

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.

## **IDENTIFYING CONGESTED CORRIDORS FOR STUDY**

An analysis of the CMP network to determine which existing and anticipated segments are classified as congested is required. For the purpose of the CMP, both current and future volume/capacity (v/c) ratios were calculated for each segment on the CMP network using the methods established by the State's current transportation planning modeling software.

Current traffic volumes were taken from the Base Year transportation network model, found in the MPO's **Year 2040 Transportation Plan**. Current roadway capacities were indicated by the MPO's transportation planning model. Future traffic volumes were taken from the future modeled traffic count for each segment. Future "improved" roadway capacity for each segment were identified by the MPO's transportation planning model. The "improved" roadway capacity takes into account all funded 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.

Once existing and anticipated segments with v/c ratios equal to or greater than 1.0 were identified, they were segregated and ranked according to a prioritization process. Numerous segments of roadway may be identified that are congested. Since it is not feasible to identify congestion mitigation strategies for all of those 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 in detail in Section 8 of the **Year 2040 Transportation Plan**.

## **WHAT ARE THE MOST CONGESTED CORRIDORS?**

Methods were established in the **Huntsville Area Transportation Study CMP Procedures and Responsibilities Report (Appendix F of the Year 2040 Transportation Plan)** 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 2040 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. The local MPO does not possess a consistent method for measuring hourly or peak real-time traffic flow for all corridors comprising the CMP network. 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 and are shown in Table 1. These corridors are later presented for congestion mitigation strategy recommendations.

**Table 1**  
**CMP Top Ten Corridor Technical Ranking List**

Rank	Roadway	Location
1	Memorial Parkway	Bob Wallace Avenue to Clinton Avenue
2	US 72 West	Hughes Road to Providence Main Street
3	Research Park Boulevard	I-565 to US 72
4	I-565	I-65 to Wall Triana Highway
5	US 231 South	Whitesburg Drive to Martin Road
6	US 231 North	Mastin Lake Road to Winchester Road
7	US 72 East	Maysville Road to Moores Mill Road
8	Governors Drive	California Street to Monte Sano Boulevard
9	Winchester Road	Moores Mill Road to Henson Drive
10	Bradford Drive	Explorer Boulevard to Wynn Drive

Source: Year 2010 Base Year Model, Atkins North America; Year 2040 Transportation Plan: Appendix F, Table 3.

### **Travel Time and Speed of the Top Ten Congested Corridors**

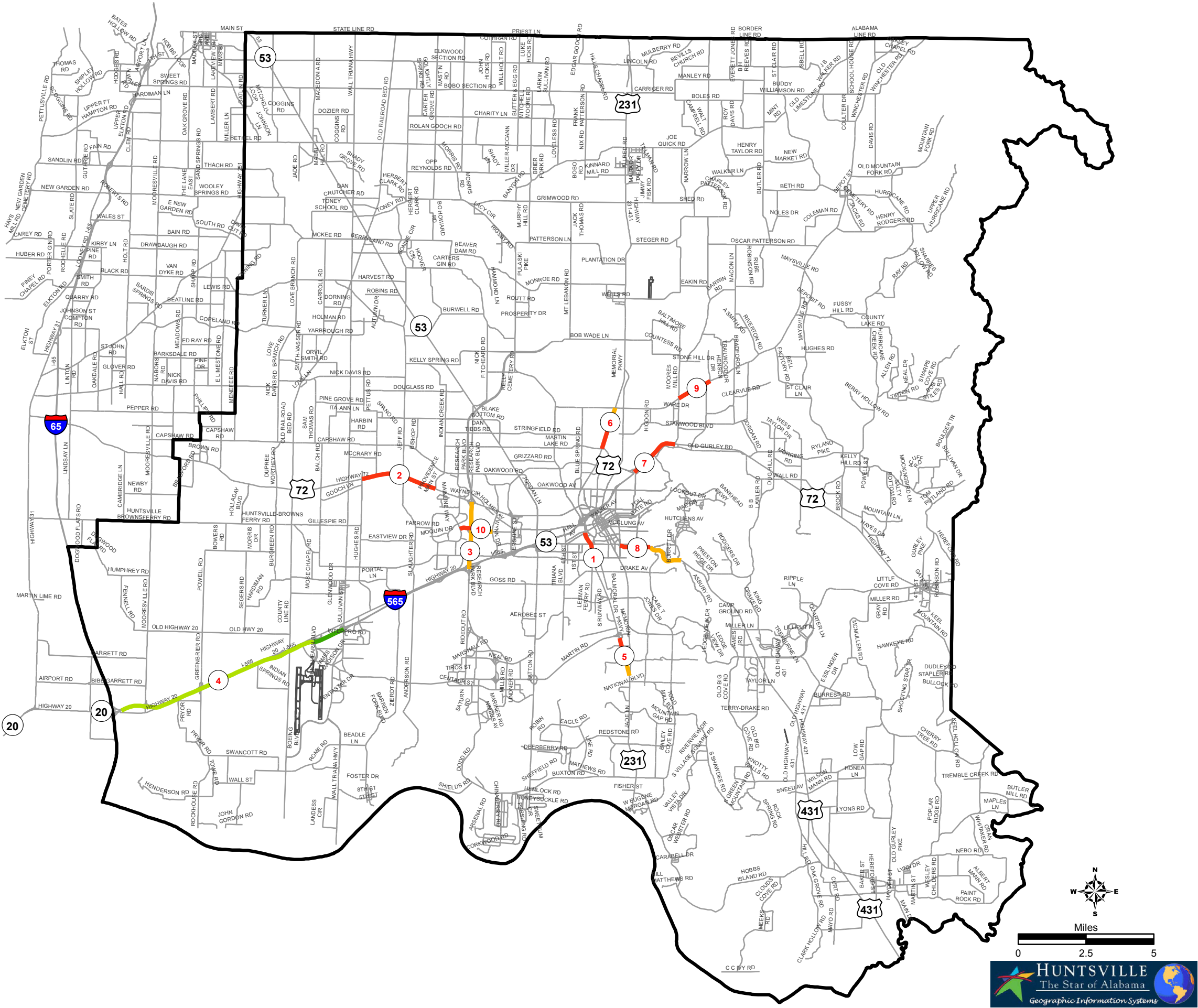
The travel time and speed of the top ten corridors selected for study, where congestion is either occurring or is subject to occur by 2040 has been compiled. Travel time and speed is indicated from the roadway segment to the center of Huntsville. A map depicting this data is shown in **Map 2**.

Map 2  
2010 Base Year Network  
Travel Speed and Time of Top Ten  
Congested Corridors Map

HATS  
Huntsville Area  
Transportation Study

Top Ten Congested Corridors				
Rank	Roadway	From	To	Travel Time (Minutes)
1	Memorial Parkway	Bob Wallace Avenue	Clinton Avenue	1.91
2	U.S. 72	Hughes Road	Providence Main Street NW	8.07
3	Research Park Boulevard	I-565	U.S. 72	3.18
4	I-565	I-65	Wall Triana Highway	10.63
5	U.S. 231	Whitesburg Drive	Martin Road	3.40
6	U.S. 231	Mastin Lake Road	Winchester Road	3.44
7	U.S. 72	Maysville Road	Moore's Mill Road	5.78
8	Governors Drive	California Street	Monte Sano Boulevard	6.12
9	Winchester Road	Moore's Mill Road	Henson Drive	3.54
10	Bradford Drive	Explorer Boulevard	Wynn Drive	3.17

- 1 Congested Corridor
- Congested Travel Speed
- Less Than Or Equal To 25 miles per hour
- Greater Than 25 - 40 miles per hour
- Greater Than 40 - 55 miles per hour
- Greater Than 55 miles per hour



## **HOW ARE CONGESTION MANAGEMENT STRATEGIES DETERMINED FOR IDENTIFIED CONGESTED CORRIDORS?**

The CMP requires through its legislation, the identification and evaluation of strategies to determine the most effective method(s) to address congestion. According to the FHWA publication *Congestion Management Process: A Guidebook* the recommended categories of strategies, or combination of strategies to be considered are:

- Transportation demand management strategies, including promoting alternatives, managing and pricing assets, land use, and work patterns
- Traffic operations strategies
- Public transit strategies
- Road capacity strategies, where necessary

While 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.

The FAST Act 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” [*In part, amended 23 USC 134(n)*]. 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 [23 CFR 450.322]. The Huntsville urbanized area is currently at attainment, but will in good faith address construction of additional system capacity lastly.

Many congestion management strategies that may be identified in the CMP may help to support livable communities. Increasing transit, bicycling, and walking options provides more transportation choices, which in turn can decrease household transportation costs, reduce dependence on fuel, improve air quality, and promote public health. Strategies that better manage and operate the transportation system can enhance economic competitiveness by decreasing travel times for commuters and freight operators, reducing fuel consumption. Coordinating land use and transportation planning can help to not only manage congestion, but to promote healthy, safe, and walkable communities.

