Airport Feasibility and Site Selection Study

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CITY OF ST. MARYS
AIRPORT FEASIBILITY AND SITE SELECTION STUDY
EXECUTIVE SUMMARY

Current airspace restrictions, instituted as a result of the terrorist acts of September 11, 2001 and directly associated with the location of the Kings Bay Naval Base (Kings Bay), have diminished operations at the St. Marys Airport and jeopardize the current and future ability of the Airport to fulfill its role in the National Plan of Integrated Airport Systems and Georgia Aviation System Plan. Due to these restrictions, the City of St. Marys (City), with the assistance of funding from the Georgia Department of Transportation (GDOT) and the Federal Aviation Administration (FAA), has embarked upon the preparation of an Airport Feasibility and Site Selection Study (Study) to assess the possibility of relocating the Airport. This Study is the first step in the process of evaluating the feasibility and necessity of relocating the Airport in order to enable the Airport to fulfill its role in the state and national aviation systems, and serve the residents of the cities of St. Marys, Kingsland, Woodbine, and Camden County well into the 21st century.

Broadly stated, the goals and objectives of the Study are to provide an airport system that can support the current and future regional aviation demand, provide an opportunity for long-term economic growth of the region, and to assess the potential for development of a replacement airport system that is compatible with the surrounding community while minimizing the impacts on the natural and human environments. To help guide the study process, two working committees were established (i.e., the Technical Advisory Committee and Community Advisory Committee). The Technical Advisory Committee was charged with providing technical review and direction during the Study, and the Community Advisory Committee was charged with providing advice concerning the local political environment and overall community desire for a replacement airport facility. Throughout the Study process these Committees were actively involved in establishing the goals and objectives for the Study, defining the selection criteria for the initial and final screening of site alternatives, evaluating potential airport sites, and selection of a final site recommendation for the proposed replacement airport.

The proposed replacement airport will satisfy the requirements for a Level II facility as defined in the Georgia Aviation System Plan (GASP). A Level II airport represents a business airport of local significance capable of accommodating all business and personal use single-engine and twin-engine aircraft, and a broad range of corporate and business jet aircraft. The GASP recommends that a Level II airport provide a primary runway that is a minimum of 5,000 feet in length, and also offers non-precision instrument approach capabilities, as well as a mix of other services typically found at a general aviation airport. The proposed site must be located in close proximity to current and future population centers, provide easy access to state and regional roadway systems, and allow for future expansion capabilities as well as the potential for development of an adjacent commercial and industrial center. The proposed replacement airport must also initially replace those facilities that are presently located at the St. Marys Airport, and be financially feasible for the local community.

Although the existing St. Marys Airport is designated as a Level II facility under the GASP, due to airspace restrictions associated with Kings Bay, and various airfield geometry and design issues that require correction to comply with current FAA design standards, the Airport cannot fulfill its role as defined in the GASP. Possible relocation of the Airport allows for the development of a facility that meets the recommendations of the GASP, and position the facility to take on a larger, possibly regional, aviation focus in the future. Various agencies have defined the market area for the Airport as a drive time within 30 minutes of the Airport. This market area would encompass most of Camden County, and portions of the adjoining counties in Southeast Georgia as well as northern Florida. Furthermore, representatives from both Charlton and Brantley Counties have expressed interest in possible participation in the development of a replacement airport. Participation by these adjoining Counties signals the truly regional potential for the development of an airport that could play a much greater role in state and national aviation systems.

The GASP identifies the potential for future aviation activity at the St. Marys Airport, or a comparable replacement facility. However, revisions to the GASP were finalized before the effects of September 11, 2001 were fully realized, and it should be assumed that the projections presented in the GASP will only occur if the Airport is allowed to function free from outside constraints. After quantifying the existing aviation demand generated at the

St. Marys Airport, the GASP projected that by 2021 the St. Marys Airport will be home to least 27 based aircraft. In addition, by 2021 the Airport will accommodate approximately 13,500 aircraft operations, which are expected to be 71% single-engine, 15% multi-engine, 7% jet, and 7% helicopter/other types of aircraft. At the current level of demand for aviation services, the Airport, at its present location, supports approximately 68 full-time equivalent employees, generating approximately $1,500,000 in income to the local community, and an overall economic impact which exceeds $5,900,000. A future airport, allowed to function and grow free from outside constraints, should generate significantly more economic benefit for the community than the existing facility.

The GASP identified the projected replacement cost for relocation of the Airport at approximately $11,300,000. An update of this estimate was conducted as part of the Study and revealed that current estimated development costs, which will vary depending on the selected site and necessary environmental mitigation, range from a low of $14,000,000 to approximately $20,000,000. Participation in the overall cost to replace the Airport will be shared by FAA (at a level of up to 95% of total eligible project costs), GDOT (at approximately 2.5% of the total project costs), and the local sponsor (i.e., governing agency responsible for development of the airport). However, participation by the local sponsor can take many forms including a cash contribution, possible “in-kind” services, and potential value of a land donation.

Due to the possibility that the replacement airport will be located outside the jurisdictional limits of the City of St. Marys, various forms of airport ownership and operation were examined as part of the Study effort to determine the most appropriate form of government to own and operate a replacement facility. Potential forms of ownership and operation include the individual Cities of St. Marys, Kingsland, and Woodbine, the County of Camden, Joint Development Authority, other Authorities, or a possible combination of these entities. It was concluded in discussions with both Advisory Committees that an independent Authority structure, similar to the existing governance structure, was the preferred alternative. Whether a new Airport Authority should be created, or one of the existing independent “Authorities” that presently exist in Camden County act as airport owner/operator, will be the subject of future discussion and examination as the project proceeds forward.

Based on lengthy discussions with both Advisory Committees, screening criteria were established to guide the initial and final site selection process. The selected screening criteria included proximity to current and future population centers, available interstate and/or state highway access, available rail access, sufficient land for future development, minimum acquisition costs, minimal environmental impacts, no airspace constraints, instrument approach capability, compatible land uses surrounding the airport site, and supportive of the military mission in Camden County. The implementation of the screening criteria yielded nine (9) sites for further analysis and discussion. These nine (9) sites were presented to both Advisory Committees for consideration, with three (3) sites selected for more detailed environmental, land-use, and overall feasibility analysis. Based on the analysis of the final three (3) sites, the Technical Advisory Committee recommended selection of a preferred alternative, and this recommendation was subsequently accepted by the Community Advisory Committee. The preferred site is located in central Camden County, approximately 3 miles southeast of the City of Woodbine. The site is bounded by Billyville road to the north, I-95 to the east, and US-17 to the west, and offers excellent access to the regional and interstate roadway system. The site is located adjacent to potential rail access from the south, is surrounded by compatible land-uses, can be developed to support instrument approach capability to the future airfield system, is well positioned to be geographically located in close proximity to future population and market centers, has adjacent land available for future airport/or commercial development, and is located well outside of the restricted airspace associated with the Kings Bay Naval Base. The site encompasses approximately 1,800 acres of usable land area for development, of which approximately 400 acres will be necessary for development. However, there are several towers located north of the site which will require further airspace analysis by the FAA, and potential environmental mitigation may be required for various wetlands found on the site. Finally, the site is currently privately owned, and the owner has expressed an interest in donating the land to the City for development of the replacement airport.

The City of St. Marys is committed to supporting the future military mission of naval facilities in Camden County, and recognizes that the proximity of the current St. Marys Airport to the Kings Bay Naval Base presents a potential impediment to supporting that mission. The proximity of St. Marys Airport to the Kings Bay Naval Base, and the inability of the airport to fulfill its' role in the state and national aviation systems, will

restrict future growth potential. Unless addressed, the St. Marys Airport will continue to exhibit the need for development of a fully functioning replacement airport. A properly functioning general aviation airport in Camden County will generate significant economic benefits for the community, and is critical to the future success of Southeast Georgia.

Airport Feasibility & Site Selection Study

Reynolds, Smith and Hills would like to acknowledge the contribution of the following elected officials during the conduct of this project, as well as those Advisory Committee members identified in the appendix of this report.

Deborah Hase – Mayor, St. Marys
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Mark McAnaw – City Council, Woodbine
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Bob Noble – Executive Chairman, JDA

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SECTION 1 – STUDY OVERVIEW

1.0 INTRODUCTION

The City of St. Marys (City), with the assistance of funding from the Georgia Department of Transportation (GDOT) and the Federal Aviation Administration (FAA), has embarked upon the preparation of an Airport Feasibility and Site Selection Study (Study) for the proposed relocation of St. Marys Airport. Current airspace restrictions, instituted as a result of the terrorist acts of September 11, 2001 and directly associated with the location of the Kings Bay Naval Base, have diminished operations at the Airport and jeopardized the current and future ability of the Airport to fulfill its role in the National Plan of Integrated Airport Systems (NPIAS) and Georgia Aviation System Plan (GASP). Recognizing that the location of the Airport is not compatible with current Naval facilities and activities, and the City's strong desire to support the current Naval mission, in 2003 the City initiated a formal process to determine the feasibility of relocating the Airport, and develop recommendations for a replacement site in Camden County, Georgia. After securing funding from GDOT and the FAA to conduct the study, the City selected Reynolds, Smith and Hills, Inc. (RS&H) to proceed with the work. This Study is the first step in the process of evaluating the feasibility of relocating the Airport in order to enable the Airport to fulfill its role in the state and national aviation systems thereby serving the residents of the cities of St. Marys, Kingsland, Woodbine, and Camden County well into the 21st century. The planning and relocation of an existing airport involves the same methods and approaches as the planning of other aviation facilities. It requires logical deductive analysis to determine the potential for aviation activity in the region, options for developing the required infrastructure necessary to accommodate these activities, and a financial plan to ensure future success.

The City of St. Marys is located in the southeast corner of Camden County, Georgia. Camden County is located in the southeast quadrant of the State of Georgia, approximately 45 miles north of Jacksonville, Florida and 40 miles south of Brunswick, Georgia, see **Figure 1.1**. The St. Marys Airport is located approximately 2 miles north of the central business district of the City. The exact coordinates are 30°45'16.849" (North Latitude) and 81°33'26.349" seconds (West Longitude). The Airport property covers

Source: R,S &H, 2004

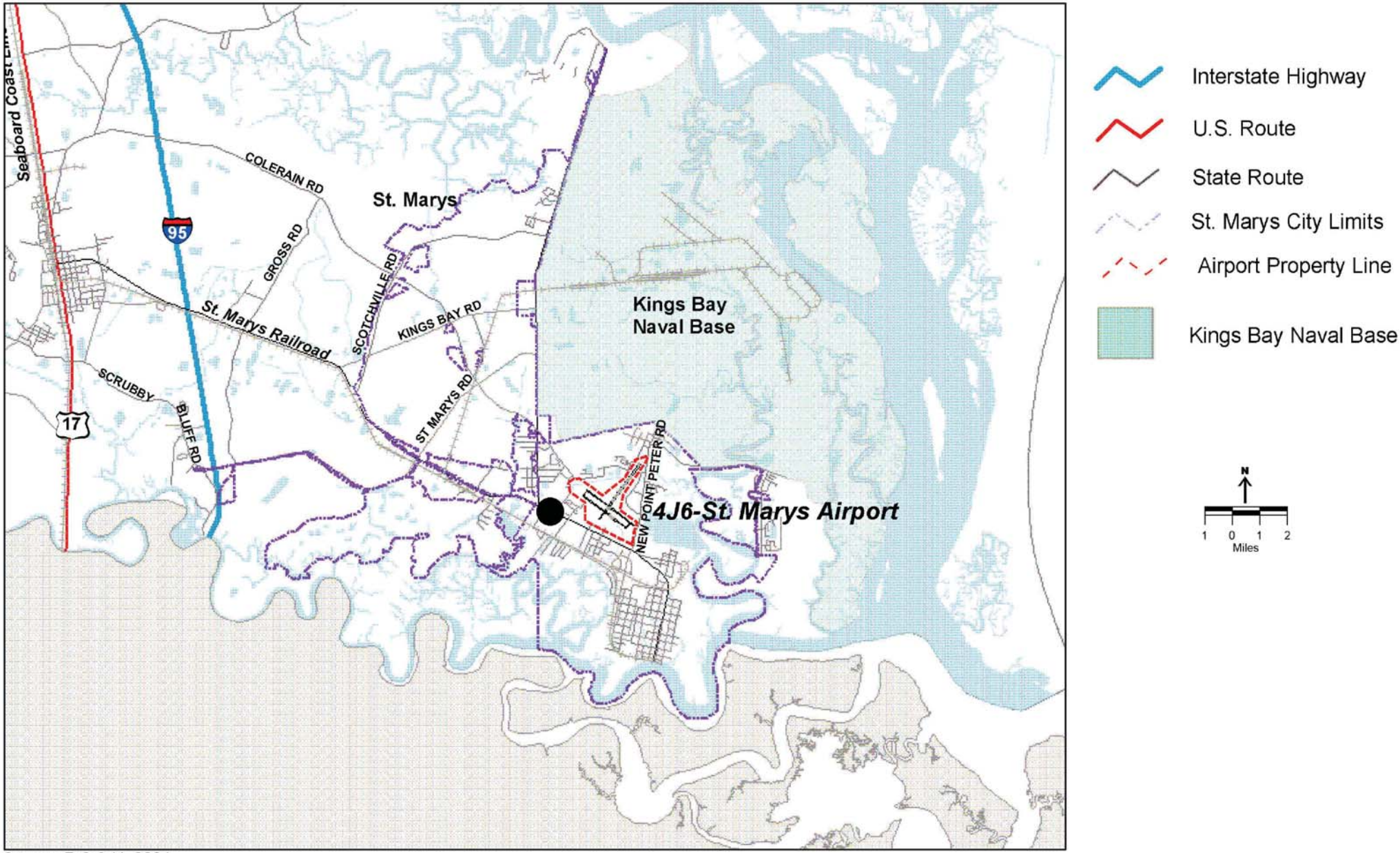
Figure 1-1
LOCATION MAP

approximately 286 acres and is located adjacent to Georgia Highway 40 and Point Peter Road, see **Figure 1.2**.

Kings Bay Naval Base is located approximately two miles north of the St. Marys Airport, and is the home of Strategic Weapons Facility Atlantic (SWFLANT), a missile assembly and production facility, along with Submarine Group Ten. Submarine Group Ten commands Submarine Squadron Sixteen and Twenty, with a combined total of eight ballistic missile submarines. Kings Bay Naval Base is also home to the Trident Refit Facility and Trident Training Facility. As a result of the terrorist acts of September 11, 2001, national security concerns have directed that prohibited airspace be implemented over Kings Bay Naval Base, which not only severely restricts current operations of the Airport, but virtually eliminates any future expansion possibilities, see **Figure 1.3**.

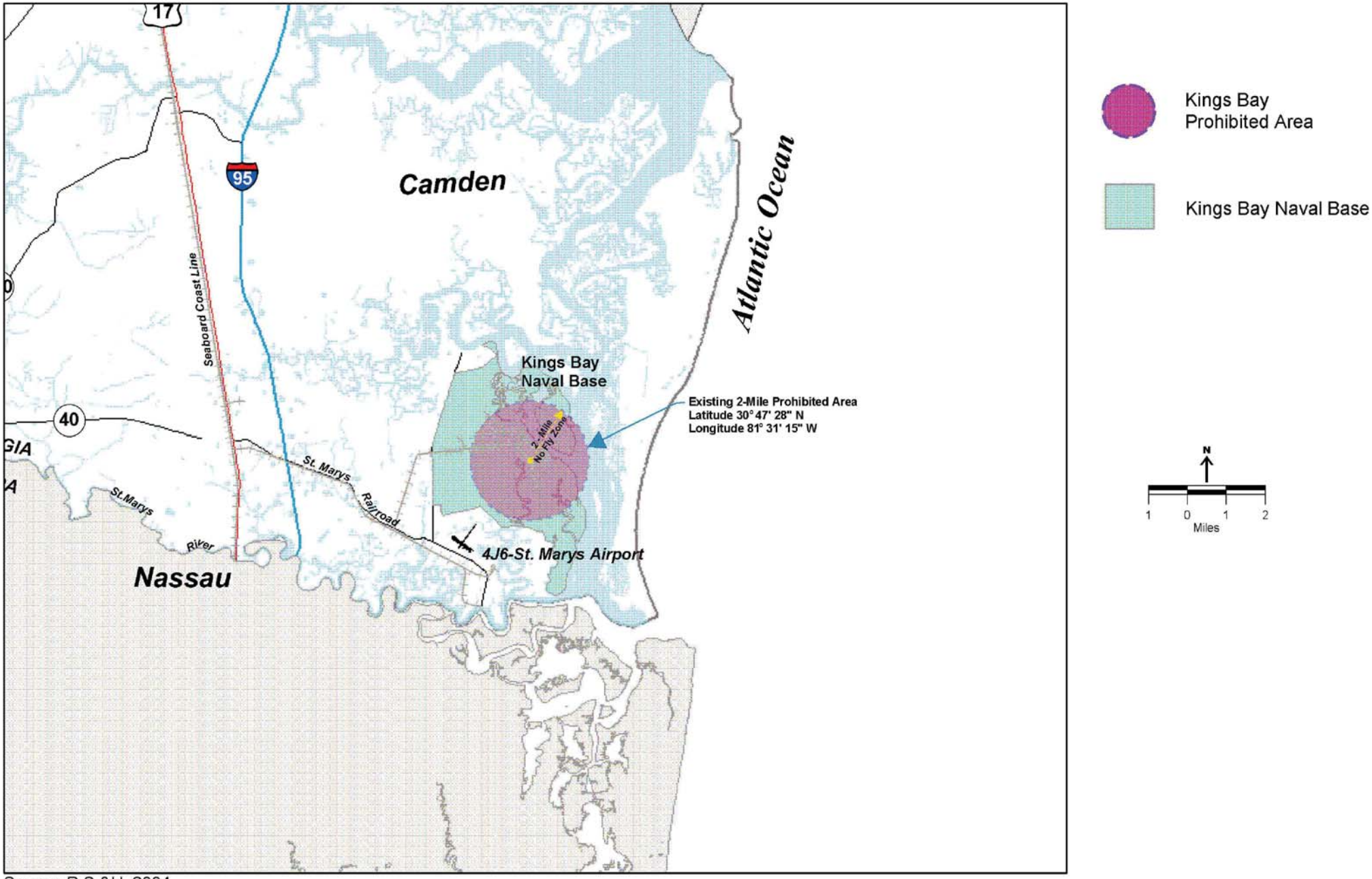
A general aviation airport, by its very nature, provides access for a community to the regional, national and international system of airspace and airports, and creates local economic benefits that access provides. As an important local asset, the St. Marys Airport should be recognized as a potential economic engine for future development in Camden County. A comprehensive report conducted in 1991, and updated in 1993, revealed that general aviation's annual economic impact on the nation's economy exceeded $42 billion per year.[1] In a recent study conducted for the Commonwealth of Virginia by an international consulting firm, the results were astonishing. Virginia has 80 public use airports (fewer than Georgia and less than the national average of 110 per state). The study showed that Virginia's public-use airports allow the state to participate and compete in national and international economic markets. Moreover, the public and private funds invested in the Commonwealth's airports annually produce economic returns that far exceed the amounts spent to operate and maintain those facilities. The study showed that for every dollar spent by aviation and/or aviation dependent businesses, an additional $1.52 in economic activity was generated, using a conservative multiplier of 2.8.[2] Furthermore, even airports with less than 10,000 operations a year produced economic impacts exceeding the amount of money necessary to operate and maintain the facility. Local general aviation airports produce identifiable economic benefits over and above the tax dollars spent on operating and

[1] Regional General Aviation Feasibility Study for Callao, Virginia, May 1998.
[2] The Study indicated that many experts would have recommended a multiplier of 4 or 5.



Source: R,S & H, 2004

Figure 1-2
ST. MARYS AIRPORT LOCATION



Source: R,S &H, 2004

Figure 1-3

KINGS BAY RESTRICTED AIRSPACE

maintaining the facilities, and the St. Marys Airport is no exception. However, future airport development needs to coincide and be compatible with the mission of Kings Bay Naval Base, and the development and expansion of Camden County.

Potential future airport sites will take into consideration the proximity of the Kings Bay Naval Base facilities, in addition to future population centers, access to major transportation corridors and the potential for future adjacent industrial park development. The remainder of this section discusses overall goals and objectives for completion of the Study, briefly describes the history of the St. Marys Airport and its role in the Georgia Aviation System Plan, and concludes with a more thorough discussion of the overall benefits to a community from a general aviation airport.

1.1 GOALS AND OBJECTIVES

During the development of the Airport Feasibility & Site Selection Study, two Committees were established to assist the consultant team in developing the most appropriate plan of action for conducting the Study. These two Committees included a Technical Advisory Committee (TAC) whose purpose was to provide technical review and direction, and a Community Advisory Committee (CAC) whose purpose was to provide advice concerning the local political environment and community's desires as it relates to development of the Study. Based on consultation with both advisory committees, the following goals and objectives were developed to chart a course for future efforts:

- To provide an airport system that can support current and future regional aviation demand.
- To provide an airport system that meets applicable design standards and can fulfill its' role in the State and National Aviation System Plans.
- To provide an airport system that can serve current and future population centers, business centers, and provide the opportunity for intermodal connectivity between air, rail, highway and port activities.
- To provide an airport system that is compatible with the surrounding community.
- To provide an airport system that creates minimal impacts on the natural and human environments.

In developing these goals, which guide future efforts under the Study, several issues have been identified for resolution throughout the process. These issues include the identification of the proper entity to own, operate and maintain a potential replacement airport; how will the replacement airport be funded, whether at the federal, state or local level; potential future enlargement (if any) of the restricted airspace which surrounds Kings Bay Naval Base; and identification of possible future uses (outside the scope of this Study) for the existing St. Marys Airport, once a permanent airport site is selected and developed. All of these issues will be addressed in later sections of this Study.

1.2 HISTORY OF THE ST. MARYS AIRPORT

For decades the St. Marys Airport has played an important role in the growth and economic development of the City of St. Marys and Camden County. Although the property where the Airport is located has always been owned by the City, like many airports in this country the St. Marys Airport was constructed and operated by the Federal Government (under lease from the City of St. Marys) for use as a Naval flight-training facility during World War II, and originally occupied a 462 acre site. Initial Airport construction included three runways, orientated in a triangle configuration for wind coverage. At the conclusion of World War II, the operation of the Airport was relinquished to the City and all federal government leases terminated. Over the ensuing years several tracts of land were identified as surplus for Airport needs and subsequently released by the FAA. The City constructed an Airport Industrial Park along with Old Jefferson Road on a portion of the surplus property, and the Airport currently occupies a total of 286 acres of land.

Presently, there are several businesses located on the Airport and airport operations include a variety of activities such as recreational flying, agricultural spraying, corporate/business jets, police/law enforcement, forest fire fighting, ultralights, and experimental aircraft. The Fixed Base Operator (FBO), St. Marys Aviation, has been located on the Airport for five years. Currently, the FBO is located in the “terminal building,” which is connected to the maintenance hangar. Bird Aviation occupies a Hangar where business is conducted on ultralights. St. Marys Flight School and Skydiving operation conducts business in a hangar across the Airport entrance road from the FBO. In general, all businesses have been adversely affected by the current airspace restrictions. These airspace restrictions have resulted in lower daily activity

levels, and a preference by the general aviation community of staying away from any potential operational issues associated with the close proximity of the prohibited airspace surrounding Kings Bay Naval Base.

1.3 EFFECTS OF SEPTEMBER 11, 2001

The events of September 11, 2001 have had a significant impact on the aviation community. The results of the terrorist attacks, along with a downturn in the national economy, have caused several major airlines to either reorganize or declare bankruptcy. As a result, many communities have seen their air service levels reduced dramatically as airlines focus only on profitable routes.

This has also had a tremendous effect on the general aviation community. As a result, of the impacts on September 11, general aviation has become more restricted in multiple ways. Airspace restrictions have increased, especially over major sporting events and various government facilities. Flight schools and student pilots have come under increased scrutiny. Unfortunately, the St. Marys Airport has not been able to weather the storm and has actually seen dramatic decreases in levels of service and operations since September 11, 2001.

On September 13, 2001, the FAA issued a series of Temporary Flight Restrictions (TFR's) to prohibit aircraft flight operations in the vicinity of Kings Bay Naval Base. The first Notice-to-Airman (NOTAM) issued, 1/9866, prohibited aircraft operations at and below 10,000 feet above ground level (AGL) within a 10-nautical mile radius of the base. The dimensions of this TFR encompassed the St. Marys Airport, which resulted in temporary closure of the facility. NOTAM 1/9866 was replaced on September 14, 2001, by NOTAM 1/9948 that amended the TFR by reducing the restriction to that airspace at and below 5,000 AGL within a 5-nautical miles radius of the base. On December 3, 2001 restricted operations were permitted at the Airport after the FAA issued NOTAM 1/2287. This NOTAM amended the TFR by reducing its dimensions to that airspace within a 2-nautical mile radius of a point on the base, from the surface up to, but not including, 3,000 feet above mean sea level (MSL). On February 26, 2004 the FAA issued a Notice of Proposed Rulemaking that proposed to establish a permanent Prohibited Area over the base. The Prohibited Area dimensions were identical to NOTAM 1/2287, with aircraft prohibited from operating in an area within a 2-nautical mile radius of 30°48'00" North

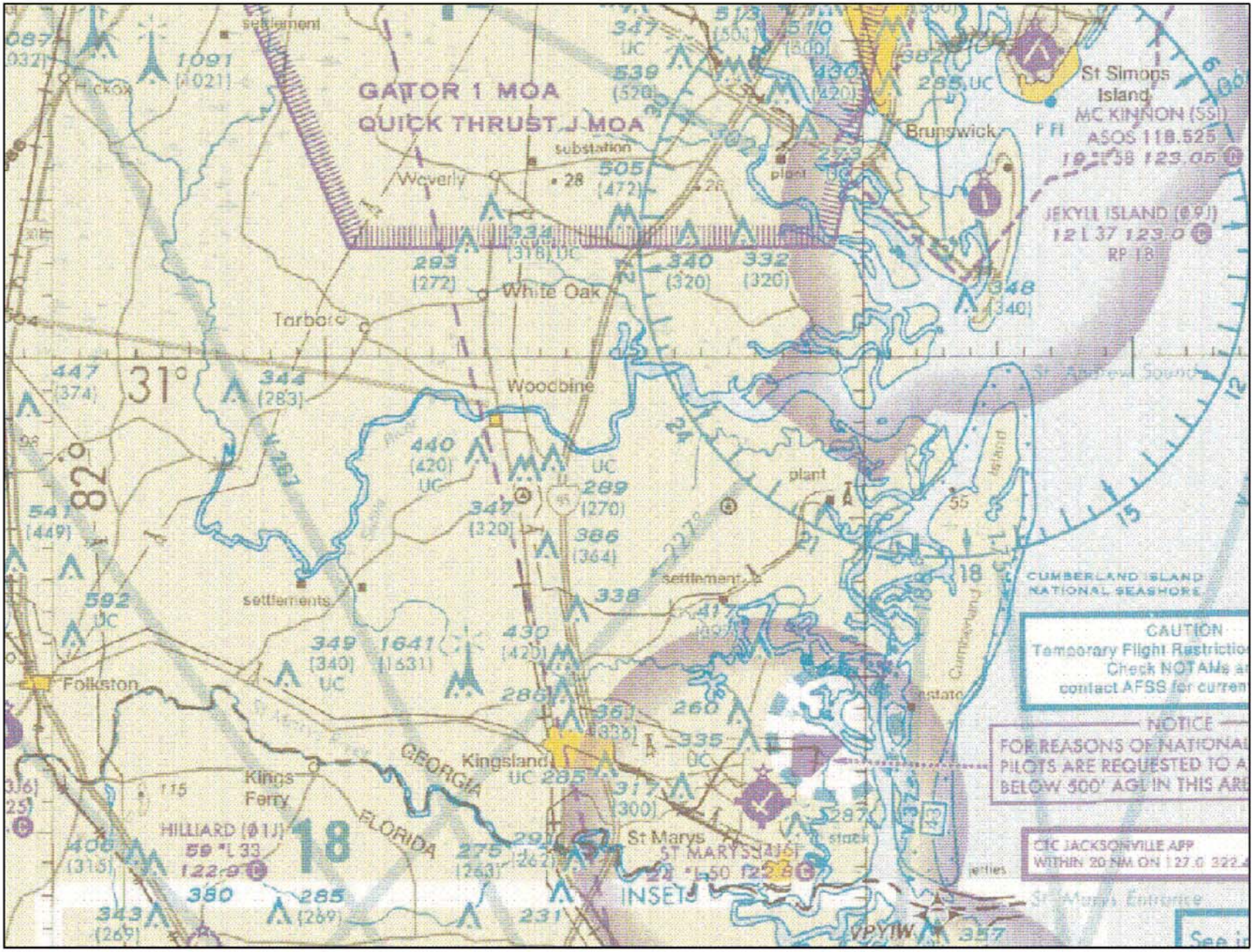
Longitude, 81°31'00" West Latitude, from the surface up to but not including 3,000 feet MSL. The current airspace restriction is charted in the recent Visual Flight Rule (VFR) Sectional Chart, see **Figure 1.4**.

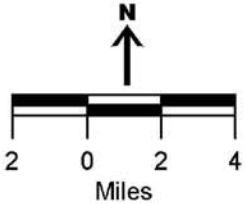
1.4 AIRPORT CLASSIFICATION AND ROLE

The ultimate goal of the national air transportation system is to provide for the safe, rapid and efficient movement of people and goods by aircraft, based on the needs of all segments of civil aviation. An integral component of this process is the airport. The Federal Airport Act of 1946 initially established the requirement for development of a National Airport Plan (NAP), which evolved into the National Plan of Integrated Airport Systems (NPIAS). The NPIAS, which is developed by the FAA, is used to identify the composition of a national system of airports together with planned airport development, and the costs necessary to expand and improve the system in order to anticipate and meet present and future needs of civil aeronautics and national defense.

The NPIAS, which is updated and published by FAA every two years, categorizes airports into two groups: General Aviation and Commercial Service. General Aviation (GA) airports are those that do not have scheduled air carrier, air cargo or commuter service, have fewer than 2,500 annual passenger enplanements, and have at least ten (10) based aircraft. Some general aviation airports are also considered reliever airports. Reliever airports are GA airports with the capacity and capability to relieve the local commercial service airport(s) in case of an emergency or increasing regional congestion. Reliever airports are typically located in the Metropolitan Statistical Area (MSA) of a city or region.

Commercial service airports are defined as those receiving scheduled passenger service and having 2,500 or more enplaned passengers per year. Commercial Service Airports are further classified as either Primary or Non-Primary facilities. Primary airports are those that enplane 10,000 passengers or more annually, while non-primary facilities enplane less than 10,000 annual passengers. Virtually all passenger enplanements occur at Primary airports. The FAA also organizes Primary airports into four classifications called "hubs". These "hubs" are further defined as follows:





Source: FAA - Sectional Raster Aeronautical Charts (2004)
Georgia State GIS Clearinghouse (2004)
R,S&H, Inc. (2004)

Figure 1-4
VFR SECTIONAL CHART

- **Large Hubs**: A large hub airport enplanes at least 1% of all annual enplanements in the U.S.
- **Medium Hubs**: A medium hub airport enplanes between 0.25% and 1% of all annual enplanements in the U.S.
- **Small Hubs**: A small hub airport enplanes between 0.05% and 0.25% of all annual enplanements in the U.S.
- **Non Hubs**: A non-hub airport enplanes over 10,000 annual enplanements, but less than 0.05% of all annual enplanements in the U.S.

The latest edition of the NPIAS was published on September 30, 2004, and covers the period 2005-2009. The NPIAS identifies 3,344 commercial service and general aviation airports, and separates these airports into several different categories, see **Table 1.1**. The NPIAS describes a GA airport as a facility that does not facilitate scheduled air carrier service, and are considered the most convenient source of air transportation for 19 percent of the country's population. Airports included within the NPIAS are also eligible to receive funding under the FAA Airport Improvement Program (AIP). Of the 5,357 public-use airports in the U.S., over 2,000 do not qualify for NPIAS status because they do not meet one or more of the entry criteria.

Table 1.1
NPIAS Airport Distribution

Number of Airports	Airport Type	Percentage of total Enplanements	Percentage of Active GA Aircraft
31	Large-hub	69.4	1.4
37	Medium-hub	19.7	2.9
68	Small-hub	7.6	4.5
247	Non-hub	3.1	11.6
127	Other Commercial Service	0.1	2.1
278	Relievers	0	28.7
2,566	General Aviation	0	39.6
3,344	Existing NPIAS	99.9	90.8
16,232	Non-NPIAS	0.1	9.2

Source: NPIAS 2005-2009

As depicted in **Table 1.1**, general aviation airports account for the largest number of airports included in the NPIAS. The St. Marys Airport has been included as a part of the NPIAS, and is classified as a General Aviation Airport. Projections prepared by the FAA

and published in the NPIAS indicate that the St. Marys Airport classification will remain unchanged in the foreseeable future.

Within the NPIAS several new general aviation airports are proposed. Among these is the replacement St. Mary's Airport. Most new airports are recommended because the communities they serve are generating a larger demand for air service and there is either no airport or the existing airport cannot meet minimum standards of safety and efficiency. The St. Mary's Airport meets this second criteria due to the new post September 11, 2001 restrictions placed on the airspace surrounding Kings Bay, and the inability of the Airport to accommodate all GA operations.

The role of an airport is also defined by FAA in terms of the classes of aircraft that a facility can accommodate. The following is a brief description of each FAA defined airport role.

- **Basic Utility**: These airports can accommodate 95% of the GA propeller-driven fleet of aircraft under 12,500 pounds maximum gross weight.
- **General Utility**: These airports can accommodate all GA aircraft under 12,500 pounds maximum gross weight.
- **Basic Transport**: These airports can accommodate all GA aircraft up to 60,000 pounds maximum gross weight.
- **General Transport**: These airports can accommodate high performance aircraft up to 150,000 pounds maximum gross weight.
- **Passenger Transport**: These airports can accommodate high performance aircraft over 150,000 pounds maximum gross weight.
- **Short Haul**: These airports are served by scheduled air carriers, which operate non-stop routes less than 500 miles.
- **Medium Haul**: These airports are served by scheduled air carriers, which operate non-stop routes greater than 500 miles and less than 1,500 miles.
- **Long Haul**: These airports are served scheduled air carriers, which operate non-stop routes greater than 1,500 miles.

According to the classification criteria described above, the St. Marys Airport would be considered a General Utility Airport. However, the 2002 Airport Layout Plan Update for the St. Marys Airport indicated that it presently serves as a Basic Transport facility, which may not be possible due to the current operational restrictions and limitations.

The State of Georgia is served by a diverse system of airports that are defined and categorized within the Georgia Aviation System Plan. In 2001, GDOT issued an update to the Georgia Aviation System Plan (GASP) that provided strategic direction for the continued development of 103 public use airports located in the State of Georgia. The 2001 GASP update included an examination of four critical components:

- The System Plan
- An Air Service/Passenger Demand Analysis
- A Pavement Management Study
- An Aviation Tax Revenue Study

Within the GASP, GDOT has implemented a state system of classifying airports, which is complimentary to the classification system of the FAA. The GDOT classification system separates all airports into three categories. These three categories are defined as Level I, II, and III, as follows:

- **Level I - Minimum Standard General Aviation Airport**: Level 1 represents the recommended minimum standard to which airports in the state are expected to develop. Level I airports should accommodate all single-engine and some small twin-engine general aviation aircraft, and maintain a minimum runway length of 4,000 feet. Level I airports should also provide non-precision instrument approach capability.
- **Level II – Business Airport of Local Impact**: Level II represents a business airport of local significance capable of accommodating all business and personal use single-engine and twin-engine general aviation aircraft, and a broad range of corporate and business jet aircraft. It is recommended that a Level II airport have a runway that is a minimum of 5,000 feet in length, and provide non-precision instrument approach capability.
- **Level III – Business Airport of Regional Impact**: Level III includes air carrier and general airports that are considered to be regionally significant and capable of accommodating commercial aircraft or a variety of business and corporate jet aircraft. It is recommended that Level III airports have a runway that is a

minimum of 5,500 feet in length, and provide precision instrument approach capability.

The GASP has categorized St. Marys Airport as a Level II airport (Business Airport of Local Impact). To meet the performance recommendations of the GASP, the Airport should be able to accommodate all business and personnel use single and twin-engine general aviation aircraft. However, due to local airspace restrictions, encroachment by development around the Airport, and various obstructions that penetrate the arrival and departure corridors, the Airport is unable to completely fulfill this role. The inability of the St. Marys Airport to fulfill this role has led to a recommendation in the GASP that the Airport be replaced and relocated to a more compatible and appropriate location. A replacement Airport should likewise initially conform to the performance recommendations of a Level II facility, but an opportunity exists to possibly go a step further. The region surrounding the City of St. Marys, and specifically Camden County, is growing at a rapid pace. The opportunity exists to select a suitable location with which to build a Level II facility, and at the same time perform the necessary planning to enable the new facility to emerge in the future as a Level III facility, or one of regional impact and importance.

1.5 ATTRIBUTES OF A GENERAL AVIATION AIRPORT

General Aviation (GA) is used to describe a segment of aviation that includes all aviation activity except scheduled air carrier (including commuter/regional aircraft) and military operators. It is one of our nation's most important and dynamic industries, carrying 166 million passengers annually on aircraft ranging in size from two-seat training aircraft to intercontinental business jets. When people think of airports and airplanes, they think of large air carrier airports like Jacksonville International Airport, Atlanta Hartsfield-Jackson International Airport and Savannah/Hilton Head International Airport. There are 94 general aviation airports located in the State of Georgia, and over 17,000 general aviation airports nationwide. The general aviation aircraft fleet ranges from two-seat single-engine Cessna training aircraft to multi-engine, multi-million dollar business jets. General Aviation aircraft number over 210,000, and comprise over 96 percent of the entire U.S. civilian aircraft fleet. General aviation is relied on exclusively by more than 5,000 communities for their air transportation needs, while scheduled airlines serve

about 500 communities. Nearly 70 percent of all hours flown by general aviation are for business purposes. Some of the benefits of GA include the following:

- **General Aviation Provides Transportation-** Many of the individuals who pilot the more than 210,000 aircraft have found that aircraft provide a fast and efficient means to travel.
- **General Aviation is Working While You Are Sleeping -** All night long general aviation pilots are transporting canceled checks to federal reserve banks around the country, keeping the national "float" down, and playing a vital role in the nation's economy. Also, general aviation pilots are flying packages overnight to destinations not reached by air carrier aircraft.
- **General Aviation Saves Lives and Enhances Safety** – Many general aviation pilots donate their time, aircraft and money to transport sick and fragile children and adults all over the county for medical visits. GA pilots are also working with law enforcement to enforce speed limits as well as "keep the peace" by following "high-speed" chases and criminal activity.
- **General Aviation Saves Crops** – Many farmers use GA aircraft for crop inspections, as well as aerial application of pesticides. Aerial photographers also help geologists and environmentalists monitor our changing topography and landscape of the country that can only be seen from the air.

The nation's GA pilots and passengers have access to over 5,400 public use community airports located all over America. Having access to that many airports affords the GA user the opportunity to depart from an airport relatively close to their home or office, and arrive much closer to their true destination. In contrast, 70% of the commercial airlines' tens of millions of passengers must connect through one of over 30 large-hub airports. This forces the airlines' customers to use airports located in cities where they don't want to go, and as a result, travel times are longer by being forced to change planes at one of the airlines "mega" hubs. GA provides quick and convenient access to the entire nation, which translates to savings in time and money.

Many of our nation's GA airports are also serviced by competent and professional Fixed Base Operators (FBO). A typical FBO provides fuel and maintenance services for aircraft, meeting facilities for pilots and passengers, courtesy or rental car transportation,

and where FAA Air Traffic Services are unavailable, traffic pattern and wind information, altimeter settings and active runway information to pilots over a Common Traffic Advisory Frequency (CTAF). The following is a comprehensive list of services provided by an FBO:

- Flight line and/or fueling services
- Scheduled/unscheduled maintenance, repair and overhaul services
- Business aviation flight planning services
- Airport management
- Aerial advertising and surveying
- Air taxi, charter and passenger transportation
- Aircraft sales and leasing brokerage
- Flight training

The physical characteristics of a GA airport vary considerably depending on location and level of activity. A large GA airport located in a major metropolitan area may have a complicated airfield configuration, with numerous runways, taxiways, aprons, buildings, hangars and FBOs, while others may only have a single runway and FBO facility. Because of the diversity among the GA aircraft fleet, runway dimensions at GA airports may vary from 75 to 200 feet in width, and greater than 10,000 feet in length. Factors used in determining runway length and width at a GA airport includes elevation, average temperature, and the type of aircraft that frequents the airport. The landing surface can also differ among GA airports. Depending on factors such as aircraft type and climate, concrete or asphalt grooved surfaces may be required. Other landing surfaces provided at GA airports may include turf, gravel or waterway landing facilities. The typical GA aircraft apron includes daily parking positions, tie-downs and T-Hangars for based aircraft. Generally, the airport owner or FBO will lease tie-down parking positions and T-Hangars to private aircraft owners and operators on a monthly basis. Owners and operators of itinerant aircraft may rent T-Hangars and tie-down positions not filled by based aircraft on a daily basis.

The initial investment, level of upkeep and maintenance associated with larger aircraft are factors used to determine a method of storage. Owners and operators of larger aircraft generally prefer storage either in a large hangar shared by other aircraft or by

constructing a private hangar. For this reason, FBO's provide hangar space for larger based aircraft. As an example, St. Marys Airport facilities include a corporate hangar, several aircraft tie-downs, three T-Hangars, a maintenance hangar and a large apron for GA local and itinerant aircraft. A general aviation airport in the community is an asset often overlooked, but provides visible and invaluable benefits to the community.

1.6 STATE AND NATIONAL TRENDS

The GASP looked at state and national trends within general aviation and came to several conclusions. While the trend in the production of general aviation aircraft had been in decline for many years, the enactment of the General Aviation Revitalization Act of 1994 established an 18-year Statue of Repose for liability to the aircraft manufacturer on all general aviation aircraft and components. This caused many manufacturers to re-enter the single-engine piston-manufacturing sector. The general aviation industry increased activities and aircraft fleet size. Record shipments and billings of fixed-wing general aviation aircraft have also occurred. Specific trends discussed in the Georgia Aviation System Plan include:

- Aircraft Shipments and Billing – In 2001, the General Aviation Manufacturers Association (GAMA) reported that shipments of airplanes declined by 6.6 percent to 2,634 aircraft from 2000 levels. This was the first decline since 1994 and is attributed to the economic recession and the events of September 11, 2001. With the exception of business jets, all areas of the general aviation market declined in 2001. Demand for business jets was attributed to an increase in the number of fractional ownership agreements, and the increase in the number of traditional corporate flight departments. Business jets generally require airport facilities built to a higher standard.

