-2024	$0	$17,528,548
2025-2035	$0	$42,068,516
TOTAL	$0	$86,376,790

6.5 Access to Jobs Program

Section 3018 - Job Access and Reverse Commute Grants in SAFETEA-LU provides funding for projects that promote the use of transit by welfare recipients. Access to jobs projects relate to the development of transportation services designed to transport welfare recipients and eligible low-income individuals to and from jobs and other activities related to employment.

Reverse commute projects are related to the development of transportation services that transport residents of urban areas and non-urbanized areas to suburban employment opportunities. **Table 6.2** identifies the types of projects that are eligible under this program.

Table 6.2
Access to Jobs Program - Types of Eligible Projects

ACCESS TO JOBS PROGRAM	REVERSE COMMUTE PROGRAM
1. Promote the use of transit by workers with nontraditional work schedules	1. Subsidize the costs of adding reverse commute bus, train, carpool, van routes or service to suburban workplaces
2. Promote the use of transit vouchers for welfare recipients and eligible low income individuals	2. Subsidize the purchase or lease by a nonprofit organization or public agency of a van or bus dedicated to shuttling employees from their residences to a suburban workplace
3. Promote the use of employer-provided transportation, such as the transit pass benefit program	3. Facilitate the provision of mass transportation services to suburban employment opportunities
4. Finance capital expenses and operating costs of equipment, facilities and associated capital maintenance items related to providing access to jobs	

The Elderly Individuals and Individuals with Disabilities, Job Access and Reverse Commute (JARC) and New Freedom programs were affected by SAFETEA-LU. As a condition of Federal assistance under Sections 5310, 5316 and 5317 programs, recipients must certify to the Secretary of Transportation that projects selected for funding emerged from a Coordinated Public Transit-Human Services Transportation Plan. The Federal Transit Administration (FTA), in accordance with SAFETEA-LU, requires that projects selected for funding be derived from a coordinated public transit-human services transportation plan ("human services coordinated transportation plan") beginning in FY2006 for JARC and FY2007 for Section 5310 and New Freedom.

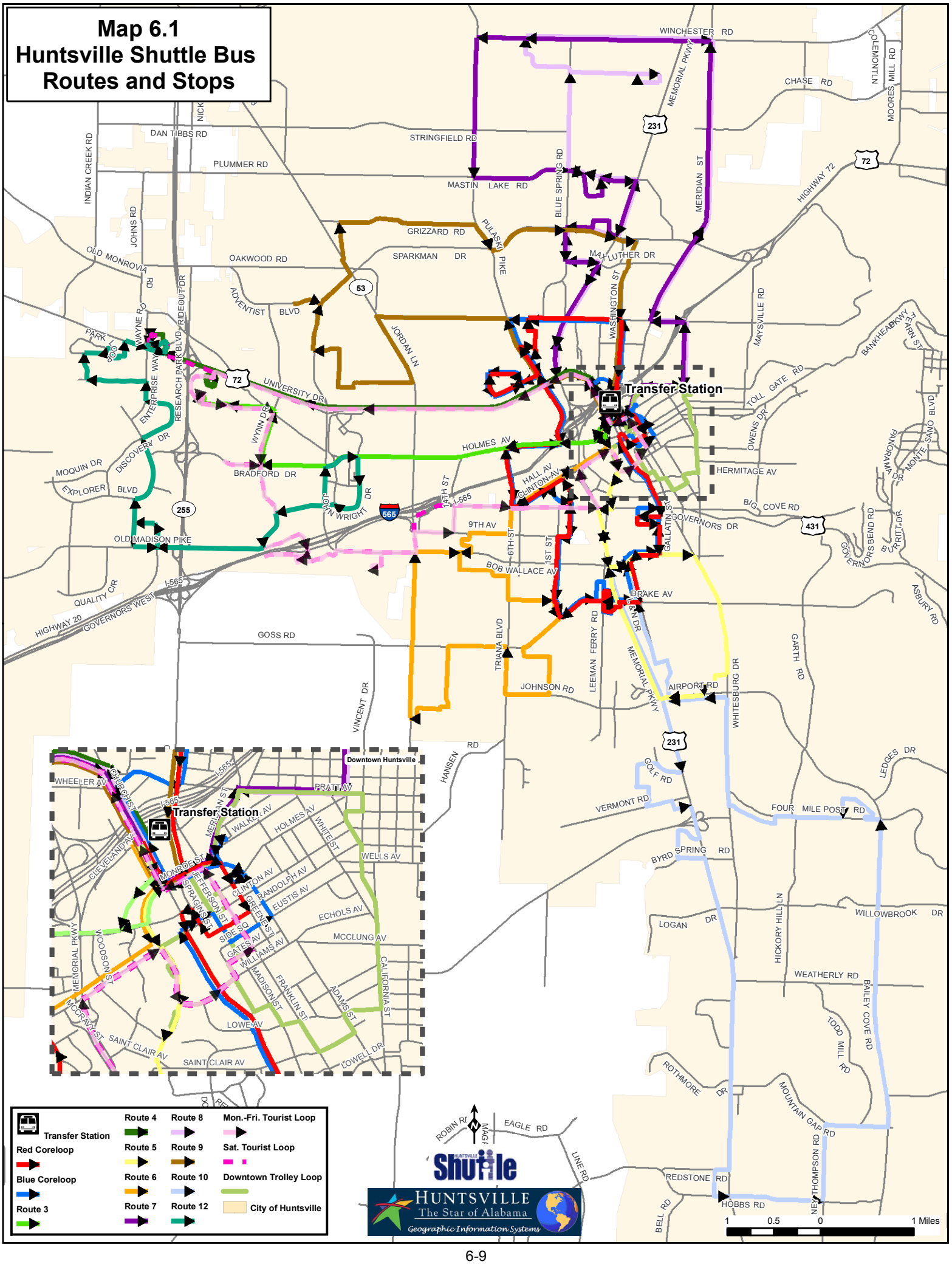
The Top of Alabama Regional Council of Governments (TARCOG) has developed a "human services coordinated transportation plan" for the northeast Alabama region, which includes the non-metropolitan areas of its five-county region. The Huntsville Area MPO contracted with TARCOG to amend their coordinated plan to include the metropolitan area of the Huntsville Area Transportation Study.

The newly developed "human services coordinated transportation plan" meets the minimum criteria of the SAFETEA-LU requirements, which include but are not limited to, the assessment of available services, the assessment of needs, and strategies to address gaps for target populations within the Huntsville MPO study area. In addition, TARCOG is the Designated Recipient of the 5310, 5316 and 5317 programs; thereby administering the competitive grant selection process to ensure a fair and equitable distribution of funds. Furthermore, TARCOG also locally manages the grant announcements for Statewide competitive grants for the non-metropolitan area's 5316 and 5317 programs.

6.6 Conclusion

The provision of public transit services and the financing of those services have been planned for the next 25 years. Steps have already been taken to physically grow the transit system, such as the construction of transit facility with expansion capability. Additionally, flexibility must be exercised as formal public transit plans are scheduled to be updated, showing more detailed system requirements, and as future financing options may become available.

Map 6.1
Huntsville Shuttle Bus Routes and Stops



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Section 7

BICYCLE AND PEDESTRIAN/GREENWAY FACILITIES ELEMENT

7.0 Introduction

Bicycling and walking are viable transportation alternatives throughout many communities within the north Alabama region. Whether for commute or recreational enjoyment, the Huntsville Area Metropolitan Planning Organization (MPO) understands the importance of these activities to ones health, safety and general welfare. Therefore, the Huntsville Area MPO is committed to improving bicycle and pedestrian conditions throughout the region and has adopted bicycle and pedestrian plans aimed at increasing the awareness and benefits of non-motorized modes of travel.

The **Year 2035 Transportation Plan** references the bicycle and pedestrian plans adopted by the Huntsville Area MPO. These plans include existing and proposed projects throughout the Huntsville MPO study area and are published as elements of the 2035 long range transportation plan in separate documentation. The City of Madison adopted the **City of Madison Greenway and Trail Master Plan** in February 2003 and just recently the City of Huntsville, coordinating with neighboring communities in the MPO study area, adopted the **City of Huntsville Bikeways Plan 2006** and the **City of Huntsville Greenways Plan 2006**.

To encourage the use of alternative means of transportation, these plans collectively will feature linked transportation facilities for bicyclists and pedestrians, encourage community-wide support of educational programs, and promote coordinated bicycle and pedestrian programs and services. The ultimate goal of the Huntsville Metropolitan Planning Area Bicycle and Pedestrian Plan, as shown in **Map 7.1** is to provide bicyclists and pedestrians with a countywide system of non-motorized corridors for safe travel and recreational enjoyment.

7.1 Requirements for Bicycle and Pedestrian Travel

Both the Federal Highway Administration (FHWA) and the MPO have established requirements for bicycle and pedestrian travel.

7.1.1 FHWA Requirements

According to FHWA, MPOs must consider at a minimum, accommodating bicycle and pedestrian needs as identified below:

- 23 United States Code 217 states that "Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State."

- FHWA guidance on this issue states that "due consideration" of bicycle and pedestrian needs should include, at a minimum, a presumption that bicyclists and

pedestrians will be accommodated in the design of new and improved transportation facilities. In the planning, design, and operation of transportation facilities, bicyclists and pedestrians should be included as a matter of routine, and the decision not to accommodate them should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling.

Exceptional circumstances are defined below:

- If bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, an effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right-of-way or within the same transportation corridor.

- If the cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project. This twenty percent figure should be used in an advisory rather than an absolute sense.

- Where sparsity of population or other factors indicate an absence of existing and future need. For example, the Portland Pedestrian Guide requires "all construction of new public streets" to include sidewalk improvements on both sides, unless the street is a cul-de-sac with four or fewer dwellings, or the street has severe topographic or natural resource constraints.

In order to comply with these requirements, the MPO long range transportation plans must, at a minimum:

- Consider the context of the project setting. In other words, MPOs should consider whether the general project area includes features like neighborhoods, shopping, schools, transit, or other facilities likely associated with the needs of bicyclists or pedestrians;

- Consider any evidence of existing, informal bicycle-pedestrian activities. An example could be a worn, dirt path along an existing road;

- Consider any reference to bicycle or pedestrian needs in the planning process for the project area;

- Consider public, agency, or other comments requesting such facilities;

- Include maps and other appropriate documentation; e.g., project listing tables, identifying specific bicycle-pedestrian projects proposed in the long range transportation plan. The maps and documentation should be consistent with the treatment of traditional "highway" projects in the long range transportation plan; and

- Include a policy statement that bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist.

7.1.2 Additional Huntsville MPO Requirements

The Huntsville Area MPO has carefully considered the appropriateness of the areas designated for bicycle and pedestrian travel. When planning for new construction and the reconstruction of transportation facilities, the MPO gives full consideration to non-motorized transportation facilities designed for bicyclists and pedestrians. Examples include, but are not limited to the following:

- Sidewalks are required on both sides of newly constructed or widened streets.
- Sidewalk construction shall be required at the time of construction or widening.
- All new roads designed with shoulders will be required to have smooth, paved shoulders. Rumble strips will be optionally applied, if necessary, not to interfere with bicycle use of shoulders.

7.2 List of Planned Bicycle and Pedestrian Projects

In addition other factors are considered in the feasibility of bicycle and pedestrian projects. These factors include traffic volume, connectivity, cost, land acquisition and safety. Currently, the Huntsville Area MPO has federal and local funds allocated for planned transportation enhancement projects aimed at increasing the quality of life for bicyclists and pedestrians. The City of Huntsville, through capital funding, allocates $200,000 per year in sidewalk construction and sidewalk improvement projects. **Table 7.1** displays the Huntsville MPO future transportation projects in the **Year 2035 Transportation Plan** and how these projects will address or consider bicycle and pedestrian travel. The projects identified in **Section 4,** for which bicycle and pedestrian use are considered, are reflected in **Table 7.1.** M&O projects, or maintenance and operation projects are displayed in this section as well. These projects include the installation of bicycle route signs in order to accommodate bicyclists. **Table 7.2** displays the sidewalk improvement projects that are associated with capacity adding roadway improvements listed in **Section 4** as well as the greenway projects that are committed in the MPO area. Please note that additional projects are reflected in **Tables 7.1** and **7.2** that are not associated with planned road improvements shown in **Section 4**.

Projects listed in **Table 7.1** and **Table 7.2** are identified as paved bike lanes, share the road/bike routes, sidewalks, and greenways (shared use paths). These projects can be further defined as follows:

- Paved Bike Lane: A corridor expressly reserved for bicycles existing on a street or roadway in addition to any lanes for motorized vehicles.

- Share the Road/Bike Routes: A facility shared with motorists and identified only by signs. A bicycle route has no pavement markings or lane stripes. A street which is recommended for bicycle use but does not have a specific area designated within the right of way.

- Sidewalk: An improved pedestrian surface that is typically located adjacent to a roadway.

- Greenway (Shared Use Path): A linear park, alternative transportation route, or open space conservation area that provides passive recreational opportunities for pedestrian and/or bicycle paths.

All paved bike lanes, share the road/bike routes, and sidewalks will be constructed on both sides of the street. Greenways or shared use paths will be constructed on one side of the street, or will provide a single transportation route beside or near the planned road improvements listed in **Section 4**. Additional details concerning the exact placement of greenways will not be known until engineering design can begin.

Several corridors listed in **Section 4** do not have bicycle or pedestrian facilities associated with their improvement because the projects were under engineering design prior to the FHWA policy regarding the construction of bicycle/pedestrian facilities. These projects are nearing the right of way acquisition phase or utility relocation phase. Paved bike lanes are planned for these locations, but pedestrian facilities are not. These corridors are as follows:

Map No. (Pg. 4-2)	Project Description
1	Ardmore Hwy-AL 53 from Research Park Blvd to Jeff Rd
2	Ardmore Hwy-AL 53 from Jeff Rd to North of Harvest Rd
62	Old Madison Pike from Thornton Industrial Park to Slaughter Road

As mentioned in **Section 4,** several corridors have been identified that cannot accommodate bicycles and pedestrians because the corridor is a limited access or controlled access roadway, or are U.S. routes and carry high volumes of traffic. The cost of constructing the *appropriate* bicycle and pedestrian facilities for these corridors is either legally impossible or cost prohibitive at the present time.

These following corridors are limited or controlled access facilities and do not include bicycle/pedestrian accommodation due to these special circumstances:

Map No. (Pg. 4-2)	Project Description
22	I-565 from Interstate 65 to Wall Triana Highway
23	I-565 Interstate from Oakwood Avenue to High Mo9untain Rd
24	I-565 Interchange at County Line Rd
25	I-565 Interchange @ Greenbrier Rd
44	Memphis to Atlanta Highway from I-65 to I-565
45	Memphis to Atlanta Highway from Southern Bypass to Marshall County Limits
70	Research Park Blvd and Interchanges from I-565 to Ardmore Highway – AL 53
75	Southern Bypass Ph 1 from I-565 to Martin Rd
76	Southern Bypass Ph 2 from Martin Rd to Weatherly Rd Extension
77	Southern Bypass Ph 3 from Weatherly Rd Extension to U.S 231
91	Weatherly Rd Extension from Memorial Parkway to Southern Bypass

These following corridors are U.S. Routes and carry large volumes of traffic. The cost of constructing appropriate bicycle and pedestrian facilities for these corridors is cost prohibitive at the present time:

Map No. (Pg. 4-2)	**Project Description**
35	Memorial Parkway Interchange from No. of Whitesburg-So. of Golf Rd @ U.S. 231 South
36	Memorial Parkway Interchange at Mastin Lake Rd
37	Memorial Parkway Interchange at Winchester Road
38	Memorial Parkway Interchange at Meridianville Bottom Rd
39	Memorial Parkway Interchange at Patterson Ln
40	Memorial Parkway Interchange at Walker Ln
41	Memorial Parkway Interchange at Mtn. Gap/Hobbs Rd
42	Memorial Parkway Interchange at Green Cove Rd
43	Memorial Parkway Interchange at Hobbs Island Rd
80	U.S. 72 East/Corridor V Interchange at Moores Mill and Shields Rd
81	U.S. 72 East/Corridor V Interchange at Jordan Rd Extended
82	U.S. 72 East/Corridor V Interchange at Moontown Rd
83	U.S. 72 East/Corridor V Interchange at Brock Rd
84	U.S. 72 East/Corridor V Interchange at Eastern Bypass
85	U.S. 72 East/Corridor V Interchange at High Mountain Rd
86	U.S 72/University Dr from Providence Main Blvd to County Line Rd
87	U.S. 72/University Dr from County Line Rd to Mooresville Rd

Table 7.1: Summary of Committed and Future Bicycle Facilities Projects Within the MPO Study Area

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-17)	Project	Jurisdiction	Project Type	Project Description
■ ***Proposed Paved Bike Lanes***					
1	N/A	Ardmore Hwy-AL 53 (Ph 1)	City of Huntsville	Capacity	Provide bike lanes from Research Park Blvd to Robins Rd
2	N/A	Ardmore Hwy-AL 53 (Ph 2)	City of Huntsville	Capacity	Provide bike lanes from Jeff Road to McKee Road
3	N/A	Ardmore Hwy-AL 53 (Ph 3)	City of Huntsville	Capacity	Provide bike lanes from North of Harvest Rd to Tennessee State Line
7	20	Beadle Lane	City of Huntsville	Capacity	Provide bike lanes from Zierdt Rd to Swancott Rd
8	72	Blake Bottom Rd	City of Huntsville	Capacity	Provide bike lanes from Jeff Rd to Research Park Blvd
9	74	Brock Rd	City of Huntsville	Capacity	Provide bike lanes from US 72E to Ryland Pike
10	21	Browns Ferry Rd	City of Huntsville	Capacity	Provide bike lanes from Mooresville Rd to County Line Rd
11	64	Capshaw Rd	City of Huntsville	Capacity	Provide bike lanes from Jeff Rd to County Line Rd
14	30	Eastern Bypass (Ph 2)	City of Huntsville	Capacity	Provide bike lanes from Quarter Ln to U.S. 72 East
17	11	Greenbriar Rd/ Powell Rd Ext	City of Huntsville	Capacity	Provide bike lanes from North of I-565 to US-72W
18	69	Hobbs Island Rd	City of Huntsville	Capacity	Provide bike lanes from US- 231 to US-431
21	21	Hughes Rd Ext	City of Madison	Capacity	Provide bike lanes from US 72 West to Wall Triana Highway
26	25	Jeff Road Ph 1	City of Huntsville	Capacity	Provide bike lanes from University Dr to Capshaw Rd
27	25	Jeff Road Ph 2	City of Huntsville	Capacity	Provide bike lanes from Capshaw Rd to AL Hwy 53
28	31	Johns Rd	City of Huntsville	Capacity	Provide bike lanes from Plummer Rd to University Dr
31	73	King Drake Road- US 431 Connector	City of Huntsville	Capacity	Provide bike lanes for new road construction from Old Big Cove Rd to King Drake Rd
32	30	Martin Rd	City of Huntsville	Capacity	Provide bike lanes from Zierdt Rd to Laracy Dr
33	30	Martin Rd	City of Huntsville	Capacity	Provide bike lanes from Zierdt Rd to Rideout Rd
46	69	Meridian St	City of Huntsville	Capacity	Provide bike lanes from Winchester Road to Memorial Parkway
47	69	Meridian St Ph 1	City of Huntsville	Capacity	Provide bike lanes from Oakwood Ave to Pratt Ave
49	75	Moontown Rd	City of Huntsville	Capacity	Provide bike lanes from Ryland Pike to US 72E
50	78A	Moores Mill Rd	City of Huntsville	Capacity	Provide bike lanes from Winchester Rd to Northern Bypass

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-17)	Project	Jurisdiction	Project Type	Project Description
■ ***Proposed Paved Bike Lanes***					
51	57	Mount Lebanon	City of Huntsville	Capacity	Provide bike lanes from Grimwood Rd to Northern Bypass
52	64A	Nance Rd	City of Huntsville	Capacity	Provide bike lanes from University Dr to Capshaw Rd
53	80	Northern Bypass Ph 2	City of Huntsville	Capacity	Provide bike lanes from East of Pulaski Pike to US 231 N
54	80	Northern Bypass Ph 3	City of Huntsville	Capacity	Provide bike lanes from US 231 N to Moores Mill Rd
55	80	Northern Bypass Ph 4	City of Huntsville	Capacity	Provide bike lanes from Moores Mill Rd to Winchester Rd
56	80	Northern Bypass Ph 5	City of Huntsville	Capacity	Provide bike lanes from Winchester Road to US 72E
57	64	Oakwood Rd	City of Huntsville	Capacity	Provide bike lanes from Adventist Blvd to Research Park Blvd
58	81	Old Hwy 431	City of Huntsville	Capacity	Provide bike lanes from US 431 S to North of Wilson Mann Rd
59	71	Old Big Cove Rd	City of Huntsville	Capacity	Provide bike lanes from US 431 S to Sutton Rd
60	71	Old Big Cove Rd	City of Huntsville	Capacity	Provide bike lanes from South Green Mountain Road to Hwy 431
61	20	Old Hwy 20	City of Huntsville	Capacity	Provide bike lanes from Greenbriar Rd to County Line Rd
62	50	Old Madison Pike	City of Huntsville	Capacity	Provide bike lanes from Thornton Industrial Park to Slaughter Rd
64	15	Old Railroad Bed Rd Ph 1	City of Huntsville	Capacity	Provide bike lanes from U.S 72 W to Capshaw Rd
65	15	Old Railroad Bed Rd Ph 2	City of Huntsville	Capacity	Provide bike lanes from Capshaw Road to AL Hwy 53
66	N/A	Patton Rd	City of Huntsville	Capacity	Provide bike lanes from Aerobee Rd to Redstone Rd
67	70	Plummer Rd	City of Huntsville	Capacity	Provide bike lanes from Research Park Blvd to Indian Creek Rd
69	11	Powell Rd	City of Huntsville	Capacity	Provide bike lanes from Powell Rd to Browns Ferry Rd
71	70	Ryland Pike	City of Huntsville	Capacity	Provide bike lanes from US 72 E to Northern Bypass
73	74A	Shields Rd	City of Huntsville	Capacity	Provide bike lanes from Jordan Ln to Winchester Rd
74	25	Slaughter Rd	City of Huntsville	Capacity	Provide bike lanes from Madison Blvd to US 72W
79	20	Swancott Rd	City of Huntsville	Capacity	Provide bike lanes from I-565 to County Line Rd
89	19	Wall Triana Highway	City of Madison	Capacity, Maintenance & Operations	Provide bike lanes and install “Share the Road” signage from US 72 W to Capshaw Rd

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-17)	Project	Jurisdiction	Project Type	Project Description
■ ***Proposed Paved Bike Lanes***					
90	19	Wall Triana Highway	City of Madison	Capacity, Maintenance & Operations	Provide bike lanes and install "Share the Road" signage from Capshaw Rd to Yarborough Rd
92	76	Winchester Rd Ph 2	City of Huntsville	Capacity	Provide bike lanes from Dominion Cr to Naugher Rd
93	76	Winchester Rd Ph 3	City of Huntsville	Capacity	Provide bike lanes from Naugher Rd to Bell Factory Rd
94	76	Winchester Rd Ph 4	City of Huntsville	Capacity	Provide bike lanes from Bell Factory Rd to Maysville Rd
■ ***Proposed Share the Road/Bike Route Projects***					
6	17	Balch Rd Ext	City of Madison	Maintenance & Operations	Install "Share the Road" signage from Browns Ferry Rd to Madison Blvd
12	59A	Church St	City of Huntsville	N/A	Bike route already exists from Monroe Street to Oakwood Ave
13	52	Dug Hill Rd	City of Huntsville	N/A	Bike route already exists from 431 to Broad Armstrong
19	69A	Homer Nance Rd	Madison County	Maintenance & Operations	Install "Share the Road" signage from Jordan Rd to Winchester Rd
20	21	Hughes Rd	City of Madison	Maintenance & Operations	Install "Share the Road" signage from Madison Blvd to US 72W
29	74	Jordan Rd Ph 1	Madison County	Maintenance & Operations	Install "Share the Road" signage from Homer Nance Rd to US 72 East
30	75	Jordan Rd Ph 2	Madison County	Maintenance & Operations	Install "Share the Road" signage from Moores Mill Rd to Homer Nance Rd
34	70	Maysville Rd Connector	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Maysville Rd to Epworth Dr
63	50	Old Madison Pike	City of Madison	Maintenance & Operations	Install "Share the Road" signage from Hughes Rd to Slaughter Rd
N/A	50	Drake Ave	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Memorial Parkway to Garth Rd
N/A	69	Garth Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Drake Ave to Four Mile Post Rd
N/A	73	Terry Drake Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Old Big Cove Rd to Taylor Rd
N/A	73	Taylor Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Sutton Rd to Terry Drake Rd
N/A	73	James Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Sutton Rd to Miller Ln
N/A	73A	Miller/ Caldwell Ln	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from James Rd to King Drake Rd
N/A	22	Mountain Gap Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Memorial Parkway to Todd Mill Rd

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-17)	Project	Jurisdiction	Project Type	Project Description
■ ***Proposed Share the Road/Bike Route Projects***					
N/A	52	Dug Hill Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from US 431S to King Drake Rd
N/A	52	Dug Hill Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from US 72 E south to Caldwell Ln
N/A	70	Plummer Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Indian Creek Rd to Jordan Ln
N/A	70	Grizzard Rd	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Jordan Ln to Brookline Dr
N/A	70	Chapman Dr	City of Huntsville	Maintenance & Operations	Install "Share the Road" signage from Rueben Dr to Gladstone Dr
N/A	15	County Line Rd	City of Madison	Maintenance & Operations	Install "Share the Road" signage from US 72W to Madison Blvd
N/A	24	Gillespie Rd	City of Madison	Maintenance & Operations	Install "Share the Road" signage from County Line Rd to Hughes Rd
N/A	N/A	Palmer Rd	City of Madison	Maintenance & Operations	Install "Share the Road" signage from County Line Rd to Balch Rd extension
N/A	19	Sullivan St	City of Madison	Maintenance & Operations	Install "Share the Road" signage from Dublin St to Mill Rd
N/A	25	Zierdt Rd, Shelton Rd Ext.	City of Madison	Maintenance & Operations	Install "Share the Road" signage from Madison City Limits to Old Madison Pike
N/A	69	Bailey Cove Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Four-Mile Post Rd south to Hobbs Island Rd
N/A	53	Bell Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Redstone Rd south to Green Cove Rd
N/A	31	Johns Rd, Enterprise Way, Explorer Blvd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Old Monrovia to Old Madison Pike
N/A	64	Oakwood Ave, High Mountain Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Maysville Rd to High Mountain Rd
N/A	51	Maysville Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from US72E South to Pratt Ave
N/A	69	Green Cove Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Bailey Cove west to Bell Rd
N/A	60	Monroe Street, Green Cove Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Monroe St south on Church/ Gallatin, south on Bonita/Hastings/Homewood/ Chateau/ Queensbury/ Cadillac/Todd Mill/ Chaney Thompson Rd to Green Cove Rd
N/A	30	Four Mile Post, Cecil Ashburn Way, Sutton Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs Whitesburg east to Old 431 South

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-17)	Project	Jurisdiction	Project Type	Project Description
■ *Proposed Share the Road/Bike Route Projects*					
N/A	50	Old Madison Pike	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Wynn Dr east to 9th Ave to Seminole Dr
N/A	51	Cedar St, Gladstone Dr	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Cedar St, north on Alpine, east on Holly Ave, north on Triana Blvd, northeast on Hall Ave, south on Derrick St, east on Clinton Ave, north on Maysville Rd to Gladstone Dr
N/A	74	Chase Rd, Jordan Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Meridian St east to Homer Nance Rd
N/A	76	Winchester Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Pulaski Pike east to Moores Mill Rd
N/A	60	Bankhead Parkway	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Maysville Rd east to Nolen Ave
N/A	22	Mountain Gap Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Bailey Cove west thru Memorial Parkway to English Dr west to St. Alban Dr
N/A	60A	Farrow Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Slaughter Rd east to Explorer Blvd to Voyager Way
N/A	70	Old Gurley Rd, Harris Hill, Mastin Lake Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from US 72E west to Maysville Rd south to Quietdale Ave, west to Max Luther Dr to Blue Spring Road, north on Millbrook to Broadview/Pulaski Pike, north to Grizzard Rd , north to Mastin Lake Rd
N/A	74	Dan Tibbs Rd, Stringfield Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Indian Creek Rd east to Blue Springs Rd
N/A	40	Patton Rd, Chadwell Dr	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Patton Rd , east on Telstar Cr, east on Centaur Blvd, north on Squaw Valley, east on Grunden Dr, north in Conger Rd, north on McCalley Pl, east on Village Dr, south on Triana Blvd, east on Johnson Rd, east on Airport Rd, south on Balmoral, east on Breckenridge Dr to Chadwell Dr
N/A	69	Wade Mtn. Preserve-Aldridge Creek	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Hollow Rd south on Meridian/Greene/Franklin and Hastings, east on Drake, south on Garth, east on Four Mile Post to Bailey Cove, south to Mountain Gap

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-17)	Project	Jurisdiction	Project Type	Project Description
■ ***Proposed Share the Road/Bike Route Projects***					
N/A	74	Governors House Dr-Stringfield Rd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Sparkman Dr, east on Technology Dr, north on South Loop Rd, east on Putnam Dr, north on Jordan Ln, east on Sparkman Dr, north on Aspen Dr, north on Grizzard Rd, north on Rosedale Dr to Stringfield Rd
N/A	49	Village Dr/Holmes Ave	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Village Dr, north on McCalley Pl, east on Archer Dr, north on Lemley Pl, east on Drake Ave, north on Alpine Dr, west Gesman Pl, north on Atlantic St, west on 10th Ave and north on 14th St to Holmes Ave

■ All Proposed Bike Lane and Proposed Share the Road/Bike Route Projects are shown on **Map 7.1**. Bicycle facilities that are associated with proposed road improvements are indicated by map number. As mentioned in this Section, additional bicycle facility projects have been identified that do not correlate directly with proposed road improvement projects.

All projects highlighted in blue are financially constrained projects. All projects highlighted in red are visionary projects. The cost of constructing bike lanes and/or providing signage for the above projects have already been incorporated in the total cost of the road improvement projects shown on page 4-2. Project costs are detailed in **Section 10**. The cost of constructing bike lanes or providing signage for the above projects not associated with any road improvement listed on page 4-2 is provided as well in **Section 10**.

Table 7.2: Summary of Committed and Future Pedestrian Enhancement Projects Within the MPO Study Area

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description
Sidewalks				
3	Ardmore Hwy-AL 53 Ph 3	City of Huntsville	Capacity	Provide sidewalks from North of Harvest Rd to Tennessee State Line
6	Balch Rd Ext	City of Madison	Capacity	Provide sidewalks from Browns Ferry Rd to Madison Blvd
7	Beadle Ln	City of Huntsville	Capacity	Provide sidewalks from Zierdt Rd to Swancott Rd
8	Blake Bottom Rd	City of Huntsville	Capacity	Provide sidewalks from Jeff Rd to Research Park Blvd
9	Brock Rd	City of Huntsville	Capacity	Provide sidewalks from US 72E to Ryland Pike
10	Browns Ferry Rd	City of Huntsville	Capacity	Provide sidewalks from Mooresville Rd to County Line Rd
11	Capshaw Rd	City of Huntsville	Capacity	Provide sidewalks from Jeff Rd to County Line Rd
12	Church St	City of Huntsville	Capacity	Provide sidewalks from Monroe St to Oakwood Ave
13	Dug Hill Rd	City of Huntsville	Capacity	Provide sidewalks from Broad Armstrong Dr to U.S. 431
14	Eastern Bypass Ph 2	City of Huntsville	Capacity	Provide sidewalks from Quarter Ln to U.S. 72 East
17	Greenbriar Rd/ Powell Rd Ext	City of Huntsville	Capacity	Provide sidewalks from North of I-565 to US-72W
18	Hobbs Island Rd	City of Huntsville	Capacity	Provide sidewalks from US- 231 to US-431
19	Homer Nance Rd	Madison County	Capacity	Provide sidewalks from Jordan Rd to Winchester Rd
20	Hughes Rd	City of Madison	Capacity	Provide sidewalks from Old Madison Pike to U.S 72 East
21	Hughes Rd Ext	City of Madison	Capacity	Provide sidewalks from US 72 West to Wall Triana Hwy
26	Jeff Rd Ph 1	City of Huntsville	Capacity	Provide sidewalks from University Dr to Capshaw Rd
27	Jeff Road Ph 2	City of Huntsville	Capacity	Provide sidewalks from Capshaw Rd to AL Hwy 53
28	Johns Rd	City of Huntsville	Capacity	Provide sidewalks from Plummer Rd to University Dr
29	Jordan Rd Ph 1	Madison County	Capacity	Provide sidewalks from Homer Nance Rd to US 72 East
30	Jordan Rd Ph 2	Madison County	Capacity	Provide sidewalks from Moores Mill Rd to Homer Nance Rd
31	King Drake Rd- US 431 Connector	City of Huntsville	Capacity	Provide sidewalks for new road construction from Old Big Cove Rd to King Drake Rd
32	Martin Rd	City of Huntsville	Capacity	Provide sidewalks from Zierdt Rd to Laracy Dr
33	Martin Rd	City of Huntsville	Capacity	Provide sidewalks from Zierdt Rd to Rideout Rd
34	Maysville Rd Connector	City of Huntsville	Capacity	Provide sidewalks from Maysville Rd to Epworth Dr
47	Meridian St Ph 1	City of Huntsville	Capacity	Provide sidewalks from Oakwood Ave to Pratt Ave

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description
Sidewalks				
49	Moontown Rd	City of Huntsville	Capacity	Provide sidewalks from Ryland Pike to US 72E
50	Moores Mill Rd	City of Huntsville	Capacity	Provide sidewalks from Winchester Rd to Northern Bypass
51	Mount Lebanon Rd	City of Huntsville	Capacity	Provide sidewalks from Grimwood Rd to Northern Bypass
52	Nance Rd	City of Huntsville	Capacity	Provide sidewalks from University Dr to Capshaw Rd
53	Northern Bypass Ph 2	City of Huntsville	Capacity	Provide sidewalks from East of Pulaski Pike to US 231 N
54	Northern Bypass Ph 3	City of Huntsville	Capacity	Provide sidewalks from US 231 N to Moores Mill Rd
55	Northern Bypass Ph 4	City of Huntsville	Capacity	Provide sidewalks from Moores Mill Rd to Winchester Rd
56	Northern Bypass Ph 5	City of Huntsville	Capacity	Provide sidewalks from Winchester Rd to US 72E
57	Oakwood Rd	City of Huntsville	Capacity	Provide sidewalks from Adventist Blvd to Research Park Blvd
58	Old Hwy 431	City of Huntsville	Capacity	Provide sidewalks from US 431 S to North of Wilson Mann Rd
59	Old Big Cove Rd	City of Huntsville	Capacity	Provide sidewalks from US 431 S to Sutton Rd
60	Old Big Cove Rd	City of Huntsville	Capacity	Provide sidewalks from South Green Mountain Rd to Hwy 431
61	Old Hwy 20	City of Huntsville	Capacity	Provide sidewalks from Greenbriar Rd to County Line Rd
64	Old Railroad Bed Rd Ph 1	City of Huntsville	Capacity	Provide sidewalks from U.S 72 W to Capshaw Rd
65	Old Railroad Bed Rd Ph 2	City of Huntsville	Capacity	Provide sidewalks from Capshaw Road to AL Hwy 53
66	Patton Rd	City of Huntsville	Capacity	Provide sidewalks from Aerobee Rd to Redstone Rd
67	Plummer Rd	City of Huntsville	Capacity	Provide sidewalks from Research Park Blvd to Indian Creek Rd
69	Powell Rd	City of Huntsville	Capacity	Provide sidewalks from Powell Rd to Browns Ferry Rd
71	Ryland Pike	City of Huntsville	Capacity	Provide sidewalks from US 72 E to Northern Bypass
73	Shields Road	City of Huntsville	Capacity	Provide sidewalks from Jordan Ln to Winchester Rd
74	Slaughter Rd	City of Huntsville	Capacity	Provide sidewalks from Madison Blvd to US 72W
79	Swancott Rd	City of Huntsville	Capacity	Provide sidewalks from I-565 to County Line Rd
89	Wall Triana Hwy	City of Madison	Capacity	Provide sidewalks from US 72 W to Capshaw Rd
90	Wall Triana Hwy	City of Madison	Capacity	Provide sidewalks from Capshaw Rd to Yarborough Rd
92	Winchester Rd Ph 2	City of Huntsville	Capacity	Provide sidewalks from Dominion Cr to Naugher Rd
93	Winchester Rd Ph 3	City of Huntsville	Capacity	Provide sidewalks from Naugher Rd to Bell Factory Rd
94	Winchester Rd Ph 4	City of Huntsville	Capacity	Provide sidewalks from Bell Factory Rd to Maysville Rd

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description
∞ *Greenways (Shared Use Paths)*				
4 & 5	Balch Rd Greenway	City of Madison	Enhancement Unclassified	2.89 mile path from Browns Ferry Rd to US 72. Coincides with road project #4 and a portion of #5: Balch Rd widening from Browns Ferry Rd to Gooch Ln, and Balch Rd from Gooch Ln to Capshaw Rd
16	Mill Creek Greenway & Trail	City of Madison	Enhancement Unclassified	1 mile, asphalt, 2 mile natural trail from Hughes Rd to Browns Ferry Rd. Greenway project compliments road project # 16: Eastview Dr Extension from Hughes Rd to Sullivan St
78	Sullivan St Greenway	City of Madison	Enhancement Unclassified	.5 mile path from Royal St to Front St. This also correlates to Bike Route 50 shown on Map 7.1
88	Wall Triana Highway Greenway	City of Madison	Enhancement Unclassified	3.6 mile multi-use path from Mill Rd to US 72
95 & 96	Zierdt Rd Greenway	City of Huntsville	Enhancement Unclassified	8.75 mile, 12-ft wide asphalt multi-use path from Slaughter Rd to Wheeler National Wildlife Refuge. Includes greenway at Zierdt Rd from Madison Blvd to South of Martin Rd and Zierdt Rd from South of Martin Rd to Beadle Ln.
97	Zierdt Rd Greenway, Ph 2	City of Madison	Enhancement Unclassified	.8 mile , 12 ft wide asphalt multi-use path on Zierdt Rd from ¼ mile north of Madison Blvd to Old Madison Pike
15	Eastview Dr Greenway	City of Madison	Enhancement Unclassified	2.1 mile greenway from West of Slaughter Rd to Hughes Rd. Includes project #18: Eastview Drive from Slaughter Road to Hughes Road
63	Old Madison Pike Greenway	City of Madison	Enhancement Unclassified	2.77 mile greenway from Browns Ferry Rd to Slaughter Rd. Includes project of Old Madison Pike from Hughes Rd to Slaughter Rd. Also is shown as Bike Route 50 on Map 7.1.
48	Mill Rd Greenway	City of Madison	Enhancement Unclassified	1.07 mile greenway from Sullivan St to Hughes Rd. Includes the parameters of project #52: Mill Rd from Hughes Rd to County Line Rd.
68	Portal Ln Greenway (Ph 2)	City of Madison	Enhancement Unclassified	.5 mile greenway (multi-use path) from Shelton Rd to Portal Ln Extension
72	Shelton Rd Greenway	City of Madison	Enhancement Unclassified	.81 mile greenway from Old Madison Pike to Madison Blvd. Includes the parameters of project #72: Shelton Road from Madison Blvd to ¼ mile north of Madison Blvd.
N/A	Bradford Creek Greenway Phase II	City of Madison	Enhancement Unclassified	1 ½ mile, asphalt multi-use path, from Palmer Park to Westchester Rd
N/A	Aldridge Creek Greenway II	City of Huntsville	Enhancement Unclassified	1.0 mile from Four Mile Post Rd to Mira Vista Dr
N/A	Barren Fork/ Miller Branch Greenway	City of Huntsville	Enhancement Unclassified	5.75 mile, 12-ft wide asphalt multi-use path from Martin Rd to Wheeler National Wildlife Refuge
N/A	Betts Spring Branch Greenway	City of Huntsville	Enhancement Unclassified	2.5 mile, 12-ft wide asphalt multi-use path from Zierdt Rd to Martin Rd
N/A	Big Cove Greenway	City of Huntsville	Enhancement Unclassified	8.0 mile, 12-ft wide asphalt multi-use path from Flint River to Monte Sano State Park
N/A	Big Spring Greenway	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Big Spring Park to Monte Sano Mountain
N/A	Blevins Gap Greenway	City of Huntsville	Enhancement Unclassified	4.5 mile, 12-ft wide asphalt multi-use path from Big Cove Creek to Bailey Cove Rd
N/A	Blue Creek Greenway	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Big Spring Park to Monte Sano Reserve.

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description
∞ *Greenways (Shared Use Paths)*				
N/A	Blue Spring Creek Greenway	City of Huntsville	Enhancement Unclassified	2.5 mile, 12-ft wide asphalt multi-use path from Pinhook Creek to Pulaski Pike.
N/A	Broglan Branch N. Greenway	City of Huntsville	Enhancement Unclassified	1.5 mile, 12-ft wide asphalt multi-use path from Stoner Park to Sparkman Dr
N/A	Broglan Branch S. Greenway	City of Huntsville	Enhancement Unclassified	1.25 mile, 12-ft wide asphalt multi-use path from Holmes Ave to Huntsville Spring Branch.
N/A	Chapman Mountain Greenway	City of Huntsville	Enhancement Unclassified	3.0 mile, 12-ft wide asphalt multi-use from north section of Monte Sano State Park to Alabama A&M University.
N/A	Dallas Branch Greenway	City of Huntsville	Enhancement Unclassified	.5 mile, 12-ft wide asphalt multi-use path from Pinhook Creek to abandoned L&N railroad corridor.
N/A	Dry Creek Greenway	City of Huntsville	Enhancement Unclassified	6.25 mile, 12-ft wide asphalt multi-use path from Providence Main to Pulaski Pike
N/A	Huntsville Spring Branch Greenway	City of Huntsville	Enhancement Unclassified	10 mile, 12-ft wide asphalt multi-use path from Tenn. River to Holmes Ave.
N/A	Indian Creek Greenway Ph II-III	City of Huntsville	Enhancement Unclassified	1.5 mile, 12 ft-wide asphalt multi-use path from Creekwood Park to Providence Elementary School.
N/A	Knox Creek Greenway	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Wall Triana Hwy to Limestone Creek.
N/A	Limestone Creek Greenway	City of Huntsville	Enhancement Unclassified	14 mile, 12-ft wide asphalt multi-use path from AL Hwy 20 to Nick Davis Rd
N/A	McDonald Creek Greenway	City of Huntsville	Enhancement Unclassified	3.0 mile, 12-ft wide asphalt multi-use path from Redstone Arsenal boundary to Alabama Space and Rocket Center.
N/A	Pinhook Creek Greenway Ph 1	City of Huntsville	Enhancement Unclassified	3.0 mile, 12-ft wide asphalt multi-use path from Holmes Ave to Lakewood Elementary School.
N/A	Pinhook Creek Greenway Ph 2	City of Huntsville	Enhancement Unclassified	1.25 mile, 12-ft wide asphalt multi-use path from Medaris Rd to Wade Mountain.
N/A	Smithers Mountain Greenway	City of Huntsville	Enhancement Unclassified	4.0 mile, 12-ft wide asphalt multi-use path from Edmonton Heights Park to Spragins Hollow Rd
N/A	Spacewalk Greenway Ph 1	City of Huntsville	Enhancement Unclassified	5.5 mile, 12-ft wide asphalt multi-use path from Blevins Gap to Monte Sano State Park
N/A	Spacewalk Greenway Ph 2	City of Huntsville	Enhancement Unclassified	5.0 mile, 12-ft wide asphalt multi-use path from Blevins Gap to Madison County Nature Trail
N/A	Spacewalk Greenway Ph 3	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Space Walk Phase II to Ditto Landing
N/A	Tennessee River Greenway	City of Huntsville	Enhancement Unclassified	6.0 mile, 12-ft wide asphalt multi-use path from west of Ditto Landing along the river east to Flint River
N/A	Wade Mountain Greenway	City of Huntsville	Enhancement Unclassified	6.0 mile, 12-ft wide asphalt multi-use path from Spragins Hollow Rd to Pulaski Pike at Dry Creek
N/A	Wallace Mountain Greenway	City of Huntsville	Enhancement Unclassified	6.0 mile, 12-ft wide asphalt multi-use path from Spacewalk III terminus to Flint River
N/A	Weatherly Mountain Greenway	City of Huntsville	Enhancement Unclassified	1.5 mile, 12-ft wide asphalt multi-use path from Hemlock Dr to Mountain Gap Rd
N/A	Gooch Lane Greenway	City of Madison	Enhancement Unclassified	1.6 mile greenway from Balch Rd to Hughes Rd

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description
∞ ***Greenways (Shared Use Paths)***				
N/A	Highland Avenue Greenway	City of Madison	Enhancement Unclassified	1.55 mile greenway from Old Madison Pike to Eastview Dr
N/A	Portal Lane Greenway	City of Madison	Enhancement Unclassified	1.04 mile greenway from Hughes Rd to Shelton Rd

∞ All Greenway Projects are shown on **Map 7.1**. Greenways that are associated with proposed road improvements are indicated by map number. As mentioned in this Section, additional greenway projects have been identified that do not correlate directly with proposed road improvement projects.

All Sidewalk and Greenway (Shared Use Path) projects highlighted in blue are financially constrained projects. All projects highlighted in red are visionary projects. The cost of constructing sidewalks for the above projects has already been incorporated in the total cost of the road improvement projects shown on page 4-2. Project costs are detailed in **Section 10**. The cost of constructing Greenways (Shared Use Paths) for the above projects not associated with any road improvement listed on page 4-2 is provided as well in **Section 10**.

7.3 Huntsville Metropolitan Planning Area Bicycle and Pedestrian Plan

The purpose of the Huntsville Metropolitan Planning Area Bicycle and Pedestrian Plan is to guide the long-term direction of bicycle and pedestrian projects within the MPO study area. The plan provides a regional view of interconnected bicycle and pedestrian networks and identifies a countywide system of corridors aimed at improving non-motorized transportation and accessibility.

The MPO Bicycle and Pedestrian Plan emphasizes regional connectivity to provide a framework for the development and enhancement of bicycle and pedestrian facilities throughout the counties, cities and towns of the MPO study area. With growing interests in walking, cycling and the safety of these modes of travel, the MPO has carefully considered the appropriateness of the areas designated for bicycle and pedestrian travel. The MPO has adopted the following bicycle and pedestrian plans, which collectively feature a linked network of non-motorized transportation facilities throughout the MPO study area.

The City of Huntsville Bikeways Plan

The City of Huntsville Bikeways Plan addresses the bicycle transportation needs of the citizens within the Huntsville area. With growing interest in cycling and bicycle safety, the City of Huntsville continues to promote bicycle projects and programs that encourage the use of alternate means of transportation which supports active transportation and healthy lifestyles. The goal of this plan is to develop a safe, continuous comprehensive network and to enhance non-motorized transportation facilities and projects throughout the metro area, by advancing education, enabling planning, and encouraging cycling. The plan also encourages the use alternative means of transportation to promote active communities, and a bicycle friendly community with a transportation network supporting bicycles, pedestrians, transit, and motorists.

It identifies bike routes that connect residential areas to major employers and shopping centers, covering a distance of over 282 miles throughout the city. In addition to the 34 miles of existing bike routes, the plan calls for another 148.4 miles of proposed bike routes, 81.5 miles of proposed bike lanes, and 18.1 miles of shared routes. Combined with the 119 miles of additional proposed routes in the county, a total of over 400 miles of bicycle facilities is planned for the Huntsville metro area. The plan serves as a guide for improving bicycle activity and suggests education, promotion and policy projects to integrate bicycling into the existing transportation environment. **Map 7.1** shows an overall map of bike routes planned throughout the Huntsville Study Area.

The City of Huntsville Greenways Plan

This City of Huntsville Greenways Plan identifies over 282 miles of interconnected trails, which includes shared use paths for biking and walking as well as canoe trails and hiking trails for recreational enjoyment. The goal of this plan is to maintain a continuous greenway system of interconnected corridors that offer alternative non-motorized transportation to demonstrate the many benefits of greenways to the community. This includes access to facilities for recreation, increased quality of life and preserving cultural, natural and historic resources. With more than 22 miles of existing greenways and trails, local pedestrians and bicyclists will enjoy open space along natural features and scenic roadways throughout the Huntsville and Madison County area.

Map 7.1 also shows the existing and proposed greenways and trails within the City of Huntsville, Madison County and Limestone County.

The City of Huntsville Sidewalk Improvement Plan

The Sidewalk Improvement Program is an on-going effort by the City of Huntsville to maintain existing sidewalks as well as to construct sidewalk projects that provide connectivity to community facilities; thus encouraging an alternative means of transportation. The plan details a five-year schedule of prioritized sidewalk construction projects, allocating an annual budget of $300,000.00 for construction and $100,000.00 for maintenance. In addition the City of Huntsville was awarded a $200,000 grant for the Safe Route to School program which allows spending on facilities within 2 miles of elementary schools to improve the safety for children walking or riding bicycles. Although the grant is awarded bi-annually it presents an opportunity for the city to increasingly provide safe travel for all pedestrians.

Countywide Shared Bike Routes

The Huntsville Metropolitan Planning Area Bicycle and Pedestrian Plan highlights connecting bicycle routes, bike lanes and greenways throughout the counties, cities and towns of the MPO study area. These routes are depicted on **Map 7.1**. These routes will be signed to alert cyclists and motorists of shared road usage while traveling on county roadways. The MPO will promote the use of "Share the Road" signs in efforts to alert motorists of the presence of bicyclists, thus encouraging and creating cooperative behavior, courtesy, and safety for both area cyclists and motorists. The use of "Share the Road" signs is an objective of the plan to enhance the existing bicycle and pedestrian programs by educating motorists and bicyclists on safe and effective ways to coexist – ultimately leading to a greater safe traveling environment for all.

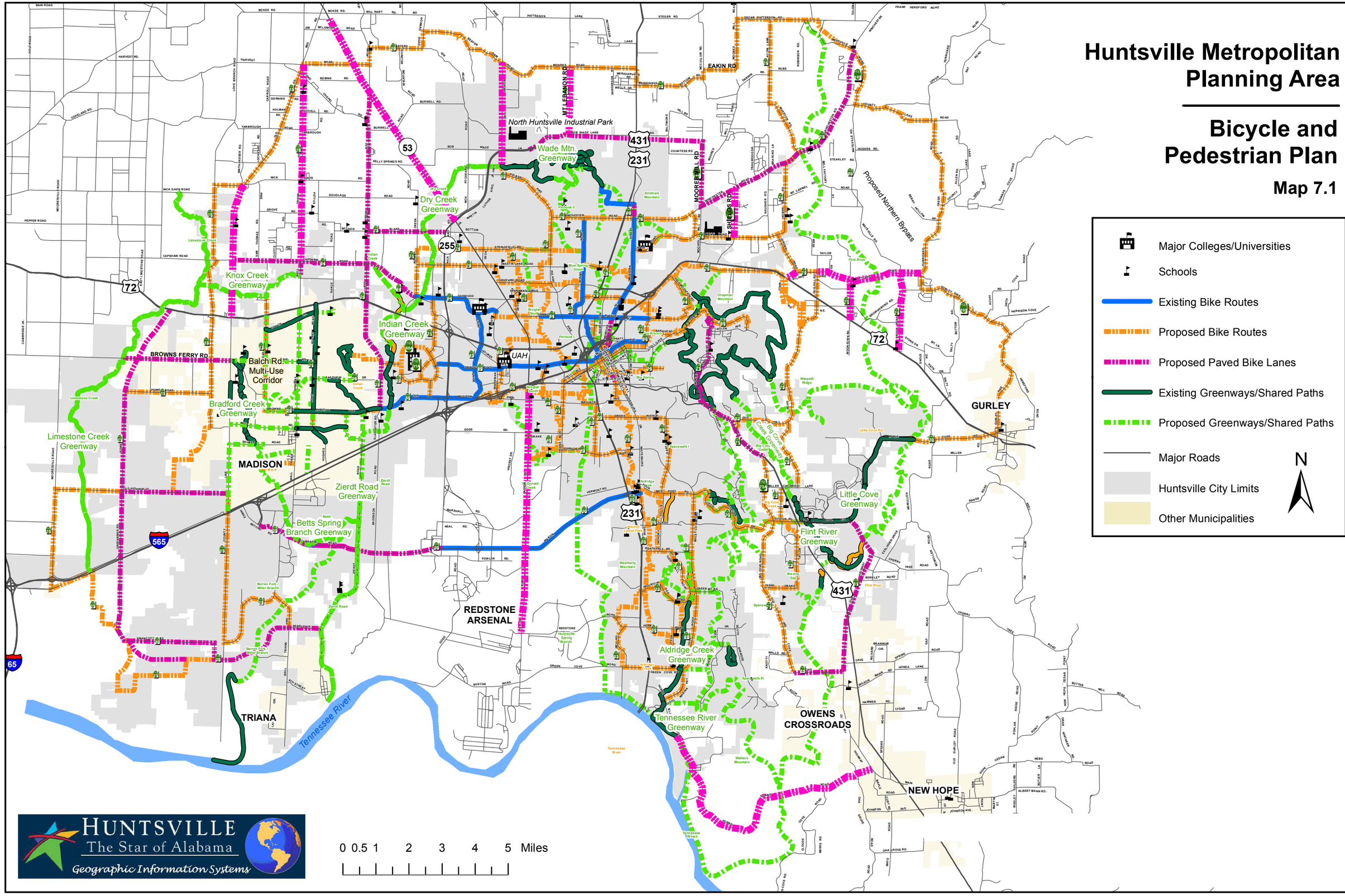
City of Madison Greenway Plan

The City of Madison has a number of greenway and trails projects identified and underway. The goal of the plan, which was adopted in 2003, is to connect the city with various pathways to facilitate alternative modes of transportation and promote a healthy lifestyle. Numerous trails, greenways, sidewalks/walkways, and multipurpose facilities have been planned for its citizens. A pedestrian and non-motorized corridor along Bradford Creek has already been funded with federal money, with construction starting FY 2010. This corridor will provide a walking laboratory and a new route for elementary and middle school children. Also along the corridor is Madison's largest recreation park: 99 acre Palmer Park, which contains a playground, softball and baseball diamonds, and soccer and football fields. In addition the Mill Creek Greenway which can be accessed via Mill Road connects Mill Stone subdivision to the new Mill Creek Elementary with future connections from Browns Ferry Road and the new Balch Road extension. **Map 7.1** includes all future greenways and multi-use corridors projects along the major roads in the City of Madison.

Huntsville Metropolitan Planning Area

Bicycle and Pedestrian Plan

Map 7.1



Huntsville Metropolitan Planning Area

Bicycle and Pedestrian Plan

Map 7.1A (Northwest Huntsville)

Major Colleges/Universities
Schools
Existing Bike Routes
Proposed Bike Routes
Proposed Paved Bike Lanes
Existing Greenways/Shared Paths
Proposed Greenways/Shared Paths
Major Roads
Huntsville City Limits
Other Municipalities

N

0 0.5 1 2 Miles

HUNTSVILLE The Star of Alabama Geographic Information Systems

Major Colleges/Universities

Schools

Existing Bike Routes

Proposed Bike Routes

Proposed Paved Bike Lanes

Existing Greenways/Shared Paths

Proposed Greenways/Shared Paths

Major Roads

Huntsville City Limits

Other Municipalities

N

*Redstone Arsenal is a gated military installation. Those wanting to access bike lanes and bike routes on Redstone Arsenal must have appropriate security credentials. Signage of bike lanes and routes on Redstone Arsenal is subject to approval of the installation.

Limestone Creek

Limestone Creek Greenway

Bradford Creek Greenway

Balch Rd. Multi-Use Corridor

Indian Creek

Indian Creek Greenway

Broglan South

Pinhook I

UAH

MADISON

Zierdt Road Greenway

Zierdt Road

Betts Spring Branch

Betts Spring Branch Greenway

McDonald Creek

Barren Fork / Miller Branch

REDSTONE ARSENAL

Huntsville Spring Branch

TRIANA

Tennessee River

0 0.5 1 2 Miles

HUNTSVILLE The Star of Alabama Geographic Information Systems

Huntsville Metropolitan Planning Area

Bicycle and Pedestrian Plan

Map 7.1B (Southwest Huntsville)

Major Colleges/Universities

Schools

Existing Bike Routes

Proposed Bike Routes

Proposed Paved Bike Lanes

Existing Greenways/Shared Paths

Proposed Greenways/Shared Paths

Major Roads

Huntsville City Limits

Other Municipalities

N

*Redstone Arsenal is a gated military installation. Those wanting to access bike lanes and bike routes on Redstone Arsenal must have appropriate security credentials. Signage of bike lanes and routes on Redstone Arsenal is subject to approval of the installation.

Inset A

HUNTSVILLE The Star of Alabama Geographic Information Systems

0 0.5 1 2 Miles

Huntsville Metropolitan Planning Area

Bicycle and Pedestrian Plan

Map 7.1C (Southeast Huntsville)

Major Colleges/Universities

Schools

Existing Bike Routes

Proposed Bike Routes

Proposed Paved Bike Lanes

Existing Greenways/Shared Paths

Proposed Greenways/Shared Paths

Major Roads

Huntsville City Limits

Other Municipalities

N

Inset A

North Huntsville Industrial Park

Wade Mtn. Greenway

Dry Creek

Dry Creek Greenway

Indian Creek

Indian Creek Greenway

Blue Spring Creek

Broglan North

Broglan South

Pinhook I

Pinhook II

Smithers Mountain

Chapman Mountain

Flint River

Big Spring

Warpath Ridge

Big Cove Creek Greenway

Big Cove Creek

Spacewalk I

Proposed Northern Bypass

UAH

EAKIN RD

GURLEY

Little Cove Rd

0 0.45 0.9 1.8 Miles

HUNTSVILLE
The Star of Alabama
Geographic Information Systems

Huntsville Metropolitan Planning Area

Bicycle and Pedestrian Plan

Map 7.1D (Northeast Huntsville)

7.4 Transportation Enhancements Activities

Transportation Enhancements (TE) activities are transportation-related initiatives that are designed to strengthen the cultural, aesthetic, and environmental aspects of the intermodal transportation system. The transportation enhancements program provides the implementation of a variety of non-traditional projects, with examples ranging from the restoration of historic transportation facilities to the mitigation of water pollution from highway runoff. All transportation enhancement projects must relate to surface transportation, which includes all elements of the intermodal transportation system, exclusive of aviation. According to the Federal Highway Administration, all qualifying TE activities must comply with at least one of the following 12 categories:

	Activity	***Examples***
1	Provision of pedestrian and bicycle facilities	New or reconstructed sidewalks, walkways, or curb ramps; wide paved shoulders for non-motorized use, bike parking, and bus racks; construction or major rehabilitation of off-road shared use paths (non-motorized transportation trails); bridges and underpasses for non-motorized users.
2	Provision of pedestrian and bicycle safety and education activities	Educational activities to encourage safe walking and bicycling.
3	Acquisition of scenic or historic easements and sites	Acquisition of scenic land easements, vistas, and landscapes; acquisition of buildings in historic districts or historic properties (including historic battlefields).
4	Scenic or historic highway programs including tourist and welcome centers	For projects related to scenic or historic highway programs: Construction of turnouts, overlooks, and viewing areas; construction of visitor and welcome centers; designation signs and markers.
5	Landscaping and scenic beautification	Landscaping, street furniture, lighting, public art, and gateways along highways, streets, historic highways, trails, and waterfronts.
6	Historic Preservation	Preservation of buildings in historic districts; restoration of historic buildings for transportation-related purposes.
7	Rehabilitation and operation of historic transportation buildings, structures, or facilities	Restoration of historic railroad depots, bus stations, ferry terminals and piers, and lighthouses; rehabilitation of rail trestles, tunnels, and bridges; restoration of historic canals, canal towpaths, and historic canal bridges.
8	Conversion of abandoned railway corridors to trails	Acquiring railroad rights-of-way; planning, designing, and constructing multiuse trails; developing rail-with-trail projects.
9	Control and removal of outdoor advertising	Billboard inventories or removal of illegal and nonconforming billboards.
10	Archaeological planning and research	Research, preservation planning, and interpretation of archaeological artifacts; curation for artifacts related to surface transportation and artifacts recovered from locations within or along surface transportation corridors.
11	Environmental mitigation of highway runoff pollution, reduce vehicle-caused wildlife mortality, maintain habitat connectivity	For existing highway runoff: soil erosion controls, detention and sediment basins, and river clean-ups. Wildlife underpasses or other measures to reduce vehicle caused wildlife mortality and/or to maintain wildlife habitat connectivity.
12	Establishment of transportation museums	Construction of new transportation museums; additions to existing museums for a transportation section; conversion of railroad stations or historic properties to museums with transportation themes.

Source: U.S. Department of Transportation, Federal Highway Administration, 2004

The Alabama Department of Transportation (ALDOT) accepts transportation enhancements project applications. A thorough review, which includes a five step process, is conducted annually to determine projects selected for funding. Through the Huntsville Metropolitan Planning Area Bicycle and Pedestrian Plan, the Huntsville Area MPO can ensure that bicycle and pedestrian accommodations will be more fully integrated into local, state and regional transportation improvements. As federal transportation policy with regards to bicycle and pedestrian accommodations evolves, new funding opportunities are made available to enhance the non-motorized transportation network. The projects identified in **Tables 7.1** and **7.2,** and further displayed in **Map 7.1** are eligible for transportation enhancement funding.

Section 8

CONGESTION MANAGEMENT, SAFETY MANAGEMENT, AND SECURITY ELEMENT

8.0 Introduction

This section focuses upon three program elements to be considered in the planning process: Congestion Management, Safety Management, and Security of the transportation system. These elements serve to increase the mobility of persons and freight that utilize the transportation system and to eliminate or mitigate hazards on the transportation network. TEA-21 legislation required a Congestion Management System be developed for Transportation Management Areas, such as the Huntsville Urbanized Area. SAFETEA-LU updated the requirement for a Congestion Management Process, in contrast to the Congestion Management System. This change intends to address congestion management through a process that provides for effective management and operations, an enhanced linkage to the planning process, and to the environmental review process, based upon cooperatively developed travel demand reduction and operational management strategies as well as capacity increases. Additionally, SAFETEA-LU split two previously conjoined planning factors: safety and security of the transportation system, and added emphasis upon maintenance and operations strategies. Since these factors are clearly integrated within Congestion Management, they are included in this section as well.

8.1 Congestion Management Element

Increasing traffic congestion is one of the greatest challenges facing the Huntsville Urbanized Area. It results in motorist frustration, the loss of productivity, and the deterioration of air quality. Better management of the transportation system will help the region to address these growing problems as limited transportation resources struggle to meet rising travel demands.

The Huntsville Urbanized Area has been designated as a Transportation Management Area by the Federal Highway Administration and the Federal Transit Administration. This designation requires the MPO to develop and maintain a comprehensive congestion management process. As a result, a detailed congestion management analysis has been performed which specifies current and future congestion problems on the network, and identifies various strategies to correct system deficiencies.

The new legislative requirements view the Congestion Management Process (CMP) as more objectives-driven. The CMP also has an emphasis on incorporating management and operations in the project development process, so that short-term improvements may be made to alleviate immediate congestion problems, and long range solutions may also be offered as a more permanent fix.

8.1.1. Management and Operations (M&O)

One of the planning factors identified in the SAFETEA-LU legislation that must be considered in the transportation planning process is to "promote efficient system management and operations". The legislation specifically requires that the metropolitan transportation plan, or long range plan, include not only capital projects, but management and operations strategies as well. These management and operations strategies are highlighted as an important component in mitigating congestion in addition to increasing safety and security.

The Federal Highway Administration recently published: **Management and Operations in the Metropolitan Transportation Plan** (November 2007) and **An Interim Guidebook on the Congestion Management Process in Metropolitan Transportation Planning** (February 2008). These publications define M&O as an integrated approach to optimize the performance of existing and programmed infrastructure through the implementation of multi-modal, intermodal, and often cross-jurisdictional systems, services, and projects. Implementing a planning process with a strong M&O component is best accomplished by a new way of thinking about management and operations in transportation planning – one that is objectives-driven and performance-based such as the CMP. Essentially, the M&O is integrated into the CMP. The CMP actualizes the operations objectives through a systematic approach for developing performance measures, identifying and analyzing problems, collecting data, developing strategies, implementing strategies, and further evaluating how the implemented strategy(ies) impact the transportation network.

M&O strategies are integrated into the long range transportation plan through the CMP. While the CMP focuses on congestion relief, the process itself is systematic in that it involves developing performance measures, identifying operational needs and deficiencies, and developing strategies, including M&O strategies. A discussion of the types of strategies considered in the transportation planning process is found in **Section 8.1.2.3** and in **Appendix C.** Specific projects have been identified to improve the management and operation of the transportation network. These projects are listed in **Section 8.4**, and are classified by the Alabama Department of Transportation as "maintenance and operations" projects.

8.1.2 Steps to an Effective CMP

There are eight steps to an effective CMP. These steps are as follows:

1. Develop Congestion Management Objectives
2. Identify Area of Application
3. Define System or Network of Interest
4. Develop Performance Measures
5. Institute System Performance Monitoring Plan
6. Identify and Evaluate Strategies
7. Implement Selected Strategies and Manage Transportation System
8. Monitor Strategy Effectiveness

Of these eight steps, three provide a critical foundation to the process. These three steps are further discussed below.

8.1.2.1 Develop Congestion Management Objectives

Objectives are specific steps that help to accomplish the goal, and include outcome or output-oriented measures. Objectives should be stated in such a way that performance measures can be derived from the objectives. Congestion management objectives may be related to other, operations-oriented objectives, such as making transit more attractive to commuters or to objectives aligned with regional land use goals.

8.1.2.2 Develop Performance Measures

Performance measures provide metrics that can be used regionally to track systemwide performance, or at a corridor, roadway, or intersection, etc… to identify specific deficiencies within the system. These have been identified and are integrated within the CMP.

8.1.2.3 Identify, Evaluate, Implement and Monitor Strategies

Selected projects and programs are implemented to achieve objectives and to mitigate congestion. Various types of strategies to be considered in the CMP are identified in **Appendix C**. While corridor widening is a viable option, the CMP requires additional strategies to be considered as well. SAFETEA-LU requires that "for transportation management areas classified as nonattainment for ozone or carbon monoxide pursuant to the Clean Air Act, federal funds may not be advanced in such area for any highway project that will result in a significant increase in the carrying capacity for single-occupant vehicles unless the project is addressed through a congestion management process." Furthermore, the CMP must give priority to strategies that reduce congestion and improve the mobility of people, goods, and services without requiring the construction of additional roadway capacity. Capacity adding projects are not prohibited, but the CMP requires the MPO to consider alternative strategies to capacity increases, and that measures be incorporated into the project to make the most efficient use of the new capacity once it has been constructed. At the present time, the Huntsville Urbanized Area is at attainment, but in good faith will consider the additional strategies to mitigate congestion.

In addition to increasing roadway capacity, there are two other major categories of congestion mitigation strategies: Transportation System Management (TSM) and Travel Demand Management (TDM). The TSM approach to congestion management seeks to identify improvements to new and existing facilities that are operational in nature. These techniques are designed to improve traffic flow through better management of existing facilities. The TDM approach to congestion management focuses on user demand and behavior modification strategies to reduce drive-alone and peak-period travel.

The adopted TSM strategies include intersection and signalization improvements on collector and arterial streets to help alleviate traffic congestion. A group of technologies, collectively known as Intelligent Transportation Systems (ITS), is proposed to improve transportation system efficiency and safety. The City of Huntsville has embarked upon a regional effort to develop methods that would enhance the management and operation of the local transportation system in efforts to maximize the level of efficiency and safety through its investment in ITS. Strategies have been identified for the region, and are planned for implementation; however, current efforts are hampered due to lack of federal funds to support the program. The ITS strategies include, but are not limited to, the integrated and coordinated operations of incident management, emergency management, and advanced traffic signal and traveler information. These strategies are discussed in further detail in the Intelligent Transportation Systems (ITS) section of this chapter.

TDM strategies currently underway include the rideshare program which helps to encourage carpooling, vanpooling, and transit usage by offering incentives to the employees of the region's large employers. Additionally, the recent development of bicycle facilities encourages cycling to work.

The implementation of congestion mitigation strategies provides several benefits. The reduction of vehicle travel will mean less traffic congestion on our roadways resulting in reduced travel times, lower vehicle emissions, and improved air quality. Enhanced accessibility, fewer traffic accidents, and greater transportation system reliability will also be achieved through the use of these relatively low-cost strategies. Monitoring the implemented strategies will assure that these benefits continue for users of the transportation system.

The Congestion Management Process for the Huntsville Urbanized Area is presented below.

8.2 Congestion Management Process

The Congestion Management Process (CMP) is a federally required program providing for the comprehensive and continuous study of traffic movement on major corridors at the regional level. Locally, the Huntsville Area Transportation Study's CMP consists of on-going data collection and analysis used to establish trends and to monitor the overall mobility of the transportation system through benchmarking techniques established in the **CMP Procedures and Responsibilities Report**, found in **Appendix C** of this document.

8.2.1 Local CMP Framework

This CMP has been prepared to meet the requirements of federal legislation. The purpose of the CMP is to establish certain characteristics of the local transportation system, so that future data analysis may be performed which would show changes in system efficiency and the quality of the transportation system service experienced by users. All CMP monitoring requirements have been consolidated. The CMP is divided

into the following four sections to cover all aspects of the CMP addressed in the federal requirements:

- State of the System
- CMP Technical Ranking
- Strategy Recommendations
- Strategy Effectiveness Evaluations

The "State of the System" section will assess mobility conditions through established performance measures. The "CMP Technical Ranking" section will list in priority order current and anticipated congested corridors for further study. The "Strategy Recommendations" section provides for further analysis and defines appropriate actions for implementation to solve congestion problems. The "Strategy Effectiveness Evaluations" section will include an evaluation of any implemented strategy recommendations mentioned in previous congestion management documents to determine if the implemented strategy is successful.

The cornerstone of an effective CMP is dependent upon the quality and quantity of data collected for the study area. Specific performance criteria and the parameters of study were established in the **CMP Procedures and Responsibilities Report**, found in **Appendix C**. According to the report, the following elements were selected for study, and have been incorporated into this document:

1. *CMP Transportation Network:*
   The CMP Transportation Network consists of all major arterials, minor arterials, major collectors, and major rural collectors that have been modeled per the MPO's **Year 2035 Transportation Plan**. Traffic counts have been taken from the base year network of the transportation model and were used in compiling this report on mobility.

2. *Local Public Transit Systems:*
   Both fixed route and demand response public transit services were studied that receive federal funds through the Federal Transit Administration either directly or through the State of Alabama. The City of Huntsville Department of Parking and Public Transit administers a fixed route service - the Huntsville Shuttle. The Shuttle operates thirteen routes within the city limits of Huntsville, and provides service Monday through Friday from 6:00 a.m. until 6:00 p.m. The fixed route system began in 1990 with four routes and a limited schedule, and has since expanded routes and service hours based upon demand for service.

   The City of Huntsville also administers a demand response service, known as Handi-Ride. The Handi-Ride service operates Monday through Friday from 6:00 a.m. until 6:00 p.m. Service is limited to pre-qualified individuals that are elderly and/or disabled and cannot access traditional fixed route transit service. Handi-Ride transportation must be scheduled at least 24 hours in advance.

Madison County operates a demand response transportation service as well. Transportation for Rural Areas of Madison County (TRAM) operates Monday through Friday from 7:00 a.m. until 3:00 p.m. This service is limited to individuals residing in rural Madison County; otherwise, there are no other service restrictions. TRAM service must be scheduled at least 24 hours in advance.

Utilizing the data collected for the established CMP network and public transit systems, analyses and assessments were made concerning the state of our local transportation system. The State of the System follows.

8.2.2 State of the System

The following categories of performance measures are being monitored to analyze current mobility conditions and trends in the Huntsville region:

- Congestion Based measures
- System Efficiency Based Measures
- System Mobility Based Measures
- System Accessibility Measures
- Non-Recurring Congestion Measures

These categories have been further broken down into specific performance measures analyzed later in this section.

Statistics are available only for routine vehicular traffic and public transit services on the adopted Congested Management System Network as defined in the **CMP Procedures and Responsibilities Report, Appendix C.**

Data collection for the CMP was performed in accordance with the methods and procedures outlined in the **CMP Procedures and Responsibilities Report**. The most recent traffic count data collected and utilized in this report was collected by all entities and was input into the base year transportation model during its 2009 update. The latest public transit statistics have been compiled from data provided in annually required federal and State reports for the years 2005 through 2008. Data for 2009 has not been validated as of publication time.

8.2.2.1 CMP Objectives

Various objectives for the Huntsville Urbanized Area have been developed, and are based upon the identified performance measures. These objectives and their correlating performance measures follow:

1. Congestion-Based Measures: V/C Ratio and Fixed Route Rate of Occupancy

   Reduce the number of segments on the transportation network that have a V/C ratio of 1.0 or higher, so that by 2015 the transportation network

exhibit more free flow conditions. This can be accomplished by implementing various strategies that relate to land use, access management, operational improvements, construction of additional bike and pedestrian facilities, as well as road widening.

Correlate Shuttle Bus ridership with Shuttle Bus capacity so that by 2015 certain routes will not require additional buses to handle overflow passengers.