Using the CMP to support livability involves a comprehensive approach that allows for congestion to be assessed in the context of multiple goals to include economic vitality, safety, multimodal options, and the environment. Placing an emphasis on demand management and operational strategies can help to preserve the current infrastructure, support existing

communities, and improve multimodal travel choices.

To ensure that all levels of strategies are appropriately considered, the Huntsville Area MPO devised a strategy screening matrix (Appendix F, Table 4 of the **Year 2040 Transportation Plan**) 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. Additionally, maps and graphics pertaining to livability are referenced as well.

Once the **CMP Technical Ranking** list is developed, the process of congestion mitigation must begin. MPO member 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. 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

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: Memorial Parkway  
BEGIN POINT: Bob Wallace Avenue  
END POINT: Clinton Avenue

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 1.1 miles

LANE CONFIGURATION: The corridor presents an urban interchange with service roads. The service roads are 4 lanes adjusting to 6 lanes for ramp access and turning movements at major intersections. The service roads are divided by a 4 lane main line road. The corridor also provides access to I-565 via ramps located between Clinton Avenue and University Drive.

TRAFFIC CONTROLS: There are overpasses at Clinton Avenue and Bob Wallace Avenue with urban interchanges present at Memorial Parkway and those locations. Traffic signals manage traffic flow along the service roads at Clinton Avenue and Bob Wallace Avenue, providing access to interchange on-ramps.



SERVICE CHARACTERISTICS:	2010	2010	2010	2040	2040	2040
	ADT	V/C RATIO	LOS	ADT	V/C RATIO	LOS
Bob Wallace Avenue to Clinton Avenue	77,687	1.04	F	92,494	1.23	F

CURRENT LAND USE/DEVELOPMENT TRENDS: Current land use along and around this corridor consists primarily of commercial and retail development. Land use in the area is primarily built out. Future developments in the area would more likely be redevelopment of property for commercial and/or retail use.

TRANSIT SERVICE: The Huntsville Shuttle Bus provides service along the corridor between Bob Wallace and Clinton Avenue.

CORRIDOR FUNCTION: This corridor serves as a federal highway and a major arterial. The corridor is part of a transportation system which runs through the entire county in a north/south direction. As such, it is a high demand corridor carrying a major portion of trips traversing through the urban area.

OTHER PLANNING DOCUMENTS/STUDIES: None identified.

RECOMMENDATIONS: Current assessment of the corridor reveals that the roadway is operating at congested conditions. City engineers have reviewed corridor performance and have determined that a major traffic snarl that impacts performance of the segment originates further north at the access of I-565 and Memorial Parkway. The following is recommended:

- Construction of minor geometric improvements at intersections
- Improved traffic signal coordination
- Mainline ramp elimination
- Ramp metering
- Improve freeway to freeway ramp configurations further north at the junction of I-565 and Memorial Parkway

RANK: 2

CORRIDOR: US 72 West  
BEGIN POINT: Hughes Road  
END POINT: Providence Main Street

FUNCTIONAL CLASSIFICATION: Major Arterial

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

CORRIDOR LENGTH: 2.83 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 four intersections, and three local residential streets west of Jeff Road/Slaughter Road are under stop sign control.



SERVICE CHARACTERISTICS:	2010	2010	2010	2040	2040	2040
	ADT	V/C RATIO	LOS	ADT	V/C RATIO	LOS
Hughes Road to Providence Main Street	38,943	1.15	F	59,934	1.20	F

CURRENT LAND USE/DEVELOPMENT TRENDS: The remaining undeveloped frontage along this corridor is expected to become 100% developed by the year 2040 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: A larger portion of this corridor has been identified in Section 4 of this document for improvement. Project #94, listed in Section 4, includes this segment of roadway. It is currently under engineering design.

RECOMMENDATIONS: This corridor is under design as a 6 lane facility, with a number of access management, signalization, and side street geometric improvements. These improvements shall provide the necessary and additional capacity above that provided by conventional planned improvements. The City of Huntsville is cost-sharing the construction of US 72 from Providence Main to County Line Road with the Alabama Department of Transportation. The City of Madison has received ATRIP funds to improve the portion of US 72 from Hughes Road westward to County Line Road. It is recommended that these improvements continue to be pursued and constructed.



RANK: 3

CORRIDOR: Research Park Boulevard  
BEGIN POINT: I-565  
END POINT: US 72

FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 2.49 miles  
LANE CONFIGURATION: 4 lane median divided, limited access roadway with interchanges at I-565 and US 72.

TRAFFIC CONTROLS: Traffic signals control intersections at the bottom of ramps at Research Park Boulevard and I-565 and US 72. Ramping is additionally provided in between, at Old Madison Pike and Bradford Boulevard.



SERVICE CHARACTERISTICS: 2010	2010	2010	2010	2040	2040	2040
	ADT	V/C RATIO	LOS	ADT	V/C RATIO	LOS
I-565 to US 72	47,148	0.91	E	58,352	1.17	F

CURRENT LAND USE/DEVELOPMENT TRENDS: The corridor provides limited access to surrounding land uses between the intersections. The Research Park Boulevard /I-565 interchange provides direct access to Redstone Arsenal Gate 9 on Rideout Road. Rideout Road is the extension of Research Park Boulevard on Redstone Arsenal. The Research Park Boulevard/US 72 interchange provides direct access to major retail development. The interchanges located between the two endpoints, at Old Madison Pike and Bradford Drive, provide direct access to retail and Research Park.

TRANSIT SERVICE: Transit is not provided directly on this corridor, but in close proximity is served by multiple routes. Route 3 serves Old Madison Pike and a portion of Research Park. It runs hourly. Route 4 serves US 72/University Drive at Research Park Boulevard. This route runs every 30 minutes.

CORRIDOR FUNCTION: This corridor serves as a limited access State Route and major arterial. At its interchange with I-565, it provides direct access to Redstone Arsenal Gate 9. Approximately 40% of all Redstone Arsenal employees use this gate. The north end of the corridor provides access to a US highway. Research Park Boulevard, north of US 72, provides access to the Northern Bypass, connecting commuters from north Madison County to Redstone Arsenal and Research Park.

OTHER PLANNING DOCUMENTS/STUDIES: Interchange Modification Study: I-565 at Rideout Road/Research Park Boulevard

RECOMMENDATIONS: An interchange modification study was performed in 2011 which revealed deficiencies not only at the interchange at I-565, but even locations north of the interchange. In particular, ramp capacity failures were noted along the I-565 westbound exit ramps to both northbound Rideout Road and southbound Rideout Road. Additionally, segment capacity failures and weaving segment capacity failures were identified. The study recommended that modification to the ramps at I-565 and Research Park Boulevard and northward be considered. Additionally, the City of Huntsville is currently working with Redstone Arsenal to address traffic flow and capacity issues at I-565 and Research Park Boulevard by studying the corridor and a new connection (Resolute Way) to the Redstone Gateway Office Park. The City of Huntsville is funding this improvement with its capital budget as project #34. Additionally, the City of Huntsville is trying to identify funding sources for operational improvements for the ramps at Research Park Boulevard and I-565 and US 72, and the roadway in between. These projects have been identified in Section 4 as projects #80, L, and M. It is recommended that these projects be pursued.