- Aircraft Fleet – The FAA annually tracks all general aviation aircraft that fly at least one hour per year. The FAA projected that the total number of active general aviation aircraft would increase from 221,213 aircraft in 2000 to 245,965 in 2012 or an annual growth rate of 0.9 percent. After September 2001, the FAA revised its forecast downward to only 0.3 percent annual growth in this market. However, one of the strongest trends is in the growth of general aviation

business/corporate aircraft, illustrating a movement toward higher-performance, more demanding aircraft.

- General Aviation Hours Flown – General Aviation hours flown has increased steadily since 1994, with the exception of 2000 and 2001. The FAA projects that the general aviation hours flown will grow by 1.1 percent annually until 2013. By 2013, total annual hours flown by general aviation aircraft are estimated to be 32.9 million.

- Active Pilots – The total number of pilots increased by 13,000 in the year 2000 to approximately 648,540 pilots. The strongest growth sector was that of student pilots, which increased by 7.0 percent. The FAA projects that the active pilot population within the United States will increase to 27,177 by 2012, representing an annual growth rate of approximately 2.0 percent. The other area of strong general aviation pilot growth is anticipated to be that of Airline Transport pilots, which is projected to increase 3.2 percent annually until 2012, or approximately 204,400 pilots.

- Business Use of General Aviation Aircraft – Business use of general aviation aircraft has increased significantly both before and continuing after the events of September 11, 2001. The use of fractional ownership increased by 40 percent in 2000 alone. Charter operations are also seeing a significant increase. Business jets provide increased control of schedule and accessibility since they can land at over 5,500 U. S. airports as opposed to 500 commercial airports provided by scheduled airlines.

1.7 SUMMARY

An appropriately designed and conveniently located GA airport can be a very strong attribute for a community to attract economic development and provide access to the air transportation system. GA has played a vital role in our nation's history and will become even more important in future years to come. Thus the importance of ensuring an appropriately planned and conveniently located replacement for the St. Marys Airport. The remainder of this Study will document the existing conditions of the St. Marys Airport, discuss projected aviation demand, document the basic requirements for a new

facility, introduce the various environmental considerations and evaluate the potential replacement sites within Camden County. The projected aviation demand will be used to establish facility requirements to accommodate the anticipated demand. Environmental considerations for a potential site within Camden County will be evaluated to address many of the unique environmental challenges if an airport were constructed. Estimated capital development costs will be prepared to estimate the costs for a new facility and an economic impact analysis will be prepared. Typical airport management structures will be discussed and a final recommendation made to the City of St. Mary's and other local governmental entities.

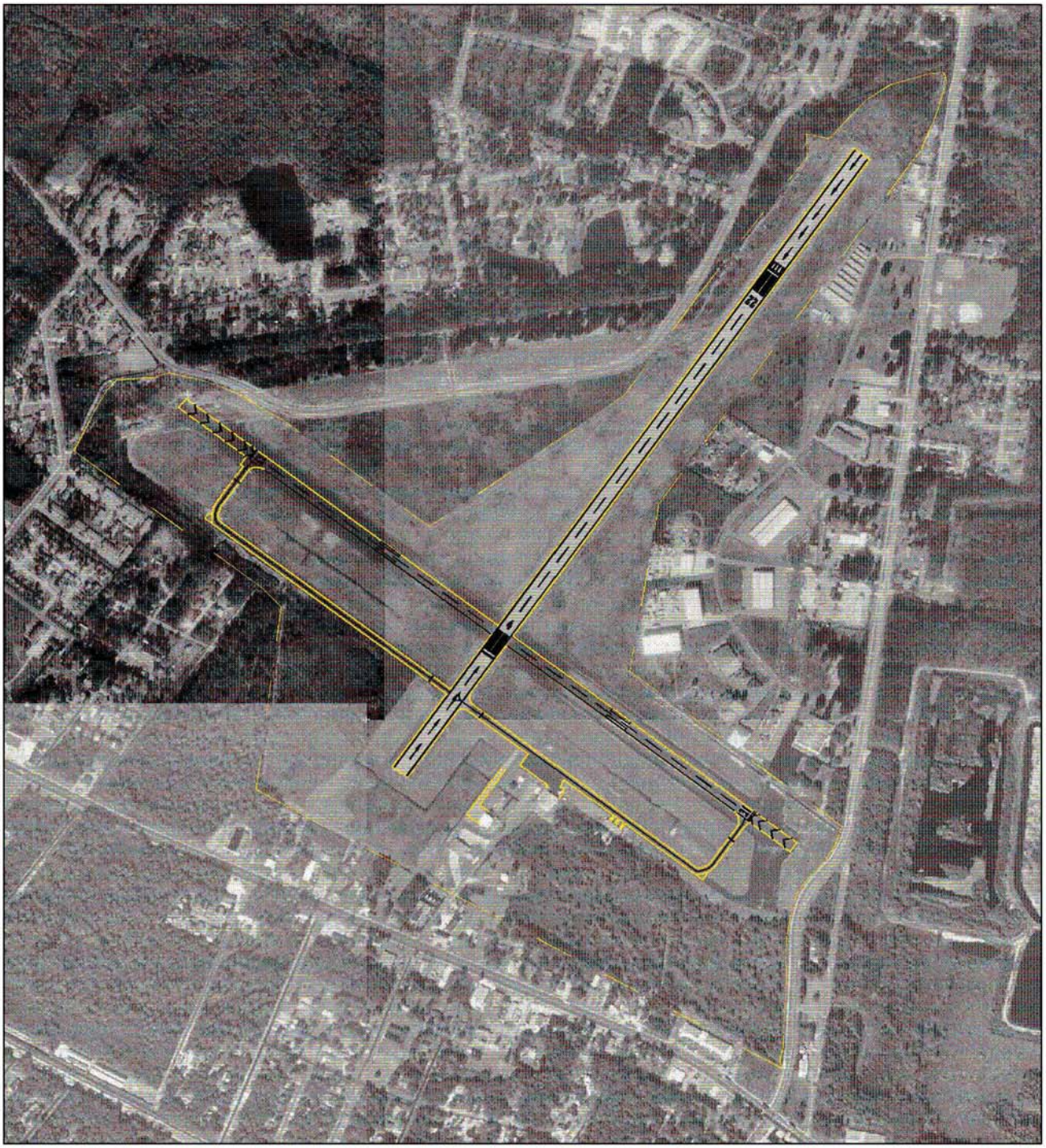
SECTION 2 – EXISTING AIRPORT CONDITIONS

2.0 INTRODUCTION

The purpose of this Section is to summarize the existing conditions of the St. Marys Airport and document the Airport's ability to fulfill its role in the National Plan of Integrated Airport Systems (NPIAS) and Georgia Aviation System Plan (GASP). This Section presents and summarizes the information collected at the outset of the preparation of this report and serves as the foundation for this report and all future airport development. On-site visits to St. Marys Airport as well as research of secondary source material published on the National, State and Local level were used in the preparation of this Section. The St. Marys Airport's major component areas include airside, landside, and ancillary facilities, and surrounding airspace. These areas have been analyzed to determine if they are able to provide the necessary facilities to fulfill their role as identified in the NPIAS and GASP.

2.1 AIRSIDE FACILITIES

This section presents a description of the existing airside facilities at the Airport, including an introductory discussion of the design aircraft and FAA Airport Reference Code for the Airport. The airside area of the Airport, also referred to as the "Airport Operating Area" (AOA), is the area in which aircraft, support vehicles, and other aviation-specific operational activities take place. Airside facilities include all runways, taxiways, aprons, lighting and approach aids. The existing airport layout is shown in **Figure 2.1. Table 2.1** also summarizes the Airport's airside characteristics.



Source: Georgia State GIS Clearinghouse (2004)

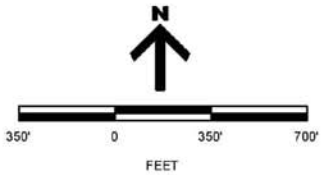


Figure 2-1

EXISITNG ST. MARYS AIRPORT

Table 2.1
St. Marys Airport Airside Characteristics

Item	Characteristic
Airport Elevation	24' MSL
Runway 4/22	5,000' x 100'
Runway 13/31	4,000' x 75'
Taxiways	Parallel (40' wide, Rwy. 13/31 only)
Runway Lighting	Medium Intensity (Rwy. 4/22 only)
Taxiway Lighting	None
NAVAIDS	Rotating Beacon Lighted Segmented Circle Wind Cone
Approach Lighting	None
Weather Reporting	None
Ground Communications	Public Telephone

Source: MSE Inc., ALP Report 2002

2.1.1 Design Aircraft & Airport Reference Code

The Federal Aviation Administration has defined for each airport in the NPIAS an Airport Reference Code (ARC), which is a coding system used to establish airport design criteria for the unique operational and physical characteristics of the aircraft intended to operate at the airport. The ARC is made up of the Aircraft Approach Category and the Airplane Design Group of the most "critical" or design aircraft that uses the airport. The design aircraft is typically defined as the most demanding aircraft that performs or is projected to perform at least 250 annual departures (or 500 annual operations) at the facility. The FAA's Aircraft Approach Categories and Airplane Design Groups are listed in **Table 2.2** and **Table 2.3.** Examples of aircraft classified by the Airplane Design Group are listed in **Table 2.4.**

Table 2.2
Aircraft Approach Category

Aircraft Category	Approach Speed
Category A	Speed less than 91 knots
Category B	Speed 91 knots to less than 121 knots
Category C	Speed 121 knots to less than 141 knots
Category D	Speed 141 knots to less than 166 knots
Category E	Speed 166 knots or more

Source: FAA Advisory Circular 150/5300-13, Airport Design

Table 2.3
Airplane Design Group

Design Group	Wingspan
Group I	Less than 49 feet
Group II	49 feet to less than 79 feet
Group III	79 feet to less than 118 feet
Group IV	118 feet to less than 171 feet
Group V	171 feet to less than 214 feet
Group VI	214 feet or more

Source: FAA A/C 150/5300-13, Airport Design

To determine airfield facility requirements, FAA planning guidelines recommend the identification of an existing and future design aircraft. Some airport facilities may have an ARC for each runway if the runway is designed to accommodate various types of traffic, such as an airport that may have a runway that accommodates commercial service traffic on one runway and general aviation traffic on another. The St. Marys Airport is classified as a Design Group II facility, which can accommodate aircraft with a wingspan up to 79'.

Table 2.4
Airplane Design Group Aircraft

Design Group	Representative Aircraft
Group I	Beech Baron 58A, Cessna 150, Learjet 35A Piper Navajo, F-18, F-16
Group II	Beech King Air C90, Canadair Regional Jet Citation III, Gulfstream IV, F-14, Saab 340
Group III	Airbus A-320, Boeing 727/737, DC-9 Fokker 100, Gulfstream V, MD-80
Group IV	Boeing 757/767, Airbus A-300, DC-10 MD-11, C-141
Group V	Airbus A-340, Boeing 747/777
Group VI	Antonov AN-124, Lockheed C-5B

Source: Jane's All-the-World Aircraft

In Advisory Circular (AC) 150/5300-13, *Airport Design*, the FAA has established airfield dimensional standards pertaining to runway and taxiway widths, separations, and building setbacks based on the design aircraft and corresponding ARC. The remaining

portions of this section will introduce and discuss the applicable airfield design criteria for the St. Marys Airport.

2.1.2 Runways and Taxiways

The airfield layout refers to the location and orientation of the runways, taxiways and apron areas. The St. Marys airport has two runways that are used for arriving and departing aircraft. These two runways allow maximum wind coverage during all weather conditions, and enhance operational effectiveness by offering aircraft a runway with a lower crosswind component most of the time.

Runway 4/22 is the primary runway for the Airport, has a predominantly northeast/southwest direction, and measures 5,000 feet in length and 100 feet in width. Moreover, Runway 4/22 has a displaced threshold of 950 feet on each end, but these thresholds are not marked. A displaced threshold is usually located at the end of a runway when obstructions exist in the approach path, thereby preventing the entire runway length from being usable for landing. The displaced thresholds for Runway 4/22 were necessary because of the obstructions (trees) located near the approach end of both runway ends. Based on information received during the development of this Study, the obstructions off the Runway 4 approach end have been removed, but the runway markings have not changed and the displacement is still in place. The obstructions off the Runway 22 approach end have not been removed. Because of the displaced thresholds, Runway 4/22 has 4,050 feet of usable runway length, in each direction. Since, there is less than 5,000 feet of usable runway length, the Airport is unable to fulfill the recommendations for a Level II facility under the GASP. The conditions of the basic markings on the runway are excellent. Runway 4/22 is composed of asphalt, and is in good condition. The FAA reports the pavement strength for Runway 4/22 as 20,000 pounds for single gear aircraft, and is considered a Basic Transport runway. The runway is equipped with Medium Intensity Runway Lights (MIRLs) and there is no full-length parallel taxiway.

Runway 13/31 is considered the crosswind runway, has a northwest/southeast orientation, with an overall length of 4,000 feet and a width of 75 feet. There is a full parallel taxiway for Runway 13/31, which is 40 feet in width. The runway is constructed of asphalt and generally is in good condition. There are no published reports for the

pavement strength for Runway 13/31. During the last Airport Layout Plan Update, it was recommended that the Runway be rehabilitated. The full parallel taxiway is constructed of asphalt and is in poor condition. Runway 13/31 is a general utility runway equipped with basic runway markings and no lighting system. The associated parallel taxiway is equipped with basic taxiway markings and no lighting.

2.1.3 Aircraft Apron

An aircraft parking apron is necessary to ensure adequate parking and ground maneuvering space for transient as well as locally based aircraft. The St. Marys general aviation parking apron is located north of St. Marys Aviation, is approximately 8,900 square yards in size, constructed of asphalt, and is in poor condition.

2.1.4 Airfield Beacon

The Airport has a rotating beacon that is located directly east of the fire station on an approximately 100 foot tall water tower. Rotating beacons in general have a vertical light distribution, which results in the most effective emissions occurring in a range from one to ten degrees above the horizon. For civilian airports, rotating beacons are required to flash between 24 and 30 times per minute, and emit green and white light. Operation of the rotating beacon during the hours of daylight typically indicate ground visibility is less than three miles and/or ceilings are below 1,000 feet Above Ground Level (AGL), and instrument meteorological conditions exist. All other times the rotating beacon is operated during the hours of 30 minutes before sunset and 30 minutes after sunrise.

2.1.5 Wind Cone and Lighted Segmented Circle

Pilots obtain wind direction and traffic pattern information from a wind cone and segmented circle. Wind cones and segmented circles are placed in a location near the operational runways of an airport. Additionally, these visual aids are placed in a location that provides maximum visibility to pilots in the air and on the ground. At St. Marys, a wind cone is located above the corporate hangar, which is south of Runway 13/31 and east of Runway 4/22. A supplemental wind cone is located on a storage building east of Runway 4/22 in the St. Marys Airport Industrial Park.

The segmented circle is located near the apron in front of St. Marys Aviation. A segmented circle shows the traffic pattern direction for a particular airport, which in most

cases is a standard left-hand pattern. However, if the traffic pattern for the particular airport is not known, the segmented circle can be used for a visual reference.

2.2 LANDSIDE FACILITES

This section presents a description of the existing landside facilities at the Airport. The landside of the Airport is the area in which all aviation and non-aviation related buildings and associated infrastructure are located. As previously mentioned, the existing Airport layout is shown in **Figure 2.1**. **Table 2.5** summarizes the Airports buildings and infrastructure.

Table 2.5
Airport Facilities

Facility	Size	Ownership
Terminal/Office	1,000 sq.ft.	St. Marys Aviation
Maintenance Hangar	8,000 sq.ft.	St. Marys Aviation
Covered Maintenance Hangar Extension	5,000 sq.ft.	St. Marys Aviation
Fuel Farm	(1) 10,000 gal. (1) 12,000 gal.	Airport Authority
T-Hangars (3)	1,600 sq.ft.	Private
Individual Hangars (4)	2,400 sq.ft.	Private
Gillman Hangar	4,200 sq.ft.	Airport Authority

Source: RS&H, 2004

2.2.1 Aircraft Hangars

The general aviation area is located on the east side of the airfield. The current facilities consist of three T-hangars that measure 40x40 (1,600 square feet each), located east of St. Marys Aviation, and are privately owned. There are four individual hangars that measure 40x60 (2,400 square feet each), located southwest of St. Marys Aviation, and these are also privately owned. The business associated with these hangars is Bird Aviation. St. Marys Aviation occupies an FBO/terminal building that measures 20x50 (1,000 square feet in size), and is connected to the maintenance hangar that measures 40x200 (8,000 square feet in size). There is a covered extension to the maintenance

hangar that measures 50x100 (5,000 square feet in size) and does not currently have walls. This area is also used for maintenance on aircraft. The Gillman Hangar, which houses St. Marys Flight School and St. Marys Skydiving, is located west of the access road across from the water tower. The Gillman Hangar measures 60x70 (4,200 square feet in size) and has a connection to the taxiway, apron space and auto parking. A City of St. Marys fire station is located on the west side of the access road, south of the Gillman hangar.

The Airport Authority owns the Gillman Hangar and the fuel farm tanks. The FBO/terminal building, maintenance building, covered extension, automated point of sale device for the fuel farm and one square hangar are all owned by St. Marys Aviation. The remaining hangars are all privately owned.

2.2.2 Ground Access and Auto Parking

The City of St. Marys is located in Camden County, in the Southeastern region of the State of Georgia. Interstate 95 (I-95) provides north-south highway access through the County. There are six interchanges along the I-95 corridor that serve Camden County. St. Marys is located approximately 6 miles east of I-95 along State Highway 40, which is the main east/west thoroughfare in the southern part of the County. State Highway 40 is also the primary route connecting St. Marys to Kingsland, and the only access to the Airport. Major improvements are underway to widen Highway 40. U.S Highway 17 also provides north-south access in Camden County, and parallels I-95 about three miles to its west. The Airport is approximately 9 miles east of the I-95 corridor.

The number of auto spaces required at an airport is dependent upon the airport's overall activity level. Auto parking is very limited around the St. Marys Airport, and St. Marys Aviation has five (5) paved spaces. The Gillman Hangar, which houses the flight school and skydiving business, has eight (8) paved spaces.

2.3 NAVAIDS/Visual Aids

Various types of navigational aids (NAVAIDs) are in use today at general aviation airports. Many NAVAIDs used throughout the U.S. are owned, operated and maintained by the FAA. As a result, the FAA has the statutory authority to establish, operate and prescribe standards for the operation of all NAVAIDs used in federally controlled

airspace. Currently, St. Marys Airport has an Airport Surveillance Radar (ASR) approach to Runway 4.[3] Since the events of September 11, 2001 and the current airspace restrictions, a "missed" approach on Runway 4 could result in an aircraft violating the airspace restriction. Visual aids at the Airport consist of a rotating beacon, wind cone and a lighted segmented circle.

2.4 ANCILLARY FACILITES

This section presents a description of the existing ancillary facilities at the St. Marys Airport. The ancillary facilities at the Airport include all support and auxiliary services, such as the utilities, fuel farm, and drainage facilities. The Airport Industrial Park is not considered an ancillary facility, but will be discussed in general terms in this section.

2.4.1 Utilities

The utilities consist of electrical power, telephone, water, sanitary sewer and drainage facilities. Each are described below:

- **Electrical Power** – Electrical power is provided by Georgia Power. The electric vault that furnishes power to the runway lights is located in the St. Marys Aviation Hangar. The City of St. Marys pays for the electric service to the airfield.
- **Telephone Service** – Telephone service is provided by Camden Telephone and Telegraph Company.
- **Water Service** – Water service is provided by the City of St. Marys Department of Public Works.
- **Sanitary Sewer System** – The City of St. Marys provides sanitary and wastewater services for the airport.
- **Drainage System** – Surface drainage within the airport is generally good.

2.4.2 Fuel Facilities

Aircraft fueling facilities located adjacent to the aircraft parking apron are owned by the St. Marys Airport Authority, and operated by St. Marys Aviation. Fuel services include 100LL and Jet-A, and a self-serve dispensing system is available. Fuel truck dispensing services are also provided. The fuel farm facility includes two above ground tanks. One

[3] U.S. Terminal Procedures, Southeast (SE), VOL 4 of 4, 30 Sept 2004.

10,000 gallon tank for dispensing 100LL, and one12,000 gallon tank for Jet A fuel. The fuel facilities meet all state and federal requirements for pollution standards.

2.4.3 Airport Industrial Park

There are several Industrial Parks located in Camden County. The largest is the Camden County Industrial Park, which is a 164 acre-park situated between Woodbine and Kingsland along I-95. This park is owned and operated by the Camden County Joint Development Authority (JDA). There is also an industrial park located in the City of St. Marys adjacent to the St. Marys Airport, just east of Runway 4/22 and north of Runway 13/31.

2.4.4 Other

There is a municipal fire station for the City of St. Marys located on the access road to the Airport. This station serves the City of St. Marys, St. Marys Airport, and has the capability to provide mutual aid services to other municipalities, or Camden County, if requested.

2.5 AIRSPACE

The FAA has created various airspace classifications to control the movement of aircraft in visual as well as instrument flight conditions. The exact definition and description of each type of airspace is contained in several different federal regulations, and is further described within one of the following airspace types:

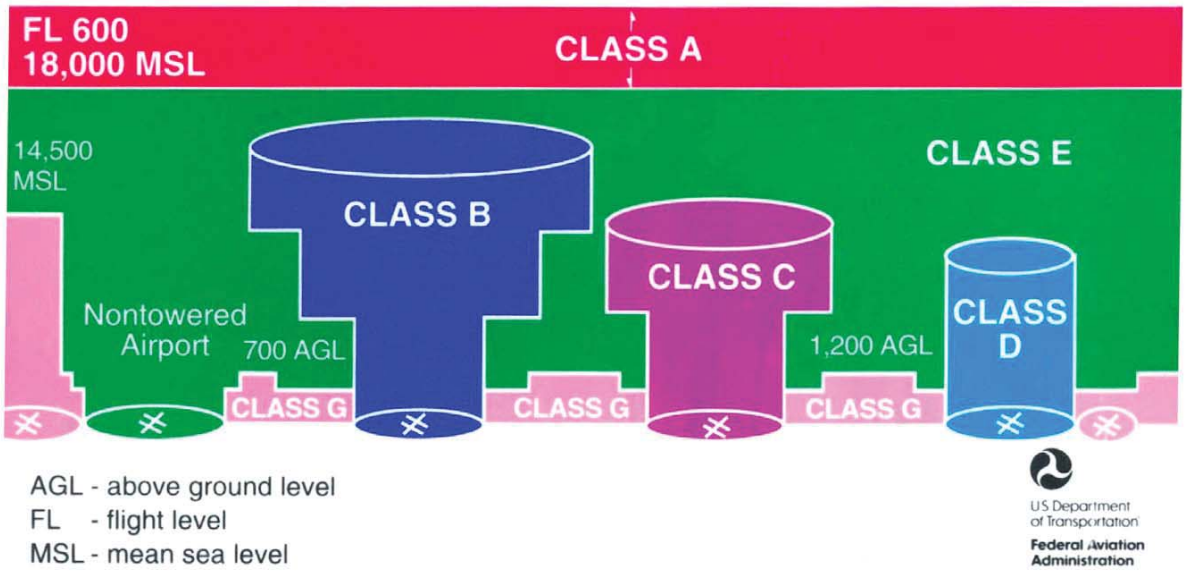
- Controlled Airspace
- Uncontrolled Airspace
- Special Use Airspace
- Other Airspace

A complete description of each type of airspace under the jurisdiction of the FAA is discussed in the following sections.

2.5.1 Controlled Airspace

Controlled airspace includes all airspace categorized as Class A, B, C, D, and E airspace, see **Figure 2.2**. In accordance with each airspace classification, Air Traffic Control (ATC) service is provided to aircraft operating under Instrument Flight Rules (IFR) and Visual Flight Rules (VFR).

Figure 2.2
Types of Airspace



Source: FAA

- **Class A Airspace** – Class A Airspace begins at 18,000 feet Mean Sea Level (MSL) or Flight Level 180 (FL 180) and extends vertically up to and including 60,000 feet MSL or FL 600. As a requirement of the federal aviation regulations, all persons operating an aircraft in Class A Airspace must be flying under an instrument flight plan. Although not specifically charted, Class A airspace includes that airspace overlying the U.S. and U.S. waters within 12 nautical miles (N.M.) of the coast of the 48 contiguous states and Alaska.
- **Class B Airspace** – Class B Airspace begins at the surface and extends vertically to 10,000 feet MSL surrounding the nation's busiest airports in terms of instrument operations or passenger enplanements. The configuration of each Class B Airspace area is individually tailored and

consists of a surface area and two or more layers, and is designed to contain all published instrument procedures once an aircraft enters the airspace. Class B Airspace is charted on VFR Sectional Charts, IFR En-Route Low Altitude Charts, and Terminal Area Charts. An example of those airports where Class B airspace is established include Miami International, Orlando International, and Atlanta Hartsfield-Jackson International Airports.

- **Class C Airspace** – Class C Airspace begins at the surface and extends vertically to 4,000 feet above the airport's elevation (charted in MSL) surrounding those airports that have an operating control tower serviced by a radar approach control. Each Class C Airspace area is individually tailored. However, the airspace usually consists of a five-nautical mile radius core surface area extending from the surface up to 4,000 feet above the airport elevation, and a 10-nautical mile radius shelf area extending from 1,200 feet to 4,000 feet above the airport elevation. Class C Airspace is charted on VFR Sectional Charts, IFR En-Route Low Altitude Charts and Terminal Area Charts where appropriate. An example of those airports where Class C airspace is established include Daytona Beach International, Ft. Lauderdale/Hollywood International, and Jacksonville International Airports.
- **Class D Airspace** – Class D Airspace begins at the surface and extends to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operating control tower. The configuration of each Class D Airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Class D Airspace areas are depicted on VFR Sectional and Terminal Charts with blue segmented lines and IFR En-Route Low Altitude charts with a boxed [D]. Class D airspace is relatively common compared to Class B and C airspace.
- **Class E Airspace** –Airspace which is controlled, but not associated with a portion of airspace identified as Class A, Class B, Class C, or Class D Airspace, is designated Class E Airspace. Class E Airspace below 14,500 feet MSL is charted in a variety of forms on VFR Sectional Charts, Terminal Charts, World Charts and IFR En-Route Low Altitude Charts.

The different forms of Class E Airspace include the surface area designated for an airport, and extension to a surface area, airspace used for transition, En-Route Domestic Areas, federal (victor) airways, and offshore Airspace Areas.

2.5.2 Uncontrolled Airspace

Uncontrolled airspace is categorized as Class G airspace. Typically, Class G airspace includes all airspace not classified as Class A, Class B, Class C, Class D, or Class E airspace. Whereas ATC services are provided within controlled airspace, no ATC services are provided within Class G or uncontrolled airspace. Uncontrolled airspace is also depicted in **Figure 2.2**.

2.5.3 Special Use Airspace

Special use airspace consists of areas in which activities within the airspace must be confined because of their nature, or limitations are imposed upon aircraft operations, which are not part of the specific activities taking place within the segregated area. Except for Controlled Firing Areas utilized during military training or testing exercises, special use airspace areas are depicted on aeronautical charts. The following list includes the different types of special use airspace.

- **Alert Areas** - Alert Areas are depicted on aeronautical charts to inform non-participating pilots of areas that may contain a high volume of pilot training or an unusual type of aerial activity.
- **Controlled Firing Areas (CFA)** - CFAs contain activity, which if not conducted in a controlled environment, could be hazardous to nonparticipating aircraft.
- **Military Operating Areas (MOA)** - MOAs consist of airspace with defined vertical and lateral limits established for the purpose of separating certain military training activities from civilian air traffic. MOAs are depicted on VFR Sectional Charts, VFR Terminal Area Charts, and IFR En-Route Low Altitude Charts.
- **National Security Areas (NSA)** - NSAs consist of airspace with defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities.

- **Prohibited Areas** - Prohibited Areas contain airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft is prohibited. These areas are published in the Federal Register and are depicted on aeronautical charts.
- **Restricted Areas** - Restricted Areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restrictions. Restricted Areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery or guided missiles. Restricted Airspace is depicted on the VFR Sectional and IFR En-Route Charts. Additionally, Restricted Areas are published in the Federal Register and described in Federal Aviation Regulation Part 73.
- **Warning Areas** - A Warning Area is airspace of defined dimensions, extending from three (3) nautical miles outward from the coast of the U.S. A Warning Area contains activity deemed hazardous to non-participating aircraft. Furthermore, a Warning Area may be established over domestic waters, international waters or a combination of both.

2.5.4 Other Airspace

Airspace designated as "Other Airspace" is primarily composed of Military Training Routes (MTRs). All MTRs positioned above 1,500 feet AGL are depicted on VFR Sectional and IFR Low Altitude En-Route Charts. These routes have been established to provide a means for military aircraft to practice low-level combat tactics. Generally, MTRs are established below 10,000 feet MSL for operations at speeds in excess of 250 knots. Presented in the following list are additional forms of airspace identified as "Other Airspace."

- The area within 10 Statute Miles (SM) of an airport where a control tower is not operating, but where a Flight Service Station (FSS) is located, also known as an Airport Advisory Area.
- Areas in which the FAA has imposed temporary restrictions for aircraft operations.
- Parachute operations in the vicinity of an airport without an operating control tower.

2.5.5 St. Marys Airspace

According to the Northeast Florida Airspace System Plan, the Jacksonville Air Route Control Center (ARTCC) and Jacksonville Terminal Radar Approach Control (TRACON), currently have sufficient capacity for aviation traffic growth in Northeast Florida/Southeast Georgia. Current flight restrictions for St. Marys Airport issued in a FAA NOTAM (Notice to Airmen) prohibit flights within a 2 NM radius at and below 3,000 ft MSL, centered on a point 15.5 NM from the Brunswick VORTAC (Very High Frequency Omni-directional Range (VOR) co-located with a Tactical Air Navigation station (TACAN) off of the 198-degree radial. Jacksonville TRACON is in charge of operations and Macon Automated Flight Service Station is the FAA coordination facility until further notice. The exact limits of this airspace restriction were described and depicted in Section 1. Additionally, the airspace overlying the St. Marys Airport is considered Class E.

2.5.6 Part 77 Airspace Restrictions

All Airports have a three-dimensional imaginary surfaces plan that identifies each airport's navigable airspace requirements as dictated by Federal Aviation Regulation (FAR) Part 77. FAR Part 77 establishes standards for identifying obstructions and publishes the design criteria for use in constructing the imaginary surfaces profile for each specific airport. These surfaces represent an imaginary "bowl" of airspace centered on the airport with long approach surfaces extending up and outward from each runway end. These imaginary surfaces surrounding the airport are also used to analyze all existing, future and proposed construction as to their potential for creating a hazard for aircraft operating at the airport. If a structure such as a natural object (i.e., a tree) penetrates into these surfaces, then it must be removed or modified. If the structure or obstacle intruding into the imaginary airspace as defined by FAR Part 77 cannot be easily removed, the FAA may extend a waiver and the structure will need to be identified by either painting, installing an obstruction light, or both. In addition, the Airport's approach minimums pertaining to descent altitude and visibility may be impacted (i.e., increased) due to any obstructions to FAR Part 77 surfaces.

FAR Part 77 basically consists of five imaginary surfaces around the airport, which are usually implemented and enforced by state and local zoning commissions to ensure aircraft safety. These surfaces are defined as follows (see **Figure 2.3**):

Primary Surface –

This surface is longitudinally centered on a runway with a varying width depending on the type of approach (visual or instrument) to the runway. The primary surface also extends 200 feet beyond each runway end.

Approach Surface –

This surface is centered on the extended centerline of the runway and extends outward and upward from the primary surface. The dimensions of the approach surface, as well as the approach slope, vary according to the type of approach (visual or instrument) to the runway.

Transitional Surface –

This surface extends upward from the outer edges of the primary surface and approach surface at a 7(horizontal) to 1(vertical) slope, and intersects with the horizontal surface.

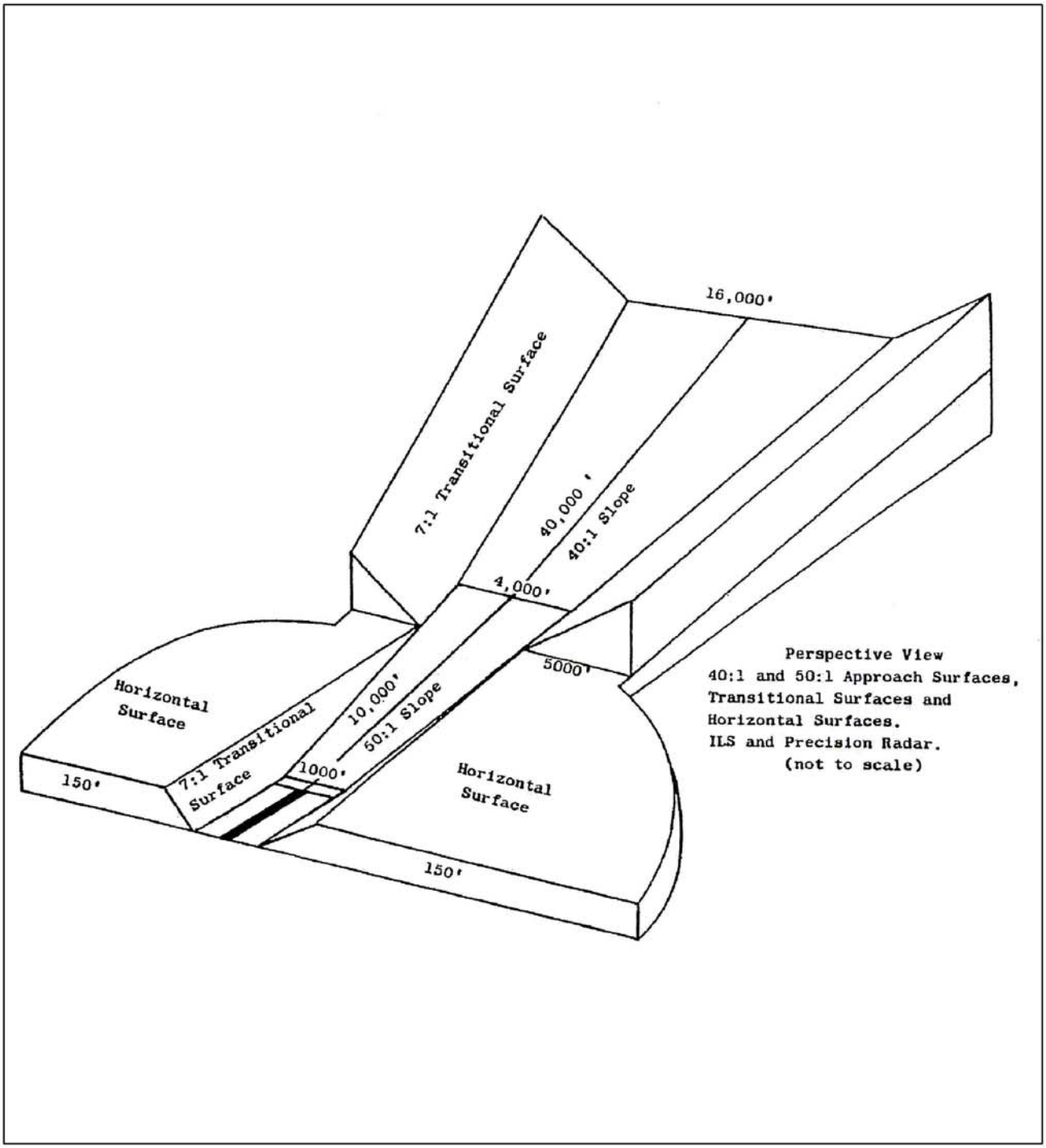
Horizontal Surface -

This surface is a horizontal plane beginning at 150 feet above the established airport elevation, with an inner perimeter established at the intersection of the transitional surface, and its outer perimeter established by swinging an arc a specified radii from the center of the primary surface ends and connecting these arcs with lines tangent to these arcs.

Conical Surface –

This surface extends beyond the horizontal surface for a distance of 4,000 feet and extends upward at a 20 (horizontal) to 1 (vertical) slope.

The implementation and enforcement of Part 77 criteria is usually through the adoption of a local airport height zoning ordinance. Currently, the City of St. Marys does not have a height zoning ordinance for the St. Marys Airport. By adopting a height zoning ordinance, the City could prevent any future obstructions from creating airspace hazards, as well as regulate development in close proximity to the Airport.



Source: Federal Aviation Regulations Part 77

Figure 2-3

PART 77 IMAGINARY SURFACES

2.6 LAND USE

Land uses adjacent to the Airport include industrial operations to the east, commercial development to the south, agricultural and woodlands to the north and west, and the Kings Bay Naval Submarine Base approximately 2 miles north of the Airport. Residential development is also located to the north and west. Future development of the St. Marys Airport would necessitate impacting surrounding residential and commercial developments, as well as potential continued impacts to the Kings Bay Naval Base.

2.7 SUMMARY

The St. Marys Airport functions today as a general aviation facility of limited utility, due to the airspace restrictions surrounding the Kings Bay Naval Base. There is no reason to believe that the Airport's utility to the community will improve, since current airspace restrictions severely hamper operations and are in the midst of becoming permanent. These operational limitations are deterrents to increased business use of the St. Marys Airport, and will act to prevent future economic development. With this impediment the Airport will be unable to fulfill its role in the GASP as a Level II "business airport of local impact." Furthermore, airfield design issues have been identified for resolution in order to bring the Airport up to the Level II standards recommended in the GASP. Although the airfield design issues could potentially be resolved, one would question the wisdom of investing additional capital in a facility to correct airfield design issues when in fact the existing facility will never fully meet the intent of the GASP Level II recommendations due to its' close proximity to Kings Bay Naval Base.

SECTION 3 – MARKET AREA IDENTIFICATION

The Georgia Aviation System consists of 103 public use airports, ranging in size from the busiest airport in the U.S., Atlanta's Hartsfield-Jackson International Airport, to the smallest general aviation airport with a single paved runway. No matter what the physical size of the airport, each contributes to the total system by supporting different types and levels of aviation activity, in addition to the service they provide to various market areas. During development of the Georgia Aviation System Plan (GASP) various targets for accessibility were established to ensure that a well developed system of airports could support the transportation and economic development objectives of the State. These service objectives include the following types of airport facilities:

- Level I Airport – within a 30-minute drive time of all areas of the State.
- Level II Airport – within a 30-minute drive time of all areas of the State.
- Level III Airport – within a 45 minute drive time of all areas of the State and a 60-minute drive time for commercial service airports.

Based on these service objectives, the market area for the St. Marys Airport is essentially those geographic areas within a 30 minute drive to the Airport. In the current location, those areas reach to the northern boundaries of Camden County, to the west into Charlton County, and to the south into northern Florida. Depending upon the ultimate location of a replacement Airport, the opportunity exists to expand upon the present service area by locating the Airport in a more central location in the County. The service area could potentially expand into more of Charlton, as well as Brantley County. Representatives from both of these Counties have expressed interest in the past in a new airport facility in Camden County as a means of also supporting the growth of aviation activity generated within these Counties.

The St. Marys Airport Assessment Report prepared for the Camden County Joint Development Authority in 2002 also determined that the service area for the St. Marys Airport includes a 30 mile radius (essentially a 30 minute drive time) from the facility, which is essentially the entire Camden County area.

SECTION 4 - AVIATION DEMAND FORECASTS

4.0 INTRODUCTION

During development of the 2002 Georgia Aviation System Plan (GASP), overall aviation activity projections were developed for the entire State and used to assess the need for and phasing of future system improvements. The general approach in the GASP was to develop aviation forecasts for Georgia's Airport System that identified historical relationships between Georgia aviation factors and total U.S. Aviation Activity. Actual trends in demand experienced on a statewide basis and at individual system airports, were also taken into consideration. Broadly, the forecasts developed for the GASP revealed the following:

- Due to expected increases in population and employment, based aircraft at Georgia's public airports are predicted to increase from 5,209 in 2002, to 6,571 by 2021.
- Statewide general aviation operations are projected to reach 2.9 million annually in 2021, up from 2.3 million presently.

While aviation activity is expected to grow over the planning period, the GASP also examined system capacity to ensure adequate facilities are provided to meet demand. The GASP mentioned that the FAA has determined that as an airport's annual operational demand reaches 60% or more of the airport's calculated airfield operating capacity, delays to aircraft on the ground and in the air begin to increase. As annual demand equals or exceeds 80% of an airport's annual operational capacity, delays can increase dramatically. Statewide, sufficient operational capacity exists to meet Georgia's projected operational demand. Systemwide, only 6% of all airports will have demand/capacity ratios that approach the FAA critical demand/capacity trigger point of 60%. Specifically for Level II facilities, in 2001 the overall demand capacity ratio was calculated to be 10% statewide, and projected to increase to 12% by 2021.

4.1 GASP ACTIVITY PROJECTIONS

For all general aviation (GA) airports in the State, the GASP developed projections for based aircraft, fleet mix, and GA operations. The baseline for development of these

activity projections was an examination of the various historical activity levels. Specifically for the St. Marys Airport, in 1992 eleven (11) based aircraft were recorded at the Airport, and 22 based aircraft were reported in 2001. The historical fleet mix of aircraft which use the general aviation system were estimated to be 69% single-engine, 12% multi-engine and turboprop, 3% jet, and 16% helicopter or other. Furthermore, annual GA operations at St. Marys Airport were estimated to be 12,000 from the period 1996 through 2000, and 12,250 in 2001. Based on these historical projections, several different forecasting methodologies (i.e., socioeconomic, trend analysis and market share methodology) were used to project potential future activity levels. Forecast data will be presented in the following sections for based aircraft, fleet mix and GA operations for the St. Marys Airport.

4.1.1 Based Aircraft Forecast

According to the results of the socioeconomic methodology under the GASP, using the population projections for Camden County (i.e., a growth rate of 0.98% during the years 2000 through 2020), as well as statewide projections for total anticipated population growth obtained from Woods and Poole,[4] based aircraft are expected to grow to 23 by 2006, 25 by 2011, and 27 by 2021.

