CHAPTER SEVEN

TRANSPORTATION

presented to

MADISON COUNTY COMMISSION

by

CHAMBER OF COMMERCE
OF HUNTSVILLE/MADISON COUNTY

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TENNESSEE VALLEY REGIONAL GROWTH COORDINATION PLAN

DISCLAIMER

This study was prepared under contract with the Madison County Commission, Alabama, with financial support from the Office of Economic Adjustment, Department of Defense. The content does not necessarily reflect the views of the Office of Economic Adjustment.

This report is intended as an aid to planners, managers, elected officials, and other decision makers in the Tennessee Valley/Redstone Arsenal region. Our aim is not to dictate what should be done, but to assist in ongoing efforts to achieve goals and objectives identified and valued by the residents of the region. The recommendations presented in this report are suggestions for how the region could work towards those goals and objectives, based on best available information and current understandings.

The information, projections, and estimates in this report are based upon publicly available data and have been prepared using generally accepted methodologies and formulas. The projections and needs presented in this report are based upon best estimates using the available data. It is important to note that currently available information and understandings are incomplete and cannot account for the inevitable, but unpredictable, impacts of unexpected global, national, state, and/or local events. Actual results and needs may differ significantly from the projections of this report due to such unforeseen factors and conditions, as well as inaccuracy of available data, and/or factors and conditions not within the scope of this project. Persons using this information to make business and financial decisions are cautioned to examine the available data for themselves and not to rely solely on this report.

Neither the Madison County Commission, the Chamber of Commerce of Huntsville/Madison County, nor its subcontractors guarantee or warrant that the projections set forth in this report will, in fact, occur. The Madison County Commission, the Tennessee Valley Regional Growth Coordination Plan Advisory Committee and Task Forces, and the Chamber of Commerce of Huntsville/Madison County and its subcontractors disclaim any liability for any errors or inaccuracies in the information, projections, and needs analysis, regardless of how the data is used, or any decisions made or actions taken by any person in reliance upon any information and/or data furnished herein.

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EXECUTIVE SUMMARY

Adequacy of transportation – particularly road safety and ease of travel – is one of the most common elements in the evaluation of a place's quality of life. Highway accessibility also consistently ranks in the top three factors of *Area Development* magazine's annual survey of business executives on various factors important in selecting or remaining in a location.

A section of this overall study was dedicated to the development of a long-range vision (see Chapter 2 of this report) of what the residents of the region would like it to look and feel like in the future. One of the top five components of that vision, coming from numerous individuals in multiple group meetings, is: "The regional highway system is improved to meet the needs of increased intra-regional traffic flow as well as connectivity with the rest of the Southeast and nation." Clearly, road transportation is on the minds of the residents of the region.

A project of particular importance to the region is the Memphis-Huntsville-Atlanta Highway. This Interstate corridor will provide the region with a high-speed, four-directional interstate linkage that is currently lacking. This will improve the region's economic development competitiveness, expand the laborshed for the region's employers by extending the territory within a 30-minute commute zone, and provide an additional means of moving a large volume of car and truck traffic within and through the region.

Transportation needs for the Primary Study Area (PSA) are well-planned by a system of integrated Metropolitan Planning Organizations (MPOs) and allied agencies. Adequate resources must be provided in the future to support the continuation of necessary planning. This planning team has been, and will continue to grapple with two interrelated transportation issues.

- Normal growth trends in the PSA, which have been substantial and are expected to continue, create a continuing need for transportation improvements, in particular, new or upgraded roads.

- On top of this "natural growth", the influx of people to the region resulting from BRAC will significantly exacerbate road congestion and require roadway improvements sooner than would otherwise be needed.

Eighty-nine (89) roadway improvement projects related to BRAC growth have been identified in the PSA. While most of these projects are not needed solely because of BRAC-related growth in the region, this growth is causing either a need to increase the scope of many projects or to undertake them sooner than they would otherwise be needed. These 89 projects have a combined total cost of more than $3.5 billion, of which more than $1 billion is attributable to BRAC-related growth. A very small portion of these projects is already funded, leaving a gap of more than $3.3 billion for completely or partially unfunded projects. Of this gap, nearly $954 million is a result of BRAC-related growth.

The single largest obstacle to implementing necessary roadway improvements is funding. The region must be prepared to fund a significant portion of necessary improvements while

continuing to aggressively pursue funding from all appropriate departments of the State of Alabama and U.S. government and special appropriations from the Alabama Legislature and U.S. Congress.

However, it is impossible for the counties and municipalities in the region to pay for these improvements in the timeframe in which they are necessary. Substantial amounts of federal and state funding are necessary. Regional officials must continue cooperative and coordinated efforts to secure federal and state funding as rapidly as possible.

Funding will require use of less-traditional methods such as the creation of toll-roads or other user fees (e.g., Vehicle Miles Traveled Fees), user benefit fees such as impact fees or special tax districts, use of Special Purpose Local Option Taxes (SPLOT), private ownership and development of new roads, use of Federal Credit Assistance, and similar tools.

Selection of these alternative funding methods must be based on careful study to identify both positive and negative factors and assess the true feasibility and revenue potential of each approach considered. This will likely require the hiring of specialty consultants with expertise in such areas. The MPOs serving the area should consider the establishment of a shared office similar to the Oregon Department of Transportation's Office of Innovative Partnerships and Alternative Funding to oversee this topic. Additional research is necessary to identify a recommended structure and budget for this office.

In the past, public transportation in the region has been a relatively low priority due in large measure to low demand except by special groups with limited mobility. Increased traffic congestion in the region, coupled with rising motor fuel costs, should cause an increase in interest in the use of public transportation, necessitating an increase in services. This in turn, will require more funding for public transportation equipment and services.

Portions of the east-west Norfolk-Southern rail line between Huntsville/Decatur and Memphis are already at or above capacity, and without improvements to this corridor the entire Norfolk-Southern corridor from Memphis to Chattanooga will be above capacity by 2035. Without investment in improving east-west freight service, the PSA and possibly Redstone Arsenal will see a continuing decline in rail-freight-service quality as the rail corridor becomes more congested and freight shipment takes longer. Rather than encouraging the use of rail freight as an alternative to highway shipment, this situation may encourage the use of roads for more freight shipment, leading to increased congestion on highways in the PSA.

Huntsville International Airport is a high-quality, small airport, with significant growth potential. It is well-positioned to meet the air travel needs of increased personnel working at Redstone Arsenal and the air freight needs of companies in the PSA and the surrounding area.

As this report is being written, the nation is in the midst of a significant economic downturn with an accompanying credit crisis. The inability of communities to finance infrastructure construction projects at reasonable costs – if at all – has become a national problem. Finding effective means of financing the transportation improvement projects caused by or related to BRAC-related growth is a primary challenge for the region.

Recommendations related to transportation include:

1. Regional officials must continue cooperative and coordinated efforts to secure federal and state funding as rapidly as possible, particularly for the top priority projects shown in Table 7-2 of this report. A Transportation Task Force should be established to coordinate this effort.

2. Alternative funding methods should be identified and must be carefully studied to evaluate both positive and negative factors and assess the true feasibility of each approach considered. This will likely require the hiring of a specialty consultant with expertise in such areas; an estimated cost for this work is $75,000.

3. The MPOs serving the area should consider the establishment of a shared office similar to the Oregon Department of Transportation's Office of Innovative Partnerships and Alternative Funding to oversee identification and development of new funding methods for necessary transportation improvements. Additional research is necessary to identify a recommended structure and budget for this office; if undertaken by a consultant, an estimated $50,000 budget would be necessary for this effort.

4. Increased attention should be paid to improving public transportation in the PSA with particular emphasis on providing effective home-to-work linkages for major employment centers such as Redstone Arsenal, Cummings Research Park and the Jetplex Industrial Park. This will require more funding for public transportation equipment and services; the cost is unknown at this time.

BACKGROUND

The **Madison County Commission (MCC)** issued a Request for Proposal (RFP) to develop the **Tennessee Valley Regional Growth Coordination Plan (TVRGCP)**. Funding for this study was provided by the **U.S. Department of Defense (DoD), Office of Economic Adjustment (OEA)** to prepare the Tennessee Valley for the impact of **Base Realignment and Closure (BRAC) 2005** at **Redstone Arsenal (Arsenal)**.

The **Chamber of Commerce of Huntsville/Madison County (Chamber)** submitted a proposal in response to MCC's nationwide search for a consultant as addressed in RFP P-2007-01. This proposal identified the Chamber as the lead consultant with Wadley-Donovan GrowthTech, LLC (WDG) serving as a subcontractor. After completing a competitive bid process, MCC awarded the contract to the Chamber with a Notice-to-Proceed date of October 29, 2007.

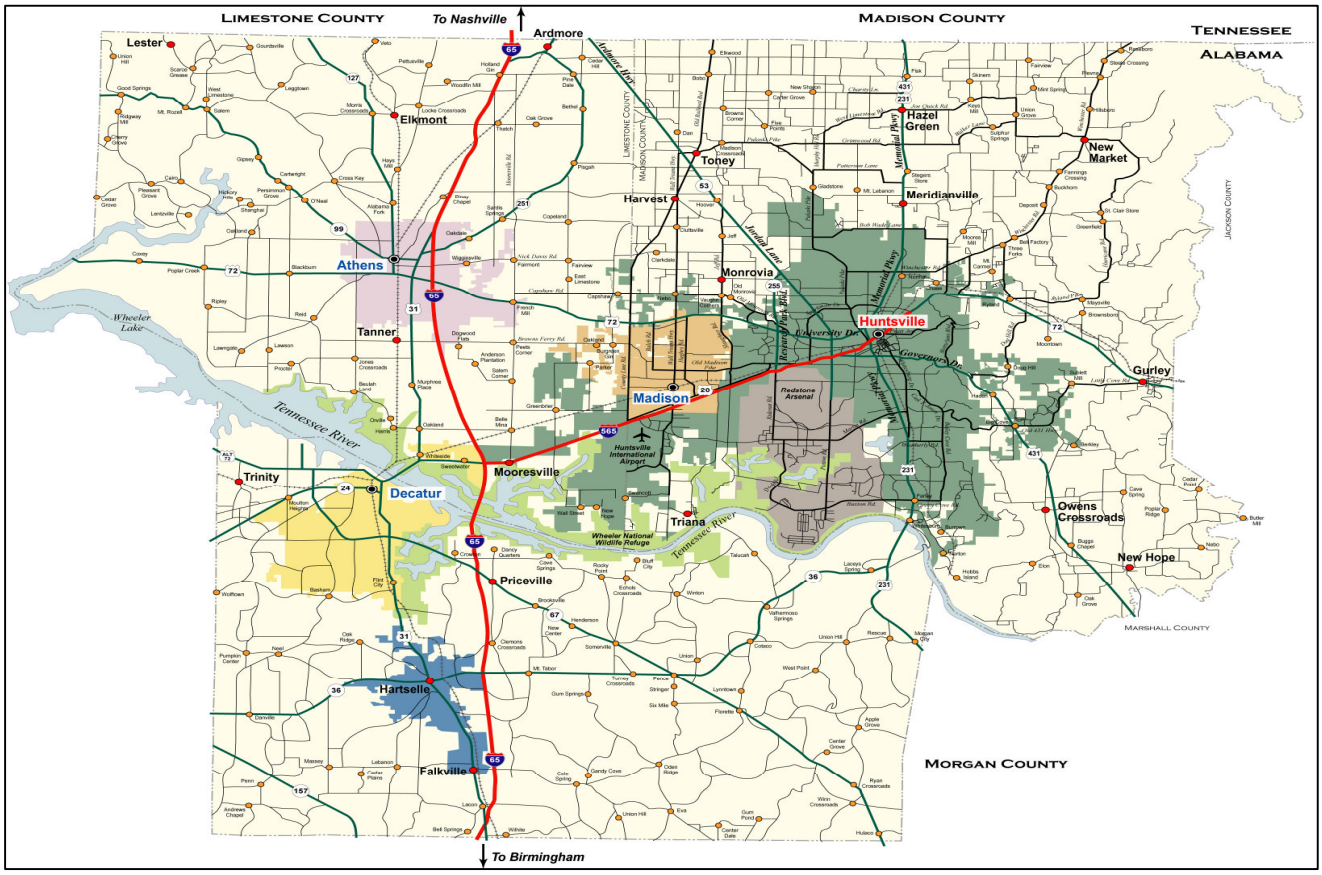
The Tennessee Valley **Study Area** for this project includes thirteen counties in northern Alabama and southern Tennessee within an eighty-mile-radius of the Arsenal. The **Primary Study Area (PSA)** includes the three Alabama counties of Limestone, Madison, and Morgan. The **Broader Impact Region (BIR)** includes the additional six counties in Alabama (Colbert, Cullman, Jackson, Lauderdale, Lawrence, and Marshall) and four counties in Tennessee (Franklin, Giles, Lawrence, and Lincoln). A map of the Study Area is shown in Figure 7-1.

