

**SUPPLEMENTAL  
ENVIRONMENTAL ASSESSMENT**

**PROPOSED NEW RUNWAY  
Guntersville Municipal - Joe Starnes Field  
Guntersville, Alabama**

Submitted to

**Lead Agency:  
U.S. Department of Transportation  
Federal Aviation Administration**

**Cooperating Agencies:  
Tennessee Valley Authority  
U.S. Army Corps of Engineers – Nashville District**

by the  
**City of Guntersville, Alabama**

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**June 2009**

This environmental assessment becomes a Federal document when evaluated and signed by the responsible official.



Responsible Official  
Federal Aviation Administration



Date

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**SUPPLEMENTAL  
ENVIRONMENTAL ASSESSMENT  
PROPOSED RUNWAY CONSTRUCTION  
Guntersville Municipal - Joe Starnes Field  
Guntersville, Alabama**

## **PURPOSE AND NEED**

### **Introduction**

The City of Guntersville is planning to expand and improve the Guntersville Municipal – Joe Starnes Field in Guntersville, Marshall County, Alabama (**Figure 1**). In June 2005, the City of Guntersville submitted an Environmental Assessment (EA), *Proposed New Runway - Guntersville Municipal-Joe Starnes Field- Guntersville, Alabama* (BWSC 2005) to the Federal Aviation Administration (FAA) considering the potential environmental impacts of a proposed airport expansion program. The FAA issued a Finding of No Significant Impact (FONSI) on July 19, 2005. Since the FONSI was issued, in response to FAA regulations, the City of Guntersville revised the project scope to include a request for the use of additional Tennessee Valley Authority (TVA) property intended for a vegetation management area. Additionally, the proposed runway length was reduced from 5,500 feet to 5,000 feet. Changes to project scope necessitate additional documentation, coordination with resource agencies, and FAA coordination and approval. Therefore, a supplemental EA (SEA) has been prepared to address the scope changes to the 2005 EA. The goal of the airport improvement project is to provide the public with a safe aviation facility that would accommodate a variety of general aviation aircraft, including business jets. The need for the relocation of the existing runway was documented in a Runway Justification Study (Appendix A) approved by the FAA on May 30, 2002.

The proposal to upgrade and modernize the Guntersville Airport would provide a safe aviation facility that meets current FAA design standards. The airport serves mostly small single engine aircraft with a weight limit of 10,000 pounds. The redesigned airport would also accommodate large aircraft (those weighing more than 12,500 pounds and less than 60,000 pounds). Guntersville Airport presently covers 125 acres and has one asphalt runway.



**PROJECT LOCATION MAP  
GUNTERSVILLE MUNICIPAL - JOE STARNES FIELD  
GUNTERSVILLE, ALABAMA**

**Figure  
1**

The proposed project would improve the existing local transportation network by allowing a range of general aviation aircraft, including business jets, safe airport access. The 2005 EA examined the potential environmental impacts of the proposed airport expansion program including the following proposed actions:

- A. Acquire approximately 172 acres of land
- B. Construct a new 5,500 foot by 100 foot runway and install runway lights
- C. Improve the Runway Safety Area (RSA) for the proposed runway
- D. Construct a full-length parallel taxiway to serve the proposed runway and install lighting
- E. Construct new terminal building
- F. Construct a new access road and automobile parking area
- G. Construct T-hangars and individual hangars
- H. Relocate the fuel farm
- I. Install Automated Weather Observing System (AWOS)
- J. Install perimeter fencing

Since the EA was completed in 2005, the scopes of the project and the environmental review have changed and include the following:

- A. Acquire approximately 203 acres instead of 172 acres of land
- B. Construct a new 5,000 foot by 100 foot runway instead of a 5,500 foot by 100 foot runway
- C. Convert approximately 47.15 acres of TVA property to a vegetation management area
- D. A Vegetation Management Plan has been developed
- E. Wetland and Stream impacts have changed in size and number
- F. A Wetland/Stream Mitigation Plan has been developed
- G. Sections discussing Natural Areas and Recreation have been added
- H. Other sections of the SEA have been updated with current information

The City of Guntersville needs approval under Section 26a of the *TVA Act* for any fill associated with runway construction, as well as permit approvals under Section 404 and Section 401 of the *Clean Water Act* from the United States Army Corps of Engineers – Nashville District (USACE), and the state of Alabama, respectively. The proposed action was the subject of a Joint Public Notice (JPN) issued by the USACE and TVA on May 1, 2009 (see Appendix B). The JPN comment period ended June 1, 2009. One comment was received from the USFWS expressing concerns regarding bald eagles and the loss of 40.25 acres of wetland habitat. The draft SEA and 2007 Site Observation Report from BWSC addressed the bald eagle concerns. In response to the USFWS comment, the purchase of

additional wetland mitigation bank credits has been proposed by the applicant to compensate for the temporal loss of 22.40 acres. Correspondences regarding the potential purchase of additional mitigation credits are included in Appendix G.

**Need for New Runway**

The capability of the airport to fully serve the people and business community of the surrounding area is currently limited by the length of the runway. The airport's existing runway is 3,368 feet in length; however, to obtain the required clearances over portions of Buck Island Road, the threshold on the approach to Runway 3 has been displaced approximately 800 feet. This significantly reduces the amount of useable runway to 2568 feet for approaching pilots. The runway can presently accommodate most small aircraft. However, the runway would need to be extended to 5,000 feet to safely accommodate 75 percent of large aircraft (those weighing more than 12,500 pounds and less than 60,000 pounds) at 60 percent useful load according to the FAA Airport Design Computer Program. The airport's "critical aircraft" is the largest aircraft, or combination of aircraft, expected to operate at least 500 times per year at the facility. The Cessna Citation II was identified as the critical aircraft for the Guntersville Airport and requires a runway length of at least 5,000 feet. The Cessna Citation II has a wingspan of 51.7 feet, a maximum take off weight of 13,300 pounds, and is usually equipped to carry six to ten passengers.

The proposed new runway is consistent with the Airport Layout Drawing (ALD), an FAA-approved planning document, which graphically depicts existing and planned airport facilities, including the proposed new runway (**Figure 2**).

RUNWAY SAFETY AREA DIMENSIONS			
RWY END	EXISTING	PROPOSED	ULTIMATE
3	240' BEYOND RUNWAY END X 120' W	300' BEYOND RUNWAY END X 150' W	N/A
21	240' BEYOND RUNWAY END X 120' W	300' BEYOND RUNWAY END X 150' W	N/A
6	N/A	N/A	300' BEYOND RUNWAY END X 150' W
24	N/A	N/A	300' BEYOND RUNWAY END X 150' W

RUNWAY PROTECTION ZONE DIMENSIONS			
RWY END	EXISTING	PROPOSED	ULTIMATE
3	500' W X 1000' L X 700' DW	SAME	N/A
21	500' W X 1000' L X 700' DW	SAME	N/A
6	N/A	N/A	500' L X 1000' W X 700' DW
24	N/A	N/A	500' L X 1000' W X 700' DW

RUNWAY OBJECT FREE AREA			
RWY END	EXISTING	PROPOSED	ULTIMATE
3	400' W X 240' BEYOND RUNWAY END	500' W X 300' BEYOND RUNWAY END	N/A
21	400' W X 240' BEYOND RUNWAY END	500' W X 300' BEYOND RUNWAY END	N/A
6	N/A	N/A	500' W X 300' BEYOND RUNWAY END
24	N/A	N/A	500' W X 300' BEYOND RUNWAY END

EXISTING	
NO.	STRUCTURE
E1	PAP1
E2	BEACON (TO BE RELOCATED)
E3	WIND CONE

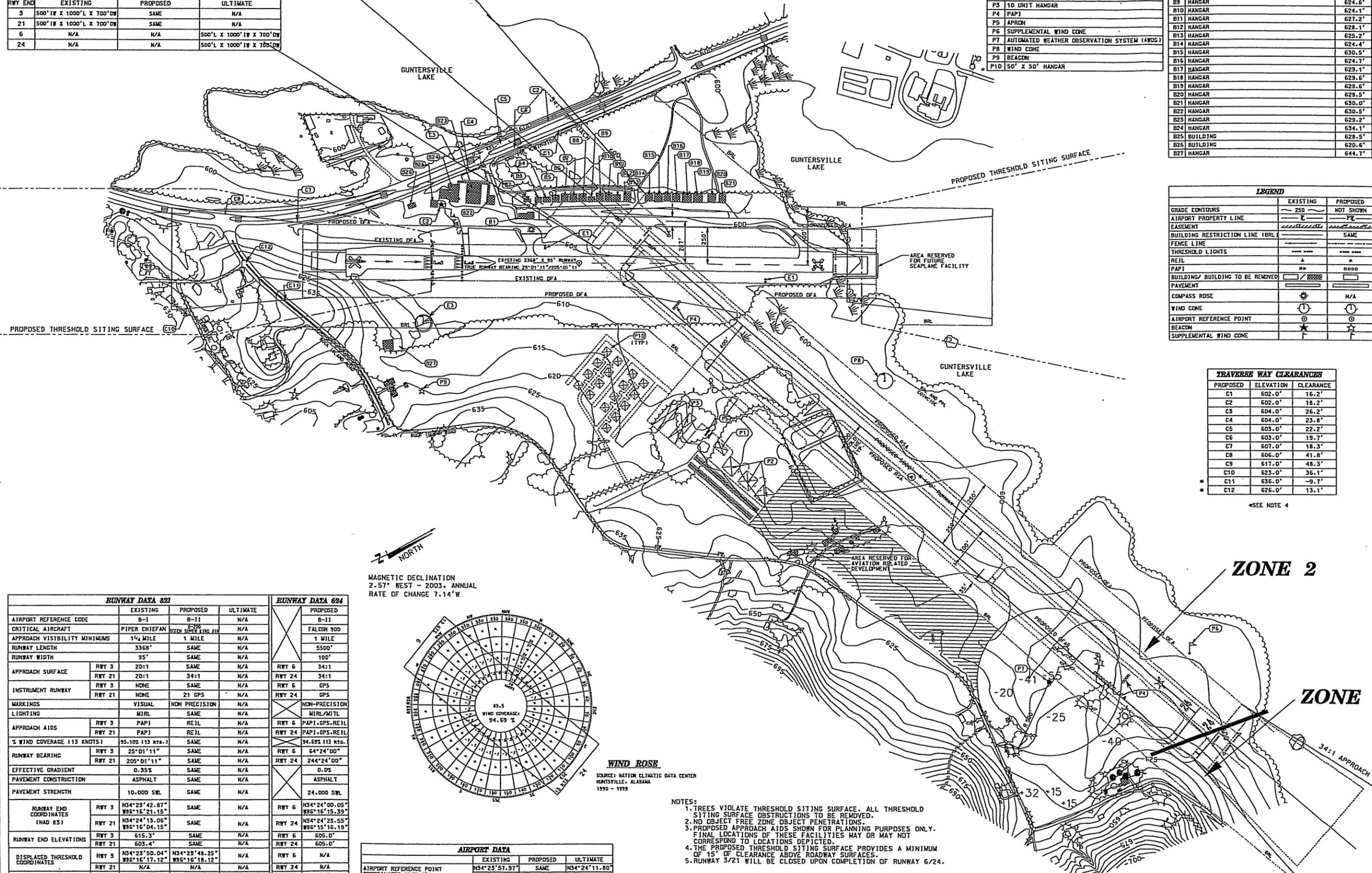
PROPOSED	
NO.	STRUCTURE
P1	TERMINAL BUILDING
P2	100' X 100' HANGAR
P3	10 UNIT HANGAR
P4	PAP1
P5	APRON
P6	SUPPLEMENTAL WIND CONE
P7	AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)
P8	WIND CONE
P9	BEACON
P10	50' X 50' HANGAR

BUILDING DATA		
NO.	STRUCTURE	ELEVATION
B1	TERMINAL/FBO	625.1'
B2	HANGAR	622.0'
B3	HANGAR	621.2'
B4	HANGAR	624.2'
B5	HANGAR	624.6'
B6	HANGAR	624.4'
B7	HANGAR	624.1'
B8	HANGAR	624.3'
B9	HANGAR	624.6'
B10	HANGAR	624.1'
B11	HANGAR	627.2'
B12	HANGAR	628.1'
B13	HANGAR	625.2'
B14	HANGAR	624.4'
B15	HANGAR	630.5'
B16	HANGAR	624.7'
B17	HANGAR	629.1'
B18	HANGAR	629.6'
B19	HANGAR	629.6'
B20	HANGAR	629.5'
B21	HANGAR	630.0'
B22	HANGAR	630.5'
B23	HANGAR	629.2'
B24	HANGAR	634.1'
B25	BUILDING	628.5'
B26	BUILDING	620.6'
B27	HANGAR	644.7'

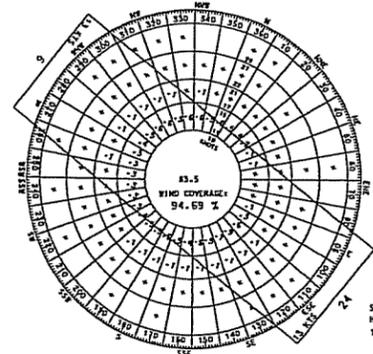
LEGEND		
	EXISTING	PROPOSED
GRADE CONTOURS	250	NOT SHOWN
AIRPORT PROPERTY LINE	---	---
EASEMENT	---	---
BUILDING RESTRICTION LINE (BRL)	---	SAME
FENCE LINE	---	---
THRESHOLD LIGHTS	---	---
REIL	---	---
PAP1	---	---
BUILDING/ BUILDING TO BE REMOVED	---	---
PAVEMENT	---	---
COMPASS ROSE	---	N/A
WIND CONE	---	---
AIRPORT REFERENCE POINT	---	---
BEACON	---	---
SUPPLEMENTAL WIND CONE	---	---

TRAVERSE WAY CLEARANCES		
PROPOSED	ELEVATION	CLEARANCE
C1	602.0'	16.2'
C2	602.0'	18.2'
C3	604.0'	26.2'
C4	604.0'	23.8'
C5	603.0'	22.2'
C6	603.0'	19.7'
C7	607.0'	18.3'
C8	606.0'	41.8'
C9	617.0'	48.3'
C10	623.0'	36.1'
C11	636.0'	-9.7'
C12	626.0'	13.1'

SEE NOTE 4



MAGNETIC DECLINATION  
2.57' WEST - 2003, ANNUAL  
RATE OF CHANGE 7.14' W

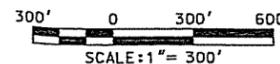


**WIND ROSE**  
SOURCE: NATIONAL CLIMATIC DATA CENTER  
GUNTERSVILLE, ALABAMA  
1950 - 1999

- NOTES:
- TREES VIOLATE THRESHOLD SITING SURFACE. ALL THRESHOLD SITING SURFACE OBSTRUCTIONS TO BE REMOVED.
  - NO OBJECT FREE ZONE OBJECT PENETRATIONS.
  - PROPOSED APPROACH AIDS SHOWN FOR PLANNING PURPOSES ONLY. FINAL LOCATIONS OF THESE FACILITIES MAY OR MAY NOT CORRESPOND TO LOCATIONS DEPICTED.
  - THE PROPOSED THRESHOLD SITING SURFACE PROVIDES A MINIMUM OF 15' OF CLEARANCE ABOVE ROADWAY SURFACES.
  - RUNWAY 3/21 WILL BE CLOSED UPON COMPLETION OF RUNWAY 6/24.