Calculations of based aircraft using the trend analysis methodology compares Georgia's growth in statewide general aviation based aircraft to reported national growth for all general aviation aircraft. Using the average annual growth rate for St. Marys Airport from the period of 1992 through 2001 (i.e., a 9.05% annual growth rate) based aircraft are projected to grow to 24 in 2006, 26 in 2011, and 31 in 2021.

Using the market share approach as presented in the GASP, Georgia's statewide based aircraft have historically accounted for approximately 2.39% of all active general aviation aircraft in the U.S. Assuming this relationship remains applicable throughout the planning period identified in the GASP, based aircraft at St. Marys Airport are expected to remain at 22 through 2011, and grow to 23 by 2021, which equals a 0.42% average annual growth rate.

[4] Woods and Poole is a nationally recognized consulting firm that specializes in the development of long-term economic and demographic projections.

Since demand is closely related to anticipated market conditions for each airport, and population growth was the only market driven demand variable examined within the GASP, the GASP selected or preferred forecast is the socioeconomic projection. The projections for based aircraft, along with the GA aircraft fleet mix and annual operations forecasts, are summarized in Section 4.2.4.

4.1.2 Aircraft Fleet Mix

As stated in the GASP, an airport's based aircraft fleet mix is an indication of the airport's operational role and facility needs. The fleet mix and level of activity will also dictate the type and size of airport facilities (i.e., tie-downs, apron area, hangars, etc.) to be planned and implemented. In projecting the based aircraft fleet mix for the State of Georgia, the GASP considered the changing national general aviation feet as compared to Georgia's aircraft fleet mix. **Table 4.1** depicts the historic (2000), 2013 and 2021 national general aviation fleet mixes as presented in the GASP.

Table 4.1
Historic and Forecast National General Aviation Fleet Mix

Aircraft Type	Historic 2000 Fleet Mix	FAA 2013 Fleet Mix	Extrapolated FAA 2021 Fleet Mix
Single Engine Piston	69%	67%	67%
Multi-engine/Turboprop	12%	12%	11%
Jet	3%	5%	6%
Helicopter and Other	16%	16%	16%

Source: Georgia Aviation System Plan, 2002

Based on the historic and national general aviation fleet mix, the GASP generated similar fleet mix forecasts for the State of Georgia, see **Table 4.2**. These are the fleet mix projections that will be used in future planning efforts for the St. Marys Airport.

Table 4.2
Georgia Statewide General Aviation Fleet Mix

Aircraft Type	2001 Fleet Mix	2006 Fleet Mix	2011 Fleet Mix	2021 Fleet Mix
Single Engine Piston	76%	75%	73%	71%
Multi-engine/Turboprop	15%	15%	15%	15%
Jet	5%	5%	6%	7%
Helicopter and Other	4%	5%	6%	7%

Source: Georgia Aviation System Plan, 2002

4.1.3 Annual Aircraft Operations

A determination of aircraft operational demand at an airport is crucial to adequately develop a long-term plan for the facility. As part of the 2002 GASP update process, historical general aviation operations were collected and analyzed for both the individual airports and statewide levels. Since a significant number of general aviation airports in Georgia do not have operational control towers, takeoffs and landings are not accurately counted, and therefore an estimate of annual demand must be made. Due to the inherent limitations in estimating annual aircraft operational activity, the GASP used three methodologies to produce total projected annual demand (i.e., market share, trend analysis and operations per based aircraft analysis).

For the market share analysis, the GASP concluded that the aircraft operational demand at an individual airport is proportional to the total demand in the State. Drawing upon this conclusion, the GASP indicated that St. Marys Airport creates approximately 0.54% of the total annual aircraft operational demand in the State (e.g., its “market share”). Using this market share value and projected growth rate for all aircraft operations in the State, annual aircraft operations at St. Marys are expected to grow to 12,161 in 2006, 13,908 in 2011, and 16,016 in 2021.

For the trend analysis calculations, the GASP relied upon the FAA’s projections of total annual general aviation hours flown and the national projections of future demand. Using this methodology, annual aircraft operations are expected to grow to 12,522 by 2006, 12,870 in 2011, and 13,596 by 2021.

The final methodology used to develop a projection of annual aircraft operations was an examination of the operations per based aircraft (OPBA). As stated in the GASP, FAA

recognizes and accepts that there is a direct correlation between the total number of aircraft operations that occur at a general aviation airport each year, and that airport's number of based aircraft. Using the GASP estimate of annual aircraft operations and number of based aircraft for St. Marys Airport in 2001, operations per based aircraft were calculated to be 545. Based on this OPBA, annual aircraft operations are expected to grow to 12,788 in 2006, 13,517 in 2011 and 15,099 in 2021.

The GASP selected trend analysis as the preferred forecasting methodology since the forecast was more reflective of each airport's individual reported operational histories.

4.1.4 Summary of Forecasts

Specifically as it relates to St. Marys Airport, a historic review of aviation demand was accomplished and revealed that based aircraft increased from 12 in 1990 to a current level of 15 (in 2002). By 2021, the Airport's total based aircraft are expected to reach 27. Currently, the Airport has approximately 10,500 annual aircraft operations (takeoffs and landings), which are divided equally between local and itinerant. Annual aircraft operations are projected to increase to 13,595 by 2021. Furthermore, aircraft operational fleet mix is expected to be 71% single-engine, 15% multi-engine, 7% jet and 7% helicopter/other by 2021, which is a reduction in single-engine aircraft in favor of increasing multi-engine and jet aircraft. **Table 4.3** depicts a summary of the overall forecasts as presented in the GASP. By the end of the planning period, operations are expected to reach 9% of the Airport's available annual operating capacity. The GASP also reflected the sentiment that if a replacement airport is developed, it is likely that additional demand would be attracted to the new airport.

Table 4.3

GASP Activity Forecasts

	Existing 2001	2006	2011	2021
Based Aircraft	22	23	25	27
Operation	12,250	12,522	12,870	13,596
Local Operations	4,900	5,009	5,148	5,438
Itinerant Operations	7,350	7,513	7,722	8,157
Fleet Mix				
Single-Engine	76%	75%	73%	71%
Multi-engine	15%	15%	15%	15%
Jet	5%	5%	6%	7%
Helicopter/Other	4%	5%	6%	7%

Source: Georgia Aviation System Plan, 2002

SECTION 5 – FACILITY REQUIREMENTS

5.0 INTRODUCTION

This Section documents those basic airport infrastructure requirements necessary for adequate development of a replacement airport. This section will also discuss in general the capacity of the total airport system, and establish general facility requirements for the replacement airport based on the previously developed Georgia Aviation System Plan (GASP) forecasts. This section is presented in several topic areas, including, airspace, airfield, landside and ancillary requirements.

The basic facilities required for a replacement airport to accommodate the aviation demand activity forecasts need to follow the prescribed recommendations in the GASP. As stated in Section 1, the GASP categorizes the St. Marys Airport as a Level II (Business Airport of Local Impact) facility. The minimum requirements that this level of airport facility is recommended to achieve are as follows:

- **AIRSIDE FACILITIES**

  - 5,000 feet primary runway length.
  - 100 feet width.
  - Full parallel taxiway.
  - Medium Intensity Runway and Taxiway Lighting Systems.
  - Non-Precision Approach.
  - AWOS or ASOS Weather Reporting.
  - Public Telephone, GCO for Ground Communications.
  - Runway hold position signs, location and guidance signs.
  - Aircraft Parking Apron.
  - Perimeter and Security fencing.
  - Rotating Beacon, segmented circle and wind cone, Precision Approach Path Indicator lights and other navigational aids required for non-precisions approach.

- **GENERAL AVIATION FACILITIES**
  - 1,500 square feet of public use space including restrooms, conference area and pilot's lounge for terminal/administration.
  - Auto parking: one space for each based aircraft plus an additional 50% for visitors/employees.
- **SERVICES**
  - Fuel: AVGAS and/or Jet Fuel
  - Full Service FBO
  - Limited/Full Service Maintenance
  - Rental Cars Available

5.1 AIRSPACE

The airspace associated with Camden County was examined for factors that may impact or prohibit aircraft operations and affect the location of a potential replacement airport. The airspace associated with Camden County and those aircraft that operate under instrument flight rules (IFR) is controlled by Jacksonville Center. Several en-route visual and instrument "victor" airways traverse Camden County. A "victor" airway is an invisible three-dimensional network of "roads" within controlled airspace and used for air navigation purposes. The dimensions of these "victor" airways are nine (9) nautical miles wide, the floor of which begins at 1,200 feet above mean sea level (MSL) and extends to 18,000 feet MSL. Aircraft under an instrument flight plan who use these airways are separated by FAA Air Traffic Control at least 1,000 feet vertically, at altitudes of up to 29,000 feet. MSL. Each airway carries its own name, required speed, radio and cockpit instrument procedures, and operating altitudes. At points where these airways intersect, there are Federal Aviation Regulations and Air Traffic Control rules for how to cross airways and at what altitude. These airways are for general aviation, commercial and military use. The military has also designated training routes for their own use. Those airways associated with Camden County include:

- Victor 3 (V-3) is 8 miles to the east of St. Marys Airport and runs in a predominant north/south direction.

- Victor 37 (V-37) is 5 miles to the east of St. Marys Airport and runs in a predominant north/south direction.

- Victor-441 (V-441) and Victor-267 (V-267) are 8 and 10 miles northwest and southwest respectively of the St. Marys Airport. V-267 runs in a predominant northwest/southeast direction, and V-441 runs in a predominant northeast/southwest direction.

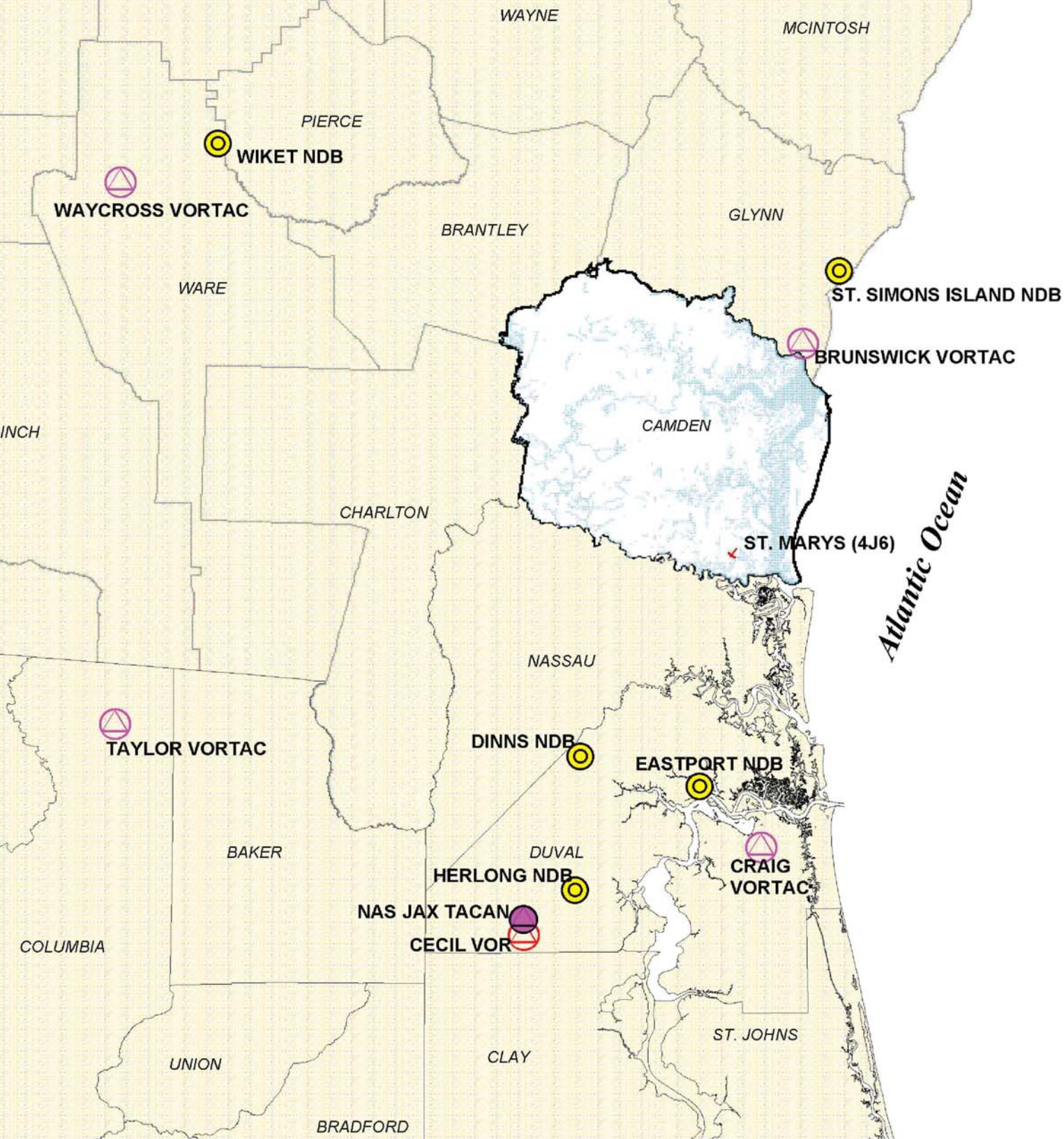
The terrain in Camden County should pose no limitations upon radar or radio coverage for VFR or IFR operations. Prior to the enactment of the restricted airspace associated with the Kings Bay Naval Base, a non-precision Airport Surveillance Radar (ASR) approach to the Airport was available. Currently, although still published, the ASR approach is of questionable value to the Airport. Based on the location of various VOR and VORTAC facilities in the region (see **Figure 5.1**), and depending upon the final airfield configuration for the replacement airport, a non-precision instrument approach to all runways should be possible. Generally, it is anticipated that airspace capacity will be adequate to accommodate the forecast activity for the St. Marys Airport (or any replacement) well into the future.

The airspace immediately surrounding the St. Marys Airport is Class E airspace. The airspace for any proposed replacement facility will likewise also be categorized as Class E. Jacksonville International Airport's Class C airspace is about 20 miles to the south. A Temporary Flight Restriction is in effect 2 miles northeast of the airport due to Kings Bay Naval Base. The Special Use Airspace associated with the Study Area or in close proximity to the Study Area is summarized in **Table 5.1**.

Table 5.1
Special Use Airspace

Area Identification	Location	Altitude of use (in feet)	Time of Use
Live Oak MOA	Live Oak, FL	8,000 AGL and above	6:00am - 2:00am Mon-Fri
Gator 1 MOA	Waynesville, GA	14,000 AGL and above	7:00am - 10:00pm Mon-Fri
Mayport High MOA	Jacksonville, FL	3,000 AGL and above	Intermittent 6:00pm - 10:00pm

Source: VFR Sectional Chart (Sept, 2004)



Non-Dire

VHF Om

VHF Om
Tactical

Tactical

5.2 AIRSIDE REQUIREMENTS

The major components of the airfield system to be defined for the replacement airport include the runway system, taxiway system, runway/taxiway safety areas, object free areas, runway protection zones, approach surfaces, apron areas, and other facilities which support the takeoff, landing and surface maneuvering of aircraft. Additionally, the capacity of the airfield system will be discussed in general terms, and is affected by various operational characteristics such as aircraft fleet mix, climatology, airfield configuration and air traffic control procedures. However, in order to determine the specific design criteria to be applied to the airfield environment, the specific "design aircraft" for the airport must be determined.

5.2.1 Design Aircraft

In order to define the proper airport design geometry and comply with Federal Aviation Administration (FAA) design standards, a "design aircraft" must be selected for the airport, and a corresponding Airport Reference Code (ARC) identified. The design aircraft is typically defined as the most demanding aircraft that performed or is projected to perform at least 250 annual departures (or 500 annual operations) at the facility. Some airport facilities may have a design aircraft for each runway, if the runway is designed to accommodate various types of traffic, such as an airport that accommodates business jet traffic on one runway and lighter single-engine and multi-engine traffic on another.

As previously discussed in Section 2, the ARC is a coding system used to relate airport design criteria to the operational and physical characteristics of the aircraft intended to operate at the airport. The ARC is made up of two components; i.e., the Aircraft Approach Category and the Airplane Design Group. The FAA's defined Aircraft Approach Categories are listed in **Table 5.2** and Airplane Design Groups are listed in **Table 5.3**. Examples of aircraft classified by the Airplane Design Group are listed in **Table 5.4.**

The fleet of aircraft currently operating at the Airport include various single and multi-engine general aviation aircraft including the occasional business jet aircraft such as the Cessna Citation. It is recommended that for the replacement airport the design aircraft be identified as the family of business aircraft such as the King Air B200, Cessna Citation II and III, and the Falcon 20 and 50, which are ARC B-II aircraft. However for purposes of maximum flexibility and in order to ensure future growth potential, strong consideration should be given to designing the new airport to accommodate a C-II design aircraft, in order to reflect the fact

that the facility should be designed to accommodate a slightly larger business category aircraft such as the Grumman Gulfstream III, IV and V.

Table 5.2
Aircraft Approach Category

Aircraft Category	Approach Speed
Category A	Speed less than 91 knots
Category B	Speed 91 knots to less than 121 knots
Category C	Speed 121 knots to less than 141 knots
Category D	Speed 141 knots to less than 166 knots
Category E	Speed 166 knots or more

Source: FAA Advisory Circular 150/5300-13

Table 5.3
Airplane Design Group

Design Group	Wingspan
Group I	Less than 49 feet
Group II	49 feet to less than 79 feet
Group III	79 feet to less than 118 feet
Group IV	118 feet to less than 171 feet
Group V	171 feet to less than 214 feet
Group VI	214 feet or more

Source: FAA Advisory Circular 150/5300-13

Table 5.4
Airplane Design Group Aircraft

Design Group	Representative Aircraft
Group I	Beech Baron 58A, Cessna 150, Learjet 35A Piper Navajo, F-18, F-16
Group II	Beech King Air C90, Canadair Regional Jet Citation III, Gulfstream IV, F-14, Saab 340
Group III	Airbus A-320, Boeing 727/737, DC-9 Fokker 100, Gulfstream V, MD-80
Group IV	Boeing 757/767, Airbus A-300, DC-10 MD-11, C-141
Group V	Airbus A-340, Boeing 747/777
Group VI	Antonov AN-124, Lockheed C-5B

Source: Jane's All-the-World Aircraft

5.2.2 Runway(s) and Taxiways

Based on the minimum recommended requirements for a Level II airport as described in the GASP, the replacement St. Marys Airport should provide a primary runway 5,000 feet in length, 100 feet in width, and capable of supporting the applicable design aircraft. A full-length parallel taxiway and appropriately spaced exit taxiways should also be provided for the primary runway. In addition, depending on the ultimate orientation of the primary runway, which will depend in part on site conditions and wind coverage data, a secondary or crosswind runway may be necessary to ensure 95% minimum crosswind coverage for aircraft under all-weather conditions, as recommended by FAA.

5.2.3 Aprons and Aircraft Parking Areas

The existing apron facilities at St. Marys Airport consist of various areas for parking, tie-down, circulation and general aircraft movement to and from parking and storage hangars. The primary apron serves based and transient aircraft, and is located immediately adjacent to St. Marys Aviation, and adjacent to the parallel taxiway for Runway 13/31. The area of this apron measures approximately 8,900 square yards and should be constructed of a similar size at the replacement airport. The GASP recommends that a Level II facility have parking for at least 40% of the airport's based aircraft, plus an additional 50% of the forecasted transient aircraft. Sufficient aircraft parking apron will be provided at the replacement airport to accommodate this demand.

5.2.4 Runway Protection Zones

For the protection of people and property on the ground, the FAA has identified an area of land off each runway end as the Runway Protection Zone (RPZ). This area was formerly known as the Clear Zone. For paved runways, the trapezoidal-shaped RPZ is centered on the extended runway centerline starting 200 feet from the paved runway end. The RPZ varies in width and length based on runway instrument approach classification (i.e., a visual, non-precision instrument or precision instrument runway). An airport acquires an interest in the land underlying the RPZ through fee simple purchase or acquisition of an avigation easement. Currently, the St. Marys Airport is in the process of obtaining easements for the existing RPZ's. For the proposed replacement Airport, it is recommended that the property lying under the RPZ's be purchased in fee simple. The dimensions of the RPZ for the proposed replacement airport, which will accommodate a non-precision instrument

approach[5] for the primary runway, and as a basis of comparison a visual approach for the crosswind runway, is presented in **Table 5.5.**

Table 5.5
Runway Protection Zone (RPZ) Requirements

Runway	Dimensions (feet)
Primary Runway	
Length	1,700
Inner Width	1,000
Outer Width	1,510
Crosswind Runway	
Length	1,700
Inner Width	500
Outer Width	1,010

Source: FAA Advisory Circular 150/5300-13, Airport Design

5.2.5 Runway Safety Area

A Runway Safety Area (RSA) is an area centered on the runway centerline and designed to enhance the safety of aircraft that undershoot, overrun or veer off the runway. The RSA should also support and provide greater accessibility for firefighting and rescue equipment during aircraft accidents and incidents. The RSA must be cleared and graded, and have no potentially hazardous ruts, humps, depressions or other surface variations; drained by grading or storm sewers to prevent water accumulation; capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damages to the aircraft; and be free of objects, except for objects that need to be located in the RSA because of their function. The dimensions of the RSA's for the replacement airport must conform to those depicted in **Table 5.6**.

5.2.6 Runway Object Free Areas

The Runway Object Free Area (OFA) is an area on the ground centered on the runway centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for aircraft navigation or ground maneuvering purposes. **Table 5.6** also provides the Runway OFA requirements and Runway Safety Area requirements recommended for each runway at the replacement Airport.

[5] Approach visibility minimums not lower than ¾ of a mile.

Table 5.6

Runway Safety Area and Object Free Area Standards

	Runway ARC	Primary C-II	Crosswind B-II
Runway Safety Area Width		500’	150'
Runway Safety Area Length (beyond Rwy end)		1,000’	300'
Runway Object Free Area Width		800'	500'
Runway Object Free Area Width (beyond Rwy end)		1,000'	300'

Source: FAA Advisory Circular 150/5300-13, Airport Design

5.2.7 Airfield Geometry Summary

Advisory Circular (AC) 150/5300-13, *Airport Design*, has established airfield dimensional standards pertaining to runway and taxiway widths, separations and building setbacks based on the design aircraft and corresponding ARC. **Table 5.7** summarizes and compares the design criteria for an ARC B-II and C-II aircraft.

Table 5.7

Airfield Geometry

	Runway ARC	Primary C-II	Crosswind B-II
Runway Width		100'	75'
Runway Shoulder Width		10'	10'
Runway Blast Pad Width		120'	95'
Runway Blast Pad Length		150'	150'
Runway Safety Area Width		500'	150'
Runway Safety Area Length (beyond Rwy end)		1,000'	300'
Runway Object Free Area Width		800'	500'
Runway Object Free Area Length (beyond Rwy end)		1,000'	300'
Taxiway Width		35'	35'
Taxiway Shoulder Width		10'	10'
Taxiway Safety Area Width		79'	79'
Taxiway Object Free Area Width		131'	131'
Taxilane Object Free Area Width		115'	115'
Runway Centerline to Taxiway Centerline		300'	240'
Runway Centerline to Aircraft Parking Area		400'	200'
Taxiway Centerline to Parallel Taxiway/Taxilane		105'	105'
Taxiway Centerline to Fixed or Mobile Object		65.5'	65.5'
Taxilane Centerline to Fixed or Mobile Object		57.5'	57.5'

Source: FAA Advisory Circular 150/5300-13, Airport Design

5.3 LANDSIDE REQUIREMENTS

The landside components that make-up the airport include the terminal and hangar areas, auto parking areas and access roadways that support a fully functioning airport system. At a minimum the replacement airport should be constructed to accommodate those facilities that currently exist at the St. Marys Airport. These facilities and the other landside components that are applicable for the replacement airport will be discussed in this section.

5.3.1 Current Airport Facilities

Most based aircraft at St. Marys Airport are stored in covered facilities, which include four conventional/multi-use hangars and 3 single-unit aircraft storage facilities. While conventional hangars are primarily used to store corporate aircraft, T-hangars, sunshades and port-a-port type hangars are primarily used to provide covered storage for single-engine and light twin-engine aircraft. Aircraft storage facilities available for lease or rental at the St. Marys Airport are owned and maintained by private owners. A complete summary of current Airport facilities, and those facilities need to be replicated at the replacement airport, are listed in **Table 5.8**. In addition, the GASP recommends that aircraft hangars be provided for a minimum of 60% of the based aircraft at the airport.

Table 5.8
Current Airport Facilities

Facilities	Size (sq.ft.)	Ownership
Terminal/FBO Office	1,000	St. Marys Aviation
FBO Maintenance Hangar	8,000	St. Marys Aviation
Covered Extension	5,000	St. Marys Aviation
Fuel Farm	10,000 gal	Airport Authority
	12,000 gal	Airport Authority
3 T-hangars	1,600	Private
4 Individual Hangars	2,400	Bird Aviation
Gillman Hangar	4,200	Airport Authority

Source: RS&H, 2004

5.3.2 Ground Access and Auto Parking

Convenient access to the state and interstate highway system should be provided to the replacement airport. In addition, adequate automobile parking should be provided at a level to support ongoing airport operations. The GASP recommends that a minimum of

one space for each based aircraft, plus an additional 50% for visitors and employees should be provided.

5.4 ANCILLARY REQUIREMENTS

Ancillary facilities at an airport are those facilities that provide overall support to airport activity. Those facilities include airport maintenance activities, fuel farms, fire stations and other support facilities.

5.4.1 Airport Maintenance

The operation and maintenance of airport facilities often requires the storage and sheltering of equipment for the efficient operation and maintenance of an Airport. Depending on the ultimate operating agency for the replacement airport, storage of equipment on-site may or may not be required.

5.4.2 Fuel Farm

The main aviation fuel farm at St. Marys Airport is located near the southern perimeter of the airfield along N. Dandy Street. The Airport Authority owns the fueling facility and does not charge the Fixed Base operator a storage fee. The fuel farm consists of one 12,000-gallon Jet A tank, and one 10,000-gallon 100LL tank. Planning for the storage of fuel requires not only future operational demand but also fuel settling requirements, how fuel is transported to the airport, the reliability of the fuel supply both nationally and internationally, and major changes in aircraft types. In order to meet the recommended standards in the GASP for a Level II facility, the replacement airport must offer both Avgas, and Jet fuel.

5.4.3 Rental Cars

Currently, there is no rental car facility at the St. Marys Airport. With the proposed relocation of the airport, it is yet to be determined if the facility will offer rental car services. The GASP recommends that all Level II airports offer rental car services.

SECTION 6 – FINANCIAL ANALYSIS

6.0 INTRODUCTION

The purpose of this section is to introduce and discuss the capital requirements for developing the replacement St. Marys Airport, and to also present an initial financial "pro-forma" which describes the potential yearly operations and maintenance expenses for the new facility upon opening.

6.1 CAPITAL DEVELOPMENT COSTS

The 2002 update to the Georgia Aviation System Plan (GASP) identified the need for a replacement airport for the City of St. Marys, due to the fact that the Airport is no longer fully capable of meeting the recommended system role as a Level II facility at its current location. The GASP also identified estimated costs associated with developing the replacement airport, see **Table 6.1**.

Table 6.1
GASP Replacement Airport Development Costs

Facility Improvement	Objective		Cost
Runway	5,000' x 100"	$	7,500,000
Taxiway	Full Parallel	$	1,137,500
Runway Lighting	MIRL		Included
Taxiway Lighting	MITL		Included
Land Acquisition	250 acres	$	625,000
PAPI	2	$	50,000
Rotating Beacon	1	$	50,000
Segmented Circle	1	$	3,000
Windcone	1	$	-
Weather	AWOS/ASOS	$	100,000
GCO/Phone	1	$	15,000
Hangar Storage	12	$	330,000
Apron	18	$	389,000
Auto Spaces	30	$	45,000
Terminal Space	1500	$	225,000
Fuel	2	$	100,000
Access Road & Infrastructure	1	$	750,000
Total Estimated Cost		**$**	**11,319,500**

Source: Georgia Aviation System Plan, 2002

Since these costs were prepared in 2002, and the actual site/airfield configuration was undetermined at that time, an update was developed as part of this study effort. Revised

cost estimates for those sites selected as possible locations for the replacement Airport are presented in Section 9.

6.2 AIRPORT REVENUE AND OPERATING EXPENSES

The initial starting point for the development of any financial pro-forma for the operation of a General Aviation (GA) airport is to introduce the typical revenue and expense items associated with the airport. GA airports typically generate revenue from fuel sales, aircraft hangar rents, land leases, tie-down fees, ramp fees, landing fees, or any combination thereof. Typical GA airport expenses include direct salary and overhead costs for staff, utilities, insurance, ongoing maintenance, advertising and marketing, and capital development. The level of revenue and expense associated with any GA facility depends principally on the size of the airport, level of aircraft activity, type of management structure/ownership of the facility, and the quality/level of service the airport owner desires to provide.

As the basis for creation of the financial pro-forma, supporting data was available from a report published in 2004 by the American Association of Airport Executives (AAAE). The AAAE surveyed all public use airports in the U.S., and compiled information pertaining to established rates and charges for various sized airport facilities (commercial service and general aviation). Of those airports surveyed, 237 GA airports responded. The responding GA airports (which included large and small facilities) reported average annual operating revenue of $8.54 per aircraft operation, and an average annual operating expense of $10.42 per aircraft operation. In order to more closely approximate the potential revenue and expense picture for a replacement St. Marys Airport, those airports with in excess of 100,000 annual aircraft operations were excluded from the analysis, and a new projection developed. Based on this new projection, those airports responding reported average annual operating revenue of $7.92 per aircraft operation, and an average annual expense of $11.02 per aircraft operation.

By applying these average annual revenue and expense figures to estimated annual aircraft operations, a general idea of the financial situation the replacement airport will be presented with can be developed. Based on the forecasted aircraft operations presented in Section 4, a replacement airport can be expected to generate a revenue and expense picture as depicted in **Table 6.2.**

Table 6.2
Projected Revenue & Expenses

	Existing	2006	2011	2021
Annual Aircraft Operations	12,250	12,522	12,870	13,596
Operating Revenue	$ 97,020	$ 99,174	$ 101,930	$ 107,680
Operating Expenses	$ 134,995	$ 137,992	$ 141,827	$ 149,828

Source: RS&H

As a basis of comparison, financial statements were requested from the St. Marys Airport Authority (Authority),[6] with the intent of analyzing the operating performance of the existing facility. The only documents provided for the analysis were a ledger of revenue and expense items generated during 2003, and a 2004 annual budget. An examination of those items revealed that $11,117.00 was collected in revenue by the Authority in 2003, and $14,449 was paid out in expenses. The 2004 Budget of the Authority depicts an estimated $11,120 in revenue, and an estimated $15,086 in expenses.

6.3 CAPITAL DEVELOPMENT FUNDING

The principal sources of capital funding for the construction of the replacement airport will be the Federal Aviation Administration (FAA), Georgia Department of Transportation (GDOT) and local funding sources. Under current federal law,[7] airport sponsors are eligible for FAA funding for specifically approved airport development/improvement projects through the FAA's Airport Improvement Program (AIP). FAA funding for the AIP program has existed in the U.S. since 1946, and currently provides over $3.5 billion dollars of annual funding for airport improvements nationwide. The Airport and Airway Improvement Act of 1982 established the current AIP program, and provides funding for eligible airport planning, land acquisition, noise compatibility, security and other projects at public-use airports. While the AIP legislation has been amended several times, and the amounts appropriated and funding formulas adjusted to reflect changing conditions in the industry, the basic structure of the program has remained essentially the same.

[6] Although the Airport property is owned by the City of St. Marys, the Airport is operated by the St. Marys Airport Authority.

[7] Title 49, United States Code, Chapter 471 (2004).

The AIP program provides "entitlement" funds for commercial service and cargo airports based on the annual number of enplaned passengers and landed weight of all-cargo aircraft. AIP funds are also distributed to states on an apportionment basis, and a significant amount of the annual funding program is designated as "discretionary" funds that are allocated at the discretion of the FAA. These discretionary funds are usually allocated to very high priority projects that enhance system capacity, security and safety, and preserve existing infrastructure. In addition, since the enactment of the Wendall H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21), which was signed into law in 2000, general aviation airports have been eligible to receive an annual $150,000 AIP entitlement to be used towards eligible projects. Under the existing law, general aviation airport sponsors are currently able to receive up to 95% of the eligible projects costs under AIP, provided the airport sponsor obligates the remaining 5% share from local funds.

Within the State of Georgia, GDOT also provides funding assistance for planning projects, capital improvements, maintenance and approach aids to publicly-owned airports. When no federal participation is received for a project, GDOT will typically fund up to 75% of the eligible project costs. Where federal funds are received, GDOT will typically match, on a 50% basis, the sponsor's share of eligible projects costs (up to 5% of total eligible project costs). In other words, if the sponsor receives 95% federal money to fund an eligible project, GDOT will contribute 2.5% of eligible project costs, leaving the airport sponsor to cover the remaining 2.5%.

The administration of the AIP program, and the relevant legislative and administrative policies and procedures behind the AIP program, are described in FAA Order 5100.38B, *Airport Improvement Program Handbook*. The AIP Handbook also defines those projects that are eligible and ineligible for federal funding. Based on the criteria established in the AIP Handbook, the following portions applicable to development of the replacement airport are eligible for federal funding:

- Land acquisition
- Construction of all airfield improvements (runways, taxiways, lighting)
- Construction of fuel farm facilities
- Access road and infrastructure
- General Aviation Terminal (non-revenue producing public spaces only)

- Apron areas
- Public parking areas
- PAPI, Windcone, Segmented Circle, Communication equipment, rotating beacon

The only portion of the estimated cost to replace the St. Marys Airport that would be ineligible for federal funding assistance is the construction of hangar facilities.[8] Furthermore, the Georgia Airport Aid Program also identifies development items that are ineligible for State funding assistance. Those include:

- Land Acquisition.
- Hangars (all types).
- Terminal Buildings and associated security systems.
- Fuel facilities.
- Aircraft Rescue and Firefighting (ARFF) equipment and facilities.
- Taxiways which serve a private facility.

Based on the GASP estimated costs depicted in **Table 6.1**, overall federally eligible project costs total $10,440,025. In addition, assuming a portion of those eligible costs are funded by FAA and GDOT, the funding distribution is calculated as follows:

- FAA Funding: $10,440,025.00
- GDOT Funding: $259,112.50
- Local Funding requirement: $620,362.50
- Total Project Costs: $11,319,500.00

This local funding requirement is a significant amount for a small municipality to handle. There is an opportunity however to seek a possible land donation, and at least one property owner has expressed some interest in possibly donating land for a new airport facility. The AIP Handbook specifically addresses the potential value of donated land in relation to local sponsor funding requirements. The AIP Handbook states: " the value of land, labor, materials, and equipment donated or loaned to a sponsor may be credited

[8] See, FAA Order 5100.38B, Airport Improvement Program Handbook, Change 1, January 8, 2004, Section 301, Prohibitions. Although in some cases, hangars may be eligible if entitlement funds are used and all airfield safety/security projects have been completed.

toward the sponsor's share [of eligible project costs] provided the donation is necessary to accomplish the project. Proposed donations on which grant payments will be requested must be identified and a valuation agreed upon between the regional field office and the sponsor. The value of donated land is based on an appraisal by a competent appraiser and is the fair market value of the land at the time of conveyance to the sponsor."[9]

It should also be noted that approximately half of the Local share requirement presented above is the cost of replacement hangars, which are typically not eligible for federal or state funding. However, a majority of the hangars located at the existing Airport are privately owned, and the opportunity exists at the replacement site to permit third-party (private) development of aircraft hangar facilities, thereby eliminating the requirement for local funding.

[9] Ibid, Section 350.

SECTION 7 – GOVERNANCE

7.0 INTRODUCTION

The governance of a publicly owned, public use, airport can take many forms. Airports are owned and operated by the federal government, states, local municipalities (Cities, Counties and Special Districts), and independent airport authorities. The purpose of this section is to discuss and explore the municipal governmental and independent airport authority types of public airport ownership. Since there are currently no state owned airports in Georgia, and typically those federally owned airports are military installations, they will not be discussed or evaluated as a potential option for consideration in selecting the most appropriate governance option for a replacement airport in Camden County.

7.1 MUNICIPAL AIRPORT OWNERSHIP

The ownership and operation of a vast majority of the public-use airports in the U.S. is by local municipality, (i.e., City and County government). This ownership structure has evolved since the inception of aviation as a means to maintain and develop airport facilities that were historically not capable of being financially self-supporting, and therefore operated as a private enterprise. The theory behind this form of ownership and public investment in these facilities is that aviation, as a benefit to the entire community, creates employment opportunities for the workforce, fosters economic development opportunities, provides access to broader regional, national and international markets, and allows the community a competitive advantage over other communities, which is deemed a proper governmental role to provide. Furthermore, airports have historically been viewed as complimentary to local government oversight of other public works type facilities, such as the local roadway system, water and sewer facilities, parks and other "traditional" government services. Many of today's modern airport facilities were constructed as military training sites during World War II, and transferred from federal government control to local control at the conclusion of the war effort. At that time local government was the best equipped to handle the operation and maintenance burden of this "new" transportation infrastructure asset.

There are many benefits to having an airport owned and operated by a local municipality. These include the allocation of staff resources to the airport from many different and

specialized functional departments (e.g., finance, human resources, maintenance, engineering, etc.), creating economies of scale and lower overhead costs for the facility. If the airport is not capable of being financially self-sufficient, general fund revenues from local government can be applied to cover overall capital and operating expenses. Large-scale capital projects can be financed utilizing local government bonding capability or other governmental debt mechanisms that routinely offer lower financing costs and less risk for the bondholder. Finally, since the airport is typically considered to be a significant public asset, participation in the strategic oversight and direction of airport facilities is provided by elected officials. These elected officials will ensure the public's voice is heard as it relates to airport operations and long-term development.

There are however some potential disadvantages of municipal ownership of the local airport. Principal among these disadvantages is the fact that the operation of the airport is usually delegated to a specific municipal department, often competing for attention and resources with other functional departments. Airport policy decisions are usually made in a broader context of competing public investment needs, budgetary constraints, and development goals without a specific focus on the individual needs of the airport and the potential economic benefits airport development creates. In times of financial constraint or distress, the airport is often viewed as a liability, even if financially self-sufficient, and will in all probability suffer the same budget reductions as other municipal departments. Even taking into consideration the potential disadvantages relating to municipal ownership and control over airport facilities, it remains the preferred method of governance in the U.S. for small and large airports. However, over the past several decades, due to changing airport operational, local political and capital development demands, independent airport authorities have continued to emerge as a means of governing a public use airport using more of a private enterprise managerial approach while still maintaining some of the advantages of public ownership.

7.2 INDEPENDENT AIRPORT AUTHORITY OWNERSHIP

Generally, independent authorities are legally chartered state organizations endowed with the legal status of public corporations that operate a variety of publicly owned facilities (e.g., harbors, airports, toll roads, bridges, etc.). In managing the facilities under their control, independent authorities have extensive independence from state and local governments. These authorities are typically financially independent, have the power to

issue their own debt (general, revenue or other forms of bond indebtedness), can usually exercise the power of Eminent Domain, have the power to sue and be sued in any court, and in theory function totally independently from state and local politics. In reality however, the governing body of the independent authority, be it a board or commission, is usually appointed by one or more local political officials or bodies, and in some respect beholden to, or influenced by, local political demands.

The consensus among many airport professionals is that independent airport authorities function more effectively than airports that operate under local municipal control. This concept acknowledges that airport organizations are almost always more efficient and effective if not governed by publicly elected boards or commissions for two main reasons: 1) Airports function significantly different from the typical local governmental agency, wherein taxes are levied based on priorities set through a political process, and long-term strategic development priorities may be disrupted as frequently as elected officials enter and exit public office; and 2) The need for a rational, private enterprise, business driven agenda far outweighs the various political agendas individual elected officials might bring to the table. Thus, elected boards often stray from their purpose, or change priorities over and over again as membership changes through the electorate process.

Assuming the business purpose of the airport is to be the number one priority, it is essential to appoint members properly qualified for that role and attuned to it. There is no model across the country for determining independent airport authority appointments. One multi-jurisdictional example is the Burbank-Glendale-Pasadena Airport Authority, an independent authority composed of appointees from each of the three cities. Each city appoints three (3) individuals for a four (4) year term. These nine board members then set policy by majority vote of a quorum. The beauty of this particular authority is that no individual city controls the entire board. Another example is the Greater Orlando (Florida) Aviation Authority and the Hillsborough County (Florida) Aviation Authority, both of which have five member boards with two automatic appointments (defined by Charter) and three at-large gubernatorial appointments. Some boards are comprised of all gubernatorial appointments, while others are comprised of all local appointments or combinations thereof. In short, how appointments get done is less important than how well candidates are screened before they're appointed. Some communities allow appointments chosen by the business community, and others require that appointees

have certain qualifications and experience to be eligible for appointment. In particular, appointed boards are better screened, in that the appointing body or public official knows far more about the prospective member than would otherwise be obtained in the elective process. In addition, the field of candidates for appointment is vastly large and more potentially qualified, since many excellent candidates choose not to engage in the elective process. It is generally the case that appointees tend to be among the very best people in a community, with substantial experience and credentials, and whose talents, disposition and orientation, is well known.

7.3 OPTIONS FOR GOVERNANCE OF THE REPLACEMENT ST. MARYS AIRPORT

Georgia statutes grant the legal authority to Counties, Municipalities, and other political subdivisions to individually, or jointly, acquire, own and establish airports in the State.[10] Although not defined in the relevant statutes, "political subdivisions" should be interpreted to include independent airport authorities, and state statutes specifically authorize local counties and municipalities (either individually or jointly) to establish airport authorities if they feel the need for an independent governing body over the facility. The universe of possible governing options for a replacement airport facility in Camden County is relatively small. They include Camden County, the cities of Kingsland, Woodbine and St. Marys, the Camden County Joint Development Authority, or any combination of those bodies. The governing body to be recommended by this Study will depend on the actual location of the replacement facility, and its physical location within a given jurisdiction. However, during the initial discussions with the Technical and Community Advisory Committees, the Camden County Joint Development Authority emerged as a strong candidate for consideration. The remainder of this section will examine the Joint Development Authority in greater detail to determine if this entity should receive further consideration.