Figure 7-1
Tennessee Valley Regional Growth Coordination Plan Study Area

PRIMARY STUDY AREA

The Primary Study Area (PSA) consists of three counties in Alabama, Limestone, Madison, and Morgan, surrounding Redstone Arsenal (Arsenal). Figure 7-2 shows the relationship of the Arsenal to the three counties and primary cities.

Figure 7-2
Primary Study Area



Source: City of Huntsville Planning Division and the North Central Alabama Regional Council of Governments

The PSA contains numerous incorporated areas, both large and small, as summarized below:

County	Large Municipalities	Small Municipalities
Madison	Huntsville, Madison	Gurley, New Hope, Owens Cross Roads, Triana
Limestone	Athens	Ardmore, Elkmont, Lester, Mooresville
Morgan	Decatur	Hartselle, Priceville, Trinity

The PSA includes a large amount of unincorporated area in all three of its counties. Alabama State Law allows the annexation of portions of a county by a municipality located in an adjacent county. Thus, the Cities of Huntsville, Madison, and Decatur have annexed portions of Limestone County; this is particularly the case along the I-565/Alabama Highway 20 corridor in the vicinity of I-65 (although this is not the only location).

PURPOSE

The purpose of this section of the study is to analyze the transportation infrastructure serving the Primary Study Area (PSA), including Redstone Arsenal, and identify transportation issues that will impact the area due to the influx of new jobs to the Arsenal, coupled with contractors who will follow those jobs, construction jobs for new facilities at the Arsenal, and the "multiplier impacts" that are caused by direct activity. This analysis looks in particular at road and highway infrastructure and issues, but also considers air transportation, rail services, port capabilities, and public transportation.

METHODOLOGY

The analysis of transportation infrastructure and services in the PSA provided in this section of the TVRGCP was developed from extensive research that included review of many relevant documents provided by the Metropolitan Planning Organizations in the PSA or obtained from other sources; interviews with transportation planning officials from the region; an interview with representatives of Huntsville International Airport and the Huntsville/Madison County Airport Authority; interviews with representatives of Redstone Arsenal; review of information contained in numerous city, county, state and transportation services websites; and input from the TVRGCP Advisory Committee. Sources for the data cited in this section of the report are provided in the text or with the accompanying tables.

As part of the process of preparing this analysis, a Transportation Task Force was established. This broadly representative group was comprised primarily of individuals who work for the Metropolitan Planning Organizations (MPOs) that prepare the transportation plans for the region; representatives of key transportation agencies such as the Huntsville/Madison County Airport Authority; county and municipal departments that have responsibility for transportation or related issues in their jurisdictions; and other interested parties. The Transportation Task Force membership is shown in Appendix 7-A. Transportation issues were discussed at several meetings of this Transportation Task Force.

During the early stages of this project, a "Data Call" was received from Office of Economic Adjustment (OEA) Director, Patrick J. O'Brien, seeking "…a prioritized working estimate of local projects that, but for Federal assistance, can't be undertaken to address mission growth." To respond to this request, the MCC, assisted by the Consultant Team, prepared a "Tennessee Valley BRAC-Related Transportation Needs" data collection spreadsheet (see Appendix 7-B). This was distributed through the Transportation Task Force and a summary list showing priorities was developed. Subsequently, OEA asked for a list showing only level one priorities and information on the methodology for selecting those priorities. Information on projects identified as part of this process is presented later in this report.

TRANSPORTATION PLANNING IN THE PSA

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, working under requirements set forth by federal legislation, is tasked with ensuring that all transportation plans and programs are continuous, cooperative and comprehensive and coordinated with other aspects of the planned development of the urban area.

Transportation planning in the PSA is the responsibility of three primary agencies:

- The City of Huntsville functions as the MPO for the cities of Huntsville, Madison, Owens Cross Roads, and Triana, as well as portions of Limestone and Madison counties.
- The Top of Alabama Regional Council of Governments (TARCOG) has some transportation planning and programmatic responsibilities for a multi-county area that includes Madison and Limestone counties.
- The North Central Alabama Regional Council of Governments (NARCOG) is the designated Decatur MPO, providing transportation planning for Decatur, Hartselle, Priceville, Trinity, Morgan and Limestone counties.

These organizations are well-coordinated in their planning functions and responsibilities and have prepared a series of documents that guide the PSA's transportation planning and funding. Documents that are most relevant to this project include the following.

- Decatur Metropolitan Planning Organization "2030 Decatur Urban Area Long Range Transportation Plan" (January 2005)
- Huntsville Area MPO "Human Services Coordinated Transportation Plan" (August 2007)
- Huntsville Area MPO "North Alabama BRAC Highway Loop System" presentation to the Alabama Commission on Infrastructure Committee Day Meeting 25 September 2006
- Huntsville Area MPO "Transportation Improvement Plan 2006-2008" (December 2006)
- Huntsville Area MPO "Year 2030 Transportation Plan" (December 2004, Amended April 2005, August 2007)
- NARCOG "Human Services Coordinated Transportation Plan" (January 2007)
- NARCOG "Transportation Improvement Plan for the Decatur Metropolitan Planning Organization – Fiscal Years 2008-2011" (September 2007)
- TARCOG "Human Services Coordinated Transportation Plan" (December 2006)
- TARCOG "Long Range Transportation Needs (September 2007)
- TARCOG "Regional Transportation Study 2007-2008 – Draft" (undated)

It should be noted that a portion of the funding of transportation improvements comes from state and federal sources, and that the documents listed above provide much of the basis for

identifying priority projects. The following Alabama Department of Transportation (ALDOT) plans were reviewed.

- ALDOT "Five Year Plan"
- ALDOT "Statewide Transportation Plan"
- ALDOT "Transportation Improvement Program"

TRANSPORTATION IN THE PSA

1. Highway

As shown in Figure 7-2, the PSA is served with a substantial highway network of Interstate, United States, state, county and local roads. Included are:

- Interstates 65 and 565;
- US Highways 20, 31, 72, 231 and 431; and
- State Highways 1, 2, 20, 24, 36, 53, 67, 99, 127, 157, 251 and 255;

Within the PSA there is good road transportation in all directions, although linkages to the south are limited by bridge crossings over the Tennessee River. However, the area is less well positioned from an Interstate Highway perspective. While there is excellent north/south Interstate service on I-65, the area lacks a similar east/west, high-speed, limited-access highway capability. The proposed Memphis-Huntsville-Atlanta Highway would significantly improve the region's four-directional accessibility by connecting with I-20 to the east and I-40 to the west. Figure 7-3 on the following page provides a map showing an 800-mile area centered on Huntsville and the Interstate network in that broad area.

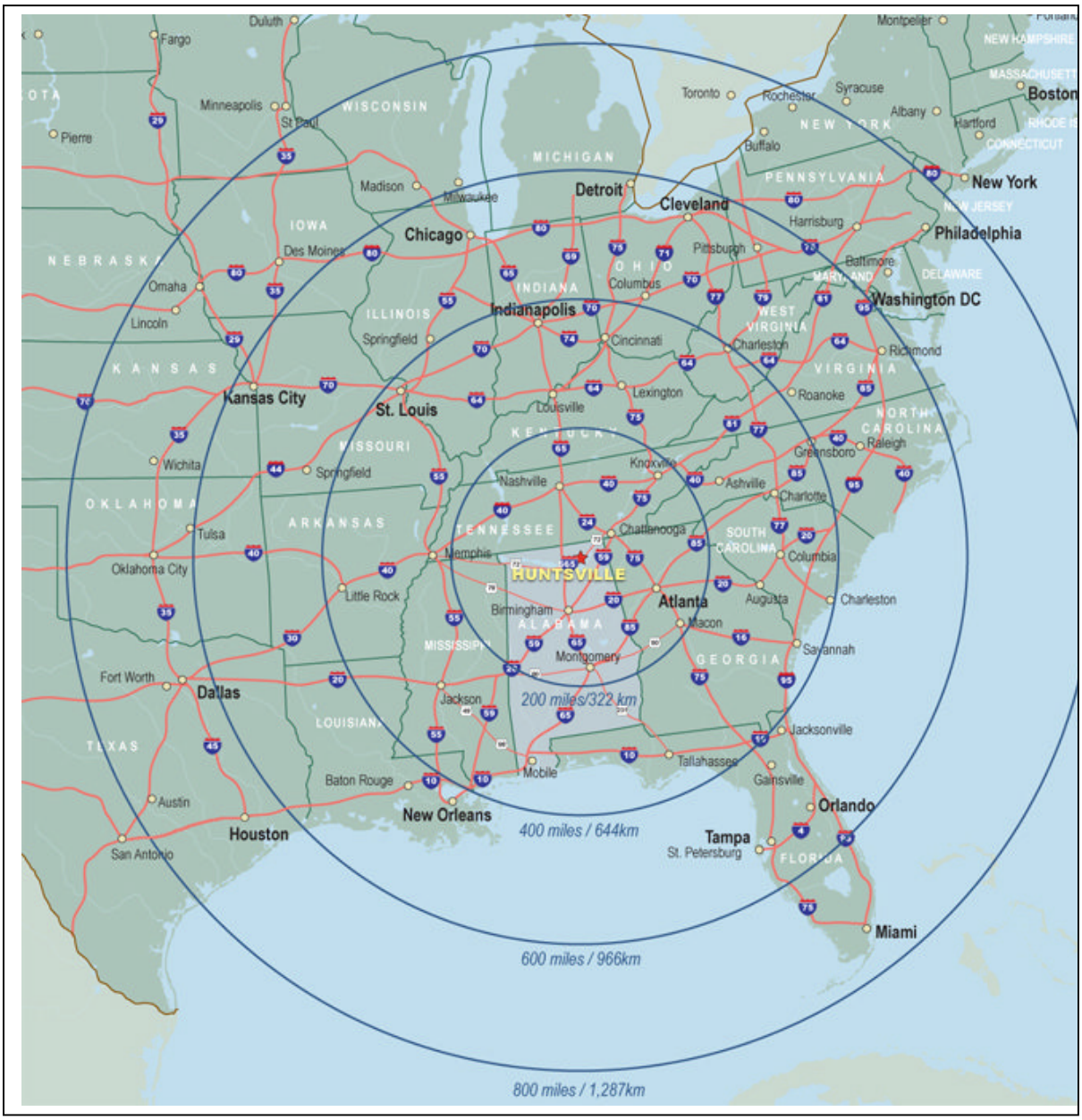
The Interstate, US and State Highways listed above tie to a more complex network of county highways and local streets. Given the continuing growth of the PSA, in terms of both population and commercial development, the region's road system is a topic of continuing concern. The addition of 4,700 new jobs at Redstone Arsenal (which already averages 48,800 vehicles a day through the gates), plus military contractors expected to move to the area, plus the families of these two groups who will move to the area, will create a significant amount of new traffic in and to the area, particularly in the immediate vicinity of the Arsenal and on the primary commuting routes to the Arsenal.