RUNWAY DATA 681				RUNWAY DATA 684			
	EXISTING	PROPOSED	ULTIMATE		EXISTING	PROPOSED	ULTIMATE
AIRPORT REFERENCE CODE	B-1	B-11	N/A		B-11		
CRITICAL AIRCRAFT	PIPER CHIEFAN	7200	N/A		FALCON 900		
APPROACH VISIBILITY MINIMUMS	1 1/4 MILE	1 MILE	N/A		1 MILE		
RUNWAY LENGTH	3368'	SAME	N/A		5500'		
RUNWAY WIDTH	95'	SAME	N/A		100'		
APPROACH SURFACE	RWY 3 20:1	SAME	N/A		RWY 6 34:1		
	RWY 21 20:1	34:1	N/A		RWY 24 34:1		
INSTRUMENT RUNWAY	RWY 3 NONE	SAME	N/A		RWY 6 GPS		
	RWY 21 NONE	21 GPS	N/A		RWY 24 GPS		
MARKINGS	VISUAL	NON PRECISION	N/A		NON-PRECISION		
LIGHTING	MJRL	SAME	N/A		MJRL/MJTL		
APPROACH AIDS	RWY 3 PAP1	REIL	N/A		RWY 6 PAP1, GPS, REIL		
	RWY 21 PAP1	REIL	N/A		RWY 24 PAP1, GPS, REIL		
% WIND COVERAGE (13 KNOTS)	95.10% (113 Kts.)	SAME	N/A		94.69% (113 Kts.)		
RUNWAY BEARING	RWY 3 25° 01' 11"	SAME	N/A		RWY 6 64° 24' 00"		
	RWY 21 205° 01' 11"	SAME	N/A		RWY 24 244° 24' 00"		
EFFECTIVE GRADIENT	0.35%	SAME	N/A		0.0%		
PAVEMENT CONSTRUCTION	SAME	SAME	N/A		ASPHALT		
PAVEMENT STRENGTH	10,000 SWL	SAME	N/A		24,000 SWL		
RUNWAY END COORDINATES (NAD 83)	RWY 3 N34° 23' 42.87" W86° 16' 21.15"	SAME	N/A		RWY 6 N34° 24' 00.05" W86° 16' 15.39"		
	RWY 21 N34° 24' 13.06" W86° 16' 04.15"	SAME	N/A		RWY 24 N34° 24' 23.55" W86° 15' 16.19"		
RUNWAY END ELEVATIONS	RWY 3 615.3'	SAME	N/A		RWY 6 605.0'		
	RWY 21 603.4'	SAME	N/A		RWY 24 605.0'		
DISPLACED THRESHOLD COORDINATES	RWY 3 N34° 23' 50.04" W86° 15' 17.12"	N34° 23' 48.25" W86° 15' 18.12"	N/A		RWY 6 N/A		
	RWY 21 N/A	N/A	N/A		RWY 24 N/A		
DISPLACED THRESHOLD ELEVATIONS	RWY 3 611.0'	612.0'	N/A		RWY 6 N/A		
	RWY 21 N/A	N/A	N/A		RWY 24 N/A		
TOUCH-DOWN ZONE ELEVATIONS	RWY 3 N/A	N/A	N/A		RWY 6 605.0'		
	RWY 21 N/A	612.0'	N/A		RWY 24 605.0'		

AIRPORT DATA			
	EXISTING	PROPOSED	ULTIMATE
AIRPORT REFERENCE POINT COORDINATES (NAD 83)	N34° 23' 51.97" W86° 16' 12.65"	SAME	N34° 24' 11.80" W86° 15' 45.79"
MEAN MAX. TEMP., HOTTEST MONTH	90°F	SAME	SAME
AIRPORT ELEVATION	615'	SAME	605.0'
NAVIGATIONAL AIDS	GPS, BEACON	SAME	SAME



CONSTRUCTION NOTICE REQUIREMENT  
 TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA REVIEW TAKES APPROXIMATELY 60 DAYS.

AIRPORT LAYOUT DRAWING  
 GUNTERSVILLE MUNICIPAL - JOE STARNES FIELD  
 GUNTERSVILLE, ALABAMA

DR.	CHK.	DATE	DESCRIPTION
		08/29/03	ORIGINAL SUBMIT
		09/02/03	REVISIONS
		09/03/03	REVISIONS
		09/08/03	REVISIONS
		09/09/03	REVISIONS

Figure 2

Although the airport currently supports a limited amount of turbine aircraft traffic, operations undertaken by turbine-powered aircraft are constrained due to insufficient runway length. In most cases, operators of turbine aircraft cannot use the airport due to performance or insurance restrictions. The general aviation turbojet aircraft that currently visit the airport have substantial restrictions on the number of passengers, the amount of fuel, or the amounts of cargo the aircraft can accommodate. Reducing fuel loads results in decreased performance by impacting the aircraft's haul distance. Reducing the cargo carried penalizes aircraft efficiency and may result in the need for additional flights or use of extra aircraft.

### **Need for Improved Facilities**

The results of the Runway Justification Report as described in Appendix A indicate that an overall increase in based aircraft and annual aviation operations are projected for the airport. The ALD identified the need for additional facilities and improvements to provide a safe and modern airport for both existing and forecasted levels of aviation activity. The 2003 based aircraft and aircraft operations forecast were updated for this SEA to reflect current conditions and the expected based aircraft and aircraft operations for the year 2013. The updated forecast summary, presented in Table 1 shows an increase in based aircraft and aircraft operations for the ten-year period from 2003 to 2013. The increase in based aircraft and aircraft operations would be generated primarily by increases in local population and economic activity.

**Table 1**  
**AVIATION FORECAST SUMMARY**  
**Guntersville Municipal - Joe Starnes Field**

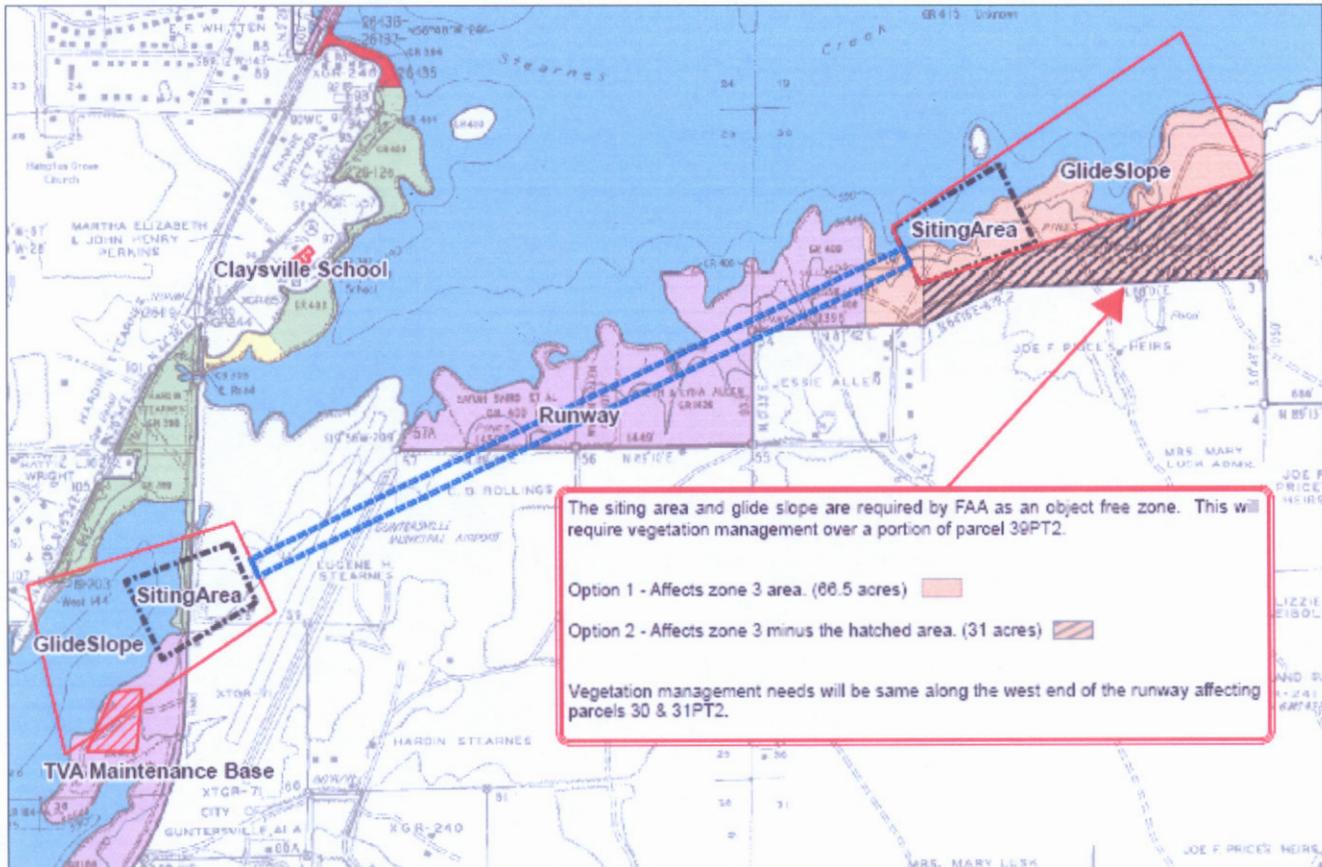
Year	2003	2013
Based Aircraft	40	43
Local Operations	2,924	3,230
Itinerant Operations	6,654	7,424
<b>Total Operations</b>	<b>9,618</b>	<b>10,697</b>

*Source: Barge Waggoner Sumner & Cannon, Inc.*

**PROPOSED ACTION**

The City of Guntersville intends to realign and expand the Guntersville Airport in Marshall County, Alabama to facilitate projected increased aviation activity at the airport and to support economic development efforts in Guntersville. The proposed airport expansion project area is 203 acres. The runway would be 5,000 feet long and 100 feet wide. Other proposed actions include construction of a new terminal building, new hangars, automobile parking area, and access roads for construction and associated airport improvement activities as described in the 2005 EA (BWSC 2005).

In addition to the 69.1 acres of TVA land initially designated for potential airport use in TVA's Guntersville Reservoir Land Management Plan, pursuant to FAA regulations, the revised scope also consists of converting approximately 47.15 acres of TVA property from forest to low-growing ground cover to control vegetation height for approaching aircraft. Beyond the runway, a vegetation management area would be developed to serve as the aircraft Siting Area and Glide Slope (**Figure 3**).



**Figure 3. Runway Siting Area and Glide Slope**

A Vegetation Management Plan (VMP) (Appendix C) was completed October 2008 with the following objectives:

1. Provide a safe approach to the Guntersville Airport by removing existing timber and understory vegetation allowing for the installation of suitable low growing vegetation.
2. Develop and maintain native plant communities for locations adjacent to the designated airport safety areas.
3. Preserve and maintain the aesthetic value of TVA lands.

This land would accommodate the safety areas that are required at both ends of the runway and would occur on the 47.15 acres of TVA property. The FAA designated safety areas include the Runway Safety Area (RSA), the Object Free Area (OFA), and the Runway Protection Zone (RPZ) (Table 2).

Table 2.  
FAA Designed Runway Safety Areas

Runway Configuration	Length (feet)	Width (feet)	Width (feet)
New Runway	5000	100	
Runway Safety Area (RSA)	300	150	
Runway Protection Zone (RPZ)	1000	500 (inward)	700 (outward)
Runway Object Free Area (OFA)	300	500	

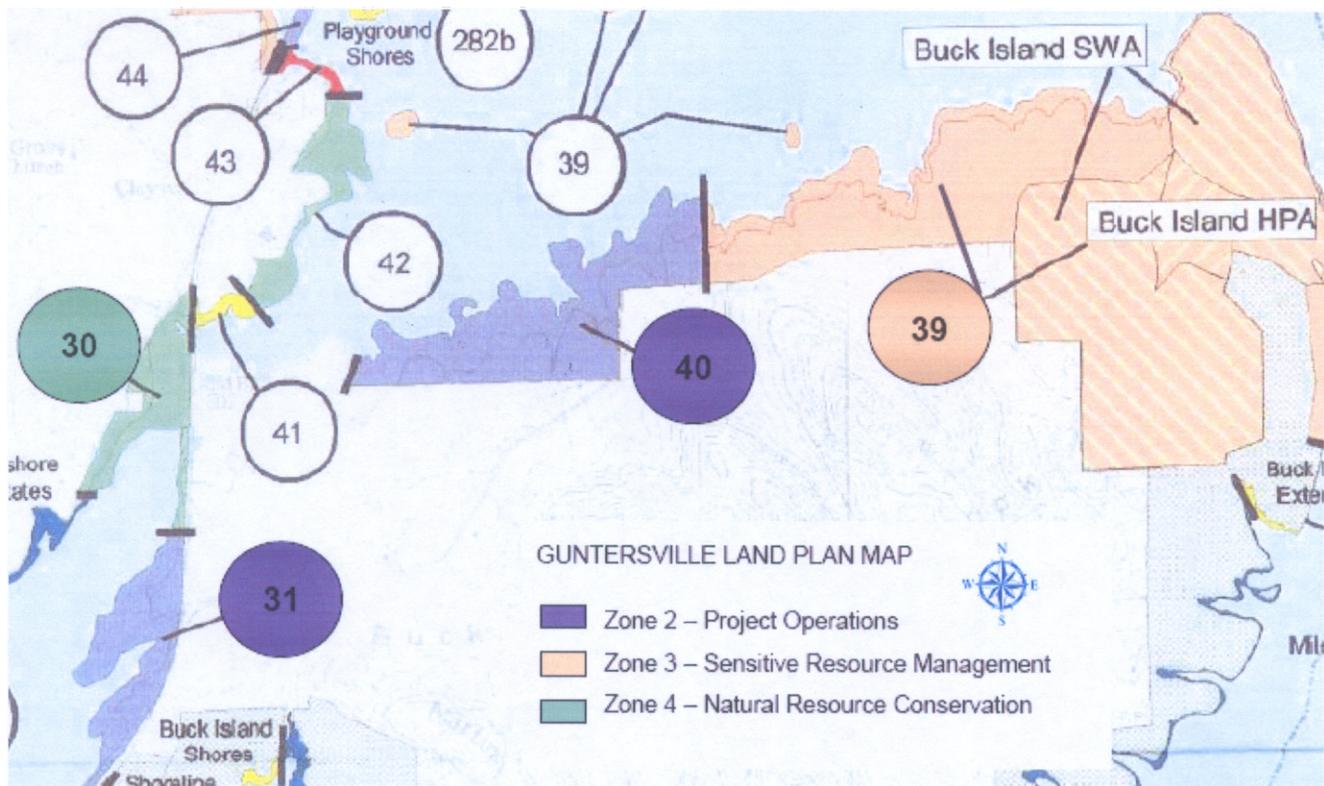
The RSA is the surface surrounding the runway intended to provide a measure of safety should an aircraft go beyond the runway. The RSA would be 150 feet wide, extending 75 feet on either side of the runway centerline, and would extend 300 feet beyond each end of the runway. This area is graded and void of all objects except those that are there for function in the area.

Extending beyond the RSA, on either side of the runway is the OFA. The OFA would be 500 feet wide, 250 feet on either side of the runway centerline and extending 300 feet beyond the runway. This area is similar to the RSA because the only objects allowed in this area are those that are there for function.

The RPZ is off the runway end and is used to as a safety feature to protect people and property on the ground. It extends 1,000 feet from the RSA and gradually widens from 500 feet to 700 feet at the end.

The remaining TVA property would be used as a wide-ranging vegetation management area (VMA). The FAA designated safety areas and the remaining VMA acreage would be maintained as described in the VMP (Appendix C). These areas are collectively referred to in the SEA as the VMA.

TVA received a formal land use application in August 2008, wherein the City requested approximately 116 acres of public land on four tracts of property (**Figure 4**) to implement its long-standing plans for airport expansion. TVA addressed the City's plans when developing the 2001 Guntersville Reservoir Land Management Plan and allocated 69.1 acres of land for airport uses. TVA has been working with the FAA and the City on this project since 2000.