2. System Efficiency Based Measures: Daily VMT, Daily VMT per Person, Roadways Operating at Congested Conditions (uncongested vs. congested lane miles, congested vs. uncongested VMT)

   Reduce congestion on the transportation network so that users accessing the network may experience overall efficient trips.

3. System Mobility Based Measures: Trip oriented and measures the ease and freedom with which persons can travel from one location to another (Total yearly public transit ridership, average daily passengers on transit services, annual revenue miles, average speed on the transportation network)

   Correlate public transit ridership with bus capacity so that by 2015 certain routes or systems can easily handle the demand for service.

   Routinely increase average speed of all classifications of corridors on the transportation network so that by 2015 enhanced mobility on the overall network can be realized. This may be accomplished through the implementation of short-term and long-term strategies that will either operationally enhance mobility or increase system capacity.

4. System Accessibility Measures: Activity oriented and measures the degree of ease that individuals experience in traveling to employment, shopping, school, and even other modes of transportation.

   Increase carpool activity and the use of alternative modes of transportation besides the vehicle, so that system accessibility may be improved and congestion experienced on the network may be reduced. This may be performed through marketing various modes of transportation and providing more opportunities for network users to try “new” methods of transportation.

   Decrease travel to work time by subarea by implementing short-term congestion relieving strategies as well as planning long-term road widening projects, so that users of the network may access the system during peak times with minimal delay.

5. Non-Recurring Congestion Measures: Traffic Accidents by Intersection

Reduce the number of accidents at high accident prone locations by investigating the need for operational improvements, and correlate the high rate of accidents to congested corridors which will define the potential for delayed trips on the network.

8.2.2.2 System Performance Measures

The statistics presented in this section validates the current state of the regional transportation system, and will assist the region in meeting the above objectives.

1. Congestion Based Measures

   Congestion based measures are facility oriented and indicate how much of the road capacity or bus capacity is being used within a corridor. The following indicators of roadway and bus congestion were evaluated:

   a. Volume to Capacity Ratios

      The Volume to Capacity Ratio (V/C Ratio) is the comparison of traffic volume at a specific location versus the roadway's capacity. Roadway segments experiencing v/c ratios in excess of 1.0 are considered congested. **Section 4, Map 4.4** identifies locations experiencing congestion using this method of measure. Data was obtained from the base year network of the **Year 2035 Transportation Plan**. **Section 4, Map 4.16** displays locations anticipated to experience congestion per the "Future Year Network" data obtained from the Year **2035 Transportation Plan**. These specific roadway segments will be identified and studied further in **Section 8.2.3** and **Section 8.2.4** of this report.

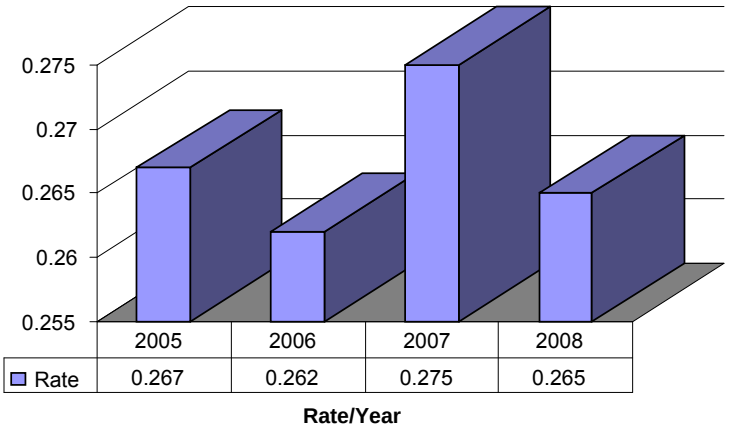
   b. Fixed Route Rate of Occupancy

      The fixed route rate of occupancy measured here gauges congestion on the Huntsville Shuttle bus system on an average daily basis. According to Huntsville Parking and Public Transit officials, there is not a standard system wide peak time of service for the Huntsville Shuttle; therefore, statistics are displayed on an average daily basis. **Figure 8.1** shows the fixed rate of occupancy for the years 2005 through 2008. In the past, average daily ridership for 2002 was 1,200 passengers, while average daily ridership for 2003 and 2004 stabilized to

approximately 1,100 passengers per day. Ridership on the system increased for 2005-2008, and peaked at 1,617 trips daily during 2007. Trips declined by only 59 trips during 2008. The average system wide rates of occupancy indicate that the fixed transit route is not experiencing congested conditions.

Of all the routes in service, the Southwest Huntsville route tends to have the most ridership, and experiences service at or beyond capacity several times during the day. The primary reason for this was ridership to and from Stone Middle School. Recent action by the Huntsville City School Board has closed the school beginning with the 2009-2010 school year, and it will be interesting to note what impacts this action will have upon this particular route. More detailed fixed route rate of occupancy data per route may be available during the next reporting period.

Figure 8.1
Fixed Route Rate of Occupancy
Years 2005-2008



2. System Efficiency Based Measures

System efficiency based measures provide an overall assessment of the transportation system's performance by measuring system demand and the level of congestion in the area. Measures in this category consist of vehicle miles traveled (VMT) and roadways operating at congested conditions. It is important to note that the VMT estimates do not indicate system wide demand, only demand on the CMP network. The following indicators of system efficiency were evaluated:

a. Average Daily Vehicle Miles of Travel (VMT)

The average daily VMT is calculated by multiplying each roadway segment's length by its average daily traffic count, and adding the results from each segment together. The average daily vehicle miles of travel driven on the CMP network totaled 7,291,749 miles for the modeled 2000 base year, and increased by nearly 12% to 8,290,375 for the year 2005 modeled network. This indicates an increase in average daily travel of nearly 1 million miles on the modeled network.

b. Average Daily Vehicle Miles of Travel per Person

The average daily VMT on the CMP network per person was calculated. Countywide, persons traveled an average 25.08 miles per day on the CMP network according to the modeled 2000 base year network. The number of average VMT on the CMP network increased to an average of 26.59 miles per day for the 2005 modeled base year network.

c. Roadways Operating at Congested Conditions

For the purpose of this report, congested roads have been defined as corridors or roadway segments where the average daily traffic count is equal to or greater than the roadway's capacity. For the Huntsville Area MPO, any location with a volume/capacity ratio of 1.0 or higher is considered congested. This section will establish the baseline of vehicle miles traveled on various road classifications operating at congested conditions on the CMP network. This information is displayed on **Figure 8.2. Figure 8.3** shows the total vehicle miles traveled on congested vs. uncongested roadways.

According to **Figure 8.2**, congested vehicle miles traveled are higher on the network's major and minor collectors, followed by major arterials, minor arterials, and interstate highway facilities.

Figure 8.2
Base Year 2005 Congested Vehicle Miles Traveled (VMT) by Roadway Classification

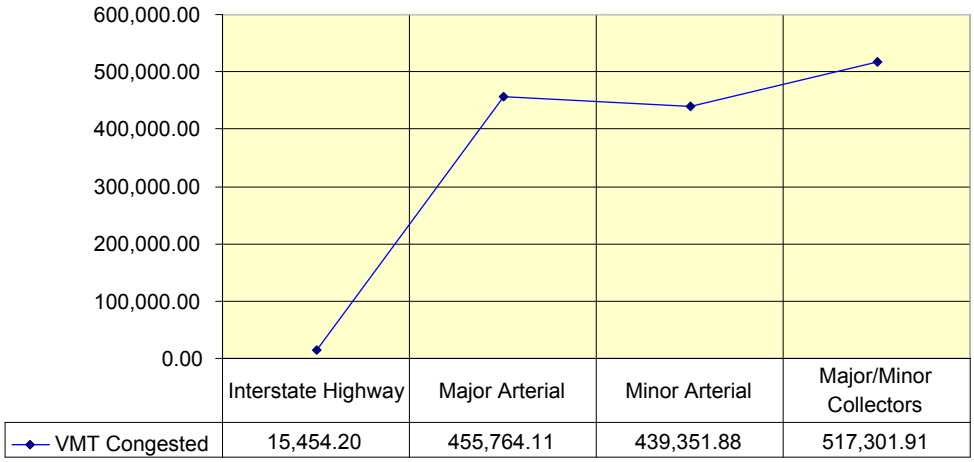
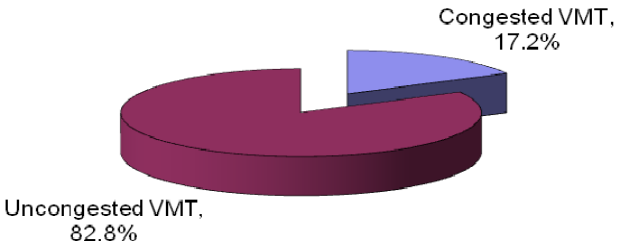


Figure 8.3
Base Year 2005 Congested versus Uncongested Vehicle Miles Traveled (VMT)



An assessment of actual vehicle miles traveled (VMT) congested vs. uncongested was conducted, and results are shown at **Figure 8.3**. Overall, 17.2% of all vehicle miles traveled on the CMP network during this reporting period occurred on congested roadways. A comparison with the modeled 2000 base year data indicates an 11.9% increase in congested vehicle miles traveled on the 2005 modeled base year network.

3. System Mobility Based Measures

Mobility based measures are trip oriented, and measure the ease and freedom with which persons can travel from one location to another. For the purpose of this report, mobility will be measured for public transit services and on the CMP transportation network.

a. Public Transit Ridership

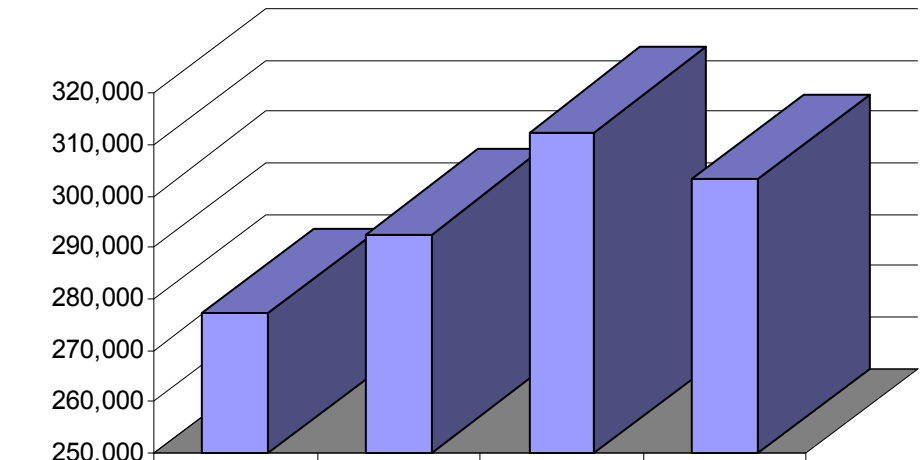
The previously reported fixed route rate of occupancy indicates a high degree of mobility on the transit system and its capability to accommodate passenger trips. Passenger mobility is not negatively impacted because the calculated rate does not indicate congested conditions on the fixed route system.

To further determine passenger throughput on the transit system, the following indicators have been evaluated:

(1) Total Yearly Ridership

Total yearly ridership for the Huntsville Shuttle fixed route service, and demand response services (Huntsville's Handi-Ride and rural Madison County's TRAM) for the years 2005-2008 are presented below.

Figure 8. 4
Total Ridership Huntsville Shuttle
Years 2005-2008



	2005	2006	2007	2008
Ridership	277,316	292,568	312,504	303,298

Figure 8.5
Total Ridership Demand Response
Huntsville Handi-Ride: Years 2005-2008

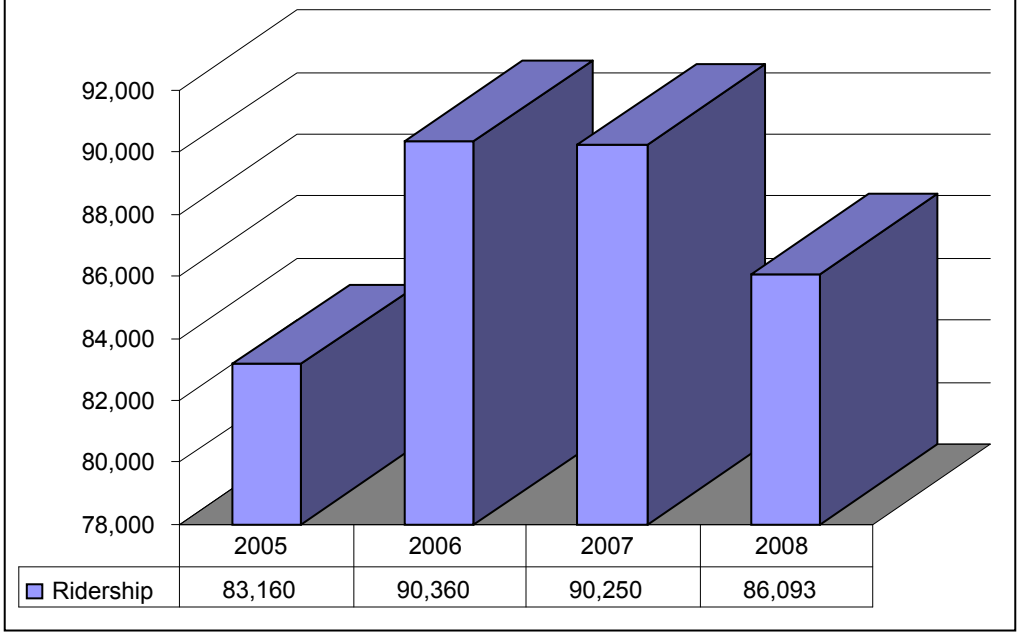
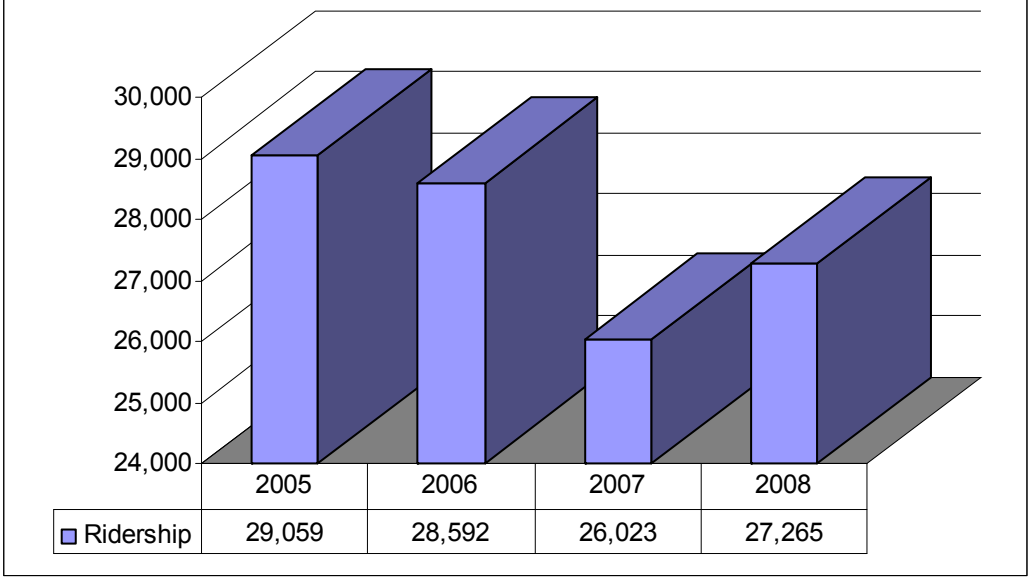


Figure 8.6
Total Ridership Demand Response
Madison County TRAM: Years 2005-2008



While ridership declined by almost 3% in 2008 for Huntsville's fixed route system form 2007's numbers, overall system throughput on the system has increased during the past four years by nearly 8.6%. The City of Huntsville's demand response service, Handi-Ride, has seen a sporadic overall increase in ridership of over 3.5% during the past four years. This sporadic trend in ridership may be due to the following reasons:

- Several human service and social service agencies that historically have depended upon demand response services provided by the City of Huntsville have dropped out of the program and some are now providing transportation services to their own clients. This decrease in demand contributed to a reduction of vehicles, ridership, and revenue miles. This is a continuing trend, as several other human service and social service agencies were not contracted in fiscal year 2006 and beyond.

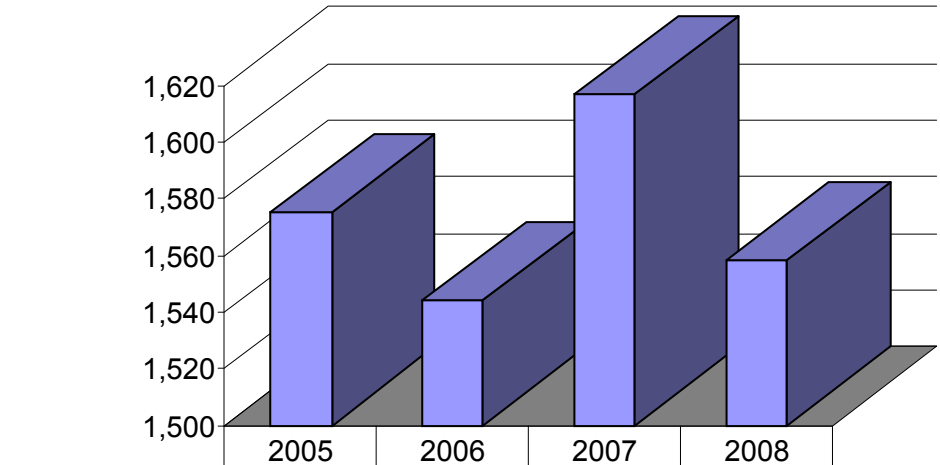
- Additionally, assisted living facilities that have recently been opened in the City of Huntsville also provide transportation for their residents. These trips are of the same nature as those that are typically provided by Handi-Ride (i.e., grocery store, doctor's appointments, drug store, Senior Center, etc…).

Demand response trips provided by Madison County's service, TRAM, has decreased during the past four years by over 6%, primarily due to the same reasons.

(2) Average Daily Passengers

Average daily passenger information was collected only for the Huntsville fixed route system. Statistics indicate that a peak average 1,617 passengers rode the Huntsville Shuttle bus per day during 2007. The average number of passengers riding the Shuttle during 2008 was 59 less. While ridership numbers have fluctuated during the past four years, the rate has not been dramatic. These ridership numbers are characteristic of a consistent population that depends on transit for trips to work, school, shopping, and socialization.

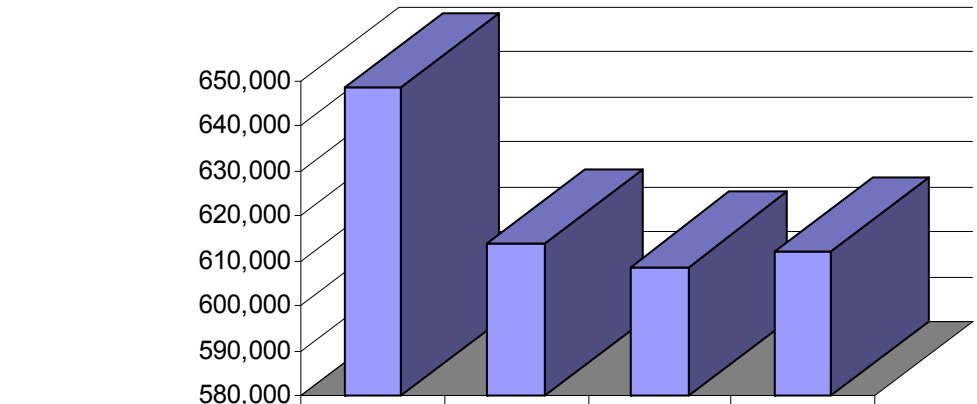
Figure 8.7
Average Daily Ridership Huntsville Shuttle
Years 2005-2008



(3) Annual Revenue Miles

Annual revenue mile data was collected on all public transit systems. A discrepancy in the fixed route service is expected since the service days vary from year to year. Additionally, the Shuttle is in service during some holidays and for some special events. The Handi-Ride demand response service's annual revenue miles for the past four years indicate an instability, which may be explained by either persons choosing fixed route service during 2007 (in which Shuttle ridership increased), or a reduction in usage by human service and social service agencies. Madison County's TRAM service reported a decrease in revenue miles, proportional with decreased ridership levels over the past four years.

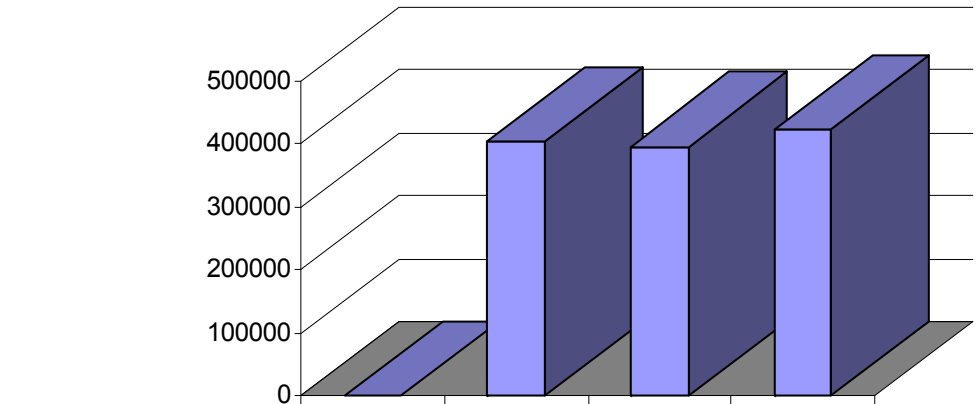
Figure 8.8
Annual Revenue Miles Huntsville Shuttle
Years 2005-2008



	2005	2006	2007	2008
Annual Revenue Miles	648,590	613,880	608,804	612,049

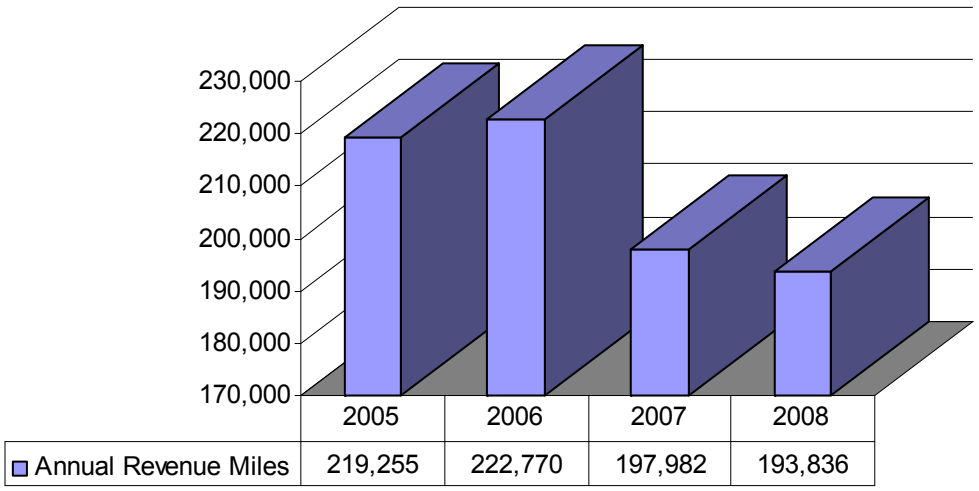
***Annual Revenue Miles for 2005 are not available.**

Figure 8.9
Annual Revenue Miles Handi-Ride
Years 2005-2008



	2005	2006	2007	2008
Annual Revenue Miles	0	403,106	395,958	423,688

Figure 8.10
Annual Revenue Miles TRAM
Years 2005-2008

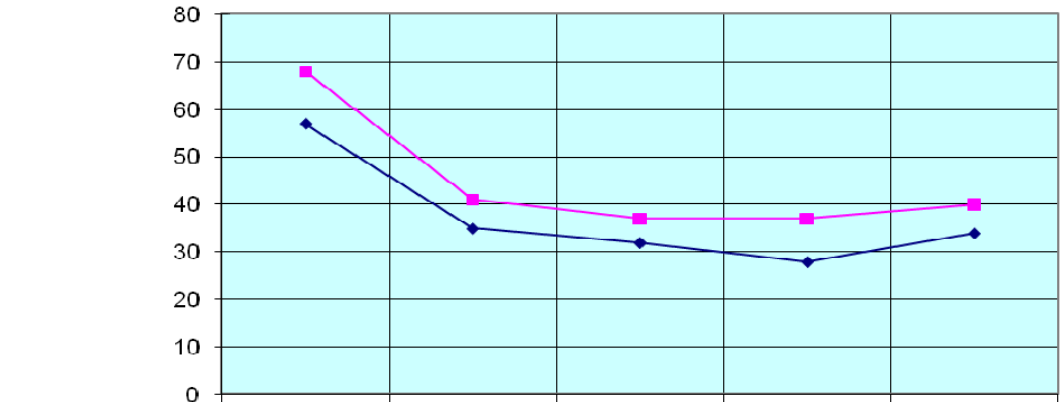


	2005	2006	2007	2008
Annual Revenue Miles	219,255	222,770	197,982	193,836

b. CMP Transportation Network

Travel time data is the best measure of mobility on transportation networks. Unfortunately, real time travel data is not available for the Huntsville area CMP transportation network. The **Year 2025 Transportation Plan** as well as the **Year 2030 Transportation Plan** and the 2035 update modeled travel time on roads within the MPO study area, which mirrors the CMP transportation network. Higher speeds translate into better mobility across the network. A comparison between the speeds indicated by the **Year 2025 Transportation Plan**, adopted in January 2000, the **Year 2030 Transportation Plan**, adopted during 2005, and the modeled year 2035 transportation network are shown at **Figure 8.11**. Overall, travel speeds have decreased on all classifications of roadways. This decrease in speed indicates more heavily traveled roadways. A decrease in speed of about 10 miles per hour is indicated on freeways and minor arterials, while expressways, major arterials, and major collectors decreased in travel speed by about 5 miles per hour.

Figure 8.11
Comparison of Average Speed on the CMP Network



	Freeway	Expressway	Major Arterials	Minor Arterials	Major Collectors
Base Year 2000	68	41	37	37	40
Base Year 2005	57	35	32	28	34

4. System Accessibility Measures

System accessibility measures are activity oriented, and measure the degree of ease that individuals experience in traveling to employment, shopping, school, and even other modes of transportation. For the purpose of this section, fixed route public transit and the CMP network were evaluated.

a. Public Transit Accessibility

Public transit accessibility is somewhat difficult to measure. There are assurances, however, that transit accessibility goals are met through the triennial **Title VI Report** submitted by the Huntsville Parking and Public Transit Division, and required by the Federal Transit Administration. Such assurances involve passenger opinion surveys, needs-analysis route committees involved in improving and developing new routes, public hearings, and citizen input gathered from these events. Accessibility is furthermore established as the norm through the distribution of specific transit amenities and access of service to a majority of the population fitting the minority population and/or low income profile. System accessibility is measured every three years, and is documented in detail in the **Title VI Report**, available for public review in the City of Huntsville's Department of Parking and Public Transit office.

b. CMP Network Accessibility

CMP network accessibility has been measured by referring to transportation related statistics available from the US Census Bureau. Conclusions have been drawn from data presented in the Huntsville Planning Division's "Journey to Work" publications, which measure commuting patterns countywide. The 1990 and 2000 versions of the publication were consulted. The statistics available in these reports are the measure of choice, since most peak-time travel is work-related, and most roadway congestion typically occurs during this time.

Upon evaluating the available statistics, it was determined that overall congestion in the area is not extreme and network accessibility is acceptable. Under free flow conditions, persons can typically commute from one end of the county to the other in about 30 to 40 minutes. **Table 8.1**, which follows, shows some comparisons of Journey to Work Data from 1990 and 2000.

Table 8.1

US Census 2000: Local Journey to Work Statistics

	% Drove Alone		% In Carpools		% Using Public Transit		% Using Other Means		% Walked or Worked at Home		Average Travel Time (Minutes)	
Location	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
Alabama	79%	83%	15%	12.3%	1%	.5%	1%	.9%	4%	3.4%	N/A	24.8
Madison County	82.4%	83.9%	12.5%	11.3%	.3%	.4%	.8%	.7%	4%	3.6%	21.7	20.9
Huntsville	83.2%	83.8%	11.8%	11.2%	.4%	.5%	.8%	.7%	3.7%	3.9%	20.0	18.0
Madison	90%	87.1%	7.5%	9.9%	.9%	.1%	.6%	.4%	1%	2.6%	19.4	18.2

Data Source: US Census Bureau and City of Huntsville Planning Division

Madison County showed a slight reduction in carpool activity, and a slight increase in persons driving to work alone. Statistics for the City of Huntsville remained relatively unchanged. A slight increase in public transit use was noted, and is equivalent to the State standard. The City of Madison showed a 2.4% increase in carpooling, and a 2.9% decrease in persons driving to work alone. These results indicate that countywide, a 1.5% increase of single occupied vehicles are accessing the transportation network. In the City of Huntsville, .6% more single occupied vehicles are accessing the transportation network, and in the City of Madison,

the number of single occupied vehicles accessing the network decreased by 2.9%.

The mean travel to work time decreased during 2000. Contributing to this improvement is no doubt the construction of Interstate 565, Four Mile Post Extension/Cecil Ashburn Drive, and other regional road widening and construction projects occurring between 1990 and 2000.

A countywide analysis of commuter patterns shows that the number of commuters increased in 2000 by 9.2%, yet commuters experienced a decrease in travel time to work in most subareas. A comparison of total commuters is shown at **Figure 8.12**, and a breakdown of travel time per subarea is displayed at **Table 8.2**. A map of subareas can be found on page 8-22.

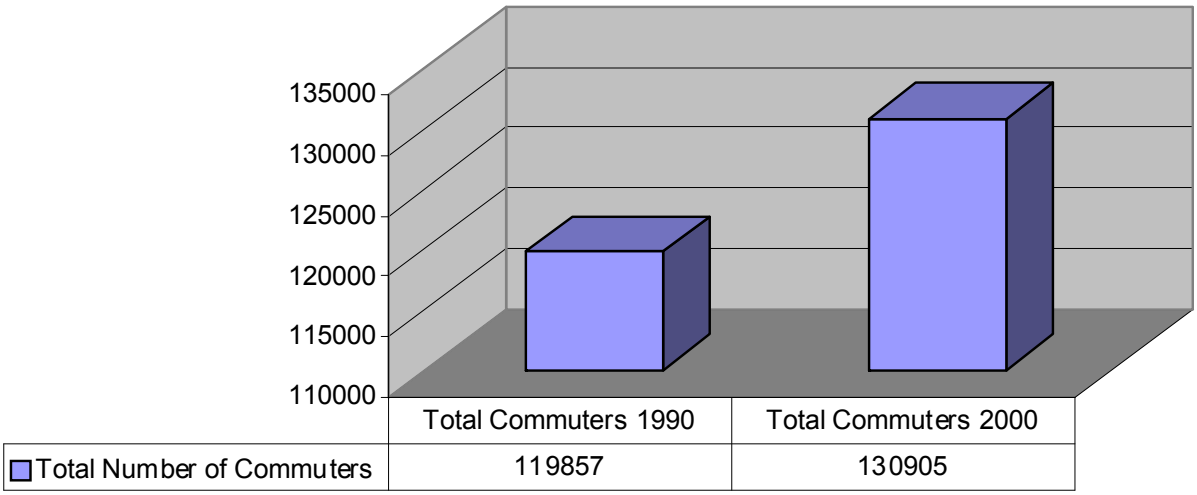
Subarea boundaries changed slightly in 2000 based upon the latest census data; however, the boundaries' impact on commuting times per subarea should not be significant nor substantial. Subareas experiencing an increase in land area include Madison, Gurley, Riverton, East Central, New Market, and Harvest/Monrovia. Subareas experiencing a decrease in land area include Airport, North, Downtown, and 72 East. Better delineation was made between the Big Cove and East subareas. Even when the Big Cove and East subareas were combined and compared, the area still exhibited a decrease in commuting times. During the past ten years, the Big Cove and East subareas have experienced tremendous growth with the development of the Hampton Cove community. The number of commuters in these combined subareas increased by approximately 127%. The fact that improvements have been made in commuting times in subareas which now have an increased population base is quite impressive. The improvement of these travel times may be the direct result of the construction of the Four Mile Post Extension/Cecil Ashburn Drive which connects the two subareas to the Near South East subarea.

Five subareas show an increase in travel time: Hazel Green, Triana, North West, Toney/Ardmore, and Research Park. The North West and Research Park subareas show an increase of .2 minutes of travel time – which is very minimal. The remaining three subareas reporting an increase are located near the Madison County limits, in suburban areas. Triana, whose northwest boundary shifted further south and northeast boundary shifted further north, showed an average 2 minute increase in commuting times.

When comparing the changes in travel time to work, and noting improvements as well as minimal increases in travel time, it is determined that network accessibility during peak hours, (when most congestion occurs) is indeed acceptable.

Figure 8.12

Comparison of Total Commuters 1990 vs. 2000



Map 8.1: CMP Subareas

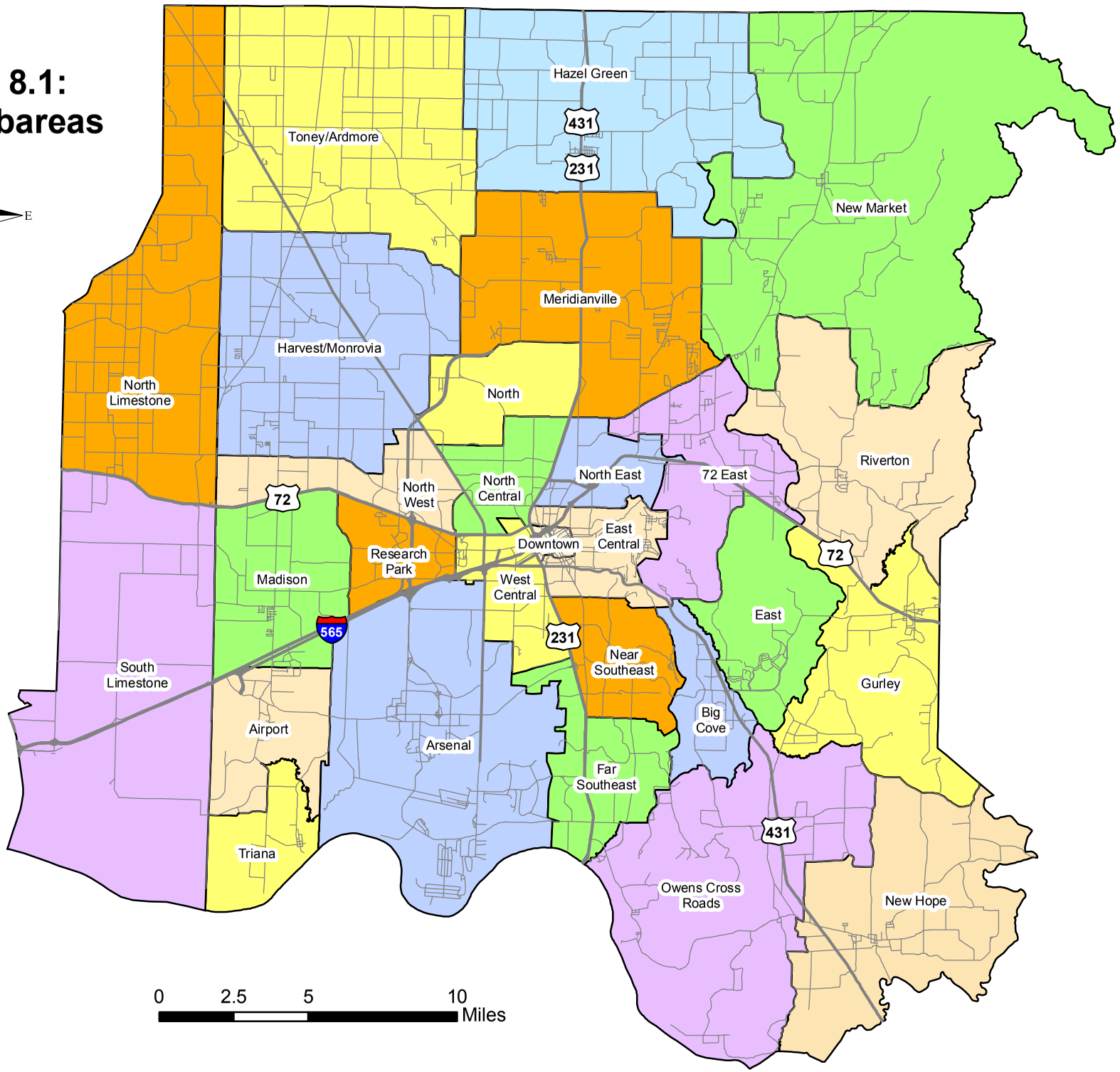


Table 8.2

Comparison of Travel Time to Work per Subarea Place of Residence

Subarea (Place of Residence)	Average Travel Time to Work (Minutes)		Change in Travel Time (Minutes)
	1990	2000	
Airport	19.3	18.4	-.9
Arsenal	12.2	11.4	-.8
Big Cove	26.5	22.5	-4.0
Downtown	15.8	12.2	-3.6
East	24.7	22.7	-2.0
East Central	19.3	16.2	-3.1
Far South East	22.9	20.1	-2.8
Gurley	30.8	27.4	-3.4
Harvest/Monrovia	26.0	23.8	-2.2
Hazel Green	29.6	30.9	+1.3
Madison	19.4	18.2	-1.2
Meridianville	26.4	23.9	-2.5
Near Southeast	19.8	16.9	-2.9
New Hope	32.7	29.3	-3.4
New Market	32.4	31.1	-1.3
North	23.9	21.7	-2.2
North Central	20.2	19.2	-1.0
North East	21.1	18.5	-2.6
North West	16.9	17.1	+.2
Owens Cross Roads	30.6	27.7	-2.9
Research Park	17.6	17.8	+.2
Riverton	31.2	27.1	-4.1
Toney/Ardmore	30.6	32.1	+1.5
Triana	20.0	22.0	+2.0
West Central	18.4	17.1	-1.3
72 East	25.5	24.7	-.8
All Subareas	21.7	20.9	-.8

Source: US Census Bureau and City of Huntsville Planning Division

5. Non-Recurring Congestion Measures

The performance measure of choice for quantifying non-recurring congestion is traffic accident statistics within the CMP network. The time of delay, severity of accidents, and the time to clear the accidents may vary widely and are unpredictable; however, the number of traffic accidents at a specific location does give some indication of where traffic flow may be impeded. The top ten intersections with the most traffic accidents have been identified for each studied year, and are displayed at **Table 8.3**. Data was provided by accessing the CARE program, a traffic accident database developed by the University of Alabama and endorsed by the Alabama Department of Transportation. The data provided was from the time period of January 1, 2005 through December 31, 2008. At the time of publication, data for 2009 had not been finalized. High numbers of traffic accidents are oftentimes an indicator of other congestion problems at intersections. Of the intersections comprising the top 10 ten accident locations

during 2004, 2 of these locations have been identified as corridors currently experiencing congested conditions per the latest transportation model. The model also indicates that an additional 2 locations may experience congestion in the future.

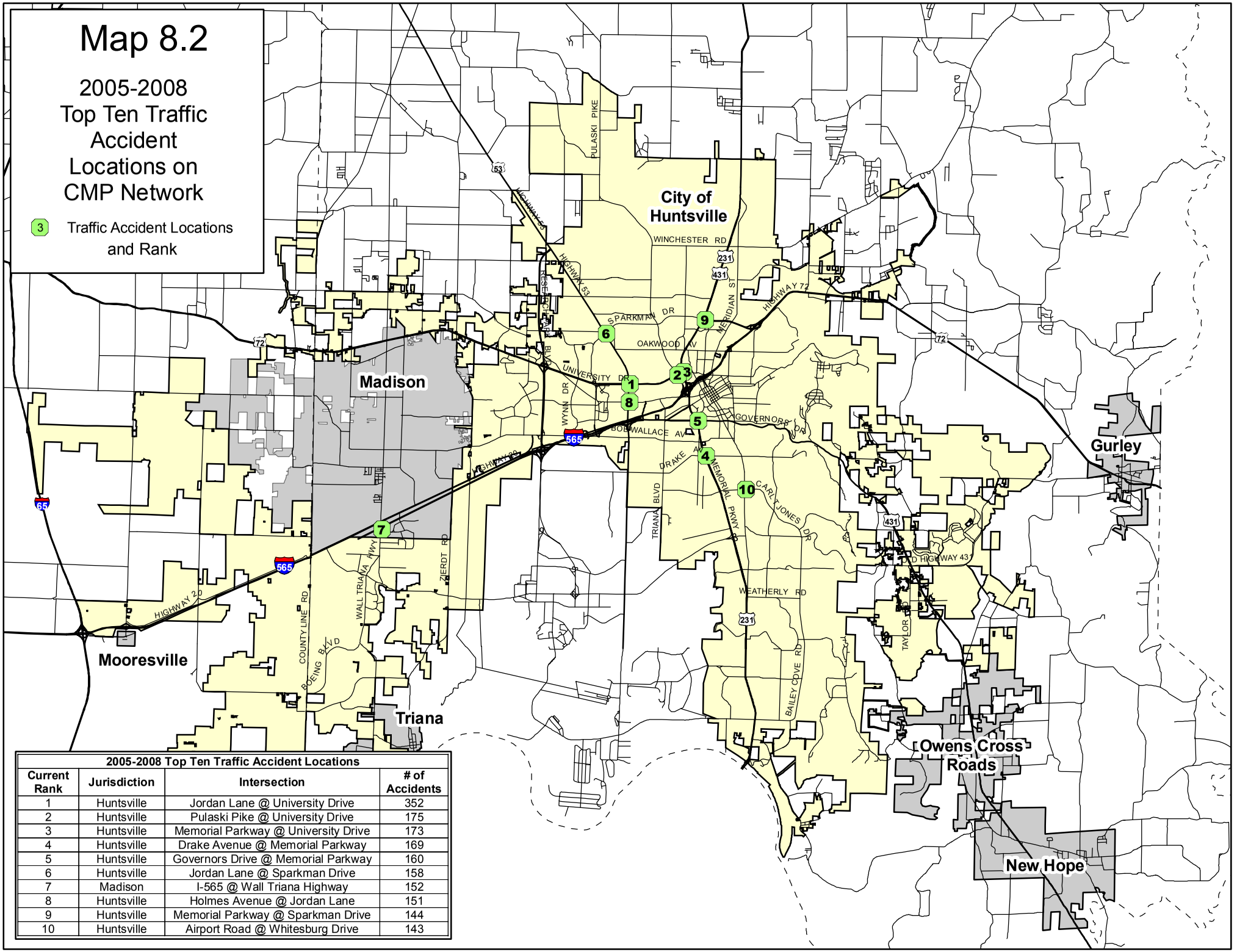
Table 8.3
Top Ten Traffic Accident Locations
January 1, 2005 – December 31, 2008

Current Rank	Jurisdiction	Intersection	# of Accidents
1	Huntsville	University Drive @ Jordan Lane	352
2	Huntsville	Pulaski Pike @ University Drive	175
3	Huntsville	Memorial Parkway @ University Drive	173
4	Huntsville	Memorial Parkway @ Drake Avenue	169
5	Huntsville	Memorial Parkway @ Governors Drive	160
6	Huntsville	Jordan Lane @ Sparkman Drive	158
7	Madison	I-565 @ Wall Triana Highway	152
8	Huntsville	Holmes Avenue @ Jordan Lane	151
9	Huntsville	Memorial Parkway @ Sparkman Drive	144
10	Huntsville	Airport Road @ Whitesburg Drive	143

Map 8.2

2005-2008 Top Ten Traffic Accident Locations on CMP Network

3 Traffic Accident Locations and Rank



2005-2008 Top Ten Traffic Accident Locations			
Current Rank	Jurisdiction	Intersection	# of Accidents
1	Huntsville	Jordan Lane @ University Drive	352
2	Huntsville	Pulaski Pike @ University Drive	175
3	Huntsville	Memorial Parkway @ University Drive	173
4	Huntsville	Drake Avenue @ Memorial Parkway	169
5	Huntsville	Governors Drive @ Memorial Parkway	160
6	Huntsville	Jordan Lane @ Sparkman Drive	158
7	Madison	I-565 @ Wall Triana Highway	152
8	Huntsville	Holmes Avenue @ Jordan Lane	151
9	Huntsville	Memorial Parkway @ Sparkman Drive	144
10	Huntsville	Airport Road @ Whitesburg Drive	143

8.2.3 CMP Technical Ranking

Methods were established in the **Huntsville Area Transportation Study CMP Procedures and Responsibilities Report (Appendix C)** for prioritizing current and anticipated congested corridors. The corridors within the defined CMP transportation network were prioritized based upon the following criteria:

- Extent of current congestion
- Extent of anticipated congestion per the 2035 modeled network
- Current traffic volumes
- Safety
- Multi-modal connectivity
- Prior funding commitments

It is important to note that the model only indicates the locations where average daily traffic volumes may exceed average daily roadway capacity. A consistent method for measuring hourly or peak real-time traffic flow for **all** corridors comprising the CMP network does not currently exist. Therefore, peak hourly flow is not used as a standard of measure, since benchmarks must be established that can be measured consistently from year to year.

Since it is not feasible to identify congestion mitigation strategies for all corridors simultaneously, the top ten corridors were selected. The top ten corridors that have been selected, are presented for congestion mitigation strategy recommendations in **Section 8.2.4** of this report.

The list of the top ten congested corridors follows on the next page:

Table 8.4
CMP Top Ten Corridor Technical Ranking List

Rank	Roadway	Location
1	US 72 East	Maysville Road to Moores Mill Road
2	US 72 West	Hughes Road to Nance Road
	US 72 West	Nance Road to Jeff Road
3	US 231 South	Governors Drive to Bob Wallace
	US 231 South	Bob Wallace to Drake Avenue
	US 231 South	Drake Avenue to Airport Road
4	US 72 West/University Drive	Jeff Road to Providence Main
	US 72 West/University Drive	Providence Main to Enterprise Drive
5	US 231 South	Byrd Spring Road to Weatherly Road
	US 231 South	Weatherly Road to Mountain Gap Road
6	Zierdt Road	Madison Boulevard to Edgewater Drive
7	Old Madison Pike	Voyager Way to Research Park Blvd
	Old Madison Pike	Research Park Blvd to Wynn Drive
8	Jordan Lane	I-565 to Holmes Avenue
	Jordan Lane	Holmes Avenue to University Drive
9	I-565	County Line Road to Wall Triana Hwy
10	I-565	Mooresville Road to Greenbrier Road

8.2.4 Strategy Recommendations

Federal CMP legislation requires the identification and evaluation of strategies to determine the most effective method(s) to alleviate congestion. The legislation further defines the categories of strategies or combination of strategies to be considered. The **CMP Procedures and Responsibilities Report** comprehensively lists each strategy to be considered within screening matrices to assist jurisdictions in selecting appropriate and feasible strategies to correct problematic corridors. The strategies, in order of consideration, are:

- Level One Strategies – Strategies that Eliminate or Reduce Trips
- Level Two Strategies – Strategies that Involve Traffic Operational Improvements
- Level Three Strategies – Strategies that Shift Trips from Single Occupancy Vehicles to Public Transit, Other High Occupancy Vehicles, and Other Modes
- Level Four Strategies – Strategies that Involve Intelligent Transportation Systems
- Level Five Strategies – Strategies that Add Capacity for All Vehicles

Each corridor selected for strategy recommendations has been through a comprehensive screening process. Some solutions may be nontraditional, but may be effective in combating traffic congestion. It is important to remember that the recommendations presented will more than likely require additional study. The following recommendations have been prepared in order to mitigate congested corridors on the CMP Transportation Network.

RANK: 1

CORRIDOR: US 72 East (ARC Corridor V)
BEGIN POINT: Maysville Road
END POINT: Moores Mill Road

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 1.91 miles

LANE CONFIGURATION: A 4-lane highway divided by a median. This road is designated as "Corridor V" by the Appalachian Regional Commission.

TRAFFIC CONTROLS: All intersections are under traffic signal control.



SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Maysville Road to Moores Mill Road	43000	1.27	F	55092	1.10	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor is primarily highway commercial, and has one high employment center located on US 72 East and another located at the corner of US 72 East and Moores Mill Road. This corridor has a portion of land that is undeveloped on the south side; however, landowners intend on developing the property for a commercial/retail use.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: This corridor is used primarily in AM and PM peak hours by employees traveling into and out of Huntsville from East Madison County as well as counties from the east. The corridor connects directly into Interstate 565, making it a primary artery for traffic to access employment, retail, universities, and healthcare.

OTHER PLANNING DOCUMENTS/STUDIES: This corridor has been identified in Section 4 of this document for improvement to an expressway. This corridor is a portion of project #80, listed in Section 4. Preliminary engineering design is currently underway.

RECOMMENDATIONS: The corridor is presently being designed as an expressway, beginning at the intersection of US 72 East and Maysville Road to Shields Road with a split interchange at Moores Mill Road and an interchange further east at Shields Road. At the present time, the Alabama Department of Transportation has the project scheduled for right of way acquisition to begin in fiscal year 2010, and for construction to begin in fiscal year 2011. It is recommended that this project (shown as project #80:U.S. 72 East/ARC Corridor V from Moores Mill and Shield Road to US 72 East in Section 4), proceed as scheduled. Upgrading this corridor to an expressway will alleviate "stop and go traffic" at the Moores Mill Road intersection.

RANK: 2

CORRIDOR: US 72 West
BEGIN POINT: Hughes Road
END POINT: Jeff Road

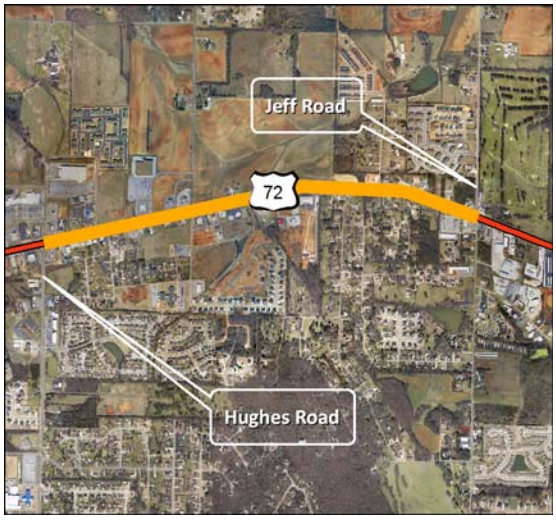
FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville and the City of Madison

CORRIDOR LENGTH: 1.56 miles

LANE CONFIGURATION: Corridor is 4-lane divided with depressed grassy median averaging 30 feet in width, with separate right and left turning lanes at most signalized intersections.

TRAFFIC CONTROLS: Signals control traffic at three intersections, and three local residential streets west of Jeff Road/Slaughter Road are under stop sign control.



SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Hughes Road to Nance Road	45000	1.33	F	68838	1.38	F
Nance Road to Jeff Road	46500	1.37	F	56406	1.13	F

CURRENT LAND USE/DEVELOPMENT TRENDS: The remaining undeveloped frontage along this corridor is expected to become 100% developed by the year 2035 as commercial use. Multi-family residential is likely as the second tier of development to the rear of the commercial tracts.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: This corridor serves as a federal highway and major arterial and with the exception of the I-565 Madison Boulevard corridor, is the only multilane east/west continuous route between Huntsville and Madison and points west. It serves high volumes of commuter traffic to employment centers located in Research Park and Redstone Arsenal, from northwest Madison County and northern Limestone County. This corridor also directly connects the major retail and other commercial properties of both Huntsville and Madison.

OTHER PLANNING DOCUMENTS/STUDIES: This corridor has been identified in Section 4 of this document for improvement. Project #86, listed in Section 4, includes this segment of roadway. The City of Madison is presently constructing intersection improvements at US 72 and Hughes Road utilizing their own funds.

RECOMMENDATIONS: The recommendations for this corridor hinge on a combination of Level 2 and Level 5 strategies. A portion of this project is recommended for improvement, and is part of the larger project listed in Section 4, project #86: U.S. 72/University Drive from Providence Main Boulevard to County Line Road. A multilane divided facility having median control of left turn and cross movement access, in combination with signalization and side street geometric improvements will provide the necessary and additional capacity above that provided by the conventional planned improvements. The City of Madison is constructing intersection improvements at US 72 and Hughes Road, which should provide better mobility at that location. The City of Huntsville is widening Nance Road from US 72 to Capshaw Road, and will need to upgrade the signalization timing during this construction project. It is recommended that the intersection and the corridor be monitored for any further improvements or upgrades that need to be made.

RANK: 3

CORRIDOR: US 231 South (Memorial Parkway)
BEGIN POINT: Governors Drive
END POINT: Airport Road

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 2.14 miles



LANE CONFIGURATION: 5 continuous lanes are provided in each direction; inner 2 serving as uninterrupted freeway lanes, one uninterrupted continuous transition lane from service road to freeway, and 2 outer lanes along the service road providing access to roadside development and intersecting cross streets at Governors Drive, Bob Wallace, Drake Avenue, and Airport Road.

TRAFFIC CONTROLS: Traffic signals control intersections with service roads at Governors Drive, Bob Wallace Avenue, Drake Avenue, and Airport Road.

SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Governors Drive to Bob Wallace	108000	1.44	F	56924	.76	B
Bob Wallace to Drake Avenue	93000	1.24	F	59800	.80	C
Drake Avenue to Airport Road	94000	1.25	F	54770	.73	B

CURRENT LAND USE/DEVELOPMENT TRENDS: Corridor frontage is 100% developed, primarily with two industrial sites occupied by the Huntsville Times and Arora Technologies. A major retail shopping center is located between Bob Wallace and Drake Avenue, and another major retail center is located on Airport Road near US 231 South (Memorial Parkway).

TRANSIT SERVICE: This corridor is served by multiple routes – the Airport Road Route being the main route. Other routes provide limited service to the corridor: The Weatherly Road Route provides service from Bob Wallace to Airport Road, The Airport Road Route provides service to US 231 and Airport Road, and the Red and Blue Routes serve Drake Avenue and Memorial Parkway. All routes run hourly except for the Red and Blue Routes, which run every 30 minutes.

CORRIDOR FUNCTION: This corridor serves as a federal highway and major arterial and thus serves both local and inter-state traffic. Centrally located, it is the most heavily north/south corridor in Huntsville. It connects to the only bridge crossing the Tennessee River between Guntersville, Alabama and I-65 near Decatur, Alabama.

OTHER PLANNING DOCUMENTS/STUDIES: None

RECOMMENDATIONS: A detailed assessment of all strategies was conducted. The parallel service road (not the inner freeway lanes) operate at peak hour Level of Service E or F. Level 4 and Level 2 strategies are recommended. ITS strategies coupled with improvements to signal operation should provide an acceptable level of service at projected traffic volumes. The City of Huntsville Traffic Engineering Division recommends that the intersection of Bob Wallace and Memorial Parkway provide a separate right turn lane from east to south, to help mitigate congestion from the service roads to the Memorial Parkway mainline. Additionally, US 231 south of Airport Road is currently under engineering design to upgrade the road to a freeway. Service roads have been constructed on US 231 from Whitesburg Drive to Weatherly Road, and an overpass was recently constructed to allow more free flow traffic. It is anticipated that once these improvements are made, that traffic along the entire stretch of US 231 will experience more free flow, eliminating stop and go traffic on the main corridor. Future traffic counts assume that the Southern Bypass is constructed; thereby, taking traffic from the portions of US 231 and dispersing it throughout the network.

RANK: 4

CORRIDOR: US 72 West
BEGIN POINT: Jeff Road
END POINT: Enterprise Way

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 2.16 miles



LANE CONFIGURATION: 6-lane divided from Enterprise Drive west for approximately 0.8 miles and 7 lanes undivided until Providence Main. From Providence Main to Jeff Road, the corridor turns into a 4-lane divided corridor. University Drive approaches to all signalized intersections are provided with left turn lanes, and most are provided with right turn lanes.

TRAFFIC CONTROLS: Most public street intersections along this corridor are under traffic signal control.

SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Jeff Road to Providence Main	42000	1.24	F	59848	1.20	F
Providence Main to Enterprise Way	39000	1.15	F	61528	1.23	F

CURRENT LAND USE/DEVELOPMENT TRENDS: With the exception of a small number of parcels, and two existing residential dwellings at the Providence intersection, this corridor is 100% developed – primarily in commercial activities.

TRANSIT SERVICE: The Huntsville Shuttle provides limited service along this corridor. The hourly route serves University Drive; however, the westward extent of service is Enterprise Way/Wayne Road.

CORRIDOR FUNCTION: This corridor serves as a federal highway and major arterial and with the exception of the I-565 Madison Boulevard corridor, is the only multilane east/west continuous route between Huntsville and Madison and points west. It serves high volumes of commuter traffic to employment centers located in Research Park and Redstone Arsenal, from northwest Madison County and northern Limestone County. This corridor also directly connects the major retail and other commercial properties of both Huntsville and Madison. Project #86, shown in Section 4, includes this segment of roadway.

OTHER PLANNING DOCUMENTS/STUDIES: This corridor has been identified for improvement in Section 4 of this document as Project #86: U.S. 72/University Drive from Providence Main to County Line Road.

RECOMMENDATIONS: Current right of way limitations for this segment may make widening a little challenging. Such improvement is indicated in Section 4 of this document, project #86. However, geometric improvements to side street approaches (Level 2 Strategy), coupled with ITS and traffic signal improvements (Level 4 Strategy) will result in significant corridor capacity improvements. City of Huntsville Traffic Engineers recommend improvements on Enterprise Way between US 72 and Moores Farm for signal improvements and left turn restrictions at the shopping center exits. These projects are shown in Section 4 of this document and Section 8.4.1.1 as Maintenance and Operations Projects “B” and “F.” The City of Huntsville has planned roadway improvements at Jeff Road from US 72 to Capshaw Road. Prior to construction, these signals will be retimed to allow for enhanced mobility of vehicles at US 72 and Jeff Road.

RANK: 5

CORRIDOR: US 231 South (Memorial Parkway)
BEGIN POINT: Byrd Springs Road
END POINT: Mountain Gap Road

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 2.47 miles



LANE CONFIGURATION: 6-lane divided, with a 40' depressed grassy median, from Byrd Springs Road to Whitesburg Drive and from south of Weatherly Road to Mountain Gap Road. The corridor provides additional right and left turn lanes at all major signalized intersections. US 231 between Whitesburg Drive and Weatherly Road is being upgraded to allow for free flow traffic via an overpass and service roads. Construction of the service roads are complete, and the overpass project will be completed soon.

TRAFFIC CONTROLS: Traffic signal controls are evident at each public street intersection.

SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Byrd Springs to Weatherly Road	50526	1.01	E	44700	.60	A
Weatherly Road to Mountain Gap Road	50526	1.01	E	44600	.59	A

CURRENT LAND USE/DEVELOPMENT TRENDS: The corridor is completely developed as commercial with the exception of a few parcels of vacant land.

TRANSIT SERVICE: The Weatherly Road Route serves this corridor on an hourly basis.

CORRIDOR FUNCTION: This corridor serves as a federal highway and major arterial and thus serves both local and inter-state traffic. Centrally located, it is the most heavily north/south corridor in Huntsville. It connects to the only bridge crossing the Tennessee River between Guntersville, Alabama and I-65 near Decatur, Alabama.

OTHER PLANNING DOCUMENTS/STUDIES: This corridor has been identified for improvement in Section 4 of this document. Projects #35 and #41, listed in Section 4, includes this segment of roadway. Additionally, the current Transportation Improvement Program includes service road improvements and overpasses on US 231 (Memorial Parkway) at Martin Road, Byrd Springs, and Lily Flagg. Right of way acquisition is underway. Utility relocation and clearing and grubbing is scheduled for fiscal year 2010. The State Department of Transportation has construction scheduled for fiscal years 2014 and 2017. The construction of service roads and an overpass have been completed on US 231 from Whitesburg Drive to Weatherly Road. Additionally, a project to construct service roads and overpasses at Mountain Gap Road and Hobbs Road is identified in Section 4 (project #41) of this document.

RECOMMENDATIONS: It is recommended that the construction of grade separation projects (i.e., Strategy 5 – the construction of service roads and associated overpasses) be accelerated for the currently planned locations at Martin Road, Byrd Springs Road, and Lily Flagg. This project is formally listed in this document as project #35: Memorial Parkway (including overpass/interchange) from North of Whitesburg Drive/South of Golf Road @ U.S. 231 North. It is also recommended that funding be pursued to construct the service road and overpass project at Mountain Gap and Hobbs Road. This project is formally listed in Section 4 as project #41: Memorial Parkway (including overpass/interchange) at Mountain Gap/Hobbs Road @ U.S. 431 South. This project will improve traffic flow in the area and will help bring to fruition the goal of unimpeded traffic flow from North Memorial Parkway to Hobbs Island Road, near the Tennessee River.

RANK: 6

CORRIDOR: Zierdt Road
BEGIN POINT: Madison Boulevard
END POINT: Edgewater Drive

FUNCTIONAL CLASSIFICATION: Major Collector

JURISDICTION: City of Madison/City of Huntsville

CORRIDOR LENGTH: 1.06 miles

LANE CONFIGURATION: A 2-lane corridor.

TRAFFIC CONTROLS: The intersection of Zierdt Road and Madison Boulevard is under traffic signal control. All other intersections are under traffic sign control.



SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Madison Boulevard to Edgewater Drive	20908	1.26	F	30200	1.18	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor is primarily residential on the west side, and borders Redstone Arsenal on the east side. This area has seen tremendous residential growth in the recent past which has increased traffic flow on this corridor.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: This corridor is used heavily in AM and PM peak hours by commuters between the high tech industries and their residences within the City of Huntsville and the City of Madison. Of particular importance is the western entrance gate at Redstone Arsenal at Zierdt Road and Martin Road. This gate serves a majority of employees residing west of Redstone Arsenal. Additionally, the corridor is utilized by residents of the Town of Triana, which lies south on Zierdt Road. As employment growth increases are expected on and around Redstone Arsenal due to BRAC, traffic is expected to increase as well.

OTHER PLANNING DOCUMENTS/STUDIES: The project is identified in Section 4 of this document for improvement. Project #95, listed in Section 4, includes this segment of roadway. Additionally, the project is identified in the current Transportation Improvement Program for improvement. Zierdt Road from Madison Boulevard to south of Martin Road is currently under design. The Transportation Improvement Program has right of way acquisition scheduled for fiscal year 2010. The State Department of Transportation has clearing and grubbing scheduled for fiscal year 2013, and construction scheduled for fiscal year 2014.

RECOMMENDATIONS: It is recommended that engineering design continue for project #95: Zierdt Road from Madison Boulevard to South of Martin Road, and that the project be moved up in the Transportation Improvement Program as funding is available. This will require close coordination with the State, Federal Highway Administration, and Redstone Arsenal to ensure that the project is not impeded. Additionally, City of Huntsville Traffic Engineering has recommended that Redstone Arsenal have equipment to provide manual operation of the traffic signal at the intersection of Zierdt Road and Martin Road.

RANK: 7

CORRIDOR: Old Madison Pike
BEGIN POINT: Voyager Way
END POINT: Wynn Drive

FUNCTIONAL CLASSIFICATION: Minor Arterial

JURISDICTION: City of Huntsville

CORRIDOR LENGTH: 1.21 miles

LANE CONFIGURATION: The corridor is 4-lanes, divided.

TRAFFIC CONTROLS: The intersections of Wynn Drive, Research Park Boulevard, and Voyager Drive are under traffic signal control. Other side streets are controlled by stop signs.



SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Voyager Way to Research Park Boulevard	13700	.43	A	51359	1.61	F
Research Park Boulevard to Wynn Drive	14300	.45	A	35004	1.10	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor includes Research Park, which has seen some major growth in the recent past, and is anticipated to grow and develop even more in the future. Recent development at the intersection of Research Park Boulevard and Old Madison Pike has been of a mixed use nature, with the construction of Bridge Street – a conglomeration of residential, hotel, retail, and office uses.

TRANSIT SERVICE: This corridor is served by the Bridge Street Route.

CORRIDOR FUNCTION: This corridor is used primarily as a connecting route between residents of the City of Madison, the City of Huntsville, and northwestern parts of Madison County who are employed in Research Park. The corridor also serves a major retail center: Bridge Street. The corridor as a whole serves as the only east-west connector from Madison to Huntsville between US 72 and I-565.

OTHER PLANNING DOCUMENTS/STUDIES: None. Old Madison Pike to the west of Voyager Way to Slaughter Road is scheduled in the current Transportation Improvement Program for improvements in fiscal year 2011.

RECOMMENDATIONS: The Base Year network indicates that this corridor is currently not experiencing a tremendous amount of congestion; however, it is anticipated by 2035. At the present time, it is recommended that the corridor be monitored, with the possibility of Level 2 Strategies, specifically traffic signal timing improvements, be performed if needed. It is also recommended that traffic improvements scheduled on Old Madison Pike west of Voyager Way be completed as planned. This will improve traffic flow coming into Research Park from the west. City of Huntsville Traffic Engineering recommends signal system improvements and system optimization for the intersections of Old Madison Pike from Steeplechase to Jan Davis Drive. Additionally, City of Huntsville Traffic Engineering recommends the construction of a joint bike/pedestrian bridge on Old Madison Pike, which crosses Research Park Boulevard. This project will provide an alternate facility for bike/ped traffic. This project is listed in Section 4 and Section 8.4.1.1 of this document as Maintenance and Operations Project “D.”

RANK: 8

CORRIDOR: Jordan Lane
BEGIN POINT: I-565
END POINT: University Drive

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 1.03 miles



LANE CONFIGURATION: Nominally, a 5 lane undivided with continuous center two way turn lane, with two left turn lanes at University Drive and at both ramps to I-565. North and south approaches to the I-565 interchange have a 7 lane undivided section.

TRAFFIC CONTROLS: All major intersections are controlled by traffic signals. Side streets are controlled by stop signs.

SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
I-565 to Holmes Avenue	27800	.87	C	37314	1.10	F
Holmes Avenue to University Drive	25800	.81	C	38842	1.15	F

CURRENT LAND USE/DEVELOPMENT TRENDS: Uses along this corridor are primarily highway commercial between Holmes Avenue and I-565, with a short section of residential between University Drive and Holmes Avenue. Land is 100% developed.

TRANSIT SERVICE: Transit service is limited, with a route serving the intersection of Jordan Lane and Holmes Avenue and a route serving the intersection of Jordan Lane and University Drive.

CORRIDOR FUNCTION: Corridor use is shared by locals with some traffic utilization by non-locals utilizing Alabama Highway 53 between I-565 and I-65 at Ardmore, Alabama/Tennessee. The corridor provides excellent access from Redstone Arsenal to I-565 and US 72.

OTHER PLANNING DOCUMENTS/STUDIES: None

RECOMMENDATIONS: Level 1 and Level 3 strategies were deemed not applicable. Level 5 strategies are applicable from I-565 to University Drive, as right of way exists to widen this corridor when growth in traffic volumes justify. The current recommendation is to monitor this corridor for any dramatic increase in traffic which would warrant any improvements to be made. Additionally, the City of Huntsville Traffic Engineering has recommended signal coordinating improvements at I-565 and Jordan Lane, and the installation of a GPS time clock as well as a wireless camera system for field to office observation and traffic signal control at the intersection of University Drive and Jordan Lane.

RANK: 9

CORRIDOR: I-565
BEGIN POINT: County Line Road
END POINT: Wall Triana Highway

FUNCTIONAL CLASSIFICATION: Interstate

JURISDICTION: State Controlled Road located in the City of Madison and City of Huntsville

CORRIDOR LENGTH: 2.17 miles

LANE CONFIGURATION: A 4-lane divided interstate, with an additional lane available for exiting or merging traffic.

TRAFFIC CONTROLS: None.



SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
County Line Road to Wall Triana Highway	44000	.65	A	121100	1.19	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor primarily consists of vacant land, but provides access “off-ramp” to highway commercial and industrial uses. The construction of an interchange at County Line Road and I-565 is planned, which will spur development along this corridor.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: Interstate 565 provides access to Interstate 65 to the west and US Highway 72 at the eastern part of Madison County.

OTHER PLANNING DOCUMENTS/STUDIES: The project is identified in Section 4 of this document for improvement. The project is listed as #24. Additionally, the project is included in the current Transportation Improvement Program for the construction of an interchange at I-565 and County Line Road.

RECOMMENDATIONS: An interchange at I-565 and County Line Road is under engineering design. The project is scheduled for right of way acquisition for fiscal year 2011, with construction planned for fiscal year 2012. It is recommended that this project proceed as scheduled. This project is listed in Section 4, project #24 as: I-565 interchange @ County Line Road.

RANK: 10

CORRIDOR: I-565
BEGIN POINT: Mooresville Road
END POINT: Greenbrier Road

FUNCTIONAL CLASSIFICATION: Interstate

JURISDICTION: State Controlled Road located in the City of Huntsville and Limestone County

CORRIDOR LENGTH: 2.21 miles

LANE CONFIGURATION: A 4-lane divided interstate, with an additional lane available for exiting or merging traffic.

TRAFFIC CONTROLS: None.



SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Mooresville Road to Greenbrier Road	44200	.65	A	115994	1.14	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor primarily consists of vacant land, but provides access “off-ramp” to mostly industrial uses. The construction of an interchange at Greenbrier Road and I-565 is planned, which will spur development along this corridor.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: Interstate 565 provides access to Interstate 65 to the west and US Highway 72 at the eastern part of Madison County.

OTHER PLANNING DOCUMENTS/STUDIES: The project is identified in Section 4 of this document for improvement. The project is listed as project #25. Additionally, the project is included in the current Transportation Improvement Program for the construction of an interchange at I-565 and Greenbrier Road.

RECOMMENDATIONS: An interchange at I-565 and Greenbrier Road has been designed. Right of way acquisition is underway. The State Department of Transportation has construction of the corridor for fiscal year 2014. It is recommended that this project proceed as scheduled. This project is listed in Section 4, project #25 as: I-565 interchange @ Greenbrier Road.

8.2.5 Strategy Effectiveness Evaluations

The previous **Congestion Management System Report on Mobility**, submitted in 2006, highlighted an improvement along a segment that has since been completed. This section will indicate the improvement made and will analyze the effectiveness of the improvement. Since base year traffic counts that were input into the year 2035 transportation model were taken *before* the improvement was completed, the staff will depend upon real-time observations in the field to indicate the improvement's success. This method of analysis and measure of system effectiveness will be applied and the improvement evaluated for effectiveness.

Corridor:
Old Madison Pike from Shelton Road to Research Park Boulevard

Background:
The previous transportation model projected future congestion to be extreme, while the base year model indicated a somewhat acceptable level of service with the exception of a stretch of Old Madison Pike from Slaughter Road to Mariner Way. Observations along Old Madison Pike from Shelton Road to Research Park Boulevard, and the completion of a regional mixed-use retail/office/residential center justified the need for taking some immediate steps to ensure traffic flow is not impeded at this location.

Corrective Action Taken:
Federal funds were leveraged to construct a multi-modal transportation center at the Bridge Street development. Additionally, Shuttle bus service became made available along Old Madison Pike and into Research Park. Traffic signals were retimed at the location, indicating operational improvements. Ramp improvements were made by the Alabama Department of Transportation at Research Park Boulevard and Old Madison Pike. The widening of Old Madison Pike from Slaughter Road to Thornton Research Park has been planned for several years, and the project is under design. Widening the corridor to handle increased future traffic is tentatively scheduled by the State of Alabama for fiscal year 2010. This widening is a necessity based upon the nature of employment locating to the Research Park area. Monitoring of this location is continuing.

Evaluation:
Traffic engineers who have studied the corridor indicate that the action taken to provide Shuttle bus service, revamp the ramps at Research Park Boulevard and Old Madison Pike, and retime the traffic signals along the Bridge Street development has assisted in moving traffic effectively along the corridor. The intersections are performing according to their designed purpose. The planned widening project should continue, due to anticipated traffic flow related to growth in employment along the corridor.

Corridor:
US 431/Governors Drive from Memorial Parkway to Monroe Street

Background:
The previous transportation model projected future congestion, while the base year model indicated a "B" level of service. The City of Huntsville has recently completed a 7-lane corridor widening project along US 432 from Monroe Street eastward to Gallatin Street. This corridor widening project affects traffic signal timing to the points east and west of the corridor improvement.

Corrective Action Taken:
While the base year model showed a "B" level of service, actions were taken by City of Huntsville Traffic Engineers. Traffic signals were retimed along the highlighted corridor to complement the widening improvements which occurred further eastward.

Evaluation:
Traffic engineers who have studied the corridor indicate that the action taken to retime the traffic signals along the corridor have improved traffic flow in the area. This corridor will continue to be monitored for future problems. Future strategies to be considered, if congestion becomes imminent, may include further retiming of traffic signals or ITS strategies, as federal funds are available.

8.2.6 Executive Summary

Since the methodology differs in some portions of the **CMP** which establishes benchmarks for the region, overall system trends have not yet been substantiated. At the present time, census data and other performance measures gives some indication that overall mobility on the transportation network is efficient and accessible, with the exception of several trouble spots which are identified in **Section 8.2.3** and addressed in **Section 8.2.4** of this report. Strategy recommendations have been made for the top ten corridors. The previous **CMS Report on Mobility** identified strategy recommendations which have been implemented. According to traffic engineers working in the jurisdiction where the improvements were made, corrections to the corridors were successful. Once additional strategy recommendations are implemented for other corridors, an assessment will be conducted on the effectiveness of the improvement(s). The overall effectiveness of the congestion management process is dependent upon the data collected, performance of the transportation model, and appropriate analysis of selected performance measures. Ongoing data collection, continuous monitoring, and future reports will serve to comprehensively measure network performance and will provide a more multi-dimensional review and assessment of the state of the local transportation system.