In anticipation of this influx of people and activity, the City of Huntsville commissioned a "Huntsville Area BRAC Transfers: Economic and Transportation Impact Assessment" by The University of Alabama's Center for Business and Economic Research, which was completed in April 2007. Salient points noted in this study include the following.

- Roadway impacts show that congestion will become a serious problem if the expected growth occurs with no increase in the amount of roadway capacity in the network.
- Vehicle miles of travel nearly double and vehicle hours of travel more than triple from 2005 to 2030.
- Average speed of travel falls to 15.9 mph from 30.7.
- The miles of congested roadway rise from 1.35% of the total network length in 2005 to 4.65% in 2015 and 15.60% by 2030.

These projections are obviously a topic of concern for the region. (It should be noted that this study looked at a four-county-region that included the PSA plus Marshall County.)

Figure 7-3
Interstate Highway Network and Distances
Centered Around Huntsville, AL



Source: Chamber of Commerce of Huntsville/Madison County website

The Huntsville Area MPO has identified a system of roads referred to as the North Alabama BRAC Highway Loop System. This system includes portions of North and South Memorial Parkway, US 72 East and West, US 431, Winchester Road, I-565, the proposed Memphis-Huntsville-Atlanta Highway and associated bypass routes. This road system is considered the location of the heaviest commuting to jobs located at the Arsenal, and therefore, the roads that

will be impacted most by the influx of new jobs at or serving the Arsenal. Coupled with vehicle trips related to other employment, shopping, recreational or similar needs, the MPO projects the following Average Daily Traffic Counts from surrounding counties on the North Alabama BRAC Highway Loop System by the year 2030.

Table 7-1
Projected Average Daily Traffic Counts
North Alabama BRAC Highway Loop System – 2030

Number of Commuters By Place of Residence	Year 2030 Projected Average Daily Traffic
Lawrence/Morgan Counties, AL	105,000
Morgan County, AL	90,000
Lincoln County, TN	90,000
Limestone County, AL	68,000
Jackson County, AL	68,000
Marshall County, AL	60,000
Giles County, TN	41,000
Franklin County, TN	36,000

Source: Huntsville Area MPO "North Alabama BRAC Highway Loop System" presentation to the Alabama Commission on Infrastructure Committee Day Meeting 25 September 2006

The analysis that provided the projections included in Table 7-1 concluded that the number of commuters accessing the North Alabama BRAC Highway Loop System would increase from 194,000 in 2006 to more than 305,000 in 2030, a 57% increase over a 24-year-period.

An issue related to increasing traffic and traffic congestion is the region's air quality. While information from the U.S. Environmental Protection Agency (EPA) shows the region is currently in full attainment status with all air quality standards, changes in ozone standards proposed by EPA in March 2008 indicate that Madison and Morgan counties may exceed the new standards. Further, the new standards are less stringent than what EPA scientific advisors had recommended, raising the possibility of even lower ozone requirements in the future. Continuing to meet air quality standards must be a concern from both health and economic development perspectives.

Because of the region's significant concern about adequately anticipating traffic increases and planning and implementing solutions, the topic of transportation was given a particularly high priority as part of this study, including the establishment of a Transportation Task Force to oversee study and recommendations on the topic. Tables 7-2 and 7-3 on the following pages provide a list of highway improvements needed by the region identified by the Transportation Task Force. These projects are segmented in Tier I projects, defined as those road systems that provide direct commuter access to Redstone Arsenal; and Tier II projects, defined as road systems that bring commuters from the region to some point on the Tier I system. These tables also show the estimated portion of the project considered directly attributable to ongoing or future BRAC-related growth at Redstone Arsenal. Figure 7-4 provides a map showing the location of the Tier I projects.

Table 7-2
Tennessee Valley BRAC-Related Roadway Needs - Tier I Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	Amount
Top Regional Priorities								
Martin Road, Including:								
Martin Rd on Redstone Arsenal from Gate 7 to Rideout Rd	25%	✓			$18,500,000		$0	$18,500,000
Martin Rd from Gate 7 to Wall Triana Highway	100%		✓		$12,640,000	Huntsville Capital Improvement Plan	$12,640,000	$0
Airport I-565 Connector to Wall Triana Highway	25%	✓			$9,000,000	Airport/Huntsville /Madison County/ State Funds	$6,750,000	$2,250,000
Memorial Parkway, including:								
Memorial Parkway service roads and overpasses @ Byrd Springs/Lily Flagg/Martin Rd	25%	under engineering design			$58,520,000	National Highway System Funds	$58,520,000	$0
Memorial Parkway service roads and overpass @ Mastin Lake Rd	25%	under engineering design			$31,000,000	National Highway System Funds	$11,245,119	$19,754,881
Hwy 53, including:								
Hwy 53 (Research Park Blvd to S. of Jeff Rd)			✓		$31,639,000	Surface Transportation Funds	$31,639,000	$0
Hwy 53 (S. of Jeff Rd to S. of Harvest)			✓		$9,000,000	Surface Transportation Funds	$0	$9,000,000
Hwy 53 (Harvest to RR Bed Rd)				2015	$14,821,000	Surface Transportation Funds	$0	$14,821,000
Ardmore Highway (AL 53) from McKee Rd to Alabama State Line	25%	✓			$51,472,265	Surface Transportation Funds	$28,449,000	$23,023,265

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		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	Amount
Winchester Rd, including:								
Winchester Rd from Dominion Cir. To Naugher Rd		under contract for design		2013	$6,983,000	Surface Transportation Funds	$6,983,000	$0
Winchester Rd from Naugher Rd to Bell Factory Rd	25%	✓			$25,000,000	Surface Transportation Funds	$7,100,000	$17,900,000
Winchester Rd from Bell Factory Rd to Maysville Rd	25%	✓			$12,800,000	Surface Transportation Funds	$0	$12,800,000
Winchester Rd from Maysville Rd to the TN State Line	25%		✓		$34,200,000	Surface Transportation Funds	$0	$34,200,000
Zierdt Rd, including:								
Zierdt Rd- Martin Rd. to Madison Blvd				2014	$10,500,000	Surface Transportation Funds	$10,500,000	$0
Zierdt Rd- Martin Rd. to Beadle Ln				Beyond 2016	$6,000,000	Surface Transportation Funds	$0	$6,000,000
US 72 (East and West), including:								
US 72 East from Oakwood Ave to the Eastern Bypass –Mainline Improvements	100%	✓			$19,836,000	Appalachian Highway System Funds	$0	$19,836,000
US 72 East overpass at Jordan Rd	25%	✓			$25,041,000	Appalachian Highway System Funds	$0	$25,041,000

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Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	Amount
US 72 (East and West, CONTINUED), including:								
US 72 East overpass at Moontown Rd	25%	✓			$36,000,000	Appalachian Highway System Funds	$0	$36,000,000
US 72 East overpass at Brock Rd	25%	✓			$40,000,000	Appalachian Highway System Funds	$0	$40,000,000
US 72 East overpass at Eastern Bypass	25%	✓			$44,000,000	Appalachian Highway System Funds	$0	$44,000,000
US 72 West from Providence Main Street to Nance Rd	25%	✓			$12,144,000	National Highway System Funds	$0	$12,144,000
US 72 West from Nance Rd to County Line Rd	25%	✓			$19,320,000	National Highway System Funds	$0	$19,320,000
US 72 West from County Line Rd to Mooresville Rd	25%	✓			$17,600,000	National Highway System Funds	$0	$17,600,000
Memphis-Huntsville- Atlanta Highway/I-565/Highway 20, including:								
Alternate North-South Access Route	25%			✓	$639,853,000	Congressional Earmarks	$0	$639,853,000
South end of North/South Access Route to Marshall County Limits	25%		2013		$295,680,000	Congressional Earmarks	$0	$295,680,000
I-565 from I-65 East to Wall Triana Highway	100%	✓			$48,180,000	Interstate Funds	$0	$48,180,000
HWY 20 Corridor Project City of Decatur/Limestone County	40%	$1,500,000	$32,000,000	$55,000,000	$88,500,000	Federal (SAFETEA-LU, FY 2005 Appropriations Bill) State Matching Funds	$8,300,000	$80,200,000

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Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	Amount
Memphis-Huntsville- Atlanta Highway/I-565/Highway 20, CONTINUED, including:								
Memphis to Atlanta Highway from State Route 20 (US HWY 72) West of Decatur to I-65 in Huntsville	25%	$1,150,000	$20,700,000	$614,000,000	$635,850,000	Federal, State, Local	$0	$635,850,000
I-565 Interchange at County Line	25%	under engineering design	✓		$20,488,000	Interstate Funds	$20,488,000	$0
I-565 Interchange at Zierdt Rd.	25%		✓		$15,000,000			$15,000,000
Memphis to Atlanta Highway from I-65 to I-565	25%			2020	$228,000,000	Congressional Earmarks	$0	$228,000,000
Other Service Roads and Overpasses:								
Memorial Parkway service roads and overpass @ Mountain Gap Rd	25%	✓			$31,000,000	National Highway System Funds	$0	$31,000,000
Memorial Parkway service roads and overpass @ Hobbs Rd	25%	✓			$31,000,000	National Highway System Funds	$0	$31,000,000
Memorial Parkway service roads and overpass @ Meridianville Bottom Rd	25%	✓			$50,400,000	National Highway System Funds	$0	$50,400,000
Memorial Parkway service roads and overpass @ Patterson Lane	25%	✓			$53,200,000	National Highway System Funds	$0	$53,200,000
Memorial Parkway service roads and overpass @ Green Cove Rd	25%	✓			$53,200,000	National Highway System Funds	$0	$53,200,000
Memorial Parkway service roads and overpass @ Winchester Rd	25%	✓			$35,200,000	National Highway System Funds	$0	$35,200,000
Memorial Parkway service roads and overpass @ Walker Lane	25%	✓			$56,000,000	National Highway System Funds	$0	$56,000,000