RANK: 4

CORRIDOR: I-565  
BEGIN POINT: I-65  
END POINT: Wall Triana Highway

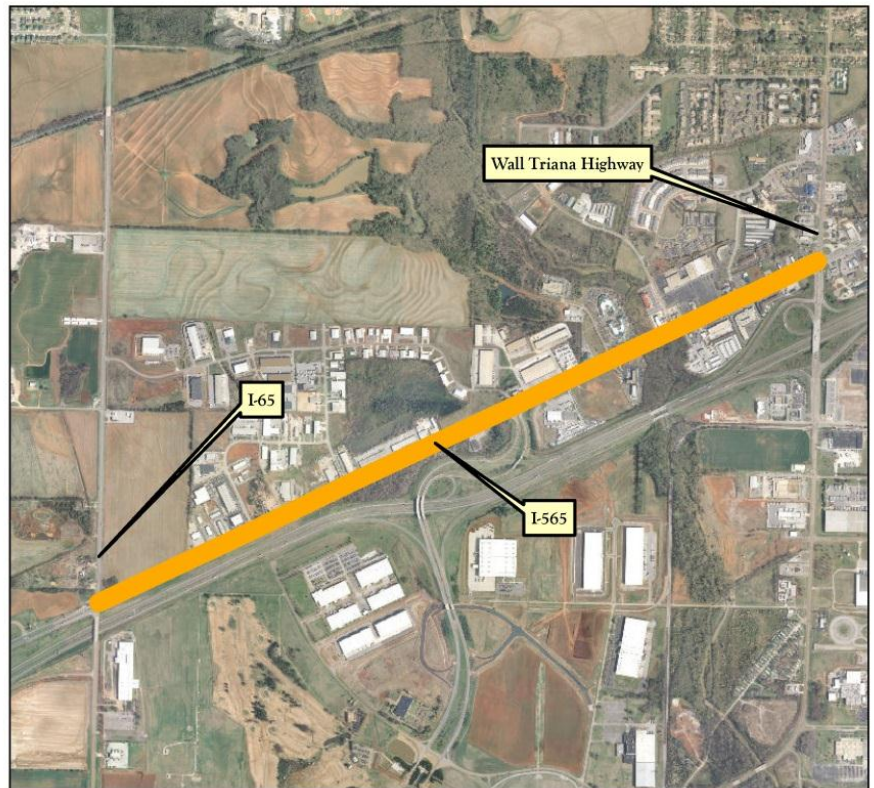
FUNCTIONAL CLASSIFICATION:  
Interstate

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

CORRIDOR LENGTH: 8.83 miles

LANE CONFIGURATION: 4-lane divided  
interstate with ramps at I-65, Mooresville  
Rd, Greenbrier Rd, County Line Rd (under  
construction), Glenn Hearn Blvd (Huntsville  
International Airport), and Wall Triana  
Highway.

TRAFFIC CONTROLS: None.



SERVICE CHARACTERISTICS:	2010 ADT	2010 V/C RATIO	2010 LOS	2040 ADT	2040 V/C RATIO	2040 LOS
I-65 to Wall Triana Highway	62,299	0.92	E	87,534	1.29	F

CURRENT LAND USE/DEVELOPMENT TRENDS: Current land use surrounding the corridor is agricultural, commercial, and aviation.

TRANSIT SERVICE: None.

CORRIDOR FUNCTION: This corridor serves as a federal highway and major arterial. It serves high volumes of commuter traffic to employment centers located in Research Park, Redstone Arsenal, and other employment locations in Madison County. This corridor also directly connects Limestone County to Madison County, to major commercial and retail properties in both jurisdictions. Projects #29, 30, and 31, shown in Section 4, comprise this segment of roadway.

OTHER PLANNING DOCUMENTS/STUDIES: None.

RECOMMENDATIONS: The State of Alabama has plans to widen this corridor. Projects #29, 30, and 31, shown in Section 4, comprise this segment of roadway. The portion from East of I-65 to Greenbrier Road is scheduled for the year 2017 and 2021. The portion from Greenbrier Road to County Line Road is planned for improvement during 2018 and 2020, and the portion from County Line Road to Wall Triana Highway is a visionary project scheduled for 2048 and 2050. It is recommended that the corridor from County Line Road to Wall Triana Highway be monitored, and the improvement scheduled adjusted as warranted.

RANK: 5

CORRIDOR: US 231 South (Memorial Parkway)

BEGIN POINT: Whitesburg Drive

END POINT: Martin Road

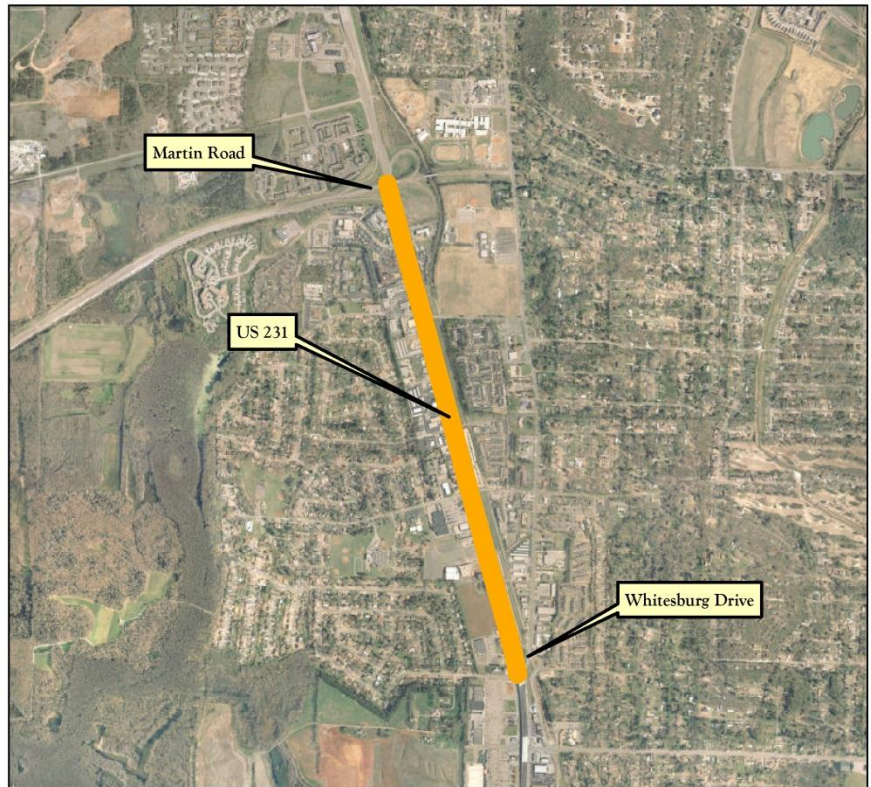
FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 1.43 miles

LANE CONFIGURATION: 6-lane divided, with a 40' depressed grassy median, from Martin Road to Whitesburg Drive. The corridor provides additional right and left turn lanes at all major signalized intersections. US 231 between Whitesburg Drive and Weatherly Road was recently upgraded to allow for free flow traffic via an overpass and service roads.

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



SERVICE CHARACTERISTICS: 2010  
ADT  
Whitesburg Drive to  
Martin Road 64,355

2010  
V/C RATIO  
1.29

2010  
LOS  
F

2040  
ADT  
107,221

2040  
V/C RATIO  
1.13

2040  
LOS  
F

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

TRANSIT SERVICE: Route 5, the South Parkway/Baily Cove 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. Project #44, 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. The State Department of Transportation has construction scheduled for fiscal year 2015. The construction of service roads and an overpass have been completed on US 231 from Whitesburg Drive to Weatherly Road.

RECOMMENDATIONS: It is recommended that the construction of grade separation projects (i.e., Strategy 5 – the construction of service roads and associated overpasses) be done for the currently planned locations at Martin Road, Byrd Springs Road, and Lily Flagg. This project is formally listed in this document as project #44: Memorial Parkway (including overpass/interchange) from North of Whitesburg Drive/South of Golf Road @ U.S. 231 North.



RANK: 6

CORRIDOR: US 231  
BEGIN POINT: Mastin Lake Road  
END POINT: Winchester Road

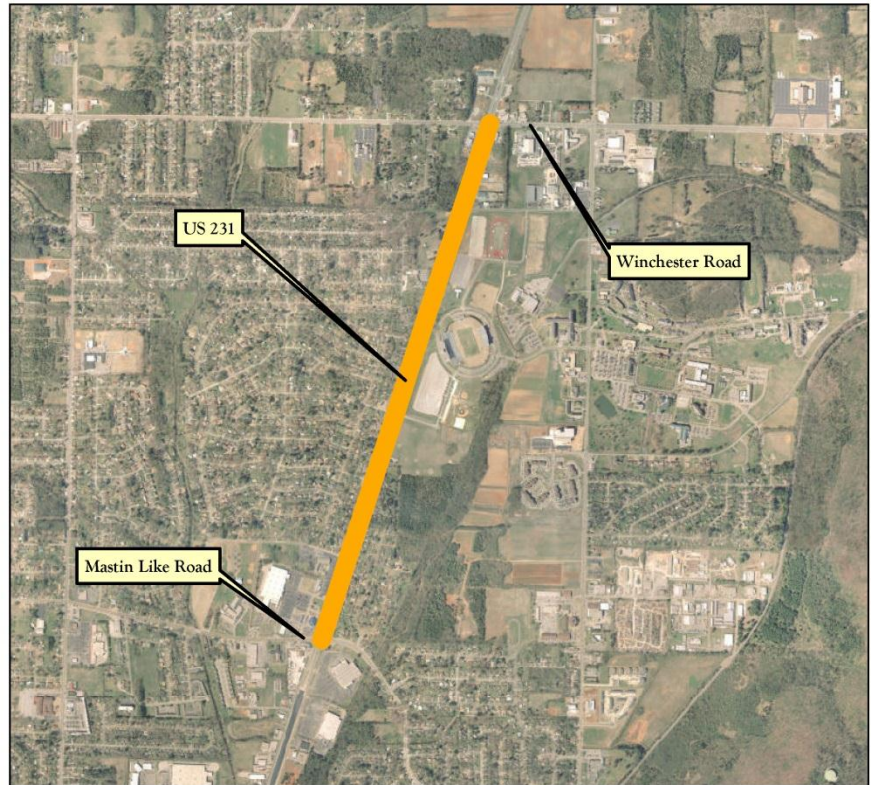
FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 1.58 miles

LANE CONFIGURATION: Divided roadway, with a 40' depressed grassy median, from Mastin Lake Road to Winchester Road. The southbound travel lane consists of 2 lanes. The northbound travel lane consists of 3 lanes.