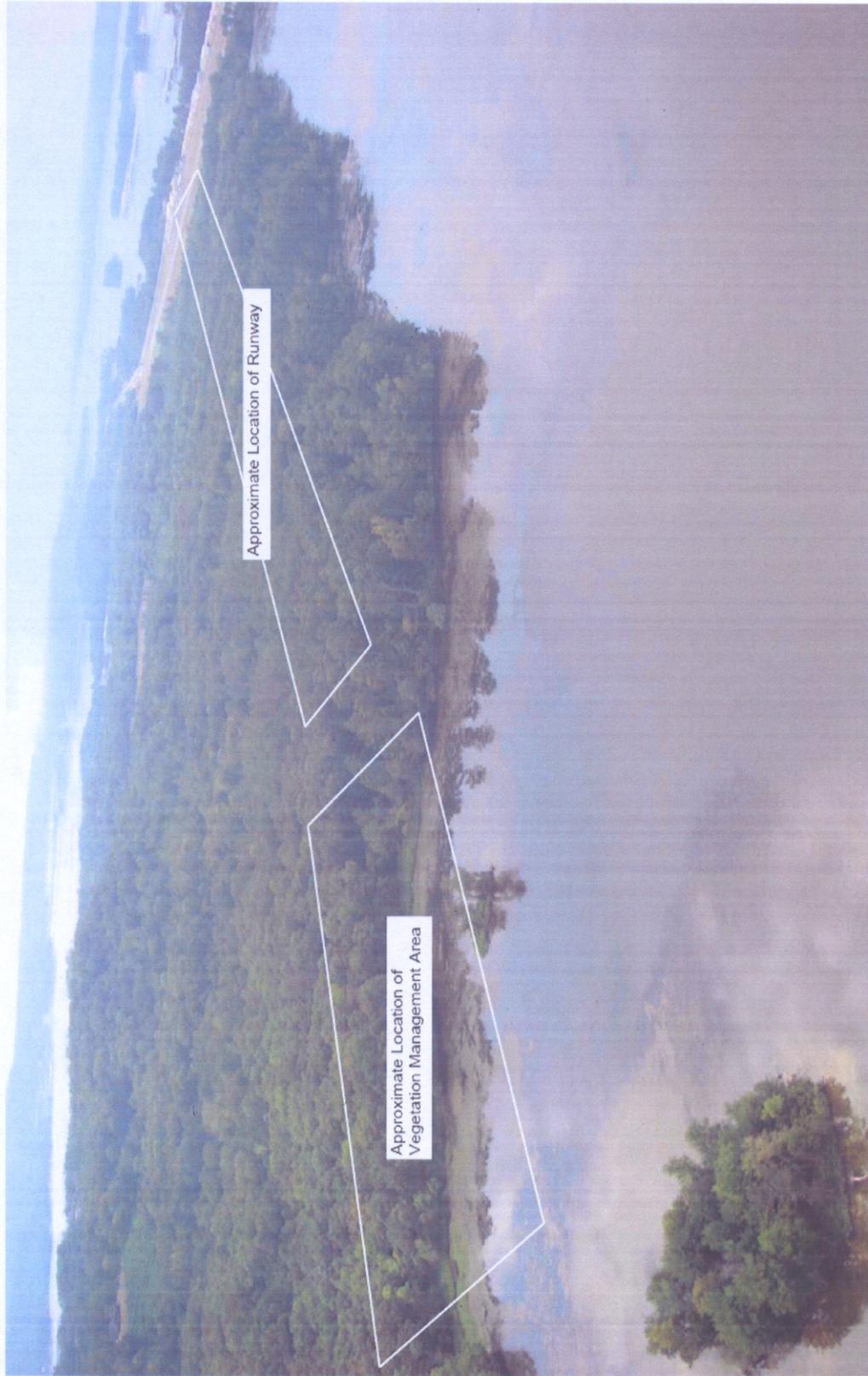


**Figure 4. Guntersville Reservoir Land Plan Map, Parcels 30, 31, 39, 40**

The City has requested the following amounts of TVA property for the proposed airport expansion project:

1. **69.1 acres of Parcel 40** (of 69.1 acres) - allocated Zone 2 – Project Operations
2. **0.25-acre portion of Parcel 31** (of 31.5 acres) – allocated Zone 2 – Project Operations (TVA Maintenance Base)
3. **1.6-acre portion of Parcel 30** (of 22 acres) – allocated Zone 4 – Natural Resource Conservation
4. **45.3-acre portion of Parcel 39** (of 349 acres) – allocated Zone 3 – Sensitive Resource Management (Buck Island)

The City has requested a land-use agreement with TVA, permitting vegetation management on 45.3 acres of Parcel 39 and 1.85 acres of Parcels 30 and 31. If TVA approves this request, these parcels of forested land would be converted to low-growing vegetation to make way for a 34:1 ratio instrument approach to the runway. Additionally, the City of Guntersville would require an easement over 69.1 acres of Parcel 40. **Figure 5** shows an aerial photograph of the proposed runway and VMA.



**Figure 5. Approximate Locations for Runway and Vegetation Management Area**

The proposed project involves mitigation measures for the following areas: Recreation, Visual Resources, Cultural Resources, Biotic Communities, and Wetlands and Streams. Planned mitigation measures are briefly summarized below:

- Recreation Impacts:*** A 400-foot segment of the Buck Island Small Wild Area access trail would be relocated to avoid the boundary of the VMA in order to reduce recreation impacts to insignificant levels.
- Visual Resources:*** In order to minimize lighting impacts to U.S. 431 travelers, the proposed airfield lighting along U.S. 431 would be aimed and shielded as permitted by FAA regulations. The limited impact would be achieved through the use of state-of-the-art lighting and vegetative barriers where permitted by FAA regulations.
- Cultural Resources:*** A cultural resources survey of the project area recommended one archeological site within the VMA be avoided during vegetation removal and maintenance activities. The Alabama State Historical Preservation Officer (AL SHPO) has concurred with TVA's findings.
- Biotic Communities:*** In order to minimize the potential for the spread of invasive plant species resulting from tree canopy removal, the VMA would be revegetated with non-invasive low-growing herbaceous plant species.
- Wetlands and Streams:*** Approximately 40.28 acres of jurisdictional wetlands and eight streams would be affected by the proposed project. A Wetland/Stream Mitigation Plan (WMP) (Appendix D) was developed in order to mitigate for unavoidable wetland and stream impacts.

## DECISIONS REQUIRED

This environmental review evaluates the environmental effects of the changes in project scope and supplements the 2005 EA. The FAA, as lead agency, and TVA and USACE, as cooperating agencies, must independently determine the adequacy of the SEA. Under the *National Environmental Policy Act* (NEPA), federal agency decision-makers must consider environmental effects of federal projects or private projects that require their approval. The FAA is required to consider environmental consequences of proposed federal airport improvement projects. TVA is required to consider the environmental consequences of the proposed uses of land under its control and activities requiring its approval under Section 26a. Additionally, the USACE, and the state of Alabama are required to consider environmental consequences under Section 404 and Section 401 of the *Clean Water Act*.

The USACE and TVA served as cooperating agencies in the preparation of the 2005 EA. The USACE adopted the EA; however, TVA did not adopt the 2005 EA because a formal application for Section 26a approval and land use request for the proposed land was not submitted by the City of Guntersville until August 2008. Upon approval, TVA and the USACE plan to adopt the final SEA. Furthermore, the FAA, TVA, and the USACE would each issue a separate FONSI.

The SEA examines the potential impacts of TVA granting the City of Guntersville a Section 26a approval and a renewable 30-year term easement over 116 acres for runway construction and development and maintenance of a VMA. Provided the City of Guntersville manages the TVA parcels proposed for a VMA in a manner that is compatible with existing sensitive resources, the proposed land use would be consistent with the 2001 Guntersville Reservoir Land Management Plan (TVA 2001) and the 2006 TVA Land Policy (TVA 2006). Furthermore, TVA is the lead agency for the *Natural Historic Preservation Act* (NHPA) Section 106 consultation.

## **ALTERNATIVES**

### **Alternatives Considered But Not Selected**

Alternatives for accomplishing the objectives of the proposed airport facilities expansion have been evaluated as part of this SEA. Seven alternatives were evaluated in the 2005 EA. Of all of the alternatives evaluated in the 2005 EA, only the Preferred Alternative has changed. Complete discussions of the other alternatives considered but not selected are included in Appendix E and include:

- 1.) Extend the Existing Runway to the South
- 2.) Extend the Existing Runway to the North
- 3.) New Airport Site
- 4.) Use of Albertville Municipal Airport
- 5.) Postponing the Project
- 6.) No Action Alternative

### **No Action Alternative**

Under the No Action Alternative, there would not be any new construction and improvements at the Guntersville Airport other than routine improvements and maintenance. TVA would not grant the City of Guntersville a 116-acre renewable 30-year term easement for the airport runway expansion project, including the development and maintenance of a VMA. Furthermore, TVA would not issue Section 26a permit approvals for the placement of fill material associated with runway construction. The USACE would not issue Section 404 permit approvals and ADEM would not issue Section 401 permit approvals.

Adoption of the No Action Alternative would not satisfy the existing and future demands of the aviation community or contribute to the development of an integrated transportation network capable of fully serving the needs of the City of Guntersville. As such, the No Action Alternative is not considered to be an acceptable alternative.

**Preferred Alternative - Runway Reorientation*****Preferred Alternative Scope Changes***

The scope of the Preferred Alternative in the SEA is similar the Preferred Alternative described in the 2005 EA with a few exceptions including the length of the runway, amount of land to be acquired, acres of wetlands impacted, and the number of streams impacted.

***The New Runway:*** The SEA proposes construction of a 5,000-foot runway instead of the 5,500-foot runway proposed in the 2005 EA.

***Land to be Acquired:*** The 2005 EA proposed acquisition of 172 acres, of which 85.87 acres of TVA property would be asked to be conveyed to the City for the proposed runway project. That proposed scope has changed to include the acquisition of approximately 203 acres, of which 116 acres of TVA property would require a term easement to be granted by TVA to the City.

***Wetland Impacts:*** There is a small change in the proposed wetland impacts. The 2005 EA indicated that there would be 3.17 acres of indirect wetland impact associated with the proposed AWOS. However, the proposed AWOS will be installed in the terminal area and therefore, there will be no wetland impact associated with its installation. The 2005 EA stated that the remaining 40.09 acres of jurisdictional wetlands in the project area will not be directly impacted; however, these wetlands may be indirectly impacted during construction activities. The SEA states that the remaining 43.26 acres of jurisdictional wetlands in the project area would not be directly impacted; however, these wetlands may be indirectly impacted during construction activities

***Stream Impacts:*** There would be eight of nine streams impacted instead of seven of eight streams as described in the 2005 EA.

### **Identification of the Preferred Alternative**

The intent of the Preferred Alternative is to provide the Guntersville area with an airport of adequate size and safety to meet the aviation needs of its existing users, be a catalyst for industrial recruitment and have the lowest impact on the local community and the environment as possible. The Preferred Alternative consists of reorienting the existing runway to a location parallel to the shoreline of Guntersville Reservoir. This new location would provide the space required to construct a new 5,000-foot runway. In addition, a 5,000-foot parallel taxiway and taxiway connectors would be constructed south of the existing runway. Also included in the Preferred Alternative are improvements to the RSA on both ends of the proposed runway (Runway 6/24), the installation of airfield lighting, construction of a new terminal area, and installation of an Automated Weather Observing System (AWOS) in the terminal area.

The Preferred Alternative was selected because it best addresses solutions to problems of the existing airport and fulfills the City of Guntersville's purpose and need. The problems include limited airport service to certain aircraft due to inadequate runway size and providing the public with a safe aviation facility that would accommodate a variety of general aviation aircraft, including business jets. Furthermore, this alternative would be the most cost effective alternative, and it ensures that the airport would be in compliance with the regulations directed by Advisory Circular 150/5300-13, *Airport Design*. Finally, the Preferred Alternative was selected due to the fact that there are no other practicable alternatives available.

### **EXISTING CONDITIONS AND TRENDS**

The review of existing socioeconomic and physical conditions in the project area provides a baseline for the evaluation of impacts related to the implementation of the proposed project. Demographic, land use, and transportation factors have been gathered from a variety of sources to aid the assessment of the nature and extent of anticipated social and environmental impacts.

### **Project Location**

Guntersville Airport is located approximately 3 miles northeast of the City of Guntersville in Marshall County, Alabama (See **Figure 1**). The airport is bordered by Guntersville Reservoir, a 69,000-acre water body to the north, Buck Island Road to the east and south, and U.S. 431 to the west. Guntersville

Reservoir is part of the Tennessee River System and is managed by TVA to provide a wide range of public benefits, including, year-round navigation, flood damage reduction, affordable electricity, improved water quality and water supply, recreation, and economic growth.

### **Population Characteristics**

Census data presented in Table 3 indicates that Marshall County has experienced an increase in population since 1995 and the projected population levels show that the growth trend is expected to continue. Guntersville is the second largest city in Marshall County with a population of approximately 8,267 in 2007.

**Table 3**  
**Marshall County Population Data and Estimates - 1995 to 2015**

<b>Year</b>	<b>Total (All Ages)</b>	<b>Change (%)</b>
1995	78,460	---
2000	82,420	4.80%
2005	85,050	3.09%
2010	94,319	9.83%
2015	100,304	5.97%

*Source: U.S. Census Bureau and Alabama State Data Center, 2009*

### **Economic Base and Activity**

As shown in Table 4, the per capita income based on current dollars has increased from \$19,897 in 1995 to \$27,582 in 2005 according to data provided by Woods and Poole Economics, Inc.

**Table 4**  
**Marshall County Per Capita Income - 1995 to 2015**

<b>Year</b>	<b>Per Capita Income (in current dollars)</b>
1995	\$19,897
2000	\$21,543
2005	\$27,582
2010	\$32,419
2015	\$40,063

*Source: Woods & Poole Economic, Inc., 2008*

Table 5 provides a breakdown of the number of persons employed in Marshall County based on one-digit industries as defined in the 1987 Standard Industrial Classification Manual (SIC). By 2005, the manufacturing industry employed the largest number with retail trade and the federal, state and local government ranking second and third, respectively. This trend is expected to continue through 2015.