Table 7-2
Tennessee Valley BRAC-Related Roadway Needs - Tier I Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	Amount
Northern Loop, including:								
Research Park Blvd from I-565 to University Drive and Bradford Drive	100%	✓			$9,216,000	Surface Transportation Funds	$0	$9,216,000
Research Park Blvd overpass at Blake Bottom Road	25%			2014	$15,000,000	Surface Transportation Funds	$0	$15,000,000
Mt. Lebanon Rd from the Northern Bypass to Grimwood Rd	100%	✓			$20,264,000	Surface Transportation Funds	$0	$20,264,000
Northern Bypass Phase 2 from East of Pulaski Pike to US 231	25%		2012		$10,336,000	Surface Transportation Funds	$0	$10,336,000
Northern Bypass Phase 3 from US 231 to Moores Mill Rd	25%		2012		$12,800,000	Surface Transportation Funds	$0	$12,800,000
Moores Mill Rd from Winchester Rd to the Northern Bypass	25%		2012		$10,311,680	Surface Transportation Funds	$0	$10,311,680
Ryland Pike from US 72 East to Northern Bypass	25%			2014	$14,749,435	Surface Transportation Funds	$0	$14,749,435
Northern Bypass Phase 4 from Moores Mill Rd to Winchester Rd	25%			2016	$21,600,000	Surface Transportation Funds	$0	$21,600,000
Northern Bypass Phase 5 from Winchester Rd to US 72 East	25%			2020	$24,000,000	Surface Transportation Funds	$0	$24,000,000
Totals					**$2,965,844,380**		**$202,614,119**	**$2,763,230,261**

Source: Survey by Garnet Consulting Services, Inc. of MPOs, Counties and Cities reviewed and formatted by MPOs, the TVRGCP Transportation Task Force and Madison County Commission staff

Figure 7.4

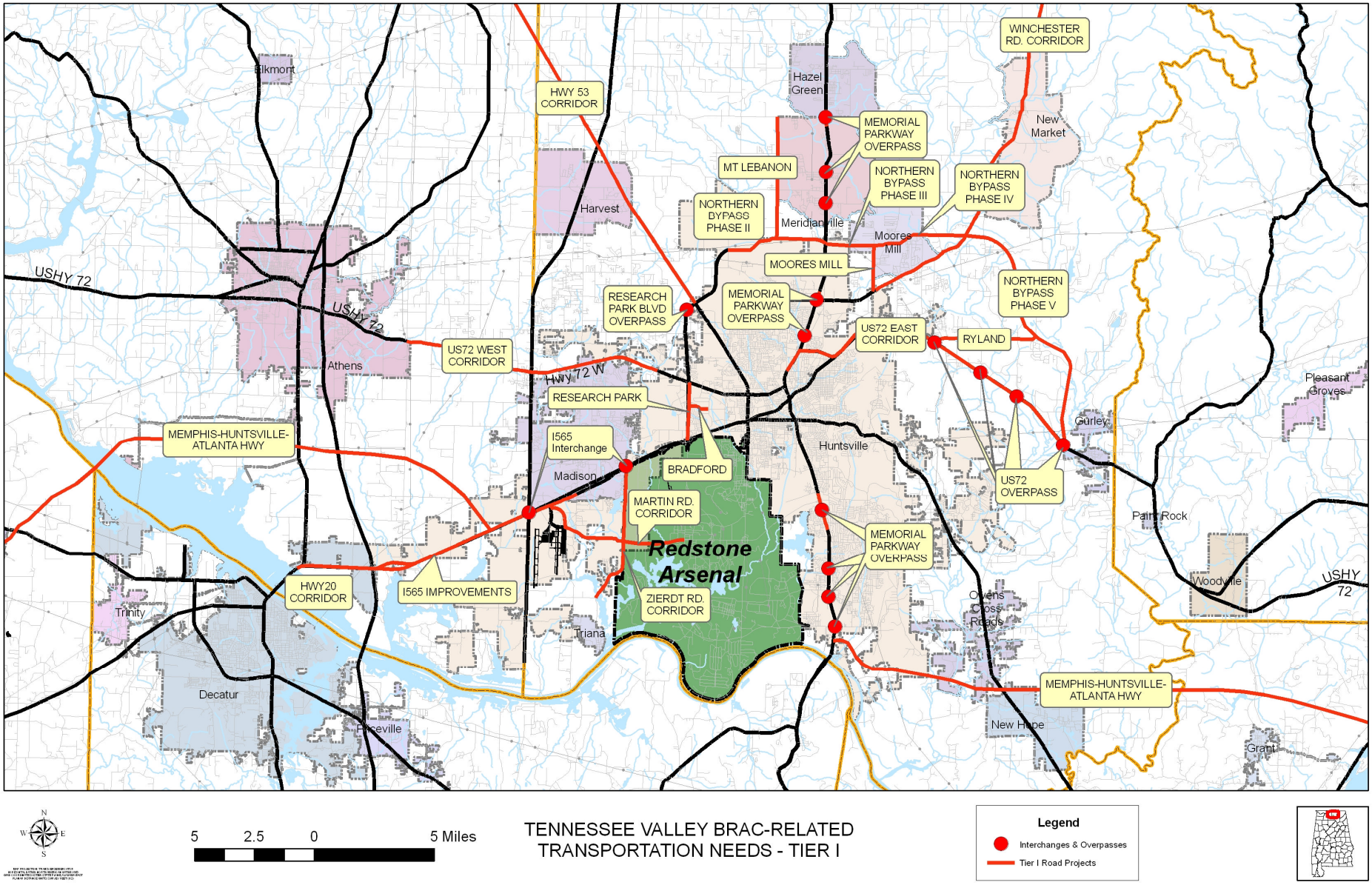

WINCHESTER RD. CORRIDOR
Elkmont
HWY 53 CORRIDOR
Hazel Green
MEMORIAL PARKWAY OVERPASS
New Market
MT LEBANON
NORTHERN BYPASS PHASE III
NORTHERN BYPASS PHASE IV
NORTHERN BYPASS PHASE II
Harvest
Meridianville
Moores Mill
MOORES MILL
USHY 72
RESEARCH PARK BLVD OVERPASS
MEMORIAL PARKWAY OVERPASS
NORTHERN BYPASS PHASE V
US72 EAST CORRIDOR
RYLAND
US72 WEST CORRIDOR
Athens
Hwy 72 W
Pleasant Groves
RESEARCH PARK
Gurley
MEMPHIS-HUNTSVILLE-ATLANTA HWY
I565 Interchange
Huntsville
BRADFORD
Madison
US72 OVERPASS
MARTIN RD. CORRIDOR
Palm Rock
MEMORIAL PARKWAY OVERPASS
Redstone Arsenal
HWY20 CORRIDOR
I565 IMPROVEMENTS
Woodville
USHY 72
Trinity
ZIERDT RD. CORRIDOR
Owens Cross Roads
Triana
Decatur
MEMPHIS-HUNTSVILLE-ATLANTA HWY
New Hope
Grant
5 2.5 0 5 Miles
TENNESSEE VALLEY BRAC-RELATED TRANSPORTATION NEEDS - TIER I
Legend
Interchanges & Overpasses
Tier I Road Projects

Table 7-3
Tennessee Valley BRAC-Related Roadway Needs - Tier II Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	
Huntsville-Madison County MPO								
Eastview Drive from Slaughter Rd to Hughes Rd	100%	✓			$8,844,000	Surface Transportation Funds	$0	$8,844,000
Blake Bottom Rd from Jeff Rd to Indian Creek Rd	100%	✓			$6,854,400	Surface Transportation Funds	$0	$6,854,400
Patton Rd from University Dr to Redstone Rd	100%	✓			$10,621,600	Surface Transportation Funds	$0	$10,621,600
Old Madison Pike from Slaughter Rd to Hughes Rd	100%	✓			$9,112,000	Surface Transportation Funds	$0	$9,112,000
Pulaski Pike from Patterson Ln to Beaver Dam Rd	100%	✓			$5,304,000	Surface Transportation Funds	$0	$5,304,000
Jeff Rd from Capshaw Rd to AL Hwy 53	25%	✓			$30,838,000	Surface Transportation Funds	$0	$30,838,000
Pulaski Pike from Beaver Dam Rd to North Huntsville Industrial Park	25%		2012		$2,300,000	Surface Transportation Funds	$0	$2,300,000
Monroe Rd/Beaver Dam Rd from Memorial Parkway to Pulaski Pike	25%		2012		$10,240,000	Surface Transportation Funds	$0	$10,240,000
Sullivan St from Royal Dr to Front St	25%		2012		$960,000	Surface Transportation Funds	$0	$960,000

Table 7-3
Tennessee Valley BRAC-Related Roadway Needs - Tier II Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	
Wade Rd from Taylor Rd to Old 431 Highway	25%		2012		$2,875,000	Surface Transportation Funds	$0	$2,875,000
Slaughter Rd from I-565 to US 72 West	25%			2014	$23,455,920	Surface Transportation Funds	$0	$23,455,920
Old 431 Highway from Highway 431 to Wilson Mann Rd	25%			2014	$2,720,000	Surface Transportation Funds	$0	$2,720,000
Shields Rd from Jordan Rd to Winchester Rd	25%			2014	$3,824,320	Surface Transportation Funds	$0	$3,824,320
Wall Triana Highway from Mill Rd to US 72 West	25%			2014	$14,960,000	Surface Transportation Funds	$0	$14,960,000
Zierdt Rd Extension from 1/4 mile north of Madison Blvd to Old Madison Pike	25%			2014	$4,760,000	Surface Transportation Funds	$0	$4,760,000
Browns Ferry Rd from Mooresville Rd to County Line Rd	25%			2016	$23,760,000	Surface Transportation Funds	$0	$23,760,000
Capshaw Rd from Jeff Rd to Old Railroad Bed Rd	25%			2016	$17,132,400	Surface Transportation Funds	$0	$17,132,400
Moontown Rd from Ryland Pike to US 72 East	25%			2016	$3,960,000	Surface Transportation Funds	$0	$3,960,000
Eastern Bypass Phase 2 from Quarter Lane to US 72 East	25%			2018	$27,360,000	Surface Transportation Funds	$0	$27,360,000