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



SERVICE CHARACTERISTICS:	2010 ADT	2010 V/C RATIO	2010 LOS	2040 ADT	2040 V/C RATIO	2040 LOS
Mastin Lake Road to Winchester Road	38,936	0.93	E	46,521	1.11	F

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

TRANSIT SERVICE: Route 7, the Alabama A&M and Medaris 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 north Huntsville, north Madison County, and southern Tennessee to the center City, and provides 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. Project #45, listed in Section 4, includes this segment of roadway. The project is a Restore Our Roads project, and is committed for right of way acquisition during fiscal year 2016, utility relocation during fiscal year 2017, and construction during fiscal year 2017. The project includes service road improvements and overpasses on US 231 (Memorial Parkway) at Mastin Lake Road.

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 #45: Memorial Parkway (including overpass/interchange) from Sparkman Drive to Mastin Lake Road, including an overpass at Mastin Lake Road. It is also recommended that funding be pursued to construct an identified service road and overpass project, listed as project #46 in Section 4 of this document, at Winchester Road.

RANK: 7

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: 2.03 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: 2010		2010	2010	2040	2040	2040
		ADT	V/C RATIO	LOS	ADT	V/C RATIO
Maysville Road to Moores Mill Road		43,310	1.28	F	54,985	1.31
						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 #88, listed in Section 4. In the interim, improvements to the westbound lanes and critical intersections is underway, to provide for a temporary fix to the traffic congestion in the area.

RECOMMENDATIONS: An additional westbound lane is currently under construction, from Shields Road to the Sparkman Drive ramp on I-565. This project includes the portion of US 72 between Maysville Road and Moores Mill Road. The corridor was previously under design 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 does not funding available to construct this full improvement. It is recommended that the construction that is underway, continue for this project, and the full project (shown as project #88 in Section 4:U.S. 72 East/ARC Corridor V from Moores Mill and Shield Road to US 72 East), be funded. Upgrading this corridor to an expressway will alleviate stop and go traffic at the Moores Mill Road intersection.



RANK: 8

CORRIDOR: Governors Drive  
BEGIN POINT: California Street  
END POINT: Monte Sano Boulevard

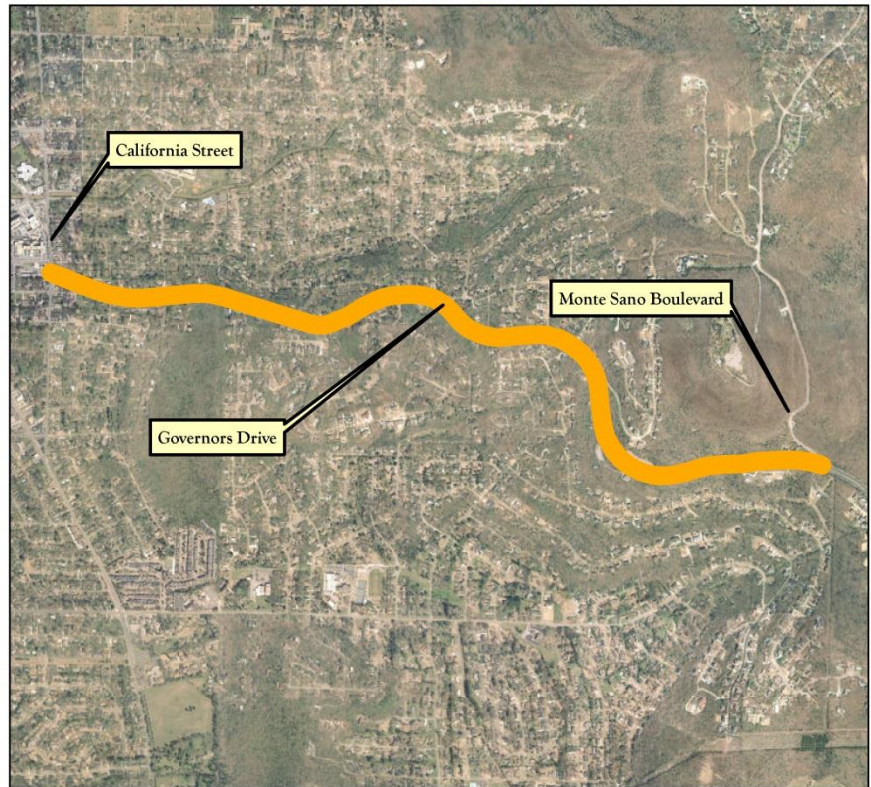
FUNCTIONAL CLASSIFICATION: Major Arterial

JURISDICTION: State Controlled Road located in the City of Huntsville

CORRIDOR LENGTH: 2.58 miles

LANE CONFIGURATION: Nominally, a 4 lane divided corridor with continuous center turn lane.

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



SERVICE CHARACTERISTICS:	2010 ADT	2010 V/C RATIO	2010 LOS	2040 ADT	2040 V/C RATIO	2040 LOS
California Street to Monte Sano Boulevard	34,602	1.19	F	41,510	0.91	E

CURRENT LAND USE/DEVELOPMENT TRENDS: Uses along this corridor are primarily residential.

TRANSIT SERVICE: None.

CORRIDOR FUNCTION: The corridor serves to connect southeast Madison County and southeast Huntsville to the downtown area, and further to US 231 and I-565.

OTHER PLANNING DOCUMENTS/STUDIES: None

RECOMMENDATIONS: This congestion problem is one of capacity, both in terms of number of westbound through lanes, as well as available green time in the Governors Drive System, especially at California Street. Possible congestion management strategies would include:

- Intersection improvements at Governors/California, Governors/Franklin, and Governors/Madison, which would mean widening these side street approaches and including the addition of right- and left-turn lanes, in order to further reduce necessary side street green time. This would allow development of better signal timing plans through the Hospital corridor.
- Widening Governors Drive east of Basset Street, carrying a third westbound through lane east of Basset Street, in order to add more queue storage space.
- Widening of Cecil Ashburn Drive, to provide additional capacity for travel demand between Hampton Cove and the City Core.
- Imposition of development restrictions in the Hampton Cove area, as continued development in this area is not currently being matched by necessary infrastructure improvements for roadways connecting Hampton Cove with the City Core.
- Construction of new roadways, between Hampton Cove and the City Core.

At the present time, the City of Huntsville has plans to widen Cecil Ashburn Drive to 4 lanes during 2017. It is recommended that this improvement continue as planned, and traffic flow be monitored on Governors Drive.

RANK: 9

CORRIDOR: Winchester Road  
BEGIN POINT: Moores Mill Road  
END POINT: Henson Drive

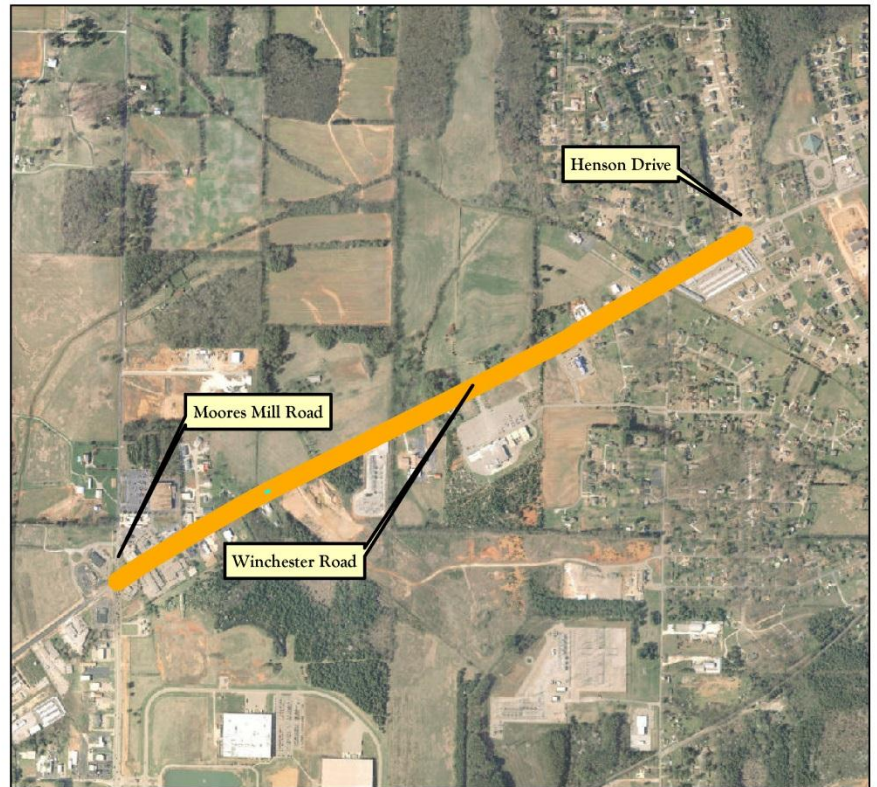
FUNCTIONAL CLASSIFICATION: Minor Arterial

JURISDICTION: City of Huntsville and Madison County

CORRIDOR LENGTH: 1.33 miles

LANE CONFIGURATION: A 4-lane divided corridor at Moores Mill Road and near Henson Drive, tapering down to a 2 lane roadway in the middle.