**Table 5**  
**Marshall County Number of Persons Employed by Industry Type - 1995 to 2015**

	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>
<b>Farming</b>	2,178	2,005	1,900	1,910	1,938
<b>Forestry, Fisheries, and Others</b>	363	486	148	158	165
<b>Mining</b>	101	83	35	34	32
<b>Utilities</b>	90	110	121	131	136
<b>Construction</b>	2,889	2,713	2,667	2,887	3,008
<b>Manufacturing</b>	15,750	14,320	14,820	15,260	15,260
<b>Wholesale Trade</b>	1,678	1,840	1,727	1,695	1,607
<b>Retail Trade</b>	6,513	6,124	6,070	5,993	6,099
<b>Transportation and Warehousing</b>	736	902	1,081	1,059	1,083
<b>Information</b>	832	760	673	674	641
<b>Finance and Insurance</b>	1,087	1,141	1,196	1,231	1,255
<b>Real Estate, Rental, and Lease</b>	846	888	930	1,043	1,103
<b>Professional and Technical Services</b>	522	546	1,009	1,258	1,658
<b>Management</b>	17	17	46	55	55
<b>Administrative and Waste Services</b>	967	1,044	2,202	2,454	2,985
<b>Educational Services</b>	164	172	113	155	161
<b>Health Care and Social Assistance</b>	1,760	1,839	2,135	2,240	2,365
<b>Arts, Entertainment, and Recreation</b>	369	363	382	388	394
<b>Accommodation and Food Services</b>	2,340	2,306	2,587	2,811	2,921
<b>Other Services Except Public Admin.</b>	2,058	2,186	2,558	2,736	2,883
<b>Federal, State, and Local Government</b>	5,478	5,841	6,156	6,402	6,548

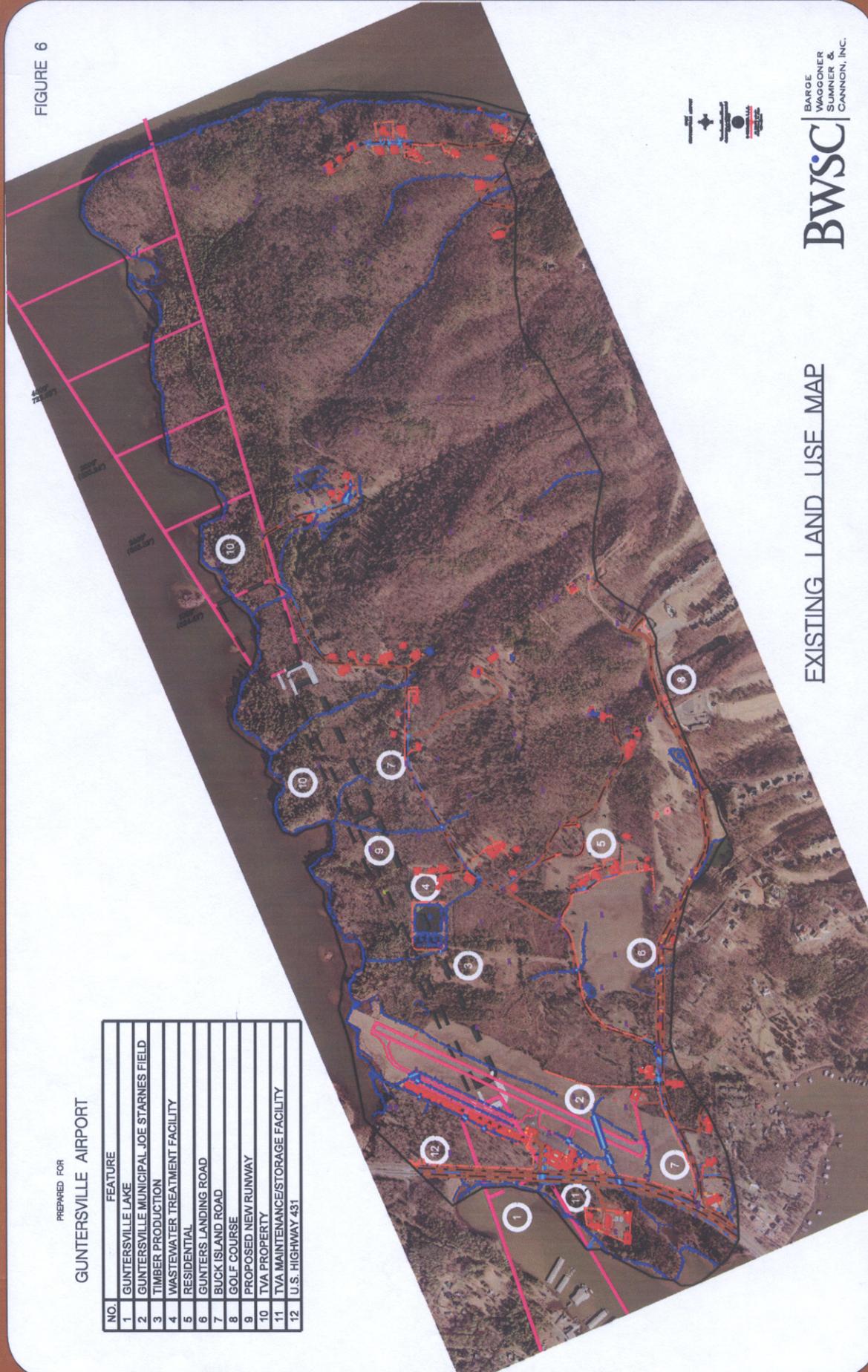
*Source: Woods & Poole Economic, Inc., 2008*

**Land Use**

Land use in the vicinity of the airport generally consists of residential and commercial land uses with areas of vacant/undeveloped land and land managed by TVA (**Figure 6**). Single-family residences are located along Buck Island Road and U.S. 431. A maintenance/storage facility operated by TVA is located just west of the airport across U.S. 431. The Claysville Junior High School is north of the airport across Guntersville Reservoir. A wastewater treatment facility is located just west of the school.

Gunter's Landing Golf Course is located south of the airport along Gunter's Landing Road. Other recreation areas in the vicinity include Marshall County Park No.1, Seibold Campground and Marina, Riverbend Marina, Lakeside Sailing Center, Anchorage Marina, Alfred Marina, and Guntersville Yacht Club.

FIGURE 6



PREPARED FOR  
**GUNTERVILLE AIRPORT**

NO.	FEATURE
1	GUNTERVILLE LAKE
2	GUNTERVILLE MUNICIPAL JOE STARNES FIELD
3	TIMBER PRODUCTION
4	WASTEWATER TREATMENT FACILITY
5	RESIDENTIAL
6	GUNTERS LANDING ROAD
7	BUCK ISLAND ROAD
8	GOLF COURSE
9	PROPOSED NEW RUNWAY
10	TVA PROPERTY
11	TVA MAINTENANCE/STORAGE FACILITY
12	U.S. HIGHWAY 431



**BWSC**  
 BARGE  
 WAGGONER  
 SUMNER &  
 CANNON, INC.

EXISTING LAND USE MAP

### **Natural Areas**

The proposed runway reorientation would cross a 45.3-acre portion of Parcel 39 on Buck Island. The TVA Guntersville Reservoir Land Management Plan (TVA 2001) indicates this 350-acre parcel is designated Zone 3 for sensitive resource management and contains two TVA Natural Areas, a small wild area (SWA) and a habitat protection area (HPA). The 45.3-acre portion of the tract is not within the SWA or HPA. SWAs are those areas on TVA lands that are identified as having exceptional natural, scenic, or aesthetic qualities, that are suitable for low-impact public use, and where appropriate development is undertaken, e.g., foot trails, signs, parking areas, or backcountry campsites, to provide better access or additional uses. Efforts are made to encourage public use and to interpret natural features of the area for visitors. HPAs are those areas on TVA lands that are established to protect populations of species that have been identified as threatened or endangered by the U.S. Fish & Wildlife Service (USFWS) or that are rare to the state in which they occur. Unusual or exemplary biological communities or unique geological features also receive protection under this category.

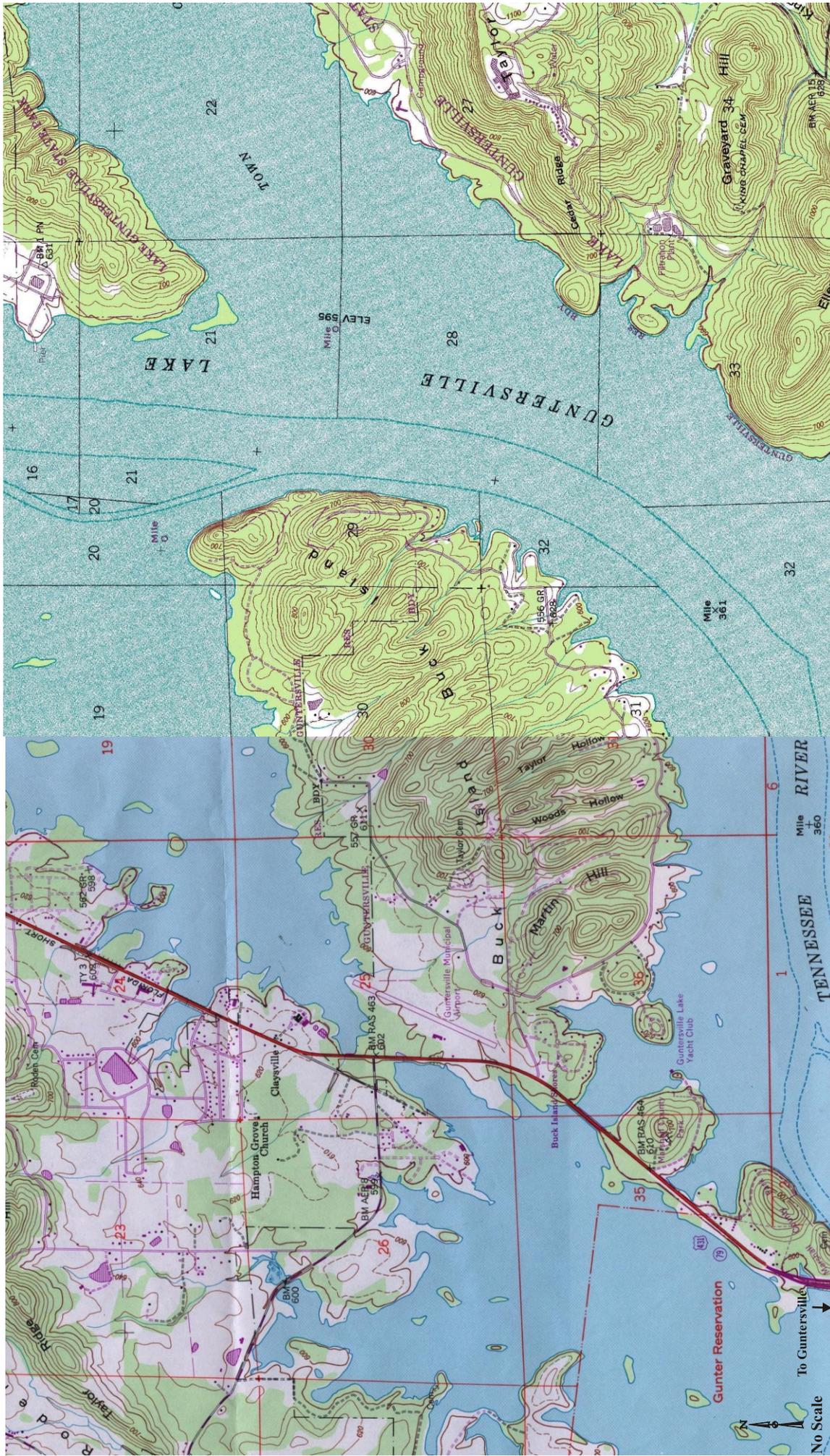
Additionally, the Lake Guntersville State Park Resort and Convention Center is approximately 2.0 miles northeast of the 45.3-acre requested area of Parcel 39. This almost 6,000-acre park is located at Tennessee River Mile (TRM) 362.0 and is situated on a 500-foot bluff overlooking Guntersville Reservoir. It is managed for intense recreational use by the Alabama Department of Conservation and Natural Resources.

### **Growth Trends**

The Marshall County area has experienced steady growth in population and economic activity. The socioeconomic trends are expected to continue for the foreseeable future. As population and economic growth continues, it is expected that residential, industrial and commercial land uses would develop in the vicinity of the airport.

**Topography and Natural Features**

The airport is located on Buck Island, adjacent to Guntersville Reservoir. The topography of Buck Island is very hilly with the exception of the western section which is relatively level. The elevation of the project area ranges from 520 to 640 feet above mean sea level, with the highest point on Runway 06/24 being 613 feet above mean sea level. Land is generally level with areas of open fields, pine tree stands, oak and cedar forests, and wet low lying areas. According to the Marshall County Soil Survey, several soil associations can be found in the vicinity of the airport that generally consist of heavy, sticky silty clay soils. Guntersville Reservoir is located adjacent to the approach end of Runway 21. The topography of the project area is shown in **Figure 7**.



Source: USGS Topographic Maps: Mount Carmel, AL (1948, photorevised 1983) and Columbus City, AL (1947, photorevised 1983)



**Topographic Map**  
Guntersville Municipal - Joe Starnes Field  
Guntersville, Alabama

**Figure**  
7

## **SOCIAL AND ENVIRONMENTAL CONSEQUENCES**

### **Aircraft Noise**

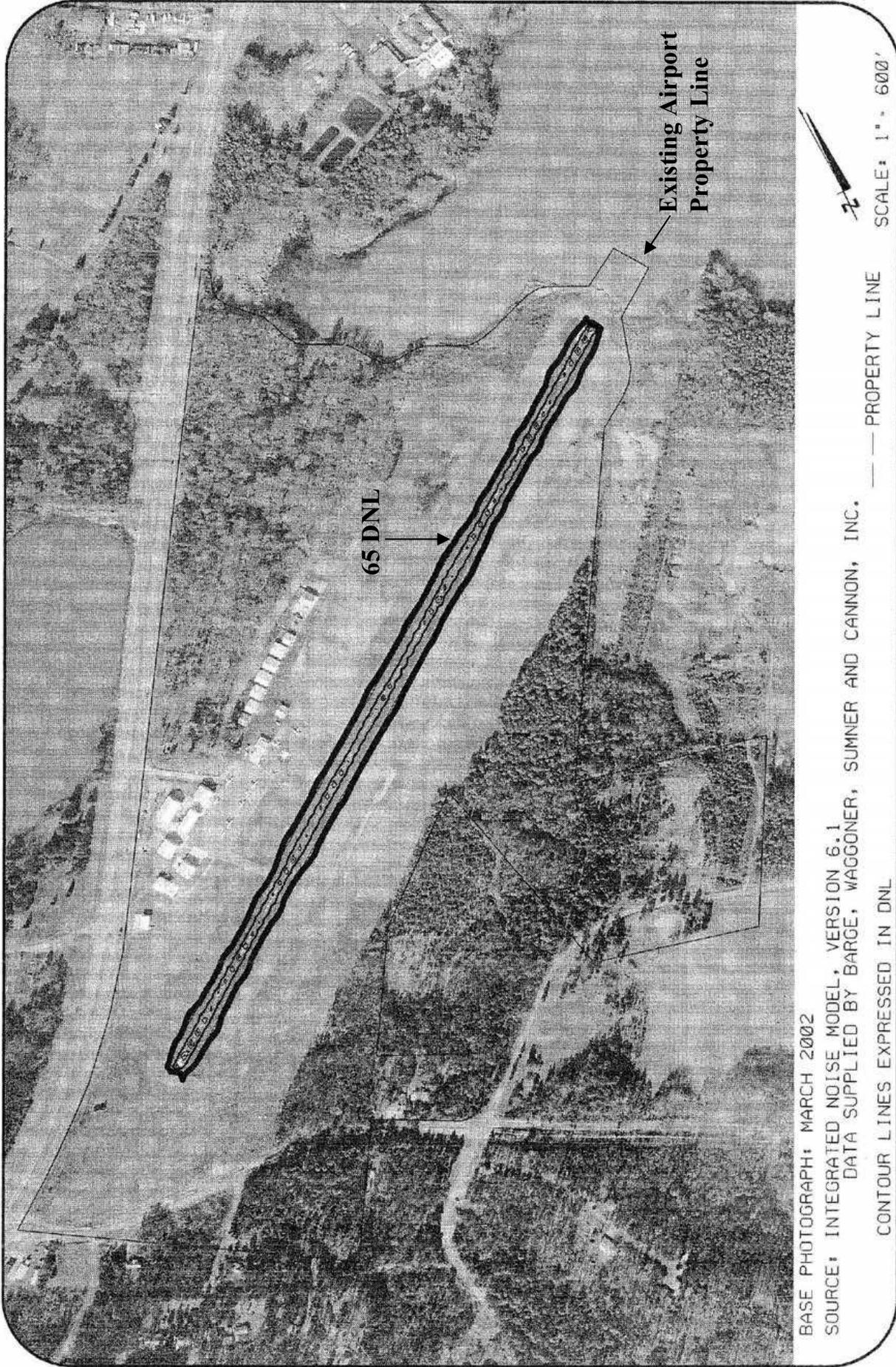
A computer-based model was employed to determine existing and projected noise levels at the Guntersville Airport and to help identify any incompatible land uses. The noise analysis was accomplished by using the Integrated Noise Model (INM), Version 6.1. The INM program is a valuable computer-based noise simulation instrument approved by the FAA for delineating and defining the impact of aircraft noise on environs on or near airports. Noise exposure maps are useful as a planning tool for both the airport operator and for planning the growth of the communities in the vicinity of the airport.