Table 7-3
Tennessee Valley BRAC-Related Roadway Needs - Tier II Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	
Hughes Rd from Old Madison Pike to US 72 West	25%			2018	$4,724,160	Surface Transportation Funds	$0	$4,724,160
Hughes Rd Extension from US 72 West to Wall Triana Highway	25%			2018	$3,040,000	Surface Transportation Funds	$0	$3,040,000
Jordan Rd Phase 1 from Homer Nance Rd to US 72 East	25%			2018	$8,896,560	Surface Transportation Funds	$0	$8,896,560
Jordan Rd Phase 2 from Moores Mill Rd to Homer Nance Rd	25%			2018	$10,232,640	Surface Transportation Funds	$0	$10,232,640
Old Railroad Bed Rd from US 72 West to Capshaw Rd	25%			2018	$5,016,000	Surface Transportation Funds	$0	$5,016,000
Old Railroad Bed Rd from Capshaw Rd to AL Hwy 53	25%			2018	$25,840,000	Surface Transportation Funds	$0	$25,840,000
Balch Rd Extension from Browns Ferry Rd to Madison Blvd	25%			2018	$17,480,000	Surface Transportation Funds	$0	$17,480,000
Wall Triana Highway from East Gate Dr to the Tennessee River	25%			2020	$31,315,200	Surface Transportation Funds	$0	$31,315,200
Mill Rd from County Line Rd to Hughes Rd	25%			2020	$8,288,000	Surface Transportation Funds	$0	$8,288,000
Portal Ln Extension from Shelton Rd to Zierdt Rd Extension	25%			2020	$2,486,400	Surface Transportation Funds	$0	$2,486,400

Table 7-3
Tennessee Valley BRAC-Related Roadway Needs - Tier II Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	
Eastview Drive Extension from Hughes Rd to Sullivan St	25%			2020	$2,000,000	Surface Transportation Funds	$0	$2,000,000
Weatherly Road Extension	25%			2022	$32,537,921	Surface Transportation Funds	$0	$32,537,921
Brock Rd from US 72 East to Ryland Pike	25%			2024	$15,527,600	Surface Transportation Funds	$0	$15,527,600
Hobbs Island Rd from US 231 to US 431	25%			2026	$42,320,000	Surface Transportation Funds	$0	$42,320,000
City of Madison								
Madison Blvd widening from Hughes Rd to Sullivan St	25%		✓		$3,000,000		$0	$3,000,000
Madison Blvd widening from Zierdt Rd to I-565	25%				$10,000,000		$0	$10,000,000
Madison Blvd widening from Hughes Rd to Zierdt Rd	25%		✓		$6,000,000		$0	$6,000,000
Balch Rd widening from Hwy 72 to Browns Ferry Rd	25%		✓		$15,200,000		$0	$15,200,000
Balch Rd Extension from Mill Rd to Madison Blvd	25%		✓		$10,000,000		$0	$10,000,000
Madison Blvd widening from Sullivan St to County Line Rd	25%			✓	$10,000,000		$0	$10,000,000
Limestone County								
Widen & Resurface Huntsville-Brownsferry Rd from I-65 to Mooresville Road	50%		✓		$15,000,000		$0	$15,000,000
Widen & Resurface Huntsville-Brownsferry Rd from Hwy 31 to I-65, plus 6 bridges @ Piney Creek and Limestone Creek	50%			✓	$7,990,000		$0	$7,990,000

Table 7-3
Tennessee Valley BRAC-Related Roadway Needs - Tier II Projects

Projects are identified as Tier I and Tier II. Tier I projects are road systems that provide direct commuter access to Redstone Arsenal. Tier II projects are road systems that bring commuters from the region to some point on a Tier I road system.

Project Name	Portion (%) of this Project Caused by BRAC Growth	Project Timeframe			Estimated Total Project Budget	Sources of Local, State or Federal Funding Already Identified		Gap Funding Required
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		Source	Amount	
Decatur/Morgan County								
Veterans Parkway Project from Interstate 65 to U.S. Hwy 31	30%	$3,500,000	$8,500,000	$67,000,000	$79,000,000	Federal, State, Local	$0	$79,000,000
Totals					**$575,776,121**		**$0**	**$575,776,121**
NOTE: Huntsville-Madison County MPO project costs are based upon 4% annual inflation rate as recommended by FHWA.								

Source: Survey by Garnet Consulting Services, Inc. of MPOs, Counties and Cities reviewed and formatted by MPOs, the TVRGCP Transportation Task Force and Madison County Commission staff

An analysis of the projects included in Tables 7-2 and 7-3 on the preceding pages shows the following.

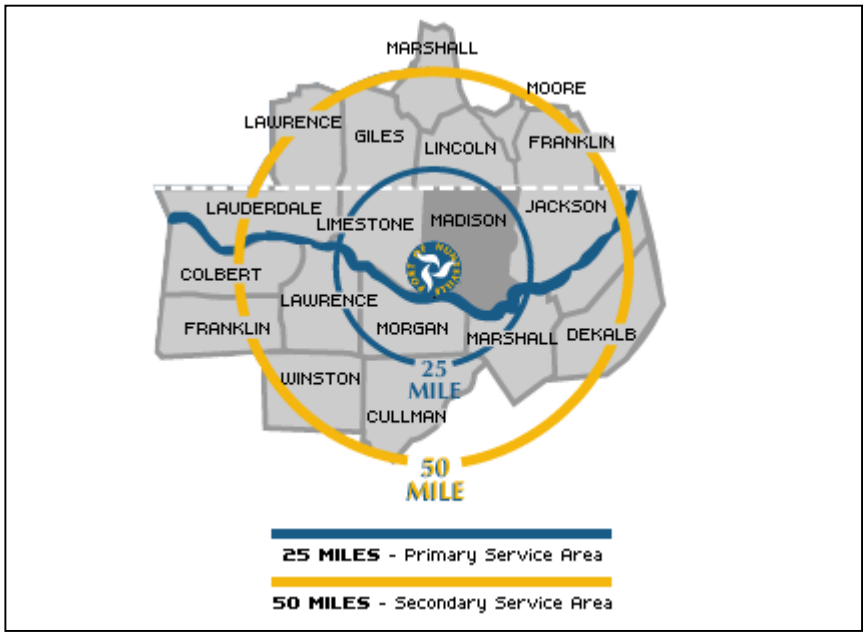
- There are a total of 89 road improvement projects identified as necessary in the PSA.
- These 89 projects have a combined total cost of more than $3.5 billion.
- Sources of funding have been identified for very few of these projects resulting in a gap (or a total of unfunded projects or portions of projects) of more than $3.3 billion.
- The estimated portion of the projects caused by BRAC-related growth impacting the PSA is more than $1 billion.
- The estimated portion of the gap or currently unfunded project costs caused by BRAC-related growth impacting the PSA is nearly $954 million.
- All these costs and funding needs will rise over time due to the impacts of inflation on construction costs.

It is obvious that sources of significant new funding are necessary – and quickly – to meet the highway transportation needs of the region, in particular, the PSA. While some of this need is caused by ongoing growth trends in the area, increased traffic caused by BRAC-related growth is responsible for an estimated need of nearly $1 billion over and above the normal needs of the region.

2. Air

Huntsville International Airport (HIA) is the major airport serving all of northern Alabama and parts of southern Tennessee, drawing passengers from a 50-mile-radius that includes all or portions of 12 counties in Alabama and 6 counties in Tennessee (see Figure 7-5).

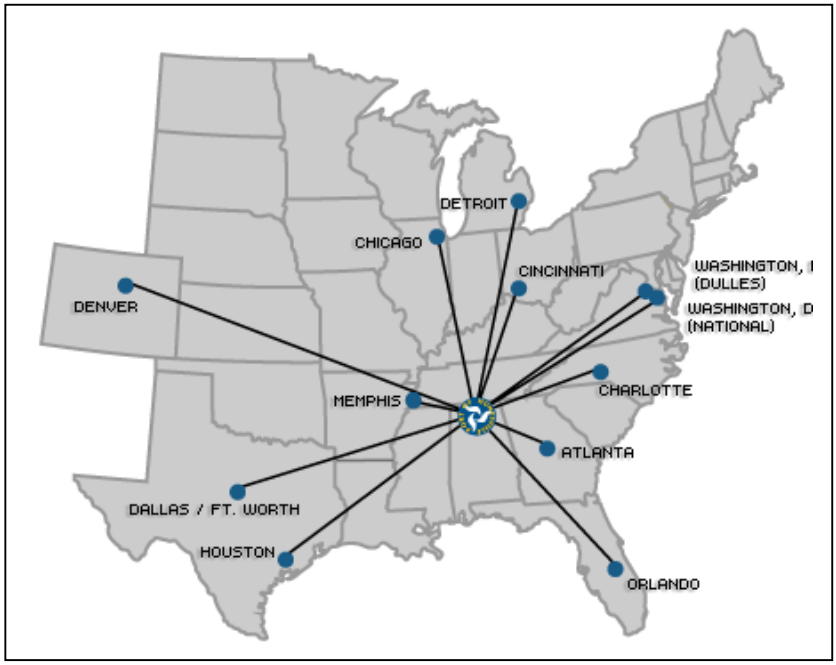
Figure 7-5
Huntsville International Airport Service Region



Source: Huntsville International Airport Website

As of September 2008, HIA was being served by 6 airlines (American, Continental, Delta, Northwest, United and USAirways) with 41 arrivals and departures daily to 12 non-stop destinations. Non-stop destinations (see Figure 7-6 on the next page) are Atlanta, Charlotte, Chicago, Cincinnati, Dallas, Denver, Detroit, Houston, Memphis, Orlando, and Washington, DC (both Dulles and Reagan Airports). The airport is pursuing additional destinations or increased service to existing destinations, in particular, increased service to Washington, DC due to the BRAC-related influx of commands or units from the Washington area. USAirways has already increased seating capacity on this route. In 2007, this was the most active destination with 102,519 passengers traveling between Huntsville and Washington-Reagan and another 17,706 traveling to or from Washington-Dulles.

Figure 7-6
Huntsville International Airport Non-Stop Destinations



Source: Huntsville International Airport Website

Passenger count at the HIA has been rising almost constantly for more than a decade, totaling more than 1.2 million in 2007 and 2008 (see Table 7-4). The airport is prepared for this growth and has planned for even more rapid growth in the future. However, passenger traffic in late 2008 has been declining, and January 2009 passenger activity was down 14.7% from a year prior, reflecting a general decline in passenger traffic due to the poor economy and increased airfares.

Table 7-4
Huntsville International Airport Passenger Activity - Historic Information

Year	Passengers			% Change (from prior year)
	Emplaned	Deplaned	Total	
2008	628,306	626,439	1,254,745	1.2%
2007	621,743	618,070	1,239,813	7.3%
2006	576,703	576,229	1,152,932	-8.9%
2005	635,462	629,691	1,265,153	6.0%
2004	599,781	599,589	1,193,370	13.5%
2003	527,261	524,383	1,051,644	6.3%
2002	497,822	491,271	989,093	2.1%
2001	487,511	481,443	968,954	-10.5%
2000	543,898	538,451	1,082,349	3.0%
1999	526,042	524,335	1,050,377	2.7%
1998	507,198	509,604	1,016,802	13.0%
1997	507,198	509,604	1,016,802	13.0%
1996	450,734	449,100	899,834	5.3%

Source: Huntsville International Airport Website

To accommodate increased usage, a capital improvement program totaling $65 million is underway that includes expansion of passenger screening, baggage claim, public waiting and

concession areas, an addition to the parking garage, and upgrade of the flight information systems. This is a continuation of a process that has totaled more than $1.3 billion in capital investment since 1964.