The Camden County Joint Development Authority (Authority) was created in 1981 by joint resolution of the Cities of Kingsland, St. Marys, Woodbine and Camden County. The Authority is governed by a nine (9) member board, with three (3) members appointed by Camden County, and two (2) members each appointed by the Cities of Kingsland, Woodbine and St. Marys. According to the by-laws of the Authority, it was

[10] Title 6, Chapter 3, Article 2, Powers of Local Governments as to Air Facilities, Georgia Statutes (2004).

created for the purpose of "developing, promoting and expanding for the public good and welfare, industry, agriculture, commerce, natural resources, the creation of jobs and the making of long-range plans for coordination of such development, promotion and expansion within the territorial limits of Camden County." The Authority is specifically governed pursuant to the provisions of the Development Authorities Law, Title 36, Chapter 62 of the Georgia Statutes. However, it is unclear after reading the language of the statute whether or not a Development Authority is authorized or empowered by law to acquire, construct, operate and maintain a public-use airport facility. In order to resolve this issue, a legal opinion was requested from the City Attorney for St. Marys. It is the opinion of Counsel for the City that the Authority may finance and acquire the airport, but the operation of the airport must be leased to a commercial entity.

In summary, the governance options for the replacement airport include the following:

- Camden County
- City of Kingsland
- City of Woodbine
- City of St Marys
- Any combination of the above referenced governmental units
- Creation of an independent airport authority
- Camden County Joint Development Authority (although it would be required by law that the operation of the airport be leased to a commercial entity)

Although an immediate decision as to the selection of the most appropriate entity to own and operate the replacement airport is not essential to move the project forward, discussions should continue between the governmental units in Camden County in an attempt to reach consensus for future action.

SECTION 8 – ECONOMIC IMPACT ASSESSMENT

8.0 INTRODUCTION

All airports, ranging in size from large-hub air carrier airports to small general aviation facilities, serve their local communities by functioning as transportation centers for the movement of people and products. Airports also benefit the local economy by providing jobs in the community, and by acting as consumers for goods and services. In some instances, it is relatively easy to measure the ways in which an airport benefits the community. One example would be airport specific employment and its associated payroll benefits in the community, which can be estimated with reasonable accuracy.

Aside from these more tangible economic benefits, an airport is also an important part of a region's economic infrastructure. A general aviation airport that caters to business/corporate aircraft can be an important economic catalyst for an area by supporting and attracting business growth, and investment through development. Determining an airport's exact contribution to the local economy as it relates to overall business growth and development is difficult to quantify. Nevertheless, when reviewing the benefits of an airport to the community, these less tangible economic contributions must be considered.

The purpose of this Section is to estimate the economic benefits the St. Mary's Airport (Airport), or a replacement facility, will bring to Camden County. This is accomplished by estimating the benefits associated with on-airport employment and salaries, for both direct and indirect employment, and induced impact, using economic modeling procedures that are a recognized standard in the aviation industry. More specifically, the objective of this section is to quantify the employment, income and economic activity contributions of aviation by evaluating the Airport, related businesses and the visitors that come to the area through the Airport. The impact estimates are those resulting from Airport operations, aviation-related businesses, Airport capital expenditures and air travel visitor spending.

8.1 METHODOLOGY

The Airport currently serves as the area's only general aviation airport providing a home to general aviation operators and transient business and pleasure flyers. Examining the

role of the Airport within the local economy involves answering several important questions:

- How does the Airport and affiliated businesses impact the community?
- How many jobs result from the Airport and affiliated businesses?
- How does this impact translate to economic activity in the local economy?

Answering these questions can help to address how the Airport contributes to the local economy, which is a concept that is often misunderstood. Like most public use airports, the St. Marys Airport is owned and operated as part of the local government, making the understanding of its role useful to the average citizen and the community as a whole.

At the same time, the Airport and its on-Airport tenants in many ways operate as any other business, providing jobs and purchasing local supplies and services, affecting the local economy and operating as a "community airport" in serving the local region. An economic impact analysis is the correct course of action to assess the role of the Airport in the local and regional economy. This analysis serves to quantify the direct and "multiplier" effects of the Airport, the economic activity encompassing Airport operations, aviation-related businesses, air travel visitor spending, and the resulting effects from these activities.

To assess the economic benefits of an airport, impacts are typically assigned to three categories:

- Direct benefits
- Indirect benefits
- Induced benefits

Direct benefits are defined as impacts that result from spending that occurs because of on-site activity at the Airport. These direct impacts usually occur at the airport and comprise financial expenditures by firms which carry passengers (air carrier, air charter and air taxi) or cargo; firms that serve the air carrier and general aviation functions (airport tenants); governmental agencies that support aviation; ground transportation firms and others. The direct category includes the number of employees, salary, and

airport operating and capital expenditures. Indirect benefits are impacts that occur off-airport, but are indirectly a result of the airport's location. Expenditure and employment impacts resulting from visitors arriving via commercial service or general aviation are examples of indirect impacts. For this analysis, direct and indirect benefits will be referred to as "first" round impacts. Initial spending and employment in both the direct and indirect categories are responsible for all other "spin-off" airport-related economic impacts.

First round impacts tend to ripple through or "multiply" within the economy. For example, as an employee at the Airport spends his or her salary for housing, food or services, employment and associated income/spending levels are increased. These successive waves of income, employment and additional re-spending continue within an airport's market area. For each wave of spending beyond the first round, a portion of the re-spending takes place outside of the region, resulting in economic leakage. Therefore, the amount of the original dollar available to be re-spent is reduced with each successive wave of spending until it is virtually non-existent. This cycle of re-spending the original first round impacts is known as the multiplier effect. The multiplier effect is considered an induced or secondary economic benefit or impact.

First round (direct and indirect) and induced benefits can be summed to provide an estimate of the total economic impact of an airport; however, induced benefits are not easily measured. Therefore, some method of estimating induced benefits must be employed. One of the best ways to estimate these secondary impacts is with the use of an input-output model.

The input-output model used to generate multipliers for this analysis is based on the Regional Input-Output Modeling System (RIMS II). This modeling process is considered one of the leading methods currently available for estimating the total economic value of an industry and is approved for use by the Federal Aviation Administration (FAA) for measuring the economic impact of an airport.

The input-output model used for this analysis requires estimates for three different categories of input to calculate total impacts. These categories are:

- **Employment** – Employment is based on full-time equivalent positions. For example, four part-time workers are assumed to equal two full-time positions.
- **Income** – Income is the annual salary paid to workers.
- **Output (or Expenditures)** – Output for direct (on-Airport) benefits is typically assumed to be the sum of the annual operating and capital expenditures at the airport. Visitor expenditures are also measured as an indirect benefit.

Various data sources were used in this economic benefit analysis. The primary source of information for this study was obtained from a tenant survey conducted during a personal interview with on-Airport tenants in October 2004. The interview was used to gather direct information from aviation-related Airport businesses regarding employment, income and expenditures. The information obtained was combined to ensure confidentiality and to assign specific RIMS II multipliers to each data element.

8.2 ECONOMIC IMPACT ANALYSIS

Economic impacts are discussed for on-Airport aviation related tenants and visitors using the St Mary's Airport. On-Airport tenants include the following organizations:

- St Mary's Flight School
- St Mary's Aviation
- Skydive St. Mary's
- Airport Management

Air visitors at the Airport include estimated non-local passengers arriving by general aviation aircraft. For this analysis, non-local general aviation visitors were estimated based on operations presented in the Georgia Aviation System Plan prepared in 2002.

On-airport aviation related tenants and area visitors are typically responsible for the majority of the first round aviation-related impacts. Once first round impacts are estimated, specific RIMS II multipliers are applied to estimate induced economic benefits. All estimates are expressed in 2003 dollars.

8.2.1 On-Airport Impacts

Estimates were developed for employment, income and expenditures for all on-Airport aviation related activity based on the data collected from the interview. It was determined that all aviation related on-Airport tenants generate approximately $1.3 million of annual operating and capital expenditures.

Aside from expenditures, it was necessary to estimate aviation related on-Airport employment and it's associated income (payroll). Data provided by the survey indicates approximately 21 persons were employed at the Airport on a full-time basis during 2003. Total annual salaries for these employees were estimated at $587,000.

The direct impacts associated with aviation related on-Airport tenants also create secondary impacts throughout the area. In order to calculate the secondary impacts, industry specific RIMS II multipliers for airports were applied to the estimated direct impacts to estimate the secondary impacts. The RIMS II multipliers used for this study are:

- Employment 1.96
- Income 1.79
- Expenditures 1.95

The secondary impact multipliers indicate that for every 100 direct (on-Airport) tenant positions, approximately 96 additional jobs are created in the local economy. For each $100 in aviation-related payroll an airport employee receives, an additional $79 in induced payroll impact is created as money recirculates through the local economy. For every $100 of expenditures the Airport generates, an additional $95 dollars is expended in the Airport's market area because of the ripple effect. Direct and secondary impacts can be summed to estimate the Airport's total on-Airport aviation related economic impact.

As discussed previously, direct aviation related employment is estimated at 21 full-time positions for the St Mary's Airport. When secondary impacts are considered, total Airport related employment is estimated at 40 employees. Direct Airport income for all on-Airport employees is estimated at $0.6 million. Induced or secondary income impacts are estimated at $0.5 million, yielding an estimated total income impact of $1.1 million.

Direct expenditures is estimated at $1.3 million. When the multiplier effect is calculated, the total expenditure impact is estimated at $2.5 million. **Table 8.1** summarizes these aviation related on-Airport total impacts.

Table 8.1
On-Airport Impacts

Impact	Direct	Secondary	Total
Employment	20.5	19.7	40.2
Income	587,000	463,730	1,050,730
Expenditures	1,299,488	1,234,514	2,534,002

Source: RS&H, 2004

8.2.2 Air Travel Visitors Impact

According to the FAA publication *Estimating the Regional Economic Significance of Airports*, the primary off-airport effects are the result of spending by visitors in various travel-related industry sectors. These include spending for such items as food, lodging, entertainment, shopping, local transportation and other related services. Measuring the effects that occur off-site must begin with the estimation of *non-local* visitors, which is a critical component of this economic impact assessment.

A quantifiable number of visitors arrive in the Camden County area each year via general aviation aircraft. These visitors arriving via transient aircraft contribute to the local economy. At St. Mary's Airport, historical itinerant activity accounts for approximately 60 percent of the Airport's total operations.[11] These transient operations include a percentage of business and pleasure flights.

Estimates of air travel visitor spending come from various sources, and no visitor spending survey was conducted as part of this study. Estimates of the length of stay and average daily expenditures were obtained from the Georgia Department of Industry, Trade and Tourism (GDITT) report titled "*Economic Impact of Travel on Georgia, 2004 Profile,*" while other data was collected from the sources mentioned below.

[11] It is recognized however that there has been a decline in transient users of the airport since 9/11 due to the airspace restrictions surrounding Kings Bay.

The general guidelines used to estimate visitor impacts at the St. Mary's Airport are as follows:

- The estimated number of total general aviation operations was determined to be 12,500 in 2003 based on information extrapolated from the 2002 Georgia Aviation System Plan. Total operations consist of aircraft arrivals and departures, therefore the number of visitor arrivals was determined to be one-half of the total operations or 6,250.

- In 2003, the number of annual itinerant general aviation operations was estimated at 60 percent of the total, or 3,750 operations.

- According to FAA estimates, the average number of occupants, including the pilot, per general aviation operation is 2.5 persons. For the purpose of this study, it was determined that this figure was applicable to the St. Marys Airport. This results in an estimated number of transient visitors of 9,375 in 2003.

- The recent GDITT study indicated that most of the visitors to Georgia in 2004 were overnight travelers, with only 24.0 percent indicating that they were "day trippers." This results in approximately 7,000 overnight visitors and nearly 2,500 day trippers generated by the Airport.

- The number of "visitor days" per year was calculated by multiplying the estimated total number of visitors through the Airport by the numbers of days spent. Overnight visitors were assumed to spend, on average, 1.5 days per visit whereas the day trippers were to spend only one day in the local area.

- The GDITT study indicated that the average daily spending for overnight visitors was $150.44 per day while the day trippers only spent $59.47

Total direct visitor spending was estimated to be $1.7 million based on the information discussed above and summarized in **Table 8.2**.

Table 8.2
Direct Visitor Spending

Total Operations		12,500
Total Arrivals (50% of total operations)		6,250
Non Local (60% of total arrivals)	**A**	3,750
Passengers	**B**	2.5
Total Visitors	**A x B**	9,375
Overnight Visitors (74% of total)	**C**	6,938
Day Trippers (26% of total)	**D**	2,438
AVERAGE NUMBER OF DAYS		
Overnight Visitors	**E**	1.5
Day Trippers	**F**	1.0
TOTAL VISITOR DAYS		
Overnight Visitors	**G = C x E**	10,406
Day Trippers	**H = D x F**	2,438
VISITOR SPENDING		
Overnight Visitors	**I**	$150.44
Day Trippers	**J**	$59.47
Overnight Visitors	**G x I**	$1,565,516
Day Trippers	**H x J**	$144,958
TOTAL SPENDING		**$1,710,474**

Source: RS&H, 2004.

Secondary impacts were developed using average RIMS II multipliers for industries likely to receive visitor spending. These multipliers were based on averages of hotel/lodging and eating/drinking establishments, miscellaneous services and retail trade. The average multipliers used to calculate the secondary visitor impacts are as follows:

- Employment 1.65
- Income 1.96
- Expenditures 1.99

The direct and multiplier impacts for air traveler visitor impacts are summarized on **Table 8.3**. As shown, the total economic impact as a result of non-local visitors using the Airport result in approximately 28 full-time employees with an income of $0.5 million and producing total economic expenditures of $3.4 million.

Table 8.3
Total Visitor Spending

Impact	Direct	Secondary	Total
Employment	17.1	11.1	28.2
Income	$256,571	$246,308	$502,879
Expenditures	$1,710,474	$1,693,370	$3,403,833

Source: RS&H, 2004.

8.2.3 Total Impacts

The total economic benefit resulting from the St. Mary's Airport is calculated by summing the economic impact estimates from aviation related tenants and visitors. Total area employment is estimated at 68 full-time positions. Total income is estimated at more than $1.5 million and total expenditures are estimated at more than $5.9 million. The total economic benefit for the St. Mary's Airport is summarized on **Table 8.4**.

Table 8.4
Total Airport Impacts

Impact	Direct	Secondary	Total
Employment	37.6	30.8	68.4
Income	$843,571	$710,039	$1,553,609
Expenditures	$3,009,962	$2,927,883	$5,937,846

Source: RS&H. 2004.

8.3 SUMMARY

While the total economic benefit of the Airport cannot be expressed in dollars, it is possible to quantify a portion of this benefit through a modeling process. When both the direct and secondary impacts are considered for on-Airport aviation related activity and air traveler visitors using general aviation, the Airport supports more than an estimated 68 full-time employees, creates more than $5.9 million in expenditures locally, and provides more than $1.5 million in income to the local community.

A general aviation airport such as St. Mary's is a significant benefit to the local community. Existence of an airport can help to sustain current employment and attract new jobs to the area. A growing and vibrant Airport has the potential to accommodate additional business related activities and enhance the economic development of the community.

SECTION 9 – IDENTIFICATION AND EVALUATION OF SITE LOCATION ALTERNATIVES

9.0 INTRODUCTION

As previously introduced in earlier sections of this report, the City of St. Mary's has embarked upon an assessment of the feasibility and potential location for a replacement facility for the existing St. Mary's Airport. This section of the report is intended to identify and evaluate various site alternatives in order to determine the best location for this new general aviation airport, with special consideration of the potential environmental, operational, airspace and access constraints. After identification of various initial site locations, each site was presented to the Technical and Community Advisory Committees for further consideration and determination of the final site location alternatives which underwent more detailed analysis. After further evaluation of the final site alternatives, a preferred alternative was selected by the Committees, and presented to the City of St. Marys, Georgia Department of Transportation and Federal Aviation Administration (FAA) for review and acceptance.

9.1 SITE SELECTION PROCESS

The purpose of the site selection analysis is to identify, evaluate, and recommend for approval a proposed site for the replacement St. Marys Airport. After acceptance of the proposed site recommendation, further environmental clearance of the site is necessary pursuant to the requirements of the National Environmental Policy Act (NEPA), and a formal Airport Master Plan/Airport Layout Plan prepared to direct initial and future development of the site. During initial discussions with the Technical and Community Advisory Committees, several "screening criteria" were established to direct the overall initial and final selection process. Those screening criteria included the following:

- The replacement airport must fulfill its role in the state and national aviation system plans.
- Easily accessible interstate and/or state highway access.
- Available rail access.
- Sufficient available land for airport development.
- Minimize acquisition costs.

- Minimal environmental impacts.
- No airspace/obstruction constraints.
- Instrument approach capability.
- Compatible with the surrounding community.
- Close proximity to current and future market/population/tourism centers.
- Available land adjacent to the site for potential commercial/industrial uses.
- Supportive of the current and future military mission in Camden County.

Implementation of this selection criteria was the responsibility of the Technical and Community Advisory Committees, through an initial and final site screening process. At the conclusion of this initial analysis, three (3) final sites were selected for further in-depth review, which resulted in the selection of a preferred alternative.

9.2 STUDY AREA

The "Study Area" for the proposed replacement airport includes all of Camden County Georgia, with the exception of the Cumberland Island National Seashore, and all locations within close proximity of the restricted airspace surrounding Kings Bay Naval Submarine Base.

9.3 MINIMUM AIRPORT REQUIREMENTS

Based on the requirements for a Level II Airport described in the Georgia Aviation System Plan, and those replacement components documented in Section 5 of this report, a replacement airport should be of sufficient size to construct the following minimum infrastructure improvements:

- A primary runway a minimum of 5,000 feet in length and 100 feet wide, with Medium Intensity Runway Lights (MIRL), and Precision Approach Path Indicators (PAPI).
- If necessary, development of a crosswind runway to support operations by the design aircraft.
- Full parallel taxiway system for both the primary and crosswind runway (if applicable), with Medium Intensity Taxiway Lights (MITL).
- Non-precision instrument approach capability for all runways.

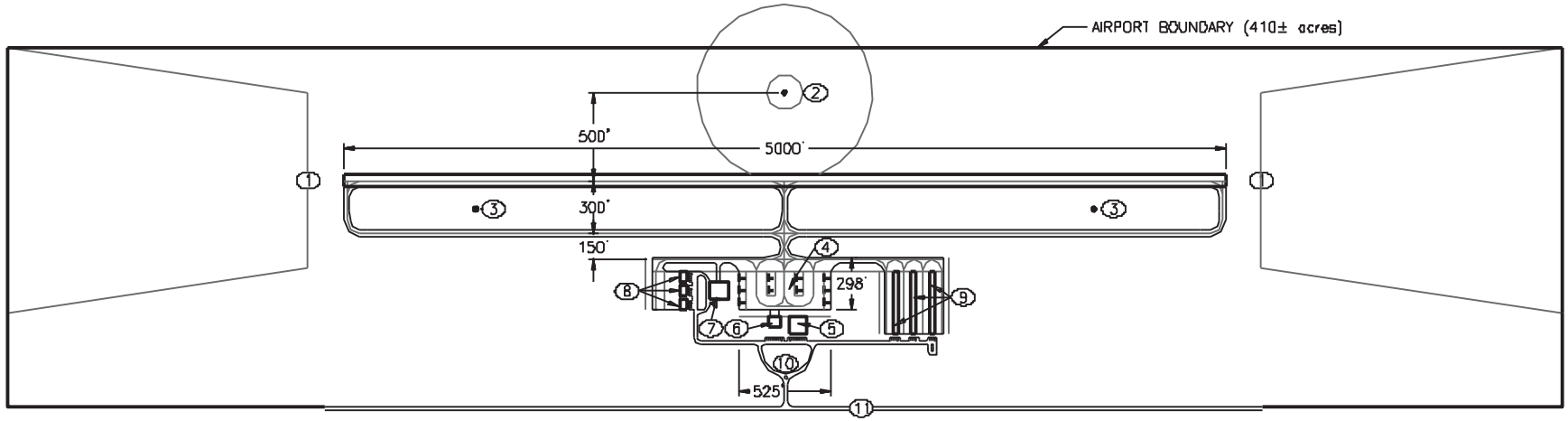
- A general aviation terminal with a minimum of 1,500 square feet of public use space including restrooms, conference areas and pilots lounge.
- Automated Weather Observation System (AWOS) or Automated Surface Observation System (ASOS) equipment.
- A rotating beacon.
- Public telephone/ground communication outlet.
- Applicable runway and taxiway hold position, location and guidance signage.
- Full perimeter fencing.
- Replacement of all hangars at the existing St. Marys Airport, and/or capability to store 60% of the based aircraft fleet.
- Adequate apron space to support 40% of the based aircraft, plus an additional 50% of the projected transient aircraft (to be further defined in the Master Plan).
- Adequate auto parking space to support airport activities (to be further defined in the Master Plan).
- Fuel storage capacity capable of accommodating AvGas and Jet-A fuel.
- Full service Fixed Base Operator (FBO) facilities to include the necessary space to accommodate the existing FBO's aircraft maintenance business, and the availability of rental cars.

A conceptual airport layout which includes the minimum infrastructure improvements described above, to include applicable standard airfield design geometry, has been developed for use during the site screening process, see **Figure 9.1**. Based on this initial concept, it has been determined that a minimum of 410 acres of available land is necessary to support development of the airport.[12]

9.4 INITIAL SITE SCREENING

The process of selecting a final site for future airport development begins initially with an examination of the entire Study Area, and application of the relevant "screening criteria" selected by the Technical and Community Advisory Committees in order to identify various portions of the Study Area for further analysis. Once various portions of the Study Area have been identified for further analysis based on the initial "screening criteria", an examination of several environmental constraints associated with the Study

[12] This assumes that a crosswind runway is not necessary for wind coverage purposes.



1	1700'x 1000'x 1510' RPZ (ALL, NOT LOWER THAN 3/4 MILE VISIBILITY)
2	ASOS WITH CLEAR AREAS (Automated Surface Observing System)
3	WINDSOCK
4	GA APRON (10 TIE DOWN AREAS)
5	FBO (10,000 sq.ft., 100'x100')
6	GA TERMINAL (4,200 sq.ft., 60'x70')
7	FUEL FARM (10,000 sq. ft., 100'x 100' FOOTPRINT)
8	CORPORATE HANGAR (2,400 sq.ft., 40'x 60')
9	10 UNIT T-HANGAR
10	ENTRANCE ROAD
11	STATE HIGHWAY

Area will be performed, with a focus towards determining those “fatal flaws” which could preclude any potential site from future development.

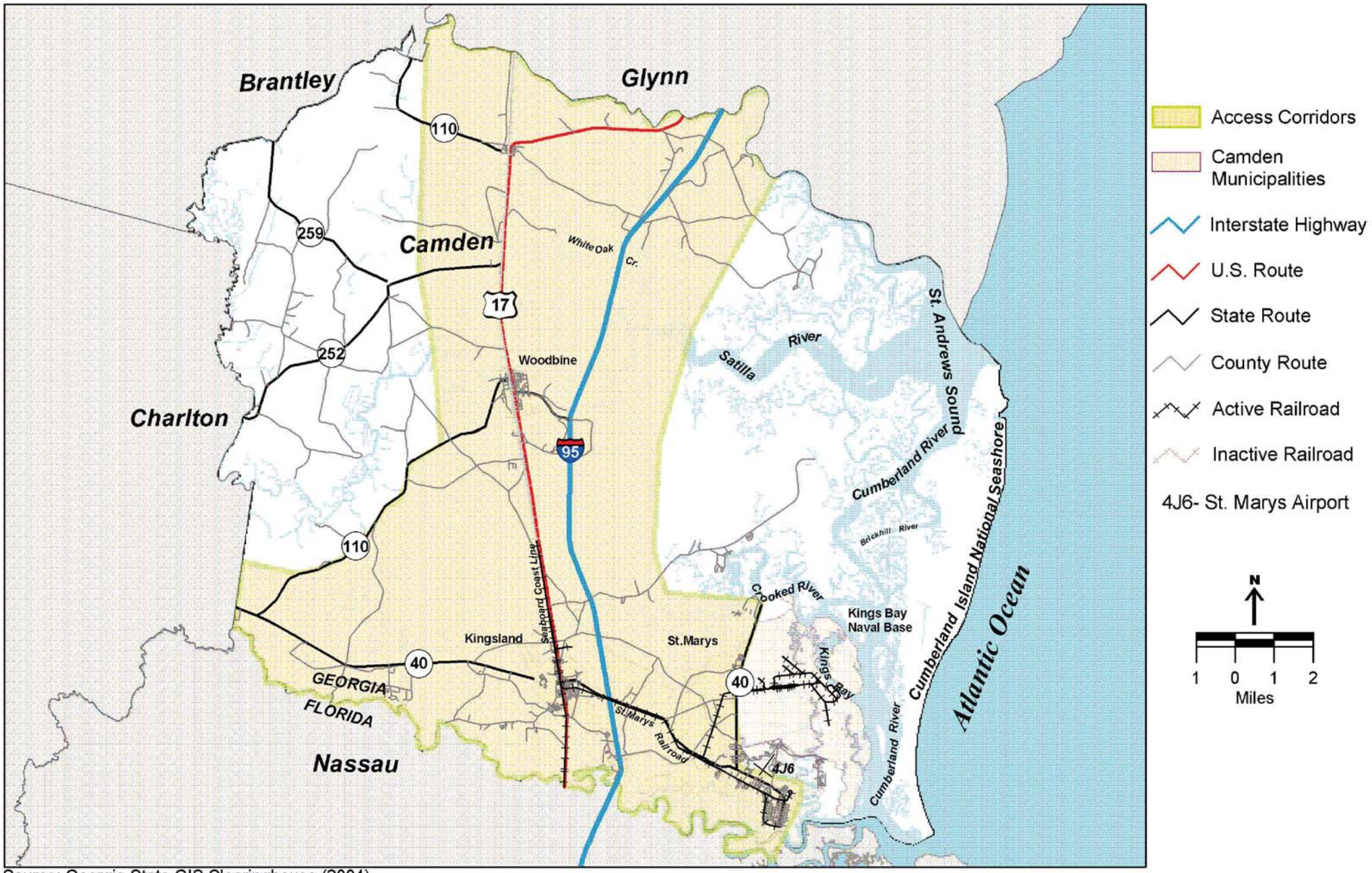
9.4.1 Screening Criteria

As discussed in Section 9.2 above, the Technical and Community Advisory Committees developed a comprehensive list of “screening criteria” to be applied to the site selection process for the purpose of evaluating those sites to be formally considered as a replacement airport location. Those screening criteria which are at least somewhat measurable and quantifiable, and will be used in the initial screening process, include the following:

- Accessible interstate and/or state highway access
- Available rail access
- Proximity to market/population/tourism centers
- No airspace/obstruction constraints
- Minimize environmental impacts

Camden County is virtually bisected from north to south by Interstate 95 (I-95), and to the east of I-95 by U.S. 17. Also, running in an east/west direction along the southern boundary of the County is State Route 40, which is the main connection between the Cities of St. Marys and Kingsland. State Route 110 also connects Highway 40 in the western portion of the County to U.S. 17 in the City of Woodbine. In order to fulfill the objective of providing accessible interstate and/or state highway access to the replacement airport, an area adjacent to and in close proximity to these transportation corridors has been identified for further analysis, see **Figure 9.2**. This area also meets the objective of identifying potential rail access for the new facility. A portion of the Seaboard Coast Line runs north/south through the City of Kingsland, but terminates just south of the City of Woodbine. There is also an active rail line that runs east from the Seaboard Coast Line, providing rail access to the Kings Bay Naval Submarine Base (Kings Bay).

The Committees also determined that the replacement airport should be located in relative close proximity to current and projected market, population and tourism centers. The majority of the population in Camden County is spread among the three



Source: Georgia State GIS Clearinghouse (2004)
R,S&H, (2004)

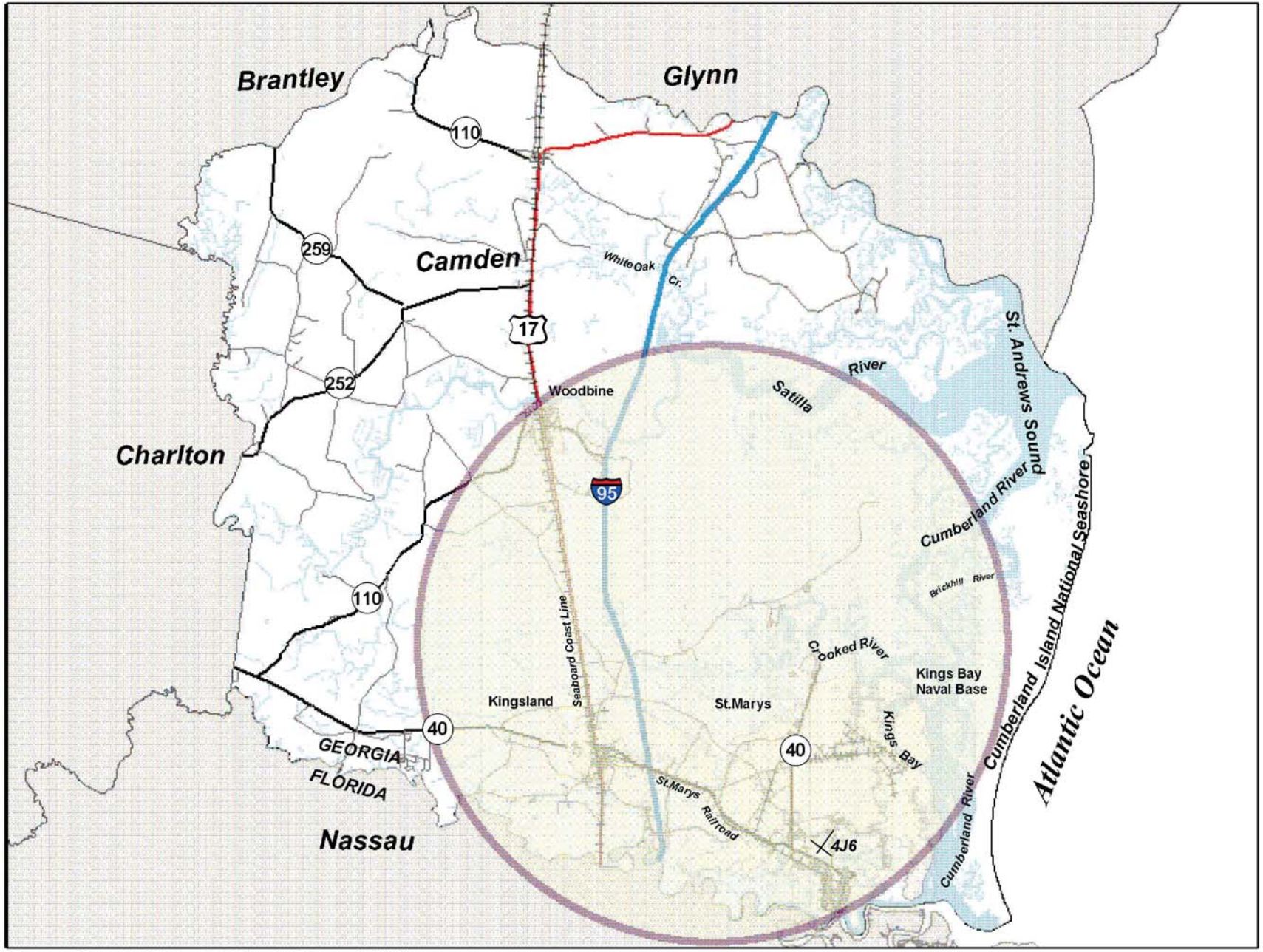
Figure 9-2
GROUND/RAIL TRANSPORTATION CORRIDORS

municipalities (St. Marys, Kingsland and Woodbine), with the largest population centered in St. Marys. **Figure 9.3** identifies the area for consideration to fulfill this objective. However, a significant consideration of the Committees in defining the overall screening criteria was the necessity to locate a potential replacement airport in an area free from current and projected airspace restrictions and obstructions. Due to national security concerns associated with Kings Bay, prohibited airspace has been established over a large portion of the Base, see **Figure 9.4**. The boundaries of this prohibited airspace will preclude a portion of the area identified for consideration with respect to the market, population and tourism centers. In addition, in order to ensure that any future traffic patterns and arrival/departure corridors do not encroach upon the prohibited airspace associated Kings Bay, an additional "block" of airspace has been identified in **Figure 9.4** and will be excluded from further consideration.

Through the implementation of the screening criteria with respect to the entire Study Area, a significantly smaller portion of the Study Area has been identified for more detailed analysis, see **Figure 9.5**. The focus in this "Revised Study Area" will be to examine environmental constraints, additional airspace constraints, roadway and rail access options, and identification of utility corridors. At the end of this initial screening effort, several sites will be selected and presented to the Technical and Community Advisory Committees for further consideration.

9.4.2 Environmental Analysis

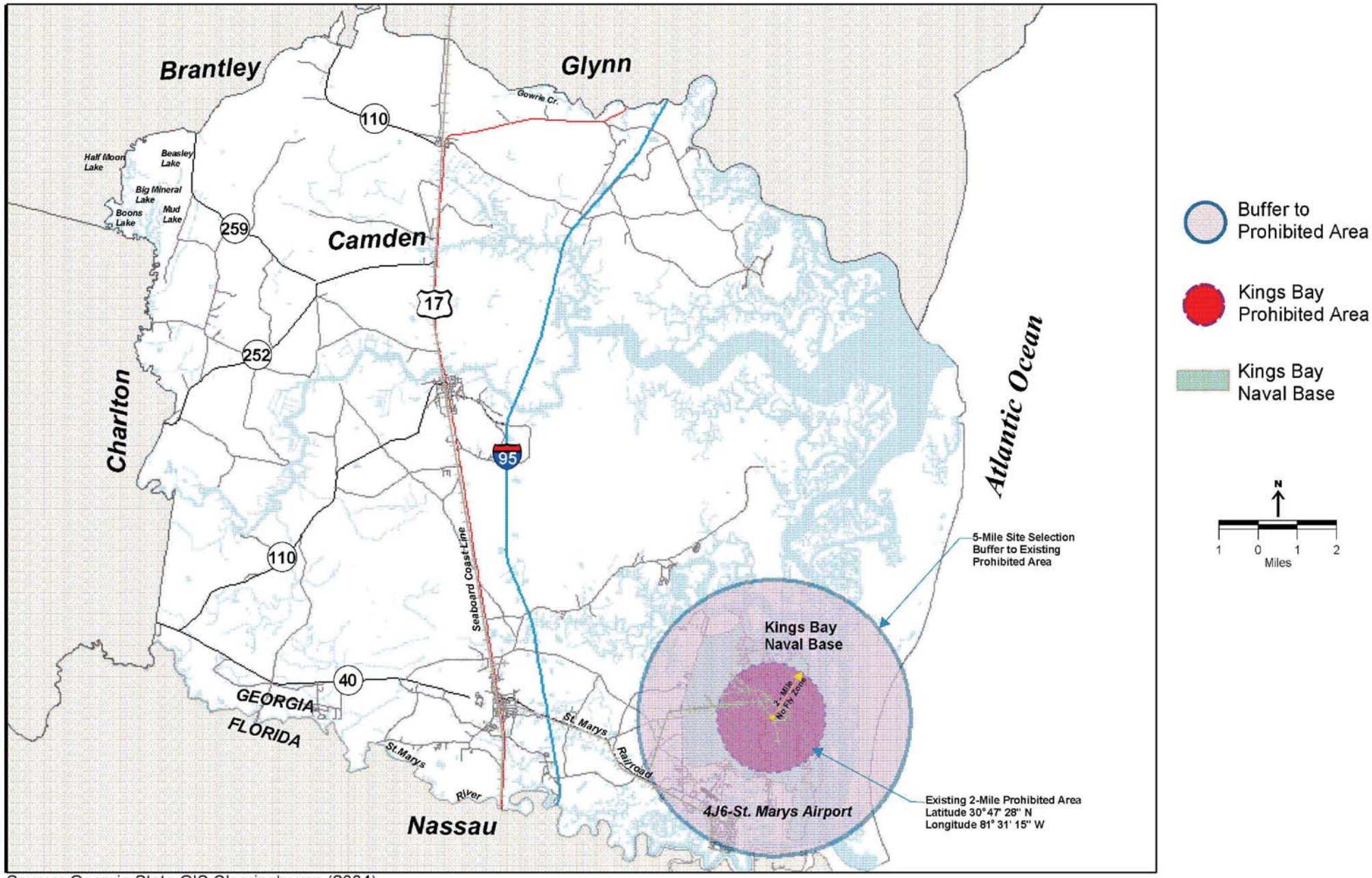
Environmental constraints will be among the most challenging aspects of locating a feasible replacement site for the St. Marys Airport. It is generally recommended by the Federal Aviation Administration (FAA) that environmental impacts be avoided to the fullest extent possible. For those areas that are impacted, they must be mitigated in accordance with federal, state and local laws, rules and regulations. At the conclusion of the site selection study, formal environmental analysis and review must be accomplished in accordance with the requirements established in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*; FAA Order 5050.4A, "*Airport Environmental Handbook*," and the National Environmental Policy Act. However, the process identified for establishing the final sites for consideration has been created with an eye towards conforming a future environmental analysis to these requirements.



Source: Georgia State GIS Clearinghouse (2004)

Figure 9-3

CAMDEN COUNTY POPULATION CENTER



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

Figure 9-4
KINGS BAY PROHIBITED AIRSPACE

17
Woodbine
95
Satilla
River
Revised S
Camden C
4J6- St. Marys Airpo
Cumberland River
N
1
0
Mile
Brickhill River
Seaboard Coast Line
Crooked River
Kings Bay
Naval Base
Kingsland
St.Marys
40
40
Kings Bay
St.Marys
Railroad
4J6
Cumberland River
Cumberland

One of the goals for the selection of a proposed site for the replacement St. Marys Airport was the minimization, to the extent possible, of environmental impacts associated with developing the new facility. Minimization of potential environmental impacts during the initial site screening process includes conforming the analysis to the following:

- Minimization or complete avoidance of potential wetland and floodplain impacts.
- Avoidance of any impacts to resources of cultural, historic, architectural or archeological significance, and avoidance of impacts to Section 4(f) lands.
- Avoidance of potential airspace impacts or restrictions.
- Identification of potential landfills in the Study Area and avoid selection of a site in close proximity to any landfill.

Each of these environmental considerations will be discussed in greater detail in the following sections.

9.4.2.1 Wetlands

Probably the most significant environmental constraint to be encountered in selecting a replacement site for the St. Marys Airport involves potential impacts to wetland areas. Wetlands have been defined by the FAA in FAA Order 5050.4A, *Airport Environmental Handbook*, as those areas that are "inundated by surface or ground water with a frequency sufficient to support and under normal circumstances would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." As further stated in the *Airport Environmental Handbook*, Department of Transportation Order 5660.1A, *Preservation of the Nation's Wetlands*, provides that Federal agencies:

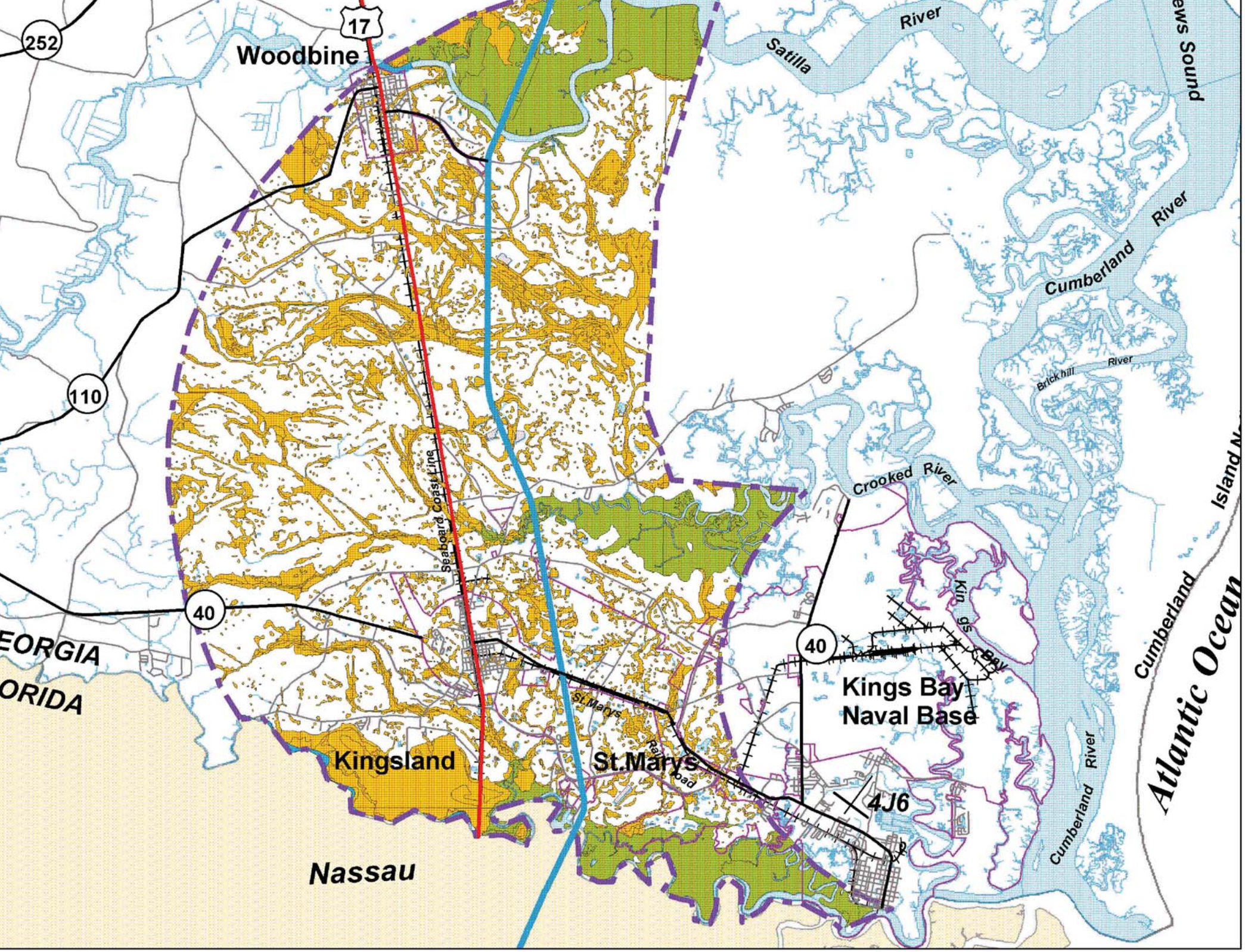
1. Avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative; and
2. Avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that:
    a. There is no practicable alternative to such construction, and
    b. That the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

In making this finding, the head of the agency may take into account economic, environmental and other pertinent factors. Consistent with the directives of the *Airport Environmental Handbook*, a major goal of the site selection effort is to identify a preferred alternative that either completely avoids wetland areas, or causes the absolute minimum impacts to wetlands in the Study Area.