The INM program uses aircraft noise data, performance data, and operations data as the main categories of input to calculate noise levels. The operational inputs required by the INM computer model include the following: runway configuration, runway utilization percentages, flight track descriptions and utilization rates, and aircraft activity categorized by level and mix of aircraft operations. The noise analysis was based on inputs for the 2003 base year and for the year 2013 with the Preferred Alternative in place.

The Day/Night Average Sound Level (DNL) was used for this noise analysis. It is the most commonly used noise metric. The DNL noise metric reflects the cumulative noise levels compiled and averaged over a 24-hour period. It is weighted to account for the quieter background noise levels occurring from 10:00 p.m. to 7:00 a.m., with a 10-decibel penalty applied for that time period. Noises occurring at night are recognized as more likely to disturb people than the same noise occurring during the day.

Once the noise is modeled by the INM, the DNL levels are depicted as contour lines centered on the runway. The contours can then be superimposed on a map to identify incompatible land uses. The numbers used in quantifying noise levels in the DNL analysis have been associated with different degrees of impact. Generally, noise levels of 65 DNL and higher are considered to be incompatible with most noise sensitive land uses such as residential.

The results of the analysis show that noise levels of 65 DNL and higher are being generated by the current level of aviation activity. However, as shown in **Figure 8**, 2003 Noise Contours, the 65 DNL contour does not extend beyond the airport's property boundary.



BASE PHOTOGRAPH: MARCH 2002

SOURCE: INTEGRATED NOISE MODEL, VERSION 6.1  
 DATA SUPPLIED BY BARGE, WAGGONER, SUMNER AND CANNON, INC.

CONTOUR LINES EXPRESSED IN DNL



**2003 NOISE CONTOURS**  
**GUNTERSVILLE MUNICIPAL - JOE STARNES FIELD**  
**GUNTERSVILLE, ALABAMA**

**Figure 8**

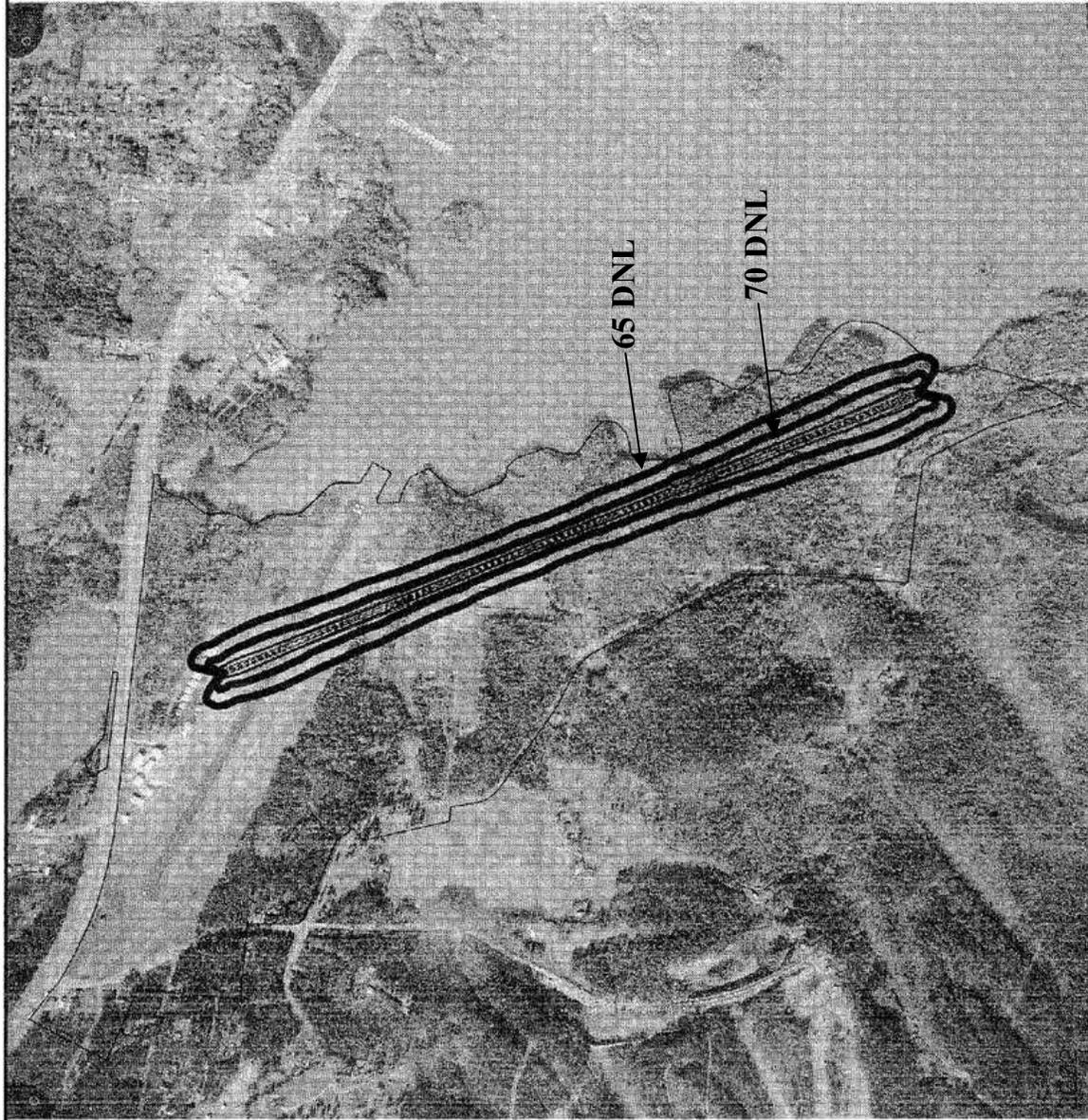
The noise analysis conducted for the level of activity projected for the year 2013 show that aircraft operations would continue to produce noise levels of 65 DNL and higher. As indicated on **Figure 9, 2013 Noise Contours**, the noise contours are larger than the contours generated for 2003 operations; however, the 65 DNL contour extends slightly beyond the airport's eastern boundary into Guntersville Reservoir.

The increase in the size of the noise exposure contours is a result of increased aircraft operations. The forecasted increase in noise levels would not create any incompatible land uses. The projected 65 DNL contour would not include any residences, schools, churches, or other noise sensitive land uses. Based on the noise analysis, the existing and forecasted aircraft noise levels do not constitute an impact on any existing or planned noise sensitive receptors or create a conflict with existing or proposed land uses.

Although the 65 DNL would not extend beyond the airport's property boundary, the proposed runway reorientation would increase the noise level within the Buck Island SWA/HPA, which is approximately 1,600 feet from Parcel 39. Although this distance provides a sufficient buffer to protect the resources of the natural areas, the increased noise from a closer runway would diminish the quality of user experience and opportunities currently offered in the SWA/HPA, especially for nature-seeking users.

Additionally, because the changes from the proposed expansion would be long-term, a decrease in the quality of user experience would be long-term and would potentially result in decreased use of the SWA/HPA over time. However, the extent of loss to the quality of user experience and opportunities would depend somewhat on the frequency of flights, types of aircraft, and other noise-producing factors (e.g., motorized watercraft on Guntersville Reservoir) in the area.

It also is likely that not all users would be adverse to the increase in noise level and that some users would find the SWA shoreline a vantage point to observe both aircraft and watercraft activity. An increase in noise would result in minor and an insignificant impact to the SWA/HPA. Because the proposed runway expansion is of sufficient distance from Lake Guntersville State Park, no significant impacts are anticipated, and increased noise levels are anticipated to be negligible.



BASE PHOTOGRAPH: MARCH  
 SOURCE: INTEGRATED NOISE MODEL, VERSION 6.1  
 DATA SUPPLIED BY BARGE, WAGGONER, SUMNER AND CANNON, INC.  
 CONTOUR LINES EXPRESSED IN DNL



SCALE: 1" = 1500'

— — — PROPERTY LINE



**2013 NOISE CONTOURS**  
**GUNTERSVILLE MUNICIPAL – JOE STARNES FIELD**  
**GUNTERSVILLE, ALABAMA**

**Figure**  
**9**

**Compatible Land Use**

The Guntersville Airport is located outside of the corporate boundaries of the City of Guntersville. The airport is considered an integral component of the local transportation system and a key element for the continued economic prosperity of the City of Guntersville and Marshall County. The proposed runway would not create any significant land use conflicts or incompatibilities with land use ordinances in the vicinity of the airport. Other than the closure of an existing wastewater treatment plant, no major shifts or changes in land use are anticipated as a result of implementing the proposed runway construction project. The wastewater would be routed to a nearby treatment facility.

The location of the proposed runway is not expected to cause any significant impact to the Gunter's Landing Golf Course to the existing vegetative buffer between Buck Island Road and the golf course. In addition, no significant impacts are anticipated for the recreation areas previously mentioned that are located in the vicinity of the airport which include Marshall County Park No.1, Seibold Campground and Marina, Riverbend Marina, Lakeside Sailing Center, Anchorage Marina, Alfred Marina, and the Guntersville Yacht Club.

It is expected that the areas surrounding the airport would remain primarily undeveloped with scattered residential development. In the Guntersville Reservoir Land Management Plan (TVA 2001), TVA public land in the immediate vicinity of the airport is allocated for TVA Project Operations (Zone 2), Natural Resource Conservation (Zone 4), and Sensitive Resource Management (Zone 3).

While TVA Natural Areas would be considered a compatible land use of the proposed airport runway expansion, the removal of trees within the airport VMA would necessitate the relocation of a section of a hiking trail that provides access to the SWA (Recreation Section, page 26).

Relocation of the hiking trail would not be a significant impact to the natural area.

### **Social Impacts**

The proposed expansion and realignment of the runway would not have an adverse effect on community access nor would the proposed project divide any communities or neighborhoods. The proposed project would not appreciably alter the layout, character, or quality of other neighborhoods or established subdivisions within the project area. Although implementation of the Preferred Alternative would cause displacement of approximately eight single-family residences and a small wastewater treatment facility, the impacted individuals would receive relocation assistance from the FAA set forth in 49 CFR Part 24, *Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs*. The policies provide for fair, impartial, and consistent property appraisals and negotiation practices. Implementation of the Preferred Alternative would not disrupt orderly, planned development or affect the delivery of public services, including police, fire, and emergency services; public transit systems; and school bus services. No significant social impacts are anticipated under implementation of the Preferred Alternative.

### **Recreation Impacts**

The portions of Parcels 30 and 31 needed to accommodate airport expansion are adjacent to U.S. 431 and receive little to no informal recreation use. Because the requested tracts are small and receive limited use, implementation of low growth vegetation management would have no significant impacts on recreation opportunities these tracts presently offer visitors.

The proposed airport improvements would cross 45.3 acres of Parcel 39 on Buck Island. This parcel is zoned for sensitive resource management in TVA's Guntersville Reservoir Land Management Plan and contains two TVA Natural Areas (see Natural Areas Section, page 22).

The 45.3-acre portion of Parcel 39 receives some limited informal recreation use such as shoreline fishing, picnicking, and hunting. Implementation of the VMP (Appendix C) on the majority of this tract would have some minor impact on current informal recreation use patterns. Because use levels are low and the land would continue to be available for informal public recreation, these impacts would be insignificant. However, the proposed VMA would directly impact a 400-foot segment of the Buck Island SWA access trail. Removal of tree canopy and routine management to sustain low

growing vegetation along this section of the trail would have an adverse impact on recreation users. Therefore, relocation of this part of the trail to skirt the boundary of the vegetation management zone would be required to minimize impacts.

### ***Recreation Mitigation Measures***

The 400-foot segment of the Buck Island SWA access trail relocation would include a 75- to 100-foot buffer as shown on the trail relocation conceptual map (Appendix F) between the new trail alignment and the southeast border of the VMA and require construction of an estimated 700 to 800 feet of new trail. Once construction activities begin in the area associated with the proposed trail relocation, specific relocation design and implementation will be coordinated by TVA and BWSC. The implementation of the proposed trail relocation would minimize adverse impacts to recreation; therefore, adoption of the Preferred Alternative would not have a significant impact on recreation.

### **Visual Resources**

The airport site topography is mostly flat and provides a visual contrast to the steep ridgelines of adjacent Buck Island to the east and the back-lying properties along Guntersville Reservoir to the north and east. The shoreline along the proposed airport expansion area is heavily vegetated with predominately loblolly and shortleaf pine, and various oak and hickory species.

The proposed project area can be seen from various positions by motorists and residents north along U.S. 431, from the reservoir to the north up to background distances (4 miles and beyond) and residents along the eastern and western sides of Guntersville Reservoir. Visitors to Lake Guntersville State Park to the east have views in the middleground distance (0.5 mile to 4 miles). Visitors to the Buck Island SWA and HPA would also have views of the proposed expansion project in the foreground distances. The Buck Island SWA and HPA are approximately 0.3 mile and 0.6 mile northeast of the 45.3-acre portion of Parcel 39, respectively. Scenic attractiveness is common for the proposed development area. Scenic integrity is moderate.

Visual consequences are examined in terms of visual changes between the existing landscape and proposed actions (development project), sensitivity of viewing points available to the public, their viewing distances, and visibility of proposed changes. Scenic integrity indicates the degree of intactness or wholeness of the landscape character. These measures help identify changes in visual

character based on commonly held perceptions of landscape beauty, and the aesthetic sense of place. The foreground, middleground, and background viewing distances were previously described.

Construction, operation, and long-term maintenance of the new airport expansion project would likely result in minor visual impacts. Removal of existing mature vegetation from Parcels 40, 39, 30 and 31 would result in an intermediate percentage of visible shoreline that would be impacted and adjacent TVA land allocated for Project Operations (Parcel 40) would support such a use. Discernible visual contrast would be most noticeable from the reservoir in the foreground of the proposed project area.

For motorists along U.S. 431, there may be some minor visual impacts as a result of land-clearing and construction. These land disturbances would be contiguous to existing development at the airport and would be viewed as a broader pattern of human alteration in the landscape. Residents along the eastern and western shorelines of Guntersville Reservoir would have foreground and middleground views of the new development. For residents and recreationists on the reservoir to the north, views would be up to background distances and would be visually insignificant as distance increases. Visitors to the Buck Island SWA and HPA would notice a decline in scenic integrity as a result of vegetation removal from the project area. However, scenic class would likely not drop by two levels or more, the threshold of significance.

The proposed airport expansion would require a number of ancillary developments aside from the runway itself. New construction would include a variety of hangars at various locations and a fuel farm facility off Buck Island Road.

The airport expansion project would require lighting along the runway that would be mandated by FAA regulations. Visual impacts as a result of an increase in night-sky brightness would be unavoidable for the runway operation.

### ***Visual Resources Mitigation Measures***

In order to minimize visual impacts, the follow mitigation measures would be implemented. All lights used (including headlights and pole-mounted, equipment-mounted or structure-mounted floodlights) are to be fully shielded or have internal low-glare optics, such that no light is emitted

from the fixture at angles above the horizontal. For construction, this may require temporarily retrofitting headlights, floodlights, and other fixtures with external visors and side-shields. Shielded Low Pressure Sodium should be used during the construction and operational phases. Area lighting and parking lot poles should be no taller than 40 feet, unless they are lighting objects taller than 40 feet. In such cases pole heights would be reduced to the lowest functional height consistent with the lighting objective.