The airport is a portion of the multi-modal Port of Huntsville that includes the following.

- Two parallel runways of 12,600 feet (second only to Miami as the longest in the Southeast) and 10,000 feet, with a 5,000 foot separation; three additional parallel runways can be constructed
- An operations capacity of 342,066 with current operations of 102,000±
- 81 general aviation and 3 corporate hangars
- The 4,000± acre Jetplex Industrial Park, Jetplex Supplier Park and International Intermodal Center, with 2,800± acres available in sites from 4 to 700 acres
- A 1,000,000 square feet apron for loading and unloading and a 200,000 square feet warehouse building, both with room to expand; a 92,400 square feet building is under development
- A Foreign Trade Zone (FTZ #83)
- U.S. Customs and Border Protection Inspectors on-site
- Two 45-ton overhead gantry cranes
- Container storage capacity of 2,500
- Rail lift capacity of 114,000 compared with 42,000 current lifts
- Immediate access to I-565 with I-65 within 6 miles

The airport's rail-cargo-service area is a 150-mile radius and international air-cargo-service area is a 600-mile radius that includes all or parts of 26 states. In 2006, Air Cargo World named HIA as the fastest growing cargo airport in the United States and third fastest in the world in terms of percentage of growth. In 2007, HIA handled approximately 175 million pounds of cargo, of which 156 million pounds were international cargo.

It should be noted that at the time this is written, the airline industry is in a state of turmoil due largely to soaring fuel costs. The result has been elimination of service to some smaller airports and reduction in service to most others. The long-term impact of this situation on HIA remains to be seen, although the airport lost direct service to Fort Lauderdale and New York's LaGuardia Airport during the first half of 2008.

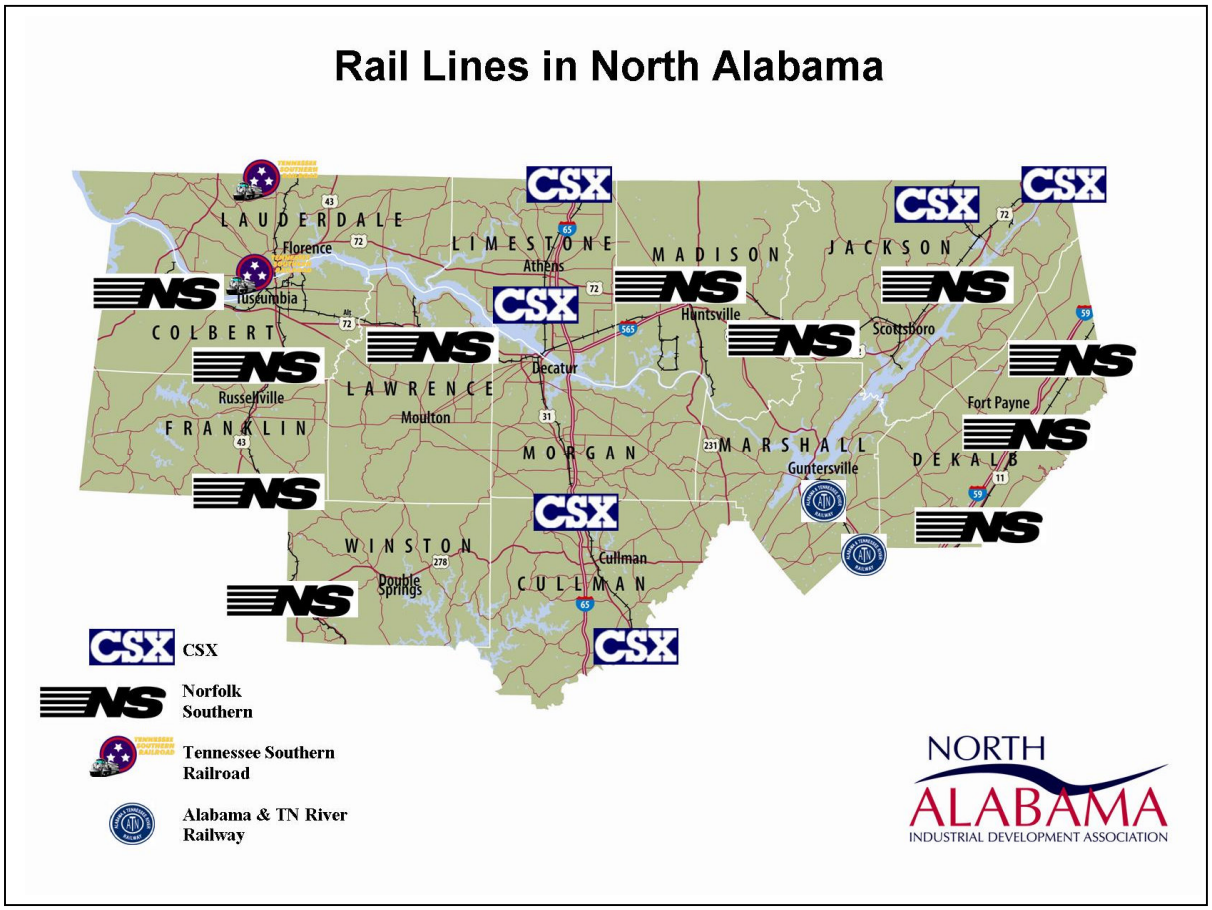
The PSA is also served by smaller General Aviation airports including the Madison County Executive Airport, Pryor Field in Decatur/Limestone County, and Rountree Field Airport in Hartselle.

3. Rail

There is no passenger rail service into the PSA. The nearest Amtrak station is in Birmingham, approximately 199 miles south of Huntsville and 83 miles south of Decatur. The Amtrak line runs generally east/west through Alabama, connecting to Atlanta to the east and New Orleans to the southwest. Many people who have moved to the PSA from other metropolitan areas are used to having passenger rail service and find this to be a disadvantage of the area.

As shown in Figure 7-7, northern Alabama is served by two major rail freight carriers – Norfolk Southern and CSX – as well as two short line carriers that serve portions of the Broader Impact Region (BIR), but not the PSA.

Figure 7-7



Source: North Alabama Industrial Development Association

The CSX line runs north/south through Limestone and Morgan counties, while Norfolk-Southern's line runs east/west through Decatur in northern Morgan County, southern Limestone County and central Madison County. The two railroads share a bridge over the Tennessee River at Decatur and have switching yards in Decatur. There are no other rail crossings of the Tennessee River in Alabama west of the PSA. In Madison County, three secondary lines run south from the NS main line:

- A line into the International Intermodal Center at Huntsville International Airport;
- A line into Redstone Arsenal; and
- A line running east of and parallel with US 231 from central Huntsville south to the Tennessee River.

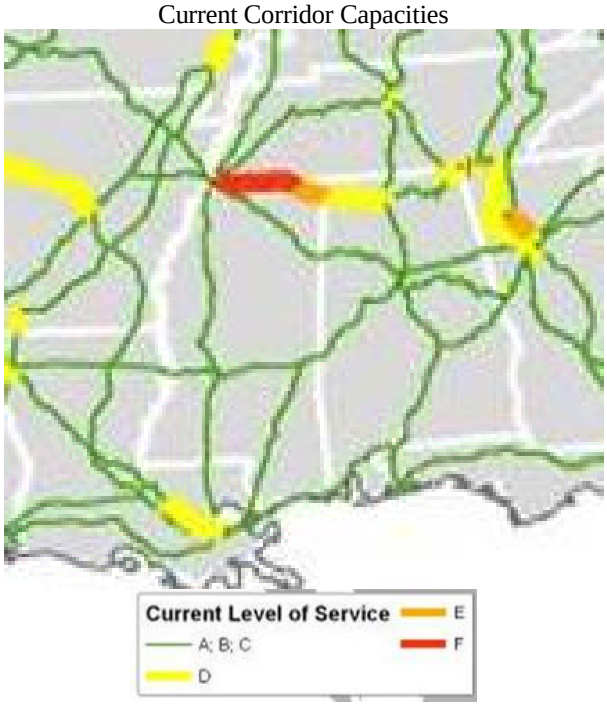
Both CSX Transportation and Norfolk Southern Combined Railroad Subsidiaries are Class 1 Freight Railroads, of which there are 7 in the United States. (The Association of American Railroads defines a Class 1 Railroad as a "line haul freight railroad with 2006 operating revenue in excess of $346.8 million.")

Rail freight is, and will continue to be an important shipping mode for the PSA. Given the expected growth in passenger vehicle trips on roadways, the reduction of tractor-trailer traffic by use of rail freight can be an important traffic mitigation factor.

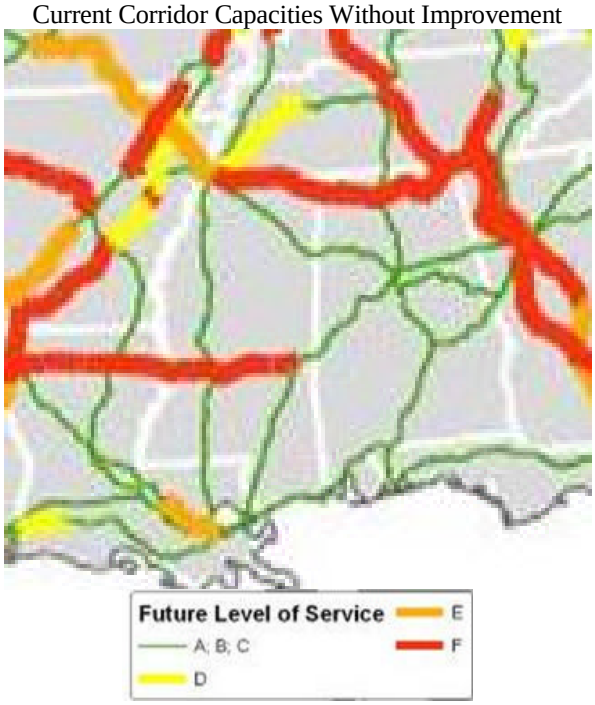
The capacity of rail lines in the PSA is of concern. In the detailed study "National Rail Freight Infrastructure Capacity and Investment Study" (September prepared for the Association of American Railroads by Cambridge Systematics, Inc.), the maps shown in Figure 7-8 were presented comparing current train volumes and capacity with future (2035) volumes and capacity if no improvements are made in available rail corridors.

Figure 7-8
Comparison of Current and Future Train Volumes and Capacities

Current Corridor Volumes Compared to Current Corridor Capacities



2035 Corridor Volumes Compared to Current Corridor Capacities Without Improvement



Source: Association of American Railroads, formatted by Garnet Consulting Services, Inc.

In the rating system used by Cambridge Systematics in preparing this report, Levels of Service (LOS) A, B and C indicate rail corridors operating below capacity; LOS D indicates rail corridors near capacity; LOS E indicates rail corridors at capacity; and LOS F indicates rail corridors above capacity. Figure 7-8 indicates that, in terms of Level of Service, while the north-south CSX line is operating below capacity now and is expected to continue this LOS through 2035, portions of the east-west Norfolk-Southern line between Huntsville/Decatur and Memphis are already at or above capacity, and without improvements to this corridor, the entire Norfolk-Southern corridor from Memphis to Chattanooga and Atlanta will be above capacity by 2035.