8.3 Safety Management Element

The elimination of hazards that may pose problems within the transportation network will improve the safety of the transportation system. The SAFETEA-LU legislation split the safety and security requirements of TEA-21 into two separate and distinct planning factors to be undertaken by States and MPOs. This was done to further emphasize these planning factors. A full discussion of safety initiatives and identified projects is included in this section.

8.3.1 Strategic Highway Safety Plan

23 CFR 450.322(h) requires States to develop a **Strategic Highway Safety Plan** to focus on implementable policies and methods to make travel on State roads safer for motorists. Additionally, the legislation calls for long range statewide and metropolitan transportation plans to include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects contained in the Strategic Highway Safety Plan.

While States, and to a lesser degree local MPOs, are tasked with strategic safety planning and implementation, other federal organizations have taken an active role in improving safety on the nation's highways. The United States Department of Transportation (USDOT) and the American Association of State Highway and Transportation Officials (AASHTO) have adopted aggressive goals and an aggressive safety plan to reduce fatalities and injuries from traffic crashes.

The AASHTO **Strategic Highway Safety Plan** contains 22 emphasis areas and 92 separate safety strategies that are intended to save 7,000 – 8,000 lives per year. USDOT and AASHTO requested that highway agencies test various emphasis area strategies. AASHTO further requested each State highway agency adopt a statewide

comprehensive safety plan and serve as a "lead State" in one of the primary emphasis areas. The Alabama Department of Transportation has taken on the lead role in the analysis of roadway departure crashes.

The State of Alabama developed its **Strategic Highway Safety Plan** during 2006 with the assistance of almost 100 individuals from 31 agencies and organizations, including representatives from the Technical Coordinating Committee of the Huntsville Area MPO. The Alabama Strategic Highway Safety Plan emphasizes the following areas: Emergency Medical Services, Older/Restricted Drivers, Safety Legislation, Risky Driving, and Run-Off Road Crashes. Countermeasures for each emphasis area were developed as part of the safety plan. While the countermeasures apply to the entire State, no specific projects are identified. Most of the countermeasures fall outside of the MPOs specialization and area of control and are related to driver behavior. The exceptions are proposed roadway improvements that are related to older or at risk drivers and lane departure crashes. These countermeasures either propose comprehensive improvements to signage, signals, and markings or site specific improvements to address issues at high crash sites. Additionally, other organizations within the MPOs jurisdiction already have several programs in place to meet the goals of the **SHSP**.

8.3.1.1 SHSP Emphasis Areas

A review of the State's SHSP indicates that the local MPO and various agencies and organizations within its jurisdictions, have implemented a variety of strategies to assist the State in meeting its implementation goals. Some strategies are wholly State-driven and can only be enacted at the State level. The five emphasis areas that are the focus of the SHSP are:

1. **Emergency Medical Services (EMS)** – The primary concern of EMS is timely access to emergency medical services in rural areas and expertise of EMTs. The ambulance service that serves the Huntsville Urbanized Area, HEMSI, is an accredited organization. Additionally, rural areas are served by a rescue squad and volunteer fire departments, and other municipal fire and rescue departments have active EMT programs. HEMSI stations, fire stations, and their resources are strategically placed within communities throughout the MPO area. Additionally, Huntsville Fire and Rescue has expertise in extrication of traffic accident victims and are dispatched as first responders to traffic accidents. HEMSI reports that their average response within the City of Huntsville is approximately 6 minutes, 49 seconds. For rural areas, average response time is approximately 7 minutes, 39 seconds.

2. **Older/Restricted Drivers** - The two primary goals emphasized are to: 1) Enhance traffic control devices for visibility as well as rumble strips, and 2) Make older drivers aware of their cognitive/mental abilities and ways to either get them off the road or to be more aware of their limitations. This can be done with a combination of education and legislation.

3. **Safety Legislation** – The two primary goals emphasized here are to: 1) Reactivate the State Safety Coordinating Committee, and 2) Enact or strengthen State laws to assist in safety efforts. State laws to be strengthened or enacted are as follows:
   - Graduated Drivers License Law
   - Booster Seat Law
   - Statewide Red Light Camera Law (State law required for locals to operate program)
   - Child Restraint Law
   - Unattended Children Law
   - Aggressive Driving
   - Cell Phones (Prohibit use while driving)
   - Review Enforcement of Interstates by Municipalities (This is currently done by the City of Huntsville and the City of Madison on I-565)
   - Review Distribution of Funds on Citations Issued (provide a portion of the proceeds of citations to local law enforcement agencies)
   - School Bus Occupant Protection
   - Primary Seatbelt Law for All Passengers
   - ATV (Restrict use of all terrain vehicles by under-aged children)
   - Restrict Passengers in Rear of Pick Up Truck
   - Max Alcohol Violations (Adopt ordinances that close businesses after three violations)
   - Underage Alcohol Violations (Strengthen law)
   - Discourage DUI (Color coded vehicle tags for violators)
   - Diminished Driving Skills (Require driver testing for older adults)
   - Physician Reporting (Require MDs to report certain impairments for license renewal for older adults)
   - Drivers License Restrictions (Mandate license restrictions for certain medical conditions)
   - Age Related Driving Restrictions (Revise licensing renewal time frame)
   - Older/Restricted Driver Designation (Use a universal symbol on vehicles to identify older/restricted drivers)

While these ideas will impact safety on roadways, the implementation and enactment of these strategies may prove difficult due to politics involved.

4. **Risky Driving** – Strategies to mitigate risky driving are: Extensive drug/alcohol education for younger persons and more enforcement for those who drink and drive, occupant protection (safety belts), police traffic services (enforce seat belt non-use, do selective traffic enforcement programs), and youth targeted actions due to unnecessary risk taking based upon inexperience. The City of Huntsville Police Department has implemented various strategies to mitigate risky driving. They conduct extensive drug/alcohol education for younger persons. Additionally, one

of their programs involves deploying roadblocks during holidays or other times when people may have a tendency to consume alcohol and drive. The State Highway Office has multiple initiatives that can be or have been acted upon locally, such as child restraint safety checks, and also support for special campaigns like click it or ticket, etc…

5. **Lane Departure Component (Run off Road or ROR)** – 40% of all fatal crashes are caused by vehicles running off of the road. Rural roads comprise 42% of the total run off road crashes. Federal and State roads under the jurisdiction of ALDOT comprise 29% of the run off road crashes. To solve this problem, ALDOT proposes the following actions to deal with these key issues:

   a. Risky Driver Aspect – Work in coordination with the Risky Driver Team to increase the effectiveness of the countermeasures applied by both teams.

   b. County ROR Crashes – Rural roads are typically narrow, and counties typically don't have necessary funding to correct safety problems. There is a federal source of safety funds through SAFETEA-LU. The Huntsville Area MPO has taken advantage of the funds and have constructed Mooresville Road safety improvements in Limestone County, and replaced stop signs and installed traffic signals at various intersections in Madison County.

   c. Interstate Median Crossover Crashes – Investigate locations where this is a problem.

   d. ROR Crashes on Rural Two-Lane State/Federal Routes – ALDOT addresses this problem already through the hazard elimination safety program. Most recommendations for this category deal with the analysis of crash data generated via computer and if the data is effective enough to identify such crashes with accuracy compared to paper copies.

   e. Two-Lane Rural Head-On Crashes – Most recommendations for this category deal with the analysis of crash data generated via computer and if the data is effective enough to identify such crashes with accuracy compared to paper copies. While ALDOT addresses this problem on rural two-lane State/Federal roads through the hazard elimination safety program, usually these more "local" rural roads do not compete well for hazard elimination funding.

   f. Changes to ALDOT Policies and Procedures – ALDOT has incorporated the roadside clear zone concept into its new designs to the extent that funding allows. However, there may be other areas of

roadway design, construction, maintenance and operation where existing policies could be tweaked to provide additional crash reduction without adding significant cost or time to projects. ALDOT policies can be checked by more recent safety literature/software to determine if any updates are presented that would improve the State's policies. The State may consider the development of a design manual. The Alabama Longitudinal Barrier Installation Manual developed for ALDOT by Auburn University is a good example and could be one chapter of such a manual.

8.3.1.2 SHSP Implementation

Implementation of the SHSP is being conducted at two levels. First, the State Safety Coordinating Committee was reactivated by amending the legislation that created it, and secondly, implementation is being conducted by five large teams of coordinated safety volunteers under the guidance of key leaders serving as an Executive Committee.

8.3.2 Additional State Safety Legislation

In addition to the safety legislation identified in **Section 8.3.1.1**, the State of Alabama Bicycle Safety Act of 1995 also known as the "Brad Hudson Law" enforces the use of bicycle helmets of all operators and passengers who are under 16 years of age to wear approved protective bicycle helmets, and requires that all bicycle passengers who weigh less than 40 pounds or are less than 40 inches in height be seated in separate restraining seats.

8.3.3 Local Traffic Operations Related to Safety

The City of Huntsville Traffic Engineering Department has identified specific safety management projects to be undertaken to enhance safety within the city limits. These projects are in addition to any projects identified in **Section 8.2.4.** These additional projects are discussed in **Section 8.4.**

8.4 Maintenance and Operations Projects Addressing Congestion Management & Safety Management: FY 2010-2015

The Traffic Engineering (TE) Division of the City of Huntsville's Department of Urban Development is charged with the responsibility of maximizing and preserving the functional lifespan of the public street and highway network within the City of Huntsville, and plays a strong advisory role in the case of private streets, and State & Federal highways. By identifying areas of traffic congestion and high accident rates, TE recommends or implements a number of improvement programs and projects to reduce congestion and improve safety. One of TE's primary missions is to identify and implement Programs (systems and processes) that continually improve and upgrade traffic operations along all street systems. In addition the TE Division serves in an advisory capacity during the planning and conceptual stages of new roads or corridors, and in a controlling capacity regarding the geometric design of Huntsville's street and highway improvement projects.

The projects identified were selected to not only increase capacity at congested intersections, and improve the quality of traffic flow along arterial coordinated signal systems, but also to reduce both the existing collision rate and the potential for future collisions between motor vehicles, pedestrians and bicyclists. The projects are subject to further review by the TE Division, and other projects not yet identified may take precedence over the projects formally listed. The implementation of these projects is under the direction of the TE Division.

These projects were selected for the primary purpose of either congestion management or safety improvements or for both. Bicycle and pedestrian improvement projects are always categorized solely as safety improvements. Given the lack of available federal funds to implement most of these improvements, most of these projects will be categorized as visionary projects. There *may* be opportunities in the future where federal or State funds, earmarks, or grants may be applied for eligible projects, but these funds are subject to availability and certain federal and State requirements – all of which are currently unknown. Currently, one project has received federal earmarks for improvement. The project is "H: Church Street Bridge at Big Spring Park."

8.4.1 Project Selection

These projects target the more costly traffic improvements at severely congested intersections and roadway segments. The projects customarily address a relatively small number of locations that experience one or more daily periods of severe congestion, or are found to have a significantly higher-than-average accident rate history. They are often called "*intersection bottlenecks*", "*weakest links in the chain*", or "*hot spots.*"

Candidates for these projects are most often located along heaviest traveled arterial and collector streets. However, in recent years, a growing number are found at public road intersections and at commercial development along two lane rural roads in newly annexed areas.

In many of these two lane cases, one or more of the intersection approaches, or one side of the roadway at these intersections or mid block "hot spots" are under the jurisdiction of Madison County, Limestone County or the City of Madison.

These projects include the construction of new signalized systems at intersections of public roads, or where public roads intersect with major access roads to large scale commercial or industrial development projects. In many of these cases, due to cost or complexity, geometric improvements often require design and construction by others.

Project construction and signal equipment costs normally range from $50,000 to $500,000 or more depending upon the complexity of the project. Preliminary engineering is either provided in-house by TE staff, by consultants selected by TE under the City of Huntsville's Ordinance 74-401 if less than $7,500, or if more extensive plan development is required, design plans are procured and developed under the oversight of the Engineering Division of Urban Development.

Acquisition of right of way and construction of the larger cost geometric improvements is provided under the oversight of the Engineering Division. For those

projects where both the complexity and construction cost does not exceed the maximum permitted under the city's periodic bid process, construction oversight is provided by TE staff.

8.4.1.1 List of Maintenance & Operations Projects

Map No. (Page 4-2)	Location	Description	Purpose and Need
A	Four Mile Post Rd @ Whitesburg Dr	Signal & major geometric improvements to Four Mile Post Rd approach	This project will improve traffic flow
B	Enterprise Way @ University Dr	Reduce island width or eliminate to construct additional Northbound approach lane to University Dr.	This project will improve safety and traffic flow
C	Caldwell Rd @ Hwy 431	Construction of West to North right turn lane and acceleration lane on Hwy 431	This project will improve safety and traffic flow
*D	Old Madison Pike @ Research Park Blvd	Construct joint use pedestrian & bicycle bridge and sidewalk approaches across Research Park Blvd	This project will improve safety
E	Explorer Dr @ Pegasus Rd	New traffic signal installation	This project will improve traffic flow
*F	Enterprise Way: Moores Farm to University Dr	Add signal, left turn restrictions island at shopping center exits, a sidewalk, plus 3rd left turn lane to University Dr	This project will improve safety and traffic flow
G	County Line Rd @ HWY 72	Upgrade displays, phasing and timings and geometric improvements	This project will improve safety and traffic flow
H	Church St Bridge @ Big Spring Park	Construct bridge to improve pedestrian access to Big Spring Park and reduce vehicular/pedestrian conflicts	This project will improve safety and traffic flow

Note * - Project is *part* of improvement recommended for identified corridors shown in **Table 8.4**.

8.5 Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems (ITS), a collective group of innovative technologies, were developed and have been deployed globally to improve transportation system efficiency, safety, and security. ITS aims to provide travelers with current information on traffic conditions, provide vehicles with safety equipment, and improve the transportation infrastructure by relieving congestion and enhancing productivity. ITS can assist emergency responders in securing the transportation network during special events as well as time of emergency.

ITS uses a number of technologies including; information processing, communications, and control systems. The anticipated benefits of coordinating and integrating these technologies with the Huntsville area transportation system include improved safety, reduced congestion,

improved mobility, improved economic productivity, and a savings in public investment dollars without negatively affecting the environment.

ITS offers an alternative to the traditional measures used for addressing transportation problems and needs. It applies advanced technologies to transportation systems to make them safer, more efficient, and more customer service oriented. The technology includes systems for communicating transportation options, conditions, and schedule information to transportation consumers; smarter vehicles and smarter roads, flexible traffic control, and enhanced fleet management systems. Creative ideas include new ways to disseminate information to travelers and public/private partnerships; linking various public partners by providing real-time information, innovative financing, and techniques, and leveraging non-transportation investments.

8.5.1 USDOT ITS Initiatives

The United States Department of Transportation's (USDOT) Intelligent Transportation Systems (ITS) program has maintained continual efforts of improving transportation safety, relieving congestion, and enhancing productivity. The USDOT recently introduced a new generation of initiatives aimed at enhancing the operation of transportation systems. These initiatives include:

- Integrated Vehicle Based Safety Systems
- Cooperative Intersection Collision Avoidance Systems
- Next Generation 9-1-1
- Mobility Services for All Americans
- Integrated Corridor Management Systems
- Nationwide Surface Transportation Weather Observation System
- Emergency Transportation Operations
- Universal Electronic Freight Manifest
- Vehicle Infrastructure Integration (VII)

8.5.2 Huntsville Urbanized Area ITS Strategic Initiatives

The City of Huntsville, in cooperation with other regional governments and organizations, has identified ITS strategies for its region, and has developed a Strategic Regional ITS Plan. Two important aspects of the Plan are the Concept of Operations and the Regional ITS Architecture.

The Concept of Operations includes, but is not limited to, the integrated and coordinated operations of incident management, emergency management, and advanced traffic signal and traveler information. The development of the Concept of Operations translates the region's identified transportation operations problems into a set of "core" strategies for developing the Huntsville Regional ITS operations and management program.

The Regional ITS Architecture defines the specific transportation management and incident management components needed to achieve the regional vision of the City.

The following components are applicable to the Huntsville area transportation system:

- Traffic Signal Control Systems - Provides for the control and coordination of traffic signals, surveillance and monitoring of traffic, and the monitoring of hardware and software malfunctions.

- Freeway Management Systems - Provides for the following on limited access facilities: surveillance and incident detection, "intelligent" ramp control, information dissemination, incident management, lane use control, and coordination/integration with all appropriate agencies that are affected by freeway management strategies.

- Transit Management System - Provides for the following with respect to public transit operation: transit vehicle tracking, demand-responsive operations, passenger and fare management, vehicle security, vehicle maintenance, and multi-modal coordination. The City of Huntsville Transit has invested in an automatic vehicle locating (AVL) system that has been installed on all of its fleet, which will enhance safety and security of the transit system.

- Regional Multi-Modal Traveler Information System - Provides multi-modal trip planning, route guidance, traveler advisory functions, confirmation and payment services for travelers, special event information, and pre-trip/en-route trip planning assistance, including roadway conditions, traffic information, travel times, and transit information. This information would be available from either home, workplace, hotels, airports, or high-density shopping areas.

- Emergency Management System - Provides for the integration and coordination of appropriate emergency management agencies (county and local police, fire, E-911) with respect to the transportation infrastructure. Detection and response of incidents, as well as real-time traffic information for timely dispatch of personnel, are emphasized. The Huntsville-Madison County Emergency Management Agency, which coordinates all emergency response plans with all jurisdictions represented on the MPO, has identified critical facilities and transportation system elements in its emergency response plans. Additionally, Madison County is designated as a host county for possible nuclear power plant evacuees from adjacent counties. As a result, capabilities of securing the local transportation system are exercised yearly with emergency response organizations county-wide. Implementation of ITS will assist regional emergency response groups in both safety and security of the transportation system.

- Incident Management Program - Provides for the detection and verification of roadway incidents, appropriate response to incidents, site traffic management, incident clearance, and motorist information.

- Railroad Grade Crossing Warning System - Provides for the implementation of technologies, which increase roadway and rail safety for at-grade crossings

throughout the Huntsville area transportation system.

8.5.3 MPO ITS Implementation

The City of Huntsville is continuing its initiative to implement ITS technologies identified in the strategic plan, and integrate them into the transportation system. This is being accomplished by meetings with regional stakeholders, which include law enforcement and other public safety personnel, to discuss implementation strategies for utilizing technology for increasing the safety and security of the transportation system within the MPO jurisdiction. Specific projects have been identified to bring the system to fruition. Additionally, the City should continue to apply for any funding that may be available for the deployment of ITS technologies that complement the ITS strategic plan.

Congestion management and safety management projects have been identified. A systematic approach of integrating these improvements to the transportation system, along with the implementation of ITS technologies and construction of the transportation improvements identified in **Section 4 - Highway Element**, yields a transportation network that will provide more efficient and safe travel in future years.

8.6 Security Element

ITS is a tool that can be used to address congestion, safety, and security on the transportation network. Even though there is a lack of federal funds to fully implement the ITS program, the Huntsville Urbanized area utilizes several tools to promote security on the transportation network.

8.6.1 Local Strategies Implemented to Secure the Transportation Network

1. The City of Huntsville Department of Parking and Public Transit has recently completed installation of extensive hardware and software designed to enhance the effectiveness and efficiency of fixed route and Paratransit services in addition to providing for enhanced customer safety and security. All vehicles are equipped with AVL (automated vehicle location)/GPS transmitters that communicate with dispatchers and transit operations personnel at 30 second intervals providing real time vehicle location and schedule adherence information. The system includes an emergency switch which can be covertly activated by the driver in a situation that requires notification to dispatchers and supervisors without other people on board being aware that an alert has been sent. All vehicles additionally have mobile data computers (MDC's) for the purpose of communicating operational information that is specific to the type of service being provided by the vehicle. Drivers of Paratransit vehicles update demand response passengers who are being picked up and dropped off so that dispatchers always know who is on board the vehicles. Paratransit scheduling software also recently installed provides

dispatchers with ready access to information specific to any customer who is being transported including emergency contact information.

Some public transit vehicles are equipped with video surveillance systems. The City will be updating the existing systems and will retro-fit vehicles that do not yet have surveillance systems using ARRA stimulus grant money that was recently awarded. This work is scheduled to begin in August, 2009. The Central Transfer Station and office building is equipped with video surveillance. Building surveillance is monitored in several locations throughout the building. The adjacent Public Transit office building is also secured by a key card entry system to all employee areas that are not intended to be accessible to the public unannounced.

2. The transportation network is secured during known events for which congestion and safety may be a factor, such as football games, community festival, and other organized events that attracts large volumes of traffic in a concentrated area.

3. Additionally, the metropolitan area is designated as an evacuation area for Browns Ferry Nuclear Power Plant, which requires periodic exercising of regional law enforcement capabilities to move large volumes of traffic along long evacuation routes and in a coordinated fashion.

4. The Huntsville-Madison County Emergency Management Agency (EMA), which coordinates all emergency response plans with all jurisdictions represented on the MPO, has identified critical facilities and transportation system elements in its **Emergency Operations Plan**. Additionally, the **Emergency Operations Plan** and supporting Standing Operating Procedures identify methods for coordinated evacuation into and out of Madison County. These plans are routinely exercised in the field.

5. The Huntsville-Madison County Emergency Management Agency manages the Emergency Operations Center that is manned by local jurisdictions as well as Redstone Arsenal during critical events. The EMA is also part of a regional mutual aid association. The EMA, local response groups, and the mutual aid association frequently exercises the security of the local transportation network, focusing upon non-recurring events, and involving various modes of transportation.

It is through these security initiatives that the transportation system may be made secure for mobilizing emergency responders, improving military mobilization, managing planned events as well as non-recurring traffic operations, so that ultimately the homeland can be made secure.

8.7 Conclusion

All three elements addressed in this section are interrelated, and also utilize management and operations strategies to ensure the network is effectively and efficiently managed in terms of congestion, safety, and security. It is through the implementation of these management and operations strategies as well as other initiatives identified in the section that improvements to congestion, safety, and security can be made upon the network. Periodic monitoring of the network will be performed to ensure that implemented strategies and projects are effective and that ongoing activities remain successful.

Section 9

MULTIMODAL TRANSPORTATION ELEMENT

9.0 Introduction

The long-range plan includes both long-range and short-range strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods. Intermodalism attempts to help all modes work better by providing cross-modal connections to the transportation system.

Currently, the urban area has excellent linkage between the Huntsville International Airport and the highway system via I-565. The International Intermodal Center (IIC) is located at the airport and is connected by spur to a main line of the Norfolk Southern Railroad. There is currently no direct connection to the Tennessee/Tombigbee Waterway approximately 5.5 miles south of the airport at the Tennessee River.

A River Port Development Study was conducted during 2000 identifying potential locations for river terminal sites in Huntsville, important to capture additional economic markets. As a result of this study, property was acquired for future port development. Cargo waterway service is available in nearby Decatur offering barge service for bulk commodities and general cargo providing access for customers to the IIC and I-565.

A major concern in the Tennessee Valley has been the lack of limited access interstate highway facilities connecting the Huntsville urban area with major cities to the east and west, Memphis, Atlanta and Chattanooga. The area has been essentially left out of the interstate system since the system was designed before Huntsville grew to become a major urban area. Studies have been conducted to determine the best feasible route to connect the Huntsville urban area with Memphis, Atlanta and Chattanooga. At the present time, a route is under review, and funding for the project is pending.

Conventional inter-city passenger rail service should receive further consideration at the state level. Preliminary studies have previously been conducted with Amtrak concerning passenger service between Huntsville and Birmingham. However, during the past several years, the company has struggled with insolvency, and Amtrak has indicated that it will not be adding any new service to the system in the near future.

The categories that follow explain the various modes of transportation that are either available or being investigated in the region.

9.1 Airports

The Huntsville-Madison County Airport Authority (HMCAA) is a public corporation owning and operating Huntsville International Airport, International Intermodal Center, Jetplex Industrial Park, as well as Foreign Trade Zone No. 83. These properties – located on more than 6,000 acres – are valued in excess of $1 billion.

Huntsville International Airport, with its state-of-the-art amenities, is located just 12 miles from downtown Huntsville. The airport has parallel 10,000-foot and 12,600-foot runways with a 5,000-foot separation, allowing simultaneous approaches even during inclement weather. Air traffic operations to date are 60,000 annually with passenger traffic exceeding 1.25 million (enplaned and deplaned passengers) and air cargo activity of more than 150 million pounds per year (refer to **Table 9.1** and **Table 9.2**). The International Intermodal Center will handle over 45,000 ocean containers and railroad truck load shipments this year. Cargo services via air and rail will serve over 1,000 industries. Air cargo services already in place at Huntsville International Airport include 7-12 weekly scheduled non-stop international cargo flights to Mexico and Europe – with previous and anticipated future service to Asia – as well as daily flights by three major all-air cargo carriers via their hubs in the U.S. With the anticipated future service to the Asian market, Huntsville International is focusing its efforts to become the Southeastern US gateway for the Asian cargo industry. To aid in these efforts, a new 90,000-square-foot air cargo facility was added in April 2009. The new facility will include 5,250 square feet of cold storage area to handle perishable products. The new facility increases total air cargo building space at Huntsville International Airport to 290,000 square feet.

Table 9.1: Passengers and Revenue Tons, Calendar Year 2008
Huntsville International Airport

Carrier	Enplaned Passengers	Deplaned Passengers	Total Passengers	Total Freight (lbs.)
Allegiant Air	11,833	11,489	23,322	0
American (including American Eagle)	117,299	117,915	235,214	2,983
Delta (including ASA, Chautauqua)	168,620	166,970	441,469	323,935
NW Airlink	64,801	63,003	127,084	20,420
PSA/USAir Express	126,266	125,315	251,581	30,938
Comair & Freedom	52,351	53,528	105,879	3,925
Continental Express	36,062	36,550	72,612	8,323
United Express	50,064	50,644	100,708	0
Charter	1,010	1,025	2,035	0
Total	**628,306**	**626,439**	**1,254,745**	**390,524**

Source: Huntsville International Airport

Table 9.2: All-Cargo Carrier Activity Summary, Calendar Year 2008
Huntsville International Airport

Cargo Carrier	In (lbs.)	Out (lbs.)
Airborne Express	2,070,530	0
Air Carriers, Inc	856,296	2,319,500
Panalpina	67,895,910	75,711,392
ATI/BAX Global	0	0
Federal Express	1,187,521	8,985,713
Ameriflight/DHL	0	2,500
Baron Aviation Service	0	1,990
UPS	0	2,457,086
Non-permitted Carriers	95,656	607,268
GRAND TOTAL	72,105,913	90,085,449

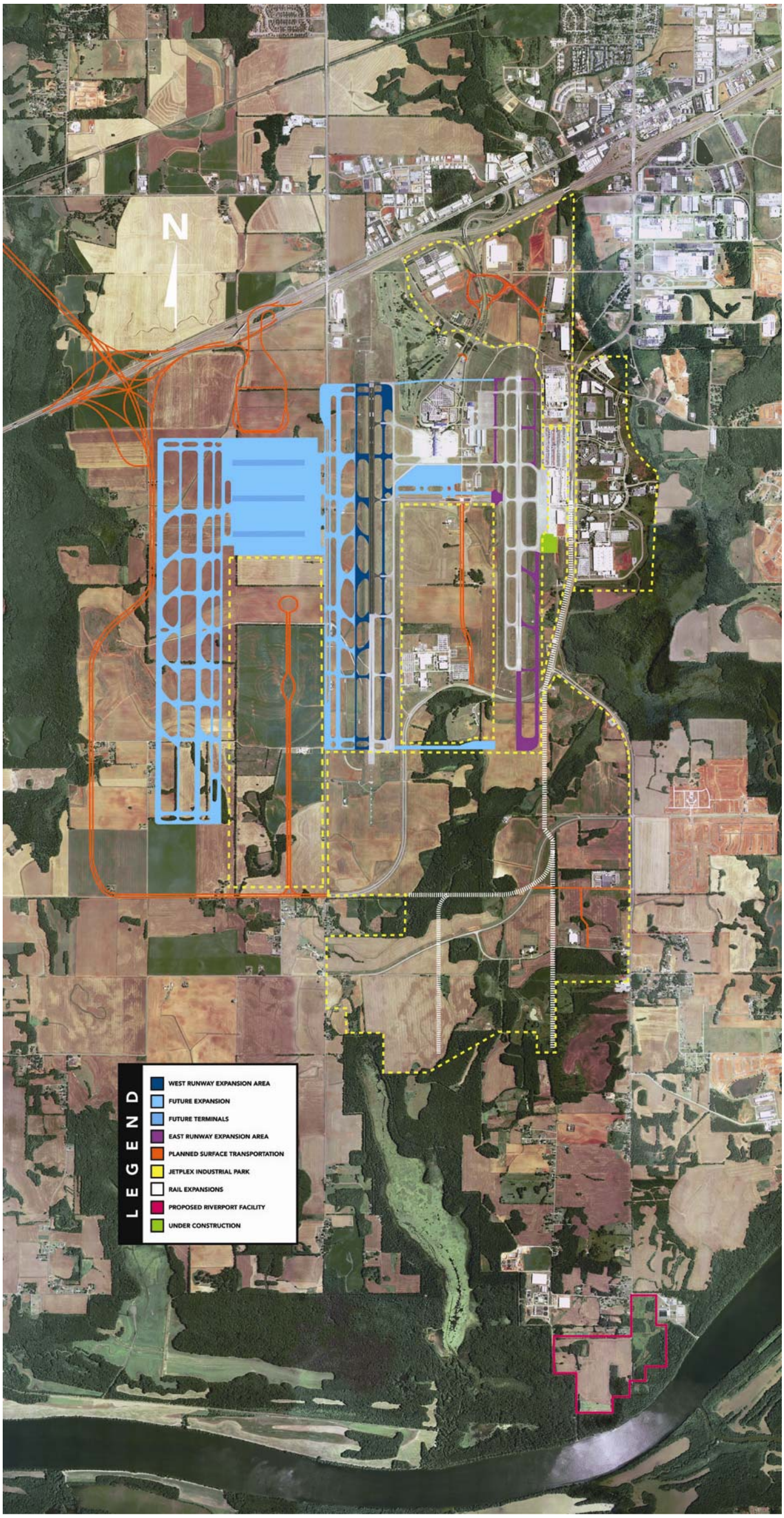
*Includes Cargolux/Atlas/MK Air/Aero Union/Atlas
Source: Huntsville International Airport

U.S. Customs and Border Protection have offices in the International Intermodal Center, where it oversees the transportation and inspection of the above-mentioned cargo. It collects over $50 million annually in import duty taxes, making the inland Port of Huntsville – located at the Huntsville International Airport – the second-largest port in the state of Alabama.

Foreign Trade Zone No. 83, located at the Port of Huntsville, includes the Jetplex Industrial Park and the Mallard Fox Creek Industrial Park and Port in Decatur, AL. Operated by the Huntsville Foreign Trade Zone Corporation, this service-plus entity provides technical expertise on regulatory Customs issues, as well as money savings from duty exemptions.

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Figure 9.1: Huntsville International Airport Master Plan



9.1.1 Airport Passenger & Cargo Hubbing

The Federal Aviation Administration's (FAA) latest aviation forecast includes data for 2005-2017. While the acts of terrorism that occurred in the United States on September 11, 2001, impacted the aviation industry, the market has rebounded since then only to be recently impacted by the price of fuel and the economy. Even with these factors, commercial aviation remains on track with passengers to exceed one billion by 2015, which represents an annual 3.2% growth rate. International travel is growing about 2% faster than domestic travel. In addition, total air cargo tonnage is expected to increase by 83% from 2005-2017 with domestic growth at a rate of 3.2% and international tonnage increasing by 6.2% annually. The trend of opening up markets worldwide will impact the movement of freight around the world but freight has been the most affected by the downturn in the economy. As the nation's air traffic continues to increase, new connecting passenger and cargo hubs must be found to relieve congestion at the overcrowded airports. Shrinking federal resources should cause the aviation industry to concentrate on utilizing available capacity before building new airports. As a result, Huntsville International Airport is a prime candidate for a potential connecting hub. Hubbing operations at Huntsville International Airport would significantly increase the volume of aircraft flights and ground transportation activity, thus solidifying the need to invest in aviation and transportation infrastructure in order to support the future needs of our community.

Currently, Huntsville International is operating at less than 30% of its capacity and has an excess capacity of 219,000 operations per year as determined by the FAA Office of Capacity. To protect future growth potential, the HMCAA continues to pursue an aggressive land acquisition program, which will make the Port of Huntsville complex approximately 10,000 acres. The Airport Layout Plan reflects parallel 12,600 feet and 10,000 feet runways with the ability to expand to a total of five parallel runways as depicted in the master plan (**Figure 9.1**).

The Huntsville International Airport is strategically located between Atlanta, Birmingham, Memphis, and Nashville, making it an attractive transfer point for the Southeastern United States. Airport hubs develop where demand and airline revenue dictate such a need – "where people live." Within a 50-mile radius of Huntsville International Airport, there are 1 million people. If the radius is moved to 100 miles, the population increases to approximately 4.2 million. This is a larger population than the 100-mile radius around Nashville or Birmingham.

Huntsville International also serves an international community. The presence of many international companies has been a driving force in continuous economic growth in North Alabama. The Jetplex Industrial Park is home to L.G. Electronics, the first Korean manufacturing operation located in North America. In Madison County alone, there are 46 foreign-based corporations. These include representation from Canada, France, Germany, Netherlands, Luxembourg, Sweden, Switzerland, United Kingdom, Japan, Korea, Singapore, and South Africa. Huntsville/Madison County's population base has its origin from nearly 100 countries. There are several international schools in place as well as the very active North Alabama International Trade Association. Services already in place at Huntsville

International include U.S. Customs Port of Entry, Foreign Trade-Zone No. 83, freight forwarders, customs brokers, and weekly scheduled international cargo flights to Europe and Mexico. The world-class International Intermodal Center combines air, rail, and highway modes of transportation and more than 90% of all cargo at the Intermodal Center has an international origin or destination.

In addition, Huntsville International Airport was cited by the FAA as one of four potential new connecting hub airports in a report to Congress entitled "A Case Study of Potential New Connecting Hub Airports," dated March 7, 1991. Of the four airports cited in the report, Huntsville International is the only one in the Southeast United States. Potential hubs such as Huntsville could significantly reduce flight delay by diverting connecting air passengers from forecast delay-problem airports. The report states that while airlines will choose a new hub based on their own particular marketing strategies, hub airports developed since deregulation have exhibited one or more of the following characteristics: strong O&D market, good geographic location, expandable airport facilities, multiple instrument weather arrival capability, strong economy, availability of balanced workforce, and ability to accommodate existing/planned scheduled service fleet. Huntsville International Airport exhibits all of these characteristics.

Following the FAA's study to identify potential connecting hubs, Huntsville International Airport completed a Master Plan Update in December 1995 and is currently updating the plan.

The Statewide Transportation Improvement Plan includes the future construction of an interstate highway corridor between Memphis-Huntsville-Atlanta, as described in ISTEA and TEA-21. Corridor studies were ongoing for many years, and the final route selection uses the existing I-565 corridor and will connect to the proposed Southern Bypass (Patriot Parkway). This placement of the Memphis-Huntsville-Atlanta Interstate Highway Corridor will allow access to Huntsville International Airport, International Intermodal Center, and major industries and corporations within Huntsville and the surrounding community.

9.2 Intermodal Facilities

In order to efficiently serve the growing demand of its customers and at the same time cope with the trend of industry movement to suburban and rural locations often remote from existing rail facilities, the railroads are placing increasing importance on intermodal facilities. Development of domestic containerization by railroads is consistent with the trend toward more diverse points of origin and destination, shipment of smaller units, and the need for more rapid service. International markets (imports and exports) are also adding volume to rail capacity at record levels. Over the past 10 years, intermodal traffic has been the fastest-growing rail traffic segment. Intermodal combines the convenience of trucks with the long-haul economy of the railroads. Rail intermodal traffic has quadrupled in the last 25 years, rising from 3.1 million trailers and containers in 1980 to 12.3 million units in 2006. This growth trend is expected to continue as international trade increases and the railroads seek to take more domestic trucks off of the nation's highways.

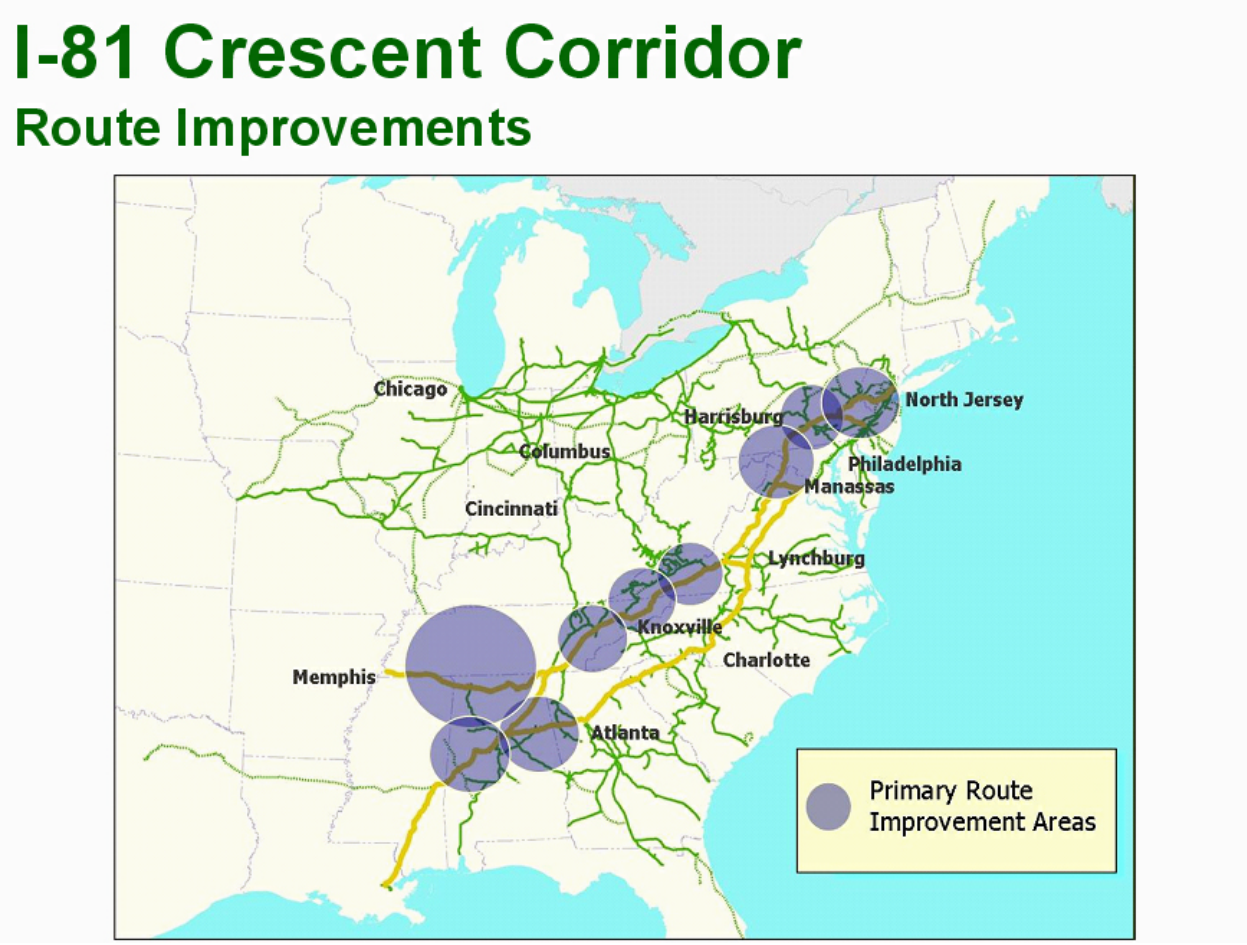
The International Intermodal Center is one of the entities that is owned and operated by the HMCAA and provides multi-modal services and facilities at one central hub location. The center supports a range of services for receiving, transferring, storing, and distributing air, rail, and highway cargo as well as features a U.S. Customs & Border Protection Port of Entry with Customs Officials, U.S. Department of Agriculture Inspectors, and Custom Brokers on site. Rail service is provided by Norfolk Southern. The Intermodal Center is capable of handling trailer on flat car and container on flat car (TOFC/COFC) and double-stack service. The center is located in Foreign Trade Zone No. 83, enhancing trade and economic development. The Intermodal Center serves as a regional distribution hub for rail customers within a 200-mile radius and a 600-mile radius for air cargo customers.

9.2.1 International Intermodal Center Expansion for Future Capacity

Due to rapid rail volume growth and depot activity, further expansion of facilities at the Intermodal Center was necessary. The second phase of an expansion of the Intermodal Center was completed at the end of 2003. In this project, 4,000 feet of siding track was installed parallel to the existing mainline from Short Pike to the old Cheeseborough-Pond building. The terminal yard paving and concrete joint sealing was strengthened and rehabilitated. Track #4 was extended south off the mainline to add 2,000 feet for additional lift capacity. This additional 2,000 feet will provide 50% more additional loading and unloading capacity. In addition, the outbound building and inbound/outbound truck lanes were expanded. The entire 36-acre expansion area was lighted and fenced. A 45-ton overhead Mi-Jack gantry crane was added to the equipment lineup. The Mi-Jack is rubber tire-mounted, thus it can traverse the entire rail yard while being operated with a radio control by a single individual on the ground. The new crane will increase lift capacity and efficiency on the yard while providing complete backup for the original crane. The original rail-mounted Paceco gantry crane received upgrades and refurbishments resulting in a near doubling of lift capacity for that crane. This expansion has doubled the size of the existing terminal and quadrupled rail lift capacity from 26,000 containers to 114,000 containers.

Currently, the container volume at the Intermodal Center is 90% international and 10% domestic. Domestic intermodal volume was expected to increase significantly after Norfolk Southern acquired over 50% of Conrail in 1998. A 1999 study by the Kingsley Group, which was commissioned by the Intermodal Center, indicated domestic rail volume between Huntsville and the Northeast U.S. would grow substantially between 2000 and 2025. One growth scenario in the Kingsley study projected as many 55,000 domestic containers moving between Huntsville and the Northeast U.S. by 2025. While there has been some growth in the Northeast corridor from Huntsville, the rapid growth projected has not materialized to date. To address this lack of domestic intermodal growth, in June 2007 Norfolk Southern announced a $2.3 billion rail expansion called, “The I-81 Crescent Corridor” (**Figure 9.2**). The corridor stretches from New Orleans to the South and Memphis to the West – across Alabama – and then to the Northeast U.S. running parallel to Interstate 81. This new corridor expansion should allow for the realization of substantial increases in domestic intermodal traffic at the Intermodal Center. Norfolk Southern projects the Corridor may take as many as one million trucks per year off the highway. New and improved service additions to the corridor will begin in 2009, and the corridor network is scheduled to be complete by 2013.

Figure 9.2



The Intermodal Center currently serves 12 major steamship lines, which also utilize the Center as a container yard depot to store and manage their equipment in Huntsville. Current system users and projected increases in rail traffic, coupled with the recent expansion of the Center, place the region in a strategic position to accommodate anticipated cargo growth.

9.3 Trucking Facilities

Following is a list of rail-highway, drayage, and cartage companies serving rail-highway facilities, as well as motor freight carriers serving the Huntsville area. Drayage consists of trucking goods between a warehouse and rail yard.

9.3.1 Rail-Highway Companies

Norfolk Southern Corporation (256) 772-7084
TOFC/COFC/Double Stack

TOFC – Trailer on flat car (with wheels)
COFC – Container on flat car (without wheels)

Double Stack – Containers stacked two high on flat car
CV Depot Services
Mechanical Repair & Maintenance

9.3.2 Draymen Serving Rail-Highway Facilities

(Companies that truck goods from a warehouse to a rail yard or vice-versa):

Averitt Express	Madison	(256) 350-9141
Comtrak Logistics	Madison	(256) 464-7905
Cowan Trucking	Nashville	(615) 255-4615
Diamond Express	Birmingham	(205) 591-0661
Diamond Express	Chattanooga	(423) 266-2164
House's Loading Service	Madison	(256) 772-4659
Jim Potter & Son	Sheffield	(256) 383-7836
Liberty Transport	Huntsville	(256) 704-3635
Mason Dixon	Madison	(256) 772-1301
Mainstream Transportation	Memphis	(800) 762-1223
Midwest Carriers	Florence	(256) 246-0047
Old Dominion	Madison	(256) 464-9086
Phoenix Transit	Nashville	(615) 469-2273
Sea Lane Express, Inc.	Madison	(256) 461-9334
TCW	Birmingham	(205) 252-4786
RoadLink USA	Tarrant	(205) 841-1169

9.3.3 Motor Freight Carriers

AAA Cooper Transportation	Decatur	(256) 355-9610
Averitt Express	Madison	(256) 350-9141
BJJJ Trucking, Inc.	Huntsville	(256) 464-7857
Comtrak, Inc.	Madison	(256) 464-7995
Con-Way	Decatur	(256) 351-0390
First Fleet	Huntsville	(256) 772-5304
Huntsville Air Freight	Huntsville	(256) 772-9800
Old Dominion	Madison	(256) 464-9086
Overnight Express	Huntsville	(256) 533-0394
Overnight Transportation	Huntsville	(256) 533-0394
Roadway Express	Huntsville	(256) 772-9216
CH Robinson	Madison	(256) 461-8994
SAIA Motor Freight Line, Inc.	Madison	(256) 464-0200
Service Transport Inc.	Madison	(256) 772-0002
Southeastern Freight Lines	Madison	(256) 772-0096
Steve Cagle Trucking Co.	Huntsville	(256) 881-0098
USA Motor Express	Florence	(800) 897-0690
Yellow Transportation	Decatur	(256) 353-8511
Watkins Motor Lines	Huntsville	(800) 553-5425
Wilson Trucking	Madison	(256) 774-5201

9.3.4 Custom Brokers and Freight Forwarders

Companies serving the International Intermodal Center

BAX Global	Madison	(256) 461-8018
CH Robinson	Madison	(256) 461-8994
Eagle Global Logistics	Huntsville	(256) 772-6585
Expeditors International	Huntsville	(256) 774-1156
J.F. Lumpkin, C.H.B.	Madison	(256) 461-0042

Kuehne & Nagel, Inc.	Huntsville	(256) 464-0888
Landstar Logistics	Huntsville	(256) 461-7183
Page & Jones, Inc.	Huntsville	(256) 772-0231
Panalpina, Inc.	Huntsville	(256) 772-9149
Team Worldwide	Huntsville	(256) 461-7770
UPS Supply Chain Solutions	Huntsville	(256) 461-1880

9.3.5 Truck Routes

Ordinance No. 96-810 established truck routes within the city of Huntsville. Designated truck routes on state highways include I-565, U.S. 431, U.S. 231, U.S. 72 East and West, Alabama Highway 53, Alabama Highway 20, and Research Park Boulevard. Truck routes established on city of Huntsville streets include the following:

1. Jordan Lane from I-565 to Redstone Arsenal
2. Triana Boulevard south of Bob Wallace Avenue
3. Johnson Road from Triana Boulevard to Leeman Ferry Road
4. Airport Road from Leeman Ferry Road to Carl T. Jones Road
5. Carl T. Jones Road from Airport Road to Bailey Cove Road
6. Bailey Cove Road from Carl T. Jones Road to Green Cove Road
7. Bob Wallace Avenue from I-565 to Memorial Parkway
8. Pulaski Pike from University Drive to city limits
9. Sparkman Drive west of Jordan Lane
10. Pratt Avenue between Memorial Parkway and Meridian Street
11. Meridian Street north of Pratt Avenue
12. Oakwood Avenue between Jordan Lane and Andrew Jackson Way
13. Moores Mill Road between U.S. Highway 72 East and Winchester Road
14. Winchester Road from Pulaski Pike to city limits
15. Stringfield Road between Alabama Highway 53 and Pulaski Pike
16. Mastin Lake Road between Pulaski Pike and Memorial Parkway
17. Old Madison Pike from I-565 to city limits
18. Martin Road in its entirety
19. Green Cove Road from Memorial Parkway to Bailey Cove Road
20. Whitesburg Drive from Airport Road to Memorial Parkway

9.4 Railroad Facilities

Figures 9.3 through **9.5** illustrate the railroad system in Alabama. Three railroads operate in the urbanized area – Huntsville-Madison County Airport Authority (HMCAA), Huntsville/Madison County Railroad Authority (HMRA), and Norfolk Southern (SOU)(NS).

9.4.1 Huntsville-Madison County Airport Authority (HMCAA)

The Huntsville-Madison County Airport Authority owns and operates 6.2 miles of industrial switching track off the Norfolk Southern spur into the International Intermodal Center (IIC). The Airport Authority completed $18 million in capital improvements to the IIC which included – increasing yard capacity to 100,000 lifts; expanding the track; adding a Mijack crane; paving, lighting, fencing and drainage of the entire Intermodal yard. All of these improvements help to enhance the efficiency of the IIC operations. The trackage serving the IIC has the capability to extend rail southward to any potential riverport facility bringing total track to approximately 12 miles.

9.4.2 Huntsville-Madison County Railroad Authority (HMRA)

The Huntsville/Madison County Railroad Authority is a Class III railroad company that owns 13.25 miles of track in Madison County. The HMRA extends from the Norfolk Southern connection in Huntsville to Norton Industries (south of Hobbs Island Road) and serves all shippers on the line. In recent years the Authority has expanded and improved its Downtown Huntsville facility with 100 feet of additional track and improved trucking access to its transload facilities. In addition, the Authority has purchased 5.5 acres of land in south Huntsville and plans to expand its transload capabilities at this location also.

9.4.3 Norfolk Southern (SOU)(NS)

This Class I railroad has both North to South and East to West lines with most of the track located in the central and northern part of the state. The SOU has 1,144 miles of track within Alabama. Major commodities transported include coal, chemicals, lumber and wood products. From Huntsville west to I-65 the Southern railway mainline runs north and parallel to I-565, encompassing some of the highest quality industrial development property in North Alabama. This property adjoins industrial property in Morgan County along the Tennessee River and in the direction of the river ports in Decatur, Alabama.

There is currently a trend of railroads granting operating rights to other railroads for use of tracks. Consideration should be made to the future possibilities of operating rights for railroads serving Huntsville and Memphis. Shared operating rights could substantially increase intermodal rail and truck activities between these two cities.

Figure 9.3: Alabama Rail Service General Statistics



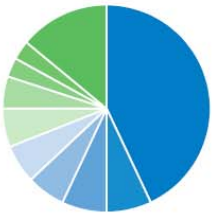
ALABAMA RAIL FAST FACTS:

- 25 freight railroads operate in Alabama
- 3,877 freight railroad employees live in Alabama
- $65,300 is the average wage a freight rail employee living in Alabama earns, with an additional $26,000 in fringe benefits
- 9,336 railroad retirees live in Alabama
- Alabama ranks 16th among states in total rail mileage (3,295 miles)
- Railroads in Alabama carried 2,941,478 carloads of freight in 2007

RAILROADS' IMPACT ON ALABAMA: ENVIRONMENT, ECONOMY & WAY OF LIFE

- In 2007, America's railroads moved a ton of freight an average of 436 miles on one gallon of gas — that's like going from Mobile all the way across the Florida panhandle to Jacksonville, FL.
- From 1980 through 2007, freight railroads improved their fuel efficiency by 85 percent. They consumed 48 billion fewer gallons of fuel and emitted 538 million fewer tons of carbon dioxide than they would have if their fuel efficiency had not improved during this time.
- A single freight train can take 280 or more trucks off of Alabama's highways; this reduces traffic congestion and saves Alabamians' time, money and gasoline.
- If all the freight that traveled through Alabama in 2007 had moved by truck instead of rail, another 10,049,037 trucks — an average of 27,532 per day — would have clogged Alabama's highways.[1]
- Based on U.S. Department of Commerce data, every $1.00 of rail infrastructure investment generates a $3.00 return in terms of total economic output including purchases and job creation.
- Each $1 billion of rail investment creates an estimated 20,000 jobs nationwide.

WHAT COMES TO ALABAMA BY RAIL



- Coal 261,595 (43%)
- Grain or other field crops 44,137 (7%)
- Scrap paper or metal 39,664 (7%)
- Intermodal 37,960 (6%)
- Chemicals 37,336 (6%)
- Petroleum or coal products 35,731 (6%)
- Metallic ore 31,120 (5%)
- Autos or auto parts 19,480 (3%)
- Food products 16,035 (3%)
- All other 85,045 (14%)

TOTAL CARLOADS: 608,103

WHAT ALABAMA SHIPS BY RAIL



- Coal 113,669 (21%)
- Pulp or paper products 69,100 (13%)
- Gravel, crushed stone, sand 61,626 (11%)
- Autos or auto parts 47,560 (9%)
- Chemicals 44,076 (8%)
- Iron or steel 38,928 (7%)
- Petroleum or coal products 23,632 (4%)
- Intermodal 19,160 (4%)
- Lumber or wood products 18,660 (3%)
- All other 100,559 (19%)

TOTAL CARLOADS: 536,970

Source 2007 STB Waybill Sample

[1] Assumes 18 tons per truck. In 2007, 180,882,668 tons of freight moved in Alabama by rail.

Figure 9.4: Alabama Freight Rail Network

ALABAMA

ASSOCIATION OF AMERICAN RAILROADS



ALABAMA PASSENGER RAIL

- In fiscal year 2008, nearly 48,000 Amtrak passengers started or ended their trips in Alabama, including 32,700 in Birmingham, 10,000 in Tuscaloosa, and 5,200 in Anniston.

ALABAMA'S FREIGHT RAIL NETWORK

CLASS I RAILROADS	
BNSF Railway Company	244
CSX Transportation	1,014
Grand Trunk Corporation	41
Norfolk Southern Corp.	1,371
TOTAL	**2,670**

REGIONAL RAILROADS	
Alabama & Gulf Coast Railway	344
TOTAL	**344**

LOCAL RAILROADS	
Alabama & Tennessee River Railway, LLC	122
Alabama Southern Railroad	83
Bay Line Railroad, LLC	42
Chattahoochee Bay Railroad Inc.	24
Conecuh Valley Railroad	15
Eastern Alabama Railway	25
Georgia Southwestern Railroad, Inc	17
Huntsville & Madison County RR Auth.	13
Luxapalila Valley Railroad, Inc.	26
Meridian and Bigbee Railroad, LLC	139
Redmont Railway Co.	2
Sequatchie Valley Railroad	3
Tennessee Southern Railroad Co., Inc.	9
Three Notch Railroad Co., Inc	34
Wiregrass Central Railroad Co.	20
TOTAL	**918**

SWITCHING & TERMINAL RAILROADS	
Alabama & Florida Railway Co.	45
Alabama Railroad Co.	55
Birmingham Southern Railroad	35
Jefferson Warrior Railroad	16
Terminal Railway Alabama State Docks	8
TOTAL	**159**

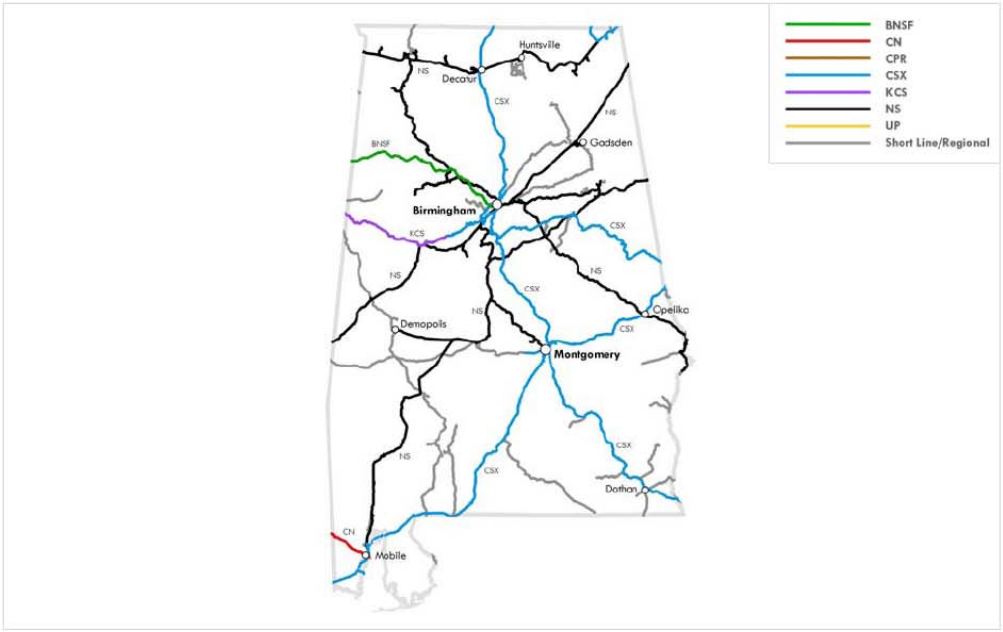


Figure 9.5 AMTRAK Routes Through Alabama



Source: http://www.amtrak.com

9.5 Designated High Speed Rail Corridor

According to the 2008 Alabama Rail Plan, as of January 2002, there are eleven high speed rail corridors designated by the Federal Railroad Administration (FRA) under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21). One of these, the Gulf Coast Corridor, has two segments located in Alabama. The Huntsville urbanized area is not within a high speed rail corridor at this time.

Figure 9.6
US Designated High-Speed Rail Corridor Designations



Source: Federal Railroad Administration

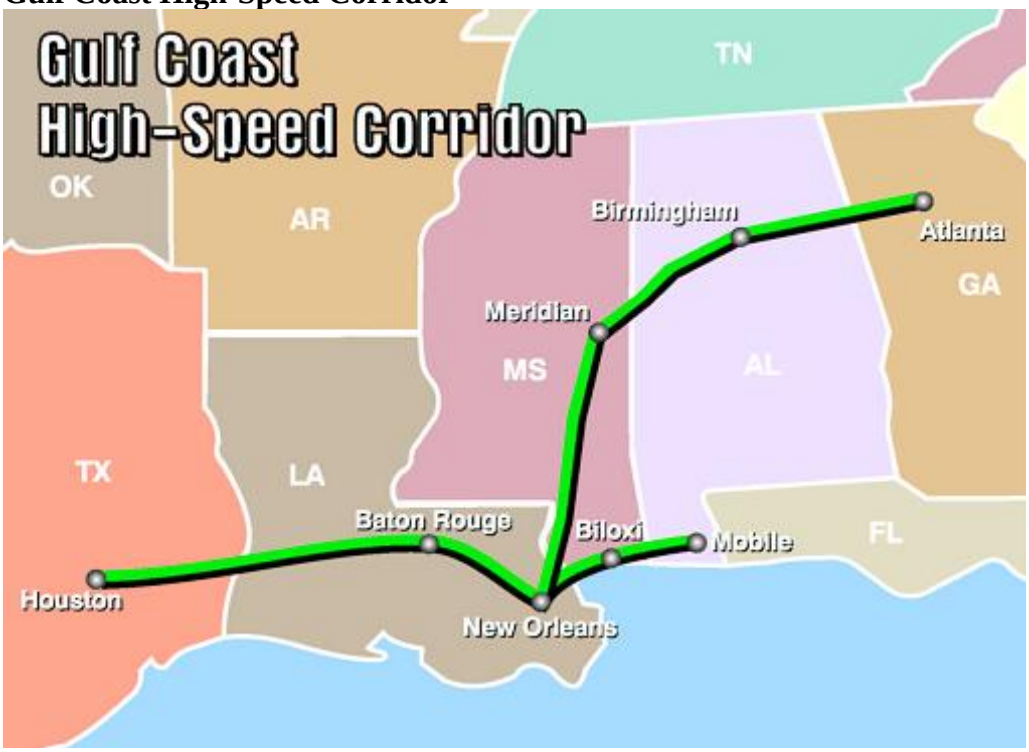
The Gulf Coast Corridor is comprised of three segments:
- Houston, TX to New Orleans, LA (362 miles)
- New Orleans, LA to Mobile, AL (145 miles)
- New Orleans, LA to Atlanta, GA (518 miles)

The original corridor was conceived to include only the existing *Sunset Limited* route across Louisiana, Mississippi, and Alabama, terminating in Houston, Texas and Pensacola, Florida. It was subsequently modified to include a second link from New Orleans to Atlanta. The existing freight routes in these corridors are among the highest density in Alabama for CSX and NS, respectively. The CSX line segment between Mobile and Pascagoula, MS, is primarily single track with a Traffic Control System. The NS line segment between Austell, GA and Meridian, MS, via Birmingham and

Tuscaloosa is also primarily single track with a Traffic Control System.

Corridor planning under FRA guidance has been completed for the New Orleans to Mobile segment and between Lake Charles, LA and Meridian, MS. Corridor planning from Meridian to Anniston, AL is pending allocation of matching funds from the state of Alabama.

Figure 9.7
Gulf Coast High-Speed Corridor



Source: Federal Railroad Administration

9.5.1 Southern High Speed Rail Commission

Alabama is a member of the Southern High Speed Rail Commission (SHSRC). The SHSRC is a bipartisan coalition of state and local elected officials and public and private rail interests through the tri-state area of Louisiana, Mississippi, and Alabama. The SHSRC has spearheaded efforts to bring high-speed rail to the Deep South. ISTEA originally identified just five emerging high speed rail corridors in addition to the existing Northeast Corridor. SHSRC was instrumental in the designation of a high speed rail corridor in the Deep South when the bill was reauthorized in 1998.

As one of the 11 federally designated rail corridors, the TEA-21 legislation made available dedicated federal funds for corridor analysis. SHSRC has led a number of efforts to study the high speed rail concept for the Gulf Coast Corridor, using those funds made available by TEA-21, including:

- *Deep South High Speed Rail Corridor Feasibility Study, 1995.* This conceptual feasibility study focused on planning for the corridor extending from Atmore, AL to

Lake Charles, LA.

- *The Gulf Coast High Speed Rail Corridor Feasibility Study, Phase II, 1999.* This study examined six operating scenarios for three proposed routes: Houston to New Orleans, New Orleans to Birmingham, and New Orleans to Pensacola. This study identified several important findings, including:

    - The Corridor is capacity constrained. All of the freight railroad operators have expressed concern about how their operations would be affected by increasing the level of passenger service
    - Increasing the frequency of service will actually contribute more to generating ridership than will increased average speeds.
    - Connecting the corridors to Houston and Atlanta will be critical to its success

- *Phase I: Improvement Implementation Plan – Meridian to New Orleans.* The findings of this study prompted the SHSRC to undertake a more detailed study of the Norfolk Southern corridor from New Orleans to Meridian to identify projected capacity deficiencies on the line. This study looked at the projected impacts of adding more and faster trains, adding more freight trains, and investing in additional infrastructure to add capacity to the line.

- *New Orleans to Mobile Corridor Development Plan, 2006.* The purpose of this plan was to identify the engineering and financial requirements to introduce high-speed intercity passenger rail between New Orleans and Mobile to determine the feasibility of implementing the proposed service.

- *Lake Charles to Meridian Corridor Development Plan, 2007.* This plans overall goal was to determine the impact of introducing high-speed passenger service to freight operations and then determine the level of infrastructure improvements necessary to implement high speed passenger service without negatively impacting freight operations.

In 2008, SHSRC developed a Strategic Plan to guide their efforts from 2008-2013. This plan affirms the overarching mission of the SHSRC, and then outlines a series of goals, objectives, strategies and actions toward achieving those goals. These actions are further refined with assigned responsible parties and deadlines by which to complete the actions. SHSRC's determination is clearly articulated in their mission statement:

The mission of Southern High Speed Rail Commission (SHSRC) is to facilitate the development of higher speed passenger rail services on the Gulf Coast High Speed Rail (HSR) Corridor and to establish connectivity to the national rapid passenger rail system.

The Commission's goals include:

1. Lead the effort to establish/increase intercity passenger rail service between key cities and towns

2. Identify the type of equipment, optimum train consists, and least cost for the Baton-Rouge-New Orleans and the New Orleans-Mobile service as well as other future corridor services in the Gulf South
3. Support multi-year federal funding for AMTRAK and work closely with AMTRAK to improve and expand existing intercity rail passenger operations in the Gulf South
4. Facilitate connectivity for passengers at rail stations to all modes of transportation (bus transit, streetcar, taxi, bicycle routes and pedestrian sidewalks) and improve the understanding of the positive impact this will have on economic development
5. SHSRC will work to establish itself as the body that speaks for the Gulf South and is a resource for local, state and federal government on passenger rail issues
6. SHSRC will eliminate impediments and create opportunities for financing of intercity passenger rail
7. Improve the safety and performance of passenger rail operations

In combination with this plan, SHSRC is outlining an action plan which will track the progress of these efforts to achieve their desired outcomes for passenger rail systems throughout the Gulf South.

9.6 Intercity Bus Service

The urban area is served by one major intercity bus company, Greyhound. The following data describes the intercity bus service available in Huntsville at the time of plan publication:

Greyhound Bus Lines Information:

1. Average # buses arriving and departing Huntsville daily: 7
2. Major destinations from the Huntsville station: Nashville, Memphis, Atlanta and Birmingham
3. Average number of passengers served per day per bus: 15
4. The average lbs. of cargo shipped per day per bus: 100
5. Future plans to increase/decrease the number of routes

The local station could become a major hub once the Memphis-Huntsville-Atlanta Highway runs through Huntsville.

9.7 Taxicab Service

The Huntsville City Council must issue a certificate of need and necessity to any passenger transportation company using the city streets for hire. The City has also adopted ordinances regulating the taxicab and limousine industry. Primary areas of regulation include rates, safety, and licensing of companies and drivers. The City of Huntsville Parking & Public Transit Department is responsible for oversight of the taxicab regulations.

The City recognizes the critical role private transportation providers play in the public transportation mix for the city. The Parking & Public Transit Department conducts regular meetings

with the taxi and limousine company managers to discuss any problems or concerns regarding the ordinances, regulations or other areas of interest to the companies. A listing of local providers follows:

Taxi Company Name	# Licensed Cabs
Ace Cab Company	5
Huntsville Cab Company	13
United Deluxe Cab Company	16
Rocket City Cab Company	5
Alabama Express Cab Company	5
American Cab Company	7
Executive Connection	7 minivans
A+ Cab Company	10

9.8 Waterway Facilities

The transportation of goods via water transportation makes economic sense. Shipping of bulk commodities utilizing barge transportation proves more cost effective, since one barge can transport as much tonnage as 15 rail cars or 60 semi-trucks. The significance of the future development of this mode of transportation in the Huntsville area has been recognized, and will provide existing and expanding industries with another option of shipping products in a cost-effective manner.

A River Port Development Study was conducted during 2000 to identify future sites for port facilities adjacent to the Tennessee River that lie within (or are eligible for annexation into) the Huntsville area. It was determined that if the City of Huntsville was to diversify its economic base and provide another active mode for the transportation of goods, that the City of Huntsville should identify and procure property to make barge transportation a reality. The study, which involved a full evaluation and screening of potential sites, recommended that the City of Huntsville purchase property for river port development at the southern end of Wall-Triana Highway, approximately 3 miles southwest of the Town of Triana. Since that time, the property has been purchased.

While the Huntsville economy can continue to grow in the advanced technology area with or without a river port, diversification of industry is vital to future economic growth. Diversification into more traditional manufacturing industries could fit into future plans for broadening Huntsville's economic base, and a viable river port would be an asset that could make a difference in attracting transportation intensive industries. The feasibility of the new river port development is highly dependent upon a common desire and concerted effort by community leaders to recruit businesses using barge transportation.

Figure 9.8 and **Figure 9.9** illustrate the Tennessee River and Inland Waterway System. **Table 9.2** describes waterway facilities in the vicinity of Huntsville.

Various modes of transportation in the area provide options for industries moving goods along the transportation system, and for individuals seeking alternative methods of trip-taking either within or outside of the study area. Long range plans have been developed to improve and/or expand

services with existing or future capacity capabilities. The provision of multimodal services for industries and the general population will continue to be available, and will expand as demand and potential growth and development dictates.