Of the nearly 783 square miles of area within the overall Study Area, approximately 153 square miles are wetlands or water bodies. Due to the size, shape and proximity of these wetland areas to potential developable sites, finding a feasible site capable of accommodating a reasonably sized facility without impacting any wetlands will be a significant challenge. According to the National Wetland Inventory, provided by the U.S. Fish and Wildlife Service and the U.S. Corp of Army Engineers, the majority of high quality wetlands surround rivers and creeks as marshlands located throughout Camden County. The largest areas of wetlands within the county include those that span the length of the Satilla River for a width of up to five miles either side of the riverbank. Another large wetland area spans the length of the Cumberland River for a width of up to two and a half miles either side of the riverbank. Other rivers with associated wetland areas include the St. Mary's River on the Georgia-Florida border and the Crooked River located north of the cities of St. Mary's and Kingsland.

During the initial site screening analysis National Wetland Inventory Maps were reviewed to document the existing wetlands for the Revised Study Area, see **Figure 9.6**. Those wetlands identified in the Revised Study Area have been categorized as follows:

- **Marine Wetland**: The Marine System consists of the open ocean overlaying the continental shelf and its associated high-energy coastline.
- **Estuarine Wetland**: The Estuarine System consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by fresh-water runoff from the land. The Estuarine System includes both estuaries and lagoons.
- **Riverine Wetland**: The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: 1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens; and 2)


252
17
Woodbine
Satilla
River
Jews Sound
Cumberland
River
Brick hill
River
110
Crooked River
Seaboard Coast Line
40
EORGIA
ORIDA
Kingsland
St.Marys
St.Marys
Railroad
Kings Bay
Naval Base
4J6
Cumberland
River
Cumberland
Island N
Atlantic Ocean
Nassau

habitats with water containing ocean-derived salts. A channel is an "open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

- **Lacustrine Wetland**: The Lacustrine System includes wetlands and deepwater habitats with all of the following characteristics: 1) situated in a topographic depression or a dammed river channel; 2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and 3) total area exceeds 20 acres. The Lacustrine System includes permanently flooded lakes and reservoirs and tidal lakes with ocean-derived salinities.
- **Palustrine Wetland**: The Palustrine System includes all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due ocean derived salts is relatively low. The Palustrine System was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent or intermittent water bodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers.

Camden County has a significant amount of wetland areas identified on the National Inventory, which is administered and enforced by the Georgia Department of Natural Resources (GDNR) and the U.S. Army Corps of Engineers (Corps). Throughout the site selection process a significant effort will be focused on minimizing, to the extent practicable, any potential wetland impacts. However, any wetland impacts during eventual construction of the facility will result in no net loss of any wetlands, and any disturbed wetland areas will be re-established if necessary. In many instances newly created wetlands can be developed such that they tie into existing wetlands, either directly adjacent to, or through an existing ditch system. Any potential impacts to wetland areas will be closely coordinated with the applicable agencies.

9.4.2.2 Floodplains

Floodplains are lowland areas adjacent to lakes, wetlands and rivers that occasionally overflow onto the surrounding banks and inundate adjacent land areas with floodwater. Nationally, the term Floodplain means: "the land area that will be inundated by the overflow of water resulting from a 100-year flood (i.e., a flood which has a 1% chance of occurring any given year, NOT a flood that occurs once every 100 years)." Floodplains often contain wetlands and other areas vital to a diverse and healthy ecosystem. Loss of wetlands in and outside of floodplains exacerbates flood events because it decreases the ability of the watershed as a whole to hold water.

A review of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, depicts those areas within the Revised Study Area that have been determined to be floodplains, see **Figure 9.7**. These floodplain areas are regulated by the GDNR, FEMA and local zoning codes. The objective during the site selection process will be to avoid, to the extent practicable, any impacts within the 100-year floodplain. However, if all impacts become unavoidable, any loss of flood storage capability will be compensated through an equal amount of storage being developed elsewhere on the proposed site.

9.4.2.3 Cultural Resources

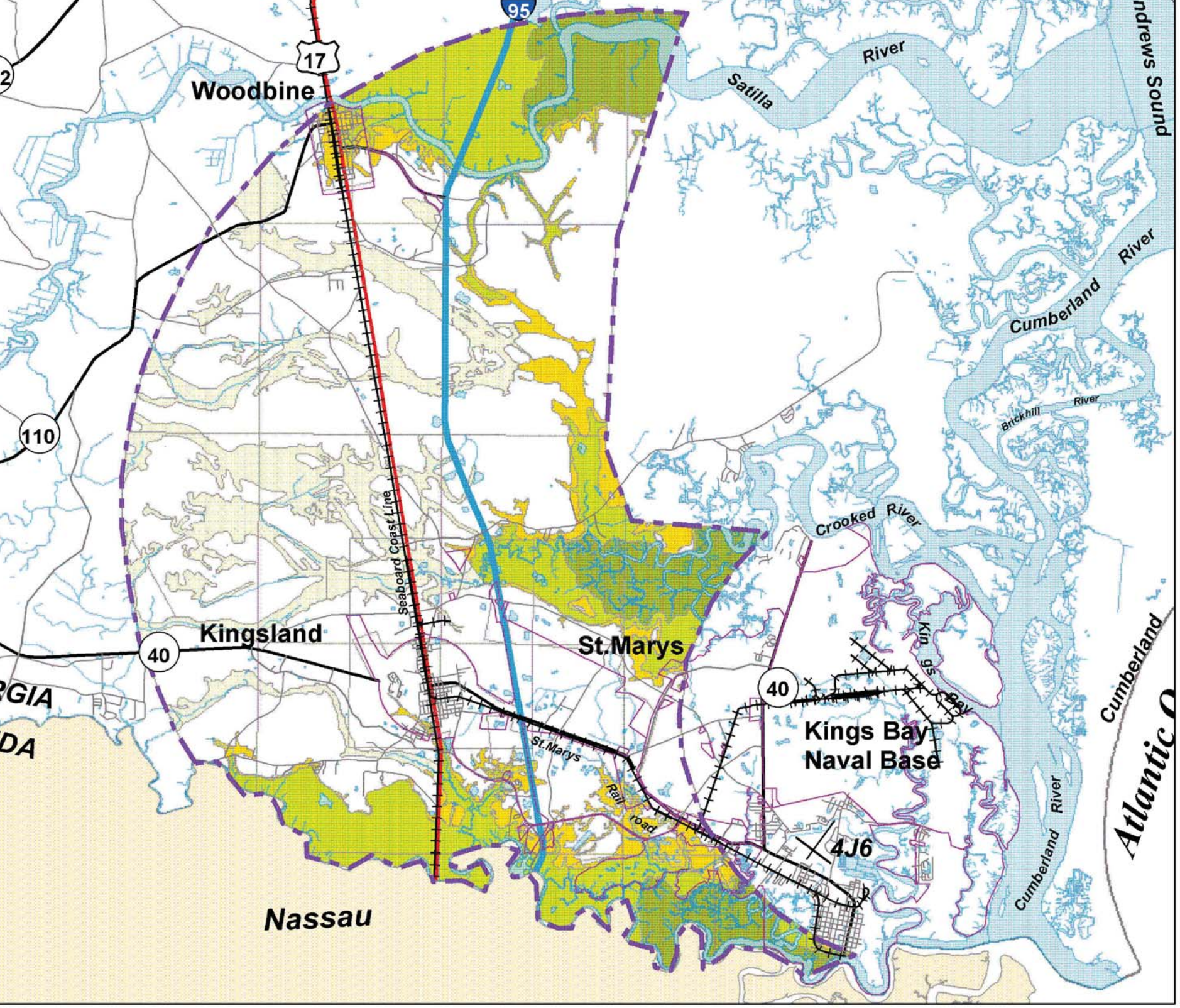
An inventory of those properties within the Revised Study Area having either a historic, architectural, archaeological or cultural significance was prepared, using available resources, and included churches, public parks, schools, cemeteries and historic properties, see **Figure 9.8**.

9.4.2.4 Landfills

The location of a single landfill with Camden County has been documented, and is outside of the Revised Study Area and should not be a factor during the site selection analysis, see **Figure 9.9**.

9.4.2.5 Airspace Analysis

Potential airspace obstructions associated with the Revised Study Area have been depicted in **Figure 9.10**. Aside from the prohibited airspace associated with Kings Bay, other potential airspace constraints include:



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4J6 - St. Marys

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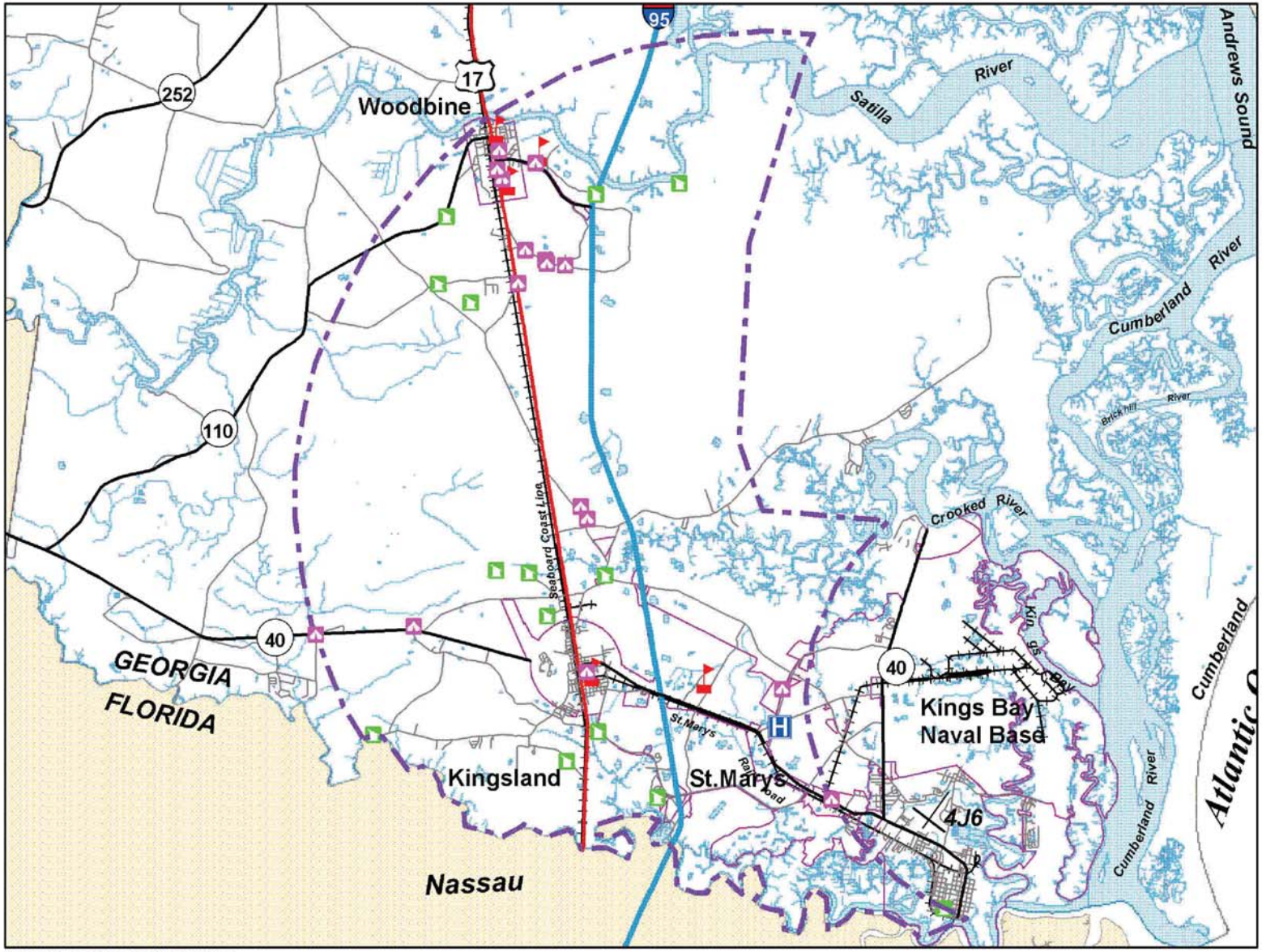


Cemetaries

Churches

Schools

Hospitals

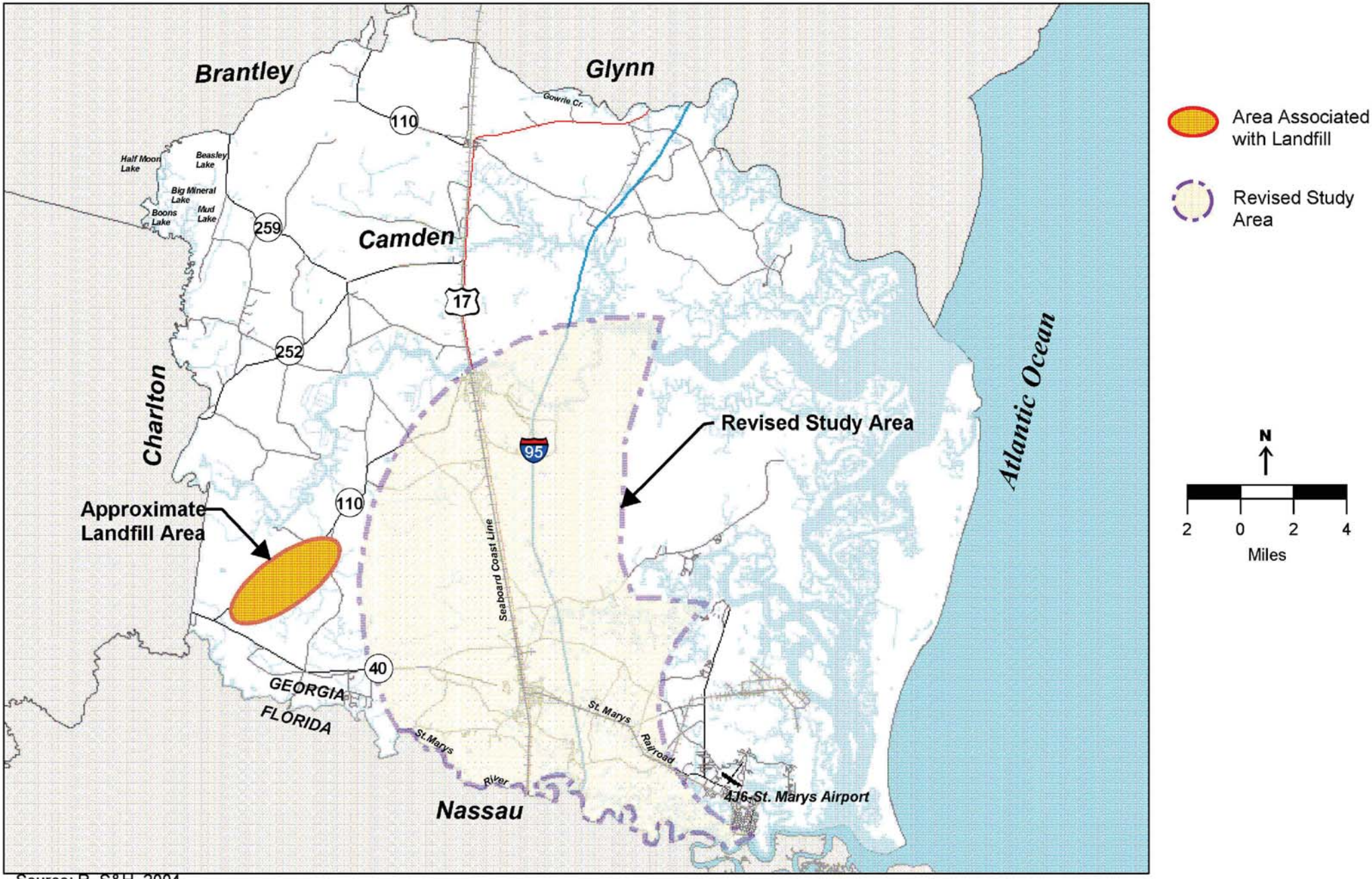
4J6 - St. Marys Airport

N

1 0 1 2
Miles

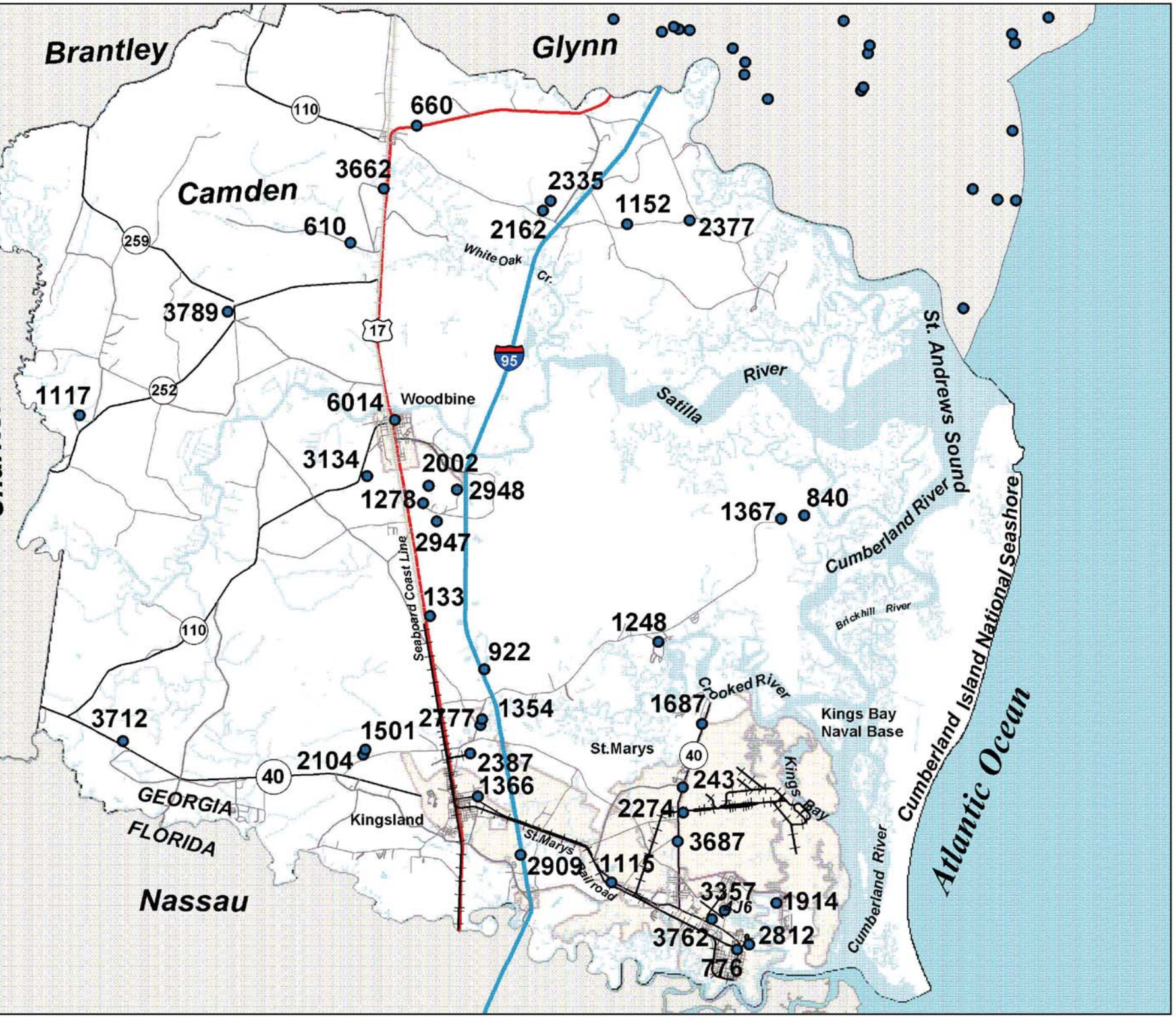
Source: Georgia State GIS Clearinghouse
R, S&H, 2004

FIGURE 9-8
CULTURAL RESOURCES



Source: R, S&H, 2004

Figure 9-9
CAMDEN COUNTY LANDFILL



OBSTRUCTIO

FAA ID No.	Obst. Type	AGL Ht.	AMS Ht
1115	TWR	300	3
1117	TWR	283	3
1152	TWR	320	3
1248	TWR	70	
133	TWR	364	3
1354	TWR	420	4
1366	TWR	336	3
1367	TWR	180	1
1501	TWR	1631	16
1687	TWR	397	4
1914	TWR	190	1
2002	TWR	320	3
2104	TWR	220	2
2162	TWR	472	5
2274	TWR	301	3
2335	TWR	365	3
2377	TWR	320	3
2387	TWR	265	2
243	TWR	1086	11
2777	TWR	350	3
2812	TWR	260	2
2909	TWR	270	2
2947	TWR	262	2
2948	TWR	270	2
3134	TWR	420	4
3357	TWR	125	1
3662	TWR	318	3
3687	TWR	195	2
3712	TWR	340	3
3762	TNK	156	1
3789	TWR	310	3
6014	TWR	185	1
610	TWR	272	2
660	TWR	268	2
776	STK	275	2
840	TWR	185	1
922	TWR	322	3
1278	TWR	309	3

N

2.5 0 2.5

Miles

FAA DES

nistration

- Various tall structures (i.e., obstructions) located within the Revised Study Area. These obstructions include numerous cellular phone towers and high power transmission lines.
- Victor Airway 441 (V-441), which traverses the Revised Study Area from northeast to southwest, and is the 227° Radial from the Brunswick VOR. Although Victor-441 traverses the Revised Study Area, it should not present an impediment in selecting a replacement site.
- Victor Airway 267 (V-267), which traverses the western boundary of the Revised Study Area from northwest to southeast, and is the 336° Radial from the Craig VORTAC. Although Victor-267 traverses the western boundary of the Revised Study Area, it should not present an impediment in selecting a replacement site.
- The southern boundary of a Military Operations Area (along the northern Camden County boarder), which does not encroach upon the limits of the Revised Study Area.

The principle airspace constraint that will be considered further in the site selection analysis are potential obstructions that may impact the selection of a final site.

9.4.3 Utility Corridors

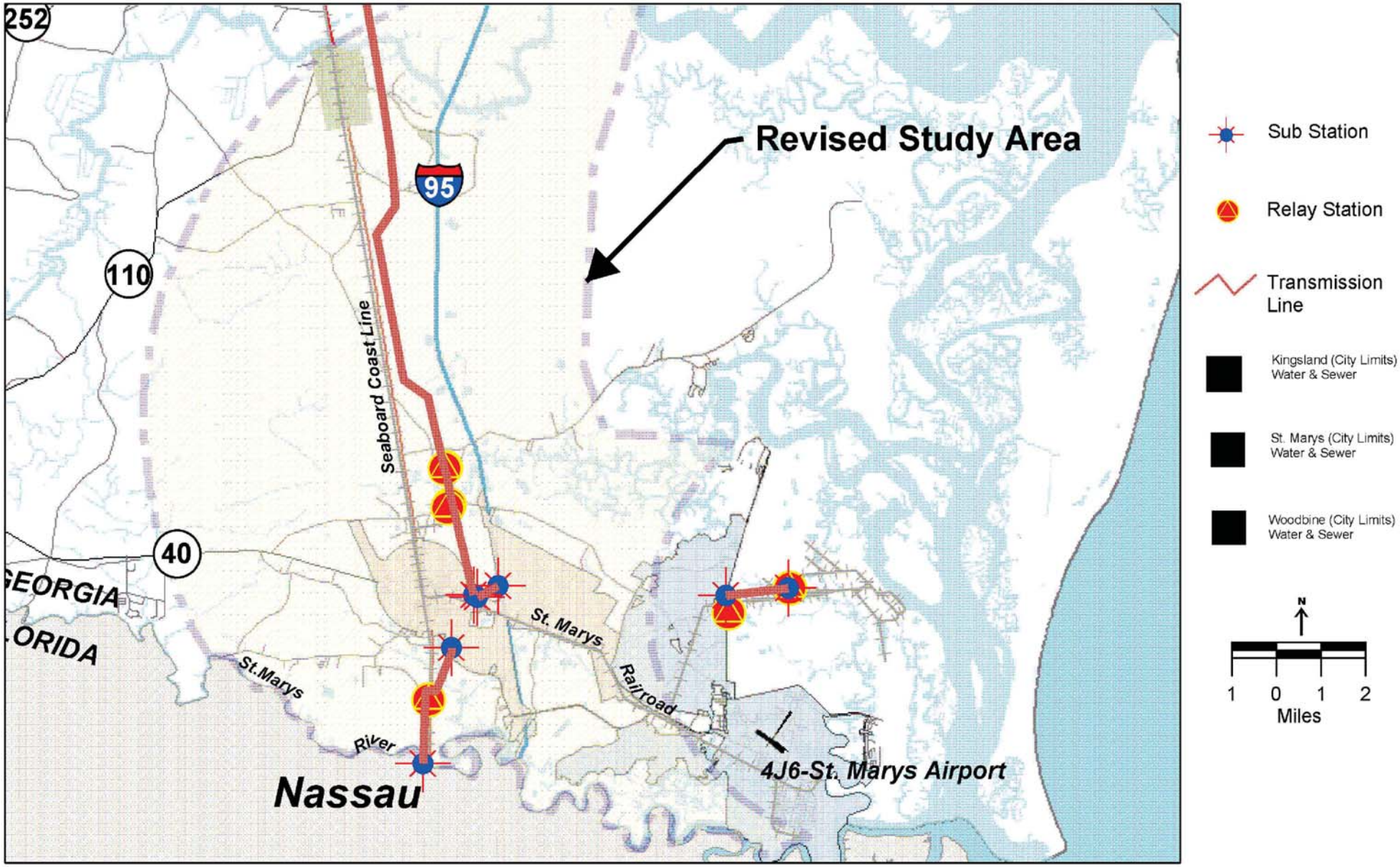
The applicable above and below-ground utility corridors (i.e., water, sewer and electrical services), associated with the Revised Study Area, are documented in **Figure 9.11**.

9.4.4 Initial Site Alternatives

Based on the initial screening criteria established in this section, the Revised Study Area has been evaluated and nine (9) separate locations identified for further consideration of a potential replacement airport site, see **Figure 9.12**. These nine (9) sites are described in more detail in the remaining portion of this section.

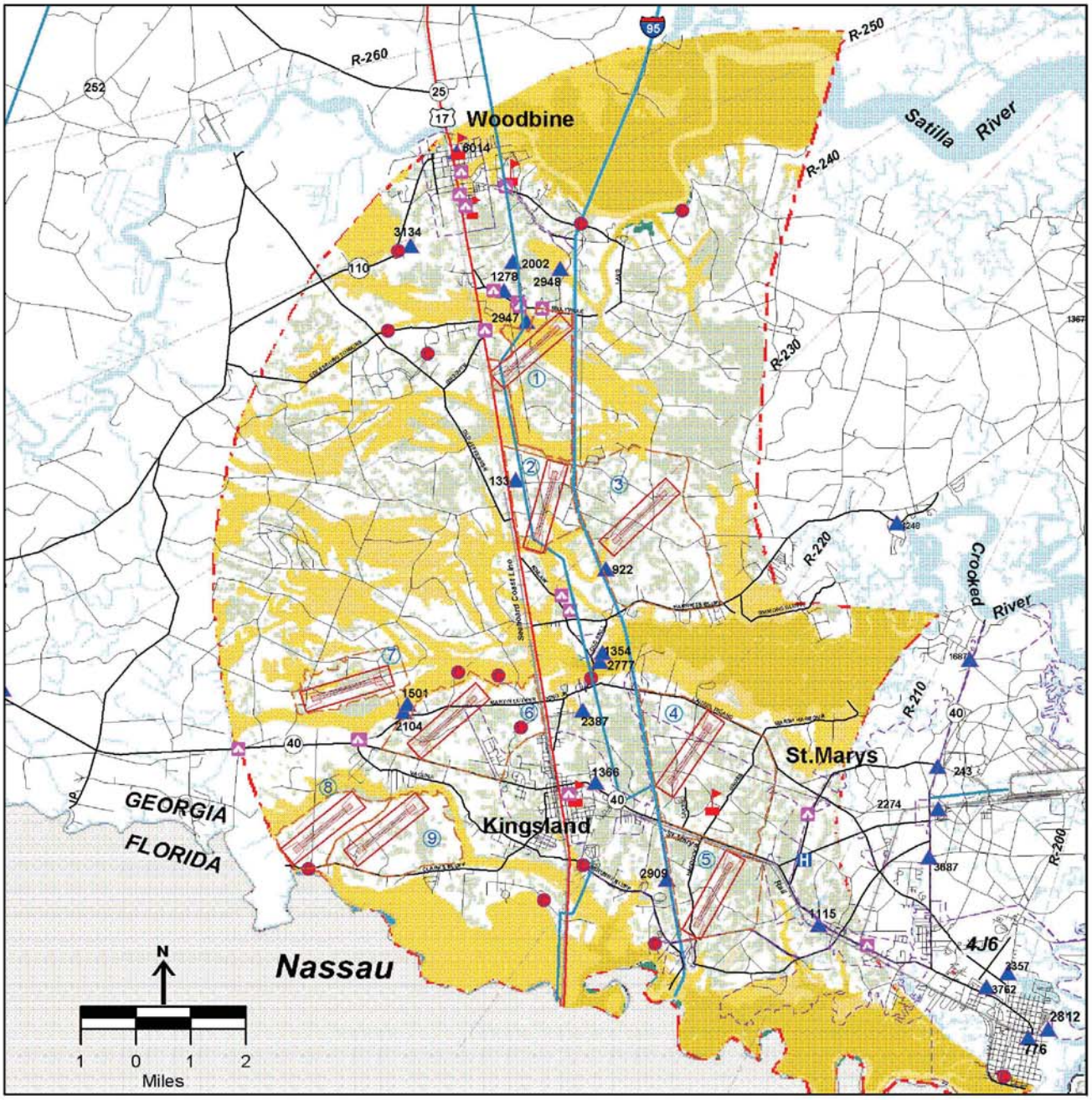
9.4.4.1 Site 1

Site 1 is located approximately three miles south of the City limits of Woodbine, and 6.5 miles north of the City of Kingsland. The boundaries of the Site include Billyville Road to the north, US 17 to the west, and Interstate 95 to the east, see **Figure 9.13**. Site 1 offers direct access to US 17, and is located in close proximity to Interstate 95. The Site is also approximately one-quarter mile east of potential rail access via the Seaboard



Source: Georgia State GIS Clearinghouse, (2004)
R, S&H, 2004.

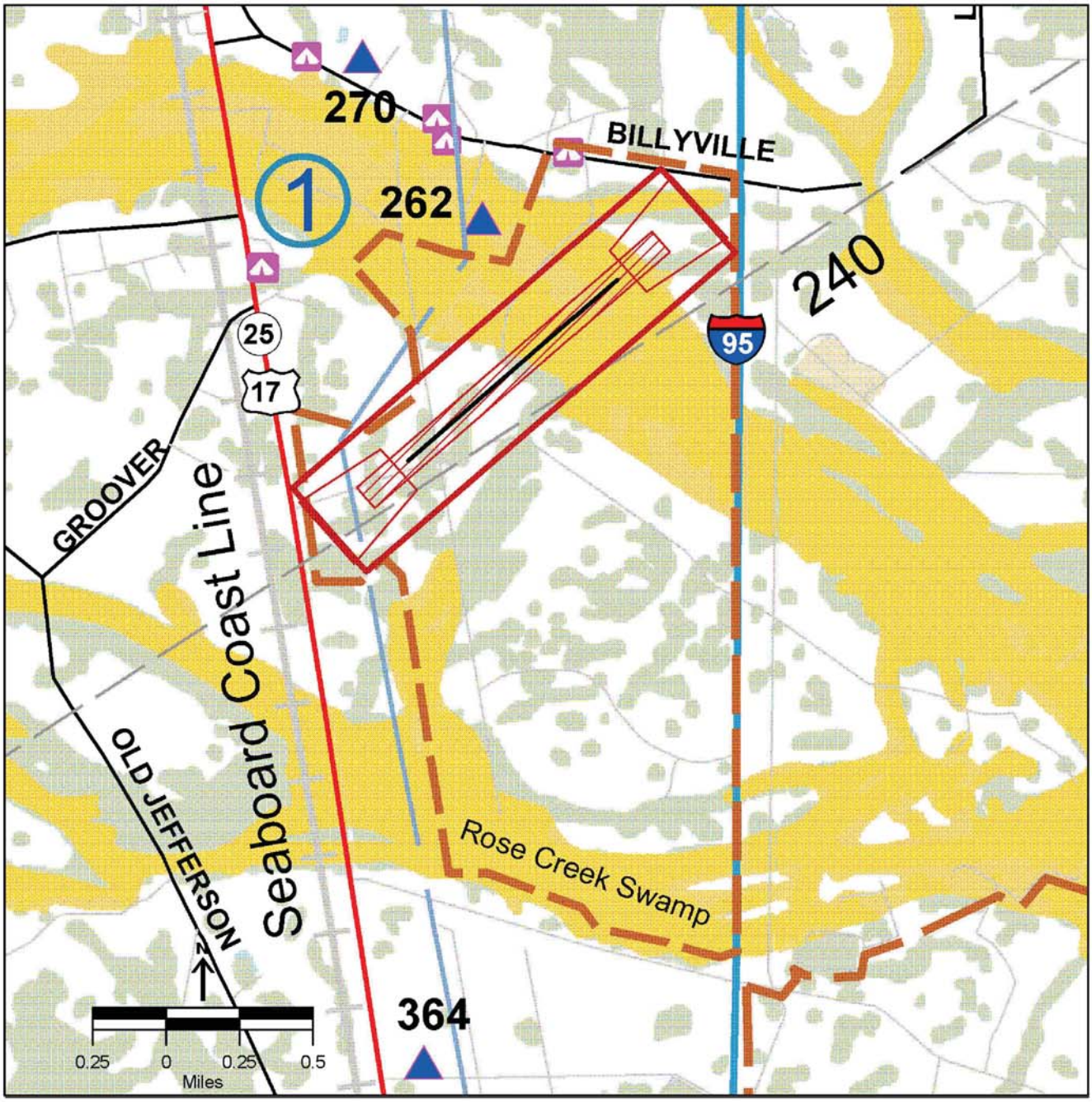
Figure 9-11
UTILITY CORRIDORS



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Camden Municipalities
- Prospective Airport Sites
- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Revised Study Area
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-12
PROSPECTIVE SITE LOCATIONS



Interstate Highway
U.S. Route
State Routes
County Roadways
High-Tension Utility Line
Radial From Brunswick VOR
Active Railroad Tracks
Inactive Railroad Tracks
Prospective Property Boundary
Prospective Safety Areas
Esturine Wetlands
Palustrine Wetlands
Lustrine Wetlands
Riverine Wetlands
100-Year Floodplain
Hospitals
Churches
Cemetaries
Schools
FAA Obstructions

Figure 9-13
SITE 1

Coast Line, thereby offering a possible opportunity for convenient multi-modal access to air, surface and rail transportation corridors. The closest water and sanitary sewer connection would be to the municipal system in the City of Woodbine. Georgia Power provides electrical power for the area, and there are some "high-tension" utility transmission lines that traverse the Site from north to south along the western boundary. These power lines present a potential airspace obstruction and may need to be relocated.

The project Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. Drainage of the Site flows southeastward to the Rose Creek Swamp, which ultimately discharges to the Satilla River. There is a sizable floodplain that crosses the northern and southern portions of the Site, as well as a significant amount of wetlands that are dominated by a seasonally flooded, forested system associated with the drainageways. The Site is not located within any area designated as critical habitat by the United States Fish and Wildlife Service (FWS), and no endangered or threatened plant and animal species listed by both FWS and the Georgia Department of Natural Resources (GDNR) are known to occur at the project Site or were observed during the site inspection. There are various cultural resources located near the Site, but potential development of the Site as an airport should not adversely affect these resources. There are cell phone towers located north and south of the Site, which may create potential airspace obstructions and require further analysis.

There are numerous advantages associated with the selection of Site 1 for further analysis. Those advantages include:

- The location of the Site is situated in close proximity to the current and future population centers of Camden County.
- There is sufficient land area associated with the Site to permit future growth as demand warrants, including potential adjacent commercial/industrial park development.
- Since the surrounding area is sparsely developed/populated, construction of an airport would be compatible with the surrounding land uses.
- Due to the location of the Site, a Non-Precision Instrument Approach off the Brunswick VOR is possible.

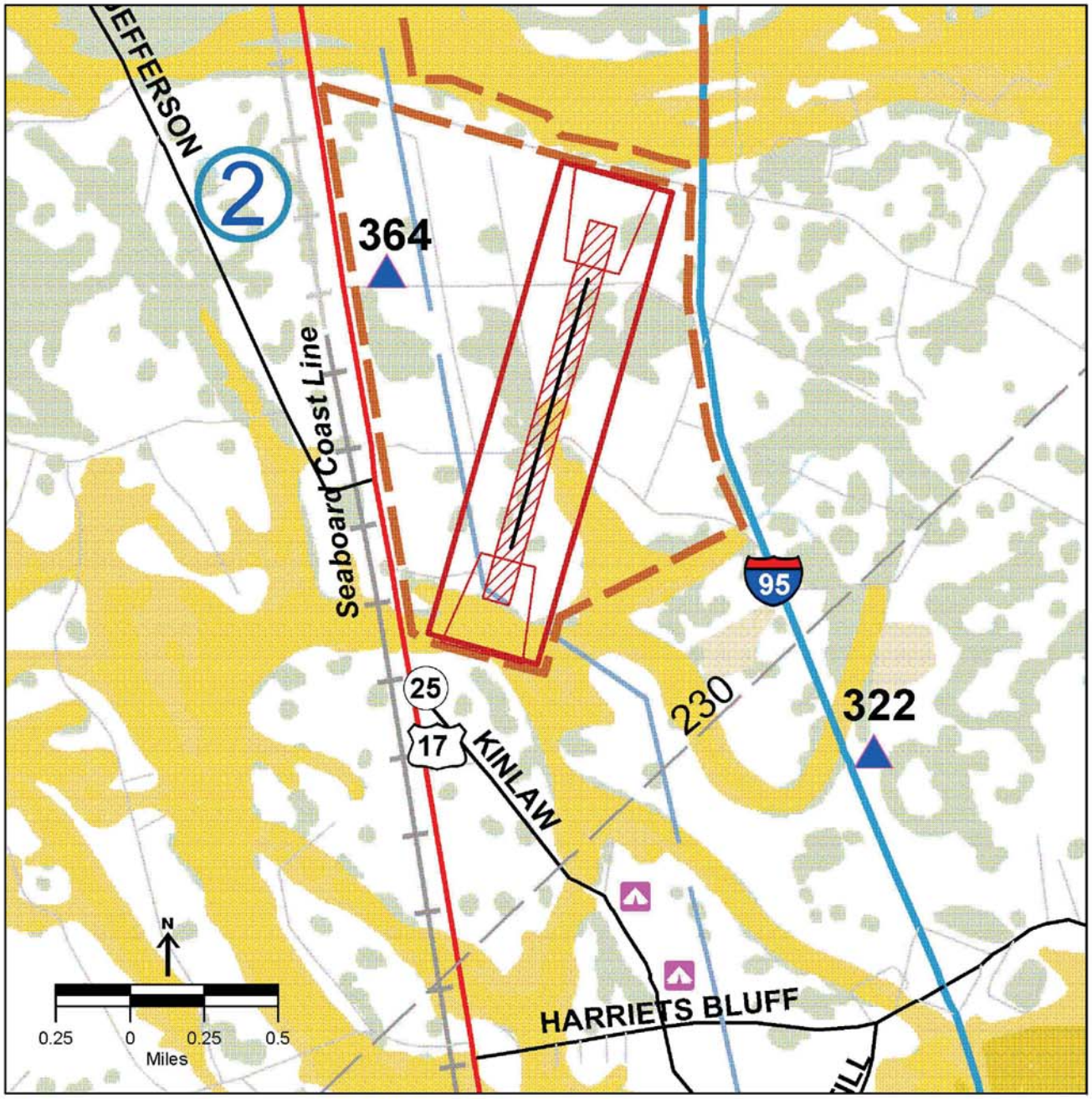
- The Site is located approximately 12 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.
- The current property owner has expressed an interest in donating the land for construction of the airport. If this donation takes place, the value of the donated land could be used as the City's share of total development costs under current FAA guidelines.

There are, however, potential disadvantages associated with the selection of this Site as the preferred alternative. Those disadvantages include:

- A large portion of the Site has been identified as being within the 100-year Floodplain.
- The Site contains a large amount of wetland areas that would potentially be impacted by construction. Prior to construction, coordination would need to occur with the various state and federal agencies to determine the applicable environmental mitigation requirements.
- The Georgia Power Line that run north-south on the Site may need to be relocated.
- The towers located both north and south of the site would need further detailed airspace analysis to determine the extent of their impacts, and may require relocation.

9.4.4.2 Site 2

Site 2 is located approximately three and one-half miles north/northeast of the City limits of Kingsland, and one and one-half mile north of Harriet's Bluff Road. The boundaries of the Site include US 17 to the west and Interstate 95 to the east, see **Figure 9.14.** The Site is also approximately one-quarter mile east of potential rail access via the Seaboard Coast Line, thereby offering a possible opportunity for convenient multi-modal access to air, surface and rail transportation corridors. Georgia power currently offers electricity to the area in the vicinity of the Site. The closest water and sanitary sewer connection would be to the municipal system in the City of Woodbine. There are also some "high tension" utility transmission lines that traverse the Site from north to south along the western boundary, which present a potential airspace obstruction and may need to be relocated.



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-14
SITE 2

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. There is a floodplain that crosses the southern part of the Site, as well as a small amount of wetlands that are dominated by a seasonally flooded, forested system associated with the drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS and GDNR are known to occur at the project Site. There are minimal cultural resources located near the Site, and potential development of the Site as an airport should not adversely affect these resources. There is also a tower located to the west of the property that may be considered an airspace obstruction.

There are numerous advantages associated with the selection of Site 2 for further analysis. Those advantages include:

- The Site location is situated in close proximity to the current and future population centers of Camden County.
- Future development of the Camden County Industrial Park could be stimulated by construction of the airport on this Site.
- Since the surrounding area is sparsely developed/populated, construction of an airport would be compatible with the surrounding land uses.
- The Site is located approximately 11 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.
- Other than the small floodplains and wetland areas, the Site offers few environmental constraints.