Furthermore, building exterior color schemes would be visually compatible with natural background colors (hues in the dark green or brown range) and provide dark roofs on all structures, as acceptable by the FAA.

The airport expansion project will require lighting along the runway that will be mandated by FAA regulations. Visual impacts as a result of an increase in night-sky brightness will be unavoidable for the runway operation. Lighting for proposed access roads and ancillary buildings would be insignificant if the mitigation measures in the mitigation section of this document are implemented.

This would include fully shielding all lights and providing low-glare optics that does not emit light above the horizontal plane. All lights for access roads and building exteriors should be Low Pressure Sodium with poles not exceeding 40 feet in height.

Visual impacts of the operation, construction, and maintenance of the proposed airport expansion would be visually insignificant with the implementation of mitigation measures described above. There may be some minor visual discord during the construction period due to an increase in personnel and equipment and the use of laydown and materials storage areas. These minor visual obtrusions would be temporary until completion of construction activities. Therefore, no significant visual impacts are anticipated as a result of this project.

### **Relocation Impacts**

The implementation of the Preferred Alternative would require the use of approximately 203 acres. As discussed in the 2005 EA, Implementation of the Preferred Alternative would cause the displacement of approximately eight single-family residences and one business, the wastewater treatment plant. Further information, including the Proposed Land Acquisition Map that depicts the structures to be relocated is in the 2005 EA.

The FAA's policies and procedures used to acquire property and provide relocation assistance are based on the requirements set forth in 49 CFR Part 24, *Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs*. The policies provide for fair, impartial, and consistent property appraisals and negotiation practices. Financial assistance is available to compensate the landowner and tenants for moving costs, and if applicable, reestablishment expenses. The additional land acquired from TVA would not displace any residences or businesses. Because the FAA's policies and procedures afford fair and relocation practices, no significant impacts are anticipated.

### **Socioeconomic Impacts**

The potential for attracting new businesses and industries to the area would be presented by providing the facilities necessary for the support of regular business jet operations at the airport, and the ability to handle the operations safely and efficiently. There is also the potential, although modest, that the expansion would influence such factors as shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity. These secondary impacts are not anticipated to be of a level of significance that would require detailed analysis and are occurring anyway.

### **Environmental Justice**

The EPA defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group share bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

According to U.S. Census Bureau, the project area is located within Census Tract 302.02. Based on 2000 U. S. Census Bureau data (Appendix I), between 11 and 36 people live in the area to be acquired for the proposed airport improvements. Of these residents, 100 percent are white. Approximately 182-329 people live in the area south of Buck Island Road adjacent to the project

area. Roughly 96.9 percent to 99.1 percent of these residents are white. In Census Tract 302.02, the 1999 per capita household income was \$18,993. The Census website search would not allow isolation of Buck Island Road to further refine income information. Based on the 2000 U.S. Census information, the proposed improvements at Guntersville Airport would not disproportionately impact any minority or low income group of people.

### **Air Quality**

The provisions in FAA Advisory Circular (AC) 150/5370-10 *Standards for Specifying the Construction of Airports*, Item p-156, would be used to minimize any short-term impacts from dust and open burning.

As stated in the 2005 EA, coordination was conducted with the ADEM Air Division in August 2002 (BWSC 2005) to determine the air quality effects of the proposed airport expansion. The response indicated that Marshall County and therefore the entire project area are in attainment of the current National Ambient Air Quality Standard (NAAQS) for criteria pollutants. ADEM concluded that based on the current standards and the project information provided, the project was not anticipated to affect compliance with NAAQS. Furthermore, the attainment status for Marshall County has not changed since the 2002 coordination was completed during the preparation of the original EA. Therefore, no additional impacts associated with the NAAQS compliance and air quality impacts are anticipated.

The FAA utilizes annual General Aviation (GA) operations in excess of 180,000 general aviation and air taxi annual operations per year as the threshold for the requirement to conduct air quality analysis, as identified in Chapter 1, Air Quality, pp. 12, of the FAA Environmental Desk Reference for Airport Actions (FAA 2007). The proposed annual operations for the airport are forecast at 10,697 for the year 2013. Based on the forecast GA operations being less than 180,000 general aviation operations annually, it is exempt from detailed analysis with respect to NAAQS. Because the airport is not expected to exceed these milestones, no impact on air quality classifications are anticipated from aircraft operations.

**Water Quality**

The *Clean Water Act of 1977*, as amended, requires proper authorities to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment management plans and practices, and issue permits for discharges and for dredge and fill operations.

Potential adverse impacts to surface and ground water quality are normally related to those resulting from construction activities and the maintenance and use of the new facility. Potential construction-related impacts in waterways include increased turbidity, sedimentation, the improper use of fertilizers, and accidental releases of petroleum products from aircraft, equipment, and machinery.

Proper erosion control measures would be taken to minimize the potential for adverse impacts on aquatic organisms and habitats. A National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Storm Water Discharges from Construction Activities would be obtained from ADEM prior to construction activities.

Section 404 of the *Clean Water Act of 1977* (33 U.S.C. § 1344) prohibits filling activities in waters of the United States, including wetlands, without securing a permit from the USACE. It has been determined that jurisdictional wetlands would be directly impacted by the proposed projects; therefore, a Section 404 permit would be required prior to construction. In addition, portions of eight of the nine jurisdictional streams identified within the project area would be impacted by the proposed improvements. The WMP (Appendix D) indicates on-site stream mitigation measures would mitigate for anticipated stream impacts. Fill material would be required within the jurisdictional streams, therefore, a joint TVA Section 26a approval and an USACE Section 404 permit would be required.

Potential adverse impacts related to the use and maintenance of the new facility may result from the occasional use of fertilizers, herbicides and pesticides, random spills, and storm water runoff. The improper use of fertilizers, herbicides, and pesticides can be detrimental to water quality and aquatic organisms. However, if used properly, these substances have very little effect on water quality or aquatic organisms. Concerning random spills, the frequency and magnitude of accidents cannot be accurately predicted. Vehicles and aircraft would have the potential to be involved in accidents,

which could result in pollution of adjacent water bodies. Airfield storm water runoff may contain varying levels of suspended solids, heavy metals, oils, nutrients, and other pollutants. The potential impact of the pollutant load on adjacent water bodies varies greatly and is influenced by numerous factors including the frequency and duration of rainfall events, wind, vegetation, traffic volumes, and adjacent land uses.

The construction phase of the proposed development would include mitigation measures to control erosion and the discharge of suspended materials into water bodies as prescribed in FAA Advisory Circular 150/5370-10, *Standards for Specifying Construction of Airports*. The plans and specifications for the proposed project would incorporate those design and construction measures necessary to control erosion, minimize the impact of sedimentation, and prevent pollution.

There are nine identified streams on the airport site totaling 12,650 feet in length. Eight of the nine streams would be directly impacted by proposed construction activities and are an estimated 5,850 feet. The stream nearest to U.S. 431 and the existing runway would not be impacted.

Two of the eight streams have been identified as relatively permanent waterways (RPW) and would have 1,100 feet of impacts. The other six streams have been identified as non-relatively permanent waterways (NRPW). BWSC has prepared a Wetland/ Stream Mitigation Plan (WMP) that includes on-site stream mitigation measures. Proposed on-site stream mitigation measures and conceptual drawings are included in the WMP (Appendix D), as previously mentioned.

Although the proposed project would adversely impact eight streams, implementation of the approved on-site stream mitigation plan would reduce adverse stream impacts to an insignificant level.

### ***Water Quality Mitigation Measures***

Specific mitigation measures to protect water quality would include the use of silt fences and traps, staked hay bales, seeding and mulching of exposed soils, sedimentation traps, diversion ditches, and ditch and slope linings. The construction phase of the proposed project would also incorporate the use of Best Management Practices (BMPs), as recommended by the ADEM, in an effort to maintain the quality of any storm water discharged from the construction site and to minimize the potential

for groundwater contamination during construction efforts. BMPs identify commonly accepted measures, depending on the specific situation, to control erosion and sedimentation. BMPs also detail recommended procedures related to the handling and storage of petroleum products and other potentially hazardous materials on the construction site. The use of standard BMPs is required by state-issued NPDES permits for construction projects.

Construction of the proposed improvements to the airport facility, utilizing erosion and sedimentation control measures and pollution prevention practices, would have minimal short-term and long-term adverse impacts on water quality and aquatic habitats. The potential to adversely impact water quality in adjacent water bodies as a result of normal use and maintenance of the new facility should be no greater than from the existing operation of the airport. The proposed runway and VMA would not create a significant impact on the quantity or quality of public drinking water supplies, groundwater, or surface waters.

#### **Section 4(f) Properties**

Section 4(f) of the *Department of Transportation Act* provides that no program or project would be approved which requires the use of any publicly owned land from a public park, recreation area, historic site, or wildlife and waterfowl refuge of national, state, or local significance as determined by those authorities who have jurisdiction over such areas unless there is no practicable alternative available and provisions to minimize the possibility of harm are included in the planning.

The proposed runway expansion project would not involve any public park, public recreation area, or a designated wildlife or waterfowl refuge of national, state, or local significance.

Since there would be no use of, or adverse impact to, public park property as a result of constructing the preferred alternate, the requirements of Section 4(f) of the *Department of Transportation Act* would not apply.

### **Historic and Archaeological Resources**

The area of potential effect (APE) for the archaeological sites includes the 69.1 acres on Parcel 40 and the 47.15 acres of property on Parcels 30, 31, and 39 proposed for vegetation management. In addition, the APE for the historic view shed is a 0.5-mile radius surrounding the airport property. One previously recorded historic site (1Ms320) is located within the archaeological APE, and TVA land acquisition maps indicate that additional homesteads may be located on the property.

Parcel 40 (approximate 69.1 acres) and a 0.5-mile radius of the parcel were investigated in 2003 by P.E. LaMoreaux & Associates (PELA) during a cultural resources survey associated with the 2005 EA for the proposed airport expansion project (report entitled *Phase I Cultural Resource Survey for the Proposed Construction of Improvements at the Guntersville Municipal Airport, Marshall County, Alabama* [Lolley 2003]) (FAA 2005). One archaeological site (1Ms460) was recorded within the bounds of Parcel 40. Site 1Ms460 consisted of a low-density scatter of non-diagnostic historic material with no evidence of associated intact structural remains or intact cultural deposits. PELA considered the site to be ineligible for listing in the National Register of Historic Places (NRHP).

A reconnaissance level survey of the 0.5-mile radius surrounding the proposed project area identified 12 buildings or structures greater than 50 years old. These structures included the terminal building for the Guntersville Airport proper. None of the 12 structures are considered eligible for listing in the NRHP. Based on a review of the PELA report, the Alabama Historical Commission (AHC 02-1281) concurred with PELA's recommendation of ineligibility for 1Ms460. TVA concurs with this conclusion (Appendix G).

A Phase I Cultural Resources Survey was conducted on Parcels 30, 31, and 39 to identify any archaeological resources that may be affected by the proposed action. No prehistoric archaeological sites were identified.

Eleven historic features depicted on the land acquisition maps were tested and evaluated. Of the 11 historic features tested, one site (1Ms484) is considered potentially eligible for listing in the NRHP.

Designated portions (1.85 acres) of Parcels 30 and 31 were initially investigated by the Office of Archaeological Research (OAR) during a survey of TVA lands along Guntersville Reservoir (report entitled *Cultural Resource Investigations in the Guntersville Reservoir Area, Marshall and Jackson Counties, Alabama and Marion County, Tennessee* [Solis and Futato 1987]). As of result of these investigations, no cultural resources were recorded within the bounds Parcels 30 and 31. In February 2009, TVA Cultural Resources Staff assessed Parcels 30 and 31 and confirmed that no cultural resources were present in either parcel.

Parcel 39 was surveyed in 2008 by The Archaeological Research Laboratory (ARL) at the University of Tennessee's Department of Anthropology during a cultural resources survey of TVA lands to be included within the airport expansion project (draft report entitled *Phase I Archaeological Survey and Architectural Survey for the Guntersville Airport Expansion, Marshall County, Alabama* [Kocis and Guymon 2009]). During this survey, two isolated finds (FS-6 and FS-11) and one archaeological site (1Ms484) were recorded within the bounds of Parcel 39. The isolated finds consisted of a brick scatter (FS-6) and the remains of a well constructed from cut limestone (FS-11). ARL did not consider the brick scatter at FS-6 or the isolated feature at FS-11 eligible for the NRHP, therefore no further work was recommended for these cultural resources. TVA concurs with these recommendations for FS-6 and FS-11.

Site 1Ms484 consisted of a mid-to-late nineteenth century rural domestic site containing a limestone chimney pad, brick scatter and pier stones. Shovel testing identified potentially intact midden deposits and a light artifact scatter within the structure area. Given the presence of intact structural remains, coupled with the potential for intact midden deposits, ARL considered the site potentially eligible for inclusion in the NRHP. TVA concurs with this assessment.

***Cultural Resources Mitigation Measures***

To ensure that sensitive cultural resources associated with site 1Ms484 would not be adversely affected by the proposed work, implementation of the proposed project would be subject to the following mitigation measures:

- 1) A 10-meter buffer zone surrounding the recorded bounds of the archaeological site will be established and demarcated by flagging;
- 2) No heavy machinery will be allowed within the 10-meter buffer area;
- 3) All vegetation removal within the 10-meter buffer zone will be conducted by hand; and
- 4) No subsurface disturbance, including impact to existing structural remains in the area, will be permitted, thus avoiding disturbance of in situ deposits.

The site may be maintained by mowing. Mowing and other ground surface activities would not result in adverse affects to the site. If avoidance is not possible, Phase II testing would be required to determine if the site is eligible for the NRHP.

The results of these investigations and recommendations were submitted to the Alabama State Historic Preservation Officer (AL SHPO) and the appropriate federally recognized Indian tribes for comments and concurrence. Two tribes responded with letters of no objection and on April 02, 2009, the AL SHPO concurred with TVA's findings, with the implementation of the mitigation measures. These correspondences are included in Appendix G.

**Biotic Communities****Plants**

Adoption of the Preferred Alternative would require clearing of all 47.15 acres of forest on Parcels 30, 31, and 39 and 69.1 acres on Parcel 40. Most forested habitats and other woody vegetation would be removed from the proposed VMA, taken off-site, and would be maintained as early successional or shrub habitats as described in the VMP (Appendix C). However, plant communities occurring on the parcels are common and well represented throughout the region. No rare plant communities occur in the proposed project area. Any impact to vegetation is expected to be minor and regionally insignificant.

The exotic invasive shrub, Chinese privet, is abundant in the disturbed areas closest to the shoreline and less common in the more opened wooded areas. Impacts to native vegetation would be expected due to the removal of the forest canopy.

### ***Biotic Community Mitigation Measure***

In order to minimize impacts to biotic communities, the VMA would be revegetated with non-invasive low-growing herbaceous plant species. Native and/or non-invasive seed mix is preferred as an alternative to fescue.

With the implementation of mitigation measures to minimize introduction of invasive plant species, no significant impacts to plant communities are anticipated as a result of the proposed action.

### **Terrestrial Animals**

Converting the forested areas to a VMA would result in a change in the composition of wildlife habitats and associated wildlife populations in the project area. The initial clearing would temporarily displace larger animals, such as deer and turkey, from the property into nearby areas. Some smaller animals, such as mice, shrews, frogs, and salamanders, occupying the areas to be cleared would be impacted by construction activities. Following the construction and revegetation of the site, wildlife that favors the edges and early successional habitats would likely occupy the VMA. Development of the VMA would slightly change the overall species composition of the area and there would be an increase in those species that inhabit early successional habitats. Consequently, the numbers of dispersed forest-dwelling species would likely decline slightly and relocate to the adjacent forested areas in the Buck Island Natural Area.