Figure 9.8 Tennessee River and Interconnected Inland Waterway System



Figure 9.9: Tennessee River System

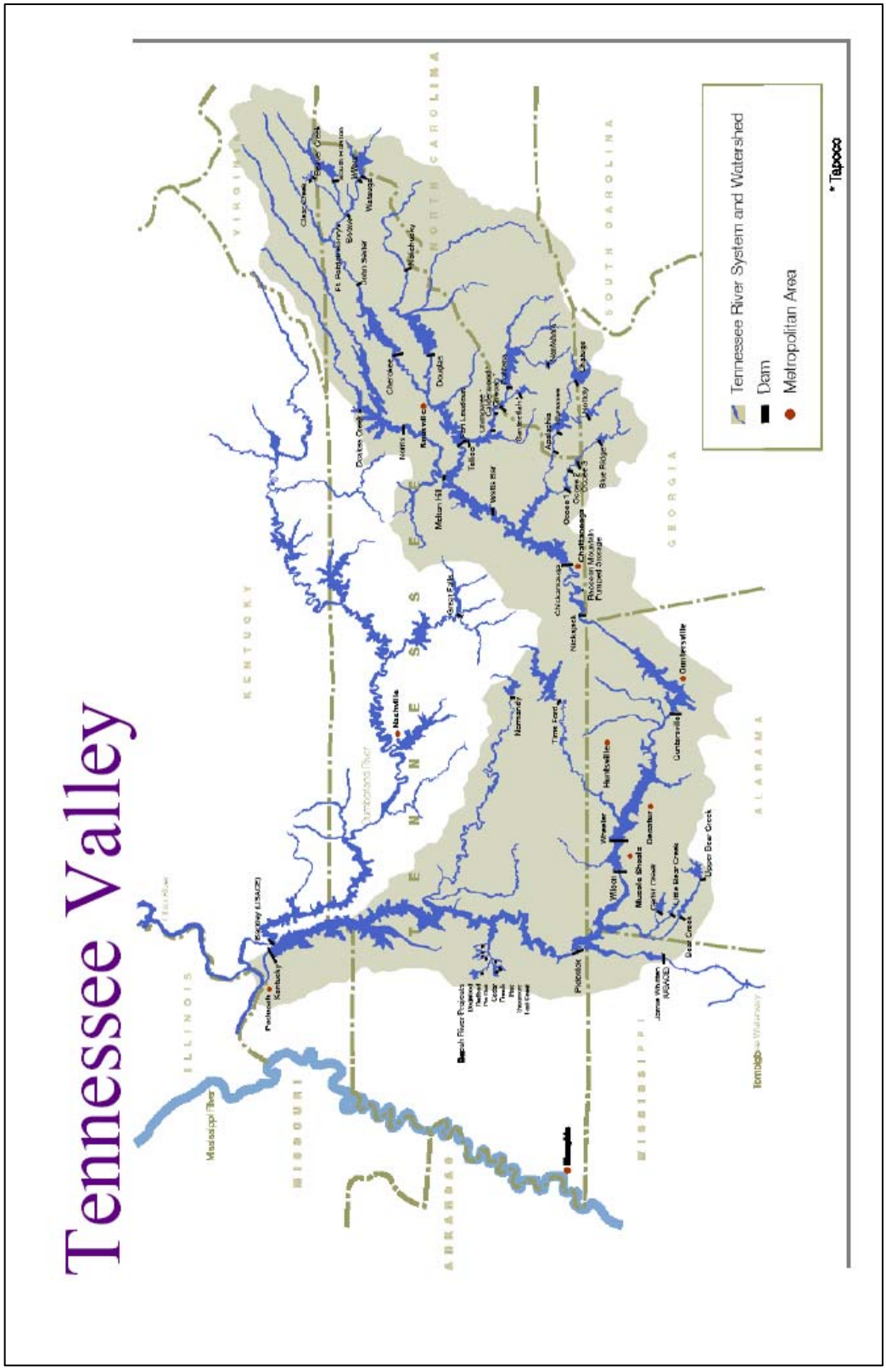


Table 9.3: Waterway Facilities

Terminal: NUCOR, Inc
River Bank: Left N/A
Address 4301 Iverson Blvd, Trinity, AL 35673
Phone: (256) 301-3507 **FAX:** (256) 560-4975
Web: www.nucor.com
River / Mile: Tennessee / 298
GIS Coordinates: 34.662498,-87.08277
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Iron, Steel, Scrap Metal
Handling: Dry Bulk Loading/Unloading
Equipment: Crane, Front End Loader, Magnet, truck/rail to river
Storage: Yes **Indoor:** None **Out Door** Unimproved
Total Storage Capacity: 7 Acres
Total Commodity Storage:
Rail Service: NS & CSX **Track Capacity:** 600 Cars **Highway Access:** ST-20, US-72 ALT
Special Services: None
Summer Pool: 12 Feet **Winter Pool:** 12 Feet **Mooring Cells:** None

Terminal: Boeing Company-United Launch Alliance, Decatur
River Bank: Left N/A
Address 100 Decatur Way, MC6010-1001, Trinity, AL. 35673
Phone: (256) 432-1108 **FAX:** (256) 432-1460
Web: www.ulalaunch.com
River / Mile: Tennessee / Mile 298.2
GIS Coordinates: 34.657248,-87.06970
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Rocket s and Components
Handling: Roll On-Roll Off Loading
Equipment: Cranes
Storage: Yes **Indoor:** None **Out Door** Improved
Total Storage Capacity: 75,000 Sq. Ft.
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 65 Cars **Highway Access:** ST-20, US-72 ALT
Special Services: Rockets and Components
Summer Pool: 14 feet **Winter Pool:** 13 feet **Mooring Cells:** 3 Federal Cells

Terminal: Kinder Morgan Terminals, Decatur Mallard-Fox Creek Port
River Bank: Left N/A
Address 1802 Red Hat Road, Decatur, AL 35602
Phone: (256) 353-4553 **FAX:** (256) 353-4951
Web: www.kindermorgan.com
River / Mile: Tennessee / Mile 298.5
GIS Coordinates: 34.65611,-87.06889
Owned By: Public **Used By:** Public **Status:** Active
Commodities: Steel, pig iron, alloys
Handling: Dry Bulk Loading/Unloading
Equipment: Crane, Front End Loaders(3)

Storage: Yes **Indoor:** Warehouse **Out Door** Improved
Total Storage Capacity: 350,000 sq ft
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 10 Cars **Highway Access:** ST-20, US-72 ALT
Special Services: None
Summer Pool: 13 Feet **Winter Pool:** 13 Feet **Mooring Cells:** 3 Federal Cells

Terminal: B.P Decatur Works
River Bank: Left N/A
Address 1401 Findley Island Road,P.O. Box 2215, Decatur, AL 35603
Phone: (256) 340-5560 **FAX:** (256) 301-5443
Web: www.bp.com
River / Mile: Tennessee / Mile 299.5
GIS Coordinates: 34.649444,-87.05361
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Chemicals, Styrene, Heavy Areomaticts
Handling: Liquid loading, Unloading
Equipment: Pipeline to dock
Storage: Yes **Indoor:** Tank **Out Door** None
Total Storage Capacity:
Total Commodity Storage: 700,000 gal cap
Rail Service: NS **Track Capacity:** 500 Cars **Highway Access:** ST-20, US-72 ALT
Special Services: None
Summer Pool: 20 feet **Winter Pool:** 20 feet **Mooring Cells:** None

Terminal: Cronimet Corporation
River Bank: Left N/A
Address 1220 State Docks Road, Decatur, AL 35601
Phone: (256) 350-7776 **FAX:** (256) 350-7662
Web: www.cronimet.com
River / Mile: Tennessee / Mile 301
GIS Coordinates: 34.637775,-87.03426
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Stainless Steel
Handling: Dry Bulk Loading
Equipment: Truck to River
Storage: None **Indoor:** None **Out Door** None
Total Storage Capacity: None
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 5 Cars **Highway Access:** ST-20, US-72
Special Services: None
Summer Pool: 12 Feet **Winter Pool:** 12 Feet **Mooring Cells:** None

Terminal: Cargill, Inc.
River Bank: Left N/A
Address 1030State Docks Road, Decatur, AL 35601
Phone: (256) 351-4200 **FAX:** (256) 351-8012
Web: www.cargill.com
River / Mile: Tennessee / Mile 301.4
GIS Coordinates: 34.6375,-87.03306
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Grain Products

Handling: Dry Bulk Loading/Unloading
Equipment: Crane, Clam Buckets (2)
Storage: Yes **Indoor:** None **Out Door** Silo
Total Storage Capacity:
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 10 Cars **Highway Access:** ST-20, US72 ALT
Special Services: Corn, Corn Gluten Feed
Summer Pool: 10 feet **Winter Pool:** 10 feet **Mooring Cells:** None

Terminal: Cemex, Inc.
River Bank: Left N/A
Address 1216 State Docks Road, Decatur, AL 35601
Phone: (256) 351-6336 **FAX:** (256) 353-7795
Web: None
River / Mile: Tennessee / Mile 301.4
GIS Coordinates: 34.638056,-87.03444
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Cement,
Handling: Dry Bulk Unloading
Equipment: Dock side Unloader,
Storage: Yes **Indoor:** None **Out Door** Silo
Total Storage Capacity: 3 silos,
Total Commodity Storage: 4,800 ton cap
Rail Service: NS **Track Capacity:** 27 cars **Highway Access:** ST-20, US-72 ALT
Special Services: None
Summer Pool: 14 feet **Winter Pool:** 13 feet **Mooring Cells:** None

Terminal: Decatur-Morgan County Port -Cronimet Corp
River Bank: Left N/A
Address 1220 State Docks Road, Decatur, AL 35601
Phone: (256) 353-7776 **FAX:** (256) 353-7662
Web: www.cronimet.com
River / Mile: Tennessee / Mile 301.4
GIS Coordinates: 34.63889,-87.03417
Owned By: Public **Used By:** Public **Status:** Active
Commodities: Scrap Metal, Stone
Handling: Dry Bulk Loading/Unloading
Equipment: Crane, Clam Bucket, Front end loader (3)
Storage: Yes **Indoor:** Warehouse **Out Door** Unimproved
Total Storage Capacity: 7 acres
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 5 Cars **Highway Access:** ST-20, US-72 ALT
Special Services: None
Summer Pool: 13 Feet **Winter Pool:** 12 Feet **Mooring Cells:** None

Terminal: Solutia, Inc,Decatur Chemical Dock
River Bank: Left N/A
Address P.O. Box 2204, Decatur, AL 35609-2204
Phone: (256) 552-2733 **FAX:** (256) 552-3100
Web: www.solutia.com
River / Mile: Tennessee / Mile 301.9
GIS Coordinates: 34.636435,-87.01765

Owned By: Private **Used By:** Private **Status:** Active
Commodities: Chemicals
Handling: Liquid Loading/Unloading
Equipment: Pipeline
Storage: Yes **Indoor:** Warehouse **Out Door** Tank
Total Storage Capacity:
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 75 Cars **Highway Access:** ST-20, US-72 A
Special Services: None
Summer Pool: 14 Feet **Winter Pool:** 12 Feet **Mooring Cells:** None

Terminal: Solutia, Inc, Decatur Chemical Dock
River Bank: Left N/A
Address 1050 Chemstrand Ave. Decatur, AL 35601
Phone: (256) 552-2733 **FAX:** (256) 552-3130
Web: www.solutia.com
River / Mile: Tennessee / Mile 301.9
GIS Coordinates: 34.636435,-87.01765
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Coal, Coke
Handling: Dry Bulk Unloading
Equipment: Crane, Clam Bucket, Front End Loader
Storage: Yes **Indoor:** None **Out Door** Improved
Total Storage Capacity: 8 Acres
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 75 Cars **Highway Access:** ST-20, US-72 ALT
Special Services: None
Summer Pool: 14 Feet **Winter Pool:** 12 Feet **Mooring Cells:** None

Terminal: Port of Decatur, Decatur Transit, Inc
River Bank: Left N/A
Address P.O. Box 1784, 500 Market Street NW Decatur, AL 35602
Phone: (256) 353-9601 **FAX:** (256) 353-1777
Web: www. Decaturtransit.com
River / Mile: Tennessee / Mile 304.1
GIS Coordinates: 34.619722,-86.98555
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Asphalt,corn, dry fertilizer
Handling: Dry Bulk, Liquid Loading, Unloading
Equipment: Crane (3) clam bucket (2) Front end loaders
Storage: Yes **Indoor:** Warehouse **Out Door** Tanks, Unimproved
Total Storage Capacity: 10,000 sq ft Dry Commodity
Total Commodity Storage: 1 million gal tank
Rail Service: NS **Track Capacity:** 18 cars **Highway Access:** ST-20, US-72 ALT
Special Services: Fleeting
Summer Pool: 12 feet **Winter Pool:** 12 feet **Mooring Cells:** 3, 2 up River (federal), 1 below

Terminal: Port of Decatur-Fleeting
River Bank: Right N/A
Address P.O. Box 1784, Decatur, AL 35602
Phone: (256) 353-9601 **FAX:** (256) 353-1777
Web: www.Decaturtransit.com

River / Mile: Tennessee / Mile 304.2
GIS Coordinates: 34.619767,-86.98114
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Marine Services
Handling: None
Equipment: None
Storage: None **Indoor:** None **Out Door** None
Total Storage Capacity:
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 8 cars **Highway Access:** ST-20, US-72 ALT
Special Services: Fleeting
Summer Pool: 14 feet **Winter Pool:** 11 feet **Mooring Cells:** 3, 2 up River (federal), 1 below

Terminal: Agriliance-AFC,LLC, Decatur Fertilizer Wharf
River Bank: Left N/A
Address 905 Market Street, Decatur, AL 35601
Phone: (256) 560-2843 **FAX:** (256) 560-2943
Web: www.agri-afc.com
River / Mile: Tennessee / Mile 305.2
GIS Coordinates: 34.610180,-86.97197
Owned By: Private **Used By:** Private **Status:** Active
Commodities: DAP, potash, Nitrate, Amm Sulphate, Urea, Liq Nitrogen
Handling: Liquid-Loading/Unloading
Equipment: Crane/Clam Bucket/Pipeline
Storage: Yes **Indoor:** Warehouse **Out Door** Tank
Total Storage Capacity:
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 5 Cars **Highway Access:** US-31,St-20,US-72Alt
Special Services: None
Summer Pool: 13 Feet **Winter Pool:** 10 Feet **Mooring Cells:** 2 Federal Cells

Terminal: Alabama Farmers CO-OP-Grain
River Bank: Left N/A
Address 800A Market St. Decatur, AL 35601
Phone: (256) 353-6844 **FAX:** (256) 560-2671
Web: www.alafarm.com
River / Mile: Tennessee / Mile 305.3
GIS Coordinates: 34.606852,-86.96439
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Grain Products
Handling: Dry Bulk Loading/Unloading
Equipment: Crane, clam bucket, Truck/Conveyor to river
Storage: Yes **Indoor:** None **Out Door** Silo
Total Storage Capacity: 817,000 bu
Total Commodity Storage:
Rail Service: NS **Track Capacity:** 25 Cars **Highway Access:** US-31, ST-20, US-72 A
Special Services: None
Summer Pool: 13 Feet **Winter Pool:** 12 Feet **Mooring Cells:** 2 Federal Cells

Terminal: Bunge Corporation
River Bank: Left N/A
Address P.O. Box 2248, 1400 Market Street SE, Decatur,AL 35602

Phone: (256) 309-2227 **FAX:** (256) 309-2258
Web: www.bunge.com
River / Mile: Tennessee / Mile 305.6
GIS Coordinates: 34.606389,-86.96444
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Grain Products,
Handling: Dry Bulk loading, liquid unloading
Equipment: clam bucket
Storage: Yes **Indoor:** Bulk bins,tanks **Out Door** none
Total Storage Capacity:
Total Commodity Storage: 7.5 mil bu, dry, 20 mil lbs liquid
Rail Service: CSX, NS **Track Capacity:** 75 cars **Highway Access:** US-31, ST-20, US-72 A
Special Services: None
Summer Pool: 15 feet **Winter Pool:** 13 feet **Mooring Cells:** 3 cells

Terminal: Conagra-Decatur Flour Mill
River Bank: Left N/A
Address 2050 Market Street, Decatur, AL 35601
Phone: (256) 552-4769 **FAX:** (256) 552-4709
Web: www.conagrafoods.com
River / Mile: Tennessee / Mile 306.3
GIS Coordinates: 34.601389,-86.95694
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Grain Products, wheat, flour, milo
Handling: Dry Bulk Loading, unloading
Equipment: Clam shell (2) Bucket leg
Storage: Yes **Indoor:** Warehouse **Out Door** Silo
Total Storage Capacity: 3,000 sq yds
Total Commodity Storage: 1.3 mil bu
Rail Service: CSX **Track Capacity:** 25 cars **Highway Access:** US-31, ST-20, US-72A
Special Services: None
Summer Pool: 13 feet **Winter Pool:** 10 feet **Mooring Cells:** None

Terminal: Army Missile Command (Inactive)
River Bank: Right N/A
Address Building 111, Redstone Arsenal, AL 35898
Phone: (256) 955-6536 **FAX:** (256) 876-1190
Web: None
River / Mile: Tennessee / Mile 323.5
GIS Coordinates: 34.587385,-86.68557
Owned By: Private **Used By:** Private **Status:** Inactive
Commodities: None
Handling: Dry Bulk Unloading
Equipment: None
Storage: None **Indoor:** None **Out Door** None
Total Storage Capacity:
Total Commodity Storage:
Rail Service: None **Track Capacity: Highway Access:** ST-20
Special Services: None
Summer Pool: 14 feet **Winter Pool:** 13 feet **Mooring Cells:** None

Terminal: NASA Marshall Space Flight Center
River Bank: Right N/A
Address AD20, Marshall Space Flight Center, Huntsville, AL 35812
Phone: (256) 544-9451 **FAX:** (256) 544-1693
Web: www.nasa.gov
River / Mile: Tennessee / Mile 324
GIS Coordinates: 34.585833,-86.6808
Owned By: Public **Used By:** Public **Status:** Active
Commodities: Space Components
Handling: None
Equipment: Cranes (4)
Storage: None **Indoor:** None **Out Door** None
Total Storage Capacity:
Total Commodity Storage:
Rail Service: None **Track Capacity: Highway Access:** ST-20
Special Services: None
Summer Pool: 15 feet **Winter Pool:** 13 feet **Mooring Cells:** None

Terminal: Huntsville-Madison Co. Marina & Port Authority (Inactive)
River Bank: Right N/A
Address P.O. Box 14250, Huntsville, AL 35815
Phone: (256) 882-1057 **FAX:** (256) 880-7620
Web: www.dittolanding.com
River / Mile: Tennessee / Mile 333.8
GIS Coordinates: 34.576496,-86.55938
Owned By: Public **Used By:** Public **Status:** Inactive
Commodities: None
Handling: Dry Bulk Unloading
Equipment: None
Storage: Yes **Indoor:** Warehouse **Out Door** None
Total Storage Capacity:
Total Commodity Storage: 300 Recreation Boats, Dry Storage
Rail Service: None **Track Capacity:** None **Highway Access:** US-431
Special Services: None
Summer Pool: 556 elv **Winter Pool:** 551 elv **Mooring Cells:** None

Terminal: Baker Sand and Gravel Company, Inc.
River Bank: Right N/A
Address 500 Bill Mathews Road, Huntsville, AL 35803
Phone: (256) 881-4951 **FAX:** (256) 881-4951
Web: None
River / Mile: Tennessee / Mile 336.6
GIS Coordinates: 34.536111,-86.54527
Owned By: Private **Used By:** Private **Status:** Active
Commodities: Stone, Sand, Gravel
Handling: Dry Bulk Unloading
Equipment: Crane (1) clam bucket
Storage: Yes **Indoor:** None **Out Door** unimproved
Total Storage Capacity: half acre
Total Commodity Storage: 0
Rail Service: None **Track Capacity: Highway Access:** US-231
Special Services: None
Summer Pool: 11 feet **Winter Pool:** 11feet **Mooring Cells:** 3 cells

Section 10

FINANCIAL PLAN ELEMENT

10.0 Introduction

SAFETEA-LU legislation requires MPOs to demonstrate how the long-range transportation plan can be successfully implemented through the development of a financial plan. The financial plan must indicate resources from public and private sources that are reasonably expected to be made available to carry out the plan, and recommends any additional financial strategies for needed projects and programs. This chapter will describe the estimates of funds that may be available to support plan implementation, operating under the premise that similar funding amounts will be available to the MPO for the next 25 years. The chapter will also identify the projects listed in **Section 4, Section 7,** and **Section 8** that exceed anticipated funding revenues, and face the possibility of not being funded within the 25 year period. While the consideration of bicycle and pedestrian facilities have been made as part of the planned projects listed in **Section 4**, other bicycle, pedestrian, and greenway projects have been identified that reach further than the scope of the traditional roadway improvements listed in that section.

10.1 Funding Sources

The implementation of a financially constrained plan for the Huntsville urban area will require a mix of funding sources. These sources include various programs at the federal, state and local levels. Many of the needs identified are located on the state and federal highway system, and therefore, will require substantial financial assistance through the state and U.S. DOT funding programs. In order to determine available resources, historic funding data from ALDOT was examined in addition to ALDOT's expectation of future funding.

Table 10.1, Table 10.2, Figure 10.1, **Figure 10.2,** and **Figure 10.3** show 6-year historic and proposed future funding of projects in the Huntsville Area Transportation Study MPO by funding category. During the previous six years, over $131.6 million of projects was funded across all categories for capacity adding projects as well as operations and maintenance projects. Historically, the largest proportion of funding was allocated for Surface Transportation Projects. In analyzing future projections, it is expected the largest proportion of funding will continue to be from the Surface Transportation Project category. The operations, maintenance, and capital costs for the transit program were derived from analyzing trends from the past two fiscal years.

Table 10.1
Huntsville Urban Area
Highway Capacity, Operation and Maintenance Costs
6-Year Historic and Planned Allocation of Federal Funds Only
(Costs in Thousands)

		CAPACITY			OPERATIONS AND MAINTENANCE		
Funding Category	Huntsville Average Annual Costs *	Average Annual Capacity Costs *	% Costs	25 Year Total Projection	Average Annual O&M Costs *	% Costs	25 Year Total Projection
♦Surface Transportation (Urban>200k)	$4,560	$4,469	98%	$111,720	$91	2%	$2,280
Surface Transportation (OA) (Not Attrib)	$0	$0	60%	$0	$0	40%	$0
Surface Transportation (Any Area)	$4,242	$2,333	55%	$58,328	$1,909	45%	$47,723
National Highway System	$4,315	$2,589	60%	$64,730	$1,726	40%	$43,153
◙♦Appalachian	$173	$1,869	100%	$46,715	$0	0%	$0
◙ Interstate Maintenance	$23	$1,663	10%	$41,583	$21	90%	$525
♦Bridge Optional	$67	$0	0%	$0	$67	100%	$1,667
Safety (All)	$420	$0	0%	$0	$420	100%	$10,496
Equity Bonus	$4,347	$2,608	60%	$65,198	$1,739	40%	$43,465
♦Congressional Special Projects	$442	$146	33%	$3,646	$296	67%	$7,392
TOTAL	**$18,589**	**$15,677**		**$391,920**	**$6,268**		**$156,700**

* Based on a 6-year average of authorized funds.
♦ Percentages are based on actual funds.
Note: The Congressional Special Projects category is solely dependent upon Congressional Funding; therefore, a realistic spending trend is not available for this category. More funding may be available due to special appropriations.
◙ 25 Year Projection was based upon planned projects either in the TIP or in ALDOT's Comprehensive Project Management System. Appalachian includes planned projects on Corridor V. Interstate Maintenance includes I-565 interchange at County Line Road and Greenbrier Road under Capacity.

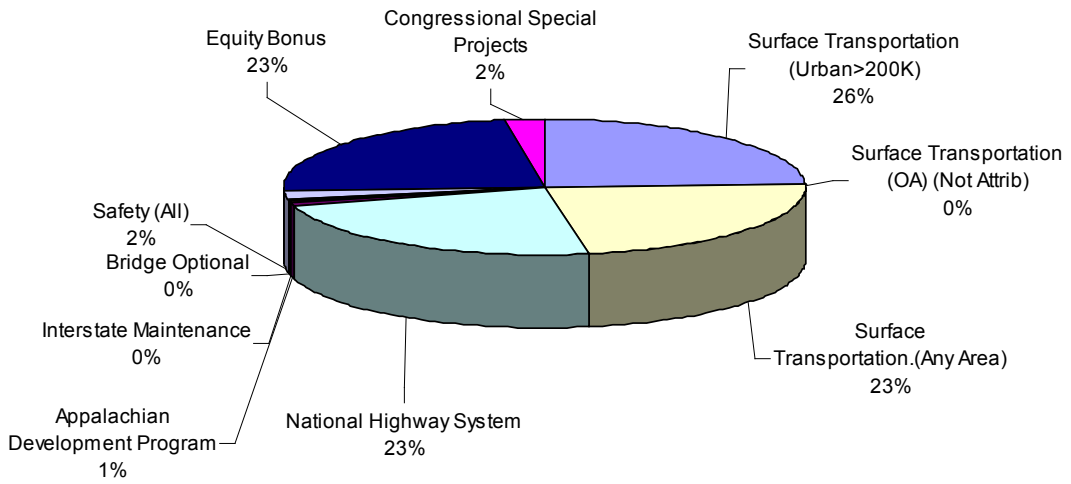
Source: Alabama Department of Transportation

Table 10.2
Huntsville Urban Area
Transit Operations, Preventative Maintenance, and Capital Costs
Historic and Planned Allocation of Federal Funds Only
(Costs in Thousands)

Funding Category	FY 2007	FY 2008	Average Per Year	25 Year Projection
*Section 5307 (Urban)	$1,753	$1,753	$1,753	$43,825
Section 5311 (Non-Urban)	$222	$213	$218	$5,438
Section 5310 (Elderly & Disabled)	$107	$0	$54	$1,338
Section 5316 (JARC)	$20	$39	$30	$738
Section 5317 (New Freedom)	$0	$0	$0	$0
Section 5309 (New Starts, Buses)	$1,231	$2,570	$1,901	$47,513
TOTAL	**$3,333**	**$4,575**	**$3,954**	**$98,850**

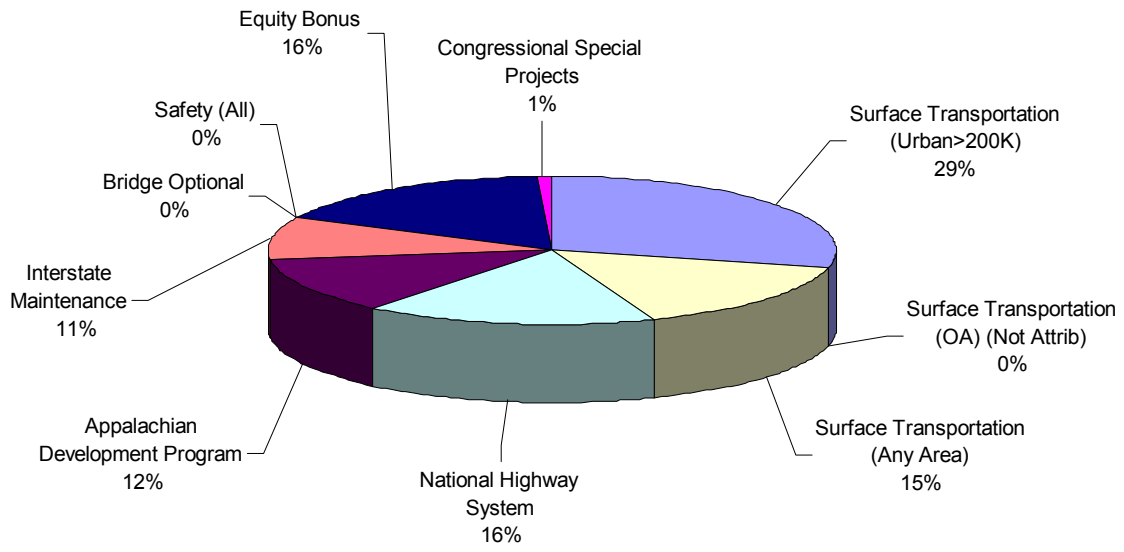
*Section 5307 Funds are based on the Federal Register February 28, 2008.
Source: Alabama Department of Transportation

Figure 10.1: 6 Year Historic Average Allocation of Federal Capacity and Operations & Maintenance Funds (October 2003-September 2008)



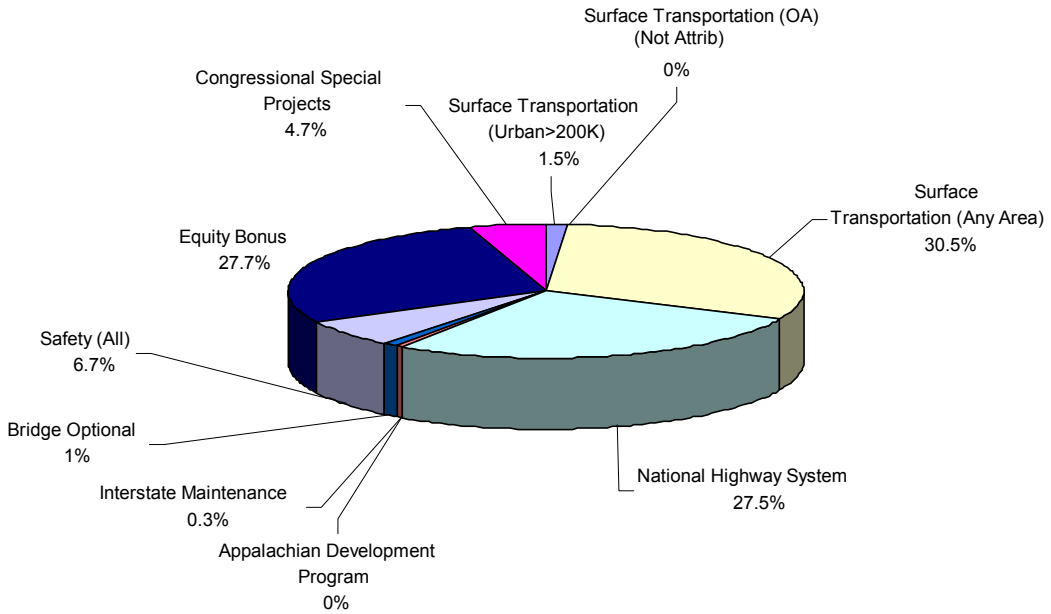
Source: Alabama Department of Transportation

Figure 10.2: 25 Year Projection of Highway Capacity Funds
Federal Funds Only



Source: Alabama Department of Transportation

Figure 10.3: 25 Year Projection of Operations & Maintenance Funds
Federal Funds Only



Source: Alabama Department of Transportation

It is assumed that the local MPO will continue to receive funds from the Congressional Special Projects, National Highway Program, Surface Transportation Program, and transit programs during the next 25 years. To effectively determine anticipated revenues per relevant funding programs or categories, the Alabama Department of Transportation staff projected funding based upon each program's average past revenues within a six-year period. The FTA projections were based upon past funding trends and information gathered from the Alabama Department of Transportation, the Huntsville Public Transit Division, and the Madison County Department of Planning and Economic Development. The Alabama Department of Transportation estimates Surface Transportation Any Area (STPAA) funds to be approximately $58.3 million for the next 25 years and maintenance funds to be over $1.9 million per year. The maintenance funds will be used to maintain current and planned roadway facilities in the study area. Even though historic data has been analyzed in order to project anticipated funding, there are instances where funding in certain project categories will increase due to new sources of financing, at the discretion of the Governor, or the leveraging of local funds to complete projects. This has occurred, and the project funding tables shown at **Table 10.3** and **Table 10.4** reflect those modifications.

10.2 Overview of Major Funding Categories

The following is an analysis of anticipated revenues for the long range plan implementation based upon the data presented in **Tables 10.1** and **10.2**, as well as local programs.

10.2.1 Federal Programs

Federal funding amounts shown in this section reflect past funding trends, and assume that funding will at least be level. Various categories of federal funds are available for transportation improvements. These categories may be further broken down into capacity adding and maintenance and operations. Capacity adding funding is dedicated to projects which improve or widen an eligible corridor. Maintenance and operations funding is dedicated to projects which construct improvements such as traffic signal installation, improved signage, intersection improvements, etc. Historically, ALDOT has used maintenance funds for activities such as resurfacing projects.

Appalachian Development Highway System (ADHS) funds are targeted for use on ARC Corridor V (U.S. 72) and Corridor X. During fiscal year 2008, the Alabama Department of Transportation obligated a total of $34.4 million of federal funds on the ADHS. ALDOT is currently programming approximately $15.1 million in ADHS funding through FY 2010 on US 72 East/ARC Corridor V. An additional $37.8 million is planned by the State for upgrades to Corridor V beyond fiscal year 2010. The Appalachian Regional Commission reports that over $178.3 million is required to complete all improvements to ARC Corridor V. The majority of ADHS funding in the State is now programmed for Corridor X. This Plan assumes that once this route is completed, funding will be available to upgrade Corridor V. Current ADHS projects programmed by ALDOT for the Huntsville area total $52,978,000. This amount indicates a combination of federal and State matching funds. Since this is the case, federal funds in the amount of $42,382,000 will be required. It is anticipated that this amount will be available to complete these scheduled projects.

Congressional Special Appropriations may be earmarked by Congress to fund some needed projects. These allocations do not represent a typical flow of revenues, but are mentioned in this section, as some projects may be funded through this method.

National Highway System (NHS) routes in the Huntsville urban area include the following: I-565, U.S. 72, U.S. 231, U.S. 431, and Research Park Boulevard from I-565 to University Drive. NHS funding currently programmed by the ALDOT for FY 2010 totals over $3.7 million, primarily to prepare for construction on Memorial Parkway. For this category, the MPO combined NHS revenues, Equity Bonus, and Congressional Special revenues so that more funds can be leveraged to needed projects. Based upon past precedence, the combined total of federal only NHS funds, Equity Bonus funds, and Congressional Special Project funds anticipated for the Huntsville Urban Area should be well over $133.57 million.

Surface Transportation Program (STP) funds are typically divided into several different categories as designated by Congress. STP funds dedicated to road construction are split into two major categories: STP Any Area (STPAA) and STP Urbanized Area (STPHV). STPAA dedicated projects are funded with federal and state matching money. STPHV dedicated projects are funded with federal and local matching money. It is estimated that over $106 million of federal funds only will be available in the STPAA category, based upon historic data. This includes both capacity and maintenance and operations funds. For capacity adding projects only, a total of $58,328,000 of federal funds is anticipated to be available. It is also estimated that approximately $114 million of federal funds will be available in the STPHV category for both capacity adding projects and maintenance and operations. When capacity adding projects alone are considered, the federal total of $111.7 million is anticipated to be available. The amount in the STPAA category has increased, due to anticipated additional funding availability, through special programs, and the leveraging of other sources of funds. While quite a bit of money is available for locals to use, receipt of STPHV revenues are contingent upon the locality's ability to provide the typical 20% matching funds to finance transportation projects within their jurisdiction.

FTA funds for both the rural and urbanized area programs are shown in **Table 10.2**. Past trends of revenues received by Huntsville Public Transit indicate an annual increase of transit funding of approximately 5%. While the State projects flat funding for the next 25 years, Huntsville Public Transit anticipates a conservative increase in revenues consistent with past funding received, and have projected their future capital needs based upon their methodology. The ALDOT estimated amount to be received during the next 25 years in the urbanized area falls below the transit system's capital needs shown in **Section 6: Public Transportation Element**. To make up for this projected deficiency, additional federal funds will need to be allocated or other creative funding will need to be identified. The rural program assumes consistent funding, and will continue to provide services based upon their future allocations.

The maintenance allocation provides funding for maintenance activities on existing eligible transportation systems as well as new infrastructure constructed due to plan implementation.

10.2.2 State and Local Programs

Project costs not covered by federal programs are the responsibility of state and local governments. Most federal programs require a 20 percent match of state or local funds. State and local funding comes primarily from property taxes, sales taxes, user fees, special assessments, and impact fees. The revenues from property or sales taxes can also be used to pay off general obligation or revenue bonds.

During the past 6 years, there was approximately $12.5 million funded for the construction of corridor improvements in the **Transportation Improvement Program (TIP)** in the State Program. The projection of State revenues is difficult to predict and may vary from year to year; therefore, projected State Program funding is not included in this section.

10.3 Program Costs

The overall list of planned projects was evaluated, and the projects were categorized per funding source as appropriate. The projects receiving the highest priority were those projects that either are in process, in the Transportation Improvement Program, or are exhibited on the Alabama Department of Transportation's Comprehensive Project Management System (CPMS) as being programmed for future years. Once these programmed projects were segregated from the remaining projects, future projects were selected based upon available funds remaining. These projects are listed in **Table 10.3**. At the present time, funding is deficient to construct every single project identified in **Section 4, Section 7,** and **Section 8**. Based upon this fact, **Table 10.4** was developed, which lists visionary projects that may be pursued if and when future funds are available.

10.3.1 Financially Constrained Projects

A breakdown of the financially constrained planned transportation projects per funding category is available in **Table 10.3.** Cost estimates included in **Table 10.3** and **Table 10.4** (visionary projects) are derived from existing sources, such as the State CPMS records, and City of Huntsville, City of Madison, and Madison County engineering estimates. In instances where engineering estimates are not available, the MPO staff estimated the Preliminary Engineering, Right of Way, and Construction costs as follows:

- $1.5 million per lane mile
- $2.5 million per lane mile if elevated
- $2.5 million per lane mile if the road is in an urban environment (a retrofit)

All costs appearing in **Table 10.3** have been adjusted at 4% per year for the anticipated year of expenditure. The cost of projects appearing in **Table 10.4** reflects current year dollars because it is unknown exactly when those projects may be constructed. It is therefore impossible to estimate inflated costs for a future year when the future year of

construction is unknown. The costs for both tables reflect charges for preliminary engineering, right of way, construction, and include the costs for bike lanes and sidewalks where planned.

10.3.2 Visionary Projects

In many instances, projects exceeded anticipated funding revenues. While the MPO staff developed reasonable cost estimates of all project costs using the techniques previously described, the staff had to limit projects based upon expected revenues per source. Since the long range transportation plan must be financially constrained, projects lacking funding are listed in **Table 10.4** as visionary projects. This list of visionary projects will be maintained in the hope that additional funds will be acquired. The MPO is committed to the projects listed in **Table 10.4**; however, those projects cannot be funded until money is available. The improvements identified in **Table 10.4** will serve as a source of pre-viewed projects that could eventually be added to the list of fundable projects exhibited in **Table 10.3**. Projects identified in **Table 10.4** could be added for instance, if any long range transportation plan project is completed substantially under cost, with alternative funding sources, or is effectively eliminated.

10.4 Proposed Sources of Revenues to Cover Shortfalls

According to U.S. Department of Transportation Metropolitan Planning Regulations, the financial plan **must** identify proposed new revenues and/or revenue sources to cover shortfalls. Funding is inadequate to finance all of the NHS and STP projects identified in the **Year 2035 Transportation Plan.** Alternative sources of funds will be needed to cover these shortfalls.

It is anticipated that supplemental funding for the long-range plan may come from the following sources:

1. Local capital improvements programs, bonds, taxes
2. State programs, industrial access funds
3. U.S. Congressional appropriations
4. Public/Private partnerships, including tax increment financing, impact fees
5. Toll Roads/Bridges

There may be some instances where corridors may be required based upon market demand and development. In cases such as this, private funds may be made available to perform needed roadway improvements, based upon specific development-driven growth.

The HPP/NHS category of projects requires a total of approximately $744 million in federal funds for the construction of the Southern Bypass and the Memphis to Atlanta Highway. These projects are listed as High Priority Projects on the National Highway System, and should be actively pursued as additional funding can be identified and appropriated. These projects appear in **Table 10.4** as **Visionary Projects**, since they can only move forward if Congressional money is formally appropriated to them. At the present time, the projects are at various phases of implementation and funding.

The NHS program shows a deficit of approximately $371.5 million in federal funds for all desired projects to be added to the funding list. These projects include overpasses on Memorial Parkway, the widening of Ardmore Highway to the Tennessee State line, and improvements to I-565 and Research Park Boulevard. These projects will require additional state and federal funds.

The Appalachian Development Program shows a deficit of $76.8 million in federal funds to fund interchanges on Corridor V/US 72 East at Moontown Road, Brock Road, the Eastern Bypass, and Jordan Road. These projects will require additional federal appropriations.

According to **Table 10.4**, the STPAA program has over $393.3 million of projects to be added to the funding program during the planning period. Major projects presented in this category include widening Jeff Road, Martin Road, and Winchester Road; the Eastern Bypass Phase 2; Browns Ferry Road improvements; and the widening of Old Railroad Bed Road, Wall Triana Highway, and Hobbs Island Road. If these projects are to be implemented, other state and local revenues will be needed to fund all of these projects.

Additionally, **Table 10.4** identifies unfunded maintenance and operations projects as well as unfunded enhancement-type projects. The maintenance and operations projects, which primarily focus on geometric improvements and signalization can possibly be funded through Surface Transportation Any Area funds, Safety funds, or special Congressional appropriations. The total of federal funds required for these projects is estimated to be $986,000. Enhancement-type projects, which would include the construction of greenways and signage of bike routes may be eligible for Enhancement funds. The allocation of these funds are based upon the discretion of the State of Alabama and are distributed through grant activities. All of these types of projects compliment the road improvement projects identified in **Section 4**, by providing bicycle and pedestrian facilities such as bike lanes, bike routes, and greenways. Federal funds in the amount of $52,479,625 are required to construct these types of projects.

The jurisdictions that comprise the local MPO are dedicated to find alternative methods of financing so the projects listed in **Table 10.4** are funded.

10.5 Summary

The long range transportation plan presented and the projects selected to facilitate the future movement of people and goods within the MPO study area are realistic and exhibit financial constraint. The projects detailed in this document indicate the "best fit" for improvements within the area. Actual implementation of this plan will be incremental since these projects will be programmed into future 5-year **Transportation Improvement Programs (TIPs)** as local priorities and available funds dictate.

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Table 10.3: Estimated Cost and Funding Source of Proposed Roadway Improvements
Capacity Projects and Maintenance & Operations Projects
Federal Funds Only

FUNDING CATEGORY: APPALACHIAN DEVELOPMENT PROGRAM/NATIONAL HIGHWAY SYSTEM

Map Number (Pg. 4-2)	Project Description	Facility Type	Length in Miles	Current Lanes	Status	Year of Expenditure Estimated Cost
80	US 72 East/ARC Corridor V - Moores Mill Road Interchange and Shields Road	Major Arterial	1	4	Planned – FY 2010	$29,600,000
85	US 72 East/ARC Corridor V – High Mountain Road Interchange	Major Arterial	1	4	Planned- FY 2012	$12,782,400
					Total	$42,382,400
					Anticipated Funds	$46,715,000
					Balance	$4,332,600

*All projects in this funding category will not include bike/ped facilities as indicated in **Section 4** and **Section 7**.*

FUNDING CATEGORY: NATIONAL HIGHWAY SYSTEM/EQUITY BONUS/CONGRESSIONAL SPECIAL

Map Number (Pg. 4-2)	Project Description	Facility Type	Length in Miles	Current Lanes	Status	Year of Expenditure Estimated Cost
86	US 72W (University Dr) Providence Main to County Line Rd.	Major Arterial	5	4	Planned	$15,994,800
36	Memorial Parkway Overpass and service roads @ Mastin Lake Rd.	Major Arterial	0.67	4	Planned - FY 2013	$23,994,800
35	Memorial Parkway Overpasses and service roads @ North of Whitesburg Dr. to South of Golf Rd.	Major Arterial	1.5	4	Planned - FY 2009	$45,594,800
37	Memorial Parkway Overpass and service roads @ Winchester Rd.	Major Arterial	1	4	To be Added to a Future TIP	$23,994,800
41	Memorial Parkway Overpass & Service Roads @ Mountain Gap Road	Major Arterial	1	4	Planned	$23,994,800
					Total	$133,574,000
					Anticipated Funds	$133,574,000
					Balance	-0-

*All projects in this funding category will not include bike/ped facilities as indicated in **Section 4** and **Section 7**.*

FUNDING CATEGORY: STATE

Map Number (Pg. 4-2)	Project Description	Facility Type	Length in Miles	Current Lanes	Status	Year of Expenditure Estimated Cost
N/A	To be Determined					Unavailable
					Total	Unavailable
					Anticipated Funds	Unavailable
					Balance	Unavailable

FUNDING CATEGORY: INTERSTATE MAINTENANCE

Map Number (Pg. 4-2)	Project Description	Facility Type	Length in Miles	Current Lanes	Status	Year of Expenditure Estimated Cost
22	I-565 from Interstate 65 to Wall Triana Highway	Major Arterial	9.1	4	Planned – FY 2013	$53,000,000
24	I-565 @ County Line Rd. – Interchange	Major Arterial	1	N/A	Planned - FY 2013	$26,522,100
25	I-565 @ Greenbrier Rd – Interchange	Major Arterial	1	N/A	Planned – FY 2013	$15,060,900
					Total	$94,583,000
					Anticipated Funds	$94,583,000
					Balance	-0-

All projects in this funding category will not include bike/ped facilities as indicated in Section 4 and Section 7.

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM ANY AREA (STPAA)

Map Number (Pg. 4-2)	Project Description	Facility Type	Length in Miles	Current Lanes	Status	Year of Expenditure Estimated Cost
1	Ardmore Highway-Alabama Highway 53,Research Park to Jeff Road	Major Arterial	5	2	CN Planned FY 2009	$25,600,000
93	Winchester Rd. , Phase 3 from Naugher Road to Bell Factory Road	Minor Arterial	1.5	2	CN Planned FY 2015	$6,800,000
62	Old Madison Pike from Thornton Industrial Park to Slaughter Rd.	Minor Arterial	0.5	2	CN Planned FY 2010	$3,040,000
2	Ardmore Highway – Jeff Road to North of Harvest	Major Arterial	2.4	2	This amount planned for FY 2009 for Preliminary Engineering	$7,200,000
32	Martin Rd from Zierdt Rd to Laracy Dr	Minor Arterial	3	2	To be funded	$26,500,000
33	Martin Rd from Zierdt Rd to Rideout Rd	Minor Arterial	2.5	2	To be funded	$12,000,000
34	Maysville Rd Connector from Maysville Rd to Epworth Dr	Minor Collector	.32	N/A	CN Planned FY 2014	$2,000,000
					Total	$83,140,000
					Anticipated Funds	$83,140,000
					Balance	-0-

Projects #1, 2, and 62 were designed prior to the FHWA policy regarding bike/ped accommodation. These projects will only include paved bike lanes.

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM HUNTSVILLE URBANIZED AREA (STPHV)

Map Number (Pg. 4-2)	Project Description	Facility Type	Length in Miles	Current Lanes	Status	Year of Expenditure Estimated Cost
12	Church Street (Total project limits from Monroe St. to Oakwood Ave.) Phase 2: Pratt Avenue to Oakwood Avenue	Major Collector	1.3	2	CN FY 2009	$18,400,000
13	Dug Hill Rd.US 431 East to Broad Armstrong Dr	Major Collector	1.5	2	CN Planned FY 2009	$3,120,000
95	Zierdt Rd., Phase 1 from Madison Blvd. to South of Martin Rd.	Major Collector	3	2	CN Planned FY 2013	$6,880,000
18	Hobbs Island Rd.- U.S 231 to Parsons Rd. (Part of Hobbs Island Rd from U.S 231 to U.S 431 project)	Major Arterial	3.5	2	Planned- FY 2016	$11,200,000
47	Meridian Street, Phase 1 from Oakwood Ave. to Pratt Ave.	Minor Arterial	0.7	2	CN Planned FY 2009	$1,600,000
92	Winchester Rd. , Phase 2 from Dominion Cir to Naugher Rd	Minor Arterial	2	2	CN Planned FY 2013	$4,320,000
74	Slaughter Road from I-565 to US 72 West	Minor Arterial	5	2	To be funded	$7,240,000
53	Northern Bypass Ph2 – East of Pulaski Pike to US 231	Minor Arterial	3.3	2	To be funded	$15,688,000
54	Northern Bypass Ph3 – US 231 to Moores Mill Rd	Minor Arterial	2.6	0	To be funded	$8,000,000
55	Northern Bypass Ph4 – Moores Mill Rd to Winchester Rd	Minor Arterial	3	0	To be funded	$8,000,000
56	Northern Bypass Ph5 – Winchester Rd to US 72 East	Minor Arterial	11	0	To be funded	$20,672,000
70	Research Park Blvd and Interchanges from I-565 to Ardmore Hwy-AL 53 (Interchange at Blake Bottom Only)	Major Arterial	5.9	4	To be funded	$6,600,000

*All projects in this funding category will include bike/ped facilities as indicated in **Section 4** and **Section 7**.*

Total	$111,720,000
Anticipated Funds	$111,720,000
Balance	-0-

FUNDING CATEGORY: SPECIAL CONGRESSIONAL APPROPRIATION

Map Number (Pg. 4-2)	Project Description	Type Improvement	Project Type	Status	Year of Expenditure Estimated Cost
H	Church St Bridge @ Big Spring Park	Construct bridge to improve park access and reduce vehicular & pedestrian conflicts	Maintenance & Operations	CN Planned FY 2016	$1,930,000

Total	$1,930,000
Anticipated Funds	$1,930,000
Balance	-0-

Table 10.4: Estimated Cost of Proposed Capacity, Maintenance & Operations, and Enhancement Visionary Projects
Required Federal Funds Only

FUNDING CATEGORY: * HIGH PRIORITY PROJECTS/NATIONAL HIGHWAY SYSTEM CORRIDOR PROJECT

Map Number (Pg. 4-2)	Project Description	Facility Type	Project Type	Length in Miles	Current Lanes	Current Year Estimated Cost
75	Southern Bypass, Phase 1 from I-565 to Martin Rd.	Major Arterial	Capacity	6.5	0	$172,800,000
76	Southern Bypass, Phase 2 from Martin Rd. to Weatherly Rd. Extension	Major Arterial	Capacity	2	0	$136,800,000
77	Southern Bypass, Phase 3 from Weatherly Rd. Extension to US 231	Major Arterial	Capacity	4.5	0	$129,600,000
44	Memphis to Atlanta Highway from I-65 to I-565	Major Arterial	Capacity	8	0	$120,000,000
45	Memphis to Atlanta Highway from Southern Bypass to Marshall County Limits	Major Arterial	Capacity	15	0	$184,800,000
					Total Federal Funds Required:	$744,000,000

*This category is solely dependent upon Congressional Funding; therefore, an accurate estimation of anticipated funds is not available for this category. Funding of these projects will be made available through special appropriations. It is unknown when these appropriations will be made. Projects in this funding category will not include bike/ped facilities as indicated in **Section 4** and **Section 7**.

FUNDING CATEGORY: APPALACHIAN DEVELOPMENT PROGRAM

Map Number (Pg. 4-2)	Project Description	Facility Type	Project Type	Length in Miles	Current Lanes	Current Year Estimated Cost
82	US 72 East/ARC Corridor V Interchange @ Moontown Rd.	Major Arterial	Capacity	1	4	$20,000,000
83	US 72 East/ARC Corridor V Interchange @ Brock Rd.	Major Arterial	Capacity	1	4	$20,000,000
84	US 72 East/ARC Corridor V Interchange @ Eastern Bypass	Major Arterial	Capacity	1	4	$20,000,000
81	US 72 East/ARC Corridor V- Jordan Road Interchange	Major Arterial	Capacity	1	4	$16,800,000
Projects in this funding category will not include bike/ped facilities as indicated in **Section 4** and **Section 7**.					Total Federal Funds Required:	$76,800,000

FUNDING CATEGORY: NATIONAL HIGHWAY SYSTEM

Map Number (Pg. 4-2)	Project Description	Facility Type	Project Type	Length in Miles	Current Lanes	Current Year Estimated Cost
3	Ardmore Highway/Alabama Highway 53 from Harvest Rd. to Tennessee State Line	Major Arterial	Capacity	5.7	2	$37,600,000
42	Memorial Parkway Overpass and service roads at Green Cove Rd.	Major Arterial	Capacity	1	4	$28,000,000
43	Memorial Parkway Overpass and service roads at Hobbs Island Rd.	Major Arterial	Capacity	1	4	$28,000,000
38	Memorial Parkway Overpass and service roads at Meridianville Bottom Rd.	Major Arterial	Capacity	1	4	$28,000,000
39	Memorial Parkway Overpass and service roads at Patterson Ln.	Major Arterial	Capacity	1	4	$28,000,000
40	Memorial Parkway Overpass and service roads at Walker Ln.	Major Arterial	Capacity	1	4	$28,000,000
87	US 72/University Drive from County Line Rd. to Mooresville Rd.	Major Arterial	Capacity	5.2	4	$8,800,000
70	Research Park Blvd and Interchanges from I-565 to Ardmore Highway-AL 53 (includes modifications to interchanges at Research Park Blvd/I-565 and Research Park Blvd/University Dr., and construction of an interchange at Research Park Blvd/Ardmore Hwy-AL 53)	Major Arterial	Capacity	5.9	4	$154,758,000
23	I-565-Oakwood Avenue to High Mountain Road	Major Arterial	Capacity	2	4	$6,800,000
41	Memorial Parkway Overpass- Hobbs Road	Major Arterial	Capacity	1	4	$24,000,000
All projects, except project #3, in this funding category will not include bike/ped facilities as indicated in **Section 4** and **Section 7**.					Total Federal Funds Required:	$371,558,000

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM ANY AREA

Map Number (Pg. 4-2)	Project Description	Facility Type	Project Type	Length in Miles	Current Lanes	Current Year Estimated Cost
6	Balch Rd. Extension from Browns Ferry Rd. to Madison Blvd.	Minor Arterial	Capacity	2.5	0	$9,200,000
8	Blake Bottom Rd. from Indian Creek Rd. to Research Park Blvd.	Minor Collector	Capacity	0.8	2	$4,400,000
9	Brock Rd. from US 72 East to Ryland Pike	Minor Collector	Capacity	2.5	2	$7,120,000
10	Browns Ferry Rd. from Mooresville Rd. to County Line Rd.	Minor Collector	Capacity	5	2	$13,200,000
11	Capshaw Rd. from Jeff Rd. to Old Railroad Bed Rd.	Major Collector	Capacity	2	2	$9,520,000
14	Eastern Bypass, Phase 2 from Quarter Ln. to US 72 East	Major Arterial	Capacity	3.7	2	$14,400,000
15	Eastview Dr. Extension from Hughes Rd. to Sullivan St.	Minor Collector	Capacity	0.5	0	$1,000,000
16	Eastview Drive Extension	Minor Collector	Capacity	2	2	$6,400,000

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM ANY AREA (Continued)

Map Number (Pg. 4-2)	Project Description	Facility Type	Project Type	Length in Miles	Current Lanes	Current Year Estimated Cost
18	Hobbs Island Rd. from US 231 to US 431	Major Arterial	Capacity	11.5	2	$18,400,000
19	Homer Nance Rd. to Jordan Rd. to Winchester Rd.	Major Collector	Capacity	2	2	$4,720,000
20	Hughes Rd. from Old Madison Pike to US 72 East	Minor Arterial	Capacity	3.2	3	$2,480,000
21	Hughes Rd. Extension from US 72 West to Wall Triana Highway	Minor Arterial	Capacity	0.5	0	$1,600,000
27	Jeff Rd., Phase 2 from Capshaw Rd. to Alabama Highway 53	Major Collector	Capacity	5.2	2	$14,000,000
29	Jordan Rd. Phase 1 from Homer Nance Rd. to US 72 East	Minor Collector	Capacity	2	2	$4,720,000
30	Jordan Rd. Phase 2 from Moores Mill Rd. to Homer Nance Rd.	Minor Collector	Capacity	2.3	2	$5,360,000
48	Mill Rd. from County Line Rd. to Hughes Rd.	Minor Collector	Capacity	2.5	2	$4,160,000
50	Moores Mill Rd. from Winchester Rd. to Northern Bypass	Minor Arterial	Capacity	2	2	$6,480,000
58	Old 431 Highway from Wilson Mann Rd. to Highway 431	Major Collector	Capacity	2	2	$1,600,000
60	Old Big Cove Rd. from South Green Mountain Rd. to Highway 431	Major Collector	Capacity	2	2	$1,600,000
64	Old Railroad Bed Rd. Phase 1 from US 72 West to Capshaw Rd.	Minor Arterial	Capacity	1.8	2	$2,640,000
65	Old Railroad Bed Rd. Phase 2 from Capshaw Rd. to Alabama Highway 53	Minor Arterial	Capacity	8.5	2	$13,600,000
68	Portal Lane Extension from Shelton Rd. to Zierdt Rd. Extension	Minor Collector	Capacity	0.5	0	$1,280,000
71	Ryland Pike from US 72 East to Northern Bypass	Major Collector	Capacity	3.75	2	$8,720,000
72	Shelton Rd. from Madison Blvd. to ¼ mile north of Madison Blvd.	Minor Collector	Capacity	0.25	2	$800,000
78	Sullivan St. from Royal Dr. to Front St.	Major Collector	Capacity	0.5	3	$600,000
97	Zierdt Rd. Extension from North of Madison Blvd. to Old Madison Pike	Minor Collector	Capacity	0.8	0	$2,800,000
73	Shields Rd. from Jordan Rd. to Winchester Rd.	Minor Collector	Capacity	1.5	2	$2,320,000
88	Wall Triana Highway from Mill Rd. to US 72 West	Major Collector	Capacity	3.6	2	$8,800,000
94	Winchester Rd. Phase 4 from Bell Factory Road to Tennessee State Line	Minor Arterial	Capacity	9.5	2	$15,680,000
91	Weatherly Road Extension - Memorial Parkway to S. Bypass	Major Collector	Capacity	1.5	0	$15,200,000
90	Wall Triana Highway - Capshaw Road to Yarbrough Road	Minor Arterial	Capacity	4	2	$12,800,000
69	Powell Road – Powell Road to Browns Ferry Road	Major Collector	Capacity	1.5	0	$4,800,000
66	Patton Road – Aerobee Road to Redstone Road	Minor Arterial	Capacity	5	2-3	$16,000,000

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM ANY AREA *(Continued)*

Map Number (Pg. 4-2)	Project Description	Facility Type	Project Type	Length in Miles	Current Lanes	Current Year Estimated Cost
63	Old Madison Pike – Hughes Road to Slaughter Road	Minor Arterial	Capacity	2	2-3	$6,400,000
51	Mt. Lebanon – Grimwood Road to Northern Bypass	Major Collector	Capacity	4.5	2	$14,400,000
49	Moontown Road – Ryland Pike to US 72 East	Major Collector	Capacity	4.5	2	$14,400,000
4	Balch Rd. from Browns Ferry Rd. to Gooch Ln.	Major Collector	Capacity	0.75	2	$7,520,000
31	King Drake Rd. from King Drake Rd. to US 431	Major Collector	Capacity	0.6	0	$2,800,000
59	Old Big Cove Rd. from Hwy 431 to Sutton Rd	Major Collector	Capacity	2	2	$4,720,000
96	Zierdt Rd., Phase 2 from South of Martin Rd. to Beadle Ln.	Major Collector	Capacity	3	2	$9,600,000
5	Balch Rd from Capshaw Rd to Gooch Ln	Major Collector	Capacity	2.2	2	$3,200,000
61	Old Highway 20 from Greenbrier Rd. to County Line Road	Minor Arterial	Capacity	3	2	$9,600,000
26	Jeff Rd, Phase 1 from University Dr. to Capshaw Rd.	Major Collector	Capacity	1.1	2	$2,560,000
17	Greenbrier Rd/Powell Rd. Extension from North of I-565 to US 72 West	Minor Arterial	Capacity	8	2	$24,000,000
79	Swancott Rd. from I-565 to County Line Rd.	Minor Arterial	Capacity	5.5	2	$16,000,000
57	Oakwood Rd. from Adventist Blvd. To Research Park Blvd.	Minor Collector	Capacity	1	2	$2,880,000
52	Nance Rd. from University Dr. to Capshaw Rd.	Minor Collector	Capacity	1.1	2	$2,400,000
7	Beadle Ln. from Swancott Rd. to Zierdt Rd.	Minor Collector	Capacity	2	2	$3,680,000
67	Plummer Rd. from Research Park Blvd. to Indian Creek Rd.	Major Collector	Capacity	0.8	2	$3,200,000
89	Wall Triana Highway from US 72 West to Capshaw Rd.	Major Collector	Capacity	1.4	2	$3,200,000
28	Johns Road- Plummer Road to University Drive	Minor Collector	Capacity	2	2	$6,400,000
46	Meridian Street- Memorial Parkway to Winchester Road	Minor Arterial	Capacity	1.5	2	$4,800,000
All projects in this funding category, except project #91, will include bike/ped facilities as indicated in **Section 4** and **Section 7**.					Total Federal Funds Required:	$393,360,000

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM ANY AREA or SAFETY

Map Number (Pg. 4-2)	Project Description	Type Improvement	Project Type	Current Year Estimated Cost
A	Four Mile Post Rd @ Whitesburg Dr	Signal & major geometric improvements to Four Mile Post Rd approach	Maintenance & Operations	$240,000
B	Enterprise Way @ University Dr	Reduce island width or eliminate to construct additional northbound approach lane to University Dr	Maintenance & Operations	$40,000

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM ANY AREA or SAFETY (Continued)

Map Number (Pg. 4-2)	Project Description	Type Improvement	Project Type	Current Year Estimated Cost
C	Caldwell Ln @ Highway 431	Construction of west to north right turn lane and acceleration lane on Highway 431	Maintenance & Operations	$120,000
D	Old Madison Pike @ Research Park Blvd	Construct joint use pedestrian & bicycle bridge and sidewalk approaches across Research Park Blvd.	Maintenance & Operations	$400,000
E	Explorer Dr @ Pegasus Rd	New traffic signal installation	Maintenance & Operations	$40,000
F	Enterprise Way from Moores Farm to University Dr	Add signal, left turn restrictions island at shopping center exits, a sidewalk, plus 3rd left turn lane to University Dr	Maintenance & Operations	$52,000
G	County Line Rd @ Highway 72	Upgrade displays, phasing and timings and geometric improvements	Maintenance & Operations	$80,000
			Total Federal Funds Required:	$986,000

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-19)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
■ ***Proposed Share the Road /Bike Route Projects***						
N/A	50	Drake Avenue	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Memorial Parkway to Garth Rd	$480
N/A	69	Garth Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Drake Ave to Four Mile Post Rd	$400
N/A	73	Terry Drake Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Old Big Cove Rd to Taylor Rd	$400
N/A	73	Taylor Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Sutton Rd to Terry Drake Rd	$400
N/A	73	James Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Sutton Rd to Miller Ln	$400
N/A	73A	Miller Lane, Caldwell Lane	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from James Rd to King Drake Rd	$400
N/A	22	Mountain Gap Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Memorial Parkway to Todd Mill Rd	$400
N/A	52	Dug Hill Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from US 431S to King Drake Rd	$400
N/A	52	Dug Hill Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs From US 72 E south to Caldwell Ln	$400
N/A	70	Plummer Road	City of Huntsville	Maintenance & Operations	Install "Share the Road " signage from Indian Creek Rd to Jordan Ln	$400

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT (Continued)

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-19)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
■ ***Proposed Share the Road /Bike Route Projects***						
N/A	70	Grizzard Road	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Jordan Ln to Brookline Dr	$400
N/A	70	Chapman Drive	City of Huntsville	Maintenance & Operations	Install "Share the Road "signage from Rueben Dr to Gladstone Dr	$400
N/A	15	County Line Road	City of Madison	Maintenance & Operations	Install "Share the Road "from US 72W to Madison Blvd	$400
N/A	24	Gillespie Road	City of Madison	Maintenance & Operations	Install "Share the Road "signage from County Line Rd to Hughes Rd	$400
N/A	N/A	Palmer Road	City of Madison	Maintenance & Operations	Install "Share the Road "signage from County Line Rd to Balch Rd extension	$400
N/A	19	Sullivan Street	City of Madison	Maintenance & Operations	Install "Share the Road "signage from Dublin St to Mill Rd	$400
N/A	25	Zierdt Road, Shelton Road Ext.	City of Madison	Maintenance & Operations	Install "Share the Road "signage from Madison City Limits to Old Madison Pike	$400
N/A	69	Bailey Cove Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Four-Mile Post Rd south to Hobbs Island Rd	$400
N/A	53	Bell Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Redstone Rd south to Green Cove Rd	$400
N/A	31	Johns Road, Enterprise Way, Explorer Blvd	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Old Monrovia to Old Madison Pike	$400
N/A	64	Oakwood Ave, High Mountain Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Maysville Rd to Chase Rd	$400
N/A	51	Maysville Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from US72E South to Pratt Ave	$400
N/A	69	Green Cove Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Bailey Cove west to Bell Rd	$400
N/A	60	Monroe Street, Green Cove Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Monroe St south on Church/ Gallatin, south on Bonita/Hastings/ Homewood/Chateau/ Queensbury/Cadillac/ Todd Mill/ Chaney Thompson Rd to Green Cove Rd	$400
N/A	30	Four Mile Post, Cecil Ashburn Way, Sutton Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs Whitesburg east to Old 431 South	$400

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT *(Continued)*

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-19)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
■ ***Proposed Share the Road /Bike Route Projects***						
N/A	50	Old Madison Pike	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Wynn Drive east to 9th Ave to Seminole Dr	$400
N/A	51	Cedar Street, Gladstone Drive	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Cedar St, north on Alpine, east on Holly Ave, north on Triana Blvd, northeast on Hall Ave, south on Derrick St, east on Clinton Ave, north on Maysville Rd to Gladstone Dr	$400
N/A	74	Chase Road, Jordan Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Meridian St east to Homer Nance Rd	$400
N/A	76	Winchester Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Pulaski Pike east to Moores Mill Rd	$400
N/A	60	Bankhead Parkway	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Maysville Road east to Nolen Ave	$400
N/A	22	Mountain Gap Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Bailey Cove west thru Memorial Parkway to English Dr west to St. Alban Dr	$400
N/A	60A	Farrow Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Slaughter Rd east to Explorer Blvd to Voyager Way	$400
N/A	70	Old Gurley Road, Harris Hill, Mastin Lake Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from US 72E west to Maysville Rd south to Quietdale Ave, west to Max Luther Dr to Blue Spring Road, north on Millbrook to Broadview/Pulaski Pike, north to Grizzard Rd , north to Mastin Lake Rd	$400
N/A	74	Dan Tibbs/ Stringfield Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Indian Creek Road east to Blue Springs Rd	$400

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT *(Continued)*

Map Number (Pg. 4-2)	Bike Rt. Number (Pg. 7-19)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
■ ***Proposed Share the Road /Bike Route Projects***						
N/A	40	Patton Road, Chadwell Drive	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Patton Rd , east on Telstar Cr, east on Centaur Blvd, north on Squaw Valley, east on Grunden Dr, north in Conger Rd, north on McCalley Pl, east on Village Dr, south on Triana Blvd, east on Johnson Rd, east on Airport Rd, south on Balmoral, east on Breckenridge Dr to Chadwell Dr	$400
N/A	69	Wade Mtn. Preserve-Aldridge Creek	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Hollow Rd south on Meridian/Greene/Franklin and Hastings, east on Drake, south on Garth, east on Four Mile Post to Bailey Cove, south to Mountain Gap	$400
N/A	74	Governors House Drive-Stringfield Road	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Sparkman Dr, east on Technology Dr, north on South Loop Rd, east on Putnam Dr, north on Jordan Ln, east on Sparkman Dr, north on Aspen Dr, north on Grizzard Rd, north on Rosedale Dr to Stringfield Rd	$400
N/A	49	Village Drive, Holmes Avenue	City of Huntsville	Maintenance & Operations	Install Bike Route signs from Village Dr, north on McCalley Pl, east on Archer Dr, north on Lemley Pl, east on Drake Ave, north on Alpine Dr, west Gesman Pl, north on Atlantic St, west on 10th Ave and north on 14th St to Holmes Ave	$400

■ All Proposed Bike Lane and Proposed Share the Road/Bike Route Projects are shown on **Map 7.1** and in **Tables 7.1** and **7.2**. The cost of all bicycle facilities that are associated with proposed road improvements are included in the cost of the road improvement as either a financially constrained projects or visionary project. As mentioned in **Section 7**, additional bicycle facility projects have been identified that do not correlate directly with proposed road improvement projects. These projects are eligible for future enhancement grant monies.

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT *(Continued)*

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
∞ ***Greenways (Shared Use Paths)***					
4 & 5	Balch Road Greenway	City of Madison	Enhancement Unclassified	2.89 mile path from Browns Ferry Road to US 72. Coincides with road project #4 and a portion of #5: Balch Road widening from Browns Ferry Road to Gooch Lane, and Balch Road from Gooch Lane to Capshaw Road	$1,025,418
16	Mill Creek Greenway & Trail	City of Madison	Enhancement Unclassified	1 mile, asphalt, 2 mile natural trail from Hughes Rd to Brownsferry Rd. Greenway project compliments road project # 16: Eastview Drive Extension from Hughes Road to Sullivan Street	$440,000
78	Sullivan Street Greenway	City of Madison	Enhancement Unclassified	.5 mile path from Royal Street to Front Street. This also correlates to Bike Route 50 shown on Map 7.1	$232,475
88	Wall Triana Highway Greenway	City of Madison	Enhancement Unclassified	3.6 mile multi-use path from Mill Rd to US 72	$1,277,336
95 & 96	Zierdt Rd Greenway	City of Huntsville	Enhancement Unclassified	8.75 mile, 12-ft wide asphalt multi-use path from Slaughter Rd to Wheeler National Wildlife Refuge. Includes greenway at Zierdt Road from Madison Blvd to South of Martin Rd and Zierdt Road from South of Martin Rd to Beadle Lane.	$3,104,640
97	Zierdt Rd Greenway, PH 2	City of Madison	Enhancement Unclassified	.8 mile , 12 ft wide asphalt multi-use path on Zierdt Rd from ¼ mile north of Madison Blvd to Old Madison Pike	$283,853
15	Eastview Drive Greenway	City of Madison	Enhancement Unclassified	2.1 mile greenway from West of Slaughter Rd to Hughes Rd. Includes project #18: Eastview Drive from Slaughter Road to Hughes Road	$745,114
63	Old Madison Pike Greenway	City of Madison	Enhancement Unclassified	2.77 mile greenway from Browns Ferry Rd to Slaughter Rd. Includes project of Old Madison Pike from Hughes Road to Slaughter Road. Also is shown as Bike Route 50 on Map 7.1.	$982,840
48	Mill Road Greenway	City of Madison	Enhancement Unclassified	1.07 mile greenway from Sullivan St to Hughes Rd. Includes the parameters of project #52: Mill Road from Hughes Road to County Line Road.	$379,653
68	Portal Lane Greenway (PH 2)	City of Madison	Enhancement Unclassified	.5 mile greenway (multi-use path) from Shelton Rd to Portal Ln Extension	$177,408

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT *(Continued)*

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
∞ ***Greenways (Shared Use Paths)***					
72	Shelton Road Greenway	City of Madison	Enhancement Unclassified	.81 mile greenway from Old Madison Pike to Madison Blvd. Includes the parameters of project #72: Shelton Road from Madison Boulevard to ¼ mile north of Madison Blvd.	$287,400
N/A	Bradford Creek Greenway Phase II	City of Madison	Enhancement Unclassified	1 ½ mile, asphalt multi-use path, from Palmer Park to Westchester Rd	$904,000
N/A	Aldridge Creek Greenway II	City of Huntsville	Enhancement Unclassified	1.0 mile from Four Mile Post Rd to Mira Vista Drive.	$354,816
N/A	Barren Fork/ Miller Branch Greenway	City of Huntsville	Enhancement Unclassified	5.75 mile, 12-ft wide asphalt multi-use path from Martin Rd to Wheeler National Wildlife Refuge	$2,040,192
N/A	Betts Spring Branch Greenway	City of Huntsville	Enhancement Unclassified	2.5 mile, 12-ft wide asphalt multi-use path from Zierdt Rd to Martin Rd	$887,040
N/A	Big Cove Greenway	City of Huntsville	Enhancement Unclassified	8.0 mile, 12-ft wide asphalt multi-use path from Flint River to Monte Sano State Park	$2,838,528
N/A	Big Spring Greenway	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Big Spring Park to Monte Sano Mountain	$1,241,856
N/A	Blevins Gap Greenway	City of Huntsville	Enhancement Unclassified	4.5 mile, 12-ft wide asphalt multi-use path from Big Cove Creek to Bailey Cove Rd	$1,596,672
N/A	Blue Creek Greenway	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Big Spring Park to Monte Sano Reserve.	$1,241,856
N/A	Blue Spring Creek Greenway	City of Huntsville	Enhancement Unclassified	2.5 mile, 12-ft wide asphalt multi-use path from Pinhook Creek to Pulaski Pike.	$887,040
N/A	Broglan Branch N. Greenway	City of Huntsville	Enhancement Unclassified	1.5 mile, 12-ft wide asphalt multi-use path from Stoner Park to Sparkman Dr	$532,224
N/A	Broglan Branch S. Greenway	City of Huntsville	Enhancement Unclassified	1.25 mile, 12-ft wide asphalt multi-use path from Holmes Ave to Huntsville Spring Branch.	$443,520
N/A	Chapman Mountain Greenway	City of Huntsville	Enhancement Unclassified	3.0 mile, 12-ft wide asphalt multi-use from north section of Monte Sano State Park to Alabama A&M University.	$1,064,448
N/A	Dallas Branch Greenway	City of Huntsville	Enhancement Unclassified	.5 mile, 12-ft wide asphalt multi-use path from Pinhook Creek to abandoned L&N railroad corridor.	$38,016
N/A	Dry Creek Greenway	City of Huntsville	Enhancement Unclassified	6.25 mile, 12-ft wide asphalt multi-use path from Providence Main to Pulaski Pike	$2,217,600
N/A	Huntsville Spring Branch Greenway	City of Huntsville	Enhancement Unclassified	10 mile, 12-ft wide asphalt multi-use path from Tenn. River to Holmes Ave.	$2,956,800
N/A	Indian Creek Greenway Ph II-III	City of Huntsville	Enhancement Unclassified	1.5 mile, 12 ft-wide asphalt multi-use path from Creekwood Park to Providence Elementary School.	$532,224

FUNDING CATEGORY: SURFACE TRANSPORTATION PROGRAM: ENHANCEMENT *(Continued)*

Map Number (Pg. 4-2)	Project	Jurisdiction	Project Type	Project Description	Current Year Estimated Cost
∞ ***Greenways (Shared Use Paths)***					
N/A	Knox Creek Greenway	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Wall Triana Hwy to Limestone Creek.	$1,241,856
N/A	Limestone Creek Greenway	City of Huntsville	Enhancement Unclassified	14 mile, 12-ft wide asphalt multi-use path from AL Hwy 20 to Nick Davis Rd	$4,967,424
N/A	McDonald Creek Greenway	City of Huntsville	Enhancement Unclassified	3.0 mile, 12-ft wide asphalt multi-use path from Redstone Arsenal boundary to Alabama Space and Rocket Center.	$1,064,448
N/A	Pinhook Creek Greenway PH 1	City of Huntsville	Enhancement Unclassified	3.0 mile, 12-ft wide asphalt multi-use path from Holmes Ave to Lakewood Elementary School.	$1,064,448
N/A	Pinhook Creek Greenway PH 2	City of Huntsville	Enhancement Unclassified	1.25 mile, 12-ft wide asphalt multi-use path from Medaris Rd to Wade Mountain.	$443,520
N/A	Smithers Mountain Greenway	City of Huntsville	Enhancement Unclassified	4.0 mile, 12-ft wide asphalt multi-use path from Edmonton Heights Park to Spragins Hollow Rd	$1,419,264
N/A	Spacewalk Greenway PH 1	City of Huntsville	Enhancement Unclassified	5.5 mile, 12-ft wide asphalt multi-use path from Blevins Gap to Monte Sano State Park	$1,951,488
N/A	Spacewalk Greenway PH 2	City of Huntsville	Enhancement Unclassified	5.0 mile, 12-ft wide asphalt multi-use path from Blevins Gap to Madison County Nature Trail	$1,951,488
N/A	Spacewalk Greenway PH 3	City of Huntsville	Enhancement Unclassified	3.5 mile, 12-ft wide asphalt multi-use path from Space Walk Phase II to Ditto Landing	$1,241,856
N/A	Tennessee River Greenway	City of Huntsville	Enhancement Unclassified	6.0 mile, 12-ft wide asphalt multi-use path from west of Ditto Landing along the river east to Flint River	$2,128,896
N/A	Wade Mountain Greenway	City of Huntsville	Enhancement Unclassified	6.0 mile, 12-ft wide asphalt multi-use path from Spragins Hollow Rd to Pulaski Pike at Dry Creek	$2,128,896
N/A	Wallace Mountain Greenway	City of Huntsville	Enhancement Unclassified	6.0 mile, 12-ft wide asphalt multi-use path from Spacewalk III terminus to Flint River	$2,128,896
N/A	Weatherly Mountain Greenway	City of Huntsville	Enhancement Unclassified	1.5 mile, 12-ft wide asphalt multi-use path from Hemlock Drive to Mountain Gap Rd	$532,224
N/A	Gooch Lane Greenway	City of Madison	Enhancement Unclassified	1.6 mile greenway from Balch Rd to Hughes Rd	$567,704
N/A	Highland Avenue Greenway	City of Madison	Enhancement Unclassified	1.55 mile greenway from Old Madison Pike to Eastview Dr	$549,960
N/A	Portal Lane Greenway	City of Madison	Enhancement Unclassified	1.04 mile greenway from Hughes Rd to Shelton Rd	$369,008
				Total Federal Funds Required:	$52,479,625

∞ All Greenway Projects are shown on **Map 7.1**. Greenways that are associated with proposed road improvements are indicated by map number. All Greenways (Shared Use Paths) are visionary projects and are not included in the total cost of road improvement projects. As mentioned in **Section 7**, additional greenway projects have been identified that do not correlate directly with proposed road improvement projects. These projects are eligible for future enhancement grant monies.