There are however, potential disadvantages associated with the selection of this Site for further analysis. Those disadvantages include:

- The tower located to the west of the Site presents a potential airspace obstruction and may require relocation.
- Since the Site is rather narrow and primarily aligned in a North-South configuration due to the adjacent roadways, there is very little potential for long-term airport growth.
- The Georgia Power Line that runs north and south on the Site may need to be relocated.

- The boundaries of the Site will not permit the development of a single runway capable of accommodating 95% wind coverage, and provide the necessary non-precision instrument approach capability for the airport. Therefore, a two runway configuration will likely be required and increase the total cost of development.

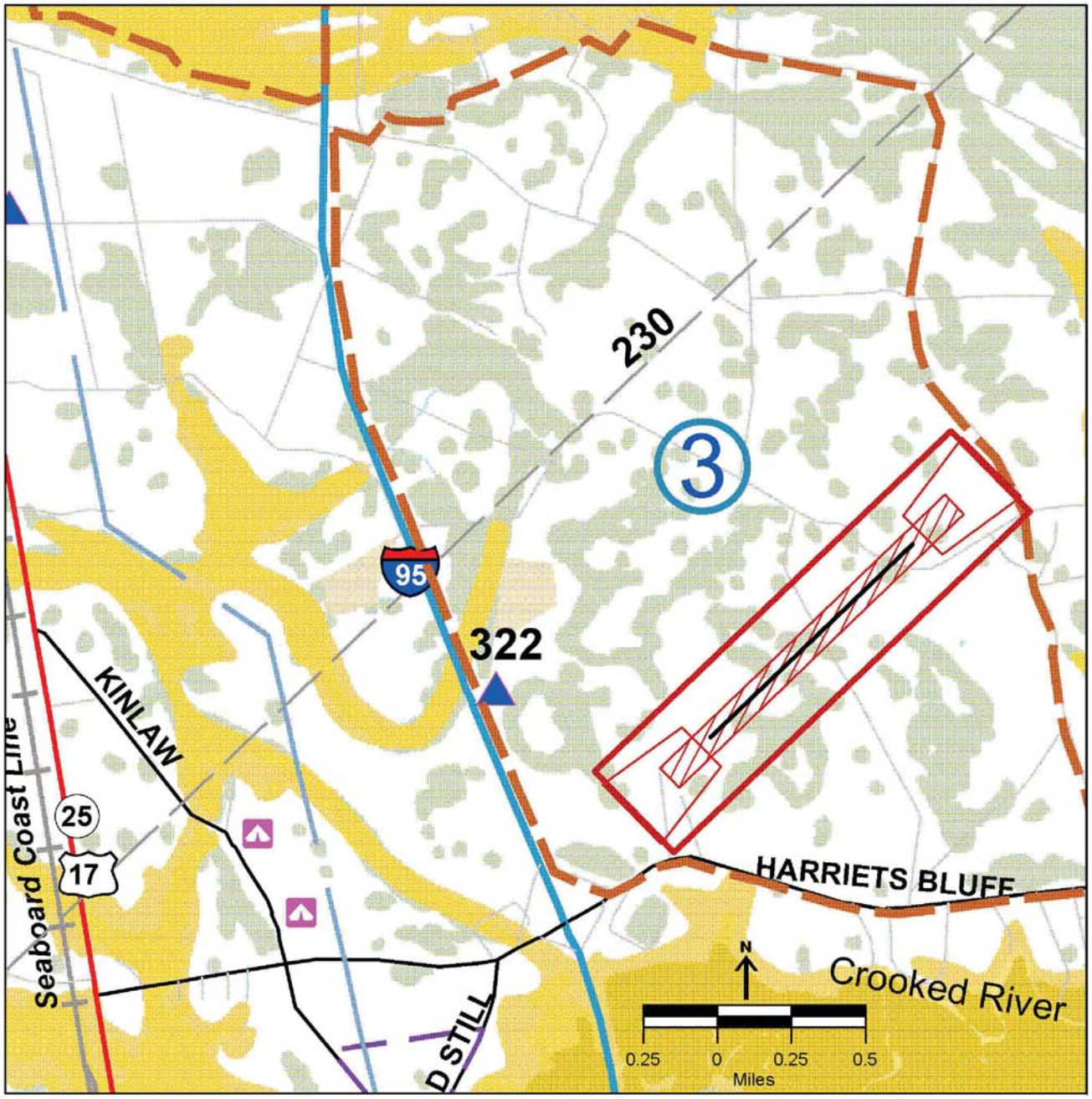
9.4.4.3 Site 3

Site 3 is located approximately one-quarter mile east of I-95, one-quarter mile north of Harriet's Bluff Road, and 4 miles north of the City of Kingsland, see **Figure 9.15**. Site 3 offers excellent access to Interstate 95, and is located in close proximity to the interchange at Harriet's Bluff Road. The Site is approximately two miles east of potential rail access via the Seaboard Coast Line, which may preclude the possibility of modal access to air, surface and rail transportation corridors. Currently, the City of Kingsland provides water and sewer to the developed properties along Harriet's Bluff road, and these utilities may possibility be extended to the southern portion of the Site. Georgia power also provides electricity in close proximity to the Site.

The project Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. Drainage of the Site flows southeastward to the Crooked River. There are no floodplains associated with the Site, but there are a limited amount of wetlands associated with the forested system and drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS and GDNR are known to occur at the project Site or were observed during the site inspection. There are few cultural resources located near the Site, so potential development of the Site as an airport will not adversely affect the area. There is also a cell tower located at the southwestern portion of the Site.

There are numerous advantages associated with the selection of Site 3 for further analysis. Those advantages include:

- The location is situated in close proximity to the current and future population centers of Camden County.
- There is sufficient land area associated with the site to permit future growth as demand warrants, including potential adjacent commercial/industrial park development.



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-15
SITE 3
April 2005

- The Site is located approximately nine miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.
- There are minimal environmental constraints associated with the development of this Site.

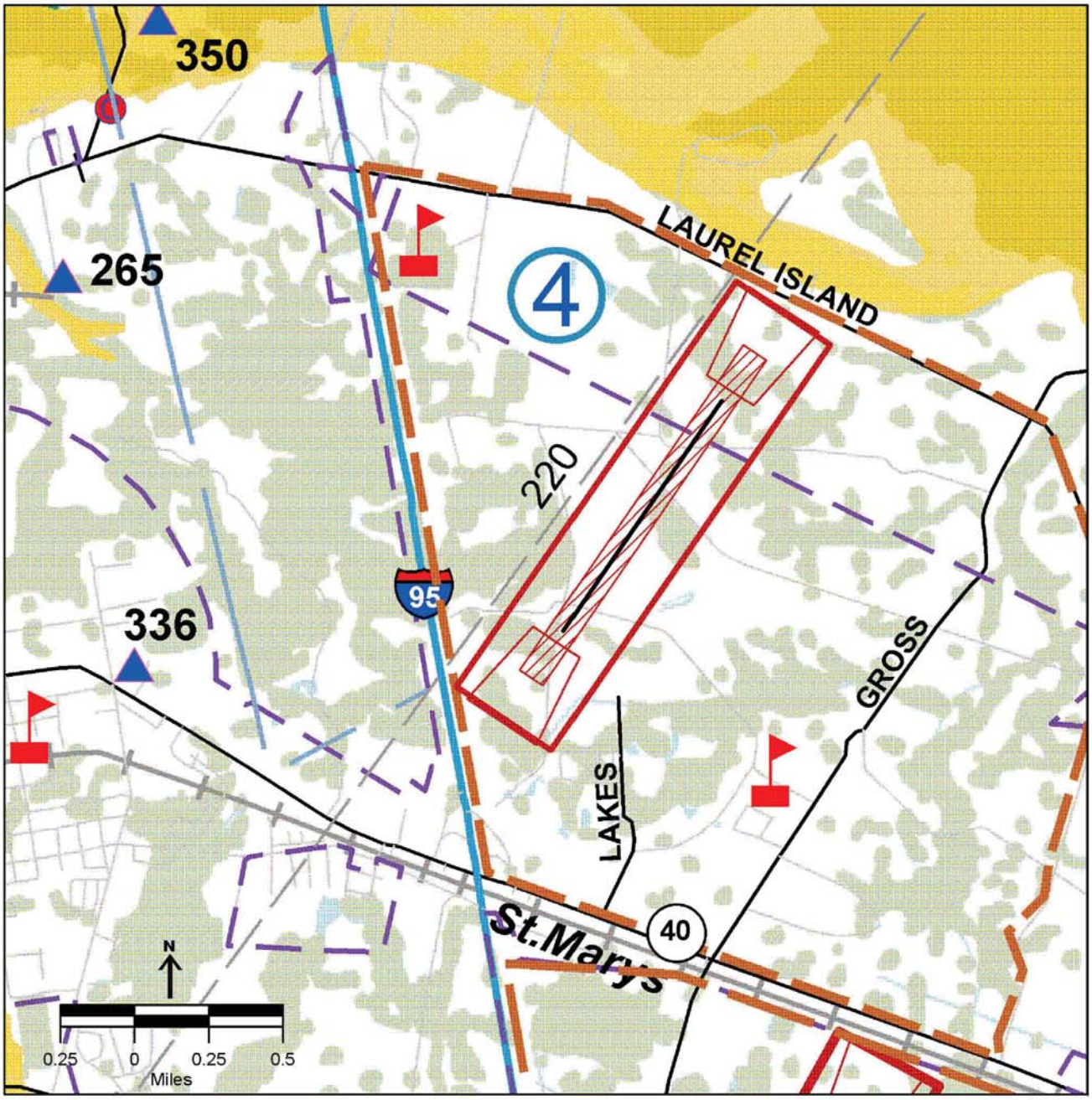
There are however, potential disadvantages associated with the selection of this Site for further analysis. Those disadvantages include:

- The Site has various types of commercial and residential development along the southern and eastern boundaries, which may create compatible land use concerns for surrounding property owners.
- The tower located south/southwest of the site would need further detailed airspace analysis to determine the extent of potential impacts.
- Rail access to the Site is not easily available.

9.4.4.4 Site 4

Site 4 is located approximately one-half mile east of the City limits of Kingsland, and one mile north of State Route 40. The boundaries of the Site include Interstate 95 to the west, Laurel Island Road to the north and Gross Road to the east, see **Figure 9.16.** The Site is also approximately one-quarter mile north of potential rail access via the St. Marys Rail Line, thereby offering a possible opportunity for convenient multi-modal access to air, surface and rail transportation corridors. Currently, electricity is available at the Site through Georgia Power. Due to the Site's proximity to the Cities of Kingsland and St. Marys, it may be possible to extend water and sanitary sewer to the Site.

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. There are no floodplains associated with the Site, but there are a limited amount of wetlands associated with the forested system and drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS and the GDNR are known to occur at the project Site. There are various cultural resources located near the Site, but the potential development of the Site should not affect these resources.



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-16
SITE 4
April 2005

There are several advantages associated with the selection of Site 4 for further analysis. Those advantages include:

- The location is situated in close proximity to the current and future population centers of Camden County.
- There are minimal environmental constraints associated with this Site.
- The Site is located approximately 11 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.

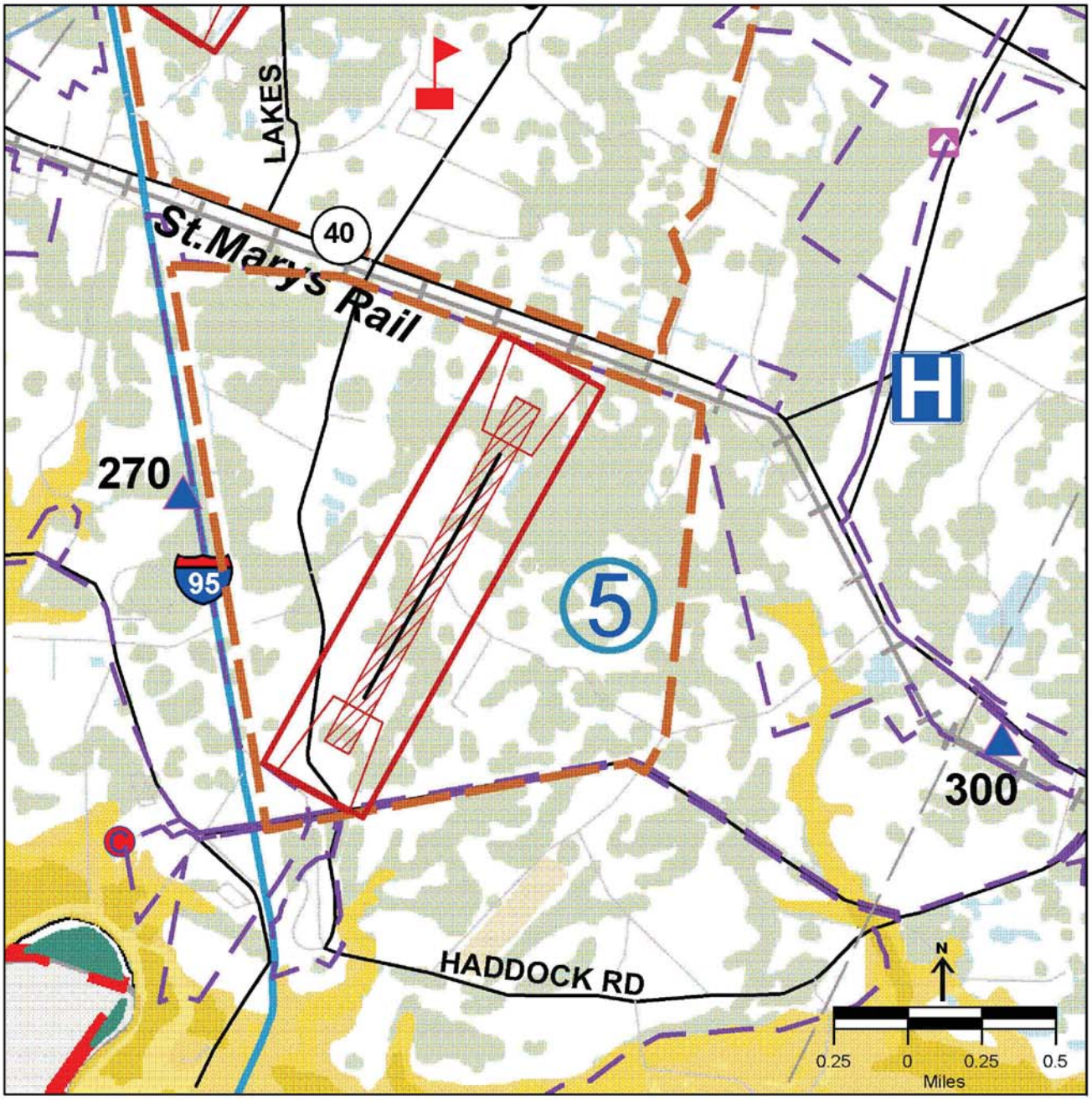
There are however, potential disadvantages associated with the selection of this Site for further consideration. Those disadvantages include:

- The school located at the northwest quadrant of the site, in addition to the developments on the northern end of the site along Laurel Island Road, may create land use compatibility concerns for surrounding property owners.
- The land area for future development of the airport is constrained by surrounding development and may present difficulties for future growth.
- There are numerous land owners associated with the Site which may make acquisition of the property for airport purposes difficult, time consuming and expensive.

9.4.4.5 Site 5

Site 5 is located approximately five and one-half miles west of the current airport location. The Site is located one mile east of Interstate 95 and directly south of State Road 40. The boundaries of the Site include Interstate 95 to the west, State Road 40 to the north, and Haddock Road to the south, see **Figure 9.17.** The Site is also approximately one-quarter mile south of potential rail access via the St. Marys Rail Line, thereby offering a possible opportunity for multi-modal access to air, surface and rail transportation corridors. Electrical power is also available at the Site and provided by Georgia Power. It also appears that the City of Kingsland would be able to provide a sanitary sewer connection along with potable water.

The project site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. There are no floodplains associated with the Site, but there are a limited amount of wetlands



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-17
SITE 5

associated with the forested system and drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS and GDNR are known to occur at the project Site. There are minimal cultural resources located near the Site, and potential development of the Site as an airport should not affect these resources.

There are some advantages associated with the selection of Site 5 for further analysis. Those advantages include:

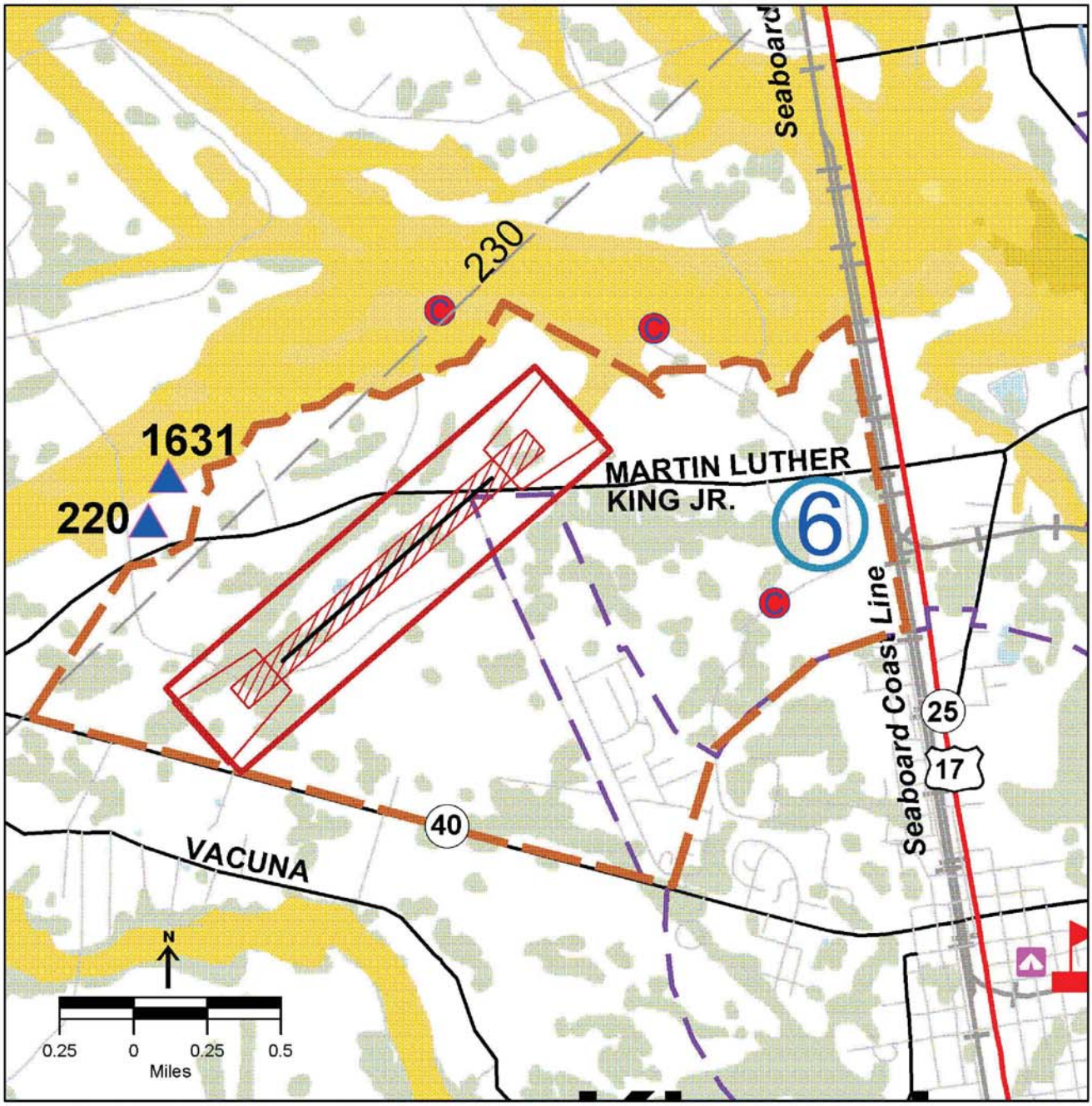
- The location is situated in close proximity to Kingsland and St. Marys, and the future population centers in Camden County.
- The Site has good potential for access to the St. Marys Rail System.
- There are minimal environmental constraints.
- The Site is located approximately 8 miles from the Kings Bay Naval Base and should not be adversely affected by current airspace restrictions.

There are however, potential disadvantages associated with the selection of this Site for further consideration. Those disadvantages include:

- There are two towers located in close proximity to the Site, which may create airspace obstructions.
- This Site offers little adjacent land area for future growth due to surrounding developments.
- A portion of Haddock road would need to be relocated to accommodate the construction of the airport.
- A significant amount of surrounding development.

9.4.4.6 Site 6

Site 6 is located approximately one and one-half miles west of US 17, three-quarters of a mile north of State Road 40, and Martin Luther King Jr. Blvd splits the Site in half, see **Figure 9.18.** The Site is also approximately three-quarters of a mile west of potential rail access via the Seaboard Coast Line, thereby offering a possible opportunity for convenient multi-modal access to air, surface and rail transportation corridors. Electrical power is currently available at the Site, and provided by Georgia Power. The City of Kingsland provides a sanitary sewer connection along with potable water to various developments in the area.



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

Interstate Highway	Inactive Railroad Tracks	100-Year Floodplain
U.S. Route	Prospective Property Boundary	Hospitals
State Routes	Prospective Safety Areas	Churches
County Roadways	Esturine Wetlands	Cemetaries
High-Tension Utility Line	Palustrine Wetlands	Schools
Radial From Brunswick VOR	Lustrine Wetlands	FAA Obstructions
Active Railroad Tracks	Riverine Wetlands	

Figure 9-18
SITE 6

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. There are no floodplains associated with the Site, but there are a limited amount of wetlands associated with the forested system and drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS GDNR are known to occur at the project Site. There are various cultural resources located near the Site, and potential development of the Site as an airport should not adversely affect these resources.

There are some advantages associated with the selection of Site 6 for further analysis. These advantages include the following:

- The location of the Site is situated in close proximity to the City of Kingsland, and future population centers of Camden County.
- The Site is situated close to the Seaboard Coast Line rail system.
- The Site is located approximately 12 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.

There are however, potential disadvantages associated with the selection of this Site for further consideration. Those disadvantages include:

- There are two towers located in close proximity to the Site, which may create airspace obstructions. The elevation of the tallest tower is 1,631 feet AGL, which may place a significant constraint on air traffic, or require the obstruction to be relocated.
- The area surrounding the Site is moderately developed which may create land use compatibility issues with the surrounding property owners.
- The expense and disruption associated with the relocation of Martin Luther King Jr. Blvd.

9.4.4.7 Site 7

Site 7 is located approximately three miles west of US 17, one mile north of State Road 40, and there are various county roads to the north, east and west, see **Figure 9.19.** Site 7 offers access to State Route 40, and is located approximately 4 miles west of Interstate 95. The Site is also approximately three miles west of potential rail access via the Seaboard Coast Line, thereby offering a possible opportunity for multi-modal access

to air, surface and rail transportation corridors. Electrical power is currently available at the Site, and provided by Georgia Power. The closest connection to a water and sanitary sewer system would be the City of Kingsland.

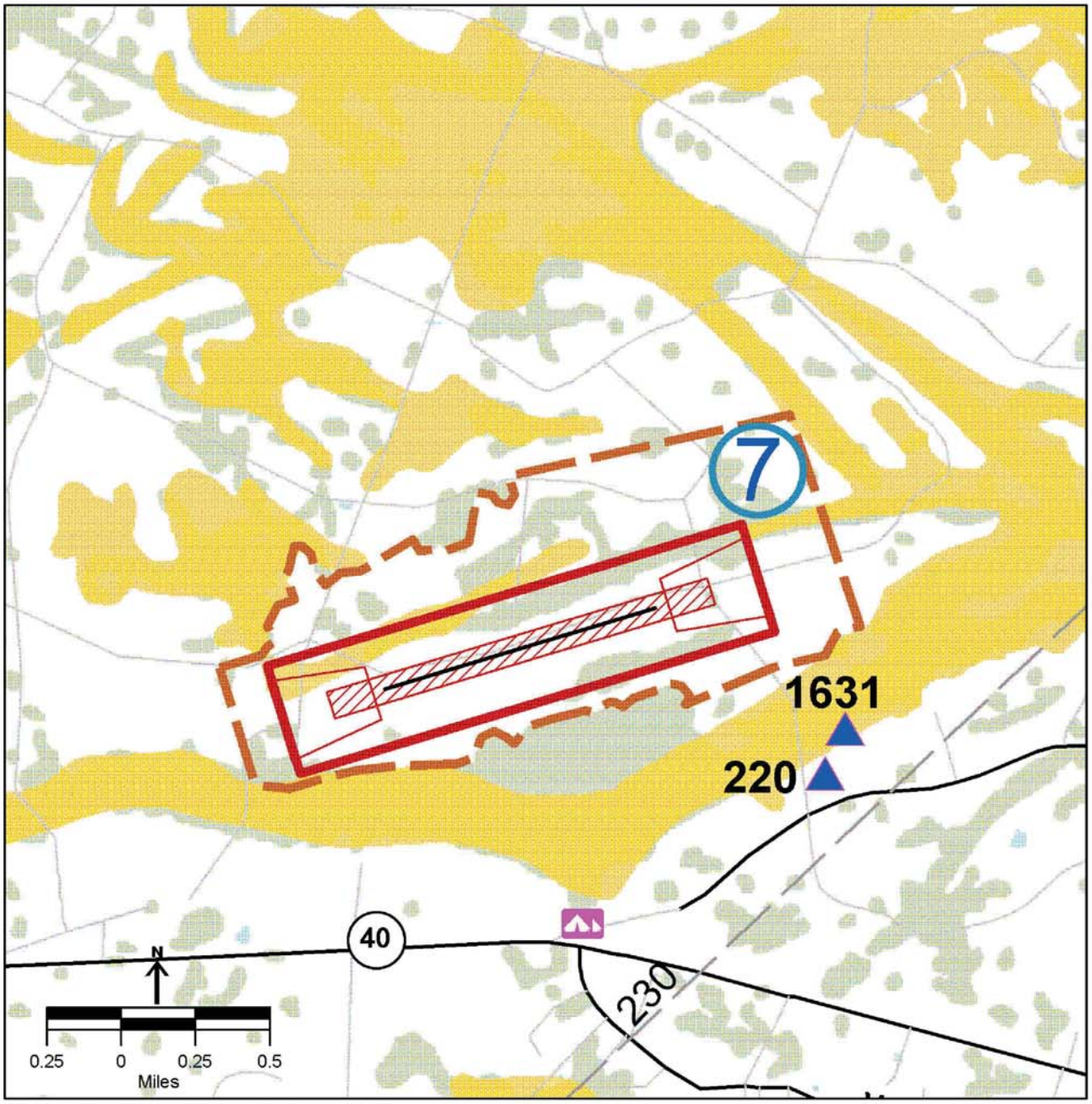
The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. There are numerous floodplains and wetlands associated with the Site, but those environmental constraints can be avoided by proper alignment of the runway. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS and the GDNR are known to occur at the project Site. There are various cultural resources located near the Site, and potential development of the Site as an airport will not affect these resources.

There are some advantages associated with the selection of Site 7 for further analysis. Those advantages include:

- The Site is located in a relatively undeveloped part of the County and therefore should be compatible with the surrounding land uses, and provide significant opportunity for future growth.
- There are few cultural resources in the area surrounding the Site and they should not be affected by airport development.
- The Site is located approximately 13 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.

There are however, potential disadvantages associated with the selection of this Site for further consideration. These disadvantages include:

- There are two potential airspace obstructions located in close proximity to the Site. These are the same obstructions discussed in Site 6.
- The site itself is small and constrained due to the amount of land available at the site in order to avoid potential environmental constraints.



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-19
SITE 7

9.4.4.8 Site 8

Site 8 is located approximately four miles west of US 17, one mile south of State Road 40 and three miles west of the City of Kingsland. The boundaries of the Site include Clarks Bluff Road to the south and Oakwell road to the east, see **Figure 9.20.** Site 8 offers direct access to State Route 40, and other potential access points from Oakwell Road or Clarks Bluff Rd. The Site is also approximately four miles west of potential rail access via the Seaboard Coast Line, thereby offering a possible opportunity for multi-modal access to air, surface and rail transportation corridors. Electrical power is available at the Site, and currently provided by Georgia Power. The City of Kingsland provides water and sewer to the developments on Vacuna Road and Clarks Bluff Road.

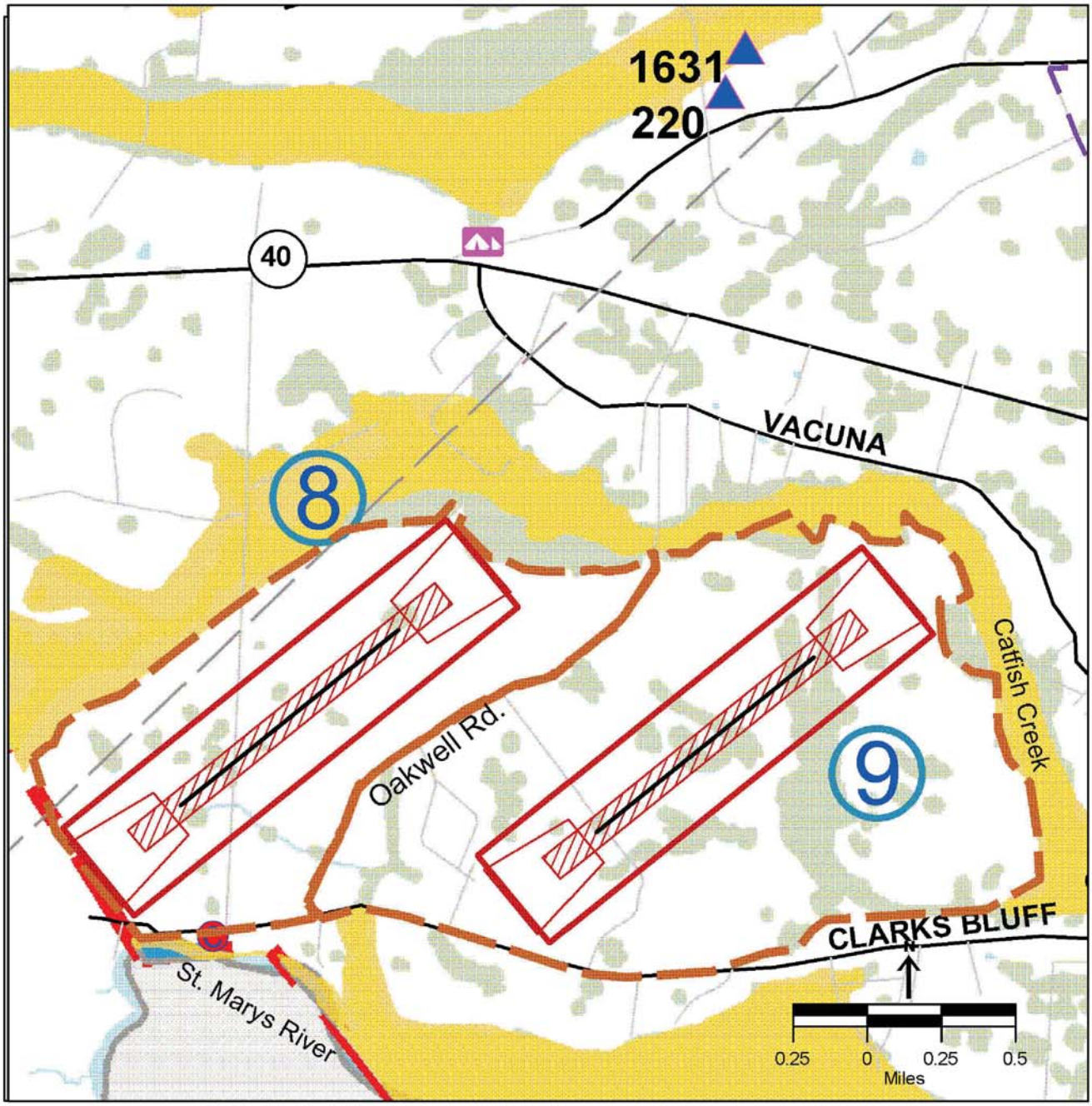
The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. There are no floodplains associated with the Site, but there are a very limited amount of wetlands associated with the forested system and drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both FWS and the GDNR are known to occur at the project Site. There are minimal cultural resources located near the Site, and potential development of the Site as an airport should not affect these resources.

There are some advantages associated with the selection of Site 8 for further analysis. Those advantages include:

- The Site is located in a relatively undeveloped part of the County and therefore should be compatible with the surrounding land uses.
- There are few cultural resources that would be affected.
- There is sufficient land area adjoining the Site for future growth.
- The Site is located approximately 14 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.

There are however, potential disadvantages associated with the selection of this Site for further consideration. Those disadvantages include:

- There are two potential airspace obstructions within close proximity to the Site. These are the same obstructions associated with Sites 6 and 7.



Source: Georgia State GIS Clearinghouse (2004)
FAA (2004)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 9-20
SITE 8 AND 9

- The site is located nearly seven miles west of the major transportation corridors of US 17 and Interstate 95.

9.4.4.9 Site 9

Site 9 is located three and one-half miles west of US 17, one mile south of State Road 40, between Clarks Bluff and Vacuna Rd. The boundaries of the Site include Oakwell Road to the west, Vacuna Road to the east, and State Road 40 to the north, see **Figure 9.20**. The Site is approximately three and one-quarter miles west of potential rail access via the Seaboard Coast Line, offering a possible opportunity for multi-modal access to air, surface and rail transportation corridors. Electrical power is located in close proximity to the Site, and provided by Georgia Power. The City of Kingsland provides water and sewer service to the developments along Clarks Bluff road, which may possibly be extended to the Site.

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. Drainage of the Site flows southeastward to Catfish Creek, and the St. Marys River. There are no floodplains associated with the Site, but there are a limited amount of wetlands associated with the forested system and drainageways. The Site is not located within any area designated as critical habitat by the FWS, and no endangered or threatened plant and animal species listed by both the FWS and the GDNR are known to occur at the project Site or were observed during the site inspection. There are few cultural resources located near the Site, so potential development of the Site as an airport should not adversely affect the area. There are also two towers located 2 miles north of the property, which have been described in discussion of Site 6 and 7.

There are numerous advantages associated with the selection of Site 9 for further analysis. Those advantages include:

- The location is situated in close proximity to the current and future population centers of Camden County.
- There is sufficient land area associated with the Site to permit future growth as demand warrants, including potential adjacent commercial/industrial park development.

- The Site is located approximately 13 miles from the Kings Bay Naval Base and will not be adversely affected by current airspace restrictions.

There are, however, potential disadvantages associated with the selection of this Site for further consideration. Those disadvantages include:

- The Site has a new residential development to the west, which may be incompatible for future airport development.
- The towers located north of the site would need further detailed airspace analysis to determine the extent of their impacts.
- The Site is not located in close proximity to rail or interstate highway access.

9.4.4.10 Final Site Selection

Based on the initial site screening criteria developed by the Technical and Community Advisory Committees, Sites 1, 3 and 9 were selected by the Committee's for further analysis, and the remaining sites eliminated from further consideration.

9.5 FINAL SITE SCREENING

The final screening of Sites 1, 3 and 9, and the development of a preferred (recommended) alternative, proceeded using a more detailed analysis of the following considerations:

- **Airfield Configuration/Building Areas:** Basic alternatives for development of each site will be prepared. Consideration was given to overall facility requirements, minimization of environmental impacts, estimates of probable construction costs, runway system wind coverage, obstruction avoidance, and operational efficiency/instrument approach capability.
- **Land Use, Acquisition and Value:** Land uses were separated for this analysis into airfield, general aviation/terminal areas, non-aviation revenue producing areas, development of adjacent commercial and industrial centers, and other compatible land uses (as appropriate). Consideration was given to existing surrounding land uses, ultimate operating efficiency, environmental impacts, noise and land-use compatibility, compatibility with local comprehensive plans as they relate to land acquisition, estimates of probable acquisition costs and estimates of probable demolition/construction costs if necessary to change

existing land uses. "Windshield" appraisals of the final three (3) site alternatives was prepared to determine order of magnitude land values for each site.

- **Environmental Evaluation:** A detailed environmental evaluation was performed for each final alternative to include a detailed site inspection and wetland inventory, floodplains, a historical review of potential hazardous waste activities associated with the final site alternatives, a review of the soil conditions associated with each site, identification of the potential for significant impacts to biotic communities and/or threatened and endangered species, and development of various noise contours to depict potential on and off airport noise impacts.

9.5.1 Site 1

As mentioned in Section 9.5 above, Site 1 is located approximately three miles south of the City of Woodbine, and 6.5 miles north of the City of Kingsland. Site 1 offers direct access to US 17, is located in close proximity to Interstate 95 and a potential interchange at Billyville Road, and is owned by Sea Island Company. The Site is also approximately one-quarter mile east of potential rail access via the Seaboard Coast Line, thereby offering a possible opportunity for convenient multi-modal access to air, surface and rail transportation corridors. An evaluation of this Site in accordance with the established selection criteria is discussed in greater detail in the following sections.

9.5.1.1 Airfield Configuration/Building Areas

Due to various environmental constraints associated with the Site, which include large amounts of land within the 100-year floodplain, and a considerable amount of wetlands, various airfield configurations were evaluated in an effort to minimize the overall environmental mitigation required if this Site is selected. Various airfield configurations were also evaluated to determine if a single runway, or dual runway system, would be required to achieve the FAA recommended wind coverage of 95% under all weather conditions.

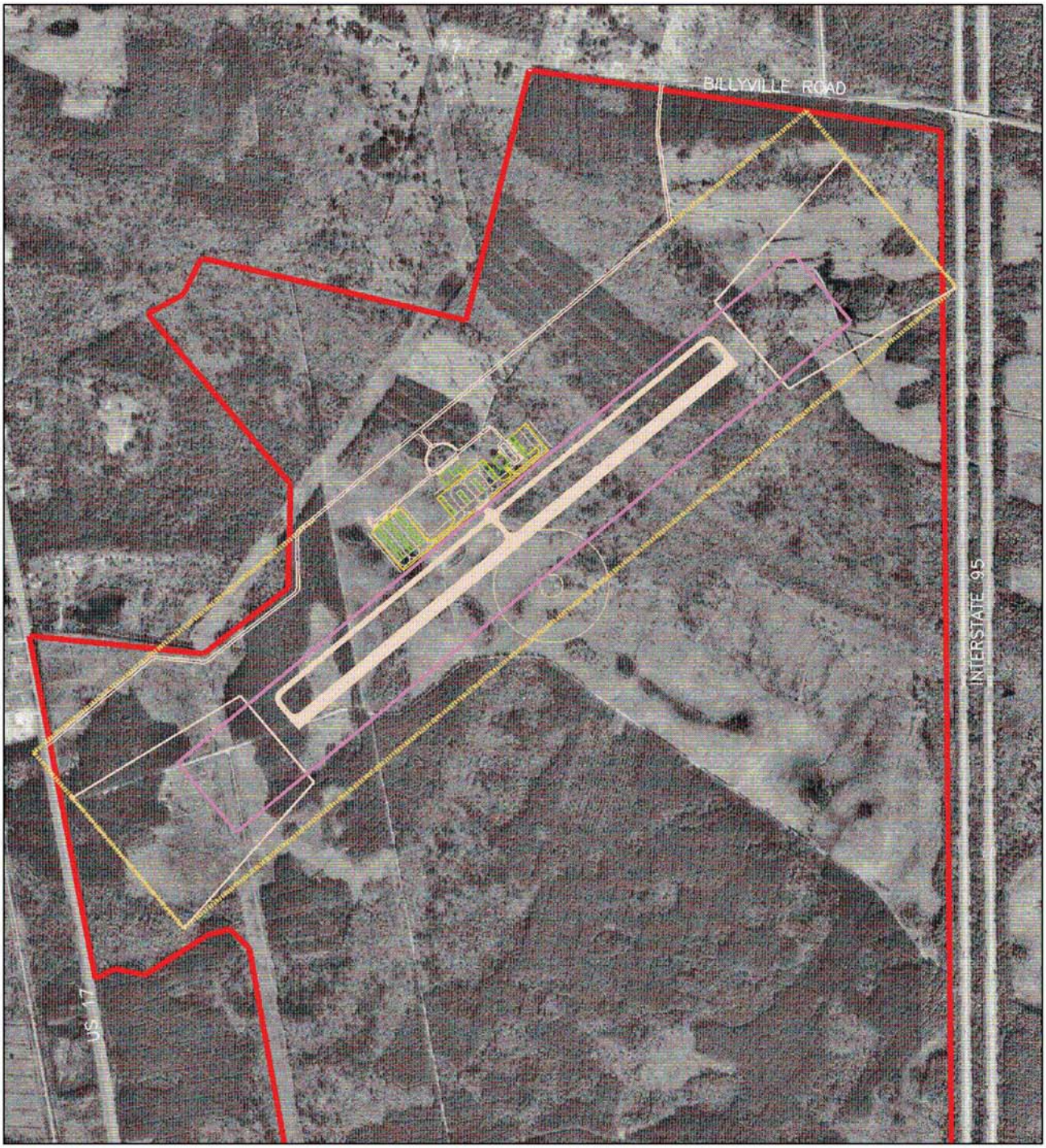
In order to achieve 95% all weather wind coverage using a single runway configuration, a runway alignment of approximately 050°/230° is required (hereinafter referred to as Configuration "A"). Using this Runway alignment as the basis for Site planning, the entire footprint of the proposed replacement Airport (as documented in Section 9.4), can be accommodated entirely within the boundaries of the Site, see **Figure 9.21**. This

proposed footprint also encompasses the required building areas and entrance road within the boundaries of the Site. Configuration "A" should provide the capability to develop a non-precision instrument approach using the Brunswick VORTAC, but the development of such an approach will need further study by the FAA. The tower(s) located north of the Site may create an airspace obstruction, which will also require further analysis by FAA. The development of Configuration "A" will require a considerable amount of environmental mitigation. In an attempt to minimize the potential environmental mitigation associated with this Site, various alternate configurations were examined, and a specific configuration selected for further analysis (hereinafter referred to as Configuration "B").

Configuration "B" is a two-runway configuration with the primary runway oriented in the direction of 180°/360° and a crosswind runway in a 130°/310° direction, see **Figure 9.22**. A two-runway configuration is necessary to provide the recommended 95% all weather wind coverage for aircraft operations. With a primary runway oriented in a north/south direction, a non-precision instrument approach procedure may be possible using the Craig VORTAC, but this will need further analysis by FAA. The tower(s) located north of the site may present a potential airspace obstruction, and will require further analysis by FAA. The implementation of Configuration "B" would require significantly less environmental mitigation as compared to Configuration "A." Configuration "B" also permits the entire building area and entrance road to be accommodated within the boundaries of the Site. Documentation of the specific environmental mitigation impacts for both configurations is discussed in greater detail below.