Potential environmental effects resulting from the proposed actions include the loss of approximately 116 acres of forested habitat, and an increase in both early successional and edge habitats within the proposed VMA. The increase in early successional and edge habitats would benefit early successional species and species that tolerate disturbance well. Overall, forest conversion would be regionally insignificant due to the high amount of habitat fragmentation that already exists in the vicinity of the airport. Most species that would be affected by these changes are locally and regionally common and abundant.

### **Caves and Heron Colonies**

A review of the TVA Regional Natural Heritage database also indicated two caves and one heron colony are recorded within 3 miles of the proposed actions. No caves were found on site, and all cave records are greater than 2 miles from the project site. Impacts to caves from the proposed actions are not expected. A great blue heron nesting colony exists on an island approximately 1.1 miles north of the project site. This is an adequate distance from the proposed actions, and no impacts to this colony are expected. The project site itself contains suitable trees and habitat for heron colonies, but none have been recorded at this time, and impacts to heron colonies are not expected.

### **Aquatic Ecology**

There are nine identified tributaries on the proposed airport site for a total length of 12,650 feet. Eight of the nine streams, an estimated 5,850 feet, would be directly impacted by proposed construction activities including encapsulation by culverts under the proposed airport facilities and runway.

Two of the eight streams have been identified as relatively permanent waterways (RPW) and would have 1,100 feet of impacts. The other six streams have been identified as non-relatively permanent waterways (NRPW). The WMP (Appendix D) proposes on-site measures to mitigate for the anticipated stream impacts. The plan proposes to enhance and restore the original stream characteristics of the approximately 6,800 feet of on-site streams not impacted by the project. Mitigation activities would include improving natural sinuosity, addition of riffle pool complexes, and removal of invasive species present in and along the stream channels. Other stream mitigation plans would include a proposed channel design for each area proposed for mitigation. Conceptual drawings of the channel designs are included in Appendix D. Further mitigation details have not yet been developed. However, under 33 CFR Part 332, *Compensatory Mitigation for Losses of Aquatic Resources*, detailed stream mitigation plans would be developed following the final engineering design of the proposed runway. The final on-site stream mitigation plans would be reviewed and approved by USACE, ADEM, and TVA. Implementation of approved on-site stream mitigation plans would reduce impacts to aquatic ecology to an insignificant level.

### ***Stream Mitigation Measures***

The WMP proposes on-site measures to mitigate for the anticipated stream impacts. The plan proposes to enhance and restore the original stream characteristics of the approximately 6,800 feet of on-site streams not impacted by the project.

### **Endangered and Threatened Species**

#### **Plants**

BWSC consulted with the USFWS in 2005 regarding potential presence of federally listed plant species within the proposed project area. BWSC completed a Biological Assessment (BA) regarding field surveys for federally listed plant species. The scope for the BA was the same as the 2005 EA. In the BA, BWSC concluded that there were no federally listed plants present and the proposed project would not impact listed plants or their habitat. In a letter dated June 29, 2005, the USFWS accepts the BA's findings, and state that no further endangered species consultation will be required for the project, unless the identified action is modified in a manner that causes an effect on listed species. These correspondences are included in Appendix G.

A January 2009 review of the TVA Regional Natural Heritage database indicates no federally listed plant species and 10 Alabama state-listed plant species are known from within 5 miles of the project area (Table 6). In addition, two federally listed plant species, green pitcher plant, *Sarracenia oreophila*, and Price's potato bean, *Apios priceana*, are known from Marshall County, Alabama. A field review conducted in August 2007 revealed no federally listed plant species or their appropriate habitats are present within the proposed project area.

Table 6

## Federally Listed and State-Listed Plant Species in Project Vicinity

Common Name	Scientific Name	Federal Status <sup>1</sup>	State Rank <sup>2</sup>
Carolina anemone	<i>Anemone caroliniana</i>	--	NOST (S3)
Price's potato bean	<i>Apios priceana</i>	THR	NOST (S2)
Carolina spring-beauty	<i>Claytonia caroliniana</i>	--	NOST (S1)
Waterweed	<i>Elodea canadensis</i>	--	NOST (S1)
Butler's quillwort	<i>Isoetes butleri</i>	--	NOST (S2)
Pasture glade-cress	<i>Leavenworthia exigua var. lutea</i>	--	NOST (S1)
Michaux's leavenworthia	<i>Leavenworthia uniflora</i>	--	NOST (S2)
False helleborne	<i>Melanthium parviflorum</i>	--	NOST (S1S2)
Limestone adder's tongue	<i>Ophioglossum englemannii</i>	--	NOST (S2S3)
Granite gooseberry	<i>Ribes curvatum</i>	--	NOST (S2)
Green pitcher plant	<i>Sarracenia oreophila</i>	END	NOST (S2)
Cumberland rosinweed	<i>Silphium brachiatum</i>	--	NOST (S2)

Source: Tennessee Valley Authority staff, January 2009

<sup>1</sup>END= Endangered; THR=Threatened; <sup>2</sup>NOST= No Status, Alabama Heritage does not assign a state status to listed rare plant species; S1=critically imperiled with less than five occurrences; S2 =imperiled in Alabama because of rarity (6 to 20 occurrences); S3=rare or uncommon in Alabama (21 to 100 occurrences); S#S#=used to indicate the range of uncertainty between ranks

Further field reviews were conducted on Parcel 39 in March 2008 and no federally listed plant species or their habitats were found. In addition, the areas identified during August 2007 field surveys as having potential habitat for state-listed spring flowering and spring emerging plant species we revisited. Although habitat for pasture glade-cress and the Carolina spring-beauty were present on Parcel 39, no plants were found during field investigations. Field reviews of Parcels 40, 30 and 31 located one known population of pasture glade-cress on Parcel 31 however the population was not located within the proposed project area. No other federally listed or state-listed species were observed within the TVA property. Although the project scope has been modified since the 2005 EA, field survey results indicate the project modifications would not impact any federally listed or state listed species or their critical habitat. Because the proposed scope changes would not cause an effect on listed species, TVA, USACE, and FAA have determined that further consultation with the USFWS would not be necessary.

## Terrestrial Animals

On behalf of the City of Guntersville, BWSC consulted with the USFWS in 2005 regarding proposed actions in the 2005 EA. BWSC indicated that the proposed project would not impact federally listed species or their habitat. In a letter dated March 31, 2004 (Appendix G), the USFWS concurred with BWSC's finding and indicated no further consultation was necessary unless the identified action is modified in a manner that causes an effect on listed species.

The TVA Regional Natural Heritage database indicates two Alabama state-listed animal species, and four federally listed or protected animal species are reported from within 3 miles of the proposed airport expansion (Table 7). No additional federally listed species have been recorded from Marshall County, Alabama. The database also indicates two caves and one heron colony are recorded from within 3 miles of the proposed actions.

**Table 7**  
**Federally Listed and State-Listed**  
**Terrestrial Animal Species in Project Vicinity**

Common Name	Scientific Name	Federal Status <sup>1</sup>	State Status <sup>2</sup>
Green Salamander	<i>Aneides aeneus</i>	--	PROT (S3)
Tennessee Cave Salamander	<i>Gyrinophilus palleucus</i>	--	PROT (S2)
Bald Eagle <sup>3</sup>	<i>Haliaeetus leucocephalus</i>	--	PROT (S3)
Gray Bat	<i>Myotis grisescens</i>	END	PROT (S2)
Indiana Bat	<i>Myotis sodalis</i>	END	PROT (S2)
Red-cockaded Woodpecker	<i>Picoides borealis</i>	END	PROT (S2)

Source: Tennessee Valley Authority staff, January 2009

<sup>1</sup>END= Endangered; <sup>2</sup>PROT=Protected; S2 =imperiled in Alabama because of rarity (6 to 20 occurrences); S3=rare or uncommon in Alabama (21 to 100 occurrences); <sup>3</sup>Recently removed from endangered species list, but protected under the National Bald Eagle Management Guidelines & Bald and Golden Eagle Protection Act

No suitable habitat for the Green Salamander, Tennessee Cave Salamander, or the Red-cockaded Woodpecker was found on site. Impacts to these species from the proposed actions are not expected.

The bald eagle has recently been removed from the endangered species list but is still protected by the National Bald Eagle Management Guidelines and the Bald and Golden Eagle Protection Act.

This species typically nests in forested areas near large bodies of waters including reservoirs, rivers, and riparian wetlands. A bald eagle nest occurs on an island in Guntersville Reservoir, approximately 1 mile north of the project area. The National Bald Eagle Management Guidelines state to avoid the operation of helicopters and fixed-winged aircraft within 1,000 feet of a bald eagle nest during the breeding survey. The bald eagle nest is located well out of the 1,000-foot buffer for small aircraft near a nest. TVA biologists monitor the bald eagle nest and any movement to the shoreline would be reported. No new bald eagle nests were found during field investigations in October 2007. The site observation report is included in Appendix G.

Gray bats roost in caves year-round and typically forage over streams, rivers, and reservoirs. Foraging habitat exists over the adjacent Guntersville Reservoir, but the closest cave used by gray bats is approximately 2.5 miles from the project site. No new caves were found during field investigations of the project site. No roosting or foraging habitat for this species would be affected by the proposed actions.

Indiana bats roost in caves during the winter and typically form summer roosts under the bark of dead or dying trees. Their summer roosts are found in forests with an open understory and available roost trees, usually near water (Romme, et al. 1995). Indiana bats forage primarily in forested areas along streams or other corridors.

The closest records of Indiana bats to the proposed project site occur in a cave approximately 2.5 miles from the proposed project area. No new caves were found during field investigations of the project site. Five points in forested habitat were surveyed following protocol from Romme et al. (1995) (Appendix H) for Indiana bat habitat suitability. Four areas scored low quality habitat and one area exhibited moderate quality habitat. Furthermore, bat mist-net surveys have previously been conducted in the vicinity and only red bats were found. Although the project scope has been modified, field survey results indicated the modifications would have no effect Indiana bats or other listed species. Because the proposed scope changes would not cause an effect on listed species, TVA, USACE, and FAA have determined that further consultation with the USFWS would not be necessary.

### **Aquatic Animals**

There are no federally listed or state-listed aquatic animal species or important aquatic areas present in the streams, therefore no impacts to listed aquatic species or their habitat are anticipated.

Furthermore, implementation of approved on-site stream mitigation plans would reduce impacts to aquatic ecology to an insignificant level.

### **Wetlands**

Section 404 of the Clean Water Act of 1977 (33 U.S.C. § 1344) prohibits filling activities in waters of the United States, including wetlands, unless the work has been authorized by a Department of the Army permit. A non-binding wetland jurisdictional delineation was performed by Wetland Sciences, Inc. during January 2003. Wetlands were identified based on methods outlined in the USACE's 1987 "*Corps of Engineers Wetland Delineation Manual*" (Waterways Experiment Station Technical Report Y-87-1, January, 1987).

There are 83.54 acres of jurisdictional wetlands in the project area and approximately 40.28 acres would be directly impacted by a combination of land clearing with heavy equipment and filling to prepare for the terminal area development and construction of the new runway and parallel taxiway. Approximately 22.40 acres are forested wetlands and the remaining 17.88 acres are scrub-shrub wetlands. The applicant has proposed to mitigate adverse wetland impacts for the 40.28 acres through off-site compensatory mitigation banking at a 2:1 ratio, totaling 80.56 credits. Furthermore, since the draft SEA was released, the city has proposed purchasing 5.6 additional wetland banking credits to compensate for the temporal loss of the 22.40 acres of mature, forested wetlands at a ratio of 2.25:1, thereby necessitating the purchase of 86.16 available credits from the wetland mitigation bank

The 2005 EA indicated that there would be 3.17 acres of indirect wetland impact associated with the proposed AWOS. However, the proposed AWOS will be installed in the terminal area and therefore, there will be no wetland impact associated with its installation. Other indirect impacts could include the removal of the trees located outside of the wetlands and the potential for sediment deposition during rainfall events. The remaining 43.26 acres of jurisdictional wetlands in the project area would not be directly impacted; however, these wetlands may be indirectly impacted during

construction activities.

The VMP (Appendix C) depicts the jurisdictional wetlands in the project area and specifically identifies those wetland areas that would be directly and indirectly impacted by the proposed airport improvements.

### ***Wetland Mitigation Measures***

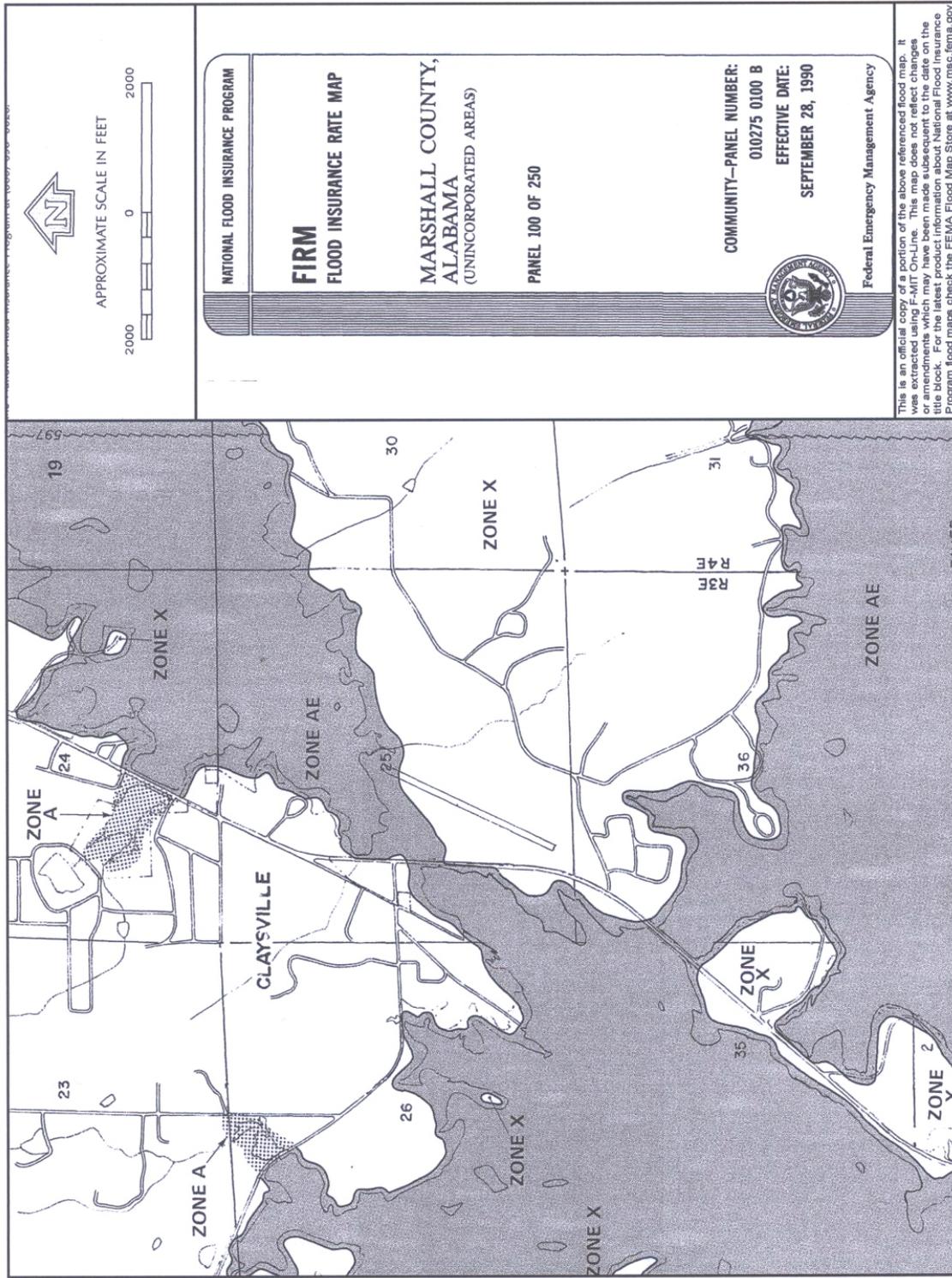
BWSC has developed a WMP (Appendix D) utilizing the *Guidelines for Developing Freshwater Wetlands Mitigation Plans and Proposals*, Washington State Department of Ecology, Ecology Publication #94-29, March 1994. As described in the Wetland/Stream Mitigation Plan, based on the anticipated 40.28 acres of direct wetland impacts, the City of Guntersville is proposing to mitigate adverse impacts through off-site compensatory mitigation banking at a 2:1 ratio totaling 80.56 credits. The city has proposed to purchase the 80.56 credits (2:1 ratio) from the Robinson Spring Wetland Mitigation Bank (RSWMB). Furthermore, of the 40.28 acres, approximately 22.40 acres are mature forested wetlands and the remaining 17.88 acres are scrub-shrub wetlands. In order to compensate for the temporal loss of 22.40 acres of mature forested wetlands, the applicant has proposed further mitigation of adverse effects through purchasing 5.6 additional mitigation credits at a ratio of 2.25:1. The RSWMB is located within the Guntersville Watershed near Hollywood, Jackson County, Alabama and consists of approximately 308 acres. On-site wetland mitigation was not selected because the enhanced wetland areas would likely attract additional wildlife resulting in potential safety hazards.