Appendix A

PUBLIC PARTICIPATION PLAN FOR TRANSPORTATION PLANNING IN THE HUNTSVILLE URBANIZED AREA







HUNTSVILLE AREA TRANSPORTATION STUDY (HATS)

Prepared by the Huntsville Planning Division in cooperation with the Bureau of Transportation Planning, Alabama Department of Transportation

ADOPTED February 27, 2008

RESOLUTION NO. 1-08

HUNTSVILLE AREA TRANSPORTATION STUDY
PUBLIC PARTICIPATION PLAN

WHEREAS, U.S.C. 23 Section 450.316 requires Metropolitan Planning Organizations to develop and use a documented participation plan that defines a process for providing citizens, representative groups, and other specialized users of the transportation network, with reasonable opportunities to be involved in the metropolitan planning process; and

WHEREAS, the U.S. Department of Transportation requires specific public involvement actions to occur as a result of the legislation, including a minimum comment period of 45 days before the public involvement process is initially adopted or revised; and

WHEREAS, the Metropolitan Planning Organization has made available the amended **Public Participation Plan for Transportation Planning in the Huntsville Urbanized Area** for public review at numerous locations for a period of 45 days; and

WHEREAS, the Metropolitan Planning Organization has amended the **Public Participation Plan for Transportation Planning in the Huntsville Urbanized Area**, in accordance with federal legislation;

NOW, THEREFORE, BE IT RESOLVED by the Metropolitan Planning Organization of the Huntsville Area Transportation Study that it hereby adopts the attached **Public Participation Plan for Transportation Planning in the Huntsville Urbanized Area**.

ADOPTED, this the 27th day of February, 2008.

Loretta Spencer
Chairman, Metropolitan Planning Organization

Curtis J. Craig
Secretary, Metropolitan Planning Organization

HUNTSVILLE AREA TRANSPORTATION STUDY
PUBLIC PARTICIPATION PLAN FOR TRANSPORTATION PLANNING IN THE HUNTSVILLE URBANIZED AREA

I. PURPOSE

This Public Participation Plan (PPP) is intended to provide guidelines for public participation activities to be conducted by the Huntsville Area MPO. This plan complies with the U.S. Department of Transportation rules requiring provisions to ensure early and continuing public participation in the development of transportation plans and programs for the Huntsville Area Transportation Study. This plan also ensures that identified Federal, State, local, and non-profit agencies and organizations responsible for plans that may be impacted by transportation planning activities are consulted and included in the public participation process, specifically during the development of the metropolitan transportation plan and the TIP.

II. INTRODUCTION

A. Legal Authority

The Federal Highway Act of 1962 required all urbanized areas with a population of 50,000 or more to establish a continuing, cooperative, and comprehensive (3C) planning process in order to be eligible to receive funding from the U.S. Department of Transportation. This process was further addressed in the 1974 Federal Aid Highway Act, which stipulated that all urbanized areas required to have a 3C planning process also create local Metropolitan Planning Organizations (MPO).

B. History and Composition of the Huntsville Area MPO

An updated agreement concerning a transportation planning process for the Huntsville Urbanized Area was executed in January 1995 by Madison County; the cities of Huntsville, Madison, Triana, and Owens Cross Roads; the Top of Alabama Regional Council of Governments; and the Alabama Department of Transportation. Representatives from these governmental entities comprise the local MPO. Membership of the MPO consists of the following members:

- Chairman of the Madison County Commission
- Mayor of Huntsville
- City Council Member of Huntsville
- Mayor of Madison
- Mayor of Owens Cross Roads

- Mayor of Triana
- Division Engineer for the Alabama Department of Transportation
- Executive Director, Top of Alabama Regional Council of Governments (non-voting)
- Division Administrator for the Federal Highway Administration (non-voting)
- Transportation Planning Engineer for the Alabama Department of Transportation (non-voting)

MPO meetings are called when necessary to adopt or amend transportation plans. Meetings are generally held on the 7th floor of the City of Huntsville Municipal Building at 4:00 pm, typically on a Wednesday. The MPO does not act arbitrarily, but is governed by specific by-laws. A quorum must be in attendance to vote upon issues that are presented before the group. Additionally, the MPO receives public input and advisement before voting on transportation plans. The MPO is advised by two committees: The Technical Coordinating Committee (TCC) and the Citizens' Advisory Committee (CAC). The Technical Coordinating Committee and Citizens' Advisory Committee meet as called. Meetings are generally held on the 7th floor of the City of Huntsville Municipal Building. Typically, the Technical Coordinating Committee meets at 3:30 pm, prior to the prescheduled Wednesday 4:00 pm meeting of the MPO. The Citizens' Advisory Committee typically meets at 5:00 pm on the Monday during the same week as the scheduled MPO meeting. These two committees provide input to transportation planning issues prior to MPO deliberations; however, the MPO is the final body that has legal authority to approve transportation plans and plan amendments.

1. **Technical Coordinating Committee**

   The Technical Coordinating Committee is comprised of technical personnel of operating agencies represented on the MPO, and other agencies (including private, when and if applicable) responsible for or affected by implementation of the transportation plans and programs. Members of the committee are appointed by the MPO.

   According to the by-laws of the TCC, their functions and duties are as follows:

   - To analyze and recommend technical methods, procedures and standards to further the transportation planning process.

   - To help coordinate work of operating departments and agencies participating in the study.

   - To recommend alternate transportation plans and programs to the MPO.

2. Citizens' Advisory Committee

The 1995 agreement concerning the transportation planning process in the Huntsville Urbanized Area includes provisions for public involvement through a representative Citizens' Advisory Committee. This Committee is tasked with the following responsibilities:

- Review and respond to local transportation plans prepared for the area.

- Assess the local areawide transportation and transportation related needs as perceived by area residents.

- Initiate actions related to providing area residents the opportunity to input individual, group, private, and semi-private ideas, suggestions, needs, and concepts for consideration and recommendation to the Metropolitan Planning Organization and/or the Technical Coordinating Committee.

- Objectively assess the social, economic, and physical impact within the area of all transportation plans submitted by the Metropolitan Planning Organization or Technical Coordinating Committee.

- Assist the transportation planning staff, where possible, in the development of specific program solutions to areawide needs as identified through community research and public meetings.

The by-laws of the Citizens' Advisory Committee provide for the committee membership to be composed of 16 members appointed by the officials of local government who serve on the Metropolitan Planning Organization. The membership of the committee is composed of the following:

Eight (8) representatives from the City of Huntsville
Two (2) representatives from Madison County
Two (2) representatives from the City of Madison
Two (2) representatives from the City of Owens Cross Roads
Two (2) representatives from the Town of Triana

The CAC meetings provide a public forum for citizens to provide input to the transportation planning process. Public announcements of CAC meetings are provided to newspapers of general circulation, radio, and television stations within the study area, inviting the participation of the general public in the meetings.

C. Other Public Participation Requirements

In addition to the Citizens' Advisory Committee, the local MPO involves the general public in transportation planning activities through a variety of strategies. Title VI of the Civil Rights Act of 1964 prohibits discrimination in any program receiving federal assistance, and local MPOs must follow those provisions.

Furthermore, federal regulation 23 CFR 450.316 requires MPOs to develop and use a documented participation plan that defines a process of providing reasonable opportunities for the general public as well as transportation users and providers among various modes, to be involved in the metropolitan planning process.

Additionally, the federal regulation requires that the participation plan be developed by the MPO in consultation with all interested parties and shall, at a minimum, describe explicit procedures, strategies, and desired outcomes.

It is based upon these requirements that the Huntsville Area MPO maintains a public participation program.

III. PUBLIC PARTICIPATION PROCEDURES

A. Overview

The local MPO is required by federal legislation to develop and adopt a Long Range Transportation Plan or metropolitan transportation plan, a Transportation Improvement Program (TIP), a Unified Planning Work Program, and a Congestion Management Plan. It shall be the policy of the MPO to conduct public involvement activities before these major plans are to be submitted for formal adoption to the MPO.

This Public Participation Plan (PPP) is intended to provide various techniques which may be implemented when conducting public involvement activities. The PPP also details the specific goals and policies of the MPO for public participation in the planning process.

Public involvement or participation activities coordinated by the local MPO can be placed within the following five broad categories:

1. In accordance with MPO by-laws, regular and special business meetings of the MPO and its advisory committees are conducted in an open public forum with prior notification.

2. The development of the Unified Planning Work Program (UPWP), Transportation Improvement Program (TIP), Long Range Transportation Plan

(LRTP) or metropolitan transportation plan, Congestion Management Plan, and other major transportation policies, plans, or programs identified by the MPO, include opportunities for public comment prior to adoption by the MPO.

3. Individual transportation improvement projects have their own public involvement methods in place. An example would be conducting engineering design public hearings for road widening projects, and taking public comments during and preceding the public hearing.

4. Periodic updates of local MPO activities are available to the public in various ways, including the **Transportation Quarterly Review** newsletter, the official MPO website, and through available staff who may assist inquiring citizens in person, by phone, letter, or e-mail.

5. In order to eliminate or minimize conflicts with other agencies' plans that may impact transportation, consultation with appropriate Federal, State, local, and private agencies and organizations is included in the participation process, more specifically during the development of the metropolitan transportation plan and the TIP.

These five components serve as a general overview of public involvement within the MPO's jurisdiction. While the public participation process for transportation plans and programs shall continue to focus upon the activities of the Citizens' Advisory Committee, the MPO staff will also continue to take advantage of processes already in place to disseminate public information and encourage public participation.

B. Public Participation Techniques

Public participation in planning activities is an on-going process for the MPO. Several techniques are employed on a routine basis to ensure that public involvement is successful. The public involvement and participation techniques listed in this section can be used for special events and for routine activities such as the TIP process and updating the metropolitan transportation plan. The list provided as follows presents a toolbox of techniques that may be utilized. The MPO may select a number of public involvement activities to be exercised during the inception and life of a project or program; however, there may be instances where some techniques may not be appropriate for all circumstances or instances where some techniques are required by federal legislation. The MPO staff must, at their discretion, select the most appropriate public involvement activities for each circumstance. All methods discussed below are currently used by the MPO, and include a description of the technique as well as the activities and outcomes promoted by each method.

1. ***MPO Website:***

The MPO website, hosted by the City of Huntsville's Information Technology Department, was developed in 2001, and includes information about the MPO, membership of the committees, meeting times, and meeting agendas. The site also includes transportation planning publications that can be downloaded such as the TIP, UPWP, Long Range Transportation Plan (metropolitan transportation plan), Congestion Management System, City of Huntsville's Bike Plan, and Transportation Quarterly Review. The MPO website is routinely maintained and updated by the MPO staff. The website is used to promote MPO meetings and special public involvement meetings and public hearings. The site can also be used by the public to download specific published transportation plans and publications. The City of Huntsville's website contains a community bulletin board on its main page, and it has been utilized to announce public hearings and public involvement meetings. Persons can access the MPO website by visiting http://www.hsvcity.com, clicking on Departments, and selecting "Planning Services/Urban Development" or by clicking visiting the MPO website at mpo.hsvcity.com.

2. ***MPO Databases:***

The MPO staff maintains several databases of contacts which include MPO committee memberships; news media; local elected officials; appropriate Federal, State, local, and non-profit agencies and organizations; businesses; and civic organizations that desire to be informed of transportation issues. The databases include the names of individuals, mailing addresses, phone numbers, and in some instances e-mail addresses and fax numbers. The databases are used for MPO meeting notices, newsletter distribution, and other public participation processes as necessary. Citizens may, upon request be added to the appropriate database to either receive the quarterly newsletter, MPO meeting notices, or both. The databases are used to inform citizens of other public involvement activities per their request. The news media are faxed meeting notices of the MPO and are made aware of other public involvement activities. Federal land management agencies, as well as State and local agencies and organizations responsible for economic growth and development, environmental protection, airport operations, freight movement, land use management, natural resources, conservation, historic preservation, and human service transportation providers (including those nonprofits that receive federal assistance from sources other than the Department of Transportation for nonemergency transportation services), will be consulted during the development of the metropolitan transportation plan and the TIP. This will occur so that conflicts with other agencies' plans will be eliminated or minimized. Additionally, the database will be used to identify which entities should be involved in the environmental impact and mitigation portion of the metropolitan transportation plan.

3. ***MPO Newsletter:***

The MPO staff publishes a quarterly newsletter that is distributed to approximately 400 persons, businesses, media, municipalities, and other government agencies. Persons are added to the distribution list by request. Each issue of the newsletter includes the MPO website address, staff point of contact, articles concerning specific projects or meetings, a listing of authorized projects for the current fiscal year, the status of transportation projects for the current fiscal year, and a status of road construction activities. The MPO newsletter informs the public of the status of current and planned transportation projects, and promotes the MPOs' planning studies and other transportation publications.

4. ***Press Releases:***

Press releases are sent to local broadcast and print media, including minority publications, to announce MPO meetings and public involvement meetings. Press releases will be sent to announce meetings, public involvement meetings, and other MPO activities.

5. ***Legal Ads:***

Legal ads are placed in a local publication that has a wide circulation in the community. These ads are placed to announce MPO activities at the discretion of the MPO staff.

6. ***Cable TV Announcements:***

The City of Huntsville operates a government news channel through Comcast Cable Television. Information regarding regular MPO and Citizens Advisory Committee Meetings and other pertinent public information concerning MPO activities is provided to the City of Huntsville Mayor's office to be included in scrolling announcements displayed on the channel. The channel is available to Comcast Cable subscribers located in the City of Huntsville and in portions of Owens Cross Roads, Alabama. This method is used for regular meeting announcements and other pertinent public involvement activities administered by the MPO staff.

7. ***Project-Specific Websites:***

Project-specific websites may be used for individual projects or plans that are significant in scope. The site may be used when the project information is too extensive to be included on the MPOs' web page. The specific site can include meeting announcements, comment forms, project updates, and project team contact information. This is to be used for major planning studies and major MPO projects such as the metropolitan transportation plan or any other pertinent major planning activity.

8. ***Project/Transportation Plan Open Houses:***

The MPO staff conducts open and informal meetings for the public to ask questions and provide comments concerning certain major transportation plans, such as the metropolitan transportation plan and the Transportation Improvement Program (TIP). MPO staff members can interact with the public on a one-on-one basis at these meetings. Additionally, the Alabama Department of Transportation conducts "open house" type meetings and public hearings concerning the design of certain transportation projects and the development of the State Transportation Improvement Program (STIP). The MPO staff attends these meetings as well, to support and supplement the State's public involvement process.

9. ***Availability of Draft Planning Documents for Public Comment:***

The MPO staff will make available copies of draft planning documents for public comment. These documents will be located in public facilities, primarily libraries located strategically throughout the Huntsville-Madison County area, as well as other locations that will facilitate input from a diverse segment of the community's population. Other facilities may include the Department of Parking & Public Transit, the Huntsville Housing Authority Offices, Community Recreational Centers, and other facilities identified by the MPO staff. The MPO staff will distribute draft planning documents for public comment for a minimum of 14 days. In instances where the final metropolitan transportation plan or TIP differ significantly from the version originally submitted for public review, another opportunity will be made available for public comment.

10. ***Citizens' Advisory Committee:***

Members of the Citizens' Advisory Committee are appointed by the elected officials that serve on the MPO Executive Committee. The objectives of this committee are listed on page 3. They provide valuable input to the planning process. This committee meets a minimum of four times a year and as often as required, to be presented and vote on the MPO staff's prepared transportation plans and amendments to other transportation planning documents. Public announcements of these meetings are made, inviting the participation of the general public in the meetings.

11. ***Comment Forms:***

Comment forms are the preferred way for the MPO to receive input pertaining to prepared transportation plans. Specialized forms will be created for each plan or issue requiring input. Comment forms will be made available to citizens at public involvement meetings and will accompany plans left at public facilities for review. Comment forms may be mailed in or handed in at the public involvement meetings. Additionally, comment forms may be received via the MPO's website once the procedures for doing so are established.

12. ***Flyers:***

Flyers are used as one method to announce public involvement meetings and public hearings. Specifically, the flyers note the date, times, and location of the scheduled meetings. Flyers are currently distributed to locations where plans are left for public review.

C. Public Involvement Policies and Objectives

The overall goal of the local MPO is to provide the public with detailed information on transportation planning programs and project development in a convenient and timely manner. The MPO also has a commitment to consult with and coordinate with other pertinent agencies and organizations responsible for other types of planning activities that may be impacted by the adoption of the metropolitan transportation plan and/or TIP. These goals are realized through engaging the techniques previously identified, and incorporating them into the following specific MPO policies and objectives:

Policy 1: The MPO will actively engage the public and appropriate agencies and organizations in the transportation planning process according to the policies contained in this Public Participation Plan, and in accordance with state procedures and federal law.

Objective 1.1: The MPO will maintain an up-to-date database of contacts including at a minimum the following persons:

a. Local elected officials
b. Appropriate local government staff
c. Local transportation agencies and other pertinent agencies/organizations responsible for planning activities that may be impacted by the adoption of transportation plans (such as transit, the Huntsville International Airport, etc.)
d. Local broadcast and print media, including minority outlets
e. Appropriate Madison County Library branches and other public facilities traditionally used for public display of plans
f. Individuals interested in transportation planning activities, per their request

Objective 1.2: The MPO will, when feasible, mail meeting announcements to the MPO contact list for upcoming activities. It is preferred that these announcements be e-mailed.

Objective 1.3: The MPO will announce meetings on the local government cable television channel. This broadcast channel covers the communities of Huntsville and portions of Owens Cross Roads.

Objective 1.4: The MPO will conduct meetings in accordance with the Americans with Disabilities Act (ADA), and provide reasonable accommodations for the disabled community. The public involvement process, as required by federal legislation, must include a methodology of informing the physically disadvantaged segment of the population that would like to participate in the planning process. Public officials must be notified no later than seven (7) days prior to the date of the scheduled meeting so that officials may make special arrangements, if necessary, in order to facilitate their participation in the proceedings.

Objective 1.5: The MPO will contact appropriate agencies and organizations for consultation prior to adoption of the metropolitan transportation plan and the TIP. Refer to Policies 5 and 6 for additional information.

Policy 2: The MPO will keep the public informed of on-going transportation related activities.

Objective 2.1: The MPO will make all draft and final adopted publications and other appropriate documents readily available to the public via the internet, the MPO staff office (City of Huntsville Planning Division), and the main branch of the Huntsville-Madison County Public Library.

Objective 2.2: The MPO staff will be available to provide both general and project-specific information at the MPO staff offices during normal business hours and after hours at the request of groups, with reasonable notice.

Objective 2.3: The MPO will publish a quarterly newsletter (**Transportation Quarterly Review**) for distribution to the MPO contact list. Citizens may be added to the list upon request. The newsletter will include status reports and/or updates on current or recently completed projects, announcements of upcoming meetings or public hearings, and will include a list of authorized projects for the current fiscal year.

Objective 2.4: The MPO will maintain an internet website. The website will be updated as required to provide the most up-to-date information available.

The website, at a minimum, will contain the following information:

a. Current MPO and advisory committee membership
b. Meeting calendars and agendas
c. Links to transportation plans and other MPO publications

Other transportation agencies, transportation related businesses, local governments, and interested groups will be encouraged to provide a link to the MPO website on their organization's website.

Objective 2.5: The MPO will, upon request and as feasible, provide information for inclusion in publications of various special interest groups that publish newsletters including, but not limited to homeowners and neighborhood associations, church groups, civic groups, and other community organizations.

Policy 3: The MPO will utilize visualization techniques to effectively communicate the metropolitan transportation plan and TIP.

Objective 3.1: Documents made available for public review and comment will include appropriate maps, photographs, and/or graphics to better communicate transportation planning goals and objectives.

Objective 3.2: Maps, photographs, and/or graphics depicting specific transportation projects and plans are readily available at the MPO office and will be used to discuss proposed transportation plans, projects, and initiatives to the visiting public.

Objective 3.3: The **Transportation Quarterly Review** newsletter may also include maps, photographs, and graphics as appropriate to clarify transportation planning goals and objectives.

Objective 3.4: Maps, photographs, and/or graphics related to transportation plans may be posted to the MPO's website, as appropriate and necessary.

Objective 3.5: Maps, photographs, and/or graphics related to the metropolitan transportation plan and TIP will be displayed and described during public meetings where the plans are being discussed, as appropriate.

Policy 4: The MPO will encourage the involvement of all citizens within its jurisdiction, especially including those identified by FHWA as "traditionally underserved", in the transportation process [23 CFR 450.316(a)(1)(vii)]. The MPO will furthermore work towards ensuring the full and fair participation in the transportation decision making process by all potentially affected communities.

Objective 4.1: The MPO will, whenever feasible, hold its public involvement meetings, at a location or locations convenient to potentially affected citizens, especially the traditionally underserved population. As mentioned previously, the MPO staff will make available copies of draft planning documents for public comment. These documents will be located in public facilities throughout the Huntsville-Madison County area, as well as other locations that will facilitate input from a diverse segment of the community's population. Other facilities may include the Department of Parking & Public Transit, the Huntsville Housing Authority Offices, Community Recreational Centers, and other facilities identified by the MPO staff. Additionally, the MPO will ensure that broadcast and print media outlets that serve primarily minority populations are included in media

releases concerning upcoming meetings and the distribution of plans for public comment. The staff may also use flyers as a method of public outreach to contact those traditionally underserved to advertise meetings and request comments pertaining to planning documents. Comments will be considered from all citizens, especially the traditionally underserved, in the planning process.

Objective 4.2: The MPO will use data obtained from the latest U.S. Census to determine areas with a concentration of minority or low-income populations. This data will be displayed in map format. The concentration of minority populations is determined by calculating the percentage of the population at the census block group level that exceeds the countywide average for the non-white population. The concentration of low-income populations is determined by calculating the percentage of the population that is at or below the poverty level at the census block group level that exceeds the countywide average for being at the poverty level.

Objective 4.3: The MPO will continue to promote diversity in the membership of its Citizen Advisory Committee. This will be done by encouraging the elected officials that make appointments to the committee, to select members that are of minority status and/or reside in areas that ensure geographic equitability among the membership.

Policy 5: In developing the metropolitan transportation plan and TIP, the MPO will consult with other agencies, officials, and organizations responsible for other planning activities within the metropolitan planning area that are affected by transportation, or coordinate its planning process to the maximum extent practicable with such planning activities.

Objective 5.1: The MPO will develop the metropolitan transportation plan and TIP with due consideration of other related planning activities within the metropolitan area, to include those agencies or organizations receiving federal funds for mass transportation services or other non-emergency transportation services, federal land highways, and federal public lands in accordance with 23 CFR 450.316(b).

Objective 5.2: The MPO will maintain a database of Federal, State, local, and non-profit agencies and organizations as indicated in Section III.B.2. of this document. The database will include agency or organization roles, responsibilities, and the key decision points for consulting with the agencies during metropolitan transportation plan and/or TIP development or update. These entities will be contacted so that plans, maps, and inventories, etc… developed by these agencies may be compared with the metropolitan transportation plan and TIP to ensure compatibility. Documentation of this process will be maintained to demonstrate who was contacted and how contact was made, responses received, results of comparison plans and programs, and how the information was used and its affect upon the metropolitan transportation plan or TIP development or update.

This documentation will be incorporated in the metropolitan transportation plan and TIP documents.

Policy 6: In developing or updating the metropolitan transportation plan, the MPO will consult with appropriate agencies and organizations to identify potential environmental impacts and will consider how such impacts might be mitigated.

Objective 6.1: The MPO will maintain a database of appropriate Federal, State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation in accordance with 23 CFR 450.322(g). These agencies and organizations can assist in the identification of potential environmentally sensitive areas, environmental impacts, and mitigation strategies resulting from the development or update of the metropolitan transportation plan.

Objective 6.2: The MPO will consult with these agencies and organizations to determine environmentally sensitive areas in relation to transportation plans. The consultation will involve as appropriate, the comparison of transportation plans with State conservation plans or maps if available, and the comparison of transportation plans to inventories of natural or historic resources if available. Categories to be assessed may include historic sites and properties, protected lands, parks and landfills, topography, flood plains, wetlands, and other potentially environmentally sensitive areas.

Objective 6.3: The MPO will further assess the impacts upon the area if the plan is implemented, will work with identified agencies and organizations to define potential areawide mitigation measures that may be needed, determine if the identified mitigation could be achieved, and adjust the transportation plan if necessary to minimize or eliminate the environmental concern.

Objective 6.4: Documentation will be made of this process to demonstrate what agency or organization was contacted, the location of capacity or regionally significant projects within the metropolitan area boundary, a description or category of the environmental inventory (i.e., historic properties, wetlands, etc…), and the assessment of any likely impacts resulting from proposed improvements and potential mitigation measures. This documentation will be incorporated into the metropolitan transportation plan.

Objective 6.5: The MPO staff will assess each project identified for improvement in the metropolitan transportation plan and determine if improvements will be in the existing right of way, add capacity, or modify traffic patterns. If no significant impacts are determined, documentation should indicate such. If impacts are realized, then a discussion of potential environmental mitigation (addressing the human and natural environment) will be incorporated into the plan. The discussion will be developed in consultation with federal, state, and tribal land

management, wildlife, and regulatory agencies as appropriate, per 23 CFR 450.322(f)(7).

Policy 7: The MPO will actively participate in public involvement activities for individual transportation improvement projects from the planning phase through construction and will actively participate in the public involvement efforts of other transportation-related government agencies and organizations.

Objective 7.1: The MPO staff will assist, upon request, the Alabama Department of Transportation, local governments, and transportation agencies in the development and implementation of their public involvement techniques for planning and other studies.

Objective 7.2: The MPO staff will assist the Alabama Department of Transportation by attending State sponsored public involvement meetings within the MPO jurisdiction. Additionally, the MPO staff can assist citizens on a limited basis that call or visit the office with questions concerning specific transportation projects.

Objective 7.3: The MPO staff will assist the Alabama Department of Transportation in the coordination of the statewide transportation planning public involvement and consultation processes when requested.

Objective 7.4: The MPO staff will participate in and strive to coordinate its public involvement efforts with other transportation-related government agencies and organizations, especially the Huntsville Department of Parking and Public Transit.

Policy 8: The MPO staff will provide feedback on public comments as required by federal legislation. Additionally, plans that have already been through the public involvement process; yet undergo major modifications, will go through the public involvement process again.

Objective 8.1: When significant written and oral comments are received on the draft metropolitan transportation plan or TIP (including the financial plan) as a result of the public involvement process, a summary, analysis, and report on the disposition of comments shall be made a part of the final plan and TIP [23 CFR 450.316(a)(2)].

Objective 8.2: If the final metropolitan transportation plan or TIP differs significantly from the one which was made available for public comment by the MPO and raises new material issues which interested parties could not reasonably have foreseen from the public involvement efforts, an additional opportunity for public comment on the revised plan or TIP shall be made available [23 CFR 450.316(a)(1)(viii)].

Policy 9: The MPO will work towards continually improving its public involvement practices.

Objective 9.1: The MPO will continuously evaluate its public participation and involvement techniques, according to the procedures outlined in **Appendix A - Public Participation Evaluation Procedures.**

Objective 9.2: This PPP will be reviewed and adopted, with modifications if necessary, at least every three years.

IV. REVISIONS AND AMENDMENTS

This Public Participation Plan reflects the current procedures of the Huntsville Area Metropolitan Planning Organization. This plan will be reviewed every three years and revisions will be made if necessary. The Public Participation Plan will be reviewed by the MPO in terms of its effectiveness in assuring that the process provides full and open access to all. Plan revisions will be based upon evaluation of the techniques implemented for public involvement.

The MPO shall publish these procedures and provide 45 days for written public comment before adoption by the MPO. This action will be advertised in a newspaper of general circulation, including the locations where plans will be made available for review and comment. The same procedure shall be followed when the MPO makes revisions to this Public Involvement Plan.

This Public Participation Plan, dated February 27, 2008 supersedes the **Public Involvement Procedures for Transportation Planning in the Huntsville Urbanized Area**, previously approved by the MPO, dated August 24, 2005. The adoption of this plan is made possible through the adoption of Resolution 1-08, approved by the MPO on February 27, 2008.

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APPENDIX A
PUBLIC INVOLVEMENT EVALUATION PROCEDURES

Federal regulation 23 CFR 450.316(a)(1)(x) requires that the MPO evaluate the effectiveness of its public involvement program on a periodic basis. In evaluating its processes, the MPO may determine to no longer utilize techniques that are deemed ineffective, or to initiate the use of other innovative techniques that provide better response and more positive feedback. The purpose of this appendix is to establish guidelines for the evaluation of public involvement techniques identified in the **Public Participation Plan for Transportation Planning in the Huntsville Urbanized Area**.

This appendix will outline the steps to be taken to evaluate the identified public involvement techniques and will identify measures to quantify success rates and outline strategies to improve the MPOs' public involvement process.

Evaluation Methods and Performance Goals

In order to evaluate the effectiveness of public involvement tools identified in this document, methods need to be established to measure or gauge performance. The methods used for evaluating the performance of the public involvement techniques in this plan consist of surveys, quantitative analysis, and qualitative analysis. A definition of each of these methods is provided below. Additionally, **Table 1** lists each public involvement technique, along with performance goals and the methods for reaching those goals.

Surveys

Surveys can be conducted in person, by phone, by mail, or by e-mail. The selection of the best type and extent of survey for evaluation purposes is dependent upon the actual public involvement technique being evaluated. For example, persons may be asked if the meeting notices shown on the local government cable channel is an effective notification tool.

Quantitative Analysis

Quantitative analysis can be achieved through the use of statistics. For instance, the number of persons attending a public involvement meeting can be compared to the number of persons notified of the meeting.

Qualitative Analysis

Qualitative analysis is more objective. It deals primarily with MPO staff review of certain techniques, with improvements listed and/or changes proposed. Qualitative analysis can be used to evaluate web sites as well as the content of newsletters.

TABLE 1
PUBLIC INVOLVEMENT/PARTICIPATION TECHNIQUES EVALUATION

Public Involvement Tool	Performance Measure	Performance Goal	Actions to be Taken to Meet Goal
Public Participation Plan	No measure used. The PPP should reflect the policies and preferences of the MPO.	None.	The PPP will be updated every three years, and will include the improvement strategies determined through public involvement evaluations.
MPO Website	Number of hits to site.	Minimum of 25 hits a quarter, with a goal of increasing hits by 3% per quarter.	Use other public involvement tools to promote the use of the website.
MPO Database	Number of returned mail items.	Maximum of 2% return rate per mailing.	Immediately correct database when mail is returned.
MPO Newsletter	Phone calls, letters, e-mails, number of returned newsletters.	Maximum of 2% return rate per mailing.	Continue providing information that gets favorable attention; correct or improve items that receive negative feedback.
Press Releases	Phone calls, letters, or e-mails from media or public.	None.	Keep media continually informed of meetings and opportunities for public input.
Legal Ads	Phone calls, letters, or e-mails from media or public.	None.	Provide plan review notices and meeting announcements to newspaper in timely manner, so the public can be effectively notified and the news media can highlight upcoming meetings and issues.
Cable TV Announcements	Phone calls, letters, or e-mails from public.	Minimum of 5% of public involvement meeting attendees/survey respondents in coverage areas indicate that they saw the meeting notice.	Provide plan review notices and meeting announcements to Mayor's office in timely manner, so announcements can be broadcast more frequently.
Project Specific Websites	Phone calls, letters, e-mails from public, number of site hits.	Minimum of 25 hits a month when used, with a goal of increasing hits by 3% over life of page.	Use other public involvement tools to promote the use of the website.

TABLE 1
PUBLIC INVOLVEMENT/PARTICIPATION TECHNIQUES EVALUATION
(Continued)

Public Involvement Tool	Performance Measure	Performance Goal	Actions to be Taken to Meet Goal
Project/Transportation Plan Open Houses	Phone calls, letters, or e-mails from media or public, attendance. (ALDOT sponsored meetings will not be evaluated by MPO staff.)	Minimum of 15 persons in attendance per meeting. (This goal may not be met, as the public tends not to attend involvement meetings en masse, even though meetings are widely advertised.)	Multiple meetings will be scheduled at times and locations convenient to public. Will use other public involvement tools to promote meeting locations, dates, and times.
Availability of Draft Planning Documents for Public Comment	Phone calls, letters, e-mails, comment sheets.	Number of persons returning comments concerning the plans.	Staff should monitor number of blank comment sheets left with plans at public facilities. Draft planning documents should be left at multiple central locations throughout the MPO study area.
Citizen Advisory Committee	Phone calls, letters, or e-mails from invitees.	N/A. These members are appointed by elected officials in the study area.	The MPO should encourage members to attend meetings. Elected officials should be encouraged to appoint citizens that promote racial, geographic, and economic diversity.
Comment Forms	Phone calls, letters, e-mails, number of responses.	60% of meeting attendees returned a form, or 20% of completed comment sheets were returned with plan left at public facilities.	Stress importance to citizens of receiving public comments. Use other public involvement tools to advertise locations of comment forms and desire to receive input.
Flyers	Calls, letters, e-mails, number of persons reached.	Minimum of 5% of meeting attendees indicate that they saw the meeting advertised via flyer.	Place public notices prominently on bulletin boards or other central locations offered by public facilities.

Improvement Strategies

The Huntsville Area MPO strives to improve public participation through increasing public awareness and by improving upon the public involvement techniques highlighted in this document. The decisions made by the MPO affect the residents of the community, and the public must be aware that their involvement is critical to the transportation planning process.

It is important that public involvement be evaluated, and its effectiveness measured. Utilizing the performance measures detailed in **Table 1** to evaluate each technique, and periodically testing its effectiveness is critical if public involvement is to be successful.

Within one month of completing a major public involvement process, the evaluation of techniques utilized in the process should be conducted. For on-going activities, such as internet websites and MPO newsletters, the evaluation should be performed semi-annually. **Attachment 1** provides a form to record the type of evaluation conducted. **Attachment 2** is provided as a template or guide for the evaluation process, and is used to record improvement strategies. Each time an evaluation is conducted, specific improvement strategies should be identified for implementation the next time the technique is employed. If an improvement is needed for a routine public involvement activity, such as the website or MPO newsletter, deadlines for implementing the improvement should be set.

ATTACHMENT 1
HUNTSVILLE AREA TRANSPORTATION STUDY OF THE METROPOLITAN PLANNING ORGANIZATION

PUBLIC PARTICIPATION EVALUATION FORM

This form should be completed for evaluating public involvement techniques

Evaluation of: ☐ Specific Planning Document - _____

☐ Specific Technique - _____

☐ Other - _____

List all of the public involvement technique(s) used:

Briefly describe all techniques used during the process:

Audience(s) Targeted for Public Involvement:

Type of Evaluation(s) to be conducted: ☐ Survey ☐ Statistical Analysis ☐ Qualitative

If survey, check type: ☐ In Person ☐ Telephone ☐ Written ☐ Mail-back ☐ E-mail

Targeted Respondents: _____

If Statistical Analysis, describe method(s):

Date Evaluation Began: _____ Date Completed: _____

Completed By:

ATTACHMENT 2
HUNTSVILLE AREA TRANSPORTATION STUDY OF THE METROPOLITAN PLANNING ORGANIZATION

PUBLIC PARTICIPATION EVALUATION IMPROVEMENT STRATEGIES FORM

Technique being Evaluated:
Date Evaluation Completed:
Recommended Improvement Strategies:
Date(s) of Implementation:

Appendix B

PLAN COORDINATION WITH OTHER AGENCIES & PUBLIC COMMENT

1.0 SAFETEA-LU Requirements for Agency/Organization Review and Public Comments

In accordance with SAFETEA-LU, appropriate agencies and organizations as well as the general public were given opportunities to comment upon the **Year 2035 Transportation Plan.** These requirements are clarified in **Appendix A** of this document, "Public Involvement Procedures."

Prior to adoption of the **Final Draft Year 2035 Transportation Plan**, all comments received by the other agencies, organizations, and the public were incorporated into the plan. The type of comments received did not change the overall content or intent of the plan. There were some grammatical corrections and reformatting changes that did not impact the overall nature of the document.

2.0 Plan Coordination With Other Agencies and Organizations

During the development of this plan, the MPO staff performed outreach to other agencies and organizations responsible for other planning activities within the metropolitan planning area that are affected by transportation, and coordinated its planning process with such planning activities. In accordance with SAFETEA-LU, the MPO staff developed a documented process that outlines roles, responsibilities, and key decision points for consulting with other governments and agencies. **Table 1** provides a breakdown of each Section of the plan, and which entity was consulted for what reason, and what the final results were.

Additionally, correspondence was sent to each agency requesting that they review the **Draft Year 2035 Transportation Plan** and compare it to their plans, and to provide any additional input to the draft document. This correspondence, as well as written agency responses, is found in **Attachment 1**. The Alabama Department of Transportation-Plans Division was also the recipient of a preliminary draft plan. Their comments and the MPO staffs' response to the comments are also found in **Attachment 1**.

Once the **Draft Year 2035 Transportation Plan** was adopted by the MPO, the Federal Highway Administration submitted comments. The Alabama Department of Transportation submitted additional comments as well. These comments have been addressed by the MPO staff. The comments and the disposition of those comments follow in **Attachment 1**.

Table 1: Database of Official Agency/Organizations Consulted For Input Prior to Long Range Transportation Plan Adoption

SECTION I: INTRODUCTION – Provides general information. No input from outside agencies required.							
SECTION II: MODELING – Provides specific information regarding the model utilized in the study, and as approved by ALDOT. No real input required from outside agencies, except to ensure that ALDOT approves the model outcomes as being correct.							
SECTION III: GROWTH FORECAST - Provides specific information regarding growth patterns in the study area. US Census data will be used.							
SECTION IV: HIGHWAY ELEMENT							
Agency or Organization	**Name & Phone Number**	**Roles & Responsibilities**	**Key Decision Points for Contact**	**Date Contacted**	**How Contacted**	**Responses Received**	**Results & How Info was Used**
ALDOT	Steve Williams (334) 242-6425	State Planner – Coordinates with MPO staff the update of the model used in the long range plan.	Contact periodically during the update process as needed to validate base year model	September/ October 2009	E-mail and phone	Exchange of external trips data files for future year	Data was used to calibrate and validate the model base year 2005
Madison County Engineering	David Pope 746-2900	County Engineer – Responsible for civil engineering projects in rural Madison County	Contact for traffic count data collected by his office as needed; Provide information concerning outcomes of model and proposed projects	10/22/09	Mailed draft plan and letter requesting comments by 11/16	Comments concerning the Functional Classification Map being outdated	Comments were used in part to update Functional Classification Map and to add two additional county roads as requested
City of Madison Engineering	Gary Chenowyeth 772-8431	City Engineer – Responsible for civil engineering projects in the City of Madison	Contact for traffic count data collected by his office as needed; Provide information concerning outcomes of model and proposed projects	9/09 meeting and 10/22/09	Mailed draft plan and letter requesting comments by 11/16	Comments on road projects in the City of Madison	Comments were received and changes in plan were implemented
Town of Owens Cross Roads	Curtis Craig 725-4917	Mayor – Responsible for civil engineering projects in Owens Cross Roads	Provide information concerning outcomes of model and proposed projects	10/22/09	Mailed draft plan and letter requesting comments by 11/16	Voted to approve the plan	Voted to approve the plan
Town of Triana	Mary Caudle 772-0151	Mayor – Responsible for civil engineering projects in Triana	Provide information concerning outcomes of model and proposed projects	8/09 and 10/22/09	Phoned for meeting and mailed draft plan and letter requesting comments by 11/16	No comments	None

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
City of Madison Planning Division	Bob Atallo & Johnny Blizzard 772-5644	Director of Planning; land use; economic development and growth	Inquire about any future project's interference with planned growth or development	9/09 meeting and 10/22/09	Mailed draft plan and letter requesting comments in October	Comments on road projects in the city of Madison	Comments were received and changes in plan were implemented
Redstone Arsenal	Joe Davis, Public Works Director 876-3516 or Tom Richardson, RSA's TCC member	Can determine if any proposed LRTP projects would interfere with RSA growth and their public works projects	Inform if access points to RSA are included in the LRTP; A RSA representative sits on the MPO's TCC, and provides comments prior to plan adoption	Meetings were held in the summer of plan update, and agreement on key roads requiring improvement was reached. Also sent info in 9/09 and 10/22/09.	Meetings and mailed draft plan and letter requesting comments in September & October	No other comments to be made	All needed road projects providing access to RSA employees were incorporated in the plan.
TARCOG	Bob Culver, Director 830-0818	Can determine if proposed LRTP projects would interfere with any other regional plans; economic development	Provide draft copy of the plan. TARCOG sits on the MPO's TCC and Executive Committee, and provides comments prior to plan adoption	10/22/09	Mailed draft plan and letter requesting comments by 11/16	Approved plan.	Approved plan.
NASA	Ralph Allen, TCC Member 544-2121	Reviews plans in draft form and can provide comments	Provide a copy of the draft plan. A NASA representative sits on the MPO's TCC, and provides comments prior to plan adoption	10/22/09	Mailed draft plan and letter requesting comments by 11/16	Approved plan.	Approved plan.
Madison County Commission – TRAM and Planning & Economic Dev.	Phyllis Seymore 533-3505	Project Manager –Can determine if proposed road projects are in conflict with County's plans/land use	Contact to see if county projects may hamper economic development and growth	10/22/09	Mailed draft plan and letter requesting comments by 11/16	Department approved plan.	Approved plan.

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
City of Huntsville Traffic Engineer	Richard Kramer 427-6850	Traffic Engineer – Responsible for traffic operations in Huntsville	Contact for traffic count data collected by his office as needed	10/22/09	Mailed draft plan and letter requesting comments by 11/16	Requested we use up-to-date traffic counts and not 2005 counts	Explained that we had to be consistent with State/FHWA requirements for a 2005 base year
Wheeler National Wildlife Refuge	Dwight Cooley, Project Leader 256-350-6639	Can determine if proposed LRTP projects would interfere with any growth plans for the refuge; land conservation	Contact to verify any updates to their plans if any proposed project is in close proximity to the Refuge	10/22/09	Mailed draft plan and letter requesting comments by 11/16	No comments.	Projects do not infringe upon refuge boundaries…Really not applicable.
Monte Sano State Park	Kent Wilbourne, Manager 534-3757	Can determine if proposed LRTP projects would interfere with any growth plans for the park ; land conservation	Inform if access points to the park or projects in the park are included in the LRTP	10/22/09	Mailed draft plan and letter requesting comments by 11/16	No comments.	Projects do not infringe upon park boundaries…Really not applicable.
Ditto Landing (Huntsville Marina & Port Authority)	George Brakefield, Acting Director 882-1057	Reviews plans in draft form and can provide comments; land use and conservation of water resources/marina property	Contact during the draft phase of the plan. A Ditto Landing rep. sits on the MPO's TCC, and provides comments prior to plan adoption	10/22/09	Mailed draft plan and letter requesting comments by 11/16	No comments.	Projects do not infringe upon marina boundaries… Really not applicable.

SECTION V: HIGHWAY PROJECT EVALUATION – Results are Displayed in the Long Range Transportation Plan, Table 5.2; More Information Follows Below							
Agency or Organization	**Name & Phone Number**	**Roles & Responsibilities**	**Key Decision Points for Contact**	**Date Contacted**	**How Contacted**	**Responses Received**	**Results & How Info was Used**
Huntsville International Airport	Rick Tucker 772-9395	Director of Airport; economic development and growth; freight and inter-modal transportation; land use; airport operations; freight movement and logistics	Inquire about any future project's interference with the Airport's planned growth or development; Work with Airport rep to ascertain additional information	5/20/09 and 10/22/09	Mailed draft plan and letter requesting comments by 11/16	Provided data per Section 9 of the long range plan; no additional response.	Refer to Section 9 of this table
City of Huntsville Natural Resources Department	Danny Shea, Director 427-5750	Reviews plans in draft form & can provide comments; Monitors air quality/environmental quality in the City of Huntsville; Can advise on air quality & sources of air pollution; Works w/ADEM	Contact during the draft phase of the plan. A Natural Resources representative sits on the MPO's TCC, and provides comments prior to plan adoption	9/09 and 10/22/09	E-mail request for assistance re: Huntsville MPO air quality; Mailed draft plan and letter requesting additional comments by 11/16	Provided updated air quality information as requested.	Data was incorporated within the plan.
City of Huntsville GIS Department	Tim Barnes, Director 427-5100	Maintains and retains inventory of cemeteries, historic properties, parks and recreational areas, landfills, topographical features, protected lands, wetlands, floodplains, and other environmentally significant and sensitive features located within the MPO's Study Area. Maps are either from FEMA, US Fish and Wildlife, USGS, other federal agencies, or locally derived	Contact during draft phase of the plan. Determine if there are any proposed projects that may pose environmental impacts	MPO staff referred to products maintained by the GIS office throughout the plan update. Also, formally contacted on 10/22/09 for any other input	MPO staff gathered data through traditional means: GIS staff, maps on file, etc… Also, mailed draft plan and letter requesting any additional comments by 11/16	GIS staff available for any assistance in procuring additional mapping needs required for env. study.	Information was incorporated into the plan.

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
Huntsville Land Trust	Andy Prewett – Land Manager 534-5263	Maintains inventory of Land Trust Properties, and can inform MPO of future planned acquisitions and plans for preservation or green space through their conservation program	Contact during draft phase of plan. Determine if there are any proposed acquisitions that may pose environmental impacts	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	No comments.	MPO staff has inventory of land trust properties and plans. No significant impact found.
Alabama Forestry Commission	Visit Website @ www.forestry.state.al.us or call locally at 776-8956; Montgomery # is: 334-240-9300	Maintains list of Champion Trees per County. Publication is available on line.	Contact during draft phase of plan to obtain list of local "protected" trees	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	No comments.	MPO staff's research showed no problems re: projects and champion trees
Wheeler National Wildlife Refuge	Dwight Cooley, Project Leader 256-350-6639	Can determine if potential LRTP projects would interfere with any growth plans for the refuge; land conservation	Contact to verify any updates to their plans if any proposed project is in close proximity to the Refuge. If so discuss mitigation activities	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	No comments.	Projects do not infringe upon refuge boundaries … Really not applicable.
Monte Sano State Park	Kent Wilbourne, Manager 534-3757	Can determine if proposed LRTP projects would interfere with any growth plans for the park; land conservation	Inform if access points to the park or projects in the park are included in the LRTP. If encroachment is an issue, discuss mitigation activities	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	No comments.	Projects do not infringe upon park boundaries … Really not applicable.

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
Ditto Landing (Huntsville Marina & Port Authority)	George Brakefield, Acting Director 882-1057	Reviews plans in draft form and can provide comments; land use and conservation of water resources/marina property	Contact during the draft phase of the plan. A Ditto Landing representative sits on the MPO's TCC, and provides comments prior to plan adoption. If proposed projects affects their properties, discuss mitigation activities	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	No comments.	Projects do not infringe upon marina boundaries … Really not applicable.
Huntsville International Airport	Rick Tucker 772-9395	Director of Airport; economic development and growth; freight and inter-modal transportation; land use; airport operations; freight movement and logistics	Inquire about any future project's interference with the Airport's planned growth or development; If encroachment is an issue, discuss mitigation activities; Work with Airport representative to ascertain additional information	5/20/09 and 10/22/09	Mailed draft plan and letter requesting comments by 11/16	Provided data per Section 9 of the long range plan; no additional response.	Refer to Section IX of this table
Alabama Department of Environmental Management	Primarily the Land Division 334-271-7730 Website: adem.state.al.us	Can provide additional info re: landfields and permits if needed. Primary agency for environmental issues is Huntsville Department of Natural Resources	Determine if there are any projects that may impact environ-ment	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	Received response 10/26/09 with no objections, but a request that projects comply with storm water permitting regulations and all applicable ADEM regs	Response noted, and letter incorpor-ated in this Section.

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
Alabama Historic Commission	Elizabeth Brown, Director-Historic Preservation 334-230-2667 www.preserveal.org	Maintains list of historic structures Statewide	Determine if there are any projects that may impact recognized historic properties	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	Received response 11/12/09 with no objections to the overall document. Requests "eligible" properties for the National Register of Historic Places be included in the Section, and that field research would determine eligibility.	Response noted, and correct-ions incorpor-ated in the plan.
National Register of Historic Places	202-354-2213 or www.nps.gov/history/nr/	Maintains searchable list of historic structures nationwide	Determine if there are any projects that may impact recognized historic properties	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	No comments	MPO staff informatio n/data revealed no significant impacts
Alabama Dept. of Conservation & Natural Resources	State Lands Division 334-242-3484 (James Griggs, Director) State Parks Division 334-242-3334 (Mark Easterwood, Director)	Can advise if proposed projects will impact nearby State Parks, State Public Lands, or the future plans/future acquisitions of State preservation property where "open space" is available	Determine if there are any projects that may impact any current properties or future planned acquisitions of open space	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	Noted that internet link typed in hard copy plan was incorrect.	Made correction

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
Dept. of the Interior – Bureau of Land Management	Eastern States (Jackson Field Office) 601-977-5400 Bruce Dawson, Field Manager Grace Guess, Asst. Field Manager	Manages BLM activities in eastern States, to include Alabama	While the MPO area does not have any prescribed federal lands under the manage-ment of the BLM, there are some resources, plans, or other documents that could be useful reference materials in writing this section	Various times during plan update	Website	N/A	N/A
Geological Survey of Alabama	No name available 205-349-3589 www.gsa.state.al.us	Maintains geologic maps and resources/data for the State of Alabama	Browse website for any pertinent information that may be useful in developing this section…	Various times during plan update	Website	N/A	MPO's data was sufficient for plan update.
Alabama Soil and Water Conservation Committee/ Nat. Resources Conservation Service (Fed. counterpart)	256-532-1692 Kathy Walker (Madison Co.) http://swcc.state.al.us	Has maps available on line that shows watersheds	Browse website for any pertinent information that may be useful in developing this section. Can review project locations in reference to area watersheds, etc…	Various times during plan update	Website	N/A	MPO's data was sufficient for plan update.

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
US Geological Survey	http://www.usgs.gov/ (Contacts available by searchable categories)	Has maps available as well as other pertinent information	While the MPO has a set of the USGS maps for topography, etc…the website may be beneficial to research for any other information that could be used to develop this section	Various times during plan update	Website	N/A	MPO's data was sufficient for plan update.
SECTION VI: PUBLIC TRANSPORTATION ELEMENT							
City of Huntsville Public Transit	Kim Smith 427-6800	Accountant – Responsible for grant management of transit program	Contact to verify accuracy of Transit section of plan	7/23/09 8/3/09	E-mail and phone	Received all requested information	Provided updated infor-mation to incorpor-ate into plan
Madison County Commission – TRAM and Planning & Economic Development	Phyllis Seymore 533-3505	Project Manager – Responsible for grant management - transit program	Contact to verify accuracy of Transit section of plan.	7/23/09	E-mail and phone	Received all requested information	Provided updated infor-mation to incorpor-ate into plan
TARCOG	General Staff 830-0818	Responsible for maintenance of the Coordinated Transit Plan or distribution of JARC funds	Contact to determine status of private/non profit agencies that may have applied for JARC funding.	6/10/09	In person	Received all requested information	Provided updated infor-mation to incorpor-ate into plan
City of Madison Transit (non-federally funded program)	Elise Kirkland 772-9300	Manager – Responsible for Madison funded transit program.	Contact to verify accuracy of Transit section of plan.	8/4/09	By phone	Received all requested information	Provided new infor-mation for plan

SECTION VII: BIKE/PED ELEMENT							
Agency or Organization	**Name & Phone Number**	**Roles & Responsibilities**	**Key Decision Points for Contact**	**Date Contacted**	**How Contacted**	**Responses Received**	**Results & How Info was Used**
City of Huntsville Planning Dept.	Planner(s) responsible for bicycle, pedestrian, greenways planning	Responsible for bicycle, pedestrian, greenways planning	To provide current plans regarding bike/ped/ greenway plans in Huntsville. Any improve-ments are typically funded by the City of Hsv.	Various times during plan update	In person – is a MPO staff member	MPO staff member updated this section	Informa-tion was incorpor-ated into the plan
City of Madison Planning Dept.	Planner(s) responsible for bicycle, pedestrian, greenways planning	Responsible for bicycle, pedestrian, greenways planning	To provide current plans regarding bike/ped/ greenway plans in Madison. Any improve-ments are typically funded by the City of Madison	September meeting and various times in October	Personal meeting, phone call, and mailed draft plan and letter requesting comments by 11/16.	Comments regarding the expansion of Greenways and Bikeways in Madison	Comments were used in part to help create the MPO Bike/Ped-estrian Plan
Madison County Engineering Dept.	David Pope, County Engineer 746-2900	Responsible for any public works type improvement in the County RW	To determine any plans regarding bike/ped/ greenway plans in Madison County	10/22/09	Mailed draft plan and letter requesting comments by 11/16.	Approved plan	Approved plan

SECTION VIII: CONGESTION AND SAFETY MANAGEMENT AND SECURITY ELEMENT							
Agency or Organization	**Name & Phone Number**	**Roles & Responsibilities**	**Key Decision Points for Contact**	**Date Contacted**	**How Contacted**	**Responses Received**	**Results & How Info was Used**
City of Huntsville Traffic Engineer	Richard Kramer Tom Sisco Dennis Thompson Jo Sommers 427-6850	Traffic Engineer – Responsible for traffic operations in Huntsville	To provide locations of congestion management and safety improve-ments (mainten-ance and operations projects); Provide updated information for ITS program for Huntsville and the region identified in the ITS regional plan; Provide traffic accident data via CARE program.	7/23/09	Phone, e-mail, in person	Received all requested information	Provided updated informa-tion to incorpor-ate into plan
Madison County Engineering	David Pope 746-2900	County Engineer – Responsible for civil engineering projects in rural Madison County	To provide locations of improveme nts if county roads are in priority list	N/A	N/A	N/A	Most problems to be corrected by CN projects scheduled in the TIP.
City of Madison Engineering	Gary Chenowyeth 772-8431	City Engineer – Responsible for civil engineering projects in the City of Madison	To provide locations of improve-ments if Madison roads are in priority list	N/A	N/A	N/A	Most problems to be corrected by CN projects scheduled in the TIP. Provided update re: intersect-ion improve-ments @ US 72 & Hughes Rd

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
City of Huntsville Public Transit	Kim Smith 427-6800	Accountant – Responsible for grant management of transit program	Provide data for performanc e measures	7/23/09 8/3/09	E-mail and phone	Received all requested information	Provided updated informa-tion to incorpor-ate into plan
Madison County Commission – TRAM and Planning & Economic Development	Phyllis Seymore 533-3505	Project Manager – Responsible for grant management - transit program	Provide data for perform-ance measures	7/23/09	E-mail and phone	Received all requested information	Provided updated informat-ion to incorpor-ate into plan
City of Huntsville Public Transit	Kim Garrett 427-6800	Manager, Public Transit	Provide data re: security initiatives on the transporta-tion system	8/3/09	E-mail and phone	Received all requested information	Provided updated informa-tion to incorpor-ate into plan
SECTION IX: MULTIMODAL TRANSPORTATION ELEMENT							
Huntsville International Airport Authority	Barbie Peek or Public Affairs Office, 772-9395	Maintains data and information concerning the airport, development, and its other facilities and interests	To determine general airport activities, passenger and cargo hubbing, intermodal facilities and activities	5/20/09	E-mail and phone	Received all requested information	Provided updated informa-tion to incorpor-ate into plan
Huntsville-Madison County Railroad Authority	Laurilee Hollister/Karen Monroe, 535-6516 KPMonroe@hmcrr.com	Owns and operates a portion of railroad in Madison County.	Can discuss scheduled improve-ments, long range plans for railroad	5/18/09	E-mail and phone	Received all requested information	Provided updated informa-tion to incorpor-ate into plan
Norfolk Southern Railroad	(800) 635-5768 or Nscorp.com or HSV NS Office at (256) 508-7147	Owns and operates a large portion of railroad in Madison County	Can discuss any scheduled improve-ments, long range plans for railroad, current services	5/15/09	Phone	Received all requested information	Provided updated informa-tion to incorpor-ate into plan
Greyhound Bus Service	Manager, 534-1681	Manages Greyhound Bus station and can answer intercity bus questions	Can update any info presented in the long range plan.	7/27/09	Phone	Received all requested information	Provided updated informatio n to incorpor-ate into plan

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
City of Huntsville Parking and Public Transit	Tommy Brown, Director 427-6800	Maintains taxicab information for City of Huntsville	Can provide information concerning the number of cabs available and the company names	6/1/09	E-mail	Received all requested information	Provided updated information to incorpor-ate into plan
Tennessee Valley Authority	www.tva.gov Gary Springsten (423) 751-7336	Provides management of the Tennessee River	Contact for updated information and better display maps	7/30/09	Phone	Received all requested information	Provided updated information to incorpor-ate into plan
SECTION X: FINANCIAL PLAN ELEMENT							
ALDOT	Jim Doolin 334-242-6000	Can make available historic years of project and funding via CPMS; Can provide general financial guidance on costing of projects	Contact for historic data of funded & authorized projects identified in CPMS; Determine if there are changes in estimating costs for PE, RW, and CN if other estimates are not available.	5/09	ALDOT provided info to us via e-mail re: historic financial data	5/09	Incorpor-ated into plan, and was used to project future financing of road projects
City of Huntsville Engineering	City Engineer 427-5300	City Engineer – Responsible for civil engineering projects in the City of Huntsville	Can provide cost estimates for projects within their city limits if needed	N/A	N/A	N/A	MPO staff updated cost estimates of previously identified projects
Madison County Engineering	David Pope 746-2900	County Engineer – Responsible for civil engineering projects in rural Madison County	Can provide cost estimates for projects within their jurisdiction if needed	N/A	N/A	N/A	MPO staff updated cost estimates of previously identified projects
City of Madison Engineering	Gary Chenowyeth 772-8431	City Engineer – Responsible for civil engineering projects in the City of Madison	Can provide cost estimates for projects within their city limits if needed	N/A	N/A	N/A	MPO staff updated cost estimates of previously identified projects

Agency or Organization	Name & Phone Number	Roles & Responsibilities	Key Decision Points for Contact	Date Contacted	How Contacted	Responses Received	Results & How Info was Used
ALDOT	Curtis Vincent or Johnny Harris 1-800-819-7418	Division Engineer – Responsible for State roadway plans	Can provide cost estimates for "State" roadways identified for improve-ment, if other jurisdictions cannot	N/A	N/A	N/A	MPO staff updated cost estimates of previously identified projects
APPENDIX A: PUBLIC INVOLVEMENT PROCEDURES – Refer to Adopted Public Participation Plan							
APPENDIX B: PUBLIC HEARING COMMENTS AND PLAN COORDINATION WITH OTHER AGENCIES – Details all contact w/public & other agencies during the plan development process							
APPENDIX C: CMP PROCEDURES AND RESPONSIBILITIES REPORT – Discusses methods of developing the congestion management process in Section VIII							

Attachment 1

Department of
Urban Development

Dallas W. Fanning
Director of
Planning Division

HUNTSVILLE

Tommy Battle
Mayor

TO: **Various Public Agencies and Organizations**

FROM: **Huntsville Area Metropolitan Planning Organization (MPO)**

DATE: **October 22, 2009**

SUBJECT: **Request for Review and Comment Concerning the Huntsville MPO's Final Draft Year 2035 Transportation Plan**

The **Huntsville Area Metropolitan Planning Organization** requests that you or an appropriate individual in your organization take time to review the Huntsville MPO's **Final Draft Year 2035 Transportation Plan.** Your organization has been identified as either having a transportation-oriented mission or other responsibility that would impact the development of transportation plans in the Huntsville, Alabama metropolitan area.

We request that you please read the enclosed document and make comments concerning the plan and its impact upon the transportation-related plans or other plans, documents, or policies that your organization develops.

We also request that all comments concerning the plan be sent to the Huntsville MPO before November 16, 2009. You may either send comments in letter form, or your organization may e-mail comments to: LongRangePlanning@hsvcity.com. Please type "Year 2035 Transportation Plan" in the subject line.

If you prefer to submit your comments using traditional methods, mail them to the MPO staff at:
City of Huntsville Planning Division
P.O. Box 308
Fountain Circle
Huntsville, AL 35804-0308
ATTN: Steve Dinges or Tanjie Kling

If you have any questions, please call us at 256-427-5100 or fax us at 256-427-5121.

ONIS "TREY" GLENN, III
DIRECTOR

BOB RILEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2059 • Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700
FAX (334) 271-7950

October 26, 2009

Steve Dinges
City of Huntsville Planning Division
P.O. Box 308
Huntsville, AL 35804-0308

RE: Review of Final Draft Year 2035 Transportation Plan
Huntsville, Alabama

Dear Mr. Dinges:

We have reviewed your submittal regarding the referenced plan. Based on the information you provided, we have no objections to the projects as presented. Please ensure that the following general requirements are met:

1. The project must comply with the storm water permitting requirements found at http://www.adem.state.al.us/FieldOps/Permitting/ConstructionProject.pdf.
2. The project must comply with all applicable Department regulations.

This letter should not be construed as an approval on behalf of any other agency. If you have any questions, please contact me at (334) 271-7796.

Sincerely,

Ron Johnson
SRF, Certification, and General Services Branch
Permits and Services Division

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (Fax)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (Fax)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (Fax)

Mobile - Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (Fax)

From: Deaton, Doug [Doug.Deaton@dcnr.alabama.gov]
Sent: Wednesday, October 28, 2009 11:24 AM
To: Kling, Tanjie
Subject: RE: 2035 Transportation Plan

Tanjie Kling,

Thank you for the updated link. It works.

I received a hard copy of the "Huntsville Area Transportation Study, Draft Final, Year 2035 Transportation Plan" via mail.

This Statement is on the first page of the document, "This document is posted at:
http://www.hsvcity.com/planning/draftfinal2035plan.pdf "

Douglas Deaton
Natural Resource Planner
Alabama Department of Conservation, State Lands
(334) 353-9145

From: Kling, Tanjie [mailto:tanjie.kling@hsvcity.com]
Sent: Wednesday, October 28, 2009 10:51 AM
To: Deaton, Doug
Cc: Dinges, Steve
Subject: RE: 2035 Transportation Plan

Doug, please try this link: http://www.hsvcity.com/Planning/mpo/docs/draftfinal2035plan.pdf

Can you tell us where you found the link below, so our IT people can correct it?

Thanks,
Tanjie Kling

From: Deaton, Doug [mailto:Doug.Deaton@dcnr.alabama.gov]
Sent: Wednesday, October 28, 2009 10:43 AM
To: LongRangePlanning
Subject: 2035 Transportation Plan

Is the link for the online version of the 2035 Transportation Plan broken or incorrect?

http://www.hsvcity.com/planning/draftfinal2035plan.pdf

Douglas Deaton
Natural Resource Planner
Alabama Department of Conservation, State Lands
(334) 353-9145

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

FRANK W. WHITE
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

November 12, 2009

Steve Dinges
City of Huntsville Planning Division
P.O. Box 308
Huntsville, Alabama 35804-0308

Re: AHC 10-0088
2035 Transportation Plan
City of Huntsville
Madison County, Alabama

Dear Mr. Dinges:

Upon review of the transportation plan submitted by your office, we have determined that we agree with the overall document. However, regarding cultural resources, we have a few issues to address. First, the cultural resource sections are very brief but as Alabama DOT will be responsible for the cultural resource work, we can accept this. However, the 2nd paragraph on page 5-7 is incorrect. It should say properties listed on or eligible for the National Register of Historic Places. Finally, information about eligible properties may not be available in Huntsville's planning office. This must be determined by field investigations conducted by qualified personnel.

We appreciate your efforts on this project. Should you have any questions, please contact Greg Rhinehart at (334) 230-2662. Please have the AHC tracking number referenced above available and include it with any correspondence.

Truly yours,

Elizabeth Ann Brown

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/LAW/GCR/gcr

ALDOT Comments Regarding the Draft Year 2035 Transportation Plan

The Alabama Department of Transportation has conducted a preliminary review of draft long range transportation plans submitted by Alabama MPOs as well as our **Draft Year 2035 Transportation Plan**, and has made the following comments and requests for changes:

For all MPOs:

We've received FHWA comments back on the Auburn-Opelika and Tuscaloosa Long Range Plans, and as a result, we have come up with a list of items for the MPOs to consider before submitting your Drafts to ALDOT. We would like for you to proactively review your draft documents prior to submittal and make sure you've addressed these FHWA concerns. In addition to the normal checklist of items, review the following:

1) In your document narrative, be sure to include Consistency with Other Plans language that has already been incorporated into your TIPs. MPOs were advised in November of 2008 that this must be included in the Long Range and TIP. Describe the interagency and consultative process.
(Huntsville MPO staff expanded this language in Section 5 – Highway Project Evaluation.)

2) In your document narrative, include Environmental Mitigation and Climate Change language that has already been included in the TIP. MPOs were advised in March of 2009 that the following language must be a part of the LR and TIP. And since we do not have new legislation and the interpretative CFR's that would surely include guidelines, be sure and at least include general descriptive language for objectives or goals in meeting long-term FHWA needs.

"According to the FHWA report Integrating Climate Change into the Transportation Planning Process, there is general scientific consensus that the earth is experiencing a long-term warming trend and that human-induced increases in atmospheric greenhouse gases (GHGs) may be the predominant cause. The combustion of fossil fuels is by far the biggest source of GHS emissions. In the United States, transportation is the largest source of GHG emissions, after electricity generation. Within the transportation sector, cars and trucks account for a majority of emissions.

Opportunities to reduce GHG emissions from transportation include switching to alternative fuels, using more fuel efficient vehicles, and reducing the total number of miles driven. Each of these options requires a mixture of public and private sector involvement. Transportation planning activities, which influence how transportation systems are built and operated, can contribute to these strategies.
In addition to contributing to climate change, transportation will likely also be affected by climate change. Transportation infrastructure is vulnerable to predicted changes in sea level and increases in severe weather and extreme high temperatures. Long-term transportation planning will need to respond to these threats."

Introduction to Integrating Climate Change into
the Transportation Planning Process
- Federal Highway Administration, Final Report, July 2008
(Huntsville MPO staff expanded this language in Section 5 – Highway Project Evaluation.)

3) Pay particular attention to your M & O (Maintenance and Operations) projects. [FHWA refers to these as O & M projects; they are the same as ALDOT M & O.]

Separate out your Capacity projects from your M & O projects. I'm including a spreadsheet from our CPMS database listing Work Codes and their descriptions. Coordination with FHWA has resulted in recent changes to the coding and some Capacity projects are now M & O. This is a current listing and may be used by the MPO's to organize your projects.
(Huntsville MPO staff indicated that all projects listed in Section 4 were Capacity projects, and all projects listed in Section 8 were M&O projects. Additionally, this delineation of project types was also done in Section 7 – Bike/Pedestrian Element.)

Provide an analysis of available funding by source for road maintenance and resurfacing. How much from which sources for what activity?
(Huntsville MPO – no action required. Already addressed in Section 10 – Financial Plan.)

On your listed M & O and Capacity projects, FHWA has asked that you delete functional descriptive information (3, 5-lane) and add the particular need that is being addressed; i.e., improve access, improve safety, provide regional connectivity. This may be causing some confusion. Capacity projects (new location, improvements, and/or retrofit) will generally have an associated environmental document (or reevaluation) as part of the NEPA process, and this in turn will include a 'purpose and need' statement as part of that. Please provide a Purpose and Need in the requested format for any Capacity projects listed.
(The Huntsville MPO staff has a problem with deleting functional descriptive information, since that is a critical component of the plan. We have; however, included "Purpose and Need" statements to the project listings in the plan.)

M & O projects are typically operational improvements other than capacity, that may not have a subjective transportation need, but rather a practical, maintenance schedule-driven purpose; resurfacing or traffic striping for example. Some M & O projects that were formerly Capacity, may cause you a problem. If you've provided an M & O project listing with an accurate improvement description from the code sheet, that is probably all you can do. If there is a clear "need" being addressed, i.e., improved safety, then add that where you can. If we have further clarification and guidance from FHWA, we will provide it.

4) Maps/Figures. All mapping in the Long Range should assume that potential readers are non-professionals. Please provide mapping in the appropriate scale, clearly annotated, and with project information (location, ID's, names) provided on the maps themselves.
(Huntsville MPO staff is making improvements to its mapping to improve clarity and understanding.)

5) Bicycle/Pedestrian **(Huntsville MPO – no action required. Already addressed in Section 7: Bicycle/Pedestrian Element.)**
The first item to emphasize is that ALDOT's position, in the absence of a statewide bicycle/pedestrian plan and policy statement, will be to fully comply with all provisions of 23 USC 217 and any additional FHWA directives applicable to state oversight.

A second clarification that we want to make is in reference to FHWA's letter of June 12, 2009, which states in part: "…..There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling." The Bureau is interpreting this to be a statement describing limited access facility design and not suggesting that facilities are in any way deliberately designed to deny access, and thus applicable to the 'exceptional circumstances' clause. The state fully ascribes to the spirit of FHWA's intent to provide bike/ped access where at all possible.

Be sure your LR document includes a clear policy statement to the effect that bicycling/pedestrian facilities will be incorporated into all transportation projects unless exceptional circumstances exist. A copy of FHWA's letter of June 12, 2009 is attached.

When you map Road projects, the corresponding bicycle/pedestrian improvements on that project should be shown, or provide a detailed explanation that "exceptional circumstances exist" for not including such improvements.

If you provide road project listings within your document, those listing should include the specific bicycle/pedestrian improvements associated with the project.

In your document, clearly define sidewalks, bike paths, bike lanes, multi-use paths, unmarked shoulders, shared vehicle lanes, and widened roadway travel lanes.

Provide an inventory of existing bicycle/pedestrian facilities in the MPO study area in mapped format.

The LR should be consistent in its approach to modal analysis; an analysis of bicycle/pedestrian needs should be done in the same manner as that done for roadway needs.

The Plan should indentify Transportation Enhancement funded projects as such. If the MPO has planned roadway projects that require bicycle/pedestrian improvements, those improvements are to be funded through traditional funding sources and not be dependent on the availability of TE funding.

6) Fiscal Constraint. Be consistent in the timeframe used for the Long Range and the related data provided for that timeframe. It should be consistent with information provided by ALDOT and other sources.

As discussed earlier, Capacity and M & O projects are to be separated out. New project tables should include individual funding sources for each project in each category. Tables providing projected costs into out years should reflect those costs in 'Year of Expenditure' dollars.
(Huntsville MPO staff added a sentence to this section that states that estimates are made based upon possible year of expenditure. Additionally, modified a column heading of all financial charts to state: "Year of Expenditure Estimated Cost" instead of "Total Estimated Cost".)

<u>For the Huntsville MPO, specifically:</u>
1) Capacity projects vs Maintenance/Operations. On 10/5, Metro Planning sent out an advisory, with spreadsheet attached, on FHWA comments following review of Auburn's and Tuscaloosa's Draft Long Range Plans. The biggest item was the failure to identify or breakout Capacity vs Maintenance/Operations projects. Looking at your LR, I don't see where you've done that, either. For example, in a listing of Bike/Ped projects on pp. 7-3 – 7-10, you're going to have to find a way to indicate whether they are Capacity or M&O according to how they are shown on the spreadsheet. Regardless of how else you identify your projects, you will have to have differentiated those two types.

You do not have to include Resurfacing projects in your Long Range M & O project listings. However, the recent change has made some former Capacity projects M & O, so you'll have to identify and list some forms

of M & O projects other than just Resurfacing. Also, you will need to add "purpose and need" descriptions for those M & O projects you list, along with the Capacity.
(Huntsville MPO staff delineated Capacity and M&O projects in Sections 4, 7, and 8. Also, added "Purpose and Need" statements to all projects listed. This was addressed per comments Statewide.)

In addition to the foregoing, you will need to break out your projects by funding sources and year of expenditure. **(This was addressed in Section 10 – Financial Plan.)**

2) Frequent use of the title Year 2035, but also occasionally FY 2035. You'll need to review and be consistent throughout which one you use. **(Consistency of use was addressed.)**

3) Unable to locate your 2005 Base Year tables or related data. You should have 2005 Socioeconomic Data by TAZ (similar to p. 3-3) and 2005 and 35 Productions/Attractions. **(Huntsville MPO staff added the year 2005 data to the table in Section 3.)**

4) Some of your maps are well done, others not so much. The Greenway Trails Map on 7-17 will need to be re-done; except for the Bike Paths in red/pink, it can't be read. The yellow sidewalks don't show up very well at all. You use some maps with shades of single color and varying thickness. These are difficult to interpret and will probably need to be re-done. Maps 4-25, 4-26, and 4-29 are such examples. Multimodal maps on pp. 9-4 and 9-7 will need to be re-done, particularly the 9-7, the Airport Layout Plan. You might try to pick up additional detail by going to 11 x 17, but you may have to take that map out altogether. **(Huntsville MPO staff has asked the City of Madison to provide clarity to its Greenways and Trail Map. The MPO staff has also provided clearer maps to Section 4, provided Map 9-4 on an 11x17 page of paper for clarity, and deleted Map 9-7.)**

5) I was unable to find the "Climate Change" language that's an FHWA requirement for the TIP and Long Range Plan. Please see attached and make sure it's included in the Environmental Mitigation section. **(Huntsville MPO staff added this language to Section 5 – Highway Project Evaluation. This was addressed per comments Statewide.)**

6) I was unable to find the "Consistency with Other Plans" language required by FHWA. This should include agency consultation and public outreach. **(Huntsville MPO staff added this language to Section 5 – Highway Project Evaluation. This was addressed per comments Statewide.)**

7) In Section 5, be very vague when discussing Wetlands Mitigation, specifically when using "purchasing credits".
(Huntsville MPO staff reworded the paragraph to make it vague when referring to ALDOT's procedures.)