TRAFFIC CONTROLS: Major intersections are controlled by traffic signals.



SERVICE CHARACTERISTICS:	2010	2010	2010	2040	2040	2040
	ADT	V/C RATIO	LOS	ADT	V/C RATIO	LOS
Winchester Road to Henson Drive	21,172	1.01	F	35,146	1.10	F

CURRENT LAND USE/DEVELOPMENT TRENDS: This corridor primarily consists of commercial land, with Henson Drive providing access to a major residential subdivision.

TRANSIT SERVICE: None

CORRIDOR FUNCTION: Winchester Road provides access to Memorial Parkway, and in a larger scope, is an east/west corridor serving northeast Madison County and southern Tennessee.

OTHER PLANNING DOCUMENTS/STUDIES: The project is identified in Section 4 of this document for improvement. The project is included as a smaller portion of project #100: Winchester Road from Dominion Circle to Naugher Road. The project is in the current Transportation Improvement Program for construction in fiscal year 2015.

RECOMMENDATIONS: The City of Huntsville has received ATRIP funding to pay for the construction of this project. At the present time, right of way acquisition is planned, and construction is scheduled for fiscal year 2015. It is recommended that this project proceed as scheduled. This project compliments other projects further east on Winchester Rd that are scheduled for fiscal year 2015, and have been planned by Madison County. Other improvements to Winchester Road that are funded include a bridge at the Flint River and widening Winchester Road from Naugher Road to Riverton Road. It is anticipated that as these improvements will improve traffic flow along the entire Winchester Road corridor.



RANK: 10

CORRIDOR: Bradford Drive  
BEGIN POINT: Explorer Boulevard  
END POINT: Wynn Drive

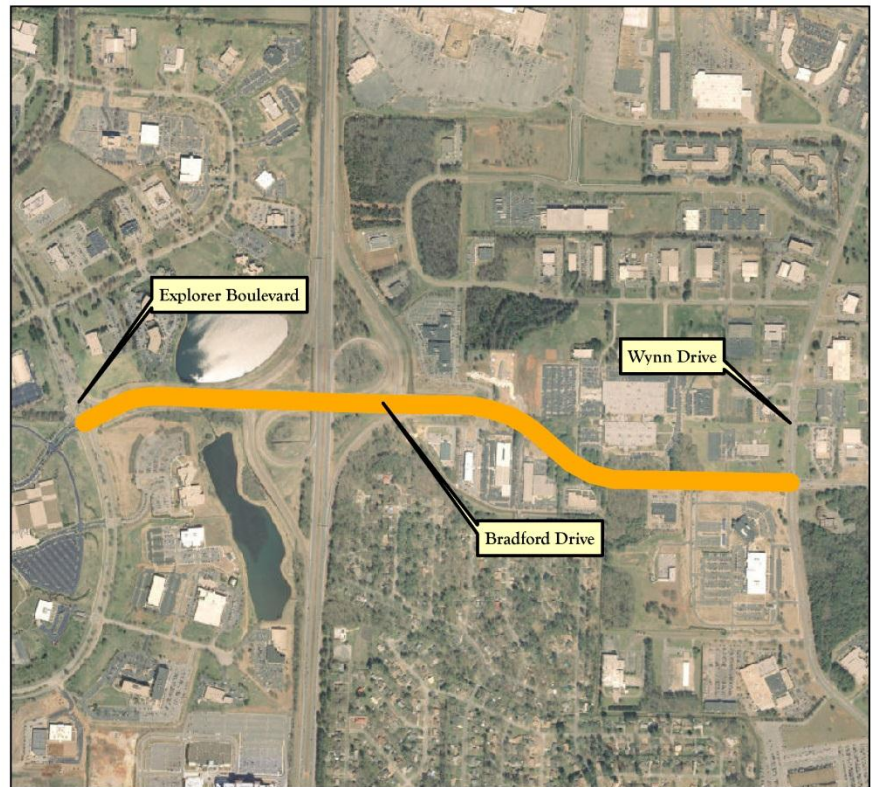
FUNCTIONAL CLASSIFICATION: Major Collector

JURISDICTION: City of Huntsville

CORRIDOR LENGTH: 1.24 miles

LANE CONFIGURATION: Bradford Drive consists of 6 lanes divided.

TRAFFIC CONTROLS: Traffic signals control the intersections at Explorer Boulevard and Wynn Drive



SERVICE CHARACTERISTICS: 2010  
ADT  
Explorer Boulevard to  
Wynn Drive 22,096

2010  
V/C RATIO  
0.84

2010  
LOS  
D

2040  
ADT  
31,255

2040  
V/C RATIO  
1.19

2040  
LOS  
F

CURRENT LAND USE/DEVELOPMENT TRENDS: Land surrounding this segment has been developed to accommodate office buildings in a research park setting.

TRANSIT SERVICE: Transit service is provided hourly via Route 3: Bridge Street/Holmes Avenue, but is limited to the intersection of Bradford Boulevard and Wynn Drive.

CORRIDOR FUNCTION: This segment serves as a primary access route to offices in Cummings Research Park.

OTHER PLANNING DOCUMENTS/STUDIES: None available.

RECOMMENDATIONS: Current traffic patterns indicate that the segment is experiencing heavy levels of congestion, but congestion is limited to peak hours and is anticipated to improve by the year 2040. As Research Park continues to develop, bringing more employees into the area, traffic flow may indeed increase in future years. Traffic engineers recommend that the corridor be monitored and additional study be conducted concerning this segment.

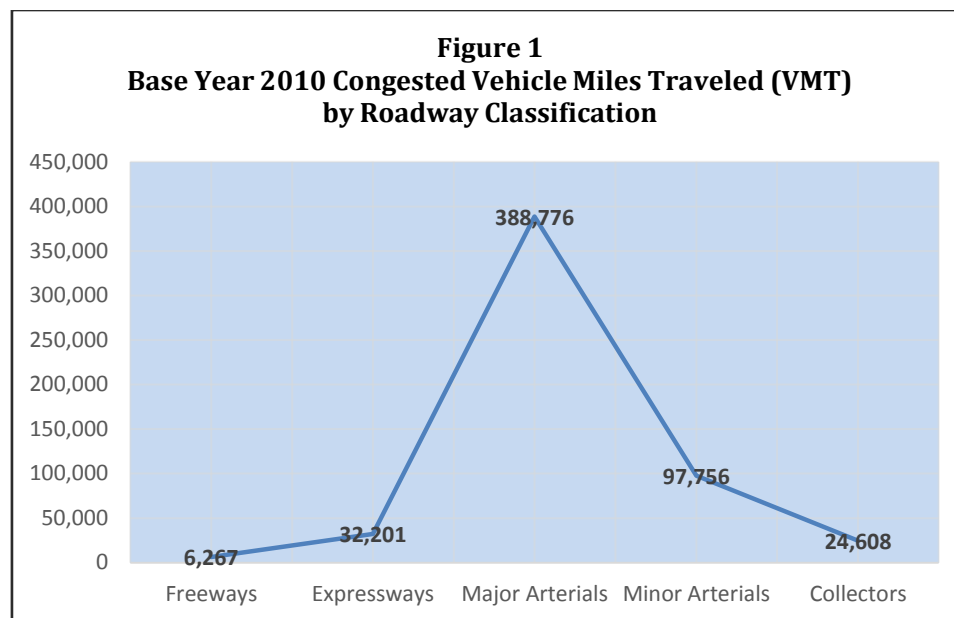
## CONGESTION-RELATED STATISTICS FOR THE TRANSPORTATION NETWORK

More detailed statistics pertaining to the current state of the regional transportation system can be found in Section 8 of the Year 2040 Transportation Plan.