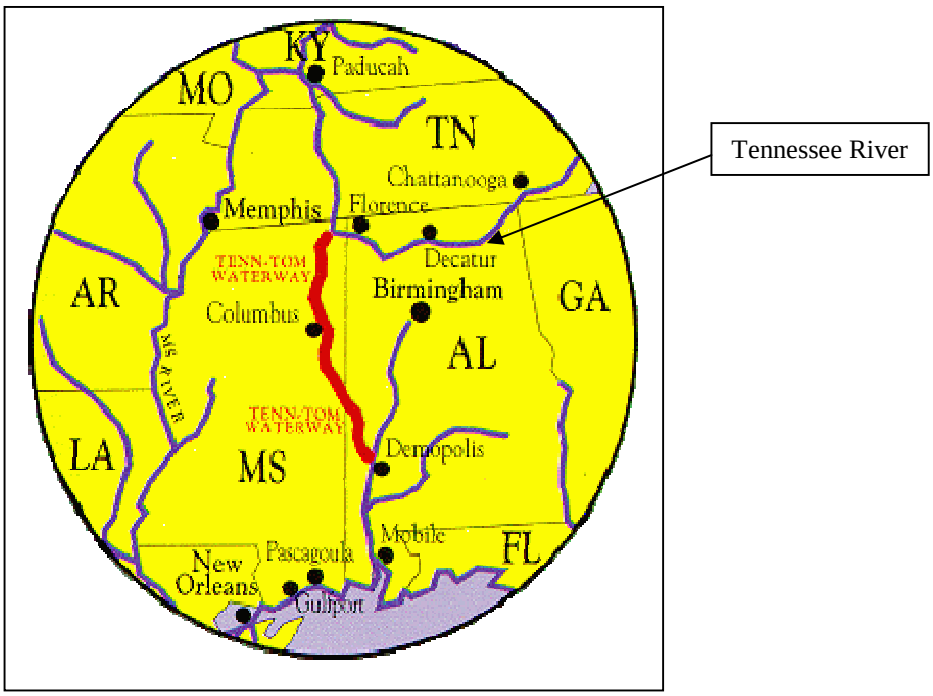
Without investment in improving east-west freight service, the PSA and possibly Redstone Arsenal (depending on its future use of rail freight) will see a continuing decline in rail freight service quality as the rail corridor becomes more congested and freight shipment takes longer. Rather than encouraging the use of rail freight as an alternative to highway shipment, this situation may encourage the use of roads for more freight shipment, leading to increased congestion on highways in the PSA.

A rail project of interest to the region is National Alabama Corporation's rail car fabrication plant, which is currently under construction in Colbert County with first product delivery expected in the first quarter of 2009. This 2.2-million-square-foot, LEED-certified building on a 600± acre site, will employ 1,800 people by 2013. The company will manufacture all types of rail cars except tank cars. No direct benefit to rail freight service in the region is expected; the majority of completed cars will be shipped to Memphis for distribution to their purchasers. This may exacerbate the rail-corridor-capacity problem discussed above between the PSA and Memphis. However, in the long run, as lighter weight rail cars with higher load capacity replace older freight cars, this may result in some reduction of the number of cars needed on the corridor.

4. Port Services

The Tennessee River is a major waterway from Decatur in Morgan County connecting to the Tennessee-Tombigbee Waterway just across the state line in Mississippi to the west. East of Decatur, the river narrows considerably, but is still navigable through Madison County to the Port of Guntersville, where the river widens again. This waterway is an alternative route to the Gulf of Mexico at Mobile Bay (see Figure 7-9 on the following page).

Figure 7-9
Tennessee-Tombigbee Waterway

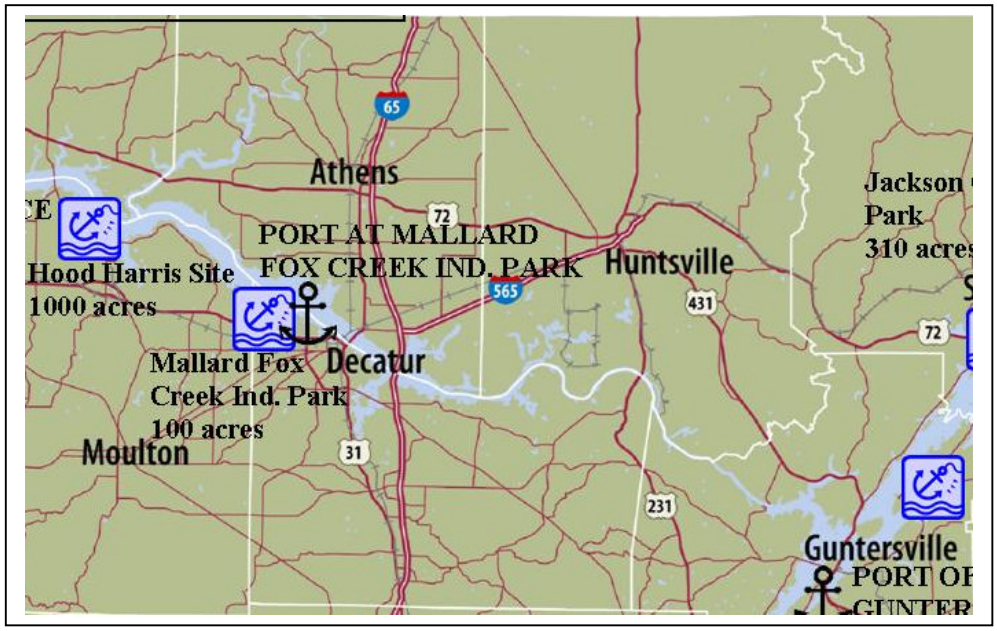


Source: US Army Corps of Engineers

The Tennessee River bisects the PSA, generally forming the northern border of Morgan County and the southern border of Limestone and Madison counties. In North Alabama there are 202 miles of navigable waterway with a guaranteed channel depth of 11 feet. One of the major port-served areas in is Morgan County, including business park sites in or near the City of Decatur (see Figure 7-10 on the following page). Most of these sites are rail served and are in environments of similar companies, all needing a location on or in close proximity to the river.

Long-range plans of the Port of Huntsville include the possible establishment of additional water cargo operations immediately south of Huntsville International Airport. This would further solidify the Port of Huntsville and its industrial areas as a multi-modal transportation location.

Figure 7-10
Ports in the Primary Study Area



Source: North Alabama Industrial Development Association edited by Garnet Consulting Services, Inc.

5. Public Transportation

A. Madison County/City of Huntsville/City of Madison

Public transit services in the Huntsville urbanized area are largely provided by Madison County and the City of Huntsville (see the "Huntsville Area Transportation Study Year 2030 Transportation Plan" dated December 2004 and amended in April 2005 and August 2007).

Madison County operates demand response transit through a program called Transportation for Rural Areas of Madison County (TRAM). There are no age or income service restrictions; however, riders must reside in the rural communities of Madison County. The TRAM service operates Monday through Friday from 7:00 a.m. until 3:00 p.m., excluding official county holidays. The service operates 11 vehicles, 8 of which 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 Huntsville Public Transit Division operates a variety of services targeted to specific community transportation needs. 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 provides these services through the following several programs.

- Major emphasis and resources are devoted to fixed route Shuttle service operating along eleven (11) fixed routes utilizing fourteen (14) buses. Hours of operation are 6:00 a.m. to 6:00 p.m., Monday through Friday excluding official City of Huntsville holidays. There is currently no evening service. Weekend service is limited to a tourist loop that serves major tourist attractions throughout the city during summer months. There are many stops along each route. 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 riders 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. 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 city also devotes significant resources to a Handi-Ride Paratransit program serving senior citizens and the disabled community. This service operates with 13 vehicles, 11 of which are wheelchair lift equipped. Operating hours are 6:00 a.m. until 6:00 p.m., Monday through Friday excluding official City of Huntsville holidays. Riders must call to request a trip. This service gives priority to ADA eligible riders throughout the 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.

- Community volunteers and human service transportation programs serve other specialized needs. The Community Volunteer and Human Service Agency programs provide specialized transportation utilizing 5 vehicles. They are usually operated by volunteer groups or Human Service agencies to serve their more specialized transportation needs that cannot be met by the fixed route or Handi-Ride service.

- A Rideshare program provides matching services for commuters and encourages carpooling and vanpooling on a local and regional basis. 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.

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.

The Huntsville Area "Human Services Coordinated Transportation Plan" published in August 2007 by the Top of Alabama Regional Council of Governments (TARCOG) for the Huntsville Metropolitan Planning Organization listed the following goals:

- Continue to support existing programs;
- Encourage growth in the scope of service;
- Encourage growth in the accessibility of service;
- Encourage growth in the coordination of services.

In early 2008, the City of Madison implemented the Madison Assisted Ride System (MARS), a paratransit service for those eligible under ADA guidelines. The service, which is available Monday through Friday from 7 a.m. to 5 p.m., is funded entirely by the City of Madison and operated with the help of the Huntsville public transit call center.

B. Limestone County/City of Athens

The TARCOG (Top of Alabama Regional Council of Governments) "Human Services Coordinated Transportation Plan" published in December 2006 identified six (6) transit providers in Limestone County, three of which were serving only the elderly, two serving those with mental disabilities and one serving those needing dialysis. All six services are based in the City of Athens.

Unmet needs identified for the TARCOG region and Limestone County in particular included:

- Increased out-of-area transit services, particularly to medical facilities;
- Non-standard or expanded hours of service, particularly for second and third shift workers;
- Weekend transit services; and
- Transit services available to the general public (rather than the elderly or other target groups), particularly for job access on a regular schedule.

C. Morgan County/City of Decatur

The NARCOG (North Central Alabama Regional Council of Governments) "Human Services Coordinated Transportation Plan" published in January 2007 identified the Morgan County Area Transportation System (MCATS) as the provider of both urbanized and non-urbanized public transit services throughout Morgan County. All MCATS routes are Demand/Response and the system has four contract routes that are also coordinated with demand response. MCATS requires that anyone wanting to ride the transit system must call and schedule an appointment no later than 2:00 p.m. the day before the appointment. MCATS operates Monday thru Friday from 7:30 a.m. to 4:00 p.m. using twenty-nine (29) vehicles with six (6) lift-equipped for paratransit use. MCATS has 24 drivers. MCATS charges $1.00 per one way trip within the City of Decatur and $2.00 per one way trip in the rural areas or between the

cities of Hartselle and Decatur. MCATS provides transportation services for special events as long as the event does not interfere with the normal daily operating schedule.

Identified public transportation improvement needs for Morgan County are:

- More service including expanded service territories and more transit vehicles;
- Extended days and hours;
- Service to medical centers located outside existing service areas (e.g. Birmingham and Huntsville);
- More medical service trips;
- More communication between Human Service Providers, state officials, local officials and the general public;
- Coordination of services at common areas; and
- Establishment of work related transit services.