8) Pp. 8-41 – 8-45. With increased emphasis on Bicycle/Pedestrian issues, you would want to mention somewhere here the Alabama Bicycle Safety Act of 1995, the "Brad Hudson Law." **(Huntsville MPO staff added this language to Section 8.)**

9) P. 8-52. In the second paragraph under 8.4.4, correct the last sentence to read, " 'They are often called "intersection bottlenecks," "weakest link in the chain," or "hot spots." ' (The correction was to move the ending quotation marks outside the punctuation, in this case two commas and a period.)
(Huntsville MPO staff made these changes.)

10) Noting that item 8 was not the only needed grammatical adjustment to get my attention. You might better do a final edit of the next version you send in, paying careful attention to general usage, phrasing, and punctuation. **(Huntsville MPO staff reviewed the document and made corrections as needed.)**

U.S. Department of Transportation
Federal Highway Administration

Alabama Division

9500 Wynlakes Place
Montgomery, AL 36117-8515

December 16, 2009

In Reply Refer To:
HDA-AL

Mr. D. J. McInnes
Director
Alabama Department of Transportation
Montgomery, Alabama

Dear Mr. McInnes:

The following is in response to Mr. Robert Jilla's recent transmittal of the transmitted Huntsville Metropolitan Planning Organization's (MPO's) draft 2035 Long Range Transportation Plan (LRTP). Our review comments do not attempt to address the MPO responses or the ALDOT comments on the plan. The following comments are provided for the MPO's consideration in developing the final LRTP.

Maps/Figures

1. On Page 4-2, the MPO should remove the "Red" text projects and create a separate visionary plan map or show roads by a different color in the legend and clearly state that the routes are not part of the financially constrained 2035 Long Range Transportation Plan but instead the "Visionary Plan" and no funding has been identified for the projects.
2. The MPO should consider making additional map pages for Map 4.1 at a larger scale for different sectors of the county to better identify project locations and label roadways.
3. The MPO should combine Maps 7.1, 7.2, and 7.3 into one map showing all existing and proposed routes, types of routes, and proposed (or visionary) projects for accommodating bicyclists and pedestrians. The maps should correspond to Map 4.1 and as stated in the comments for Map 4.1, the MPO should consider making additional map pages for these maps at a larger scale for different sectors of the county to better identify project locations and label roadways.
4. It is recommended the MPO make project descriptions (including termini) & project index numbers more consistent between sections. Some projects identified in Section 4 have different termini for the same projects identified in the congestion management process in Section 8 and in Section 7.2. (e.g. the 1st project in the CMP on page 8-29 is listed as "US 72 East (ARC Corridor V) from Maysville Road to Moores Mill Road but none of the projects for U.S. 72 (#s 90-97) in Map 4.1 and Table 4.1 identify Maysville Rd.)
5. Some cross identification should be created for the larger projects developed as part of the Congestion Management Process in Section 8. The projects should be easily identifiable in Map 4.1 and/or Map 7.1 as 2035 LRTP projects or visionary projects.

Bicycle & Pedestrian Facilities

6. The bicycle and pedestrian improvements in Section 7.2 are not consistent with the roadway program of projects in Section 4. All roadway improvements in Section 4 should include corresponding bicycle and pedestrian improvements in Section 7, unless the MPO can demonstrate that exceptional circumstances exist for not including bicycle and pedestrian improvements concurrently with the roadway improvement. Additionally, it is recommended the corresponding project index numbers in section 4 be shown.
7. The project headings in Table 7.1 are labeled Bicycle Lane/Shoulders Projects, Shared Bike/Sidewalk Facilities, Proposed Bicycle Routes Projects and Table 7.2 uses the project descriptions Greenways (Shared Use Paths) and Sidewalk Improvement Projects. The document should clearly define the terms used and the differences between the types (e.g., bicycle lanes, unmarked shoulders and widened roadway travel lane). Additionally, it should be clearly shown by table or map legend whether a facility will provide a separate bicycle accommodation and sidewalks for pedestrian accommodation or a type of shared use path.
8. All funding shown as "TBD" for planned bicycle and pedestrian projects should be specifically identified, similar to Table 10.1 in the Financial Plan Element.
9. Table 7.1 appears to identify bicycle and pedestrian projects for mostly local roadways only, the MPO must analyze and program projects for all roadways (U.S. and State routes) regardless of the entity responsible for maintaining the facility.

Project Descriptions / O&M

10. A number of projects in Table 4.1 and in other parts of the document are described as three-lane, five-lane, and seven-lane improvements. This type of project description focuses on predetermined solutions rather than planning for the actual transportation needs. The three-lane and five-lane references should be removed, and the project description should be revised to reflect the actual transportation need; e.g., improve access and safety on X Street from A to B Avenue. Some reference of additional through lanes, turn lanes and medians that were identified as part of the model capacity analysis and/or by the planning department may be included, but a continuous center turn lane should not be assumed a default solution. The actual determination of the specific type of improvement should be reserved to an individual transportation planning study or the NEPA process.
11. Additionally, there has been a long standing recommendation by our office and state agreement that:
    - "Traffic volume, speed, and roadside development are factors that influence safety of seven-lane sections of roadways. Based on AASHTO Design Policy and the experience in Georgia and Florida, it is recommended that no more seven-lane sections be built in Alabama until more is learned about the relationship of speed, volume, and roadside development, and AASHTO establishes a more definitive policy."

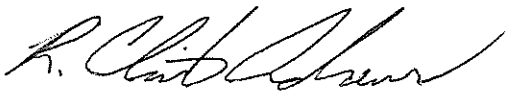
    Therefore, all references to seven-lane sections should be removed and descriptions should be as reflected in comment above.

Financial Plan Element

12. Table 10.1 Appalachian, Interstate Maintenance and the Total for capacity projects do not seem to match the amounts provided by the ALDOT in the spreadsheet dated August 21, 2009.
13. The table on page 10-14 does not seem to match the amounts provided by ALDOT. For example, the $167 million for NHS/EB/HPP should be $133.574 million. Additionally, other categories seem inconsistent and should be revised. If matching funds are included in these tables, they should be shown as a separate column in addition to the Federal funds.
14. On all tables, it is recommended the "total estimated cost" reflect current dollars and an additional column be shown for year of expenditure "YOE" dollars. Additionally, some expenditure analysis by some horizon year or expenditure years versus funding income should be shown.
15. It is recommended the funding tables or individual projects be clearly identified as "Capacity Adding" or "Operations and Maintenance". It does not appear that operations and maintenance has been included in the draft LRTP.
16. It is recommended that the individual Funding tables in Table 10.3 "Estimated Cost ...." And Table 10.4 "Visionary Projects" be individually enumerated in some way for easier reference.

If you have any questions, please contact Clint Andrews at 334-274-6374.

Sincerely yours,



for: Mark D. Bartlett, P. E.
Division Administrator

cc:
Mr. Don Arkle, ALDOT
Mr. Robert Jilla, ALDOT
Mr. Steve Dinges, Huntsville MPO
FTA Region 4

Response to FHWA Comments Regarding the Draft Year 2035 Transportation Plan

Maps/Figures

1. *On Page 4-2, the MPO should remove the "Red" text projects and create a separate visionary plan map or show roads by a different color in the legend and clearly state that the routes are not part of the financially constrained 2035 Long Range Transportation Plan, but instead the "Visionary Plan" and no funding has been identified for the projects.*

   The MPO staff revised the map on page 4-2, by showing all visionary projects as "red roads" and all financially constrained projects as "blue roads". The red and blue designation was further carried out in the text of the map, by displaying all visionary projects in red text (as was on the original map) and all financially constrained projects in blue text. The original map did display a footnote that indicated that all projects in red text were visionary projects. To further clarify this, the footnote was deleted, and the classification of visionary and financially constrained projects were clearly marked in the map's legend. Additionally, on the first page of the Section, a paragraph was written that states: "All roads, interchanges, and maintenance & operations projects that are indicated on the map in red are visionary projects. This means that no funding has been identified for the projects. All roads and interchanges that are indicated on the map in blue are classified as financially constrained projects, and funding has been identified for these projects. More information concerning the financial status of the projects can be found in **Section 10**."

2. *The MPO should consider making additional map pages for Map 4.1 at a larger scale for different sectors of the county to better identify project locations and label roadways.*

   The MPO staff divided Map 4.1 into four quadrants and at a larger scale. These are found as Map 4.1A, 4.1B, 4.1C, and 4.1D.

3. *The MPO should combine Maps 7.1, 7.2, and 7.3 into one map showing all existing and proposed routes, types of routes, and proposed (or visionary) projects for accommodating bicyclists and pedestrians. The maps should correspond to Map 4.1 and as stated in the comments for Map 4.1, the MPO should consider making additional map pages for these maps at a larger scale for different sectors of the county to better identify project locations and label roadways.*

   The MPO staff had originally considered combining all maps into one big map, but the map became so confusing and gave readers a "data overload" because there were so many classifications: 17 of them. Based upon the comments above, we decided to reclassify our projects into three major categories: Bike Routes, Paved Bike Lanes, and Greenways/Shared Paths. Some projects are funded with surface transportation funds or highway funds. We opted not to add another layer of colors for visionary versus "financially constrained" bike/ped projects, but opted instead to show this in table format at Table 7.1 and Table 7.2. Concerning the comment of "the maps (in Section 7) should correspond to Map 4.1…", that task will be difficult to accomplish. The MPO has identified *additional* bike/ped projects in

Section 7 that extend beyond the road improvements that are shown on Map 4.1. The MPO staff believes that the best way to show the corresponding projects is through a table format. It is our opinion that showing multiple projects and multiple project types on a map would be confusing to the public. In Section 4, the project table was revised, and a column added to indicate what type of bicycle and/or pedestrian facility is proposed for each project. In Section 7, where the additional bike/ped projects that extend beyond the road improvements are identified, the existing table was revised, and columns added to show how the projects listed on Map 4.1 and the bike route numbers on Map 7.1 correspond to each other. In regards to the table which lists greenways: The MPO recognizes greenway projects by name only, and not by number or any other designation. The name of each greenway project has been listed in table format, and the corresponding project number shown on Map 4.1 has been indicated. There may be instances where there is not a project number assigned to a project. These are the additional bike/ped projects that have been identified by the MPO. The MPO staff divided Map 7.1 into four quadrants, and made the scale of the maps larger. These maps are Map 7.1A, 7.1B, 7.1C, and 7.1D.

4. *It is recommended the MPO make project descriptions (including termini) & project index numbers more consistent between sections. Some projects identified in Section 4 have different termini for the same projects identified in the congestion management process in Section 8 and in Section 7.2. (e.g.,the 1st project in the CMP on page 8-29 is listed as "US 72 East (ARC Corridor V) from Maysville Road to Moores Mill Road but none of the projects for U.S. 72 (#s 90-97) in Map 4.1 and Table 4.1 identify Maysville Rd.)*

   The projects in Section 7.2 that are referenced in Map 4.1 have been cross identified in Table 7.1 and Table 7.2, by a column indicating the corresponding map number per Map 4.1 and per Map 7.1. There are some bike routes that will be designated by signage only, that are not part of any road improvement project per Map 4.1. These bike route projects involving signage only may be identified by the bike route number shown on Map 7.1. Projects that are greenways that do follow a specific road corridor have been cross referenced by project number (as indicated on Map 4.1). The MPO has identified some additional greenways for construction that do not follow along corridor projects listed in Section 4. Where this is the case, "N/A" is indicated in Table 7.2 at the column referencing the Map Number (Page 4-2).

   The "projects" in Section 8.2.4 are not "projects", but are locations that have been identified as the top ten ranked congested corridors (based on base year and projected traffic flow) and have been through a thorough screening process that has been described in the long range plan. The corridors that are listed in the top ten and their descriptions have been based upon the criteria for selection alone. To expand the project description to match verbatim the projects identified in Map 4.1 would negate the entire established process of selecting the priority corridors in Section 8.2.4. In most cases, the priority corridors identified as having a current or future congestion problem is a portion of a larger project identified in Section 4. Broader project descriptions indicated in Section 4, show that it is prudent to correct deficiencies "across the board" and not in isolated spots where the traffic model may only show base year and future projected congestion. We have, under the "Recommendations" portion in Section 8.2.4, indicated what project number(s) associated in Section 4 that the

congested corridor is a part of. Additionally, we have referenced these projects in Map 4.1 by asterisk, and a footnote explaining this at the bottom of the map.

The other projects listed in Section 8 are our "Maintenance and Operations" projects. They are projects that deal mainly with signalization upgrades and geometric improvements that will improve traffic flow and improve safety. These projects have been added to Map 4.1 and have been cross referenced in Section 8.2.4 where applicable.

5. *Some cross identification should be created for the larger projects developed as part of the Congestion Management Process in Section 8. The projects should be easily identifiable in Map 4.1 and/or Map 7.1 as 2035 LRTP projects or visionary projects.*

   We indicated, under the "Recommendations" portion in Section 8.2.4, what project number(s) associated in Section 4 that the congested corridor is a part of. We placed an asterisk beside the corresponding map i.d. number in Map 4.1 and added a footnote at the bottom of the map.

Bicycle and Pedestrian Facilities

6. *The bicycle and pedestrian improvements in Section 7.2 are not consistent with the roadway program of projects in Section 4. All roadway improvements in Section 4 should include corresponding bicycle and pedestrian improvements in Section 7, unless the MPO can demonstrate that exceptional circumstances exist for not including bicycle and pedestrian improvements concurrently with the roadway improvement. Additionally, it is recommended the corresponding project index numbers in Section 4 be shown.*

   See number 3 re: mapping, consistency of project descriptions, and the table shown in Section 7.2. We added a column in Table 4.1 that shows what type of bike/ped facility is being added to each road project. We included that information in Section 7 (Bike/Ped Element). There are some road projects that cannot feasibly accommodate bicyclists and pedestrians. These locations have been identified in Table 4.1 and included in the text in Section 7. Additionally, there are some corridor projects that have been under design for several years, and the projects are in or near the right of way acquisition and utility relocation stage. These projects came under engineering design prior to the FHWA policy regarding bike/ped accommodation. These three projects only make accommodations for bicyclists only. These three projects have been highlighted in Section 4, Section 7, and in Section 10.

7. *The project headings in Table 7.1 are labeled Bicycle Lane/Shoulder Projects, Shared Bike/Sidewalk Facilities, Proposed Bicycle Routes and Table 7.2 uses the project descriptions Greenways (Shared Use Paths) and Sidewalk Improvement Projects. The document should clearly define the terms used and the differences between the types (e.g., bicycle lanes, unmarked shoulders and widened roadway travel lane). Additionally, it should be clearly shown by table or map legend whether a facility will provide a separate bicycle accommodation and sidewalks for pedestrian accommodation or a type of shared use path.*

   The MPO staff has defined the project descriptions in the text in Section 7.2. Additionally,

the staff has expanded tables in the plan (Section 4, Section 7, and Section 10) to indicate what facilities will be proposed for each project.

8. *All funding shown as "TBD" for planned bicycle and pedestrian projects should be specifically identified, similar to Table 10.1 in the Financial Plan Element.*

   The funding for all bike/ped improvements that are associated with the capacity road improvement projects shown on Map 4.1 has been included in the total project costs for each project (see Section 10). The State has not provided us with any funding projections for the next 25 years for Enhancement Funds, but we have included all the "unfunded" bicycle/ped projects in the visionary plan (Table 10.4) in Section 10.

9. *Table 7.1 appears to identify bicycle and pedestrian projects for mostly local roads only, the MPO must analyze and program projects for all roadways (U.S. and State routes) regardless of the entity responsible for maintaining the facility.*

   ALDOT has notified us that we cannot construct bike/ped facilities on controlled access or limited access corridors, like interstates. Additionally, we cannot construct these facilities on US or State routes, because traffic at these locations are typically high. To construct ***appropriate*** facilities at these locations would be cost prohibitive. This information is highlighted in Section 4 and in Section 7.

Project Descriptions/O&M

10. *A number of projects in Table 4.1 and in other parts of the document are described as three-lane, five-lane, and seven-lane improvements. This type of project description focuses on predetermined solutions rather than planning for the actual transportation needs. The three-lane and five-lane references should be removed, and the project description should be revised to reflect the actual transportation need; e.g., improve access and safety on X Street from A to B Avenue. Some reference of additional through lanes, turn lanes and medians that were identified as part of the model capacity analysis and/or by the planning department may be included, but a continuous center turn lane should not be assumed a default solution. The actual determination of the specific type of improvement should be reserved to an individual transportation planning study or the NEPA process.*

    The MPO staff deleted all references to planned number of lanes.

11. *Additionally, there has been a long standing recommendation by our office and state agreement that: "Traffic volume, speed, and roadside development are factors that influence safety of seven-lane sections of roadways. Based on AASHTO Design Policy and the experience in Georgia and Florida, it is recommended that no more seven-lane sections be built in Alabama until more is learned about the relationship of speed, volume, and roadside development, and AASHTO establishes a more definitive policy." Therefore, all references to seven-lane sections should be removed and descriptions should be as reflected in comment above.*

Given these comments, the MPO staff will in the future endorse improvements that construct 6 lane divided corridors where appropriate, instead of seven-lane corridors. However, since we do not need to indicate the number of lanes per #10 above, it is a moot point.

Financial Plan Element

12. *Table 10.1 Appalachian, Interstate Maintenance and the Total for capacity projects do not seem to match the amounts provided by the ALDOT in the spreadsheet dated August 21, 2009.*

    We discussed this with ALDOT before making these changes. There were some projects listed in the TIP that were under design or in other stages of development that did not equal to these amounts. Since the projects were already programmed in the TIP, and since the financial projections were based upon historical data, ALDOT allowed us to increase the amount so that those programmed projects could be completed. Please refer to page 10-5 and beyond for an explanation of each category of funding.

13. *The table on page 10-14 does not seem to match the amounts provided by ALDOT. For example, the $167 million for NHS/EB/HPP should be $133.574 million. Additionally, other categories seem inconsistent and should be revised. If matching funds are included in these tables, they should be shown as a separate column in addition to the Federal funds.*

    The NHS/EB/HPP number of $167 million includes ALDOT matching funds – not federal money only. The MPO staff took out all references to matching funds and is showing only potentially available federal funds only.

14. *On all tables, it is recommended the "Total Estimated Cost" reflect current dollars and an additional column be shown for year of expenditure "YOE" dollars. Additionally, some expenditure analysis by some horizon year or expenditure years versus funding income should be shown.*

    We believe that the ALDOT was going to clarify this comment. All of our financially constrained projects show the Year of Expenditure Estimated Cost. All amounts in that column were adjusted for inflation. For visionary projects – the MPO staff has no idea when these projects may be funded, if even funded at all. All of those projects show a current year estimated cost. If we knew what year they may be funded, we could adjust for inflation. Since we do not know what year the project may be funded, or if it ever will be, it proves impossible to guess what the cost may be in the future.

15. *It is recommended the funding tables or individual projects be clearly identified as "Capacity Adding" or "Operations and Maintenance." It does not appear that operations and maintenance has been included in the draft LRTP.*

    All projects in the Section 4 text are Capacity Adding. This is indicated in the text, and explicitly at the Table Headings for Table 4.1: "Year 2035 Long Range Transportation Plan Capacity Projects." The MPO staff did add the "Maintenance and Operations" projects to maps 4.1, 4.1A, 4.1B, 4.1C, and 4.1D; however, those projects are discussed in the

appropriate section, which is Section 8. All projects in Section 8 and several projects in Section 7 are Operations and Maintenance Projects. In fact, all projects listed in Section 7 indicate the project type within the tables. Section 8.2.4 lists the top ten corridors that either are congested or will experience congestion in the future. Those top ten corridors are not "projects", but are roads that have been highlighted with current or anticipated congestion problems. The projects listed in Section 8.4 detail ALL of the Maintenance and Operations Projects addressing Congestion Management and Safety Management: 2010-2015. They are all visionary projects, and are listed in the visionary table in Section 10.

16. *It is recommended that the individual Funding tables on Table 10.3 "Estimated Cost…" and Table 10.4 "Visionary Projects" be individually enumerated in some way for easier reference.*

    The MPO staff requires clarification as to what this means. As a guess – the MPO staff moved the project number column over to the far left…but we are still unsure if that is what is meant by this comment.

ALDOT Comments Regarding the Draft Year 2035 Transportation Plan and the MPO Staff's Response

The Alabama Department of Transportation provided the following comments re: the Draft Year 2035 Transportation Plan via e-mail:

FHWA comments on the LR were fairly lengthy and will require some time for the changes. For that reason, I'll provide my own comments as soon as possible and then we'll convene by conference call, as we discussed, and make sure we have corrections that nail most, if not all, of the issues.

1) *P. 4-2 – As we discussed by phone, and after internal discussion here, we're in agreement we would prefer that you **add maps**, rather than compromise the overall scope and integrity of the Plan by taking network projects out, whether Local jurisdiction or otherwise. Just be sure to clearly differentiate the map and projects as part of your Visioning (Needs) Plan, and apart from your financially constrained (Cost Feasible) projects.*

   The MPO staff revised the map on page 4-2, by showing all visionary projects as "red roads" and all financially constrained projects as "blue roads". The red and blue designation was further carried out in the text of the map, by displaying all visionary projects in red text (as was on the original map) and all financially constrained projects in blue text. The original map did display a footnote that indicated that all projects in red text were visionary projects. To further clarify this, the footnote was deleted, and the classification of visionary and financially constrained projects were clearly marked in the map's legend. Additionally, on the first page of the Section, a paragraph was written that states: "All roads, interchanges, and maintenance & operations projects that are indicated on the map in red are visionary projects. This means that no funding has been identified for the projects. All roads and interchanges that are indicated on the map in blue are classified as financially constrained projects, and funding has been identified for these projects. More information concerning the financial status of the projects can be found in Section 10."

   The MPO staff further amended the list of projects by deleting several local road projects from the plan. These local projects are to be funded through the City of Huntsville's capital improvement budget, using 100% local funds and not any federal appropriations.

2) *P. 4-2 – Map 4.1 - Item 2 addressed breaking the map into sectors at greater scale (larger area) with increased detail. We're in agreement with this extension of item 1, and this would also allow for better annotation and labeling.*

   The MPO staff divided Map 4.1 into four quadrants and at a larger scale. These are found as Map 4.1A, 4.1B, 4.1C, and 4.1D.

3) *Pp. 7-17, 18, 19 – Maps 7.1, 2, 3 – The mapping convention adopted for items 1 and 2 can be duplicated for the Bike/Ped Plan; consolidate the three into one, then divide into segments at larger scale, well-labeled and annotated, and clearly marked as part of the Visioning Plan. The map scale of Inset A may provide sufficient room in a quartered map.*

The MPO staff had originally considered combining all maps in Section 7 into one big map, but the map became so confusing and gave readers a "data overload" because there were so many classifications: 17 of them. Based upon the comments above, we decided to reclassify our projects into three major categories: Bike Routes, Paved Bike Lanes, and Greenways/Shared Paths. Some routes are funded through surface transportation program funds. The MPO recognizes greenway projects by name only, and not by number or any other designation. The MPO staff divided Map 7.1 into four quadrants, and made the scale of the maps larger. These maps are Map 7.1A, 7.1B, 7.1C, and 7.1D.

4) *As a general statement, the MPO should review all the projects in the Plan sufficient to assert that roadway/route/facility name, termini from and to description, and all other project information is consistent throughout the document in all instances used. From the FHWA letter, it's clear the US 72 projects on p. 4-2, right hand column, nos. 90 – 94 are incomplete, unless they are Interchanges. If they are Interchanges, that descriptive name will have to be included as part of the route or what would otherwise be the termini description. Rectify against other locations as they may occur, and make sure the names are the same. Provide indexing or referencing scheme where appropriate, if used in more than one map, table, or figure.*

The MPO staff reviewed all the projects in the Plan sufficient to assert that roadway/route/facility name, termini from and to description, and all other project information is consistent throughout the document in all instances used. Additionally, projects where interchanges are to be constructed have been clarified (i.e., Memorial Parkway and US 72 East/ARC Corridor V. The MPO staff also included project numbers as appropriate in tables.

5) *Identify projects in Maps 4.1 and 7.1 as either from the Visionary or Financially Constrained part of the LRTP. This can be done either by annotation on larger scale maps or the use of indices on both maps or sets of maps.*

The MPO staff revised the map on page 4-2, by showing all visionary projects as "red roads" and all financially constrained projects as "blue roads". The red and blue designation was further carried out in the text of the map, by displaying all visionary projects in red text (as was on the original map) and all financially constrained projects in blue text. The original map did display a footnote that indicated that all projects in red text were visionary projects. To further clarify this, the footnote was deleted, and the classification of visionary and financially constrained projects were clearly marked in the map's legend. The MPO staff opted not to add another layer of colors to the maps in Section 7; however opted to further identify the bike/ped projects as either financially constrained projects or visionary projects in **Table 7.1** and **Table 7.2**.

6) *If there is a project listed in Section 4, the same project should be found in Section 7 with a description of the bike/ped improvement. If a Section 4 project does not appear in Section 7, the MPO must provide* ***exceptional circumstances*** *why it does not. These two sections will need to be rectified against one another. Index the projects in the two sections against one another.*

The MPO staff added a column to Table 4.1 which indicates what bike/ped improvement is associated with each project listed in Map 4.1. The staff further indicated in the table what projects could not accommodate bike/ped facilities due to special circumstances. Additionally, the MPO staff revamped Table 7.1 and Table 7.2 to show correlation between road improvement project numbers and (Section 4) and bike route numbers and projects/greenway projects. The staff reiterated in Section 7, page 7-4, what road projects could not accommodate bike/ped facilities and the reason why such accommodation could not be made.

7) *Under normal conditions, and if LRTP restructuring had already taken place, you would have had an Acronyms and Abbreviations section in your Appendices, to which you could add definitions appropriate to the LR. Lacking that, and for this document, under Section 7.2 on p. 7-3, provide descriptions for the following, either in a separate listing or within the tables themselves opposite the heading:*
Bicycle Lanes/Shoulders Projects
Shared Bike/Sidewalk Facilities Projects
Proposed Bicycle Routes Projects
Greenways (Shared Use Paths)
Sidewalk Improvement Projects
Indicate by Table description, Map annotation, or coded legend whether a project will have Shared or Separate Bicycle and Pedestrian facilities, i.e.; sidewalks both sides, separate Bike Path east side of roadway.

The MPO staff added definitions to the text of Section 7.2. The staff indicated in Table 4.1 what type of bike/ped facility would be constructed per associated project number shown on Map 4.1. The original tables in Section 7 showed specifically what type of improvement was to be made. The MPO staff updated these tables to correlate the Map Number shown on page 4-2 with the proposed bike route numbers and greenway projects. In regard to the comment: " ***Indicate by Table description, Map annotation, or coded legend whether a project will have Shared or Separate Bicycle and Pedestrian facilities, i.e.; sidewalks both sides, separate Bike Path east side of roadway"*** – it is difficult to indicate which side of the road a greenway project will be constructed, as the project has not been through the preliminary engineering design phase. It was indicated in Section 7.1.2 that all streets in the City of Huntsville will have sidewalks on both sides of the street per the city's subdivision regulations. All greenways are shared paths, as indicated by the heading "Greenways (Shared Paths)" in Table 7.2. Table 4.1, Table 7.1, and Table 7.2 all indicate what type of project will be constructed per project number. The MPO staff further clarified that sidewalks, bike lanes, and bike routes would be constructed on both sides of the street. The staff left the exact location (north, south, east, west) of greenways "open" until formal engineering design could be accomplished.

8) *Provide projected 25-year cost estimates for the Table 7.1 Bicycle/Pedestrian Projects, rather than the 'TBD entry,' in the same manner as done in Table 10.1 on p. 10-2.*

The 25-year cost estimates have been deleted from Section 7 and have been added to Section 10 under Table 10.4. Please note that the costs of all bike/ped projects associated with capacity road improvement projects listed in Section 4 have been included in the total cost of each

project, as shown in Section 10, Tables 10.1 and 10.2. This was noted in Section 10.

9) *Assuming the listing in Table 7.1 is complete and does, in fact, show the local roadways, you will need to assess whether your Section 4 is inclusive of all other projects in the MPA that have Bike/Ped improvements listed (excepting those that are exempt under the 'exceptional circumstances' rule) and if not, you will need to list them or program those projects with their planned improvements.*

All projects listed in Section 4 have associated bike/ped improvements listed, except for those that are exempt under the "exceptional circumstances" rule. Table 7.1 and Table 7.2 do identify some projects that are part of the MPO's bike/ped plan that extend beyond the road projects identified in Section 4. A footnote concerning this has been added to Section 7, Tables 7.1 and 7.2.

10) *See next……*

11) *The crux of both items 10 and 11 appears to hinge on the use of center turn-lanes. I'll address both that and the project description question:*

There is reference in the FHWA letter of December 16th that suggests an agreement exists between FHWA and the State of Alabama to not build seven-lane structures, but this statement is in error, confirmed by a check with Dave Harris on the 18th. A letter of ***recommendation*** *to the Department dated January 14, 2004 is on file in the Metropolitan Planning Section. Therefore, where appropriate, and preferably in association with project listings, insert a statement in your document to the effect that* ***FWHA recommends close coordination with involved agencies in the proposal and planning of road projects that feature continuous center, left-hand turn-lanes, and especially those with projects in seven lane configuration.*** *The Department will support* ***2 - 4 travel lane improvement language in your project descriptions****, if the 'actual transportation need,' requested by FHWA, has been addressed.*

The MPO staff, in response to these comments has deleted all references to planned number of lanes.

12) *Please check your Table 10.1 totals for accuracy. Use the attached spreadsheet and rectify differences in the Capacity columns opposite the Appalachian and Interstate Maintenance Funding Categories, and in the Total line. This may or may not impact your pie charts on pp. 10-3 and 10-4.*

We discussed this topic with ALDOT before making the initial changes that show we were "out of balance". There were some projects listed in the TIP that were under design or in other stages of development that did not equal to these amounts. Since the projects were already programmed in the TIP, and since the financial projections were based upon historical data, ALDOT allowed us to increase the amount so that those programmed projects could be completed. Please refer to page 10-5 and beyond for an explanation of each category of funding.

13) *In the table on p. 10-14, please review all categories for accuracy and consistency. The table should reflect federal funds only, but if matching funds included, they should be shown in a separate column.*

The MPO staff took out all references to matching funds and is showing only potentially available federal funds only.

14) *In comments earlier this year and in 2008, the Department had advised the MPOs to show estimated funding in "Year of Expenditure dollars." Adding a variation to this instruction, please include in all funding tables and where appropriate, cost totals in current year dollars, and if projected into future years, in "Year of Expenditure" dollars. This will require adding an additional column, in most cases.*

ALDOT was to clarify if we need to show both "Year of Expenditure Dollars" and "Current Year Dollars." All of our financially constrained projects show the Year of Expenditure Estimated Cost. All amounts in that column were adjusted for inflation. For visionary projects – the MPO staff has no idea when these projects may be funded, if even funded at all. All of those projects show a current year estimated cost. If we knew what year they may be funded, we could adjust for inflation. Since we do not know what year the project may be funded, or if it ever will be, it proves impossible to guess what the cost may be in the future.

15) *Some breakout of Capacity versus Maintenance and Operations has been done in project tables or listings, such as in the Bike/Ped projects and the 8.4 Section listings. Please extend this paradigm to* ***all*** *project tables and listings in the Long Range.*

All Capacity Projects and Maintenance and Operations projects have been indicated by project headings on Map 4.1. Additionally, Table 4.1's title is "Year 2035 Long Range Transportation Plan Capacity Projects." Section 7 projects are indicated by project type, and Section 8.4.1.1 indicates the "List of Maintenance and Operations Projects". I am not certain how this can be further clarified.

16) *[You have some duplexed sections where the left-hand opposite page is upside down, requiring the reader to maneuver the page both clockwise and counterclockwise in order to read the opposing pages, such as Table 10.3. Please correct view by rotating clockwise where found in the document.]*

The MPO staff will manually print these pages for our publisher for proper formatting.

On this item 16 reference, we're thinking the FHWA intention here was to have these projects 'numbered,' for ease of reference. We'll need to confirm that, and if that was the intent, we have no problem with it. Please number the projects in these tables.

The MPO staff requires clarification as to what this means. As a guess – the MPO staff moved the project number column over to the far left…but we are still unsure if that is what is meant by this comment.

As a final note, Bryan Fair has reviewed the earliest draft document for grammatical and syntax errors and has done so using the original document and Adobe commenting tools. Please view this version on the FTP site. I believe it's marked BFair Hville Comments Grammatical or similar.

These corrections will be made prior to final publication of the plan.

Victor Jordan
Transportation Planner
Alabama Department of Transportation

3.0 Public Involvement

During the development of this plan, the MPO staff performed outreach to the general public and requested public review and comment concerning the plan. This was done in accordance with SAFETEA-LU and the "Public Involvement Procedures" outlined in **Appendix A**.

During the September 2009 Citizens Advisory Committee meeting of the MPO, a preliminary draft version of the plan was distributed to members for their comment. The committee is comprised of citizens residing throughout all areas of the MPO Study area and represent minorities as well as various modes of transportation. Comments were received from the committee members.

Public involvement activities conducted during the draft plan phase included the following:

- The plan and its availability for public review and comment was advertised through press releases to local and regional news media. Local news media reported on the plan and also placed information on their website.

- The plan and its availability for public review and comment was advertised on the MPO's website. Additionally, invitations concerning public meetings the public could attend to receive more information were advertised on the website as well.

- The plan and its availability for public review and comment was advertised on the local cable television government news channel.

- Additional outreach was performed on the campus of Alabama A&M University, to reach out to younger citizens and users of the transportation network as well as minority households. A formal meeting was held on November 2nd at the campus to review the plan in detail and to request public comment.

- Users of the transit system were also targeted and sought after for plan review and input. Notices were placed in all transit vehicles advertising the plan, and a copy of the plan was made available at the City of Huntsville's Department of Parking and Public Transit. The department serves as the main transfer hub for all transit riders as well as a ticket distribution center.

- Legal ads were placed to advertise the plan's availability for review and comment, and to invite the public to a meeting where additional comments could be received and documented.

- Meetings were conducted on November 16, concurrent with the MPO's Citizens Advisory Committee and on November 18, concurrent with the

MPO's Technical Coordinating Committee Meeting and the MPO's Policy Board. Public comments were noted during these meetings and taken under consideration for incorporation into the plan. During the November 18 MPO Policy Board Meeting, the draft plan was approved, with changes recommended by agencies and organizations as well as the general public, incorporated into the plan.

Documentation of these procedures as well as public comments received and the responses of the MPO staff follow.

PROCEEDINGS OF THE CITIZENS ADVISORY COMMITTEE

September 21, 2009

A meeting of the Citizens Advisory Committee was held on September 21, 2009 at 5:00 p.m. in the conference room on the second floor of the Administration Building located at 308 Fountain Circle.

MEMBERS PRESENT:

Mr. Tom McCarty-Huntsville
Mr. Bob Devlin-Madison County
Mr. Michael Holderer-Huntsville
Ms. Jamie Miernik-Huntsville

STAFF PRESENT:

Mr. Steve Dinges-Huntsville Planning Division
Ms. Tanjie Kling-Huntsville Planning Division
Mr. James Moore-Huntsville Planning Division
Ms. Denise Womack- Huntsville Planning Division

The meeting was called to order at 5:00 p.m. by Mr. McCarty. Upon call for the ADOPTION OF MINUTES from the meeting held on June 8, 2009, Mr. Devlin made a motion to adopt the minutes; which was seconded by Mr. Holderer and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 17-09 was presented for consideration. Mr. Dinges stated that the draft for this resolution was adopted in June of 2009 and now is ready for final adoption. He went on to state that this resolution adopts the Unified Planning Work Program for fiscal year 2010.

Mr. Devlin made a motion to recommend approval of Resolution 17-09 which was seconded by Ms. Miernik and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 18-09 was presented for consideration. Mr. Moore stated this resolution amends the FY 2008-2012 TIP Enhancement Projects to add the Bicycle/Pedestrian Education: Operation C.A.R.S. program for fiscal year 2010. He continued by stating that these funds would be to educate motorists about safety issues regarding bicyclist and pedestrians. Ms. Miernik added that it would also be used for advertisement of the program. She went on to state that the main form of advertising would be to use wrap around ads on public transportation. Mr. Devlin asked if the program would allow for signage. Mr. Moore answered by stating that the only sign that could be used would be a billboard.

Mr. Holderer made a motion to recommend approval of Resolution 18-09 which was

duly seconded by Ms. Miernik and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 19-09 was presented for consideration. Mr. Dinges stated that this resolution would amend the FY 2008-2012 TIP Surface Transportation Attributable Projects category to decrease the construction cost of Meridian Street Phase 2 and move the construction of Church Street Phase 2 to fiscal year 2010. Ms. Miernik asked if the plans would allow for a bicycle lane on Meridian Street. Mr. Dinges stated that it would.

Ms. Miernik made a motion to recommend approval of Resolution 19-09 which was duly seconded by Mr. Devlin and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 20-09 was presented for consideration. Mr. Moore stated that this resolution would amend the Functional Classification map to correct the alignment of several roads. He went on to explain that there were four areas on the map that were incorrect.

Ms. Miernik made a motion to recommend approval of Resolution 4-09 which was duly seconded by Mr. Devlin and carried unanimously.

DISCUSSION OF THE YEAR 2035 TRANSPORTATION PLAN UPDATE: was presented for consideration. Mr. Dinges stated that this is the first four chapters of the plan. He went on to explain that the members are to look it over and send in suggestions for improvements or additions to the plan. Mr. Dinges also stated that staff would be mailing the plan to the absent members for their review.

There being no further business, the meeting was adjourned.

Kling, Tanjie

From: Kling, Tanjie
Sent: Tuesday, October 27, 2009 11:39 AM
To: 'Birmingham News'; 'Bob Labbe'; Bonnie O'Brien; 'John Ehinger'; John Peck (john.peck@htimes.com); Keith Clines (keith.clines@htimes.com); 'Madison County Record'; 'Speakin Out News'; Steve Doyle (steve.doyle@htimes.com); WAAY Newsroom (newsroom@waaytv.com); WAFF 48 (news@waff.com); 'WAHR - Mark'; WAHR/WRTT (lee@star99.fm); 'WAY-FM'; 'WBHP'; 'WDRM - Dan'; WEUP (news@103weup.com); 'WEUP 2'; 'WHNT - Stuart'; 'WHNT Johnson'; 'WJAB'; 'WLRH'; 'WOCG'; 'WOCG 2'; WRSA (jmalone@lite969.com); 'WRSA Studio'; 'WVNN 2'; 'WZDX TV'; 'WZYP, WXMR, WVNN'; WZYP/WVNN (Wvnn.newsroom@cumulus.com)
Subject: Upcoming MPO Meeting
Attachments: email version MPO meeting Nov 2009 press release.pdf

Please find attached a press release concerning an upcoming meeting of the MPO. The committees will be discussing the Year 2035 Transportation Plan, which identifies all road projects in the metro area that are proposed for the next 25 years.

Thanks,

Tanjie Kling, Planner III
City of Huntsville Planning Division/Huntsville MPO
308 Fountain Circle
Huntsville, Alabama 35801
256-427-5100

Department of
Urban Development

Dallas W. Fanning
Director of
Planning Division

HUNTSVILLE

Tommy Battle
Mayor

TO: **All Local News Media**

FROM: **Huntsville Area Metropolitan Planning Organization (MPO)**
October 27, 2009

SUBJECT: **MPO Citizens Advisory Committee Meeting Scheduled for November 16, 2009**
Metropolitan Planning Organization Meeting Scheduled for November 18, 2009

METROPOLITAN PLANNING ORGANIZATION FOR
THE HUNTSVILLE AREA TRANSPORTATION STUDY

PUBLIC MEETING NOTICE

The **MPO Citizens Advisory Committee** will hold a meeting Monday, November 16, 2009 on the seventh floor of the City of Huntsville Municipal Building, at 5:00 pm. The **Metropolitan Planning Organization** will also meet on Wednesday, November 18, 2009 on the seventh floor of the City of Huntsville Municipal Building, at 4:00 pm. Items on the agenda include the following:

1. Adopting the **Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program.**
2. Amending the **Functional Classification Map.**
3. Adopting the **Final Draft Year 2035 Transportation Plan**.

The MPO is currently taking public comments regarding the **Final Draft Year 2035 Transportation Plan** and the **Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program**. Comments may be received at the November 16th Citizens Advisory Committee Meeting, or on-line at the MPO website: mpo.hsvcity.com. Additionally, anyone who has questions or would like to submit written comments prior to the meeting concerning the documents to be presented for approval may contact the MPO staff at:

City of Huntsville Planning Division
P.O. Box 308
Fountain Circle
Huntsville, AL 35804-0308
(256) 427-5100
FAX (256) 427-5121
Or E-mail: LongRangePlanning@hsvcity.com

The **Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program** and the **Final Draft Year 2035 Transportation Plan** are available for public review and comment at the following locations:

On the internet, visit http://mpo.hsv.city.com or www.hsvcity.com/planning/mpo//

In person, visit the City of Huntsville Planning Division Offices during office hours of Monday through Friday, 8 a.m. until 5 p.m. The offices are located at the:
City of Huntsville Municipal Building, 2nd floor
308 Fountain Circle
Huntsville Alabama 35801

Please note that the office will be closed on Wednesday, November 11 to observe Veteran's Day.

###

NOTICE POSTED ON TRANSIT BUSES

Department of
Urban Development

Dallas W. Fanning
Director of
Planning Division

HUNTSVILLE

Tommy Battle
Mayor

METROPOLITAN PLANNING ORGANIZATION (MPO) FOR
THE HUNTSVILLE AREA TRANSPORTATION STUDY

REQUEST FOR COMMENTS

The **Huntsville Area MPO** is currently taking public comments regarding the **Final Draft Year 2035 Transportation Plan** and the **Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program**. Comments may be received at the Citizens Advisory Committee Meeting on November 16, 2009 on the seventh floor of the City of Huntsville Municipal Building, at 5:00 pm, on-line at the MPO website: mpo.hsvcity.com, or in person at the City of Huntsville's Department of Parking and Public Transit. Additionally, anyone who has questions or would like to submit written comments prior to the meeting concerning the documents to be presented for approval may contact the MPO staff at:

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The **Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program** and the **Final Draft Year 2035 Transportation Plan** are available for public review and comment at the following locations:

On the internet, visit http://mpo.hsv.city.com or www.hsvcity.com/planning/mpo//

In person, visit the City of Huntsville Planning Division Offices during office hours of Monday through Friday, 8 a.m. until 5 p.m. The offices are located at the:
City of Huntsville Municipal Building, 2nd floor
308 Fountain Circle
Huntsville Alabama 35801

Additionally, the **Year 2035 Transportation Plan** is available for public review and comment at the City of Huntsville Department of Parking and Public Transit, during office hours of Monday through Friday, 8 a.m. until 5 p.m. The offices are located at:
500-B Church Street
Huntsville, Alabama 35801

Please note that City offices will be closed on Wednesday, November 11 to observe Veteran's Day.

The Star of Alabama

P.O. Box 308 · Huntsville, AL 35804-0308 · Phone 256-427-5100 · FAX 256-427-5121
www.hsvcity.com

Huntsville Area Transportation Study–Metropolitan Planning Organization

:: HATS Committee
:: Meetings/Agendas
:: Planning Activities & Requirements
:: Plans/Publications
:: Getting Involved
:: BRAC & Roadways
:: Transportation Planning Terminology & Acronyms
:: Other Links

The transportation planning process for state and local governments, specified in the United States Code Section 134, Title 23, requires that a Metropolitan Planning Organization (MPO) be designated in urban areas with a population exceeding 50,000 individuals.

The local MPO, formally known as the Huntsville Area Transportation Study (HATS), was established in the 1970s by the Governor of Alabama. The HATS/MPO operates under a signed agreement concerning the transportation planning process for the Huntsville Urbanized Area. The agreement, updated in 1995 and signed by Madison County; the municipalities of Huntsville, Madison, Owens Cross Roads, and Triana; the State of Alabama; and the Top of Alabama Regional Council of Governments, indicates that the Huntsville Urbanized Area will carry out a 3–C (cooperative, comprehensive, and continuing) transportation planning process. This is imperative, so that coordination with the planned development of the Huntsville Urban Area can occur, and so that the designated jurisdictions can qualify for federal funding assistance for highway improvements.

The HATS/MPO plans and programs transportation improvements for the Huntsville Urbanized Area through the Unified Planning Work Program, Transportation Improvement Program, and the Long Range Transportation Plan. All federally funded transportation projects in the urban area must be programmed for construction by the HATS/MPO, and be listed in the Transportation Improvement Program and the Long Range Transportation Plan adopted by the HATS/MPO.

The MPO seeks public involvement and public input to transportation plans and policies. Please take a moment to review any documents requiring public comment, and please take the time to let us know your thoughts! Most of our documents require that you have Acrobat Reader in order to view them. If you do not have it currently available, click here for a free download.

Current MPO Road Projects/Plans

Current Adopted Plans

Five Year Schedule of Planned Road Projects
:: Year 2008-2012 Transportation Improvement Program

Adopted TIP Amendments

Road Projects Planned for the Next 25 Years
:: Year 2030 Long Range Transportation Plan

Plans for Public Review and Comment
Draft 2035 Transportation Plan
To submit comments concerning this plan, click here or e-mail LongRangePlanning@hsvcity.com

Draft FY 2010 Rebalance/Update of the FY 2008–2012 Transportation Improvement Program To submit comments concerning this plan, click here or e-mail LongRangePlanning@hsvcity.com

MPO News and Public Notices

The Draft 2035 Transportation Plan and the Draft FY 2010 Rebalance/Update of the FY 2008–2012 Transportation Improvement Program are available for review and public comment. The public is encouraged to read the plan and make comments at the Citizens Advisory Committee meeting or on-line at this site. Please refer to the left hand side of this page under "Plans for Review and Comment" to register your comments on-line. Also, please indicate which plan you are commenting on at the subject line.

The Citizens Advisory Committee of the Metropolitan Planning Organization will meet on November 16th at 5:00 pm on the 7th floor of the City of Huntsville Municipal Building. To see the agenda for this meeting, click here.

The Technical Coordinating Committee (TCC) will meet at 3:30 pm on November 18th, and the Metropolitan Planning Organization (MPO) will meet the same day at 4:00 pm. Both the TCC and the MPO meetings will be held on the 7th floor of the City of Huntsville Municipal Building. For the agendas, click here: TCC Agenda and MPO Agenda

An additional opportunity for public comment regarding the Year 2035 Transportation Plan will be given on Monday,

November 2nd at 5:30 pm on the campus of Alabama A&M University in the Dawson Building Auditorium. If you are attending the meeting, please enter the campus at the Chase Road entrance. Campus security can then direct you to the Dawson Building.

The Federal Highway Administration has completed its TMA Certification Review of the Huntsville Area MPO. The federal document concerning the review is available on line.

Under the provisions of the 2009 American Recovery and Reinvestment Act, the Huntsville Area MPO is to receive "Economic Stimulus" Funds. Read more.

Map of Economic Stimulus Projects.

Alabama Department of Transportation ARRA 2009 Website and Governor's Certifications

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HUNTSVILLE eGOV
Huntsville's Online – Forms/Applications
Online Auction – GovDeals
Alabama's Paperless Filing – Pay Taxes
Inspection Requests – Details
Municipal Court – Pay tickets online
Huntsville Police Records – Search
Portable Storage (PSS) – Permits
Search City Laws – Online Database



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Email Print
A A A Text Size

Huntsville area planning group revises road improvement plans

Posted: Nov 18, 2009 5:18 AM CST
Updated: Nov 18, 2009 7:07 AM CST



HUNTSVILLE, AL (WAFF)- Road building and the lack of money to do it is a hot topic here in the Valley.

The deadline for the public to summit their comments on the city's road building plans ends Wednesday.

The Huntsville Area Metropolitan Planning organization is responsible for drafting the long-term plans and priorities for projects in the city. The M.P.O. is currently revising its fiscal year 2008-2012 transportation improvement program and its year 2035 plan.

The first document includes millions for projects like paving and road improvements while the second forecasts the spending of billions of dollars over decades in population growth.

Both of these plans are available online at http://www.hsvcity.com/planning/mpo/.

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Comments

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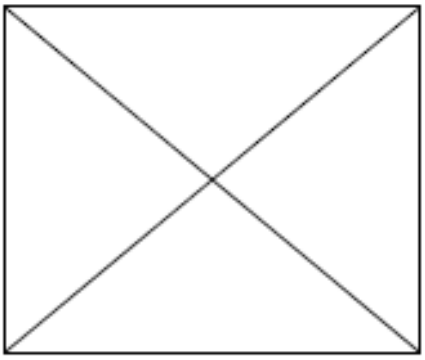
Oral arguments held in Benito Albarran appeal

HPD protocol examined in officer-involved shooting

Country Crossing to add Randy Owen venue

Obama: 30,000 more troops to Afghanistan by summer

Arab's First Call program putting a stop to meth



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Year 2035 Transportation Plan Public Meeting
November 2, 2009
Alabama A&M University, Dawson Building Auditorium

Name	Address
TRAYCEE Verdun	traycee verdun@aol.com
Ravella Gollman	1408 Lancewood dr Apt C Huntsville, AL 35816
Moses Eben	197 Little Lones Rd, Huntsville, AL 35811
Tyler Pearson	Foster Complex Rm 507 EB Alabama A&M Normal, AL 35762
SANDRA CLUTTS	[illegible] COMMUNITY PLANNING DEPT
Alison Grass	191 Honeycutt Rd. Hazel Green AL 35750
Justin Edwards	
Donald E Gilliland	519 Nick Davis Road, Madison, AL
Lloyd Banner	159 Edenshire Dr, Huntsville, AL 35811
Garrett Dickerson	Fostercomplex Rm 505 Alabama A&M 35762
Jamie Evans	1025 Pine Village Dr #103 Huntsville AL 35806
Chukwudi V. Ezeagu	A&M – Dept of Comm Planning & Urban Studies
Ellis Foster	
Dwan Johnson	2024 Golf Rd. Huntsville, AL 35803
James E Moore	2515 Brookline Dr Huntsville AL 35803

devlin Re Year 2035 Transportation Plan.txt

From: Devlin, Robert J. (MSFC-AS01) [robert.j.devlin@nasa.gov]
Sent: Friday, September 25, 2009 7:08 AM
To: Kling, Tanjie
Subject: Re: Year 2035 Transportation Plan

Thanx Tanjie.
R,
Bob

----- Original Message -----
From: Kling, Tanjie <tanjie.kling@hsvcity.com>
To: Devlin, Robert J. (MSFC-AS01)
Cc: Dinges, Steve <Steve.Dinges@hsvcity.com>
Sent: Thu Sep 24 18:40:01 2009
Subject: RE: Year 2035 Transportation Plan

Thanks for the info. We'll make the corrections. Martin Rd on RSA is listed as "funded" on the map, but we omitted it from the funding table. We need to make it "unfunded" and needed. That way if monies are identified for its completion, we can move it to the "funded" category.
Tanjie

-----Original Message-----
From: Dinges, Steve
Sent: Thursday, September 24, 2009 9:26 AM
To: Kling, Tanjie
Subject: FW: Year 2035 Transportation Plan

-----Original Message-----
From: Devlin, Robert J. (MSFC-AS01) [mailto:robert.j.devlin@nasa.gov]
Sent: Thursday, September 24, 2009 9:11 AM
To: Dinges, Steve
Subject: Year 2035 Transportation Plan

Steve, you asked us to look at the Year 2035 Transportation Plan and provide any comments.

1. The format seems to have changed since the last version. I think y'all did a great job of making it more readable.

2. On page 3-1, in the last paragraph, you talk about Redstone. This is really a nit, but I would appreciate it if you could add Marshall Space Flight Center to the list of activities out there. You may also want to call out the FBI and Alcohol, Tobacco and Firearms (ATF). They are in the middle of significant expansions.

3. The map shows Martin Road from Zierdt to Rideout as funded... but the details do not show the project. Is the map assuming that DOD will fund it, or...? (you may want to add some kind of note to identify the approach.)

4. On page 9-19, 9.6 talks about 2005 being in the future. If you aren't already planning to provide updated info, you may want to just delete it.

Thanx again for giving us the advanced copy.

R,
Bob

Additional Public Comment Regarding the <u>Draft Year 2035 Transportation Plan</u>

From: Jamie [jamorgan10@comcast.net]
Sent: Tuesday, October 27, 2009 11:10 PM
To: Womack, Denise; Kling, Tanjie; Moore, James; LongRangePlanning
Subject: 2035 Trans Plan comments
Attachments: Year 2035 Transportation Plan Review.doc

Jamie Miernik
Alabama Bicycle Coalition
Huntsville Bike Advisory & Safety Committee
Huntsville, AL
256.520-2055

E-mail attachment from Jamie Miernik:
10/27/2009
P4-7 - 4-9 Fig 4.1 and 4.2 discrepancy
"Alt 4" is on Figures, but is not described in text.
(Alt 3 should be Alt 2, Alt 4 should be Alt 3)
(Huntsville MPO staff deleted references to Alt. 4, and made changes to reflect this in figures and in the text.)

P7-3, 7.1.2 Revise last bullet:
"All new roads designed with shoulders will be required to have **smooth** paved shoulders. **Rumble strips will be optionally applied, if necessary, not to interfere with bicycle use of shoulders.**"
(Huntsville MPO staff added these statements.)

P7-6 All the entries under "Shared Bike/Sidewalk Facilities" are bike safety road sign installations. Change name of section to: "Bicycle Safety Signage"
(The headings of the tables are associated with the legends of the maps shown in this section. To change the headings of the table will eliminate this consistency.)

P7-8 Last entry of "Proposed Bicycle Route Projects" is missing: "Install Bike Routes signs..."
(This entry was corrected.)

P7-10 2nd to last paragraph:
"...which collectively features..."
Should be: "...which collectively feature..."
(This was corrected.)

P7-10 Some (those from the City of Madison) Table entries called "Sidewalk Improvement Projects" are listed as "Proposed Shared Bike/Sidewalk Facilities" on P7-15, Map 7.1 such as Gooch Ln. Also, Map 7.1 doesn't match the City of Madison designations on p7-17, map 7.3.
(All City of Madison sidewalk projects were pulled from Map 7.1 and remain on Map 7.3)

Bill Weaver
11/16/09
Executive Summary: Add information in the section regarding BRAC, and the importance of road construction to support a growing population.
(Huntsville MPO staff added more information re: the BRAC impacts.)

The Huntsville Times

Account Number
0059778
Order Number
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Date
November 16, 2009

Advertising Affidavit

City of Hsv Planning Committee
Kimberly Gosa
PO Box 308
Huntsville, AL 35804

Date	Position	Description	P.O. Number	Ad Size	Total Cost
11/15/2009	Legal	METROPOLITAN PLANNING ORGANIZATION FOR	legal ad	1 x 174 L	565.10

METROPOLITAN PLANNING ORGANIZATION FOR THE HUNTSVILLE AREA TRANSPORTATION STUDY

PUBLIC MEETING NOTICE

The MPO Citizens Advisory Committee will hold a meeting Monday, November 16, 2009 on the seventh floor of the City of Huntsville Municipal Building, at 5:00 pm. The Metropolitan Planning Organization will also meet on Wednesday, November 18, 2009 on the seventh floor of the City of Huntsville Municipal Building, at 4:00 pm. Items on the agenda include the following:

1. Adopting the Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program.
2. Amending the Functional Classification Map.
3. Adopting the Final Draft Year 2035 Transportation Plan.

The MPO is currently taking public comments regarding the Final Draft Year 2035 Transportation Plan and the Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program. Comments may be received at the November 16th Citizens Advisory Committee Meeting, or on-line at the MPO website: mpo.hsvcity.com. Additionally, anyone who has questions or would like to submit written comments prior to the meeting concerning the documents to be presented for approval may contact the MPO staff at:

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FAX (256) 427-5121
Or E-mail: LongRangePlanning@hsvcity.com

The Draft FY 2010 Rebalanced/Updated FY 2008-2012 Transportation Improvement Program and the Final Draft Year 2035 Transportation Plan are available for public review and comment at the following locations:

On the internet, visit http://mpo.hsv.city.com or www.hsvcity.com/planning/mpo7

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In person, visit the City of Huntsville Planning Division Offices during office hours of Monday through Friday, 8 a.m. until 5 p.m. The offices are located at the: City of Huntsville Municipal Building, 2nd floor
308 Fountain Circle
Huntsville Alabama 35801

Please note that the office will be closed on Wednesday, November 11 to observe Veteran's Day.

Nov. 1, 11 & 15, 2009

STATE OF ALABAMA
MADISON COUNTY

Before me, Brandi Cook , a Notary Public in and for Said State and County, personally appeared Mecia Carlson, known to me, who being by me first duly sworn, deposes and said person is a Legal Advertising Representative of the Huntsville Times, a newspaper published and printed at Huntsville, Madison County, Alabama, and that the attached legal notice was published in said newspaper on:

11/01, 11/11, 11/15/2009

Mecia Carlson
Legal Advertising Representative

Sworn to before me this the

16th day of November 2009

Brandi W. Cook
Notary Public

My Commission expires October 17, 2010

PROCEEDINGS OF THE CITIZENS ADVISORY COMMITTEE

November 16, 2009

A meeting of the Citizens Advisory Committee was held on November 16, 2009 at 5:00 p.m. in the conference room on the seventh floor of the Administration Building located at 308 Fountain Circle.

MEMBERS PRESENT:

Mr. Tom McCarty-Huntsville
Mr. David Nicolas- Huntsville
Mr. Michael Holderer-Huntsville
Mr. Buddy Chapman- Huntsville
Mr. Bill Weaver- Madison

STAFF PRESENT:

Mr. Steve Dinges-Huntsville Planning Division
Ms. Tanjie Kling-Huntsville Planning Division
Mr. James Moore-Huntsville Planning Division
Ms. Denise Womack- Huntsville Planning Division

The meeting was called to order at 5:00 p.m. by Mr. Weaver. Upon call for the ADOPTION OF MINUTES from the meeting held on September 21, 2009, Mr. Nicolas made a motion to adopt the minutes; which was seconded by Mr. Holderer and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 20-09 was presented for consideration. Ms. Kling stated that this resolution adopts the Draft FY 2010 Rebalanced/Updated FY 2008-2012 TIP. She went on to state that the committee would actually be adopting a draft and that the State had balanced their draft TIP. Ms. Kling continued by stating that there had been a lot of verbage added to the TIP per State requirements, such as language concerning bicycle and pedestrian consideration. She further noted that the State had added several road improvement projects to the TIP, primarily resurfacing projects.

Mr. Nicolas made a motion to recommend approval of Resolution 20-09 which was seconded by Mr. Chapman.

After brief discussion, the motion was carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 21-09 was presented for consideration. Mr. Moore stated that this resolution will amend the Functional Classification Map. He went on to state that the previous map had quite a few errors on it that needed to be corrected. Mr. Moore further noted that everyone had been able to look over the map and make necessary corrections to it.

Mr. Holderer made a motion to recommend approval of Resolution 21-09 which was duly seconded by Mr. Nicolas and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 22-09 was presented for consideration. Mr. Dinges stated that this resolution would adopt the Draft Year 2035 Transportation Plan. He continued by stating that staff had sent this around to all members of the committee to review and make corrections to it. Additionally, the State had reviewed the plan and recommended some modifications to the plan. These modifications were mostly formatting changes. The changes did not impact the road projects presented, and did not significantly alter the document. Ms. Kling reviewed the changes with the committee members. Mr. Dinges further noted that all comments have been received and have been reviewed by staff. All comments have been incorporated into the document and any corrections have been made.

Mr. Nicolas made a motion to recommend approval of Resolution 22-09 which was duly seconded by Mr. Holderer and carried unanimously.

There being no further business, the meeting was adjourned.

PROCEEDINGS OF THE TECHNICAL COORDINATING COMMITTEE

November 18, 2009

A regular meeting of the Technical Coordinating Committee was held on Wednesday, November 18, 2009 at 3:30 p.m. in the conference room on the seventh floor of the Administration Building located at 308 Fountain Circle.

MEMBERS PRESENT:	David Pope-Madison County Engineering Curtis Vincent-ALDOT/Guntersville Dave Harris-FHWA Tommy Brown-COH Public Transit Division Lynn Majors-COH Engineering Dennis Thompson-COH Traffic Engineering Division Bob Culver-TARCOG
STAFF PRESENT:	Tanjie Kling-COH Planning Division James Moore-COH Planning Division Denise Womack-COH Planning Division Steve Dinges-COH Planning Division
OTHERS PRESENT:	Falguni Patel-TARCOG

The meeting was called to order by Mr. Dinges. Upon call for the ADOPTION OF MINUTES from the September 23rd meeting, Mr. Pope made a motion to adopt the minutes. The motion was seconded by Mr. Brown and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 20-09, adopts the Draft FY 2010 Rebalanced/Updated FY 2008-2012 TIP was presented for consideration. Mr. Dinges stated that this is still a draft and has to be submitted to the State. He continued by stating that some language had been added and a few road improvement projects.

Mr. Pope made a motion to recommend approval of Resolution 20-09; which was seconded by Mr. Culver and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 21-09, amends the Functional Classification Map was presented for consideration. Mr. Dinges stated that the map is a classification of major roads in the study area. He went on to state that there have been corrections made to it and now needs to be adopted.

Mr. Culver made a motion to recommend approval of Resolution 21-09; which was seconded by Mr. Pope and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 22-09, adopts the Draft Year 2035 Transportation Plan was presented for consideration. Mr. Dinges stated that this plan was sent out a few weeks ago for review. Additionally, the State had reviewed the plan and recommended some modifications to the plan. These modifications were mostly formatting changes. The changes did not impact the road projects presented, and did not significantly alter the document. The changes were reviewed with the committee members. Mr. Dinges further noted that all comments have been received and have been reviewed by staff. All comments have been incorporated into the document and any corrections have been made.

Mr. Pope made a motion to recommend approval of Resolution 22-09; which was seconded by Mr. Majors and carried unanimously.

There being no further business to come before the committee, the meeting was adjourned.

PROCEEDINGS OF THE METROPOLITAN PLANNING ORGANIZATION

November 18, 2009

A meeting of the Metropolitan Planning Organization was held on Wednesday, November 18, 2009 at 4:00 p.m. in the conference room on the seventh floor of the Administration Building located at 308 Fountain Circle.

MEMBERS PRESENT:	The Honorable Mayor Tommy Battle-City of Huntsville The Honorable Mayor Paul Finley-City of Madison The Honorable Mayor Curtis Craig-Owens Cross Roads Mr. David Pope-Madison County (proxy for Mike Gillespie) Ms. Sandra Moon-COH Council Representative Mr. Johnny Harris-ALDOT-Guntersville
STAFF PRESENT:	Tanjie Kling-Huntsville Planning Division James Moore-Huntsville Planning Division Denise Womack-Huntsville Planning Division
OTHERS PRESENT:	Falgoni Patel-TARCOG

The meeting was called to order by Mayor Battle, chairman. Upon call for the ADOPTION OF MINUTES from the September 23rd meeting, Mr. Pope made a motion to adopt the minutes. The motion was seconded by Ms. Moon and carried unanimously.

TRANSPORTATION IMPROVEMENT PROGRAM: Resolution 20-09, adopts the Draft FY 2010 Rebalanced/Updated FY 2008-2012 TIP was presented for consideration. Mr. Dinges stated that this is still a draft and has to be submitted to the State. He continued by stating that some language had been added and a few road improvement projects.

Mr. Pope made a motion for approval of Resolution 20-09; which was seconded by Mayor Finley and carried unanimously.

FUNCTIONAL CLASSIFICATION MAP: Resolution 21-09, was presented for consideration. Mr. Dinges stated that the map is a classification of major roads in the study area. He went on to state that there have been corrections made to it and now

needs to be adopted.

Mr. Harris asked Mr. Dinges if a road had to be classified functional in order to receive funding. Mr. Dinges replied that it does indeed have to be classified.

Mayor Finley made a motion for approval of Resolution 21-09; which was seconded by Ms. Moon.

DRAFT YEAR 2035 TRANSPORTATION PLAN: Resolution 22-09, was presented for consideration. Mr. Dinges stated that this plan was sent out a few weeks ago for review. Additionally, the State had reviewed the plan and recommended some modifications to the plan. These modifications were mostly formatting changes. The changes did not impact the road projects presented, and did not significantly alter the document. The changes were reviewed with the committee members. Mr. Dinges further noted that all comments have been received and have been reviewed by staff. All comments have been incorporated into the document and any corrections have been made.

Mr. Pope made a motion for approval of Resolution 22-09; which was seconded by Mayor Finley and carried unanimously.

There being no further business to come before the members, the meeting was adjourned.

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Appendix C
Congestion Management Process Procedures and Responsibilities Report

I. INTRODUCTION

On July 8, 2002, the Huntsville Urbanized Area was designated by the Federal Highway Administration and the Federal Transit Administration as a Transportation Management Area (TMA). With that designation came an additional transportation planning mandate: The responsibility of developing, establishing, and implementing a Congestion Management Process (CMP) for the Huntsville Urbanized Area. Federal regulations 23 CFR 500.109 and 23 CFR 450.320 require all TMAs, defined as urbanized areas with a population exceeding 200,000 or upon special request from the Governor, to develop, establish, and implement a Congestion Management Process as part of the metropolitan planning process.

The purpose of this report is to document the development and operation of the CMP for the Huntsville Area Transportation Study – Metropolitan Planning Organization. This report will describe the role of the CMP in the transportation planning process, and will define federal and local MPO objectives guiding CMP procedures. It will also define the parameters of the CMP network study area, identify data collection requirements and responsibilities necessary for the effective implementation of the CMP program, and establish specific performance measures for assessing the condition of the transportation system being studied. Additionally, this report will establish methods to prioritize corridors for further study, will provide a toolbox of strategies to mitigate existing and anticipated congestion, and will define the CMP monitoring and update cycle. The implementation of the procedures established by this document will be incorporated in **Section 8** of the **Huntsville Area Transportation Study Year 2035 Transportation Plan**.

II. SCOPE OF STUDY

A. Role of CMP in the Transportation Planning Process

Titles III and VI of SAFETEA-LU, Sections 3005 and 6001, updates the requirement for addressing congestion in Transportation Management Areas (TMAs) by mandating the incorporation of CMP within the metropolitan planning process. SAFETEA-LU further requires that TMAs "address congestion management through a process that provides for safe effective integrated management and operation of the multi-modal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing travel facilities…through the use of travel demand reduction and operational management strategies."

The new planning regulations also require the following:

- The CMP is required in metropolitan areas with a population greater than 200,000 (TMAs), as well as in urbanized areas that have requested designation as a TMA.
- In TMAs in nonattainment of national ambient air quality standards for carbon monoxide or ozone, no Federal funds may be spent for capacity-expanding projects unless they come from a CMP.

The Congestion Management Process is intended to be an integral part of the metropolitan planning process (long range transportation plan process), rather than a stand alone program or system. The CMP also applies a new way of thinking about regional transportation systems management and operations (M&O). M&O is an integrated approach that seeks to optimize the performance of existing infrastructure through the implementation of multi-modal, intermodal, and often cross-jurisdictional systems, services, and projects. This includes regional collaboration and coordination activities between transportation and public safety agencies. Transportation systems management and operations strategies aim at improving service efficiency, enhancing public safety and security, reducing traveler delays, and improving access to information for travelers. M&O strategies can include a broad range of activities, including incident management, travel demand management, freeway and arterial management, transit priority strategies, traveler information, and activities that support emergency preparedness and response. While M&O strategies can enable transportation operators to improve service without costly infrastructure projects, M&O is also built into many capital improvement programs to maintain efficient use of new capacity over the long term.

SAFETEA-LU specifically requires consideration of M&O in the metropolitan planning process; “Promote efficient system management and operation” is specifically identified as one of eight planning factors that must be taken into account in the development of the metropolitan transportation plan [see Section 6001(h) of SAFETEA-LU]. MPOs must also include “operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods.”

Integration of the CMP process into the metropolitan transportation plan (otherwise known as the long range transportation plan) is desirable, since the application of mitigation techniques can be incorporated and programmed directly into the plan. Since the overall goal of the metropolitan transportation plan is to reduce congestion in the most efficient and effective method necessary to achieve a free-flow transportation network, incorporation of the CMP into the metropolitan transportation plan is not only ideal, but required.

The incorporation of the CMP into the metropolitan transportation plan further elevates the process to a core planning activity as opposed to a stand-alone plan. Since the CMP is such an integral part of the planning process, rather than a stand-alone effort, it takes advantage of the expertise and understanding of all who contribute to the development of the metropolitan transportation plan. In particular – local individuals and their families that travel on the local area network.

The intent of the CMP is to support decisions concerning transportation improvements. While the process itself is supported by a system of data collection, monitoring and analysis, and reports which detail various strategies that may effectively address specific congestion problems, the CMP provides a set of tools for identifying and mitigating congestion throughout the long range planning, financial planning, and project development phases.

Historically, MPOs have developed metropolitan transportation plans with a 25 year horizon, focused on the capital investments (highways, transit, bicycle, and pedestrian facilities) needed to satisfy the anticipated demand. While these demands remain important and must be considered, the reality is that, in most metropolitan areas, this traditional approach is constrained by limited funding, environmental and quality of life consideration, and land use concerns. Additionally, given the long lead times for the capital investments to be constructed, the public remains frustrated by the lack of mobility improvements within a shorter timeframe. It is time for metropolitan transportation planning to provide a mix of long-term capital investment and both long-term and near-term operational enhancements to the regional transportation system, and this process can be achieved through the integration of the CMP into the metropolitan transportation plan.

B. CMP Objectives

1. Federal

According to **23 CFR 500.109(a)**, An effective Congestion Management Process is "a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet State and local needs." From the federal viewpoint, the main objectives of the CMP are to provide decision-makers at the State and local level with a better understanding of existing and future system performance, and to provide them with better information on the effectiveness of congestion management strategies.

The federal regulations do provide some flexibility to MPOs for developing their CMP to meet these objectives; however, there are specific key elements that must be included in the CMP in order for it to

be considered effective. Since the CMP is systematic and methodical, key elements have been identified by the Federal Highway Administration that must be included as part of the Congestion Management Process. The Federal Highway Administration's "Interim Guidebook on the Congestion Management Process in Metropolitan Transportation Planning" identifies eight key elements as follows:

1. Develop Congestion Management Objectives
2. Identify Area of Application
3. Define System or Network of Interest
4. Develop Performance Measures
5. Institute System Performance Monitoring Plan
6. Identify and Evaluate Strategies
7. Implement Selected Strategies and Manage Transportation System
8. Monitor Strategy Effectiveness

The development of "Congestion Management Objectives" relate specifically to the Congestion Management Process, but other objectives and regional priorities can be derived from the vision and goals that are stated as part of the long range transportation plan. These objectives may concentrate on operations, land use, and system preservation.

The Huntsville area MPO has tailored its CMP to reflect local capabilities, resources, and the desires of the individual agencies involved in the development of the CMP. All of these key elements are part of the Huntsville Area Transportation Study Congestion Management Process, and are addressed in this document.

2. Huntsville Area MPO

Local objectives of the CMP should compliment those identified at the federal level. The Huntsville area MPO will meet the prescribed federal objectives by reporting on the state of existing and anticipated system performance, mitigating existing and anticipated congestion through the implementation of appropriate and effective strategies, and by monitoring system performance and the effectiveness of implemented strategies.

In order to meet these objectives, the following guidelines relating to the development and implementation of the local CMP were established:

- The CMP must be consistent with federal rules and regulations, as well as federal objectives presented earlier.

- The CMP must be somewhat simple to implement, with minimal financial and personnel impacts.

- The CMP must support other MPO, County, and municipal transportation monitoring and planning activities.

- The CMP must utilize data derived from the most recent approved MPO transportation network models. The transportation network models incorporate both housing and employment data throughout the network, giving a more realistic distribution of trips and better indication of congested corridors.

- Development of other transportation monitoring programs should consider methods to measure congestion on a real time basis.

- The CMP must be devised to identify and evaluate only those strategies appropriate for travel conditions in the local MPO study area. Potential near and long-term strategies for the Huntsville area MPO may be recommended through the CMP process, but will be addressed for implementation in the MPO's **Year 2035 Transportation Plan.**

Specific objectives pertaining to identified performance measures are listed in **Section 8** of the **Year 2035 Transportation Plan.**

C. CMP Oversight

The Technical Coordinating Committee (TCC) of the Huntsville area MPO has been appointed to review and oversee the development of the local CMP. The TCC is comprised of the specialized representatives from these various departments and agencies within the MPO's jurisdiction: City of Huntsville Planning Division, City of Madison Planning Department, Madison County Engineering Department, Alabama Department of Transportation, Federal Highway Administration, City of Huntsville Engineering Department, City of Huntsville Legal Department, City of Huntsville Community Development Department, City of Huntsville Department of Natural Resources and Environmental Management, Madison County Department of Planning and Economic Development, Comcast Cable, Huntsville Housing Authority, Huntsville-Madison County Marina and Port Authority, Huntsville Planning Commission, Huntsville-Madison County Airport Authority, Top of Alabama Regional Council of Governments, Redstone Arsenal, City of Huntsville Department of Parking and Public Transit, City of Madison Engineering Department, Huntsville Utilities, Huntsville-Madison County Railroad Authority, Marshall Space Flight Center, and the US Space and Rocket Center.

Public participation is also part of the development of these procedures for establishing the local CMP through the MPO's Citizens' Advisory Committee (CAC). The CAC is comprised of citizens from the various jurisdictions represented on the MPO. As customary, meetings of the CAC are advertised

through the local news media and internet site, and opened to the general public. Presentations and mailings were made to the CAC during this process, and public input was gathered as well. The CAC will continue to play a vital role by providing public review and comment on strategies and projects developed through the CMP.