### Roadways Operating at Congested Conditions

Congested roads have been defined by the Huntsville MPO as corridors or roadway segments where the average daily traffic count is equal to or greater than the roadway's capacity; therefore, 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 1**. **Figure 2** shows the total vehicle miles traveled on congested vs. uncongested roadways.

According to **Figure 1**, congested vehicle miles traveled are higher on the network's major arterials, followed by minor arterials and expressway facilities.

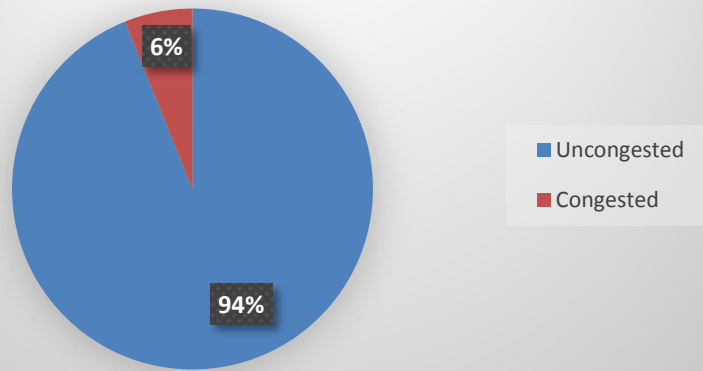


Source: Year 2010 Base Year Model Data, Atkins, North America

An assessment of actual vehicle miles traveled (VMT) congested vs. uncongested was conducted, and results are shown at **Figure 2**. Overall, 6% of all vehicle mile traveled on the CMP network during the present reporting period occurred on congested roadways. A total of 17.2% of all vehicle miles traveled on the CMP network during 2005 occurred on congested roadways. The 2000 base year network indicated that 5.3% of vehicle miles traveled were on congested roadways. From 2005 to 2010, a net decrease of 11.1% of congested VMT was witnessed on the transportation network.



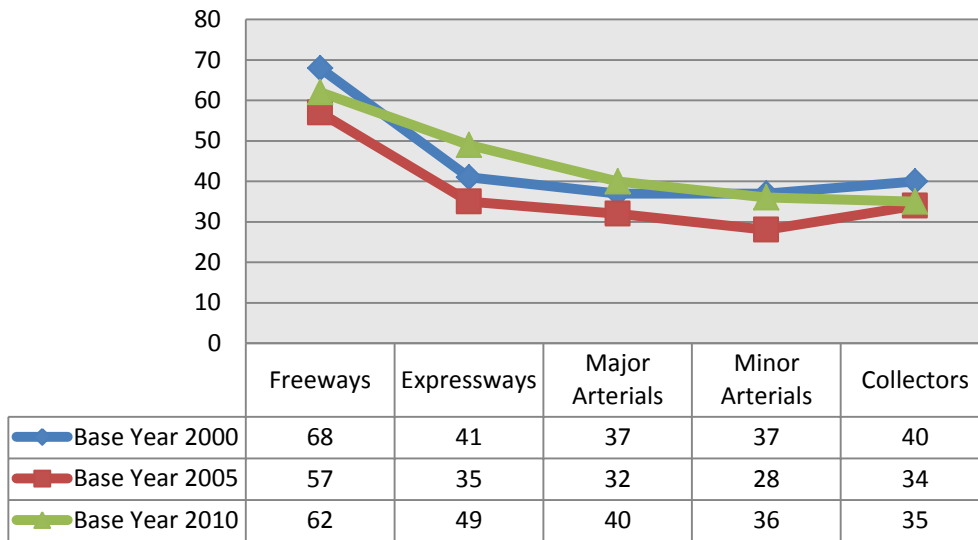
**Figure 2**  
**Base Year 2010 Congested Versus Uncongested**  
**Vehicle Miles Traveled (VMT)**



Source: Year 2010 Base Year Model Data, Atkins, North America

Higher speeds translate into better mobility across the network. Maps of the travel time and travel speed of the base year network to the center city are available at **Map 3** and **Map 4**. A comparison between the speeds indicated by the **Year 2030 Transportation Plan**, adopted during 2005, the **Year 2035 Transportation Plan**, adopted during 2010, and the modeled year 2040 transportation network are shown at **Figure 3**. Overall, travel speeds have improved on all classifications of roadways. This increase in speed indicates an improvement on traveled roadways. An increase in speed of about 14 miles per hour is indicated on expressways and 8 miles per hour on arterials, while freeways increased in travel speed by about 5 miles per hour.

**Figure 3**  
**Comparison of Average Speed on the CMP Network**



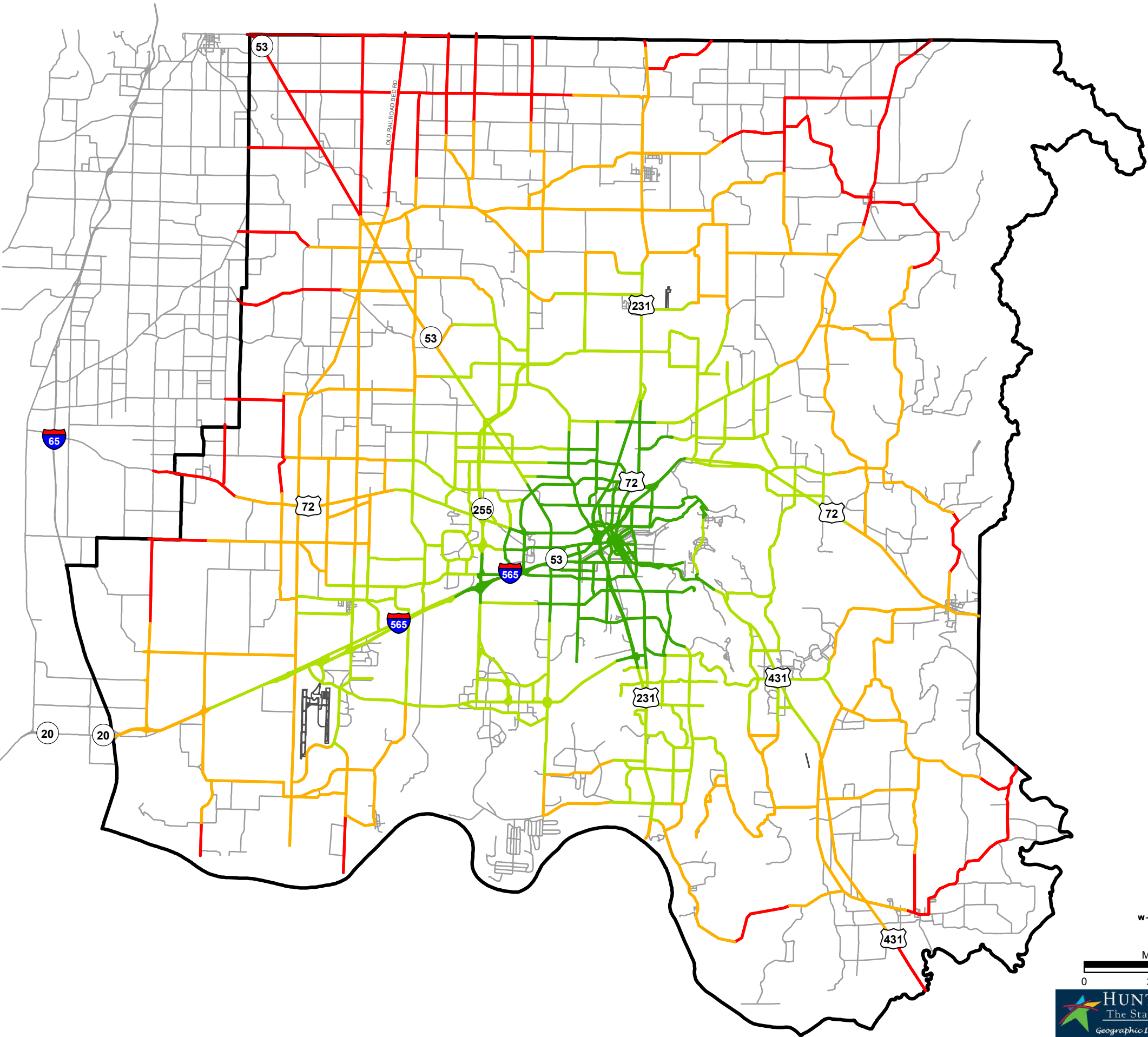
Source: Year 2000, Year 2005, Year 2010 Base Year Model Data - MPO staff and Atkins North America

### **Travel Time Data**

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 2030 Transportation Plan, Year 2035 Transportation Plan**, and the 2040 update modeled travel time on roads within the MPO study area, which mirrors the CMP transportation network.