Based on Executive Order 11990, *Protection of Wetlands*, the City of Guntersville, its consultant, and its contractors would make every effort to minimize the destruction, loss or degradation of wetlands associated with the airport improvements at Guntersville Municipal-Joe Starnes Field.

### **Floodplains**

Executive Order 11988, *Floodplain Management*, directs federal agencies to take action to reduce the risk of flood loss, to minimize impacts the impacts of floods on human safety, and to restore and preserve the natural and beneficial values served by floodplains. According to the Flood Insurance Rate Map for Marshall County, Alabama produced by the Federal Emergency Management Agency (FEMA), the Guntersville Airport is primarily located in Zone X as shown in **Figure 10**. Zone X

includes areas that are within the 500-year flood, areas within the 100-year flood with average depths less than 1 foot or with drainage area less than 1 square mile, and areas protected by levees from 100-year flood.



**Note:** Zone A - No base flood elevations determined  
 Zone AE - Base flood elevations determined  
 Zone X - Areas of 500-year flood; areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from 100-year flood.



**FLOODPLAINS IN AIRPORT VICINITY  
 GUNTERSVILLE MUNICIPAL - JOE STARNES FIELD  
 GUNTERSVILLE, ALABAMA**

**Figure 10**

The final runway design has not yet been funded by the FAA. With that being the case, BWSC engineers have conducted a preliminary grading design and have determined, tentatively, that there would be no fill placed between elevations of 593 feet MSL and 595 feet MSL, which could impact TVA power storage ability. There is an anticipated fill of approximately 1,000 cubic yards into the elevations between 593 feet MSL and 597.5 feet MSL, which could impact TVA flood control storage. The lowest elevation of the paved runway is planned to be 605 feet MSL. The lowest elevation of the runway safety area on the northeast end is planned to be 595 feet MSL. These estimates are based on BWSC original aerial mapping and the shoreline appears to differ somewhat between the aerial mapping and what is indicated on the TVA maps.

The proposed runway and associated improvements would be located in Zone X; however improvements would be in close proximity to a floodplain (Zone AE). Methods that would be used to minimize harm to the floodplain include standard construction controls to minimize erosion and sedimentation, design of the proposed improvements to allow adequate flow circulation and to preserve natural drainage, use of pervious surfaces where practicable, control of runoff, and waste and spoils disposal to avoid contamination of ground and surface water. Implementation of the standard control measures would minimize adverse impacts to the floodplain.

### **Coastal Zone Management Program and Coastal Barrier Islands**

Based on information received from the ADEM Coastal Programs office, the airport is located outside the coastal areas of Alabama. Construction and operation of the proposed activity would have not impacts on coastal waters.

### **Wild and Scenic Rivers**

In October 1968, Congress created the National Wild and Scenic Rivers System to preserve selected rivers and stream segments in their free-flowing condition to protect the water quality of these rivers and to fulfill other national conservation purposes. In addition to the National Park Service, there are four other federal agencies charged with protecting and managing the wild and scenic rivers. The agencies include the Bureau of Land Management, the USACE, the USFWS, and the U.S. Forest Service. There are no river or stream segments classified as wild and scenic that would be affected by the proposed project.

**Prime and Unique Farmlands**

As discussed in the 2005 EA, the Natural Resources Conservation Service (NRCS) determined, based on criteria prescribed in *the Farmland Protection Policy Act*, that there is approximately 8.0 acres of prime and unique farmland in the project area. The 2005 EA determined that approximately 0.008 acres of prime farmland would be directly converted by the implementation of the Preferred Alternative. The EA also determined that this would be an insignificant impact to prime farmland. No additional prime farmland is located on Parcels 40, 39, 30, and 31. No additional impacts to prime and unique farmland are anticipated.

**Energy Supply and Natural Resources**

Energy requirements associated with the airport operations have been divided into two general categories. The first category involves those requirements which relate to an increased demand for electricity from stationary facilities such as the airport fixed base of operations FBO/terminal area and airfield lighting. The second category involves those requirements which relate to providing aircraft fuel. The expansion of the facilities at the airport would increase the electricity demands slightly primarily due to the new runway and approach lights. The degree to which energy efficient systems are included in the plans would determine the significance of this demand. Electricity is presently provided to the airport by TVA. The additional electricity demand anticipated from the proposed airport expansion is not expected to be significant and can easily be provided through existing electrical distribution networks.

According to the Geological Survey of Alabama, the geology of the airport is mapped on the Geologic Map of Alabama (1988) as Orodovician Inman Formation consisting of interbedded greenish-gray or moderate- to dusky-red shale and light-gray peloidal limestone. The project area does not contain any identified surface mineral resources that would be impacted by the proposed runway.

**Light Emissions**

Lighting impacts are concerned with the extent to which any lighting associated with the proposed expansion would create an annoyance among residents or traffic in the vicinity of the airport. In order to facilitate safe take-offs and landings during periods of reduced visibility or during night

operations, medium intensity runway lights and taxiway lights would be required for the proposed runway. The airport's lighting system would also include Runway End Indicator Lights (REIL), Precision Approach Path Indicators (PAPI), threshold lights, and the current airport beacon that would be relocated upon construction of the proposed runway.

The relocation of the beacon may have the potential to create an annoyance for residences; however, the airport would aim and shield the beacon to reduce the impact of the light. In addition, the proposed Runway End Indicator Lights (REILs) for the approach end of Runway 09 may pose an inconvenience to drivers on U.S. 431. These lights, which are aimed upward and outward, are used periodically to assist pilots as they approach the airport to land and would not have significant negative impacts.

#### ***Lighting Mitigation Measures***

To alleviate any inconvenience, the airport would use directional REILs that would focus light emissions above U.S. 431 within the approach path of aircraft. In addition, low-growing vegetation would be planted along the highway to further reduce impacts to drivers.

Other planned lighting mitigation measures are described in the *Visual Resources Mitigation Measures* section on Page 28 of the SEA.

#### **Hazardous Materials and Solid Waste**

Hazardous waste sites are regulated by the *Resource Conservation and Recovery Act* (RCRA) and the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA).

Hazardous materials or wastes are defined as substances which are regulated as hazardous or toxic by the EPA. Most hazardous substances have one or more of the following characteristics: ignitability, reactivity, corrosivity, or toxicity. Businesses that might use or produce these substances routinely use or dispose of chemicals and solvents, including petrochemicals such as service stations, auto repair shops, metal fabricators, junkyards, paint stores, and airport FBOs. Most FBOs offer aircraft fuel, oil, washroom access, and parking. A comprehensive file review and database search was completed by the Land Division of ADEM to identify any previous hazardous waste or Superfund activity in the project area. No information was discovered.

Solid waste is typically generated by commercial, industrial and terminal development rather than airfield development. Projects that relate only to airfield development (i.e., runways, taxiways, etc.) do not normally result in any direct impact to solid waste collection, control or disposal other than that associated with the construction itself. Reorienting the runway, as proposed, would likely involve construction of the new runway, new taxiways, taxiway connectors, and possibly demolition of the old runway. Demolition of the old runway would likely generate solid waste such as broken concrete and asphalt. An additional quantity of solid waste may be generated from cleared vegetation that is not burned or chipped as described in the VMP (Appendix C) and would be disposed of in an appropriately permitted landfill.

The impact of the proposed construction of new facilities at Guntersville Airport would result in additional in solid waste. Depending on the design of the new terminal facilities, the resultant construction solid waste would include a mixture of materials such as scrap wood, wallboard, concrete, scrap metal, packing materials, etc. Materials that cannot be recycled would be disposed of in the appropriately permitted landfill.

Landfills near airports are considered to be a potential impact due to a landfill's tendency to attract birds, possibly creating bird strike hazards with approaching and departing aircraft. FAA Advisory Circular 150/5200-33, *Hazardous Wildlife On or Near Airports*, provides guidance regarding the location of sanitary landfills on or near airports. Landfills located within the distances outlined in AC 150/5200-33 are considered incompatible land uses. There are no landfills located in the vicinity of the airport that would be considered an incompatible land use.

The airport currently generates approximately 500 cubic yards of non-hazardous waste annually. The solid waste consists of household rubbish generated from the FBO and terminal operation as well as from the individuals that lease aircraft hangar space. The solid waste is managed in an approximately 10 cubic yard dumpster containers and is picked up weekly by the City of Guntersville and transferred to the Guntersville Landfill. With the completion of the proposed airport expansion, the solid waste generation rate would increase and be managed in accordance with the processes currently in place.

Hazardous wastes commonly generated by airport terminal operations and FBOs include waste paint, spent solvents from painting and degreasing, batteries, and grounds keeping pesticides and herbicides. The airport currently operates as a Conditionally Exempt Small Quantity Generator (CESQG) with respect to the generation of hazardous waste. As a CESQG, the airport is not required to obtain an EPA Hazardous Waste ID Number. The airport generates approximately 100 gallons of used oil (which is not a hazardous waste) per month for an annual total of approximately 1,200 gallons. The used oil is picked up on a monthly basis. The used oil that is generated by the aircraft owners' maintenance operations is managed by City of Guntersville within their established used oil-recycling program. Notably, with the expected increase in aircraft and related activity resulting from the proposed airport expansion, the used oil volume would likely increase, but would be managed in accordance with the process currently in place. Any hazardous waste generated would be disposed of in a permitted hazardous waste disposal facility.

Also, if the fuel farm is to be relocated as is indicated in the 2005 scope, that move may generate waste depending on the type of tanks, above ground or underground storage tanks, whether they are currently in use, if they will be moved or closed in place, and whether there is any petroleum-contaminated soil at the current location. If there is petroleum-contaminated waste, it will be disposed of in an appropriately permitted landfill, probably as a special waste. Scrap metal generated by the relocation will most likely be recycled.

### **Construction Impacts**

The construction of the proposed project would result in some temporary, unavoidable impacts related to air quality, noise levels, water quality, and construction material disposal. The project construction plans would require that the contractor use appropriate measures to minimize any impacts that could possibly occur. Solicitations from construction bids will require compliance with FAA Advisory Circular 150/5370-7. The incorporation of the provisions and specifications of FAA Advisory Circular 150/5370-10, *Standards for Specifying the Construction of Airports*, Item P-156, would be used in order to avoid and/or minimize adverse construction impacts. The following discussion briefly describes the possible impacts and, consistent with discussion elsewhere in this SEA, measures that would be taken to minimize these impacts.

### ***Air Quality***

Potential air quality impacts would likely occur from fugitive dust generated as a direct result of the movement of construction equipment across the project area. The fugitive dust emissions generated as a result of construction activities are expected to be minimal and short-term. The site construction and earth moving activities associated with the airport development are not expected to cause any significant air emission concerns however, should the presence of nuisance dust become an issue, the contractor would be required to implement adequate dust control measures.

To minimize impacts from fugitive dust, measures may include, but would not be limited to, the use of a water truck would be implemented to minimize dust resulting from dirt stockpiles and exposed areas. Additionally, the open burning of vegetation and wood wastes, if undertaken, would be conducted in accordance with all state air pollution control regulations and local ordinances. In the event that fill material is imported from an offsite location, the haul trucks would be covered with a tarp while traveling on local, state, and federal highways to minimize potential fugitive dust.

### ***Noise***

There would likely be a slight and temporary impact from the noise associated with the delivery of materials and the operation of machinery on site. The impacts may be mitigated, to some extent, by limiting construction to daylight hours and requiring that the contractor use designated haul routes to avoid, as much as possible, residential and other noise sensitive receptors. On-site construction noise is expected to have a negligible, temporary impact on nearby residences and businesses.

### ***Soil Erosion***

The construction of the proposed airport expansion project would include the use of commonly accepted measures to minimize erosion, sedimentation, and water pollution. Erosion and sedimentation control measures may include, but not be limited to, the use of staked hay bales and silt fences during construction. Soils exposed during construction would be reseeded as soon as practical to minimize erosion potential and establish permanent ground cover. The airport construction and operation activities would require a Water Quality Certification and NPDES permit from ADEM. Implementation of BMPs by the contractor, as mandated by the required NPDES permit, would ensure that all steps necessary to maintain the quality of water discharged from the construction site into adjacent watercourses, wetlands, and water bodies are taken. Wastes, loose

soil, and other debris would not be deposited into streams or other water bodies and would be disposed of at the appropriate landfills.

### ***Construction Waste***

The disposal of wastes, debris, and excavated material would be handled in accordance with applicable state and local requirements. The contractor would be required to use legally operating landfills for the disposal of wastes, debris, and materials generated during the construction of the proposed project. Furthermore, care would be taken not to leave borrow pits behind construction. Any borrow pits would be filled with debris associated with any clearing and construction prior to being backfilled.

### **Other Considerations**

Unavoidable adverse impacts associated with the proposed airport improvements include an increase in noise levels due to an increase in aviation activity and temporary construction impacts such as dust and noise from trucks and equipment.

The forecasted increase in noise levels would not create any incompatible land uses. The projected 65 DNL contour for both existing and future conditions would not include any residences, schools, churches, or other noise sensitive land uses. Based on the noise analysis, the existing and forecasted aircraft noise levels do not constitute an impact on any existing or planned noise sensitive receptors or create a conflict with existing or proposed land uses.

As previously discussed in the air quality section, the environmental consequences associated with impacts to air quality are likely to occur from fugitive dust generated as a direct result of the movement of construction equipment across the airport site. The fugitive dust emissions generated as a result of construction activities is expected to be minimal and relatively short in duration. The site construction and earth moving activities associated with the airport development are not expected to cause any significant air emission concerns; however, should the presence of nuisance dust become an issue, dust mitigation measures through the use of a water truck would be implemented. In the event that fill material is imported from an offsite location the haul trucks would be covered with a tarp while traveling on local, state and federal highways.

The preparation of this SEA has been coordinated with appropriate federal, state, and local government agencies. Correspondence and documentation received from responding agencies has been referenced in the appropriate discussions and included in Appendix G.

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