D. CMP Area, Network, and Modes

Federal rules indicate that a CMP area and network be defined, based upon transportation system performance standards meeting State and local needs. The CMP should measure both existing and anticipated congestion of the multimodal transportation system within the parameters of study defined by the State and local MPO. The Huntsville area MPO has selected the CMP area, network, and modes of transportation to be studied.

1. CMP Area

The Huntsville CMP Study Area shall be the same geographic parameters established for the MPO's most recently adopted Long Range Transportation Plan. This study area has been modeled and was used in the development of the MPO's latest Long Range Transportation Plan.

2. CMP Network

The CMP network shall consist of all major and minor arterials, major collectors, and major rural collectors that are included in the MPO's latest modeled network, and located within the boundaries of the MPO study area. Preliminary information reveals that major collectors and major rural collectors within the CMP study area boundaries do not currently present a significant congestion problem; however, the classifications were added to the study area based upon anticipated performance deficiencies shown in the MPO's modeled network.

3. Transportation Modes

The modes of transportation selected for study consists of the traditional urban mix of vehicles that have been modeled, and public transit systems that are the recipients of federal transit funds. Public transit services to be studied are fixed route (Huntsville Shuttle bus) and demand response (Handi-Ride and TRAM).

III. CMP – CONCEPT OF OPERATIONS

Figure 1 presents an overview of the Huntsville Area Transportation Study's CMP. The process is systematic and is designed to provide the most current and

accurate information concerning system performance to the MPO. It enables the MPO to amend the TIP and/or the metropolitan transportation plan, if necessary, to include new projects that will alleviate congested corridors identified through the CMP. The process requires the MPO to:

- Periodically report on existing and anticipated conditions on the local CMP network
- Identify local corridors which must be segregated for further study
- Identify the types of strategies that will most effectively eliminate congestion on priority corridors
- Recommend specific projects or strategies for implementation
- Program the project or strategies into the TIP or metropolitan transportation plan if necessary
- Implement the recommended project or strategy, and
- Evaluate the results of the project or strategy implementation.

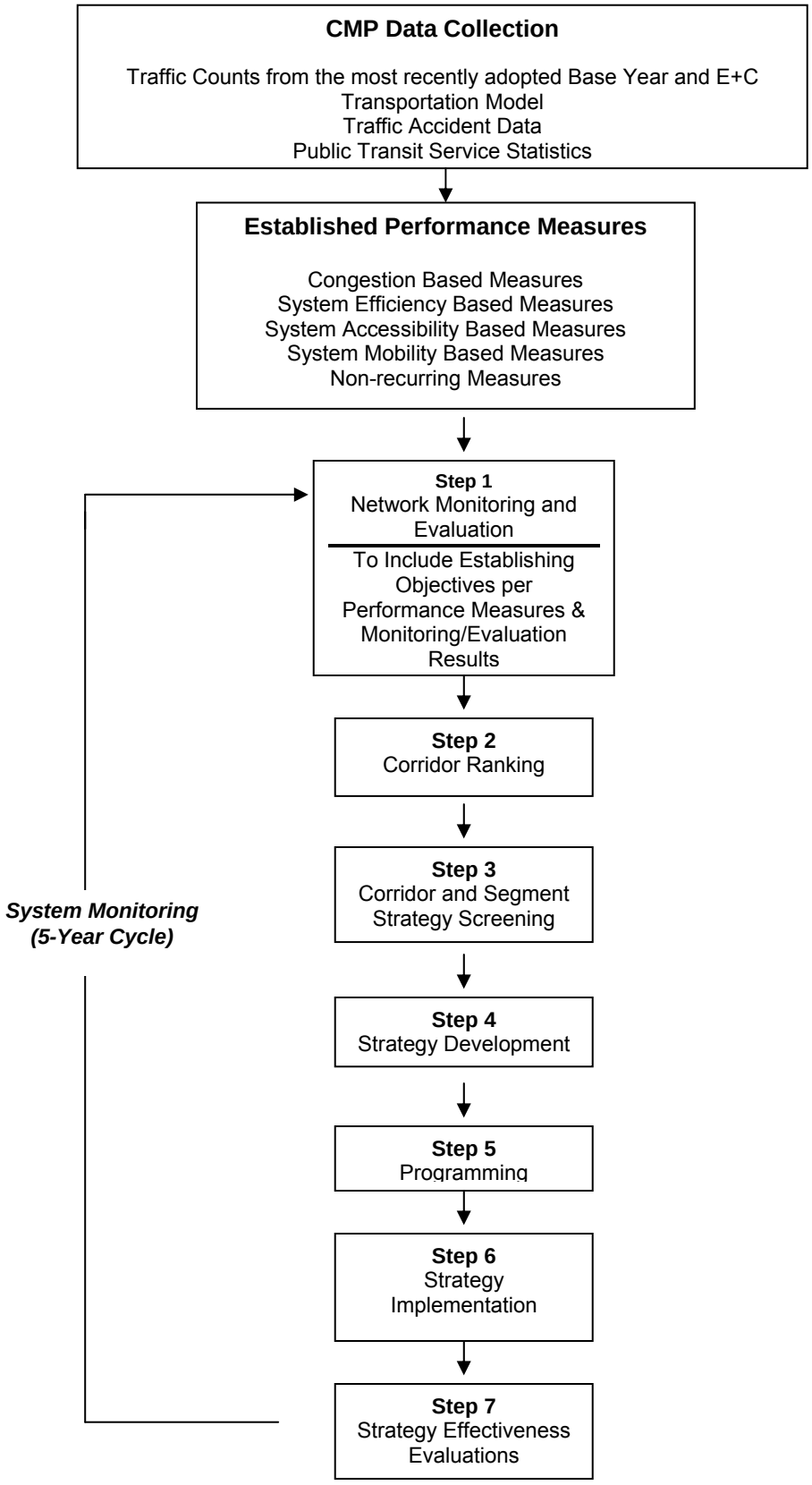
The collection of transportation system data and the application of specific performance measures tailored to meet the Huntsville Area Transportation Study CMP will allow the MPO to carry out the CMP and prepare a report on the state of the system that is incorporated into the metropolitan transportation plan. This section identifies the data collection requirements and performance measures selected by the MPO to carry out the CMP. Additionally, each step in the CMP process will be explained in detail.

A. Data Collection Requirements and Responsibilities

Coordinated data collection among all jurisdictions is required for an effective CMP. Since the foundation of the CMP is the measurement of existing and anticipated congestion, both recurring and non-recurring, the data needed to support the requirements of the local CMP consists of the most recent base year and future year modeled transportation networks, public transit service data, and current traffic accident information. While updated traffic count information may be available, it is preferred to use modeled traffic counts, since certain socio-economic characteristics are incorporated and bear influence on how trips are distributed throughout the network.

Additionally, the MPO maintains a current database of detailed information on roadway segments which comprise the CMP network. Data collection responsibilities are as follows:

Figure 1
HUNTSVILLE AREA TRANSPORTATION STUDY
CONGESTION MANAGEMENT PROCESS



1. Traffic Count Data

Traffic count data is collected by the State of Alabama, City of Huntsville, City of Madison, and Madison County. This data is incorporated, calibrated, and validated in the Base Year transportation model, and is reflected in the MPO's Long Range Transportation Plan transportation network models.

2. Traffic Accident Data

State of Alabama

The State of Alabama Multimodal Transportation Bureau serves as a repository for traffic accident data for the State. Traffic accident data is obtained through the Critical Analysis and Reporting Environment (CARE) database program, developed by the University of Alabama and endorsed by the Alabama Department of Transportation. Traffic accident data is queried for pertinent years for all locations in the MPO study area.

3. Public Transportation Data

City of Huntsville

The City of Huntsville Department of Parking and Public Transit continuously collects service performance data concerning its fixed route service and demand response service to meet annual Federal Transit Administration (FTA) reporting requirements. Additionally, the department is required to submit a **Title VI Report** to FTA every three years, justifying transit system accessibility. Transit service statistics for the past four years from the submitted National Transit Database report provided to FTA, and the latest **Title VI Report** available will be requested for input in **Section 8.2**: Congestion Management Process.

Madison County

The Madison County Department of Planning and Economic Development collects and maintains transit service data for its demand response program: TRAM. Service statistics are provided on an annual basis to the Alabama Department of Transportation (ALDOT) Multimodal Division. Transit service statistics for the previous four years from the latest report provided to ALDOT Multimodal, will be requested for input in **Section 8.2**: Congestion Management Process.

B. Performance Measures

Federal legislation [23 CFR 500.109(3)] requires that the CMP include the "establishment of a program for data collection and system performance

monitoring to define the extent and duration of congestion, to help determine the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions." This is best accomplished through the establishment of multidimensional performance measures. The Federal Highway Administration's training course, "Congestion Management for Technical Staff," defines the types of congestion management performance measures as congestion based, efficiency based, mobility based, and accessibility based. The training course also recommends that performance measures have the following characteristics:

- Clearly understood (to simplify decision making)
- Sensitive to all travel modes
- Sensitive to time
- Supporting data not too costly or difficult to collect
- Supporting data can be forecast, and
- Ability to measure effects of strategies

According to the federal rules, performance measures selected should rely on existing data sources as well as the appropriate application of real-time system performance monitoring capabilities available through Intelligent Transportation Systems (ITS) technologies. At the present time, the application of ITS technologies in the region is in its infancy. Once the regional ITS architecture is developed and projects are implemented, the region's monitoring capability will be greatly enhanced. Given this situation, the Huntsville area MPO has tailored its specific performance measures to meet the Federal Highway Administration's recommendations through its current capabilities.

An assessment of various recurring and non-recurring performance measures was conducted, and appears at **Table 1** and **Table 2**. The tables show the category of the performance measure, data required for its use, and its applicability to the Huntsville Area Transportation Study CMP. Data collected by previously identified departments and agencies is critical to the CMP process, since the data is applied to performance measures, resulting in graphic representations of mobility trends in the area. Performance measures that are readily applicable to the established CMP area, network, and modes have been selected for inclusion in the Huntsville Area Transportation Study CMP. Data collection responsibilities for each performance measure and the format for data presentation is further identified. It is preferred that performance measures and presentation formats be consistent from year to year so that trend analysis may be easier to perform. The identification and use of these performance measures is detailed as follows.

1. Congestion Based Measures

Congestion based measures are facility oriented and show how much of the road or bus capacity is being used within a corridor. There are two measures identified for this category that will be used in the Huntsville Area Transportation Study CMP.

a. V/C Ratios of the CMP Network, both current and projected.

V/C ratios for the current and projected CMP network will be obtained through methods used by the MPO's transportation modeling software, which has been endorsed by the Alabama Department of Transportation and approved by the local MPO. Segments displaying a v/c ratio equal to or greater than 1.0 on both sides of the corridor will be considered congested per State and local standards.

Data Needs and Collection Responsibilities:
Modeled Base Year traffic counts for the entire CMP network, based upon counts obtained from Alabama Department of Transportation, City of Huntsville, City of Madison, and Madison County will be required. These jurisdictions already conduct traffic counts as part of their traffic monitoring program and provide this information to the MPO as the transportation model is updated.

Projected daily traffic counts are obtained from the MPO's latest transportation modeling software.

Segment definitions of the CMP network are defined and displayed on the current modeled network.

Current and projected roadway capacity levels for the entire network are available by referencing the base year and projected year transportation model. Capacity levels are established by the Alabama Department of Transportation.

Presentation Format:
All segments with V/C ratios of 1.0 or greater will be highlighted and displayed within the metropolitan transportation plan in **Appendix D**. Additionally, a map may also be prepared indicating current fixed Shuttle routes that converge on present and future congested corridors.

Table 1
ASSESSMENT OF RECURRING PERFORMANCE MEASURES

Measure of Congestion	Data Requirements	Readily Applicable to CMP Area, Network, Modes?
Congestion Based		
Volume to Capacity Ratio	Results from current and projected transportation model, based upon system wide traffic counts and system wide capacity levels	Yes
Fixed Route Rate of Occupancy	Huntsville Public Transit statistics	Yes
System Efficiency		
Average/Percent Vehicle Miles of Travel	System wide traffic counts *per models*, mileage of CMP network	Yes
Average/Percent Vehicle Miles of Travel per Person	System wide traffic counts *per models*, mileage of CMP network, estimated county population	Yes
Duration of Congestion	Hourly traffic counts and roadway capacities, or travel time surveys	No – Data sources not currently available
Number/Percent of Vehicle Miles Traveled Congested	V/C Ratios of CMP network, lengths of congested segments, traffic counts	Yes
Number/Percent of Vehicle Hours Traveled Congested	Hourly traffic counts and roadway capacities, or travel time surveys	No – Data sources not currently available
Trips by Travel Mode	Assessment of number of trips made by all modes within network area	No – Difficult to ascertain for all modes; data not collected
Person Miles Traveled	Vehicle occupancies, traffic volumes, segment lengths	No – Difficult to ascertain vehicle occupancies; data not collected
Total Person Hours Traveled by mode	Vehicle occupancies, traffic volumes, segment lengths, travel time	No - Difficult to ascertain vehicle occupancies, travel time; data not collected
System Mobility		
Transit Passengers Served	Transit statistics from Huntsville Public Transit and TRAM	Yes
Transit Revenue Miles	Transit statistics from Huntsville Public Transit and TRAM	Yes
Average Daily Ridership on Fixed Routes	Transit statistics from Huntsville Public Transit	Yes

Table 1 (Continued)
ASSESSMENT OF RECURRING PERFORMANCE MEASURES

Measure of Congestion	Data Requirements	Readily Applicable to CMP Area, Network, Modes?
System Mobility (Cont.)		
System Wide Average Ridership	Transit statistics from Huntsville Public Transit and TRAM	Yes
Travel Speed on CMP Network Classifications	Must be ascertained from current model	Yes
Travel Times Along Corridors	Travel time surveys	No – Data source not currently available
System Accessibility		
Percent of Population within "X" Minutes of Selected Areas	Must determine selected areas, must conduct travel time surveys	No – Data sources not currently available
Percent of Population within "X" Miles of Transit	Must determine population along current transit routes, establish mileage threshold	Yes – but further assessment of accessibility based upon population density and level of income seems better use of resources
Mean Travel Time to Work	Census data	Yes
Transit Accessibility per Population Density and Level of Income	Census data, transit route maps	Yes

Table 2
ASSESSMENT OF NON-RECURRING PERFORMANCE MEASURES

Measure of Congestion	Data Requirements	Readily Applicable to CMP Area, Network, Modes?
Average Delay due to Accidents and Incidents	Traffic surveillance information	No – Information does not exist
Locations Experiencing Typical Delay due to Traffic Accidents	Traffic accident data obtained through CARE	Yes

b. Fixed Route Rate of Occupancy

The fixed route rate of occupancy measures congestion on fixed route buses, either on an average daily basis or during peak times. This number is calculated by dividing the number of average daily riders (or peak service riders) into the capacity of the system. Officials at the City of Huntsville Department of Parking and Public Transit report that there is not a standard peak time of service. Since this is the case, the rate of occupancy will be displayed for average service, and not peak hour service. At the present time, the average system wide rate of occupancy is available. Route specific information will be available in the near future.

Data Needs and Collection Responsibilities:

Average daily ridership of Huntsville's Shuttle Bus, collected by the City of Huntsville Department of Parking and Public Transit will be required.

Average daily seat capacity determined by the City of Huntsville Department of Parking and Public Transit will be needed.

Additionally, similar data will be provided to the Federal Transit Administration as part of Huntsville's report to the National Transit Database.

Presentation Format

System wide results will be displayed in bar chart format for comparison purposes.

2. System Efficiency Based Measures

System efficiency based measures provide an overall assessment of the transportation system's performance by measuring system demand and the level of congestion in the area. Measures in this category will consist of vehicle miles traveled (VMT) and roadways operating at congested conditions. It is important to note that the VMT estimates do not indicate system wide demand, only demand on the CMP network. It does provide a relative comparison of VMT trends on the CMP network.

a. Average Daily Vehicle Miles of Travel

The average daily vehicle miles of travel is calculated by multiplying each segment's average daily traffic count by

each segment's length, and then summing the individual segment's VMT.

Data Needs and Collection Responsibilities

Current average daily traffic counts for the entire CMP network taken from the approved MPO Long Range Transportation Plan's Base Year modeled network will be required.

Segment definitions and lengths of the CMP network are needed. Segments were defined by the MPO's Long Range Transportation Plan and displayed on the current modeled network. Segment lengths were determined by using 3-D TopoQuad software and GIS.

A comprehensive VMT of the modeled network is also available through the CUBE modeling software.

Presentation Format

Average daily VMT will be displayed in table format and in bar chart format.

b. Average Daily Vehicle Miles of Travel per Person

Average daily vehicle miles of travel per person is calculated by dividing the CMP daily VMT by the countywide population for the year that the VMT was developed. It provides planners with an idea of personal mobility and system utilization, and can establish a relationship between population growth and length of trips in the area.

Data Needs and Collection Responsibilities

VMT as described previously in "III.B.2.a." will be required. Population estimates used for the Long Range Transportation Plan's model development will be necessary, and can be obtained by the City of Huntsville Planning Division – Demographics Section.

Presentation Format

Average daily VMT per person will be displayed in bar chart format.

c. Roadways Operating at Congested Conditions

The number, percent, and classification of roads operating at congested VMT as well as the base year total congested versus uncongested VMT can be determined by calculating the v/c ratio for each segment on the CMP network and per each roadway classification. Segments with v/c ratios equal to or greater than 1.0 (according to State and local standards) are classified as congested. Multiplying each segment's average daily traffic count (congested versus uncongested and by classification) by each segment's length, and then summing the individual segment's VMT will provide the end result required.

Data Needs and Collection Responsibilities:
V/C ratios, traffic counts, segment lengths, and roadway classification can be obtained from the CMP segment database and the MPO's transportation model, endorsed by the State.

Presentation Format:
This data will be presented in line chart form as applicable and as a pie graph.

3. System Mobility Based Measures

Mobility based measures are more trip-oriented. These measures express the ease and freedom with which persons can travel from one location to another. It also measures the number of persons traveling by differing modes within the corridor. The Huntsville Area Transportation Study CMP will investigate system mobility on several levels.

a. Transit Ridership

The mobility of users of fixed route and demand response public transit services provided within the MPO jurisdiction will be investigated by determining total ridership, average daily passengers served by fixed route transit services, and annual revenue miles. This will assist in determining passenger "throughput" on the system. System wide rate of occupancy, mentioned earlier, can also be applied here since rate of occupancy is also an indicator of the system's ability to accommodate passenger trips. Passenger mobility is affected if the fixed route transit system cannot accommodate the passenger's trip. The following will be specifically addressed:

(1) Total ridership
   (a) Huntsville Shuttle
   (b) Handi-Ride
   (c) TRAM

(2) Average Daily Passengers – Huntsville Shuttle

(3) Annual Revenue Miles
   (a) Huntsville Shuttle
   (b) Handi-Ride
   (c) TRAM

Data Needs and Collection Responsibilities:

Total ridership data and annual revenue miles for the City of Huntsville Shuttle (fixed route) and Handi-Ride (demand response) program is collected by the Huntsville Department of Parking and Public Transit as part of its annual National Transit Database report to the Federal Transit Administration. Data indicating the average daily passengers served for the Shuttle is also collected.

Total ridership data and annual revenue miles for the county's demand response service, known as TRAM, is collected by the Madison County Department of Economic Development and Planning. This data is routinely collected and submitted to the Alabama Department of Transportation, Multimodal Section.

Data required for calculating the fixed route rate of occupancy will be the same as required under 1.b. of this section.

Presentation Format:

This data will be presented in bar graph format, depicting each public transit service and appropriate measure. Initial data may be presented in the text of the report.

b. CMP Transportation Network

Mobility on the CMP transportation network is difficult to measure without actual travel time data. At the present time, the Huntsville area MPO does not have the resources to conduct such study. Estimated travel speed will be determined.

Data Needs and Collection Responsibilities:

Estimated travel speed must be modeled, and can be obtained from the MPO's transportation model and validated base year network. Higher travel speeds on the network indicate better mobility. The

validated base year network is updated every five years to support the MPO's **Long Range Transportation Plan**.

Presentation Format:
Travel speed data will be displayed on a line chart. System speeds will be shown for major arterials, minor arterials, and major collectors.

4. System Accessibility Measures

System accessibility measures are activity oriented, and can be used to express the ease that persons are able to access activities such as work, shopping, etc. as well as other modes of transportation. System accessibility is somewhat difficult to measure. The Huntsville area MPO will measure system accessibility of the City of Huntsville's fixed route Shuttle Bus system as well as the entire CMP network.

a. Public Transit Accessibility

The ease of public access to fixed route transportation services in the City of Huntsville will be investigated. At the present time, the best way to measure public transit accessibility is by referencing the latest Title VI information submitted to FTA. Additionally, maps used in preparation of the **Title VI Report** will be consulted. These maps are based upon the latest census data, showing specific thresholds of minority population as well as income levels. Locations which meet the established thresholds and are along public transit routes shall indicate public accessibility to the system. These maps will also be used later in the CMP process for strategy screening.

Data Needs and Collection Responsibilities:
Huntsville Department of Parking and Public Transit will provide copies of their latest **Title VI Report** submission for review.

Maps used in the preparation of the **Title VI Report** are available as either part of the report or from the City of Huntsville Planning Division.

Presentation Format:
General information gathered from the Huntsville Department of Parking and Public Transit's **Title VI Report** will be referenced.

b. CMP Network Accessibility

Currently the only information available concerning the accessibility of the CMP network is "Commuting to Work" data, reported by the U.S. Census Bureau. Also, the latest Census Transportation Planning Package will be consulted for additional information. The use of this type of data has been selected, since most peak time trips are work related. More detailed analysis of these statistics can be made available in the City of Huntsville Planning Division's publication, "Journey to Work 2000: Characteristics of Workers, Households, and Commuting in Madison County, Alabama."

Data Needs and Collection Responsibilities:
Data will be collected from the latest U.S. Census Bureau reports, the latest Census Transportation Planning Package, and most recent specialized demographic reports published by the City of Huntsville Planning Division. This data is only available every ten years, and is all that is available at the present time. Estimates may be made about travel conditions along the CMP network based upon population changes, roadway improvements, and the analysis of other performance measures.

Presentation Format:
Information will be in text format; however, maps may be used to display additional pertinent information.

5. Non-Recurring Congestion Measures

Non-recurring congestion measures tend to measure delay due to incidents and accidents on the CMP network. It is difficult to adequately measure these random events since the time of delay, severity of accidents/incidents, and the time to clear such events vary widely and are unpredictable. The best method to assess non–recurring congestion is through the collection of traffic accident data. While actual time of delay is not recorded, locations with the highest number of accidents will typically experience the most delay, causing congestion to occur.

The MPO will develop a Crash History database, listing the top intersections with the highest number of accidents. Statistically speaking, the calculation of crash rates would be the ideal method used to measure accident frequency, but that level of information would require intersection approach counts for all intersections in the CMP network. That data is not currently available. Safety projects related to locations experiencing high rates of traffic accidents are identified in the MPO's Long Range Transportation Plan. The selection and scope of these projects rely on more detail than what is included in this report.

Data Needs and Collection Responsibilities:

The State of Alabama Multimodal Transportation Bureau serves as a repository for traffic accident data for the State. Traffic accident data is obtained through the Critical Analysis and Reporting Environment (CARE) database program, developed by the University of Alabama and endorsed by the Alabama Department of Transportation. Traffic accident data is queried for pertinent years for all locations in the MPO study area.

Presentation Format:

The top ten intersections with the highest number of traffic accidents will be presented in table format, with the rankings of previous reporting years to be displayed. A map will also be created, displaying the top ten intersections where crashes occur.

6. Graphic Representation of Performance Measures

   The results of all performance measures will be presented either in text, table, or chart format. Examples are shown on the next page, **Figure 2.**

C. Development of the CMP

There are two outcomes that result from the CMP: One outcome is an assessment of the overall condition of the CMP network. The other outcome involves the determination of current and future congested corridors and isolated segments, their prioritization, the application of appropriate strategies for solving congestion on the selected corridors, their potential programming into the planning process, possible implementation, and evaluation of effectiveness once implementation occurs. These outcomes will be incorporated in Section 8 of the **Year 2035 Transportation Plan**. The CMP will include the following sections:

- State of the System – defines system mobility trends per performance measures
- CMP Technical Ranking – lists in priority order *all* congested corridors
- Strategy Recommendations – summarizes recommendations for mitigating congestion on top-ranked corridors
- Strategy Effectiveness Evaluations - summarizes extent of improvement after strategies are implemented

In order to prepare this section and maintain an effective CMP which correlates with local planning goals and initiatives, the following steps in the CMP must be addressed:

1. Step 1 – Network Monitoring and Evaluation

The first step to be accomplished in the CMP is network monitoring and evaluation. This requires two tiers of analysis. The first tier involves the implementation of the established performance measures, an analysis of system performance based upon the results of the measures, and the establishment of CMP objectives to be met in the future.

The second tier of analysis requires a study of the CMP network to determine which existing and anticipated segments are classified as congested. For the purpose of the CMP, both current and future volume/capacity (v/c) ratios will be calculated for each segment on the CMP network using the methods established by the State's current transportation planning modeling software.

Current traffic volumes will be taken from the Base Year transportation network model, found in the MPO's **Year 2035 Transportation Plan**. Current roadway capacities are indicated by the MPO's transportation planning model. Future traffic volumes will be taken from the future modeled traffic count for each segment. Future "improved" roadway capacity for each segment will be indicated by the MPO's transportation planning model. The "improved" roadway capacity takes into account all future improvements programmed into the Transportation Improvement Plan and the adopted Long Range Transportation Plan.

Segments indicating a v/c ratio of 1.0 or greater will be considered as congested, according to current State and local standards and as shown in Section III.B.1.a. of this report.

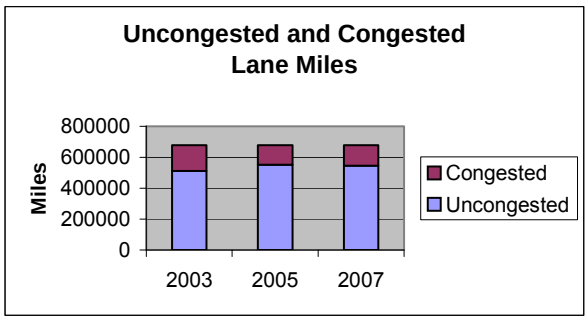
2. Step 2 – Corridor Ranking

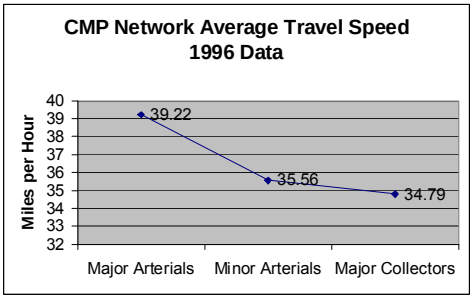
Once existing and anticipated segments with v/c ratios equal to or greater than 1.0 are identified, they will be segregated and ranked according to a prioritization process. There may be numerous segments of roadway identified that are congested. Since it is not feasible to identify congestion mitigation strategies for all of these roadways simultaneously, a systematic method for determining which segments to study first was devised. Although this technique results in a numerically ranked list - the "CMP Technical Ranking" - it does not supersede any project priority list approved by the MPO. Segments are only ranked for consideration purposes only.

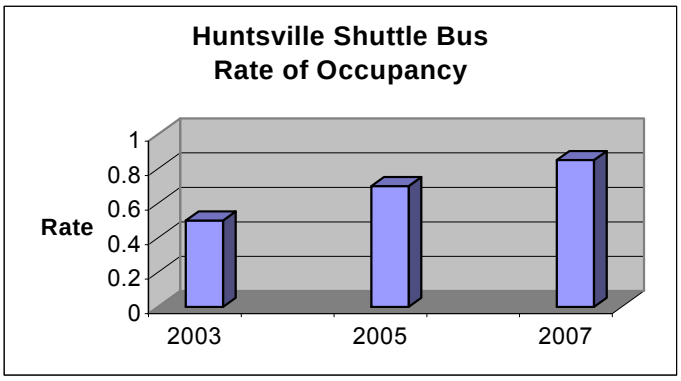
The method of prioritizing corridors is described at **Table 3** on the following page. The prioritization process involves assigning points to each segment based upon extent of congestion, existing traffic volume, traffic accident history, multi-modal connectivity, and prior funding commitments. All of these factors are somewhat self-explanatory.

Figure 2
CMP PERFORMANCE MEASURES
GRAPHIC REPRESENTATIONS

These charts represent potential display formats only. All information presented below is fictional and is not intended to represent actual conditions.







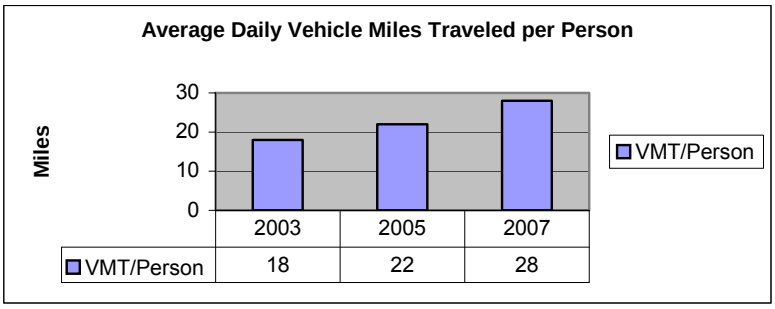


Table 3
CMP Technical Ranking Prioritization Criteria

Prioritize segments by weighing the following: V/C ratio or level of service existing year (weight=40), V/C ratio or level of service future year (weight=20), a total existing volume score (weight=10), safety (weight=10), multi-modal connectivity (weight=10), and prior funding commitments (weight=10). Possible 100 points.

Score= ELOS+FLOS+TEV+S+M+PFC

Where
ELOS = existing level of service x 40 points

FLOS = future level of service x 20 points

TEV = Total Existing Volume (score between 0 and 10) - taken from Base Year Model

Score	Total Traffic Volume
0 =	Less than 9,999
2.5 =	10,000 to 19,999
5 =	20,000 to 29,999
7.5 =	30,000 to 39,999
10 =	Over 40,000

S = Safety (score between 0 and 10)

0 = Less than 14 Traffic Accidents/Crashes per Segment
5 = 15-29 Traffic Accidents/Crashes per Segment
10 = 30 and over Traffic Accidents/Crashes per Segment

M = Multi-modal Connectivity (total score between 0 and 10)
Part A

Segment does contain existing bicycle or sidewalk facilities
5 points
Segment does not contain existing bicycle or sidewalk facilities
0 points

Part B

Part of a fixed-route transit route
5 points
Not part of a fixed-route transit route
0 points

PFC = Prior Funding Commitments (score between 0 and 10) as specified in the MPO's current adopted TIP

0 = no funding committed
3 = study funding committed *or project appears in 5 year TIP; no phases funded in current yr*
5 = design funding committed in current fiscal year
7 = right of way funding committed in current fiscal year
10 = construction of funding committed in current fiscal year

Once all appropriate points have been assigned to each segment and calculations have been made, each segment will be ranked in order from highest score to lowest. If any one segment appears toward the top of the list, and surrounding links are contiguous or near contiguous, the whole congested link will be presented for study. This will be done until all corridors have been identified. The overall corridor ranking results will be presented in **Section 8** of the **Year 2035 Transportation Plan**, "CMP Technical Ranking" section. From this list, the top ten (10) corridors will be presented for comprehensive strategy evaluations.

For the purpose of the CMP, corridors are defined as a collection of segments that are contiguous or near contiguous and involve multiple intersections.

3. Step 3 – Corridor and Segment Strategy Screening

a. General

The CMP requires through its legislation, the identification and evaluation of strategies to determine the most effective method(s) to address congestion. According to 23 CFR 500.109 (b)(3), the CMP should include the "identification and evaluation of the anticipated performance and expected benefits of appropriate traditional and nontraditional congestion management strategies that will contribute to the more efficient use of existing and future transportation systems based on the established performance measures." The legislation further defines the categories of strategies, or combination of strategies to be considered. Those categories are:

- Transportation demand management measures, including growth management and congestion pricing
- Traffic operational improvements
- Public transit improvements
- ITS technologies
- Additional system capacity, where necessary

While the legislation does not dictate a specific order to how these strategies are to be considered, it is implied that construction of additional system capacity should be the last option examined for MPOs that are at non-attainment for air quality.

SAFETEA-LU requires that "for transportation management areas classified as nonattainment for ozone or carbon monoxide pursuant to the Clean Air Act, Federal funds may not be advanced in such area for any highway project that will result in a significant increase in the carrying capacity for single-occupant vehicles unless the project is addressed through a congestion management process." Furthermore, the CMP must give priority to strategies that reduce congestion and improve the mobility of people, goods, and services without requiring the construction of additional roadway capacity. Capacity adding projects are not prohibited, but the CMP requires the MPO to consider alternative strategies to capacity increases, and that measures be incorporated into the project to make the most efficient use of the new capacity once it has been constructed. The Huntsville urbanized area is currently at attainment, but will in good faith address construction of additional system capacity lastly.

In reality, all reasonable strategies must be considered and incorporated in future plans even if additional system capacity is determined to be the appropriate "fix", since the corridor must be effectively managed once improvements are made and for years to come. 23 CFR 500.109(a) states that "Where the addition of general purpose lanes is determined to be an appropriate strategy, explicit consideration is to be given to the incorporation of appropriate features in the SOV project to facilitate future demand management and operational improvement strategies that will maintain the functional integrity of those lanes."

The interim legislation pertaining to congestion management, which was in effect from 1994 until 1997, provided greater detail and more examples of strategies to be considered. These examples were studied at great length, and most strategies mentioned in the interim legislation were deemed viable and worthy of inclusion in the final strategy categories selected for analysis.

b. Huntsville Area Transportation Study CMP Strategy Determination

To ensure that all levels of strategies are appropriately considered, the Huntsville area MPO devised a strategy screening matrix including specific questions to be considered in each strategy category. The questions, when applied to the top 10 corridors, may assist in devising potential strategies to mitigate congestion. Maps and charts displaying socio-economic and transportation characteristics have been prepared to aid in answering some questions. These maps are available in **Section 3** of this report.

Larger maps suitable for more in-depth analysis can be made available to jurisdictions upon request.

Once the **CMP Technical Ranking** list is developed, the process of congestion mitigation must begin. Jurisdictions will be notified of the ranking results. Those jurisdictions with corridors and/or isolated segments presented in the **CMP Technical Ranking** list and chosen for strategy evaluations will be responsible for formulating solutions to address congestion problems. The strategy screening matrix is meant to be used as a *guide* for identifying various strategies to mitigate congestion. It is not meant to be an inflexible tool. Jurisdictions are not limited to considering these specific strategies, but may identify other strategies that may work as well or better. It is not necessary to answer every single question presented, nor is it the intent of the legislation that all potential strategies be extensively studied. Each jurisdiction should determine the extent of using the matrix; however, all strategy categories should be considered. The goal should be to identify those strategies that can be reasonably implemented for a specific corridor or deficiency.

In some instances, strategies may or may not be feasible for implementation due to political, technical, and/or operational support. All potential strategies will be included in the screening matrix, since the area's political, technical, and/or operational environment may change in the future. The screening matrix for each strategy follows each level's definition, and is shown at **Table 4**. The five strategy categories have been assigned to "levels," and are considered in the following order:

Level One Strategies – Strategies that Eliminate or Reduce Trips

Level Two Strategies – Strategies that Involve Traffic Operational Improvements and Access Management

Level Three Strategies – Strategies that Shift Trips from Single Occupancy Vehicles to Public Transit, Other High Occupancy Vehicles (HOVs), and Other Modes

Level Four Strategies – Strategies that Involve Implementation of Intelligent Transportation Systems for Traffic Management

Level Five Strategies - Strategies that Add Capacity for All Vehicles

Table 4
Huntsville Area Transportation Study CMP Strategies

Level One - Strategies that Eliminate or Reduce Trips

Level One Strategies attempt to eliminate or reduce the need for making trips. The strategies to be studied in this category include such options as growth management, the development of activity centers, congestion pricing, and certain types of transportation demand management.

LEVEL ONE SCREENING QUESTIONS
STRATEGIES THAT ELIMINATE OR REDUCE TRIPS

Strategy Class	Strategy	Screening Questions	Source of Information
Growth Management	Land Use Regulations	1. Is a significant amount of land available for development? 2. Is projected population and/or employment growth high? 3. Has the corridor been designated as a redevelopment or growth area? 4. Is the corridor's SOV % for work trips high? 5. Is the corridor's Transit % for work trips low? 6. Does the corridor pass the transit expansion criteria? 7. Will alternative modes of travel be available within the corridor?	1. Land use maps, field work 2. LRTP, other planning documents 3. LRTP, other planning documents 4. Latest CTPP and Census data 5. Latest CTPP and Census data 6. See Level 3 Strategy : "Fixed Route Bus Service Enhancements &/or Service Expansion" 7. Various transportation plans
	Design Standards	1. Is there significant development occurring in the corridor? 2. Is there planned development occurring in the corridor?	1. Current Planning documentation 2. Current Planning documentation
	Jobs/Housing Balance	1. Is there are large imbalance between jobs and housing? 2. Has the corridor been designated as a redevelopment or growth area?	1. Latest CTPP data 2. Planning documentation
Congestion Pricing	Road User Fees	1. Is the v/c ratio on at least 70% of corridor freeway/arterial miles greater than 1.0 (the CMP threshold?) 2. If the answer to question #1 is "yes", is the answer still "yes" if the proposed roadway for congestion pricing is excluded? 3. Is a limited access facility available in the corridor? 4. Are alternative travel modes available in the corridor? 5. Are tolls on the facility politically acceptable?	This strategy is not politically acceptable, and not applicable to any corridor. Tolling new roads may be a possibility in the future, but is not likely.
	Parking Fees	1. Are there primarily commercial or retail land uses in the congested area? 2. Are alternative travel modes available in the corridor?	This strategy is not politically acceptable, and not applicable to corridors outside the downtown area.
Transportation Demand Management	Telecommuting	1. Is the type of employment available surrounding the corridor or at the activity center suitable for telecommuting? 2. Is public agency/private company participation likely?	1. Latest CTPP data; assessment of business types in corridor 2. Depends on answer to question 1.
	Trip Reduction Ordinances	1. Does a Trip Reduction Ordinance Exist?	1. Refer to Level Three Strategy: "Increase HOV Use"

Level Two - Strategies that Involve Traffic Operational Improvements and Access Management

Level Two Strategies emphasize actions that could be taken to optimize the corridor's or segment's operation for all trips that use highway facilities and modes. These strategies could include intersection widening, channelization, turning restrictions, signalization improvements, computerized signal systems, incident management, construction zone management, and driveway and median controls.

LEVEL TWO SCREENING QUESTIONS
STRATEGIES THAT INVOLVE TRAFFIC OPERATIONAL IMPROVEMENTS
AND ACCESS MANAGEMENT

Strategy Class	Strategy	Screening Questions	Source of Information
Traffic Operational Improvements	Intersection Widening	1. Is the deficiency isolated at a specific segment along the corridor? 2. Is the left turn volume on any shared left/through lane > 100 vehicles per hour? 3. Is the left turn volume on any single left turn lane > 300 vehicles per hour? 4. Is the right turn volume on any shared right turn lane > 300 vehicles per hour?	1. Current CMP Segment database 2. Turning movements 3. Turning movements 4. Turning movements
	Channelization	1. Is the right turn volume at an intersection > 500 vehicles per hour? 2. Is there a signalized intersection within 300 feet? 3. Is the intersection skewed by < 75 degrees? 4. Do large trucks turn at the intersection? 5. Is there a history of wrong-way accidents?	1. Turning Movements 2. Local field data 3. Local field data 4. Truck Route data 5. Traffic accident reports
	Intersection Turn Restrictions	1. Is the deficiency isolated at a specific segment along the corridor? 2. Can the intersection be widened? 3. Can the restricted movement be made elsewhere/using other routes? 4. Are there conflicts between pedestrians and turning vehicles?	1. Current traffic count database 2. Local field research 3. Local field research 4. Traffic accidents, field work
	Signalization Improvements	1. Is the deficiency isolated at a specific segment along the corridor? 2. Have the signal timings been updated in the past 5 years? 3. Is the traffic signal inspected regularly? 4. Is the left turn volume on any single left turn lane without signal protection > 100 vehicles per hour? 5. Does a capacity analysis or field inspection verify the need for re-timing the signal?	1. Current CMP Segment database 2. Local inventory 3. Local inventory 4. Turning movements 5. Local field research
	Traffic Control Centers	1. Is the deficiency regional or corridor-wide? 2. Are traffic incidents a major cause of congestion? 3. Are alternative routes available within deficient corridors? 4. Are there frequent special events (i.e., VBC, downtown events, sports events, etc.) that regularly cause congestion problems?	1. Current CMP Segment database 2. Traffic accident reports 3. Local field research 4. Assessment of where congestion occurs vs. activity centers
	Computerized Signal Systems	1. Are all signals within one half mile of adjacent signals interconnected on major arterials? 2. Has the timing pattern been adjusted or reviewed in the past five years?	1. Local inventory 2. Local inventory
	Traffic Surveillance and Control Systems	1. Do one or more facilities in a corridor experience significant congestion due to traffic accidents? 2. Is ramp metering used, or is planned, for the facility? (Should apply to limited access corridors only) 3. Are congestion patterns highly irregular?	1. Traffic accident reports 2. Highly unlikely strategy at the present time. 3. Cannot measure without ITS

LEVEL TWO SCREENING QUESTIONS
STRATEGIES THAT INVOLVE TRAFFIC OPERATIONAL IMPROVEMENTS AND ACCESS MANAGEMENT (Continued)

Strategy Class	Strategy	Screening Questions	Source of Information
	Elimination of Bottlenecks	1. Is the congestion isolated within two or three contiguous segments? 2. Does the interchange design cause weaving of vehicles? 3. Does congestion on ramps cause traffic to back up?	1. Current CMP Segment database 2. Field research 3. Field research
	Ramp metering	1. Is the measured peak hour service flow rate less than 2,000 passenger cars/hour/lane? 2. Does the measured service flow rate level off, or drop, during peak hours? 3. Is there adequate storage for vehicle queues at the potential metering location?	These strategies would require a lot of field research. Typical applications are for freeways. Would be potentially applicable to limited access major arterials only. Strategy should not be considered at the present time.
Access Management	Driveway Control	1. Does the corridor or isolated segment have more than two lanes, with a speed limit $\geq$ 45 miles per hour? 2. Do accident reports indicate a high number of rear end and/or right angle crashes near driveways?	1. Local inventory 2. Traffic accident reports as available
	Median Control	1. Does the corridor or isolated segment have more than two lanes, with a speed limit $\geq$ 45 miles per hour, and no median? 2. Are existing median openings spaced less than ¼ mile apart? 3. Do accident reports reflect a high incident of right angle collisions near driveways?	1. Local inventory 2. Local inventory 3. Traffic accident reports
	Frontage Roads	1. Does the corridor or isolated segment have multiple driveway connections on sections where the speed limit is $\geq$ 45 miles per hour? 2. Do accident reports indicate a high number of rear end and/or right angle collisions near driveways? 3. Is it desirable to convert an existing facility from no, or limited, access control to full access control? 4. Is adequate right-of-way available for constructing frontage roads?	1. Local inventory 2. Traffic accident reports 3. Field research 4. Field research, GIS

Level Three – Strategies that Shift Trips from Single Occupancy Vehicles to Public Transit, Other HOVs, and Other Modes

Level Three Strategies attempt to encourage the use of and provide availability of other modes for trip-making instead of relying on SOV use. The largest barrier to this strategy is personal. It requires the modification of the public's personal behavior, which may prove to be difficult. Various items could be implemented in this category, but until behavior is modified, the strategy may not appear to be beneficial.

LEVEL THREE SCREENING QUESTIONS
STRATEGIES THAT SHIFT TRIPS FROM SINGLE OCCUPANCY VEHICLES
TO PUBLIC TRANSIT, OTHER HOVs, AND OTHER MODES

Strategy Class	Strategy	Screening Questions	Source of Information
Public Transit	Fixed Route Bus Service Enhancements &/or Service Expansion	1. Have any additional service locations been identified based upon minority population and income levels/Public Transit Title VI requirements? 2. Are there any routes exhibiting an occupancy rate > .80?	1. Latest Census Data 2. Public Transit Statistics
	Fleet Expansion	1. Does the corridor pass the service enhancement/expansion screen shown above?	1. Refer to previous questions.
	Vehicle Replacement &/or Upgrade	1. Does transit service exist in the corridor? 2. Is the corridor's transit mode share at least 2% for work trips? 3. Is the average age of the bus fleet in operation greater than 7 years?	1. Transit route maps 2. Latest CTPP and Census Data 3. Public Transit Statistics
Increase HOV use	HOV Lanes	1. Are lane additions planned for limited access arterials that already have multiple mixed-flow lanes in one direction? 2. Are there any limited access arterials of at least two miles that have a v/c ratio >.90? 3. Are there 10+ buses scheduled in the peak hour for a single facility in the corridor? 4. Are there 20,000+ employees in the corridor's main activity center? 5. Are HOV work trips > 15%?	1. LRTP and TIP 2. Current CMP Segment database 3. Public Transit schedules 4. LRTP 5. Latest Census and CTPP data
	HOV Toll Facilities	1. Is there a toll facility in the corridor?	1. Strategy not politically acceptable and not applicable at the present.
	HOV Park and Ride Lots	1. Does public transit exist? 2. Is the corridor's HOV mode share greater than 15% for work trips? 3. If Park and Ride Lots are used in the corridor, is lot capacity generally > 50% full? 4. Does the corridor also have HOV lanes, or HOV toll discounts?	Feasibility of Park and Ride lots is doubtful, as the 2000 CTPP reports that the mean travel to work time is 20.9 minutes. If travel to work time increases dramatically, the Park and Ride option may be a possibility.
	Ridesharing and Vanpooling Programs	1. Does the corridor pass the HOV lane screening questions? 2. Does the corridor have HOV lanes or HOV toll discounts? 3. Are ridesharing/carpooling services available? 4. Does the region have an employer trip reduction ordinance? 5. Have major companies been targeted for Rideshare Marketing and Rideshare matching? 6. Are 60% or more work trips driven "alone"? 7. Are at least 60% of the corridor's work trips 20 minutes + in duration?	1. Refer to answers above. 2. Assess current system 3. Interview each jurisdiction 4. Interview each jurisdiction 5. Interview each jurisdiction 6. Current Census and CTPP data 7. Current Census and CTPP data

LEVEL THREE SCREENING QUESTIONS
STRATEGIES THAT SHIFT TRIPS FROM SINGLE OCCUPANCY VEHICLES TO PUBLIC TRANSIT, OTHER HOVs, AND OTHER MODES (Continued)

Strategy Class	Strategy	Screening Questions	Source of Information
Bicycle and Pedestrian Facilities	Bicycle Facilities	1. Has a Bicycle Plan been adopted? 2. Are at least 15% of the corridor's work trips under 5 miles or 10 minutes in length? 3. Does the corridor have public transit service? 4. Is the corridor's gross population density at least 3,150 persons/square mile? 5. Is the corridor's employment density at least 4,000 persons/square mile? 6. Does the corridor have a college/university campus?	1. Latest Bicycle Plan 2. Latest Census and CTPP Data 3. Public Transit maps 4. Latest Census Data 5. Latest Census Data 6. GIS maps
	Pedestrian Facilities	1. Does the corridor have public transit service? 2. Is the corridor's gross population density > 3,150 persons/square mile? 3. Is the corridor's employment density > 4,000 persons/square mile?	1. Public transit maps 2. Latest CTPP and Census Data 3. Latest CTPP and Census Data

Level Four – Strategies that Involve Implementation of Intelligent Transportation Systems for Traffic Management

Level Four Strategies involve the use of Intelligent Transportation Systems to manage traffic congestion.

LEVEL FOUR SCREENING QUESTIONS
STRATEGIES THAT INVOLVE INTELLIGENT TRANSPORTATION SYSTEMS

Strategy Class	Strategy	Screening Questions	Source of Information
ITS	Automated Toll Collection	1. Is the deficient corridor presently tolled? 2. Are the number of toll booths sufficient to meet the demand without causing traffic to back up considerably? 3. Is the percentage of trucks during peak hours greater than 10%?	Strategies are not applicable. Toll facilities do not exist.
	Advanced Traveler Information Systems	1. Are there alternative modes of travel available in the corridor or in the region? 2. Does the corridor or region experience a high level of congestion? 3. Are alternative travel routes available?	Strategies are not applicable at the present time. ITS not fully implemented.
	Other ITS Strategies	Other strategies to be developed once ITS is implemented in the area.	To be determined once ITS is implemented.

Level Five - Strategies that Add Capacity for All Vehicles

Level Five Strategies include actions that increase roadway capacity by adding lanes to the roadway system.

LEVEL FIVE SCREENING QUESTIONS
STRATEGIES THAT ADD CAPACITY FOR ALL VEHICLES

Strategy Class	Strategy	Screening Questions	Source of Information
Add Roadway Capacity	General Purpose Lanes	1. Are at least two contiguous miles congested? 2. Is the project identified in the Long Range Transportation Plan for construction? 3. Is the project identified in the TIP for construction? 4. Are through lane widths < 12 feet? 5. Are there multiple driveway connections on sections of the corridor where the speed limit is ≥ 45 miles per hour? 6. Does a capacity analysis show a need for additional through lanes? 7. Is the congestion isolated within two or three contiguous segments?	1. Current CMP Segment database, Long Range Transportation Plan 2. Long Range Transportation Plan 3. TIP document 4. Local inventory 5. Local field research 6. Local field research 7. Current CMP Segment database

4. Step 4 – Strategy Development

a. Selection of Appropriate Strategies

Once the chosen corridors and isolated segments are put through the screening process, the selection of appropriate strategies must be accomplished. This is the responsibility of the jurisdiction conducting the screening. A positive response to the screening questions shown at **Table 4** indicates the strategy is potentially applicable; however, the questioning process should not stop at the first positive answer. There may be multiple strategies that are applicable, and it will be the responsibility of the each jurisdiction to determine the most effective strategy or combination of strategies to be used to mitigate identified congestion problems. Strategies 1 through 5 should be considered for corridors identified as deficient. **Huntsville Area Transportation Study CMP Strategy Screening Forms** are available electronically for use by jurisdictions completing this process.

Some flexibility is required when considering strategies to be implemented. There may be instances where a specific strategy may be initially considered, but upon further investigation the strategy may not be applicable or effectively address congestion problems experienced in the area as once determined. Some strategies may provide a temporary fix; however, strategies must be considered and implemented which provide a more permanent solution to the deficiency. Due to financial constraints or other concerns, there may be some instances where it may not be possible to mitigate corridor deficiencies by alternative CMP strategies or by roadway widening. Overall, the strategies selected for a specific corridor or isolated segment must have a good potential for success and must also effectively eliminate the deficiency.

b. Strategy Recommendations

The strategy screening process alone typically will not provide enough information to justify project funding and implementation. After potential strategies are identified, additional study must be conducted by the appropriate jurisdiction before the strategy is even considered for possible future programming or funding, and implementation. The depth of study required is dependent upon the strategy selected. For instance, if traffic signal timing improvements are deemed an effective strategy, then a traffic engineering study should be conducted to determine appropriate changes to be made along the corridor. The type of additional

studies conducted as a result of strategy recommendations could range from low cost traffic engineering studies and analysis to more expensive major investment studies. Additional data collection and analysis may not be necessary if it is obvious to the Technical Coordinating Committee and the MPO that the overriding strategy recommendation for a specific corridor is the only viable option, and a decision can be readily made concerning the appropriate action to take. It is then that additional study can be focused on actual project implementation rather than analyzing which recommendation to implement. The CMP will include the potential strategies for each corridor and isolated segment as well as the next action recommended - which may be a more thorough study, design, or implementation. An **Example of CMP Corridor Strategy Recommendations** is shown in **Figure 3** on the next page.

5. Step 5 – Programming

As mentioned earlier, it is not the intent of the CMP strategy evaluation procedures or strategy recommendations to supercede the decision-making process of the MPO's Long Range Transportation Plan and the MPO's Transportation Improvement Program (TIP). However, the primary purpose of the recommended strategies and associated CMP is to support and complement the Long Range Transportation Plan and the TIP by providing additional information on the status of the local transportation system as well as the benefits of appropriate congestion management strategies. If a corridor is selected for further study, has been evaluated, and a project selected, that does not necessarily mean that the recommended project will be funded immediately through the TIP. New projects may be identified through the CMP process for possible funding and implementation, but all TIP projects will equally compete against each other for funding. The CMP is not intended to be the tool for prioritizing projects. The overall metropolitan and statewide planning process will determine which improvements best address the transportation goals and objectives for the State and for the Huntsville area MPO.

It is important to understand that the final decision to implement an appropriate strategy or group of strategies may not be known until the MPO goes through the TIP update cycle. It is then that the MPO will have a better understanding of funding priorities and the availability of funding for specific projects. Some improvements, such as re-timing traffic signals, may bypass the programming process and not go through the MPO for funding. Such improvements can be handled with the jurisdiction's operating funds.

Figure 3
Example of Strategy Recommendations

RANK: 1

CORRIDOR: Madison Boulevard (Alabama Highway 20)
BEGIN POINT: Wall Triana Highway
END POINT: I-565

FUNCTIONAL CLASSIFICATION: Major Collector

JURISDICTION: State Controlled Road located in the City of Madison

CORRIDOR LENGTH: 3.6 miles

LANE CONFIGURATION: A 4-lane divided former State Highway with a 30 foot grass depress median, with right and left turning lanes at each of the 7 signalized intersections and at entrances to major shopping areas, apartment complexes, and employment centers.

TRAFFIC CONTROLS: All intersections are under traffic signal control with the exceptions of Celtic and Pinehurst.

Insert Map of Corridor

SERVICE CHARACTERISTICS:	2005 ADT	2005 V/C RATIO	2005 LOS	2035 ADT	2035 V/C RATIO	2035 LOS
Wall Triana to Zierdt Rd	22851	.80	C	30678	1.08	E
Zierdt Road to Slaughter Rd	24586	.86	C	40315	1.41	F
Slaughter Road to I-565	29021	1.02	E	34707	1.22	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor is primarily highway commercial interspersed with significant sized high tech employment centers and large size apartment complexes. This corridor remains undeveloped along 30% - 50% of its available frontage. Highway commercial, high tech industrial, and/or multifamily development is anticipated to fully occupy the remaining available land by the year 2030. Coupled with the impact of rapidly developing residential growth along Zierdt Road, traffic demand east of Zierdt Road is expected to significantly exceed the modeled projections. The construction of an interchange at County Line Road and I-565 is expected to alleviate this roadway east of Wall Triana, but will have much lesser reduction impact along this corridor.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: This corridor is used primarily in AM and PM peak hours by employees between the high tech industries and their residences within the City of Huntsville and from an area from Tennessee to Scottsboro described by an arc beginning at Slaughter Road and continuing clockwise 270 degrees to Arab. A similar size peak-hour contra-flow occurs between employment centers in Huntsville and the East and residential areas along Zierdt Road to the South. During the noon peak hour, this corridor experiences significant traffic to and from its large number of food service establishments.

OTHER PLANNING DOCUMENTS/STUDIES: None

RECOMMENDATIONS: AM and PM peak hour and average daily traffic volumes are expected to significantly exceed the model forecast. A detailed assessment of all strategies was performed. Level 1 and Level 3 strategies are believed to not be applicable. The increasing traffic volumes will ultimately require Level 5 strategies, widening to 3 or more lanes in each direction. Fortunately, right of way exists to increase the number of lanes when needed. Level 5 strategies may be deferred by Level 2 operational improvements that include signalization, combined with geometric improvements to side road approaches at critical intersections. Level 4 (ITS) strategies should also be applied to monitor traffic signal efficiency levels, and to auto-dispatch component malfunctions.

6. Step 6 – Strategy Implementation

   If the TIP is amended to include projects identified through the CMP process, strategy or project implementation procedures that currently apply to the TIP will be followed. Strategy or project implementation may include preliminary engineering, design, right-of-way acquisition; or depending upon the strategy, actual construction.

7. Step 7 – Strategy Effectiveness Evaluations

   Federal legislation requires strategies be evaluated after implementation to determine their overall efficiency and effectiveness. The results will be written in the CMP's **"Strategy Effectiveness Evaluations"** section as a brief commentary, with information provided by the project's sponsoring jurisdiction. Strategy effectiveness evaluations will compare pre-implementation system performance with post-implementation system performance based upon the area's established performance measures and other analysis that may be necessary. If the implemented strategies do not appear to be effectively solving the congestion problem, other strategies may be determined for implementation along the corridor or isolated segment. This will be documented to provide guidance to jurisdictions on selection of effective strategies for future implementation as well as justify the need to look at alternative solutions.

D. CMP Monitoring and Update Cycle

Based upon the current and future year network transportation models produced during the update of the MPO's long range transportation plan, the CMP will be incorporated within Section 8 of the **Year 2035 Transportation Plan**.

Summary

The purpose of this report is to document the CMP of the Huntsville Area Transportation Study. The CMP is one of several management systems mandated by federal legislation. The CMP is managed at the local level and is a coordinated effort among all member jurisdictions of the MPO to include the Alabama Department of Transportation. Federal rules allow local flexibility in the development of the CMP, taking into consideration local resources and data availability. The Huntsville area MPO meets the federal CMP objectives presented through the implementation of this report.

The Huntsville Area Transportation Study CMP plays a supporting role in the overall transportation planning process. The CMP uses a methodical approach to identify locations which currently experience or may experience future congestion, and to develop and recommend

strategies to mitigate congestion problems. The CMP, when incorporated with the Long Range Transportation Plan and the Transportation Improvement Program, yields informed decisions and minimizes data collection and analysis costs.

CMP performance measures are used to identify system wide trends and congested areas on the CMP network. These measures are currently supported by *information obtained through the Long Range Transportation Plan's modeled networks and data collected by the ALDOT and member jurisdictions of the MPO.* This data is summarized in conjunction with the preparation of the long range transportation plan by the MPO and these results, as well as recommended strategies for alleviating congestion, will be published within the **Year 2035 Transportation Plan**.

The Congestion Management Subcommittee, comprised of the Technical Coordinating Committee of the MPO, was responsible for overseeing the development of the local CMP and will continue in its oversight role for updating the CMP procedures if necessary. Members of the subcommittee will also play a vital role in strategy development, strategy recommendations, and strategy implementation for each of their jurisdictions. Citizen involvement and public participation in this process will also continue, as public review and comment on strategies developed through the CMP process will be conducted.

The MPO will review the CMP and will make recommendations for projects to be included in the Transportation Improvement Program and the Long Range Transportation Plan as necessary, understanding that the overall transportation planning process should sort out project priorities. All Transportation Improvement Program projects are competitive, and projects that have been identified through the CMP process may not be funded immediately.

If projects resulting from the CMP are approved, funded, and implemented, federal rules require the strategies be evaluated to determine its efficiency and effectiveness. Strategy effectiveness evaluations will be conducted and the information received by the project's sponsoring jurisdiction will be included in the CMP**.**

The CMP will be updated in conjunction with the long range transportation plan and will be published as part of that document.

Appendices

Appendix A
CMP Network Segments

Functional Classification	Roadway	Location
Major Arterial	I-565	Mooresville Road to Greenbrier Road
	I-565	Greenbrier Road to County Line Road
	I-565	County Line Road to Wall Triana Highway
	I-565	Wall Triana Highway to Zierdt Road
	I-565	Zierdt Road to Research Park Blvd.
	I-565	Research Park Blvd. to Jordan Lane
	I-565	Jordan Lane to Governors Drive
	I-565	Governors Drive to Memorial Parkway
	I-565	Memorial Parkway to Washington Street
	I-565	Washington Street to Oakwood Avenue
	I-565	Oakwood Avenue to Maysville Road
Major Arterial	Jordan Lane	I-565 to Holmes Avenue
	Jordan Lane	Holmes Avenue to University Drive
	Jordan Lane	University Drive to Oakwood Avenue
	Jordan Lane	Oakwood Avenue to Sparkman Drive
	Jordan Lane/AL 53	Sparkman Drive to Research Park Boulevard
	Jordan Lane/AL 53	Research Park Boulevard to Kelly Springs Road
	Jordan Lane/AL 53	Kelly Springs Road to Burwell Road
	Jordan Lane/AL 53	Burwell Road to McKee Road
	Jordan Lane/AL 53	McKee Road to Wall Triana Highway
	Jordan Lane/AL 53	Wall Triana Highway to Bobo Section Road
	Jordan Lane/AL 53	Bobo Section Road to State Line Road
Major Arterial	US 72 East/ARC Corridor V	Memorial Parkway to Washington Street
	US 72 East/ARC Corridor V	Washington Street to Maysville Road
	US 72 East/ARC Corridor V	Maysville Road to Moores Mill Road
	US 72 East/ARC Corridor V	Moores Mill Road to Shields Road
	US 72 East/ARC Corridor V	Shields Road to Ryland Pike
	US 72 East/ARC Corridor V	*Ryland Pike to Moontown Road
	US 72 East/ARC Corridor V	Moontown Road to Brock Road
	US 72 East/ARC Corridor V	Brock Road to proposed Northern Bypass
	US 72 East/ARC Corridor V	Proposed Northern Bypass to the County Line
Major Arterial	US 72 West	Mooresville Road to East Limestone Road
	US 72 West	East Limestone Road to Old Railroad Bed/County Line Road
	US 72 West	County Line Road to Balch Road
	US 72 West	Balch Road to Hughes Road
	US 72 West	Hughes Road to Nance Road
	US 72 West	Nance Road to Jeff Road
	US 72 West/University Dr.	Jeff Road to Indian Creek Road
	US 72 West/University Dr.	Indian Creek Road to Enterprise Drive
	US 72 West/University Dr.	Enterprise Drive to Research Park Boulevard
	US 72 West/University Dr.	Research Park Boulevard to Old Monrovia Road
	US 72 West/University Dr.	Old Monrovia Road to Boardwalk
	US 72 West/University Dr.	Boardwalk to Wynn Drive
	US 72 West/University Dr.	Wynn Drive to Sparkman Drive
	US 72 West/University Dr.	Sparkman Drive to Jordan Lane
	US 72 West/University Dr.	Jordan Lane to Meadow Drive
	US 72 West/University Dr.	Meadow Drive to Pulaski Pike
	University Dr./Pratt Ave	Memorial Parkway to Church Street
	University Dr./Pratt Ave	Church Street to Washington Street
	University Dr./Pratt Ave	Washington Street to Meridian Street

Functional Classification	Roadway	Location
Major Arterial	US 231 South	Governors Drive to Bob Wallace Avenue
	US 231 South	Bob Wallace Avenue to Drake Avenue
	US 231 South	Drake Avenue to Airport Road
	US 231 South	Airport Road to Golf Road
	US 231 South	Golf Road to Martin Road
	US 231 South	Martin Road to Byrd Spring Road
	US 231 South	Byrd Spring Road to Weatherly Road
	US 231 South	Weatherly Road to Mountain Gap Road
	US 231 South	Mountain Gap Road to Redstone Road
	US 231 South	Hobbs Road to Green Cove Road
	US 231 South	Green Cove Road to Hobbs Island Road
	US 231 South	Hobbs Island Road to TN River
Major Arterial	US 231 North	State Line Road to Bobo Section Road
	US 231 North	Bobo Section Road to Joe Quick Road
	US 231 North	Joe Quick Road to Steger Road
	US 231 North	Steger Road to Meridianville Bottom Road
	US 231 North	Meridianville Bottom Road to Northern Bypass/Bob Wade Lane
	US 231 North	Northern Bypass/Bob Wade Lane to Meridian Street
	US 231 North	Meridian Street to Winchester Road
	US 231 North	Winchester Road to Medaris Road
	US 231 North	Medaris Road to Mastin Lake Road
	US 231 North	Mastin Lake Road to Sparkman Drive
	US 231 North	Sparkman Drive to Max Luther Drive
	US 231 North	Max Luther Drive to Oakwood Avenue
	US 231 North	Oakwood Avenue to University Drive
	US 231 North	University Drive to I-565
	US 231 North	I-565 to Clinton Avenue
	US 231 North	Clinton Avenue to Governors Drive
Major Arterial	US 431	14th Street to Triana Blvd.
	US 431	Triana Blvd to Memorial Parkway
	US 431	Memorial Parkway to Monroe Street
	US 431	Monroe Street to Gallatin Street
	US 431	Franklin Avenue to California Street
	US 431	California Street to Covemont Road
	US 431	Covemont Road to Monte Sano Blvd
	US 431	Monte Sano Blvd to Dug Hill Road
	US 431	Dug Hill Road to Caldwell Lane
	US 431	Caldwell Lane to Old Highway 431
	US 431	Old 431 Hwy/Taylor Road to Flint River Bridge/Old 431 Hwy
	US 431	Old 431 Highway/Main Drive to Oak Grove Drive
Major Arterial	Eastern Bypass	Old Highway 431 to Quarter Lane
Major Arterial	Northern Bypass/Bob Wade	Nick Fitchard to Pulaski Pike
	Northern Bypass/Bob Wade	Pulaski Pike to Mt. Lebanon Road
	Northern Bypass/Bob Wade	Mt. Lebanon Road to US 231
Major Arterial	Southern Bypass	Research Park Blvd to Jordan Lane/Patton Road
	Southern Bypass	Patton Road to Martin Road
	Southern Bypass	Martin Road to Weatherly Road
	Southern Bypass	Weatherly Road to Redstone Road/Hobbs Road
	Southern Bypass	Hobbs Road to Green Cove Road
	Southern Bypass	Green Cove Road to Memorial Parkway

Functional Classification	Roadway	Location
Minor Arterial	Airport Road	Memorial Parkway to Whitesburg Drive
Minor Arterial	Andrew Jackson Way	Pratt Avenue to Oakwood Avenue
Minor Arterial	Bob Wallace	Intersection at I-565 to Jordan Lane
	Bob Wallace	Jordan Lane to Triana Blvd
	Bob Wallace	Triana Blvd to 1st Street
	Bob Wallace	1st Street to Memorial Parkway
	Bob Wallace	Memorial Parkway to Whitesburg Drive
Minor Arterial	Boeing Boulevard	Wall Triana Highway to County Line Road
Minor Arterial	California Street	Pratt Avenue to Clinton Avenue
	California Street	Governors Drive to Fraser Street
	California Street	Bob Wallace Avenue to Governors Drive
Minor Arterial	Carl T.Jones/Bailey Cove Rd	Whitesburg Drive to Garth Road
	Carl T.Jones/Bailey Cove Rd	Garth Road to Four Mile Post Road
	Bailey Cove Rd	Four Mile Post Road to Lily Flagg Road
	Bailey Cove Rd	Lily Flagg Road to Weatherly Road
	Bailey Cove Rd	Weatherly Road to Green Mountain Road
	Bailey Cove Rd	Mountain Gap Road to Hobbs Road
	Bailey Cove Rd	Hobbs Road to Green Cove Road
Minor Arterial	County Line Road	US 72 to Browns Ferry Road
	County Line Road	Browns Ferry Road to Mill Road
	County Line Road	Mill Road to Old Highway 20
	County Line Road	Highway 20 West to Old Highway 20
	County Line Road	South of I-565 to Indian Springs Road
Minor Arterial	Ditto Marina Parkway	Hobbs Island Road to Bailey Cove Road
Minor Arterial	Hobbs Island Road	US 231 to Hegia Burrow
Minor Arterial	Martin Road	Whitesburg Drive to Memorial Parkway
	Martin Road	Memorial Parkway to Southern Bypass/Redstone Arsenal
	Martin Road	Southern Bypass/Redstone Arsenal to Patton Road
	Martin Road	Anderson Road to Zierdt Road
	Martin Road	Zierdt Road to Wall Triana Highway
Minor Arterial	Maysville Rd (County)	Winchester Road to Northern Bypass/Hughes Road
	Maysville Rd (County)	Proposed Northern Bypass/Hughes Road to Ryland Pike
	Brock Rd (County)	Ryland Pike to US 72
Minor Arterial	Meridian Street	Walker Avenue to Pratt Avenue
	Meridian Street	Pratt Avenue to Oakwood Avenue
	Meridian Street	Oakwood Avenue to Max Luther Drive
	Meridian Street	Max Luther Drive to US 72 East
	Meridian Street	US 72 East to Chase Road
	Meridian Street	Chase Road to Industrial Drive
	Meridian Street	Industrial Drive to Winchester
	Meridian Street	Winchester Road to Memorial Parkway
Minor Arterial	Moores Mill Road	US 72 East to Jordan Road
	Moores Mill Road	Jordan Road to Winchester Road
	Moores Mill Road	North of Winchester Road to Marcus Byers Drive

Functional Classification	Roadway	Location
Minor Arterial	Moores Mill Road	Marcus Byers Drive to Stone Hill Road
Minor Arterial	Old Madison Pike	Balch Road to Sullivan Road
	Old Madison Pike	Sullivan Road to Shelton Road
	Old Madison Pike	Shelton Road to Slaughter Road
	Old Madison Pike	Slaughter Road to Voyager Way
	Old Madison Pike	Voyager Way to Research Park Boulevard
	Old Madison Pike	Research Park Boulevard to Wynn Drive
Minor Arterial	Patton Road/Jordan Lane	Southern Bypass to Gate 10
	Patton Road/Jordan Lane	Gate 10 to Drake Avenue
	Patton Road/Jordan Lane	Drake Avenue to Freemont Drive
	Patton Road/Jordan Lane	Freemont Drive to Bob Wallace Avenue
	Patton Road/Jordan Lane	Bob Wallace Avenue to I-565
Minor Arterial	Pulaski Pike	University Drive to Oakwood Avenue
	Pulaski Pike	Oakwood Avenue to Sparkman Drive
	Pulaski Pike	Sparkman Drive to Mastin Lake Road
	Pulaski Pike	Mastin Lake Road to Stringfield Road
	Pulaski Pike	Stringfield Road to Winchester Road
	Pulaski Pike	Winchester Road to Kelly Cemetary Road
	Pulaski Pike	Kelly Cemetary Road to Bob Wade Lane
	Pulaski Pike	Bob Wade Lane and Carter's Gin Road
	Pulaski Pike	Carter's Gin to Monroe Road
	Pulaski Pike	Monroe Road to Patterson Ln
Mj Rural Collector	Pulaski Pike	Patterson Lane to Morris Road
	Pulaski Pike	Morris Road to Toney Road
	Pulaski Pike	Bobo Section Road to Old Rail Road Bed Road
	Pulaski Pike	Old Rail Road Bed Road to Macedonia Road
Minor Arterial	Research Park Blvd	AL Highway 53 to Plummer Road
	Research Park Blvd	Plummer Road to Oakwood Road
	Research Park Blvd	Oakwood Road to University Drive
	Research Park Blvd	University Drive to Bradford Drive
	Research Park Blvd	Bradford Drive to Old Madison Pike
	Research Park Blvd	Old Madison Pike to I-565
	Research Park Blvd	I-565 to Goss Road/Redstone Arsenal
Minor Arterial	Slaughter Road	University Drive to Kannon Drive
	Slaughter Road	Kannon Drive to Farrow Road
	Slaughter Road	Farrow Road to Old Madison Pike
	Slaughter Road	Old Madison Pike to AL Highway 20
Minor Arterial	Sparkman Drive	Memorial Parkway to Blue Springs
	Sparkman Drive	Blue Springs to Pulaski Pike
	Sparkman Drive	Pulaski Pike to Shady Lane
	Sparkman Drive	Shady Lane to Jordan Lane
	Sparkman Drive	Jordan Lane to Rutledge Drive
	Sparkman Drive	Rutledge Drive to University Drive
	Sparkman Drive	University Drive to Holmes Avenue
	Sparkman Drive	Holmes Avenue to I-565
Minor Arterial	Swancott Road	County Line Road to Wall Triana
Mj Rural Coll	Swancott Road	Pryor Road to County Line Road
Mj Rural Coll	Swancott Road	I-565 to Pryor Road