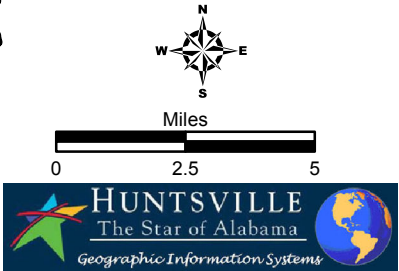
Map 3  
**2010 Base Year Network  
Travel Time Map**

HATS  
Huntsville Area  
Transportation Study



**Congested Travel Time  
From Downtown Huntsville**

- Less Than Or Equal To 10 Minutes
- Greater Than 10 - 20 Minutes
- Greater Than 20 - 30 Minutes
- Greater Than 30 - 40 Minutes
- Greater Than 40 Minutes

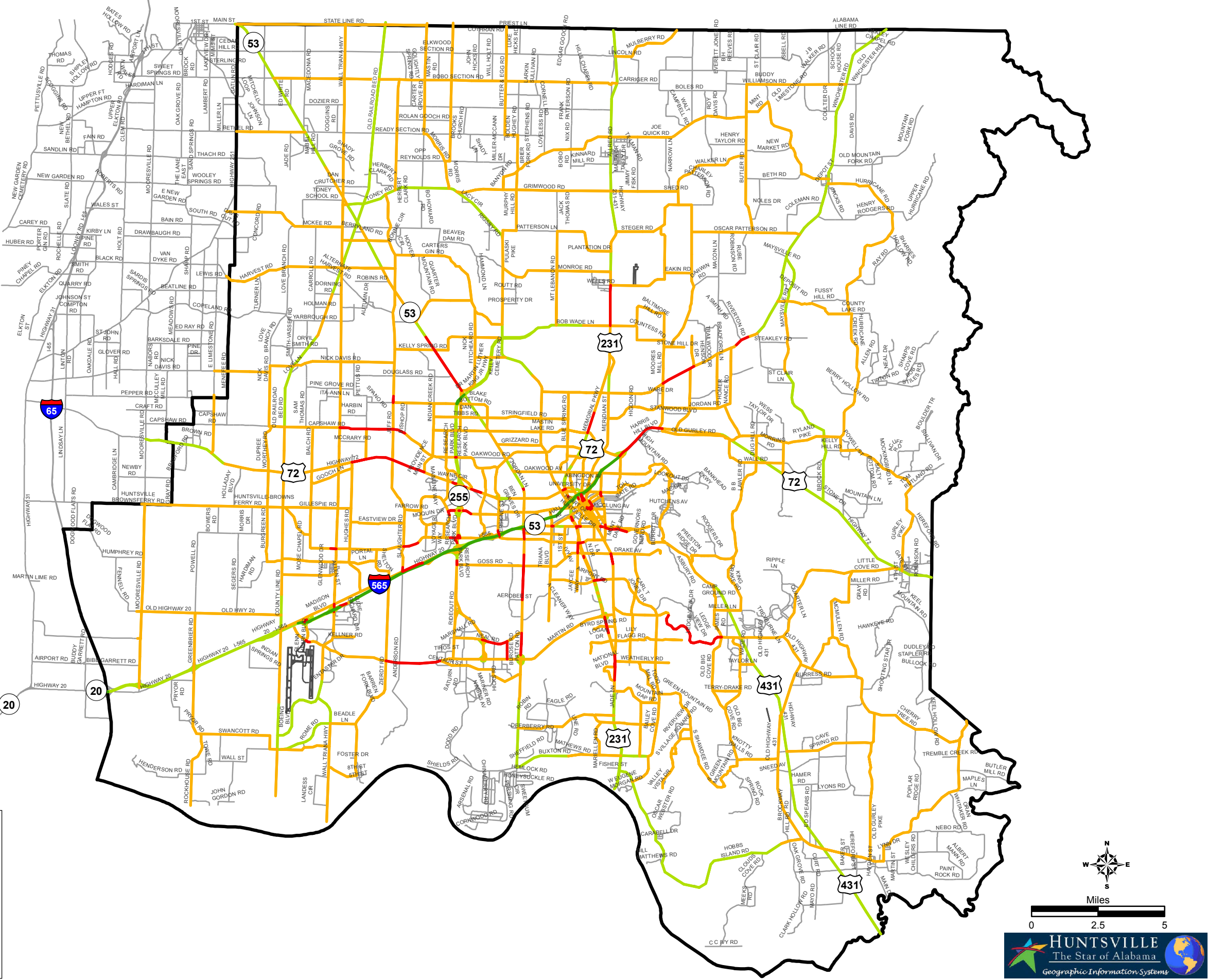


Map 4  
2010 Base Year Network  
Travel Speed Map

HATS  
Huntsville Area  
Transportation Study

**Congested Travel Speed**

- Less Than Or Equal To 25 miles per hour
- Greater Than 25 - 40 miles per hour
- Greater Than 40 - 55 miles per hour
- Greater Than 55 miles per hour





### 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, 2000, and 2010 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 2**, on the next page, shows some comparisons of Journey to Work Data from 1990, 2000, and 2010.

Statistics for all areas indicate an increase in commuters driving alone, and a reduction in carpooling. Use of public transit remained stable in all areas but the City of Madison, which showed a decrease from the 1990 percentage. Statistics indicate countywide, a 2.2% increase of single occupied vehicles are accessing the transportation network. In the City of Huntsville, 3.3% more single occupied vehicles are accessing the transportation network, and in the City of Madison, the number of single occupied vehicles accessing the network increased by 2.8%.

The mean travel to work time remained stable when comparing the 2000 census numbers to the 2010 data. When comparing the mean travel time to work of 1990 to 2000, the time on the road decreased during 2000. Contributing to that 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 by 9.2% from 1990 to 2000. A further increase of 16.4% of commuters on the network was seen when comparing 2000 to 2010 data, yet commuters experienced a decrease in travel time to work in most subareas. A comparison of total commuters is shown at **Figure 4**, and a breakdown of travel time per subarea is displayed at **Table 3**. **Map 5** shows the subareas.

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. As MPO boundaries changed due to 2010 census numbers, new subareas were identified in Limestone County. These are: Ardmore, East Limestone, and Greenbrier. Several subareas were combined into one subarea and increased in land size. These are: the North, Jetplex/Triana, and the East subareas. A couple of subareas split from one large area into multiple subareas like: Meridianville which split into Meridianville and Moores Mill, followed by Harvest/Monrovia split in to Harvest and Monrovia. The following subareas stayed the same: Arsenal, Downtown, Gurley, Madison, Hazel Green, New Hope, New Market, 72 East, Northwest, Research Park and Owens Cross Road.

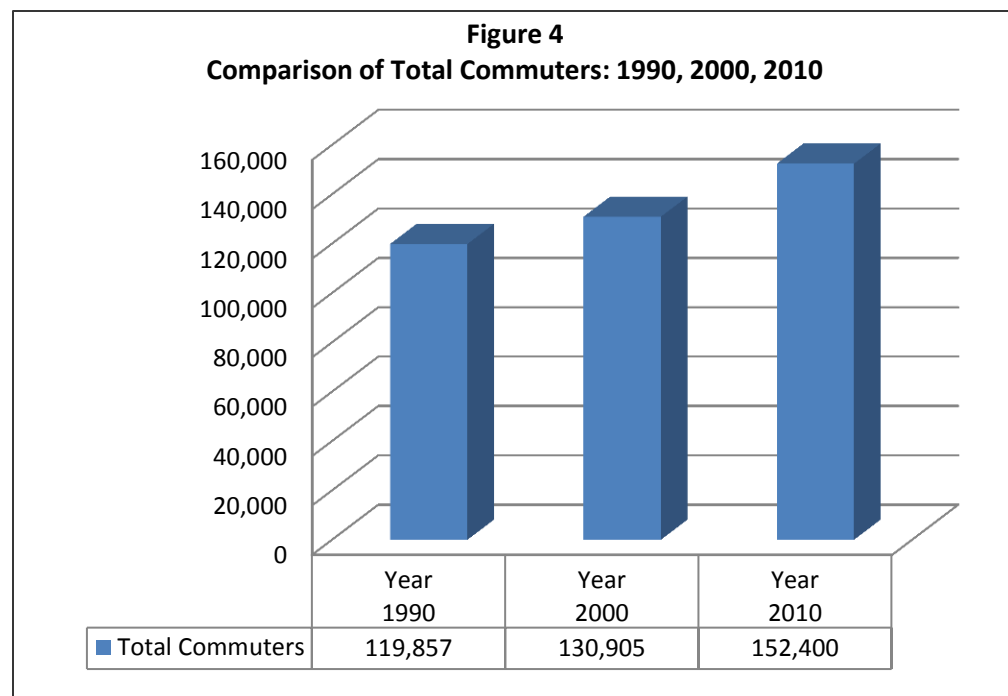
**Table 2**  
**US Census 1990, 2000, and 2010: Local Journey to Work Statistics**