THE REGION'S MULTI-MODAL TRANSPORTATION CAPABILITY

The diversity of highway, air, rail and port infrastructure and services discussed above clearly demonstrates a multi-modal transportation capability that is unmatched by most regions. This capability is further enhanced by the close proximity to Redstone Arsenal of the Port of Huntsville and its International Intermodal Center and Jetplex Industrial Park, which provide land and buildings served by Interstate, rail and air cargo operations.

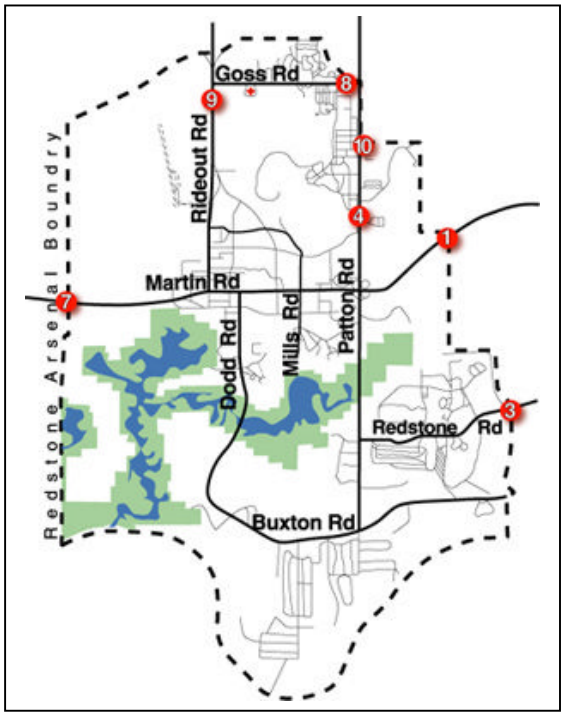
This area, combined with the world-renowned Cummings Research Park, not only positions the region for significant economic development, it provides all the real estate and transportation capabilities necessary to support Redstone Arsenal as it absorbs the current round of BRAC-related military and contractor relocations to the area and positions the area as a preferred location to receive future realignments. Current road construction between the Arsenal and airport area further strengthens the linkage between the two facilities.

TRANSPORTATION AT REDSTONE ARSENAL

1. Road Access

Redstone Arsenal is accessed from multiple gates, each with different operating schedules (which are subject to change, and therefore not given here). Figure 7-11 shows these gate locations:

Figure 7-11
Redstone Arsenal Access Gates



Source: Redstone Arsenal Website

- The primary access point, open 24 hours daily, is Gate 9, Rideout Road, at the northern boundary of the Arsenal. This provides direct access to both I-565 and the Cummings Research Park, where many contractors serving the Arsenal are located.

- Gate 7 provides access from the west via Martin Road on-post to Zierdt Road (the western boundary of the Arsenal). Improvements to this road system are highly desired by the Arsenal to provide improved access to Huntsville International Airport via James Record Road.

- There are four access points from the east: Gate 1 at Martin Road; Gate 3 at Redstone Road; Gate 8 at Goss Road (which becomes Drake Avenue off-post); and Gate 10 at Patton Road. All of these entry points provide connections to US 231/State Highway 53 to the east. Because of the heavy daily traffic to the Arsenal from the growing areas to the east, these access routes and the major arterials serving them are a concern for both the Arsenal and City of Huntsville.

2. Rail Service

A rail spur enters the Arsenal grounds from the north from the main Norfolk Southern line. Arsenal officials report that rail service onto the Arsenal is not a high priority need of the Army at this time, but the line is used periodically by NASA, Missile Defense Agency (MDA), Defense Intelligence Agency (DIA), and Army National Guard and Reserve Elements.

The Arsenal's track is in amber condition. Units use the spur five or six time a year through inspection from Norfolk Southern inspectors before a train can arrive and depart from the railhead.

The Enhanced Use Lease (EUL) project planned for the north-central portion of the Arsenal will move and update the railhead on the installation. Development of the EUL area will result in the creation of a 3 million square feet business park.

3. Tennessee River Docks

There are two dock areas on the Tennessee River on the southwestern corner of the Arsenal grounds. The Army once used one of these for coal barges, but it is now abandoned in place. There are no known plans for future use.

The only active dock on the river on the Arsenal grounds is operated by NASA. This dock may be upgraded for use in the Ares rocket launch vehicle project to ship in rocket motors.

4. Air

There is a small airfield located in the northwest portion of the Arsenal, just south of I-565. The runway is asphalt, 7,300 feet long and 150 feet wide. Activity at the Arsenal Airfield is expected to increase as the Aviation Technical Test Command is relocated from Ft. Rucker.

The Arsenal Airfield is not the primary facility for Arsenal personnel air travel; that occurs at Huntsville International Airport located slightly less than 3 miles due west of the Arsenal. A primary goal of the Arsenal is to widen Martin and James Record roads from Rideout Road within the Arsenal, through Gate 7 to Glenn Hearn Road at HIA, facilitating better traffic flow between the Arsenal and the airport.

CONCLUSIONS

1. Transportation needs for the Primary Study Area (PSA) are well planned by a system of integrated Metropolitan Planning Organizations (MPOs) and allied agencies. Adequate resources must be provided in the future to support the continuation of necessary planning.

2. Normal growth trends in the PSA create a continuing need for transportation improvements, in particular, new or upgraded roads.

3. The influx of people to the region resulting from BRAC will significantly exacerbate road congestion and require roadway improvements sooner than would otherwise be needed.

4. A portion of this study was a multi-faceted approach to developing a long-range vision of what the residents of the region would like it to look and feel like in the future. One of the top five components of that vision, coming from numerous individuals in multiple group meetings, is: "The regional highway system is improved to meet the needs of increased intra-regional traffic flow as well as connectivity with the rest of the Southeast and nation."

5. A project of particular importance to the region is the Memphis-Huntsville-Atlanta Highway. This Interstate corridor will provide the region with a high-speed, four-directional interstate linkage that is currently lacking. This will improve the region's competitiveness, expand the laborshed for the region's employers by extending the territory within a 30-minute commute zone, and provide an additional means of moving a large volume of car and truck traffic within and through the region.

6. The single largest obstacle to implementing necessary roadway improvements is funding. The region must be prepared to fund a significant portion of necessary improvements while continuing to aggressively pursue funding from all appropriate departments of the State of Alabama and U.S. government and special appropriations from the Alabama Legislature and U.S. Congress.

7. Eighty-nine (89) roadway improvement projects related to growth caused by BRAC have been identified in the PSA. These 89 projects have a combined total cost of more than $3.5 billion, of which more than $1 billion is attributable to BRAC. A very small portion of these projects is already funded, leaving a gap of more than $3.3 billion for completely or partially unfunded projects. Of this gap, nearly $954 million is a result of BRAC-related growth.

8. It is impossible for the counties and municipalities in the region to pay for these improvements in the timeframe in which they are necessary. Substantial amounts of federal and state funding are necessary.

9. Funding will require use of less-traditional methods such as the creation of toll-roads or other user fees (e.g., Vehicle Miles Traveled Fees), user benefit fees such as impact fees or special tax districts, use of Special Purpose Local Option Taxes (SPLOT), private

ownership and development of new roads, use of Federal Credit Assistance, and similar tools.

10. In the past, public transportation in the region has been a relatively low priority due in large measure to low demand except by special groups with limited mobility. Increased traffic congestion in the region, coupled with rising motor fuel costs, should cause an increase in interest in the use of public transportation, necessitating an increase in services. This in turn, will require more funding for public transportation equipment and services.

11. Huntsville International Airport is a high-quality, small airport, with significant growth potential, that is well-positioned to meet the air travel needs of increased personnel working at Redstone Arsenal and the air freight needs of companies in the PSA and the surrounding area.

12. Portions of the east-west Norfolk-Southern rail line between Huntsville/Decatur and Memphis are already at or above capacity, and without improvements to this corridor the entire Norfolk-Southern corridor from Memphis to Chattanooga and Atlanta will be above capacity by 2035. Without investment in improving east-west freight service, the PSA and possibly Redstone Arsenal will see a continuing decline in rail-freight-service quality as the rail corridor becomes more congested and freight shipment takes longer. Rather than encouraging the use of rail freight as an alternative to highway shipment, this situation may encourage the use of roads for more freight shipment, leading to increased congestion on highways in the PSA.

13. As this report is being written, the nation is in the midst of a significant economic downturn with an accompanying credit crisis. The inability of communities to finance infrastructure construction projects at reasonable costs – if at all – has become a national problem. Finding effective means of financing the transportation improvement projects caused by or related to BRAC-related growth is a primary challenge for the region. The region must continue and increase its collaborative effort to identify and employ effective financing vehicles to meet transportation infrastructure construction needs. Costs of such an initiative would be minimal.

RECOMMENDATIONS

1. Regional officials must continue cooperative and coordinated efforts to secure federal and state funding as rapidly as possible, particularly for the top priority projects shown in Table 7-2 of this report. A Transportation Task Force should be established to coordinate this effort.

2. Alternative funding methods should be identified and must be carefully studied to evaluate both positive and negative factors and assess the true feasibility of each approach considered. This will likely require the hiring of a specialty consultant with expertise in such areas; an estimated cost for this work is $75,000.

3. The MPOs serving the area should consider the establishment of a shared office similar to the Oregon Department of Transportation's Office of Innovative Partnerships and Alternative Funding to oversee identification and development of new funding methods for necessary transportation improvements. Additional research is necessary to identify a recommended structure and budget for this office; if undertaken by a consultant, an estimated $50,000 budget would be necessary for this effort.

4. Increased attention should be paid to improving public transportation in the PSA with particular emphasis on providing effective home-to-work linkages for major employment centers such as Redstone Arsenal, Cummings Research Park, and the Jetplex Industrial Park. This will require more funding for public transportation equipment and services; the cost is unknown at this time.

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Tennessee Valley BRAC-Related Transportation Needs

Instructions:
1) Column A: Projects included on this sheet should be limited to those needs caused or increased by BRAC-related growth at Redstone Arsenal.
2) Column B: Estimate the portion (%) of this project that has or will be caused by BRAC-related growth at Redstone Arsenal.
3) Columns C - E: For each project listed, indicate whether this is an Immediate Need, Short-Term Need (2-5 years) or Long-Term Need (6 years or more).
4) Column F: For each project listed, provide a budget estimate for Total Project Costs.
5) Columns G - H: List sources of funds for this project already identified or solicited and the amounts sought.
6) Column I: Show the amount of Federal Gap Funding still currently needed in order for this project to be undertaken.
7) Column J: Please rank order all of your projects (e.g., if you listed 5 projects, they should be ranked 1 through 5).
County or Community Submitting this List:

Project Name	**Portion (%) of this Project Caused by BRAC Growth**	**Project Timeframe**			**Estimated Total Project Budget**	**Sources if Local, State or Federal Funding Already Identified**		**Gap Funding Required**	**Project Priority**
		Immediate	Short-Term 2 - 5 Years	Long-Term 6+ Years		**Source**	**Amount**		