Functional Classification	Roadway	Location
Minor Arterial	Wall Triana Highway	I-565 to Kellner Road
	Wall Triana Highway	Kellner Road to Martin Road
	Wall Triana Highway	Martin Road to Boeing Boulevard
	Wall Triana Highway	Boeing Boulevard to Beadle Lane
	Wall Triana Highway	Beadle Lane to Swancott Road
Mj Rural Coll	Wall Triana Highway	Swancott Road to Tennessee River
	Wall Triana Highway	Capshaw Road to Nick Davis Road
	Wall Triana Highway	Nick Davis Road to Old Rail Road Bed Road
Minor Arterial	Whitesburg Dr./Madison St.	Williams Avenue to Lowe Street
	Whitesburg Dr./Madison St.	Lowe Street to St. Clair Avenue
	Whitesburg Drive	Governors Drive to Bob Wallace
	Whitesburg Drive	Bob Wallace to Drake Avenue
	Whitesburg Drive	Drake Avenue to Airport Road
	Whitesburg Drive	Airport Road to Jones Valley Drive
	Whitesburg Drive	Jones Valley Drive to Four Mile Post Road
	Whitesburg Drive	Four Mile Post Road to Byrd Spring Road
	Whitesburg Drive	Byrd Spring Road to Lily Flagg Road
	Whitesburg Drive	Pulaski Pike to Blue Springs Road
Minor Arterial	Winchester Road	Lily Flagg Road to Memorial Parkway
	Winchester Road	Blue Springs Road to Memorial Parkway
	Winchester Road	Memorial Parkway to Meridian Street
	Winchester Road	Meridian Street to Higdon Road
	Winchester Road	Higdon Road to Colemont Lane
	Winchester Road	Colemont Lane to Moores Mill Road
	Winchester Road	Moores Mill Road to Shields Road
	Winchester Road	Shields Road to Naugher Road
	Winchester Road	Naugher Road to Maysville Road
	Winchester Road	Maysville Road to Oscar Patterson Road
	Winchester Road	Oscar Patterson Road to Hurricane Road
	Winchester Road	Hurricane Road to Buddy Williamson Road
	Winchester Road	Buddy Williamson Road to State Line Road
Major Collector	Madison Blvd./AL Highway 20	County Line Road to Wall Triana Highway
	Madison Blvd./AL Highway 20	Wall Triana Highway to Zierdt Road
	Madison Blvd./AL Highway 20	Zierdt Road to Slaughter Road
	Madison Blvd./AL Highway 20	Slaughter Road to I-565
Major Collector	Adventist Road/Oakwood Rd	Sparkman Drive to Old Monrovia Road
Major Collector	Balch Road	Capshaw Road to University Drive
	Balch Road	University Drive to Gillespie Road
	Balch Road	Gillespie Road to Old Madison Pike
	Balch Road	Old Madison Pike to Hwy 20 (extension in 2025 Plan)
Major Collector	Bankhead Parkway	Maysville Road to Fearn
Major Collector	Beadle Lane	Wall Triana Highway to Zierdt Road
Major Collector	Blue Springs Road	Oakwood Avenue to Max Luther Drive
	Blue Springs Road	Max Luther Drive to Sparkman Drive
	Blue Springs Road	Sparkman Drive to Mastin Lake Road
	Blue Springs Road	Mastin Lake Road to Stringfield Road
	Blue Springs Road	Stringfield Road to Winchester Road

Functional Classification	Roadway	Location
Major Collector	Burose Road	Proposed Southern Bypass to Patton Road
Major Collector	Caldwell Lane	US 431 to King Drake Road
Major Collector	Capshaw Road	Sanderson Road to County Line Road
	Capshaw Road	County Line Road to Wall Triana Highway
	Capshaw Road	Wall Triana Highway to Nance Road
	Capshaw Road	Nance Road to Jeff Road
Major Collector	Carter's Gin Road	Nick Fitcheard Road to Huntsville city limits/Burwell Road
Major Collector	Chaney Thompson Road	Mountain Gap Road to Hobbs Road
	Chaney Thompson Road	Hobbs Road to Wynterhall Road
	Chaney Thompson Road	Wynterhall Road to Green Cove Road
Major Collector	Cherry Tree Road	Old 431 Highway to McMullen Road
Mj Rural Coll	Cherry Tree Road	Esslinger Road to McMullen Road
	Cherry Tree Road	McMullen Road to Old Gurley Pike
	Cherry Tree Road	Old Gurley Pike to Poplar Ridge Road
	Cherry Tree Road	Poplar Ridge Road to Cedar Point Road
Major Collector	Church Street	Oakwood Avenue to Pratt Avenue
	Church Street	Pratt Avenue to Clinton Avenue
	Church Street	Clinton Avenue to Williams Street
Major Collector	Clinton Avenue	Governors Drive to Memorial Parkway
	Clinton Avenue	Memorial Parkway to Monroe Street
	Clinton Avenue	Monroe Street to Spragins Street
	Clinton Avenue	Spragins Street to Washington Street
Major Collector	Drake Avenue	Garth Road to Whitesburg Drive
	Drake Avenue	Whitesburg Drive to L&N
	Drake Avenue	L&N Drive to Memorial Parkway
	Drake Avenue	Memorial Parkway to Leeman Ferry Road
	Drake Avenue	Leeman Ferry Road to 1st Street
	Drake Avenue	1st Street to Triana Boulevard
	Drake Avenue	Triana Boulevard to Jordan Lane
Major Collector	Dug Hill Road	Highway 431 to Broad Armstrong Drive
	Dug Hill Road	South of Highway 72 East to B.B. Lawler Road
	Dug Hill Road	North of King Drake Road to Old Orton Road
	Dug Hill Road	North of US 72 to Ryland Pike
Major Collector	East Limestone Road	US 72 West to Capshaw Road
	East Limestone Road	Capshaw Road to Nick Davis Road
	East Limestone Road	Nick Davis Road to Copeland Drive
	East Limestone Road	Copeland Drive to Harvest Road
Major Collector	Eastview Drive	Hughes Road to Slaughter Road
Major Collector	Enterprise Way	University Drive to Rime Village
Major Collector	Esslinger Drive	McMullen Road to Cherry Tree Road
Major Collector	Explorer Boulevard	Voyager to Bradford Drive
	Explorer Boulevard	Bradford Drive to Enterprise Way

Functional Classification	Roadway	Location
Major Collector	Four Mile Post Road	Whitesburg Drive to Garth Road
	Four Mile Post Road	Garth Road to Bailey Cove Road
	Four Mile Post Road Ext.	Bailey Cove Road to Avalon
	Four Mile Post Road Ext.	Avalon to Old Big Cove Road
Major Collector	Fowler Drive	Martin Road to Burose Road
Major Collector	Franklin Street	Williams Avenue to Lowe Avenue
	Franklin Street	Lowe Avenue to Governors Drive
	Franklin Street	Governors Drive to Whitesburg Drive
Major Collector	Gallatin Street	Lowe to St. Clair Avenue
Major Collector	Gillespie Road	Balch Road to Sullivan Street
	Gillespie Road	Sullivan Street to Hughes Road
Major Collector	Gooch Lane	Balch Road to Hughes Road
Major Collector	Green Cove Road	Chaney Thompson to Memorial Parkway
Major Collector	Green Mountain Road	Bailey Cove Road to Runningmeade Trail
Major Collector	Hobbs Road	Bell Road to Memorial Parkway
	Hobbs Road	Memorial Parkway to Chaney Thompson
	Hobbs Road	Chaney Thompson Road to Bailey Cove Road
Major Collector	Holmes Avenue	White Street to Monroe Street
	Holmes Avenue	Monroe Street to Pulaski Pike
	Holmes Avenue	Pulaski Pike to Triana Boulevard
	Holmes Avenue	Triana Boulevard to Jordan Lane/AL Highway 53
	Holmes Avenue	Jordan Lane to Sparkman Drive
	Holmes Avenue/Bradford Dr	Sparkman Drive to Wynn Drive
	Holmes Avenue/Bradford Dr	Wynn Drive to Research Park Blvd
	Holmes Avenue/Bradford Dr	Research Park Boulevard to Explorer Boulevard
Major Collector	Homer Nance Road	Jordan Road to Winchester Road
Major Collector	Hughes Road	South of Highway 72 West to Gillespie
	Hughes Road	Gillespie to Old Madison Pike
	Hughes Road	Old Madison Pike to Mill Road
	Hughes Road	Mill Road to AL Highway 20
Major Collector	Huntsville Browns Ferry Road	Hughes Road to Balch Road
	Huntsville Browns Ferry Road	Balch Road to County Line Road
	Huntsville Browns Ferry Road	County Line Road to Bowers Road
Mj Rural Coll	Huntsville Browns Ferry Road	Bowers Road to Mooresville Road
Major Collector	Providence Main	University Drive to Old Monrovia Road
	Indian Creek Road	Old Monrovia to Plummer Road
	Indian Creek Road	Plummer Road to Blake Bottom Road
Major Collector	Jeff Road	University Drive/US 72 West to Old Monrovia Road
Major Collector	Jefferson Street	I-565 to Monroe Street
Major Collector	Johnson Road	Leeman Ferry to Memorial Parkway

Functional Classification	Roadway	Location
Major Collector	Johnson Road	Triana Boulevard to Leeman Ferry
Major Collector	Jordan Road	Moores Mill Road and Shields Road
	Jordan Road	Shields Road to Homer Nance
	Jordan Road	Homer Nance to Ryland Pike
Major Collector	King Drake Road	Dug Hill Road to Caldwell Lane
Major Collector	Lowe Avenue	Williams Avenue to Franklin Avenue
	Lowe Avenue	Franklin Avenue to Adams Street
Major Collector	Mastin Lake Road	Memorial Parkway to Blue Springs
	Mastin Lake Road	Blue Springs to Pulaski Pike
	Mastin Lake Road	Pulaski Pike to Avondale
	Mastin Lake Road	Avondale to Jordan Lane
Major Collector	Max Luther	Blue Springs Road to Memorial Parkway
	Max Luther	Memorial Parkway to Washington Street
	Max Luther	Washington Street to Meridian Street
Major Collector	Maysville Road	Pratt Avenue to Oakwood Avenue
	Maysville Road	Oakwood Avenue to US 72 East
Major Collector	McMullen Road	Cherry Tree Road to Esslinger Drive
	McMullen Road	Esslinger Drive to Eastern Bypass/Little Cove Road
Major Collector	Mill Road	County Line Road to Balch Road
	Mill Road	Balch Road to Sullivan Street
	Mill Road	Sullivan Street to Hughes Road
Major Collector	Monroe Street	St. Clair Avenue to Williams Avenue
	Monroe Street	Williams Avenue to Clinton Avenue
	Monroe Street	Clinton Avenue to Holmes Avenue
	Monroe Street	Holmes Avenue to Church Street
Major Collector	Monte Sano Boulevard	Governors Drive to Panorama
	Monte Sano Boulevard	Panorama to Nolen
Major Collector	Mountain Gap Road	Memorial Parkway to Chaney Thompson Road
	Mountain Gap Road	Chaney Thompson Road to Bailey Cove Road
Major Collector	Nance Road	Capshaw Road to University Drive
Major Collector	Nick Fitcheard Road	Alabama Highway 53 to Carter's Gin Road
Major Collector	Oakwood Avenue	East of Jordan Lane to Pulaski Pike
	Oakwood Avenue	Pulaski Pike to Blue Springs Road
	Oakwood Avenue	Blue Springs Road to Memorial Parkway
	Oakwood Avenue	Memorial Parkway to Washington Street
	Oakwood Avenue	Washington Street to Meridian Street
	Oakwood Avenue	Meridian Street to Andrew Jackson Way
Major Collector	Old 431 Highway	US 431 South to Eastern Bypass
	Old 431 Highway	Eastern Bypass to Cherry Tree Road
	Old 431 Highway	Cherry Tree Road to US 431
Mj Rural Collector	Old 431 Highway	US 431 to Old Big Cove Road

Functional Classification	Roadway	Location
	Old 431 Highway	Old Big Cove Road to Hobbs Island Road
	Old 431 Highway	Hobbs Island Road to Main Drive
Major Collector	Old Big Cove Road	Governors Drive to Miller Lane
	Old Big Cove Road	Miller Lane to Sutton Road
	Old Big Cove Road	Sutton Road to Terry Drake Road
	Old Big Cove Road	Terry Drake Road to Green Mountain Road
	Old Big Cove Road	Green Mountain Road to US 431
Major Collector	Old Monrovia Road	Jeff Road to Indian Creek Road
	Old Monrovia Road	Johns Road to Indian Creek Road
	Old Monrovia Road	University Drive to Johns Road
Major Collector	Palmer Road	County Line Road to Sullivan Street
Major Collector	Plummer Road	Research Park Boulevard to Jordan Lane
	Plummer Road	Indian Creek Road to Research Park Boulevard
Major Collector	Portal Lane	Sullivan Street to Shelton Road
Major Collector	Pratt Avenue	Maysville Road to Andrew Jackson Way
	Pratt Avenue	Andrew Jackson Way to Meridian Street
Major Collector	Pulaski Pike	Holmes Avenue to University Drive
Major Collector	Redstone Road	Memorial Parkway to Temperance Street
Major Collector	Ryland Pike	US 72 to Jordan Road
	Ryland Pike	Jordan Road to Dug Hill Road
	Ryland Pike	Dug Hill Road to Maysville Road
	Ryland Pike	Maysville Road to Hurricane Creek Road
Major Collector	Sanderson Road	Nick Davis Road to Capshaw Road
Major Collector	Shelton Road	Madison Blvd/Highway 20 to Old Madison Pike
Major Collector	Shields Road	US 72 East to Jordan Road
	Shields Road	Jordan Road to Winchester Road
Major Collector	St. Clair Avenue	Monroe Street to Gallatin Street
Major Collector	Sullivan Street	Capshaw Road to US Highway 72 West
	Sullivan Street	South of US Highway 72 West to Gillespie Drive
	Sullivan Street	Gillespie Drive to Old Madison Pike
	Sullivan Street	Mill Road to Highway 20
Major Collector	Sutton Road	Old Big Cove Road to US 431 South
Major Collector	Taylor Road	Sutton Road to Taylor Lane
	Taylor Road	Taylor Lane to Terry Drake Road
Major Collector	Taylor Lane	Taylor Road to US 431 South
Major Collector	Terry Drake Road	Old Big Cove Road to Taylor Road

Functional Classification	Roadway	Location
Major Collector	Triana Boulevard	Holmes Avenue to Governors Drive
	Triana Boulevard	Governors Drive to 9th Avenue
	Triana Boulevard	9th Avenue to Bob Wallace Avenue
	Triana Boulevard	Bob Wallace Avenue to Drake Avenue
Major Collector	Triana Boulevard	Drake Avenue to Redstone Arsenal
Major Collector	Voyager Way	Explorer Boulevard to Old Madison Pike
Major Collector	Washington Street	Monroe Street to I-565
	Washington Street	University Drive to Max Luther
	Washington Street	Max Luther Drive to Sparkman Drive
Major Collector	Wayne Road	Old Monrovia Road to University Drive
Major Collector	Weatherly Road	Memorial Parkway to Hickory Hill Lane
	Weatherly Road	Todd Mill Road to Bailey Cove Road
Major Collector	Williams Avenue	Monroe Street to Church Street
	Williams Avenue	Church Street to Madison Street
	Williams Avenue	Madison Street to Greene Street
	Williams Avenue	Greene Street to Adams Street
Major Collector	Wynn Drive	Old Madison Pike to Bradford Drive
	Wynn Drive	Bradford Drive to University Drive
	Wynn Drive	University Drive to Adventist Boulevard
Major Collector	Zierdt Road	I-565 to Edgewater Drive
Mj Rural Collector	Blake Bottom Road	Jeff Road to Indian Creek Road
Mj Rural Collector	Bobo Section Road	Old Rail Road Bed/Pulaski Pike to Carters Gin Road
	Bobo Section Road	Carters Gin Road to John Hicks Road
	Bobo Section Road	John Hicks Road to Memorial Parkway/231 North
Mj Rural Collector	Buddy Williamson Road	Winchester Road to Butler Road
Mj Rural Collector	Butter and Egg Road	Bobo Section Road to Ready Section Road
Mj Rural Collector	Butler Road	Oscar Patterson Road to Walker Lane
	Butler Road	Walker Lane to Joe Quick Road
	Butler Road	Joe Quick Road to Buddy Williamson Road
Mj Rural Collector	Carters Grove Road	Ready Section Road to Bobo Section Road
	Carters Grove Road	Bobo Section Road to State Line Road
Mj Rural Collector	Cave Springs Road	Highway 431 to Old Gurley Pike
Mj Rural Collector	Cedar Point Road	New Hope Road to Cherry Tree Road
Mj Rural Collector	Eakin Road	McCollum Road to Moores Mill Road
Mj Rural Collector	Grimwood Road	Murphy Hill Road to Pulaski Pike
Mj Rural Collector	Harvest Road	State Route 251 to East Limestone Road
Major Collector	Harvest Road	East Limestone Road to Turner Road

Functional Classification	Roadway	Location
Major Collector	Harvest Road	Turner Road to Love Branch Road
Mj Rural Collector	Harvest Road	Love Branch Road to Wall Triana Highway
	Harvest Road	Wall Triana Highway to AL 53
	Harvest Road	AL 53 to Jeff Road
Mj Rural Collector	Hobbs Island Road	Hegia Burrow Road to the Flint River
	Hobbs Island Road	Flint River to Old 431 Highway
Mj Rural Collector	Hurricane Road	Winchester Road to Upper Hurricane Road
	Hurricane Road	Upper Hurricane Road to County Lake Road
	Hurricane (Creek) Road	County Lake Road to proposed Northern Bypass
Mj Rural Collector	Jeff Road	Old Monrovia Road to Blake Bottom Road
	Jeff Road	Blake Bottom Road to Kelly Springs Road
	Jeff Road	Kelly Springs Road to AL 53
	Jeff Road	AL 53 to Carters Gin Road
	Jeff Road	Carters Gin Road to Beaver Dam Road
	Jeff Road	Beaver Dam Road to Toney Road
Mj Rural Collector	Joe Quick Road	231 North/Memorial Parkway to Greenville Pike Road
	Joe Quick Road	Greenville Pike Road to Butler Road
Mj Rural Collector	Kelly Springs Road	Jeff Road to AL 53
Mj Rural Collector	Main Drive	Highway 431 to Carpenter Road
	Main Drive	Carpenter Road to Old Gurley Pike
	Main Drive/College Avenue	Old Gurley Pike to New Hope Road
Mj Rural Collector	McCollum Road	Meridianville Bottom Road to Steger Road
Mj Rural Collector	Meridianville Bottom Road	231 North to Bolling Road
	Meridianville Bottom Road	Bolling Road to McCollum Road
Mj Rural Collector	Monroe Road	Pulaski Pike to Mount Lebanon Road
	Monroe Road	Mount Lebanon Road to 231 North
Mj Rural Collector	Moores Mill Road	Oscar Patterson Road to Eakin Road
	Moores Mill Road	Eakin Road to Darwin Road
	Moores Mill Road	Darwin Road to proposed Northern Bypass
	Moores Mill Road	Proposed Northern Bypass to South of Stone Hill Drive
Mj Rural Collector	Mooresville Road	I-565 to Old Highway 20
	Mooresville Road	Old Highway 20 to Huntsville Browns Ferry Road
	Mooresville Road	Huntsville Browns Ferry Road to US 72 West
	Mooresville Road	US 72 West to Capshaw Road
	Mooresville Road	Capshaw Road to Nick Davis Road
	Mooresville Road	Nick Davis Road to Copeland Road
	Mooresville Road	Copeland Road to State Route 251
Mj Rural Collector	Morris Road	Pulaski Pike to Carters Grove Road
Mj Rural Collector	Mt. Lebanon Road	Patterson Lane to Monroe Rd
	Mt. Lebanon Road	Monroe Road to Northern Bypass
Mj Rural Collector	Murphy Hill Road	West Limestone Road to Grimwood Road

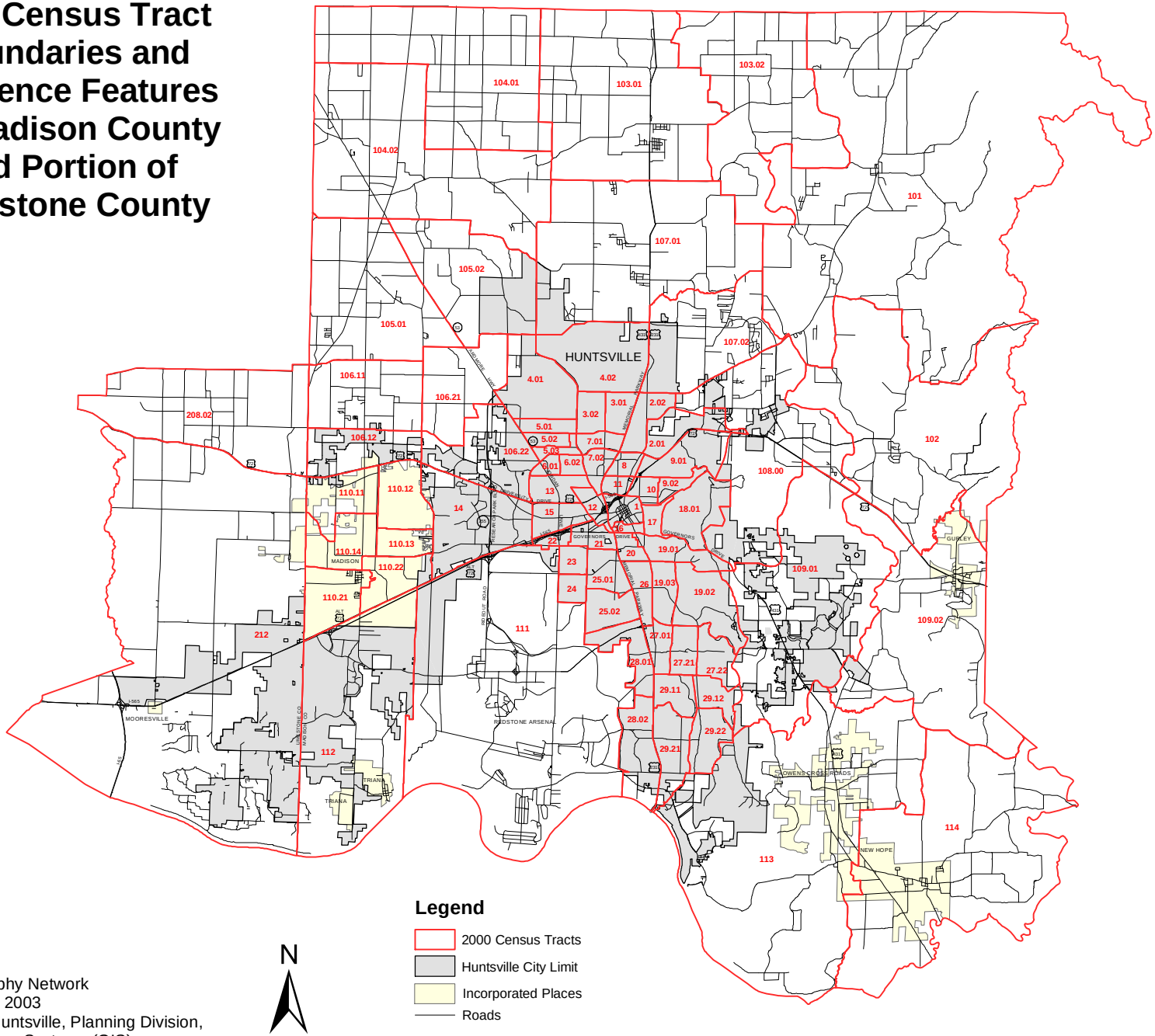
Functional Classification	Roadway	Location
Mj Rural Collector	New Hope Road	College Avenue/Main Drive to Cedar Point Road
Mj Rural Collector	Nick Davis Road	Mooresville Road to East Limestone Road
Major Collector	Nick Davis Road	East Limestone Road to Sanderson Road
Major Collector	Nick Davis Road	Sanderson Road to Old Rail Road Bed Road
Mj Rural Collector	Nick Davis Road	Old Rail Road Bed Road to Wall Triana Highway
	Nick Davis Road	Wall Triana Highway to Jeff Road
Mj Rural Collector	Old Rail Road Bed Road	State LineRroad to Pulaski Pike/Bobo Section Road
	Old Rail Road Bed Road	Pulaski Pike/Bobo Section Road to Ready Section Road
	Old Rail Road Bed Road	Ready Section Road to McKee Road
	Old Rail Road Bed Road	McKee Road to Harvest Road
	Old Rail Road Bed Road	Harvest Road to Nick Davis Road
	Old Rail Road Bed Road	Nick Davis Road to Capshaw Road
	Old Rail Road Bed Road	Capshaw Road to US 72 West
Mj Rural Collector	Oscar Patterson Road	Moores Mill Road to Butler Road
	Oscar Patterson Road	Butler Road to Winchester Road
Mj Rural Collector	Patterson Lane	Mount Lebanon Road to 231 North
Mj Rural Collector	Ready Section Road	Butter and Egg Road to Brier Fork/Bolden Hughey Road
Mj Rural Collector	State Line Road	East of Macedonia Road to Wall Triana Highway
	State Line Road	Wall Triana Highway to Carters Grove Road
Mj Rural Collector	Steger Road	231 North to Moores Mill Road
Mj Rural Collector	West Limestone Road	Memorial Parkway/231 North to Loveless Road
	West Limestone Road	Loveless Road to Brier Fork Road
Mj Rural Collector	6th Street (Triana)	Zierdt Rd to Wall Triana Highway

Appendix B
CMP Strategy Screening Maps

(Maps 1 -12 and Figure 1 follow)

Appendix B, Map 1

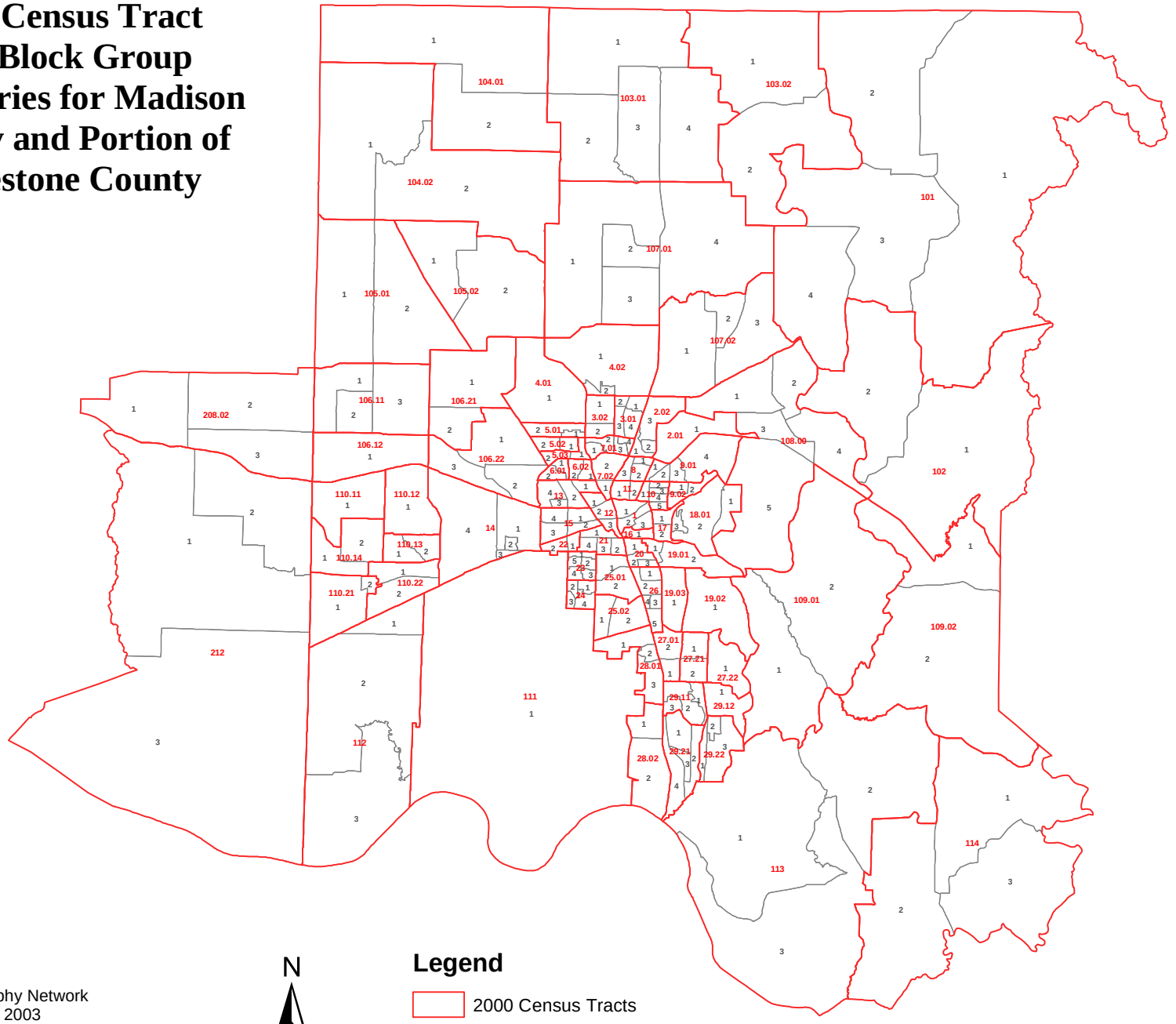
2000 Census Tract Boundaries and Reference Features for Madison County and Portion of Limestone County



Source: The Geography Network
Date Created: March 2003
Created By: City of Huntsville, Planning Division, Geographic Information Systems (GIS)

Appendix B, Map 2

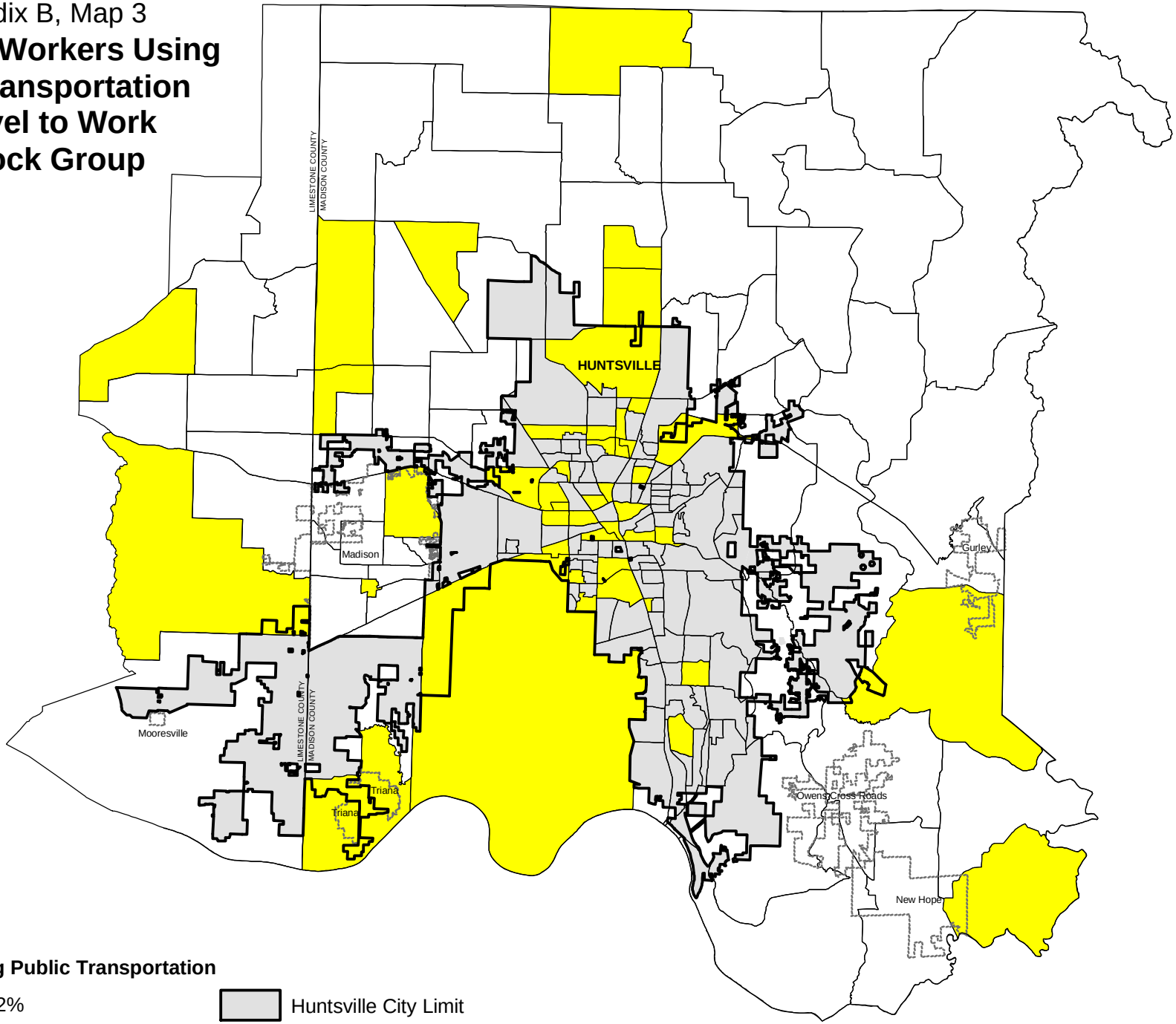
2000 Census Tract and Block Group Boundaries for Madison County and Portion of Limestone County



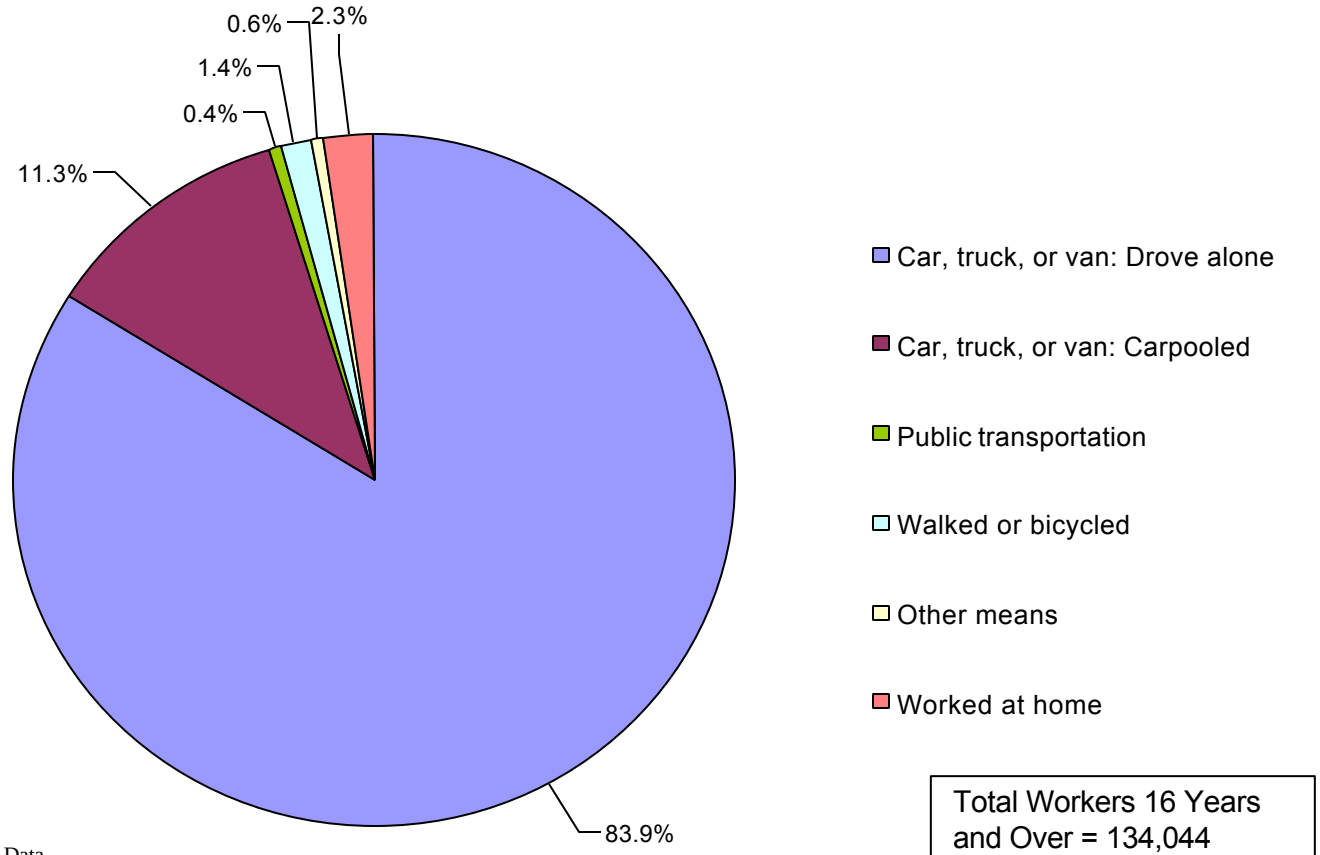
Source: The Geography Network
Date Created: March 2003
Created By: City of Huntsville, Planning Division, Geographic Information Systems (GIS)

Appendix B, Map 3

Percent of Workers Using Public Transportation to Travel to Work by Block Group

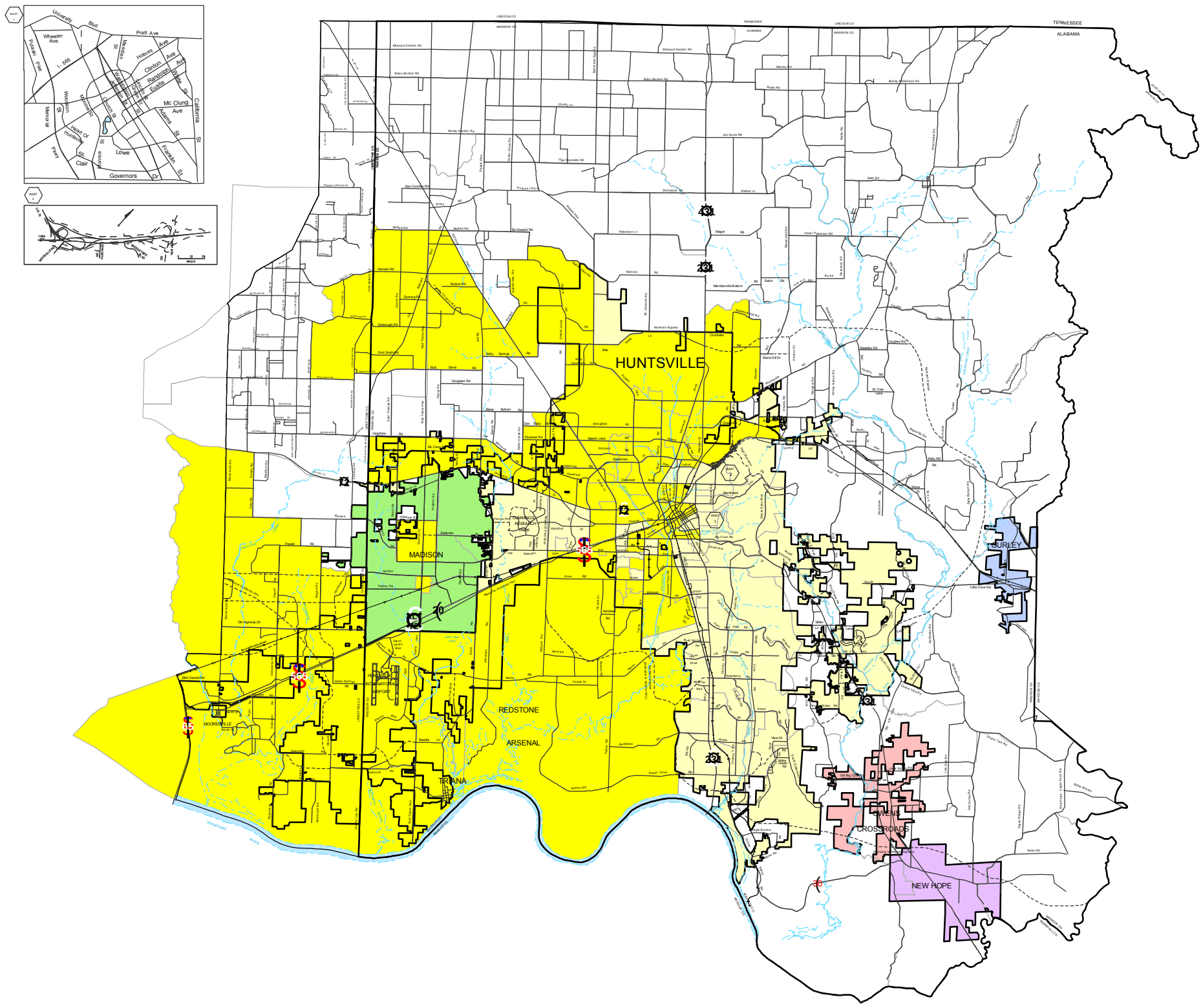


Appendix B, Figure 1
Madison County
Commuting to Work for Workers 16 Years and Over

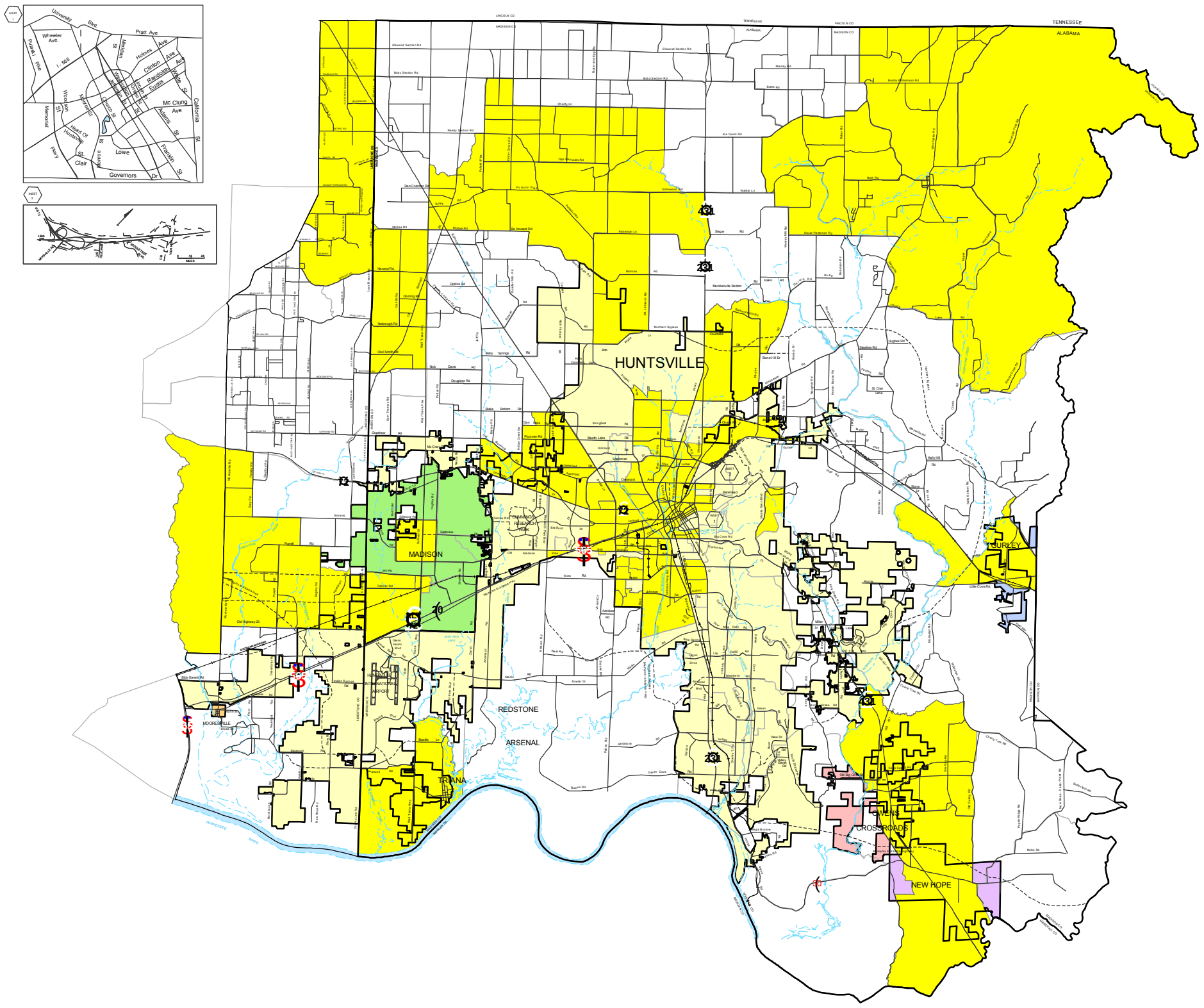


Source: Census 2000 SF3 Data,
U.S. Census Bureau

Appendix B - Map 4
Distribution of Non-White Population By Block Group (28% Threshold) Year 2000 Census

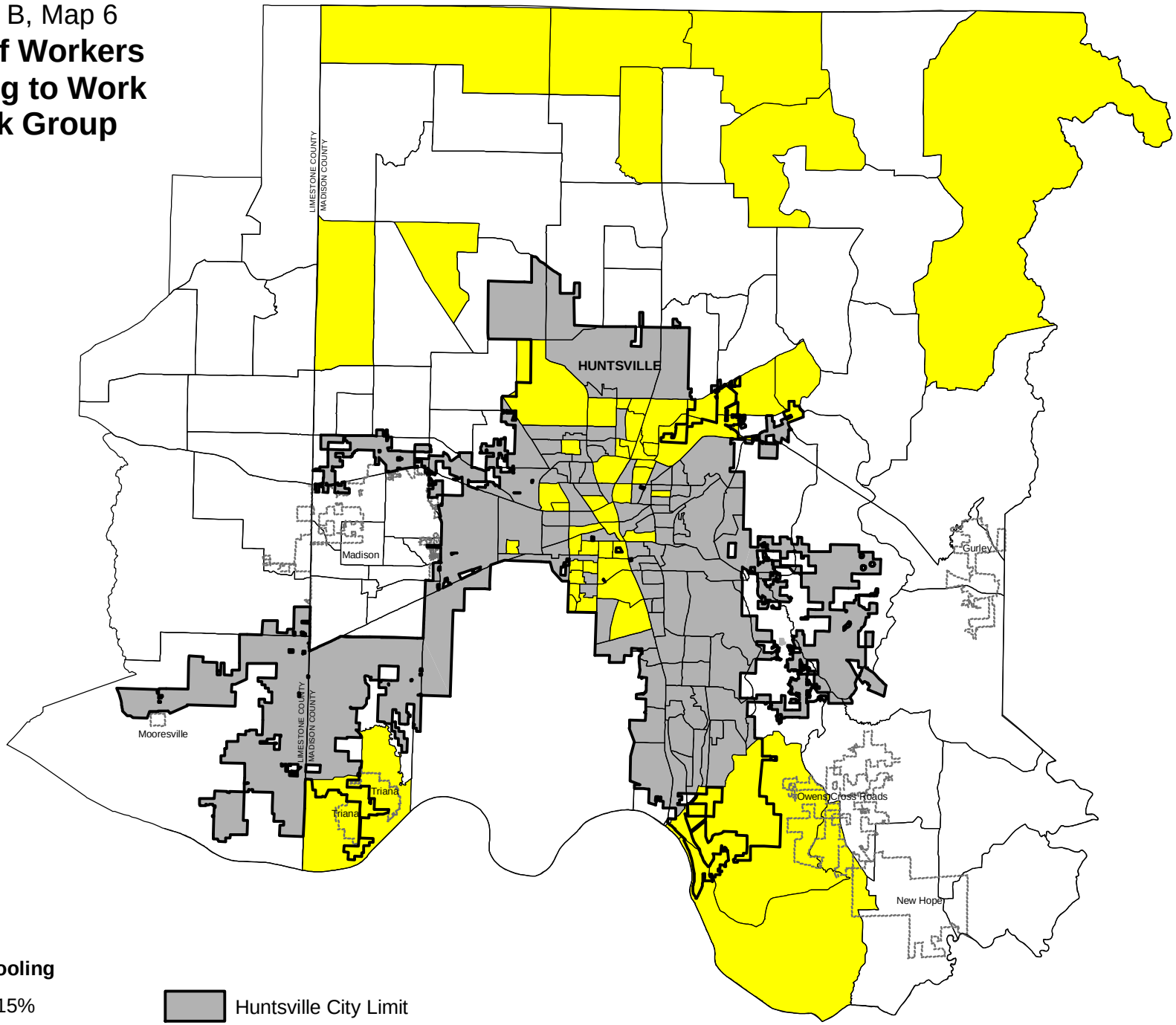


Appendix B - Map 5
Distribution of Population Below Poverty Level By Block Group (11% Threshold) Year 2000 Census


HUNTSVILLE
MADISON
REDSTONE ARSENAL
TRIANA
HURLEY
OWENS CROSS ROADS
NEW HOPE
MOORESVILLE
TENNESSEE
ALABAMA
LINCOLN CO
MADISON CO
I-565
I-65
I-24
I-20
I-31
I-72
University Blvd
Pratt Ave
Wheeler Ave.
Purdue Pkwy
Holmes Ave
Clinton Ave
Randolph St
Eustis St
Mc Clung Ave
Adams St
Franklin St
California St
Memorial Pkwy
Heart Of Humanity
Lowe St
Governors Dr
Clair St
Monroe St
Church St
Wynn Dr
Wall Triana Hwy
Old Highway 20
Glenn Hearn Blvd
Jordan Ln
Zierdt Rd
Winchester Rd
Martin Rd
Bob Wallace Ave
Research Park Blvd
Jeff Rd
Governors Dr
Pulaski Pike
Plummer Rd
Martin Lake
Slaughter Rd
Bailey Cove Rd
Big Cove Rd
Johnson Rd
Joe Quick Rd
Ready Section Rd
Elwood Section Rd
Bobo Section Rd
Gurley Pike
Meridianville Bypass
Oscar Patterson Rd
Moores Mill Rd
Monte Sano Blvd
Whitesburg Dr
Memorial Pkwy
Jeff Rd
Wall Triana Hwy
Old Big Cove Rd
Little Cove Rd
Hughes Rd
Stockton Rd
Slaughter Rd
Nick Davis Rd
Douglass Rd
Blake Bottom Rd
Wall Triana Hwy
Old Madison Pike
Sparkman
Oakwood
Bankhead
Eastview
Drake Ave
Governors Dr

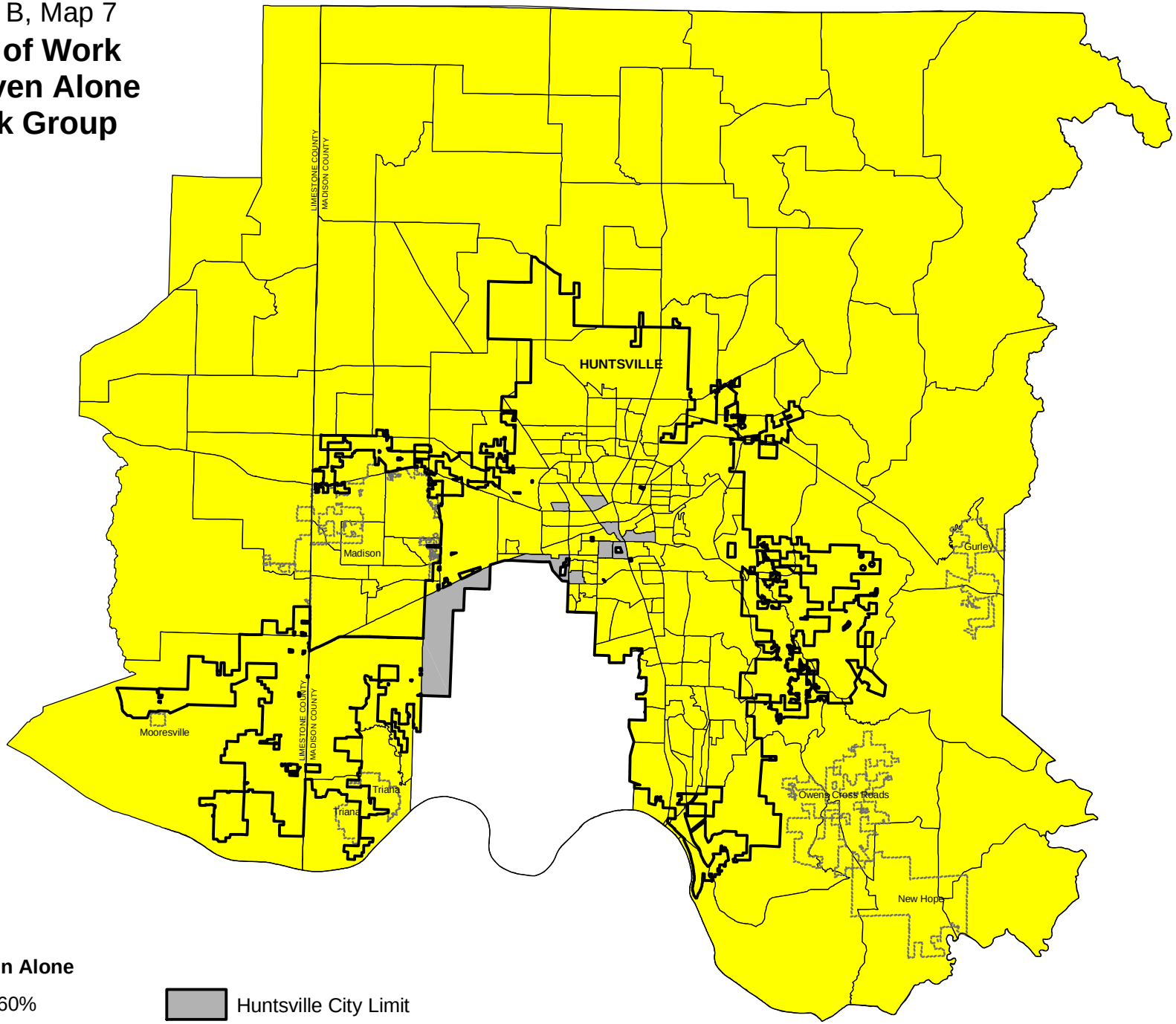
Appendix B, Map 6

Percent of Workers Carpooling to Work by Block Group



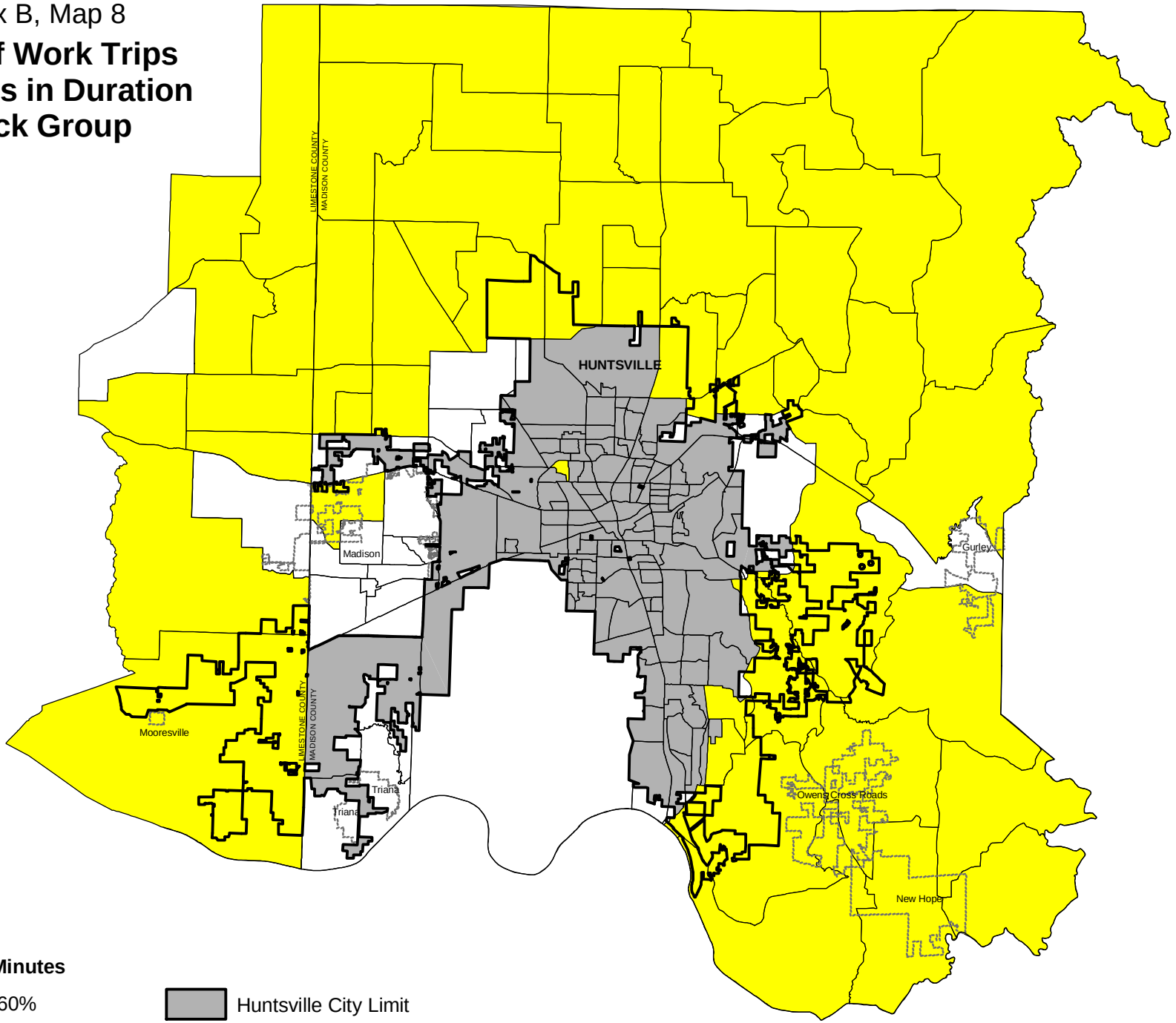
Appendix B, Map 7

Percent of Work Trips Driven Alone by Block Group



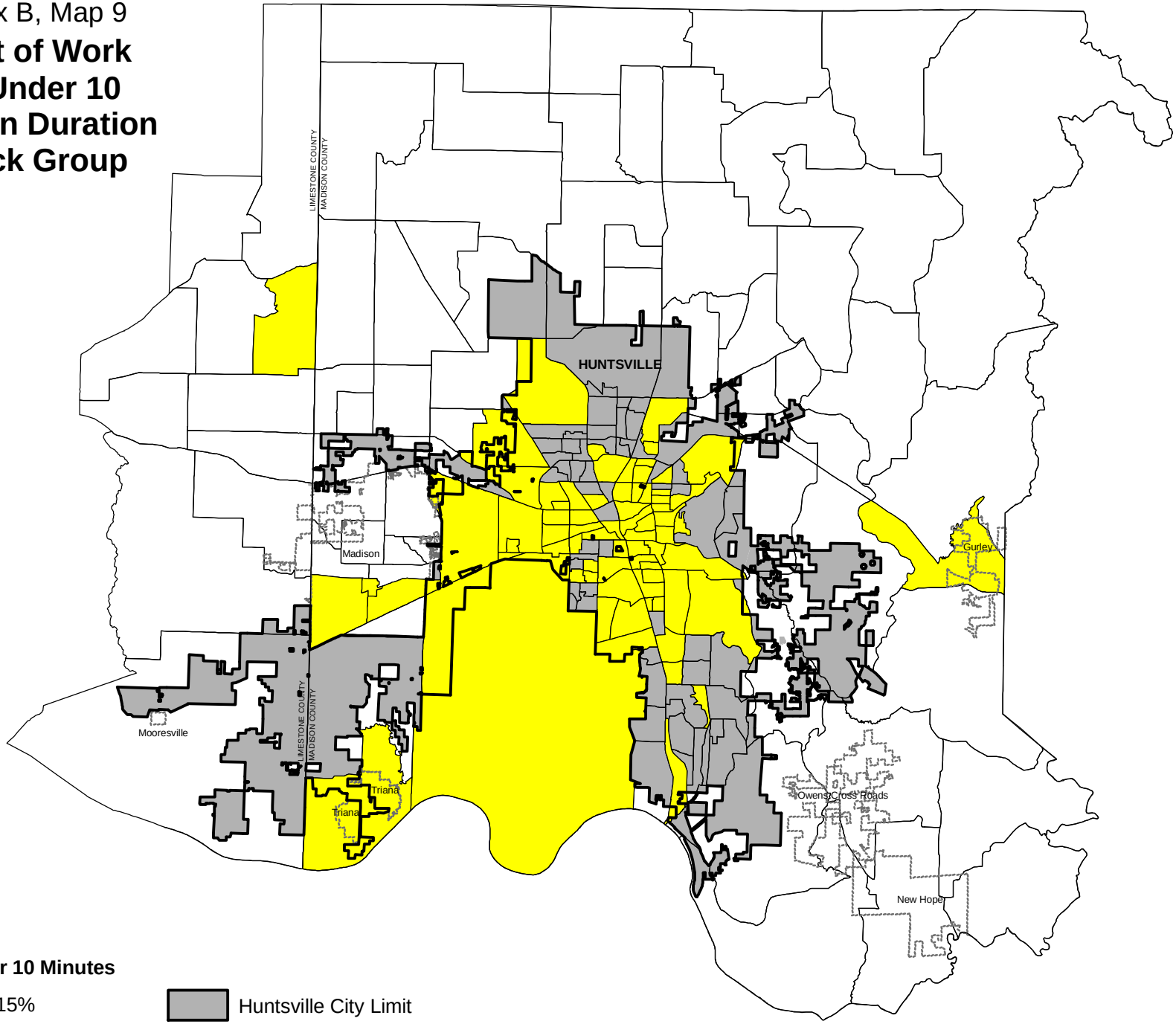
Appendix B, Map 8

Percent of Work Trips 20+ Minutes in Duration by Block Group



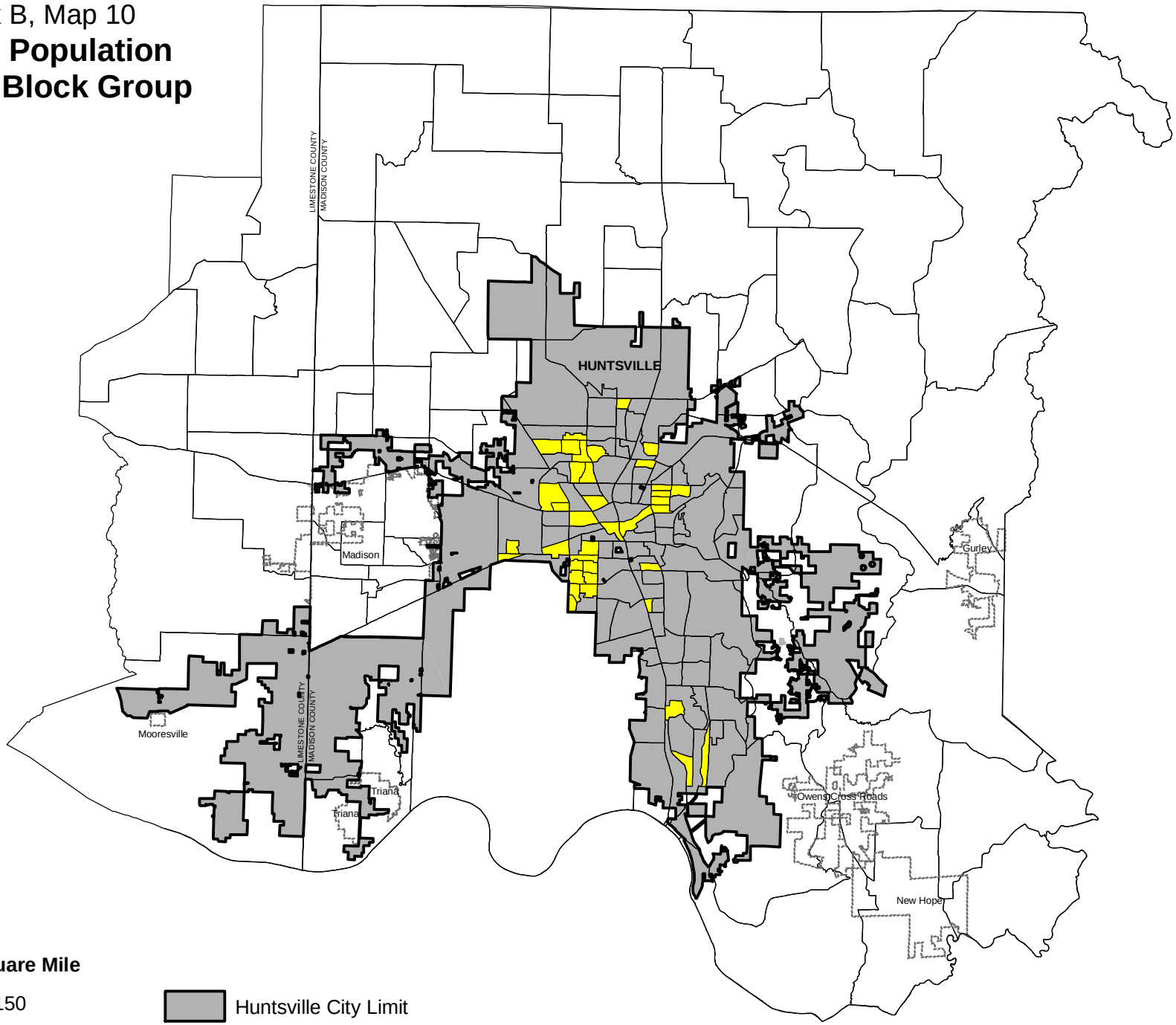
Appendix B, Map 9

Percent of Work Trips Under 10 Minutes in Duration by Block Group



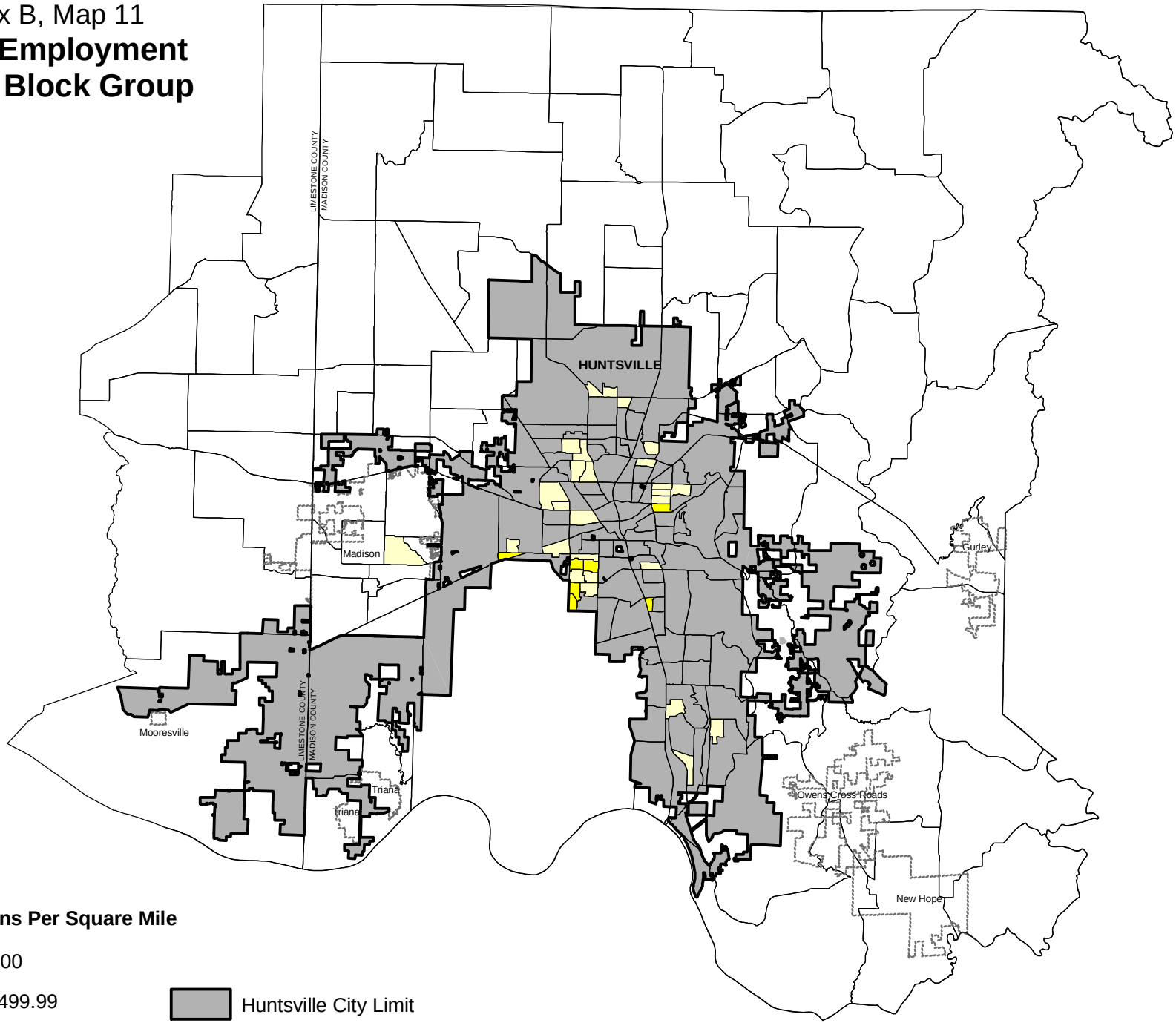
Appendix B, Map 10

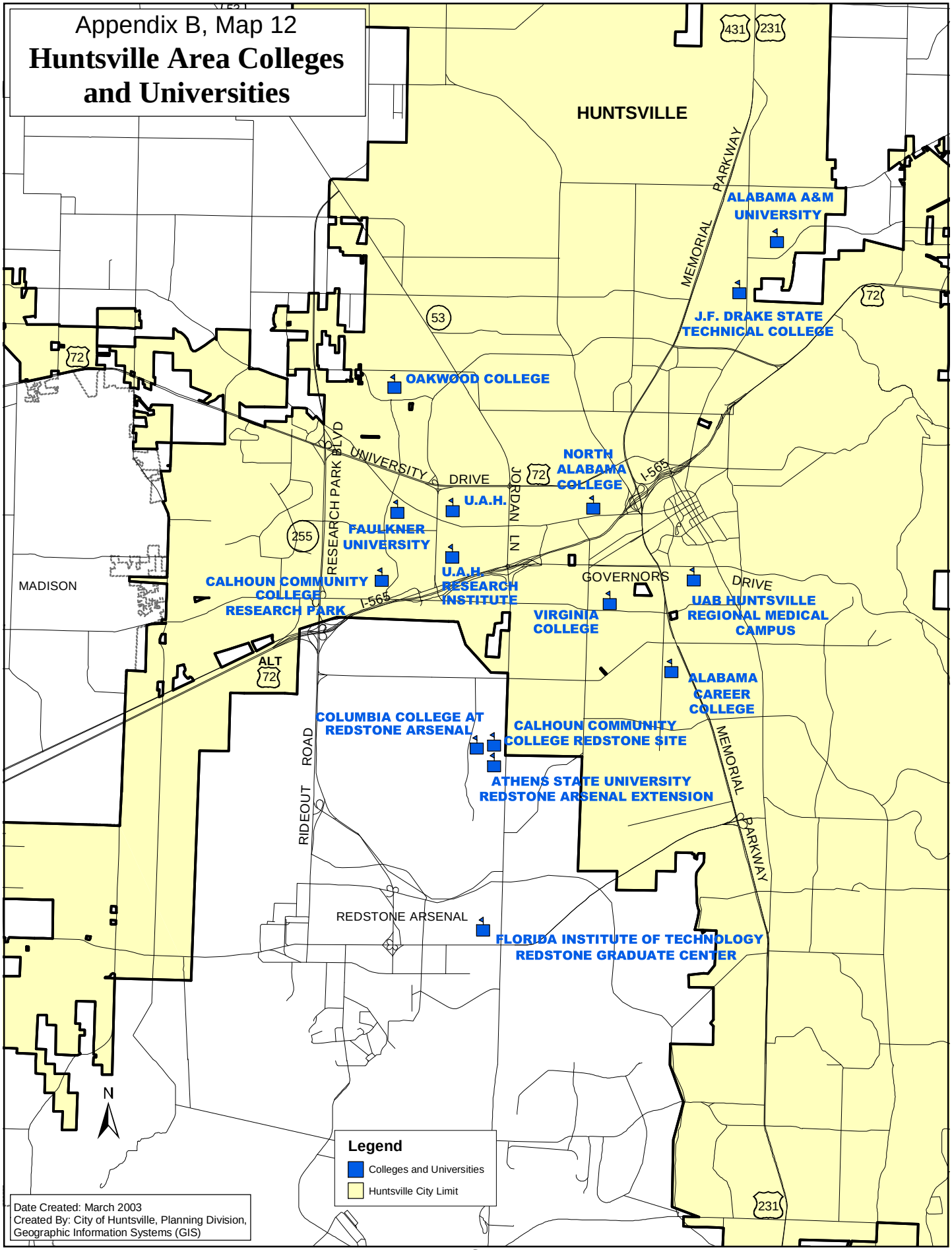
Year 2000 Population Density by Block Group



Appendix B, Map 11

Year 2000 Employment Density by Block Group




Appendix B, Map 12
Huntsville Area Colleges and Universities
HUNTSVILLE
MADISON
REDSTONE ARSENAL
ALABAMA A&M UNIVERSITY
J.F. DRAKE STATE TECHNICAL COLLEGE
OAKWOOD COLLEGE
NORTH ALABAMA COLLEGE
U.A.H.
FAULKNER UNIVERSITY
U.A.H. RESEARCH INSTITUTE
CALHOUN COMMUNITY COLLEGE RESEARCH PARK
VIRGINIA COLLEGE
UAB HUNTSVILLE REGIONAL MEDICAL CAMPUS
ALABAMA CAREER COLLEGE
COLUMBIA COLLEGE AT REDSTONE ARSENAL
CALHOUN COMMUNITY COLLEGE REDSTONE SITE
ATHENS STATE UNIVERSITY REDSTONE ARSENAL EXTENSION
FLORIDA INSTITUTE OF TECHNOLOGY REDSTONE GRADUATE CENTER
MEMORIAL PARKWAY
RESEARCH PARK BLVD
UNIVERSITY DRIVE
JORDAN LN
GOVERNORS DRIVE
RIDEOUT ROAD
I-565
ALT 72
53
255
431
231
72
N
Legend
Colleges and Universities
Huntsville City Limit
Date Created: March 2003
Created By: City of Huntsville, Planning Division, Geographic Information Systems (GIS)

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