	% Drove Alone			% In Carpools			% Using Public Transit			% Using Other Means			% Walked or Worked at Home			Average Travel Time (Minutes)		
Location	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010
Alabama	79%	83%	86.4%	15%	12.3%	8.5%	1%	.5%	.5%	1%	.9%	1%	4%	3.4%	3.5%	N/A	24.8	24.2
Madison Co.	82.4%	83.9%	86.1%	12.5%	11.3%	8.2%	.3%	.4%	.4%	.8%	.7%	1.3%	4%	3.6%	3.9%	21.7	20.9	20.9
Huntsville	83.2%	83.8%	87.1%	11.8%	11.2%	6.2%	.4%	.5%	.4%	.8%	.7%	1.7%	3.7%	3.9%	4.2%	20.0	18.0	18.3
Madison City	90%	87.1%	89.9%	7.5%	9.9%	7.4%	.9%	.1%	.2%	.6%	.4%	.3%	1%	2.6%	2%	19.4	18.2	19.4

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

Nine subareas show an increase in travel time: Downtown, East, East Central, Harvest, Madison, Meridianville, North West, South West, and Triana/Jetplex. Of these subareas, only four show increases of travel time over 1 minute. These are: East Central, Harvest, Madison, and North West. Still, these travel time increases are very minimal. Total commuters in the 72 East subarea increased by 422, while commute times decreased by an average of 2.3 minutes. Likewise, the Owens Cross Roads subarea increased by 262 commuters, but saw a decrease of average commute times of 2.2 minutes. Research Park showed a decrease of 47 commuters and a decrease of commute times averaging 3.4 minutes. A decrease in travel times for the 72 East subarea may be attributed to the completion of the I-565 interchange improvements at Maysville Road, which occurred during 2005. Additionally, the Owens Cross Roads subarea may have benefitted from the construction of Cecil Ashburn Drive, which connects the nearby Big Cove area to South Huntsville.

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.



Source: US Census Bureau

**Table 3**  
**Comparison of Travel Time to Work per Subarea Place of Residence**

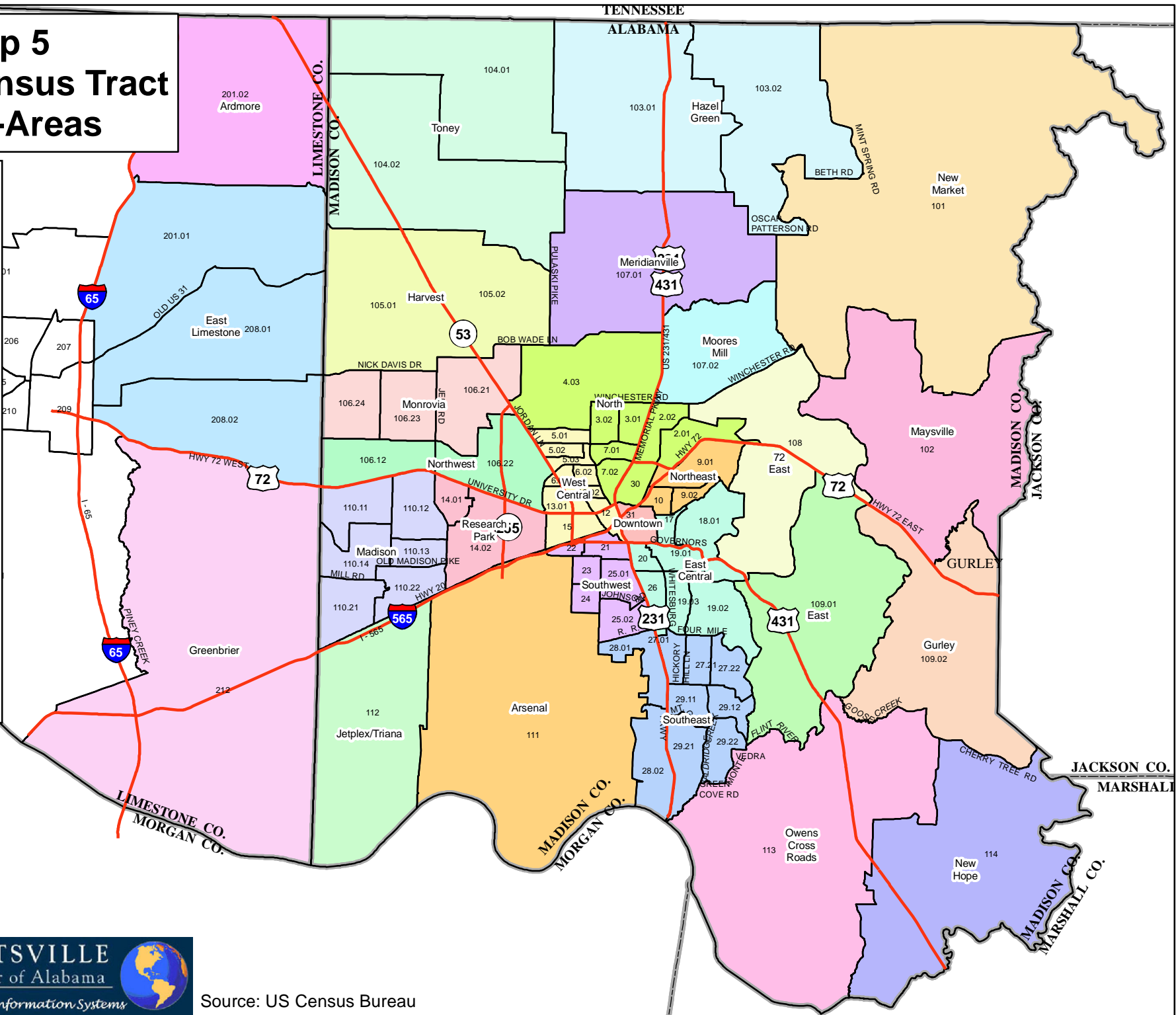
Subarea (Place of Residence)	Average Travel Time to Work (Minutes)			Change in Travel Time (Minutes) from 2000 to 2010
	1990	2000	2010	
72 East	25.5	24.7	22.4	-2.3
Ardmore	N/A	N/A	23.6	N/A
Downtown	15.8	12.2	13.0	+0.8
East	24.7	22.7	23.6	+0.9
East Central	19.3	16.2	17.6	+1.4
East Limestone	N/A	N/A	25.9	N/A
Greenbrier	N/A	N/A	21.5	N/A
Gurley	30.8	27.4	25.8	-1.6
Harvest	26.0	23.8	25.5	+1.7
Hazel Green	29.6	30.9	29.9	-1.0
Madison	19.4	18.2	19.3	+1.1
Maysville	31.2	27.1	25.6	-1.5
Meridianville	26.4	23.9	24.3	+0.4
Monrovia	26.0	23.8	22.2	-1.6
Moore's Mill	26.4	23.9	21.3	-2.6
New Hope	32.7	29.3	27.8	-1.5
New Market	32.4	31.1	30.7	-0.4
North	23.9	21.7	17.7	-4.0
North East	21.1	18.5	16.6	-1.9
North West	16.9	17.1	18.3	+1.2
Owens Cross Roads	30.6	27.7	25.5	-2.2
Redstone Arsenal	12.2	11.4	10.4	-1.0
Research Park	17.6	17.8	14.4	-3.4
South East	22.9	20.1	20.1	0
South West	18.4	17.1	17.4	+0.3
Toney	30.6	32.1	31.5	-0.6
Triana/Jetplex	19.3	18.4	18.8	+0.4
West Central	18.4	17.1	15.9	-1.2

Source: US Census Bureau and City of Huntsville Planning Division



# Map 5 2010 Census Tract Sub-Areas

- MAJOR HIGHWAYS
- CENSUS TRACTS
- COUNTY LINE
- Sub-Areas
  - 72 East
  - Ardmore
  - Arsenal
  - Downtown
  - East
  - East Central
  - East Limestone
  - Greenbrier
  - Gurley
  - Harvest
  - Hazel Green
  - Jetplex/Triana
  - Madison
  - Maysville
  - Meridianville
  - Monrovia
  - Moore's Mill
  - New Hope
  - New Market
  - North
  - Northeast
  - Northwest
  - Owens Cross Roads
  - Research Park
  - Southeast
  - Southwest
  - Toney
  - West Central



## **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 and addressed. Strategy recommendations have been made for the top ten corridors. The previous **CMS Report on Mobility** identified past strategy recommendations that are now in process or on the verge of construction. 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.