9.5.1.2 Land Use, Acquisition and Value

In order to accommodate the minimum airport requirements for a Level 2 facility under the GASP, and provide replacement facilities for those existing St. Marys Airport businesses, a conceptual airport was developed and presented in Section 9.4. This conceptual airport required approximately 410 acres of usable land for development of a single runway and taxiway system, aircraft parking aprons, tie-downs, hangars, Fixed Base Operator/General Aviation Terminal Building, Fuel Farm, entrance road and related facilities. The land area necessary for this replacement airport will also provide sufficient space for future long-term expansion.



Source: R,S,&H, 2005

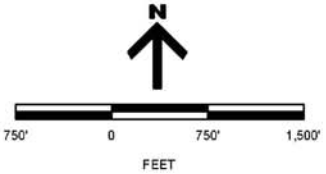
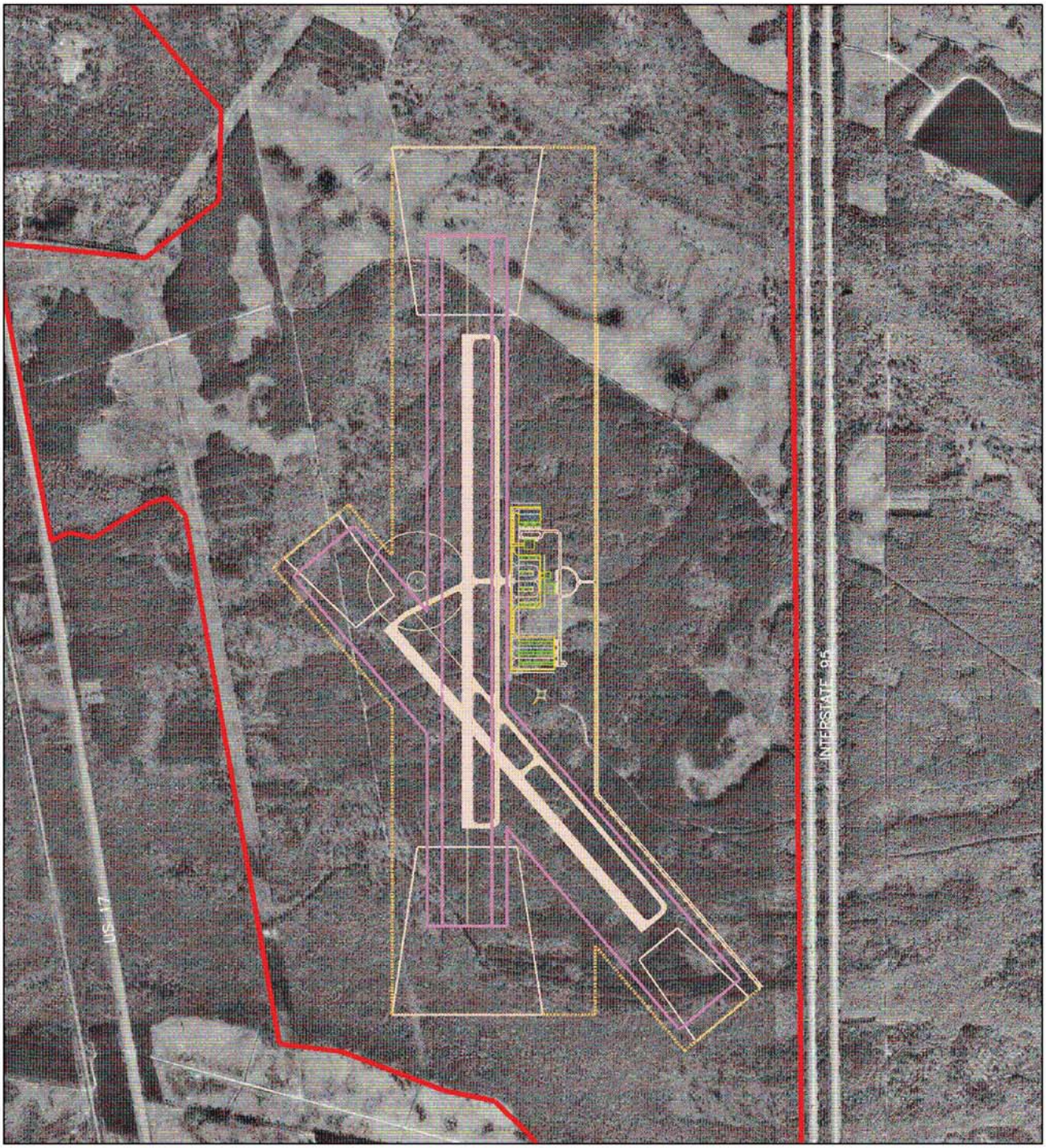


Figure 9-21

SITE 1 - CONFIGURATION A



Source: R,S&H, 2005

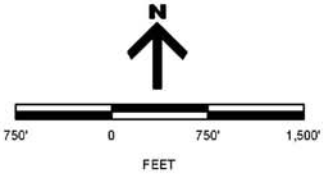


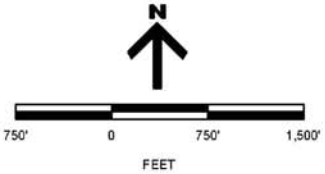
Figure 9-22

SITE 1 - CONFIGURATION B

The property referred to as Site 1 is a tract of land significantly larger that the amount required for the facility. The property owner has indicated a willingness to donate a portion of the land to the City of St. Marys for the development of the replacement airport. The portions most advantageous for development of a replacement airport has been identified and used to analyze the various airport configurations discussed in this Section. The land that encompasses Site 1 is currently zoned "Planned Development" as reflected in the Camden County Comprehensive Plan. The land adjoining Site 1 is a mixture of agriculture, commercial and limited residential uses, see **Figure 9.23**. The development of an airport in the location of Site 1 will not significantly conflict with the surrounding land uses, and should not require a re-zoning of either the Site or any adjoining properties.

In order to develop estimated land acquisition costs, or in the case of Site 1 the value of the potential donation, a licensed property appraiser in the State of Georgia was retained to develop "windshield appraisals" for the property. Site 1 is comprised of mostly undeveloped timberland, and would not require the purchase of residential dwellings or commercial properties. The land area required for development of Configuration "A" is approximately 410 acres, with an associated "appraised" value of $1,800.00 per acre. Total cost to acquire the property required for Configuration "A" is approximately $738,000. This amount is also the approximate value of the donation if an agreement can be reached with the property owner. The appraiser also estimated additional costs associated with land acquisition to include potential eminent domain proceedings, damages, further appraisals and miscellaneous costs, in the amount of $498,400. Total estimated cost to acquire the land necessary for development of Site 1 using Configuration "A" is approximately $1,236,400. The land area required for the development of Configuration "B" is approximately 480 acres, with an "appraised" value of $1,800 per acre. Total cost to acquire the property required for Configuration "B" is approximately $1,362,400, which includes the estimate for eminent domain proceedings, damages, etc. However, in the event that the property owner donates the property, these incidental costs will not be expended.

Source: R,S&H, 2005



- Planned Development
- Agricultural Forestry
- Agricultural Residential
- Central Business District
- Commercial General
- Light Industrial
- Industrial General
- Multi-Family Residential
- Single-Family Residential

Figure 9-23

SITE 1 - LANDUSE ZONING

9.5.1.3 Environmental Evaluation

The land area associated with Site 1 is bordered predominately by pine plantation, with sparse residential and commercial development. Several unpaved trail roads crisscross the project site. Locked gates restrict access to the site and seasonal game hunting is permitted by the landowner. A “high-tension” powerline crosses the western end of the site (in a predominant north-south direction) near U.S. 17.

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. Drainage of the site flows southeastward to the Rose Creek Swamp, which ultimately discharges to the Satilla River. There is a sizable floodplain that crosses the central portion of the project area. Examination of the USGS Woodbine, Georgia topographic quadrangle map revealed that elevations range between slightly over +20’ and under +10’ above mean sea level. An examination of the *Soil Survey of Camden and Glynn Counties, Georgia* produced by the U. S. Department of Agriculture, Soil Conservation Service (SCS; currently known as the Natural Resources Conservation Service, NRCS) revealed four soil types found within the project area. The soil types are:

Brookman clay loam (Br)
Meggett fine sandy loam (Me)
Pelham loamy sand (Pe)
Sapelo fine sand (Sa)

Brookman clay loam soils are very poorly drained, nearly level soils found in broad, shallow depressions in flatwoods. Meggett fine sandy loam soils are poorly drained, nearly level soils found on broad, low terraces in flatwoods. Pelham loamy sand soils are poorly drained, nearly level soils found in broad flats and depressions and drainageways in the flatwoods. Sapelo fine sand soils are poorly drained, nearly level soils found in flatwoods areas that border depressions, drainageways and bays in the flatwoods. The National Technical Committee for Hydric Soils (NTCHS) classifies all of these soil types as hydric.

The upland areas of the project site are currently under active silviculture operation. As is typical in silvicultural areas the pine plantation present varies in age. Canopy cover

ranges from open in younger parts of the plantation to closed in mature sections. Slash pine (Pinus elliottii) is the dominant species present with some loblolly pine (Pinus serotina). Groundcover is dense in the young portions of the plantation and are dominated by gallberry (Ilex glabra), sweet gallberry (Ilex coriacea), saw palmetto (Serenoa repens), blackberry (Rubus argutus) and wild sarsaparilla (Smilax glauca). The groundcover is less dense in mature parts of the plantation with generally the same species previously listed as well as some water oaks (Quercus nigra), sweet gum (Liquidambar styraciflua) and red maple (Acer rubrum).

Wetlands at the site are dominated by seasonally flooded, forested systems associated with drainageways. Herbaceous systems are also present, being found along the disturbed fringe of the forested systems, in portions of the young pine plantation and in cleared areas. Bald cypress (Taxodium distichum), black gum (Nyssa sylvatica var. biflora), red maple and loblolly bay (Gordonia lasianthus) are common canopy species of the forested wetlands. Herbaceous species present include panic grasses (Panicum hemitomon, P. scabriusculum, P. virgatum), broom sedge (Andropogon glomeratus), rushes (Juncus spp.) and hydrophytic ferns (Woodwardia virginica, Osmunda regalis).

Palustrine wetlands like those found at the project site are not regulated by the Georgia Department of Natural Resources (GDNR). GDNR only regulates tidally influenced marshlands. The federal government through the United States Army Corps of Engineers (USACE) actively regulates wetlands in the State of Georgia. Wetlands contiguous with streams and lakes as well as certain isolated wetlands fall within the jurisdictional purview of the agency. Due to a recent Supreme Court decision, Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178 (January 9, 2001) ("SWANCC"), USACE is currently not asserting jurisdiction over isolated, non-navigable, intrastate wetlands. Isolated wetlands that are connected to lakes or streams by ditches (such as those found on the Site) are considered jurisdictional wetlands by USACE and thus regulated. Mitigation may be required for any wetland impacts over one-tenth of an acre. All of the wetland areas in the project vicinity are part of the Satilla River system and appear to be within the jurisdictional purview of USACE.

Based on airfield Configuration "A," approximately 76 acres of wetlands will potentially be impacted by development, and 63 acres are located in the 100-year floodplain, see **Figure 9.24**. Based on airfield Configuration "B," approximately 57 acres of wetlands will potentially be impacted by development, and less than 1 acre of development will be located in a floodplain, see **Figure 9.25**.

The U. S. Fish & Wildlife Service (FWS) and GDNR protect threatened and endangered species of fauna and flora within the State of Georgia. Site 1 is not located within any area designated as critical habitat by the FWS. No endangered or threatened plant species listed by both FWS and GDNR are known to occur at the Site or were observed during the Site inspection. However, pondspice, a species listed as threatened by GDNR has a moderate likelihood of occurrence. Since this species is not listed by FWS, and falls solely under the protection of GDNR, only the permission of the landowner is required to impact the species. The following state and/or federally listed fauna may occur at the project site:

Reptiles and Amphibians

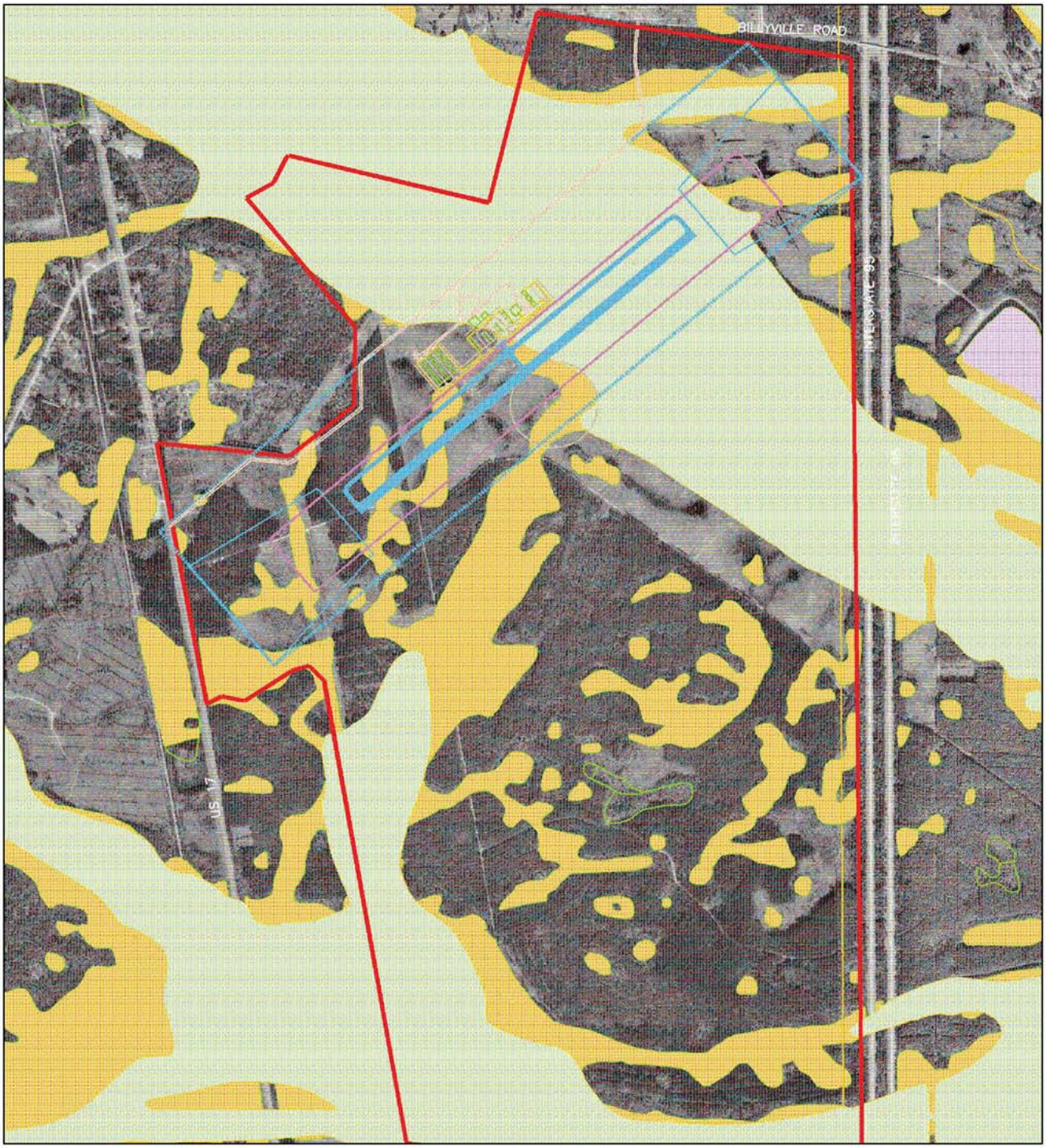
Gopher Tortoise (*Gopherus polyphemus*) State (S), Threatened (T)
Eastern Indigo Snake (*Drymarchon corais couperi*) Federal (F), T; S, T

Birds

Red-cockaded Woodpecker (*Picoides borealis*) F, Endangered (E); S, E
Wood Stork (*Mycteria americana*) F, E; S, E
Bald Eagle (*Haliaeetus leucocephalus*) F, T; S, E

The Gopher Tortoise is a large terrestrial species, which inhabits well-drained uplands such as dunes, xeric scrub, coastal strand and sandhills. Burrows are constructed for protection from temperature, predators and desiccation. Marginal habitat for the species exists at the project Site. No Gopher Tortoises or burrows were observed during the Site inspection.

The Eastern Indigo Snake is a large non-venomous snake, which occurs throughout the coastal plain of Georgia. Prime habitat is high, dry, well-drained sandy soils. The species is often found in association with the Gopher Tortoise. The Gopher Tortoise



Source: R,S&H, 2005

100-Year Floodplain

Palustrine Wetlands

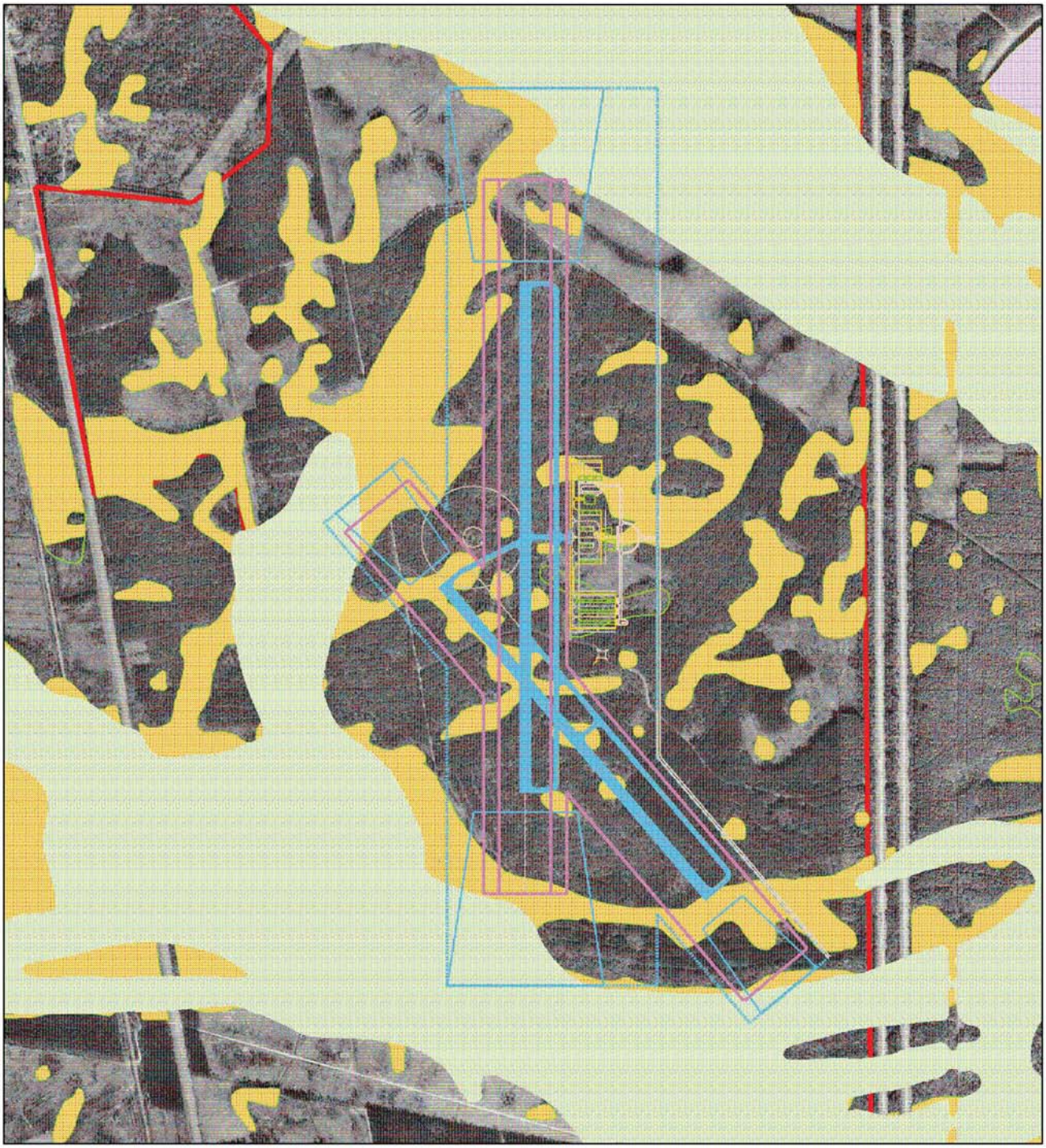
Figure 9-24

SITE 1 - CONFIGURATION 'A' WETLANDS AND FLOODPLAINS

N

750' 0 750' 1,500'

FEET



Source: R,S,&H, 2005

100-Year Floodplain

Palustrine Wetlands

N

750' 0 750' 1,500'

FEET

Figure 9-25

SITE 1 - CONFIGURATION 'B'-WETLAND AND FLOODPLAINS

burrow is commonly used as a den and for egg laying. Eastern Indigo Snakes are also found in swamps and flatwoods. Suitable habitat occurs within the Site, however no individuals were observed during the survey.

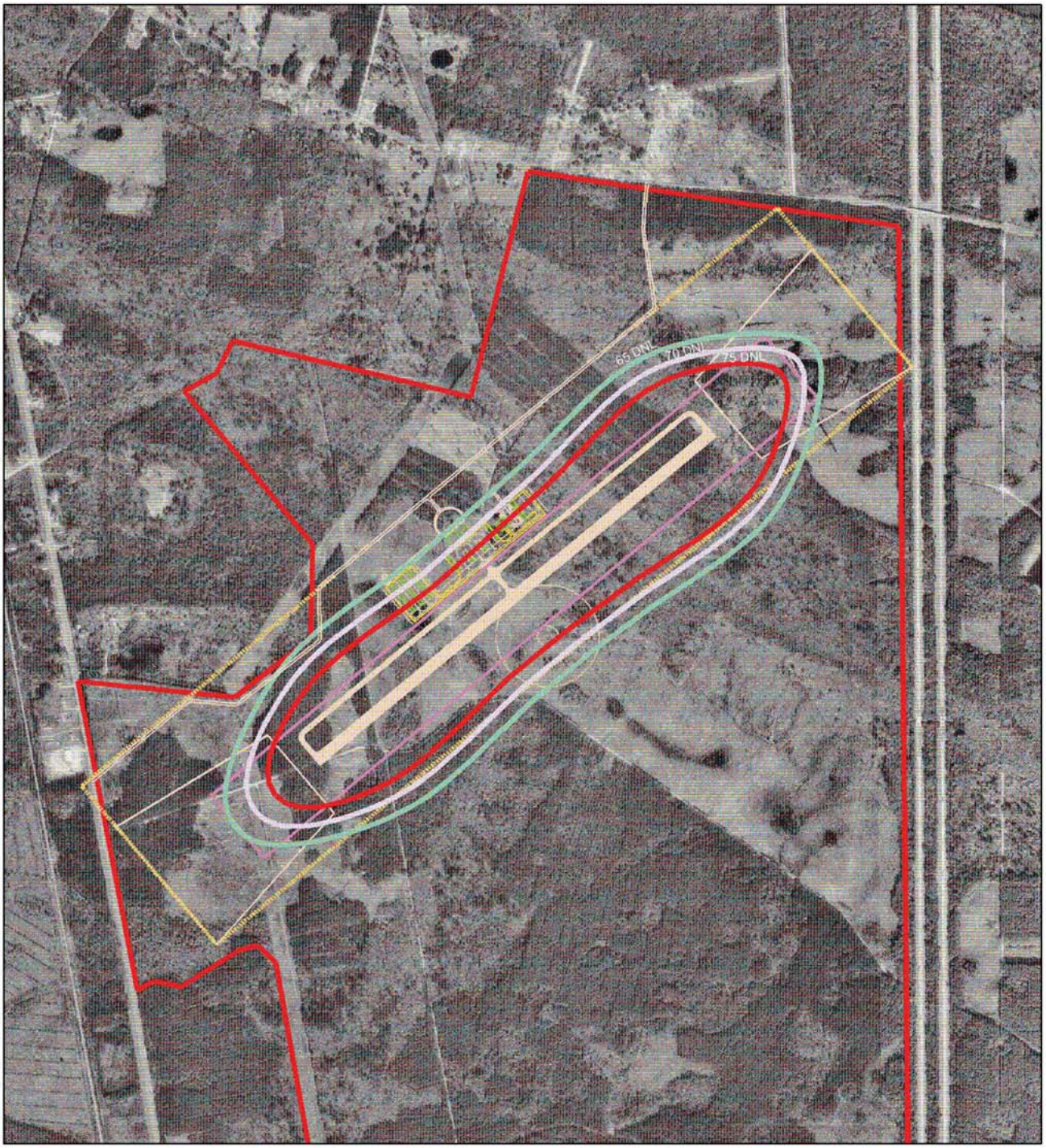
The Red-cockaded Woodpecker utilizes old growth stands of southern pines for nesting. Forests with a significant understory are not utilized. Optimal foraging habitat consists of mature pine stands 30 years or older with a minimum tree diameter of ten inches. Marginal foraging habitat for the Red-cockaded Woodpecker exists on the Site. No suitable nesting habitat is present on-site. The species was not observed during the Site inspection.

Wood Storks are large colonial-nesting, wading birds. Primary nesting sites are cypress or mangrove swamps with foraging habitat consisting of marshes, ditches and flooded pasture. Small fish provide the main dietary item. Wood Storks have been documented to fly 80 miles from nesting to foraging sites. The wetlands found on-site provide marginal nesting and foraging habitat. No Wood Storks or nests were observed during the site inspection.

The Bald Eagle generally nests in large trees near open bodies of water, which provide optimum foraging habitat. The Site provides marginal foraging and nesting habitat for the species. No Bald Eagles or their nests were observed during the Site inspection.

Noise contours were developed for both airfield configurations using the aircraft operations forecasts for year 2021 and fleet mix projections developed in the GASP, and an estimate of the type of aircraft most likely to use the facility. Also it was assumed that 95% of the aircraft operations would occur during the hours of 6:00 a.m. to 10:00 p.m., and 5% of the operations during the remaining time period. Noise contours for Configuration “A” are presented in **Figure 9.26**, and noise contours for Configuration “B” are presented in **Figure 9.27**. As depicted in the Figures, the noise contours are located predominately within the boundaries of the proposed airport site and will not create negative impacts to the surrounding land uses.

When examining the overall Site from an environmental impact perspective, depending on the selected airfield configuration, considerable environmental mitigation of both



Source: R,S&H, 2005

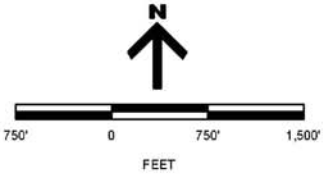
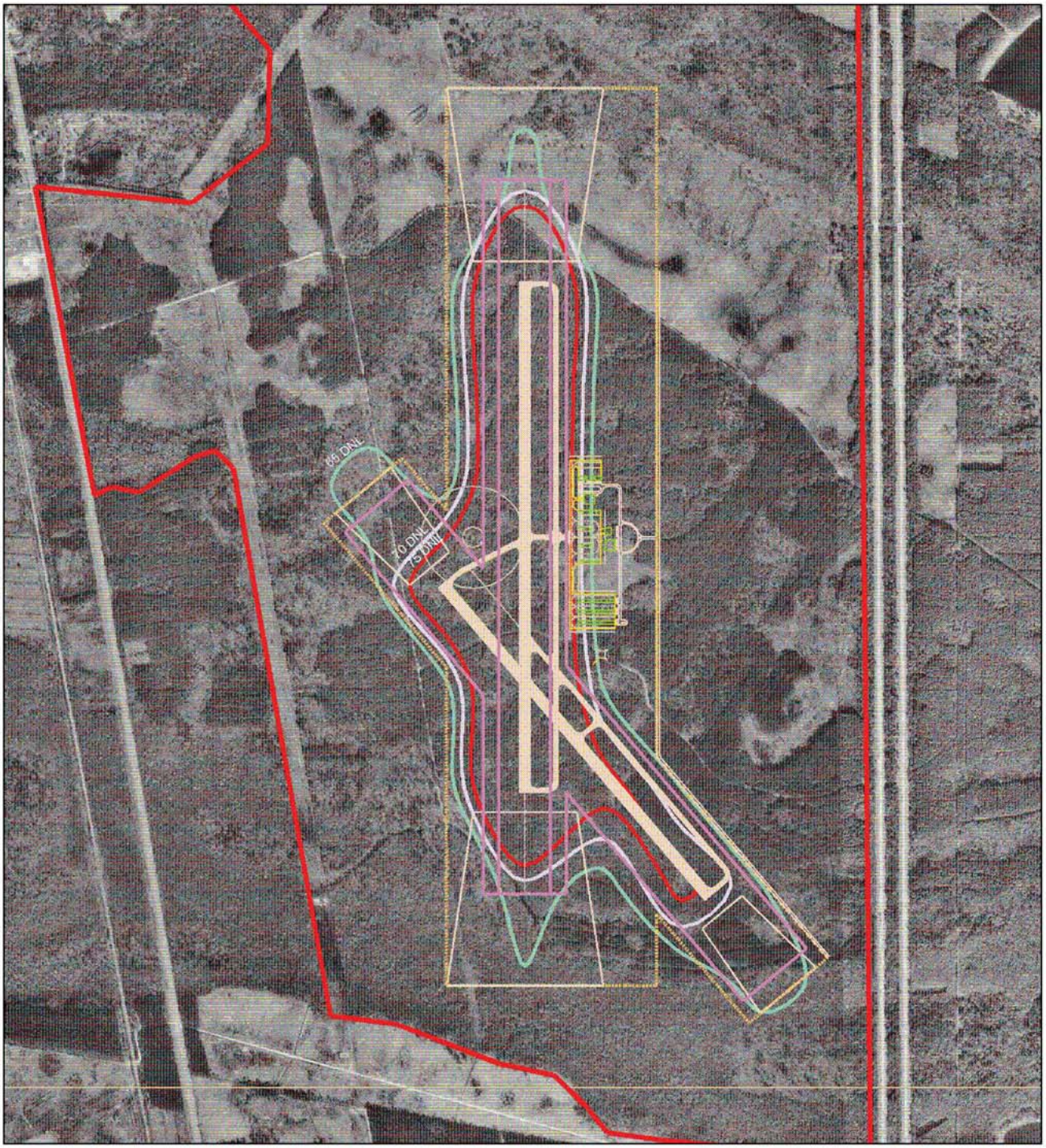


Figure 9-26

SITE 1 - CONFIGURATION 'A' - 2021 NOISE CONTOURS



Source: R,S&H, 2005

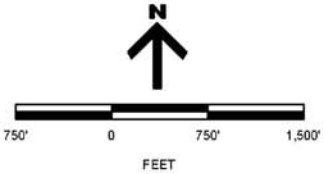


Figure 9-27

SITE 1 - CONFIGURATION 'B' - 2021 NOISE CONTOURS

wetlands and floodplains may be required. Based on an analysis of the environmental impacts associated with each configuration, Configuration "B" appears to provide the least environmentally sensitive development, but this must be balanced with the cost of developing a two-runway airport system, as opposed to the single-runway system presented in Configuration "A."

9.5.1.4 Summary of Costs

As part of the development of the GASP in 2002, estimated costs were identified for the proposed replacement airport for St. Marys. These estimated costs have been updated to reflect the potential anticipated expenditure to develop Site 1, for both configurations. **Table 9.1** presents the revised cost estimates for Configuration "A," and **Table 9.2** presents the revised cost estimates for Configuration "B."

Table 9.1
Site 1 - Configuration "A" Development Costs

Facility Improvement	Objective		Cost
Runway	5,000' x 100'	$	3,811,000
Taxiway	Full Parallel	$	2,399,000
Aircraft Parking Apron		$	1,115,000
T-Hangar Taxilanes		$	763,800
Corporate Hangar Area Taxiway/Apron		$	799,800
Airport Access Road & Auto Parking		$	173,400
T-Hangar Access Road & Auto Parking		$	88,300
Corporate Access Road & Auto Parking		$	101,300
Airfield Electrical & NAVAIDS		$	535,900
Site Utilities		$	350,500
Land Acquisition	410 Acres	$	738,000
Environmental Mitigation & Permitting	76 Acres	$	3,040,000
GCO/Phone	1	$	15,000
10 Unit T-Hangar (3 Each)	36' x 325'	$	900,000
Corporate Hangars (3 Each)	2,400 S.F.	$	360,000
Terminal Space	4,200 S.F.	$	630,000
FBO Hangar	10,000 S.F.	$	500,000
Fuel Farm	AvGas & Jet A	$	100,000
Total Estimated Cost		$	16,421,000

Source: RS&H, 2005.

Based on the information presented in **Tables 9.1** and **9.2**, the cost to develop Configuration "A" is significantly less expensive than Configuration "B," due to

considerably more airfield development required for Configuration “B” as opposed to environmental mitigation required for Configuration “A.”

Table 9.2
Site 1 - Configuration "B" Development Costs

Facility Improvement	Objective		Cost
Primary Runway	5,000' x 100'	$	3,811,000
Taxiway	Full Parallel	$	2,399,000
Crosswind Runway	4,000' x 75'	$	3,048,800
Taxiway	Full Parallel	$	1,919,200
Aircraft Parking Apron		$	1,115,000
T-Hangar Taxilanes		$	763,800
Corporate Hangar Area Taxiway/Apron		$	799,800
Airport Access Road & Auto Parking		$	173,400
T-Hangar Access Road & Auto Parking		$	88,300
Corporate Access Road & Auto Parking		$	101,300
Airfield Electrical & NAVAIDS		$	535,900
Site Utilities		$	350,500
Land Acquisition	480	$	864,000
Environmental Mitigation & Permitting	57 Acres	$	2,280,000
GCO/Phone	1	$	15,000
10 Unit T-Hangar (3 Each)	36' x 325'	$	900,000
Corporate Hangars (3 Each)	2,400 S.F.	$	360,000
Terminal Space	4,200 S.F.	$	630,000
FBO Hangar	10,000 S.F.	$	500,000
Fuel Farm	AvGas & Jet A	$	100,000
Total Estimated Cost		$	20,755,000

Source: RS&H, 2005.

9.5.2 Site 3

The location of Site 3 is approximately one-quarter mile east of Interstate 95 and north of Harriet’s Bluff Road. Site 3 offers direct access to I-95 via an interchange at Harriet’s Bluff Road. Rail access to the Site would be difficult, since the nearest rail line is the Seaboard Coast Line on the west side of I-95. An evaluation of this Site in accordance with the established selection criteria is discussed in greater detail in the following sections.

9.5.2.1 Airfield Configuration/Building Area

Based on a similar analysis conducted for Site 1, it was determined that 95% all-weather wind coverage could be provided with a single runway having a 050°/230° alignment on this Site. Using the conceptual replacement airport developed for purposes of this

Study, the proposed location of the airfield, building areas and entrance road can be developed entirely within the boundaries of the Site, and are depicted in **Figure 9.28**. A runway alignment in this configuration should provide the capability to develop a non-precision instrument approach using the Brunswick VORTAC, but the development of such an approach will need further study by the FAA.

9.5.2.2 Land Use, Acquisition and Value

As previously discussed a conceptual airport was developed that requires approximately 410 acres of usable land for development of a single runway and taxiway system, aircraft parking aprons, tie-downs, hangars, Fixed Base Operator/General Aviation Terminal Building, Fuel Farm, entrance road and related facilities. The land area necessary for this replacement airport will also provide sufficient space for future long-term expansion.

The property referred to as Site 3 is a tract of land significantly larger that the amount required for the airport, and is currently owned by multiple property owners. The portion most advantageous for development of the airport has been identified and is depicted in **Figure 9.28**. The land that encompasses the location of the airport within Site 3 is currently zoned agriculture-forestry, as reflected in the Camden County Comprehensive Plan. The property adjoining Site 3 is a mixture of agriculture and limited residential uses, see **Figure 9.29**. The development of an airport in the location depicted in Site 3 will not significantly conflict with the surrounding land uses, but may require a re-zoning of the property.

In order to develop estimated land acquisition costs for Site 3, a licensed property appraiser in the State of Georgia was retained to develop “windshield appraisals” for the property. The property necessary for the development of Site 3 is comprised of three (3) parcels. Current ownership of these three (3) parcels is in the name of Jessee and Barbara Eason (Parcels 093-053 and 105-013), and Katherine K. Revels (Parcel 104-001). Parcels 105-103 and 104-001 contain improvements that would require relocation and/or demolition. The land area required for development of the airport (i.e., 410 acres) has been valued between $2,000 and $2,500 per acre. Total cost to acquire the property required is estimated at $925,000. The appraiser also estimated additional costs associated with land acquisition to include potential eminent domain proceedings,

Source: R,S&h, 2005

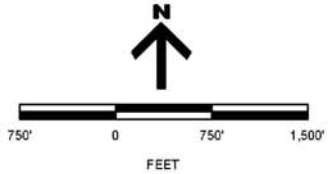
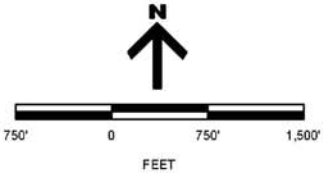


Figure 9-28

SITE 3

Source: R,S&H, 2005



- Agricultural Forestry
- Agricultural Residential
- Central Business District
- Commercial General
- Light Industrial
- Industrial General
- Multi-Family Residential
- Single-Family Residential

Figure 9-29

SITE 3 - LANDUSE ZONING

damages, further appraisals and miscellaneous costs, in the amount of $703,000. Total estimated cost to acquire the land necessary for development of Site 3 is approximately $1,628,000.

9.5.2.3 Environmental Evaluation

Site 3 is bordered predominately by pine plantation, with sparse residential and commercial development. Several unpaved trail roads crisscross the Site. Locked gates restrict access to the Site and seasonal game hunting is permitted by the landowners. The Site is currently a silviculture operation with some cattle grazing, and a large residence is located within the Site's boundaries. A power line crosses the northeastern end of the Site.

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. Drainage of the Site flows southward to the Crooked River. Examination of the USGS Kingsland, Georgia topographic quadrangle map revealed that elevations range between slightly over +20' and under +15' above mean sea level. An examination of the *Soil Survey of Camden and Glynn Counties, Georgia* produced by the U. S. Department of Agriculture, Soil Conservation Service (SCS; currently known as the Natural Resources Conservation Service, NRCS) revealed three soil types found within the project area. The soil types are:

Brookman clay loam (Br)
Meggett fine sandy loam (Me)
Sapelo fine sand (Sa)

Brookman clay loam soils are very poorly drained, nearly level soils found in broad, shallow depressions in flatwoods. Meggett fine sandy loam soils are poorly drained, nearly level soils found on broad, low terraces in flatwoods. Sapelo fine sand soils are poorly drained, nearly level soils found in flatwoods areas that border depressions, drainageways and bays in the flatwoods. The National Technical Committee for Hydric Soils (NTCHS) classifies all of these soil types as hydric.

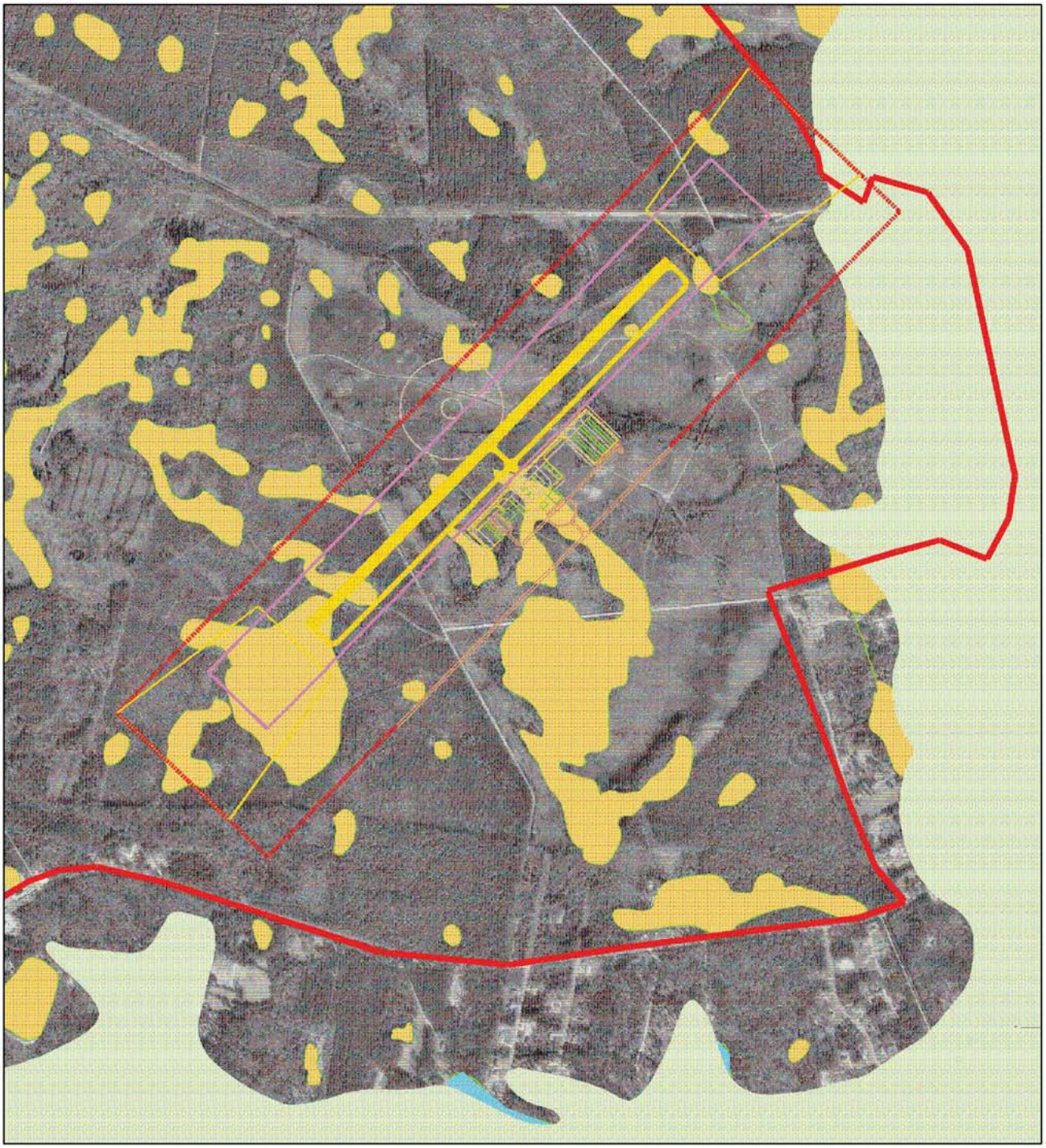
The upland areas of the project site are currently under active silviculture operation. As is typical in silvicultural areas the pine plantation present varies in age. Canopy cover

ranges from open in younger parts of the plantation to closed in mature sections. Slash pine (Pinus elliottii) is the dominant canopy species present. Groundcover is periodically mowed in the central portion of the site and consists of ruderal grasses and forbs. Cattle are allowed to graze in this section. In the unmaintained sections of the pine plantation groundcover species such as gallberry and saw palmetto are prevalent. The density of the groundcover stratum varies with the age of the stand.

Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways. Several manmade ponds are also present at the Site. Herbaceous wetlands are present being found along the disturbed fringe of the forested systems, in portions of the young pine plantation and in cleared areas. Bald cypress (Taxodium distichum), black gum (Nyssa sylvatica var. biflora), red maple and loblolly bay (Gordonia lasianthus) are common canopy species of the forested wetlands. Herbaceous species present include panic grasses (Panicum hemitomon, P. scabriusculum, P. virgatum), broom sedge (Andropogon glomeratus), rushes (Juncus spp.) and hydrophytic ferns (Woodwardia virginica, Osmunda regalis).

Palustrine wetlands like those found at the Site are not regulated by the GDNR. GDNR only regulates tidally influenced marshlands. As previously mentioned, the USACE actively regulates wetlands in the State of Georgia, and wetlands contiguous with streams and lakes as well as certain isolated wetlands fall within the jurisdictional purview of the agency. USACE is currently not asserting jurisdiction over isolated, non-navigable, intrastate wetlands. However, isolated wetlands that are connected to lakes or streams by ditches are considered jurisdictional wetlands by USACE. Mitigation may be required for any wetland impacts over one tenth of an acre. All of the wetland areas in the project vicinity are part of the Crooked River system and appear to be within the jurisdictional purview of USACE.

Based on an evaluation of the potential wetland and floodplain impacts associated with this Site, approximately 30 acres of wetlands will be impacted by development in the configuration and location recommended in this Section, see **Figure 9.30**. Development of Site 3 will not impact any existing floodplains.



Source: R,S,&H, Inc.

100-Year Floodplain

Palustrine Wetlands

N

750' 0 750' 1,500'

FEET

Figure 9-30

SITE 3 - WETLAND AND FLOODPLAINS

As previously discussed, the FWS and GDNR protect threatened and endangered species of fauna and flora within the State of Georgia. The Site is not located within any area designated as critical habitat by the FWS. No endangered or threatened plant species listed by both FWS and GDNR are known to occur at the project Site or were observed during the Site inspection. However, pondspice, a species listed as threatened by GDNR has a moderate likelihood of occurrence. Since this species is not listed by FWS and falls solely under the protection of GDNR, only the permission of the landowner is required to impact the species. The following state and/or federally listed fauna may utilize the project Site:

Reptiles and Amphibians

Gopher Tortoise (Gopherus polyphemus) State (S), Threatened (T)

Eastern Indigo Snake (Drymarchon corais couperi) Federal (F), T; S, T

Birds

Red-cockaded Woodpecker (Picoides borealis) F, Endangered (E); S, E

Wood Stork (Mycteria americana) F, E; S, E

Bald Eagle (Haliaeetus leucocephalus) F, T; S, E

The Gopher Tortoise is a large terrestrial species, which inhabits well-drained uplands such as dunes, xeric scrub, coastal strand and sandhills. Burrows are constructed for protection from temperature, predators and desiccation. Marginal habitat for the species exists at the Site. No Gopher Tortoises or burrows were observed during the Site inspection.

The Eastern Indigo Snake is a large non-venomous snake, which occurs throughout the coastal plain of Georgia. Prime habitat is high, dry, well-drained sandy soils. The species is often found in association with the Gopher Tortoise. The Gopher Tortoise burrow is commonly used as a den and for egg laying. Eastern Indigo Snakes are also found in swamps and flatwoods. Suitable habitat occurs within the Site, however no individuals were observed during the survey.

The Red-cockaded Woodpecker utilizes old growth stands of southern pines for nesting. Forests with a significant understory are not utilized. Optimal foraging habitat consists of

mature pine stands 30 years or older with a minimum tree diameter of ten inches. Marginal foraging habitat for the Red-cockaded Woodpecker exists on the Site. No suitable nesting habitat is present on-site although given the degree of silvicultural maintenance found on-site, there is a possibility that suitable nesting habitat is located near the Site. The species was not observed during the site inspection.

Wood Storks are large colonial-nesting, wading birds. Primary nesting sites are cypress or mangrove swamps with foraging habitat consisting of marshes, ditches and flooded pasture. Small fish provide the main dietary item. Wood Storks have been documented to fly 80 miles from nesting to foraging sites. The wetlands found on-site provide marginal nesting and foraging habitat. No Wood Storks or nests were observed during the Site inspection.

The Bald Eagle generally nests in large trees near open bodies of water, which provide optimum foraging habitat. The Site provides marginal foraging and nesting habitat for the species. No Bald Eagles or their nests were observed during the Site inspection.

Noise contours were developed for Site 3 using the aircraft operations forecasts for the year 2021 and fleet mix projections developed in the GASP, and an estimate of the type of aircraft most likely to use the facility. Also it was assumed that 95% of the aircraft operations would occur during the hours of 6:00 a.m. to 10:00 p.m., and 5% of the operations during the remaining time period. Noise contours for development of Site 3 are depicted in **Figure 9.31**. As depicted, the noise contours are located predominately within the boundaries of the proposed airport site and will not create negative impacts to the surrounding land uses.

9.5.2.4 Summary of Costs

As part of the development of the GASP in 2002, estimated costs were identified for the proposed replacement airport for St. Marys. These estimated costs have been updated to reflect the anticipated expenditure to develop Site 3, as presented in **Table 9.3.**

Source: R,S&H, 2005

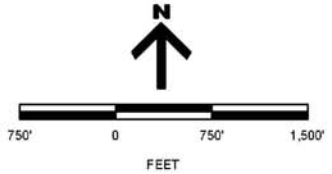


Figure 9-31

SITE 3 - 2021 NOISE CONTOURS

Table 9.3
Site 3 Development Costs

Facility Improvement	Objective		Cost
Runway	5,000' x 100'	$	3,811,000
Taxiway	Full Parallel	$	2,399,000
Aircraft Parking Apron		$	1,115,000
T-Hangar Taxilanes		$	763,800
Corporate Hangar Area Taxiway/Apron		$	799,800
Airport Access Road & Auto Parking		$	173,400
T-Hangar Access Road & Auto Parking		$	88,300
Corporate Access Road & Auto Parking		$	101,300
Airfield Electrical & NAVAIDS		$	535,900
Site Utilities		$	350,500
Land Acquisition	410 Acres	$	925,000
Environmental Mitigation & Permitting	30 Acres	$	1,200,000
GCO/Phone	1	$	15,000
10 Unit T-Hangar (3 Each)	36' x 325'	$	900,000
Corporate Hangars (3 Each)	2,400 S.F.	$	360,000
Terminal Space	4,200 S.F.	$	630,000
FBO Hangar	10,000 S.F.	$	500,000
Fuel Farm	AvGas & Jet A	$	100,000
Total Estimated Cost		$	14,768,000

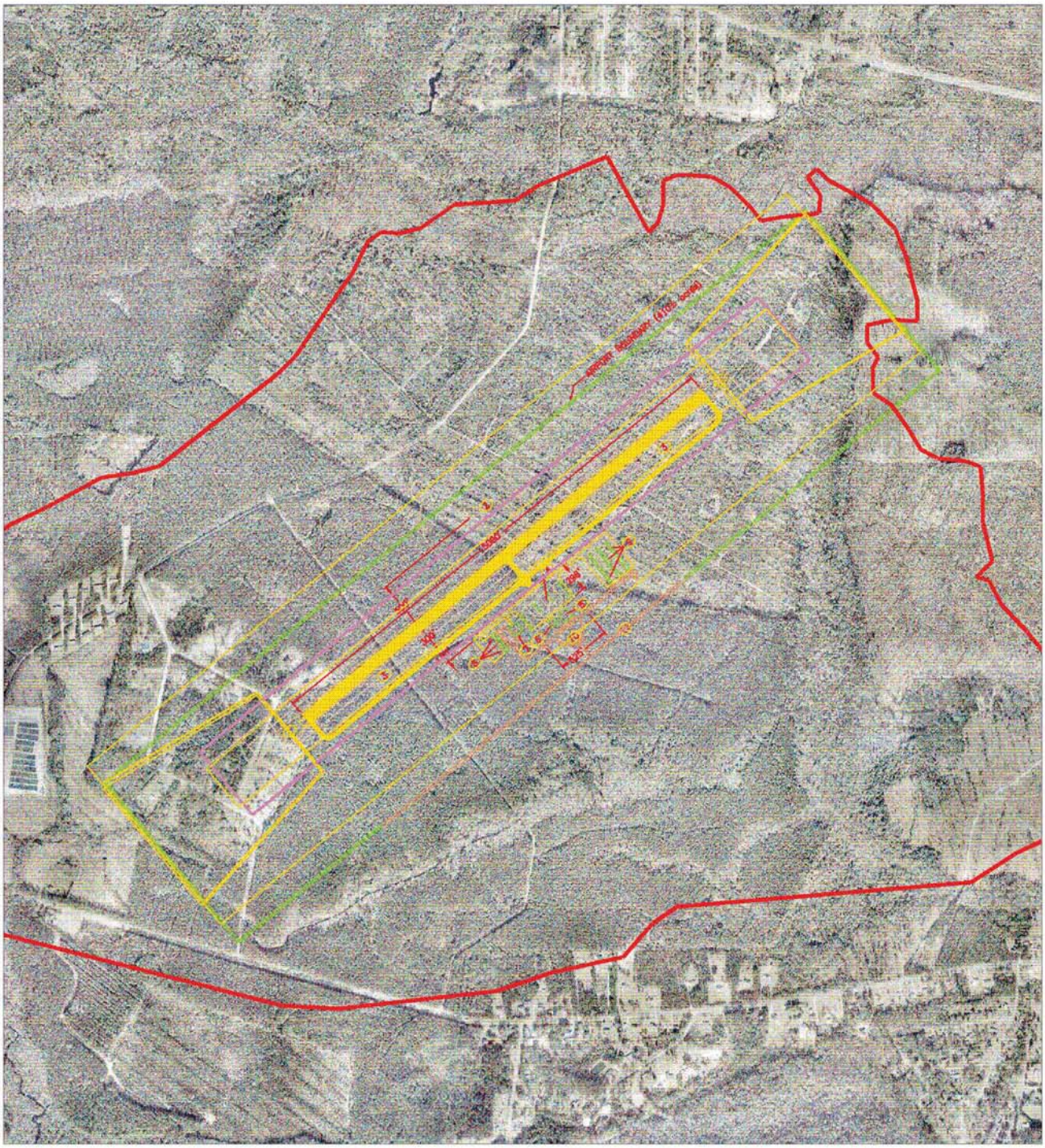
Source: RS&H, 2005.

9.5.3 Site 9

Site 9 is located approximately three (3) miles west of US 17, five (5) miles west of Interstate 95, one (1) mile south of State Road 40, and between Clarks Bluff and Vacuna Road. Site 9 is also located approximately 3 miles west of the Seaboard Coast Rail Line. An evaluation of this Site in accordance with the established selection criteria is discussed in greater detail in the following sections.

9.5.3.1 Airfield Configuration/Building Areas

Based on a similar analysis conducted for Sites 1 and 3, it was determined that 95% all-weather wind coverage could be provided with a single runway having a 050°/230° alignment on this Site. Using the conceptual replacement airport developed for purposes of this Study, the proposed location of the airfield, building areas and entrance road can be developed entirely within the boundaries of the Site, and are depicted in **Figure 9.32**. A runway alignment in this configuration should provide the capability to develop a non-precision instrument approach using the Brunswick VORTAC, but the development of such an approach will need further study by the FAA.



Source: R,S&H, 2005

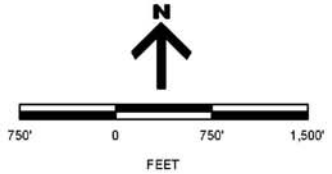


Figure 9-32

SITE 9

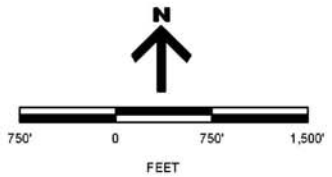
9.5.3.2 Land Use, Acquisition and Value

In order to develop a replacement airport on Site 9, approximately 410 acres of usable land is required to construct a single runway and taxiway system, aircraft parking aprons, tie-downs, hangars, Fixed Base Operator/General Aviation Terminal Building, Fuel Farm, entrance road and related facilities. The land area necessary for this airport will also provide sufficient space for future long-term expansion.

The property referred to as Site 9 is a tract of land significantly larger that the amount required for the airport, and is currently owned by multiple property owners. The portion most advantageous for development of the airport has been identified and is depicted in **Figure 9.32**. The land that encompasses the location of the airport within Site 9 is currently zoned agriculture-forestry as reflected in the Camden County Comprehensive Plan. The property adjoining Site 9 is a mixture of agriculture and residential uses, see **Figure 9.33**. The development of an airport in the location depicted in Site 9 will not significantly conflict with the surrounding land uses, but may require a re-zoning of the property.

In order to develop estimated land acquisition costs for Site 9, a licensed property appraiser in the State of Georgia was retained to develop “windshield appraisals” for the property. The property necessary for the development of Site 9 is comprised of three (3) parcels. Site 9 is comprised of mostly undeveloped timber/farmland, and would not require the purchase of residential dwellings or commercial properties. Current ownership of these three (3) parcels is in the name of James Clare Proctor (Parcel 070-010), T-Max One, L.P. (Parcel 056-001), and Newton Brown & Casey, Inc. (parcel 070-009). The land area required for development of the airport (i.e., 410 acres) has been valued at $1,800 per acre. Total cost to acquire the property required is estimated at $738,000. The appraiser also estimated additional costs associated with land acquisition to include potential eminent domain proceedings, damages, further appraisals and miscellaneous costs, in the amount of $525,900. Total estimated cost to acquire the land necessary for development of Site 9 is approximately $1,263,900.

Source: R,S&H, 2005



— Agricultural Forestry

— Multi-Family Residential

— Agricultural Residential

Figure 9-33

SITE 9 - LANDUSE ZONING

9.5.3.3 Environmental Evaluation

Site 9 is generally bordered by pine plantation and forested wetlands. Sparse residential and commercial development exists in the vicinity of the Site. Several unpaved trail roads cross the Site and locked gates restrict access. The Site is currently a silviculture operation with seasonal game hunting permitted by the landowners.

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. Drainage of the Site flows to Catfish Creek and then into the St. Mary's River. Examination of the USGS Kingsland, Georgia topographic quadrangle map revealed that elevations range between slightly over +20' and under +15' above mean sea level.

An examination of the *Soil Survey of Camden and Glynn Counties, Georgia* produced by the U. S. Department of Agriculture, Soil Conservation Service (SCS; currently known as the Natural Resources Conservation Service, NRCS) revealed eight soil types found within the project area. The soil types are Albany fine sand (AdA), Bladen loam (Bk), Brookman clay loam (Br), Olustee sand (Om), Pelham loamy sand (Pe), Rains fine sandy loam (Ra), Rutlege fine sand (Ru), and Sapelo fine sand (Sa).

Albany fine sand soils are somewhat poorly drained, nearly level soils found on low ridges of the flatwoods. Bladen loam is a poorly drained, nearly level soil found on broad, low flats and in small isolated depressions in the flatwoods. It is commonly flooded for long periods during the winter and spring. Brookman clay loam soils are very poorly drained, nearly level soils found in broad, shallow depressions in flatwoods. Olustee sand is a poorly drained, nearly level soil found on convex ridges that border depressions and drainageways in the flatwoods. Pelham loamy sand soils are poorly drained, nearly level soils found in broad flats and depressions and drainageways in the flatwoods. Rains fine sandy loam soils are poorly drained, nearly level soils found on broad flats and in shallow depressions and drainageways in flatwoods. Rutlege fine sand soils are very poorly drained, nearly level soils found in shallow depressions and drainageways in flatwoods. Sapelo fine sand soils are poorly drained, nearly level soils found in flatwoods areas that border depressions, drainageways and bays in the flatwoods. The National Technical Committee for Hydric Soils (NTCHS) classifies all of these soil types except Albany fine sand as hydric.

The upland areas of the project Site are currently under active silviculture operation. As is typical in silvicultural areas the pine plantation present varies in age. Canopy cover ranges from open in younger parts of the plantation to closed in mature sections. Slash pine (Pinus elliottii) is the dominant species present with some loblolly pine (Pinus serotina). Groundcover is dense in the young portions of the plantation and are dominated by gallberry (Ilex glabra), sweet gallberry (Ilex coriacea), saw palmetto (Serenoa repens), blackberry (Rubus argutus) and wild sarsaparilla (Smilax glauca). The groundcover is less dense in mature parts of the plantation with generally the same species previously listed as well as some water oaks (Quercus nigra), sweet gum (Liquidambar styraciflua) and red maple (Acer rubrum).

Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways. Herbaceous systems are also present, being found at the fringe of the forested systems and in portions of the young pine plantation. Bald cypress (Taxodium distichum), black gum (Nyssa sylvatica var. biflora), red maple and loblolly bay (Gordonia lasianthus) are common canopy species of the forested wetlands. Herbaceous species present include panic grasses (Panicum hemitomon, P. scabriusculum, P. virgatum), broom sedge (Andropogon glomeratus), rushes (Juncus spp.) and hydrophytic ferns (Woodwardia virginica, Osmunda regalis).

Palustrine wetlands like those found at the Site are not regulated by the State of Georgia. GDNR only regulates tidally influenced marshlands. The federal government through USACE actively regulates wetlands in the State of Georgia. Wetlands contiguous with streams and lakes as well as certain isolated wetlands fall within the jurisdictional purview of the agency. USACE is currently not asserting jurisdiction over isolated, non-navigable, intrastate wetlands. However, isolated wetlands that are connected to lakes or streams by ditches are considered jurisdictional wetlands by USACE. Mitigation may be required for any wetland impacts over one tenth of an acre. All of the wetland areas in the project vicinity are part of the Catfish Creek system and appear to be within the jurisdictional purview of USACE.

Based on an evaluation of the potential wetland and floodplain impacts associated with this Site, approximately 28 acres of wetlands, and no floodplains will be impacted by

development in the configuration and location recommended in this Section, see **Figure 9.34**.

The FWS and GDNR protect threatened and endangered species of fauna and flora within the State of Georgia. Site 9 is not located within any area designated as critical habitat by the FWS. No endangered or threatened plant species listed by both FWS and GDNR are known to occur at the Site or were observed during the Site inspection. However, pondspice, a species listed as threatened by GDNR has a moderate likelihood of occurrence. Since this species is not listed by FWS and falls solely under the protection of GDNR, only the permission of the landowner is required to impact the species. The following state and/or federally listed fauna may utilize the Site:

Reptiles and Amphibians

Gopher Tortoise (Gopherus polyphemus) State (S), Threatened (T)

Eastern Indigo Snake (Drymarchon corais couperi) Federal (F), T; S, T

Birds

Red-cockaded Woodpecker (Picoides borealis) F, Endangered (E); S, E

Wood Stork (Mycteria americana) F, E; S, E

Bald Eagle (Haliaeetus leucocephalus) F, T; S, E

The Gopher Tortoise is a large terrestrial species, which inhabits well-drained uplands such as dunes, xeric scrub, coastal strand and sandhills. Burrows are constructed for protection from temperature, predators and desiccation. Marginal habitat for the species exists at the Site. No Gopher Tortoises or burrows were observed during the Site inspection.

The Eastern Indigo Snake is a large non-venomous snake, which occurs throughout the coastal plain of Georgia. Prime habitat is high, dry, well-drained sandy soils. The species is often found in association with the Gopher Tortoise. The Gopher Tortoise burrow is commonly used as a den and for egg laying. Eastern Indigo Snakes are also found in swamps and flatwoods. Suitable habitat occurs within the Site, however no individuals were observed during the survey.

Source: R,S&H, 2005

100-Year Floodplain

Palustrine Wetlands

N

750' 0 750' 1,500'

FEET

Figure 9-34

SITE 9 - WETLAND AND FLOODPLAINS

The Red-cockaded Woodpecker utilizes old growth stands of southern pines for nesting. Forests with a significant understory are not utilized. Optimal foraging habitat consists of mature pine stands 30 years or older with a minimum tree diameter of ten inches. Marginal foraging habitat for the Red-cockaded Woodpecker exists on the Site. No suitable nesting habitat is present on-site and the species was not observed during the Site inspection.

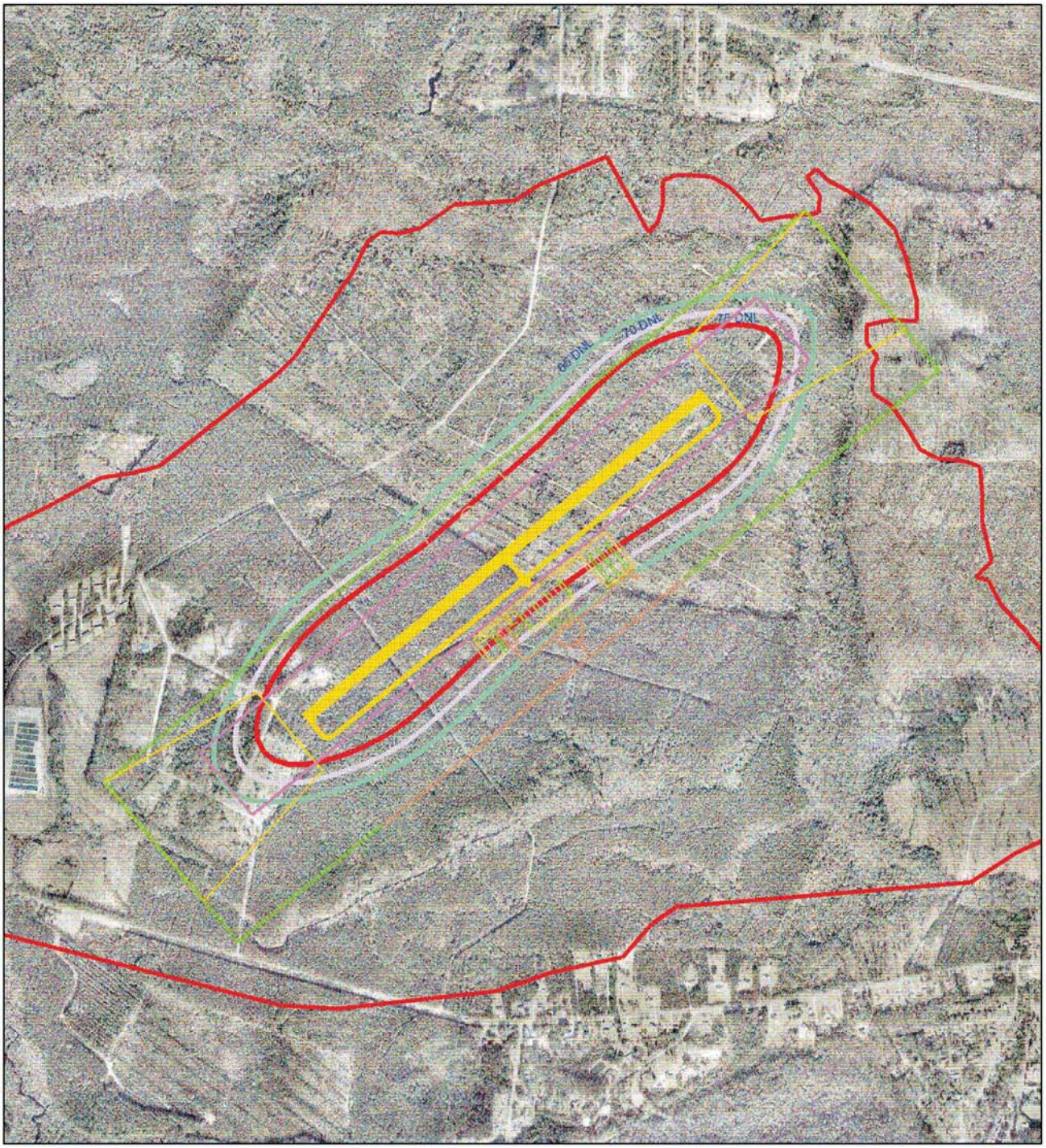
Wood Storks are large colonial-nesting, wading birds. Primary nesting sites are cypress or mangrove swamps with foraging habitat consisting of marshes, ditches and flooded pasture. Small fish provide the main dietary item. Wood Storks have been documented to fly 80 miles from nesting to foraging sites. The wetlands found on-site provide marginal nesting and foraging habitat. No Wood Storks or nests were observed during the Site inspection.

The Bald Eagle generally nests in large trees near open bodies of water, which provide optimum foraging habitat. The project Site provides marginal foraging and nesting habitat for the species. No Bald Eagles or their nests were observed during the Site inspection.

Noise contours were developed for Site 9 using the aircraft operations forecasts for year 2021 and fleet mix projections developed in the GASP, and an estimate of the type of aircraft most likely to use the facility. Also it was assumed that 95% of the aircraft operations would occur during the hours of 6:00 a.m. to 10:00 p.m., and 5% of the operations during the remaining time period. Noise contours for development of Site 9 are depicted in **Figure 9.35**. As depicted, the noise contours are located predominately within the boundaries of the proposed airport site and will not create negative impacts to the surrounding land uses.

9.5.3.4 Summary of Costs

As part of the development of the GASP in 2002, estimated costs were identified for the proposed replacement airport for St. Marys. These estimated costs have been updated to reflect the anticipated expenditure to develop Site 9, as presented in **Table 9.4.**



Source: R,S&H, 2005

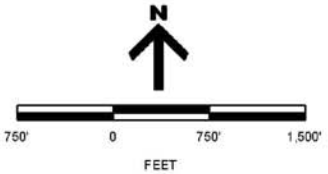


Figure 9-35

SITE 9 - 2021 NOISE CONTOURS

Table 9.4
Site 9 Development Costs

Facility Improvement	Objective		Cost
Runway	5,000' x 100'	$	3,811,000
Taxiway	Full Parallel	$	2,399,000
Aircraft Parking Apron		$	1,115,000
T-Hangar Taxilanes		$	763,800
Corporate Hangar Area Taxiway/Apron		$	799,800
Airport Access Road & Auto Parking		$	173,400
T-Hangar Access Road & Auto Parking		$	88,300
Corporate Access Road & Auto Parking		$	101,300
Airfield Electrical & NAVAIDS		$	535,900
Site Utilities		$	350,500
Land Acquisition	410 Acres	$	738,000
Environmental Mitigation & Permitting	28 Acres	$	1,120,000
GCO/Phone	1	$	15,000
10 Unit T-Hangar (3 Each)	36' x 325'	$	900,000
Corporate Hangars (3 Each)	2,400 S.F.	$	360,000
Terminal Space	4,200 S.F.	$	630,000
FBO Hangar	10,000 S.F.	$	500,000
Fuel Farm	AvGas & Jet A	$	100,000
Total Estimated Cost		$	14,501,000

Source: RS&H, 2005.

9.6 SUMMARY AND FINAL SITE RECOMMENDATION

Based on the independent analysis of the development potential of Sites 1, 3 and 9, as compared to the screening criteria established by the Advisory Committees, **Table 9.5** summarizes the relevant attributes of each site. After considerable discussion with the Technical Advisory Committee (TAC) concerning the advantages and disadvantages associated with the final three site alternatives, the TAC recommended Site 1 as the preferred alternative. The TAC recommendation was based principally on the following factors:

- Site proximity to regional and interstate ground transportation corridors.
- The compatible nature of the surrounding land uses, and the ability to implement zoning changes to protect against future encroachment of airport boundaries.
- The possibility of establishing a straight-in non-precision instrument approach using the Brunswick VORTAC, which ultimately depends on the final runway configuration.
- Site proximity to possible future rail access.
- Site proximity to current and projected population/market centers in Camden County.

Table 9.5
Comparison of Final Site Alternatives

Screening Criteria	Site 1 Configuration "A"	Site 1 Configuration "B"	Site 3	Site 9
Fulfill Role	Yes	Yes	Yes	Yes
Highway Access	Excellent	Excellent	Excellent	Fair
Rail Access	Good	Good	Poor	Fair
Future Expansion	Good	Good	Good	Good
Acquisition Costs	Excellent	Excellent	Good	Good
Environmental Constraints	Fair	Fair	Good	Good
Airspace Constraints	Fair	Fair	Fair	Fair
Instrument Capability	Good	Good	Good	Good
Available Utilities	Fair	Fair	Good	Fair
Land Use Compatibility	Excellent	Excellent	Fair	Fair
Proximity to Population	Good	Good	Good	Good
Available Commercial/ Industrial Property	Good	Good	Good	Good
Support Military Mission	Good	Good	Good	Good

Source: R,S & H, 2005

- Site proximity to the Kings Bay Naval Base, and a determination that development of the site and associated aircraft operations will not be affected by current airspace restrictions associated with the base.
- The stated desire by the property owner to donate a portion of the site for development of the Airport.

Although the TAC properly recognized the advantages associated with the location and potential development of Site 1, they also acknowledged that the site will present some challenges concerning the level of possible environmental mitigation necessary to

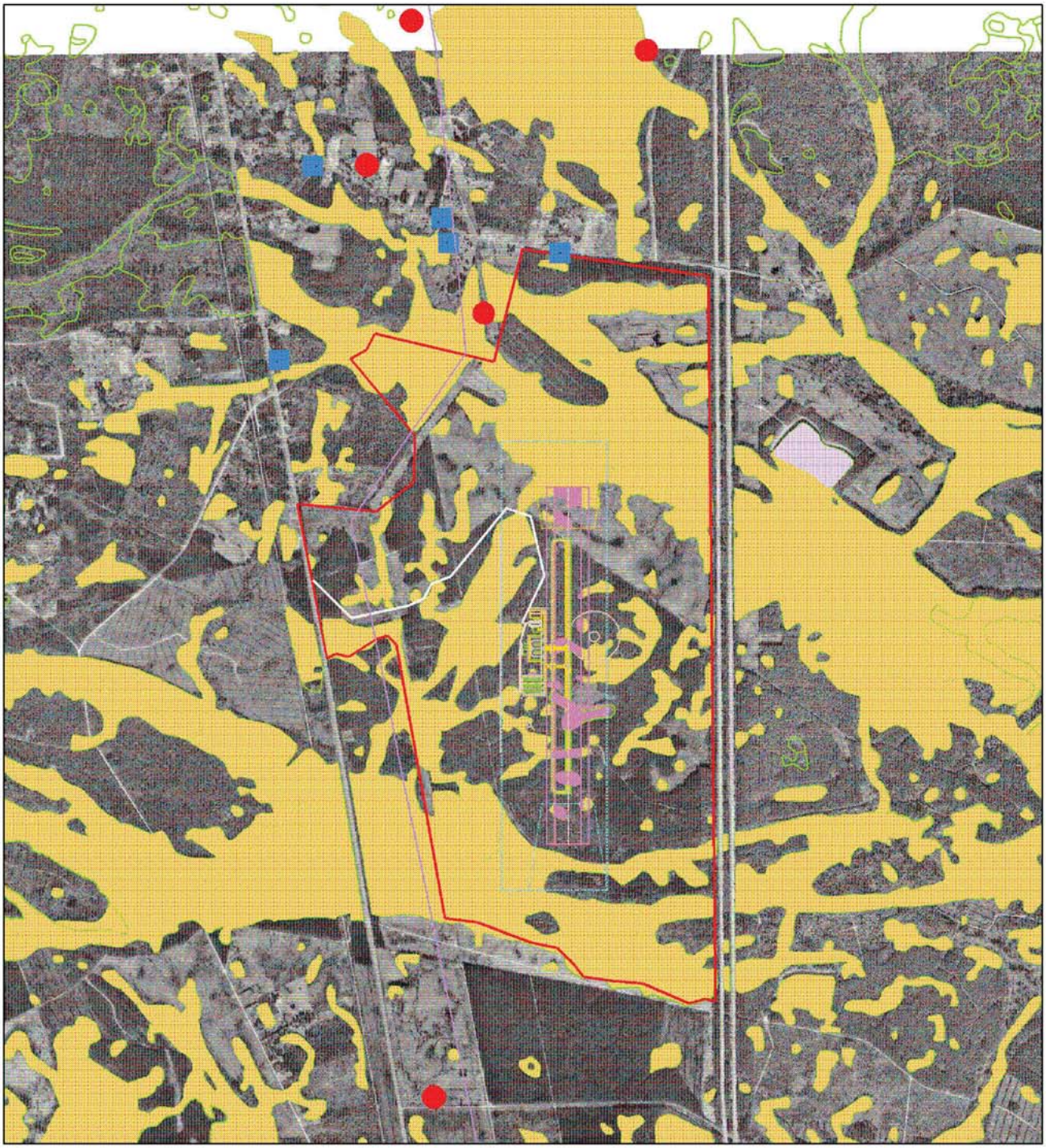
proceed with permitting and construction, as well as the potential airspace obstructions (towers) located north of the site which are undergoing further review and analysis. Clearly, the recommendation concerning selection of Site 1 as the preferred alternative acknowledges that the advantages outweigh the disadvantages or potential challenges associated with recommending development of Site 1. The TAC recommendation was presented to the Community Advisory Committee (CAC), and subsequently accepted by the Committee as the recommended site location for development of the replacement airport.

As a final effort to further examine the potential to avoid and/or minimize the environmental impacts associated with the proposed development of Site 1, and at the request of the FAA, several additional airfield configurations were analyzed as depicted in **Figures 9.36**, **9.37**, **9.38**, **9.39**, **9.40**, and **9.41**. **Table 9.6** further tabulates the associated wetland impacts and potential wind coverage associated with each alternative.

Table 9.6
Additional Site 1 Alternatives

Configuration	Number of Runways	Runway Orientation	Wetland Impacts (Acres)	Wind Coverage
C	1	18/36	18.97	92.35%
D	1	4/22	22.9	94.93%
E	2	18/36, 4/22	35.65	>95%
F	2	18/36, 14/32	34.23	>95%
G	1	3/21	19.06	94.65%
H	1	2/20	24.7	94.13%

Source: RS&H, 2005



Source: R,S,&H, 2005

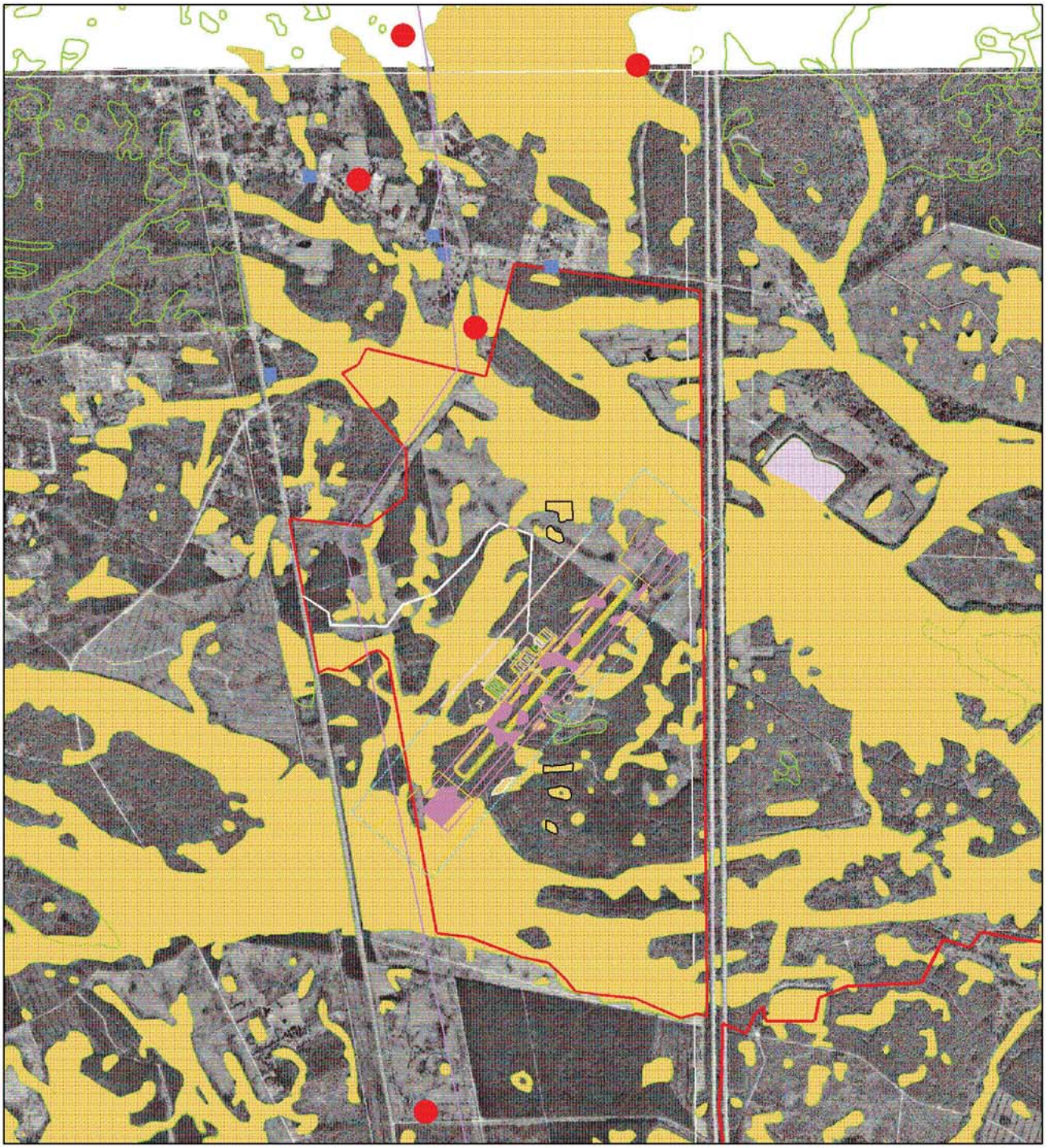
Utility (Electrical) Line
Churches
Palustrine Wetlands
FAA Obstructions
Property Line

N

1,500' 0 1,500' 3,000'
FEET

Figure 9-36

SITE 1 - CONFIGURATION 'C'



Source: R,S,&H, 2005

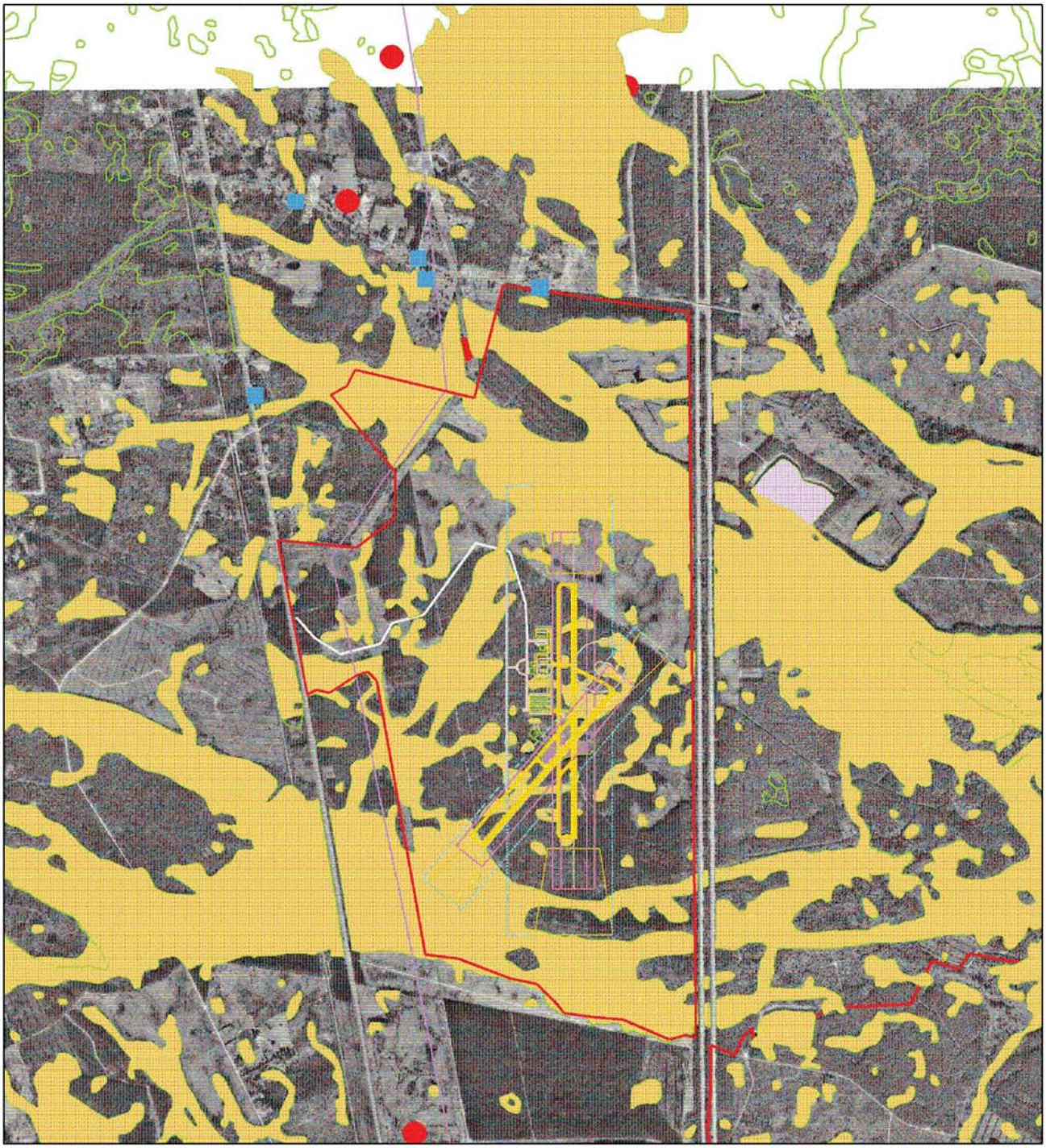
Utility (Electric) Line
Churches
Palustrine Wetlands
FAA Obstructions
Property Line

N

1,500' 0 1,500' 3,000'
FEET

Figure 9-37

SITE 1 - CONFIGURATION 'D'



Source: R,S,&H, 2005

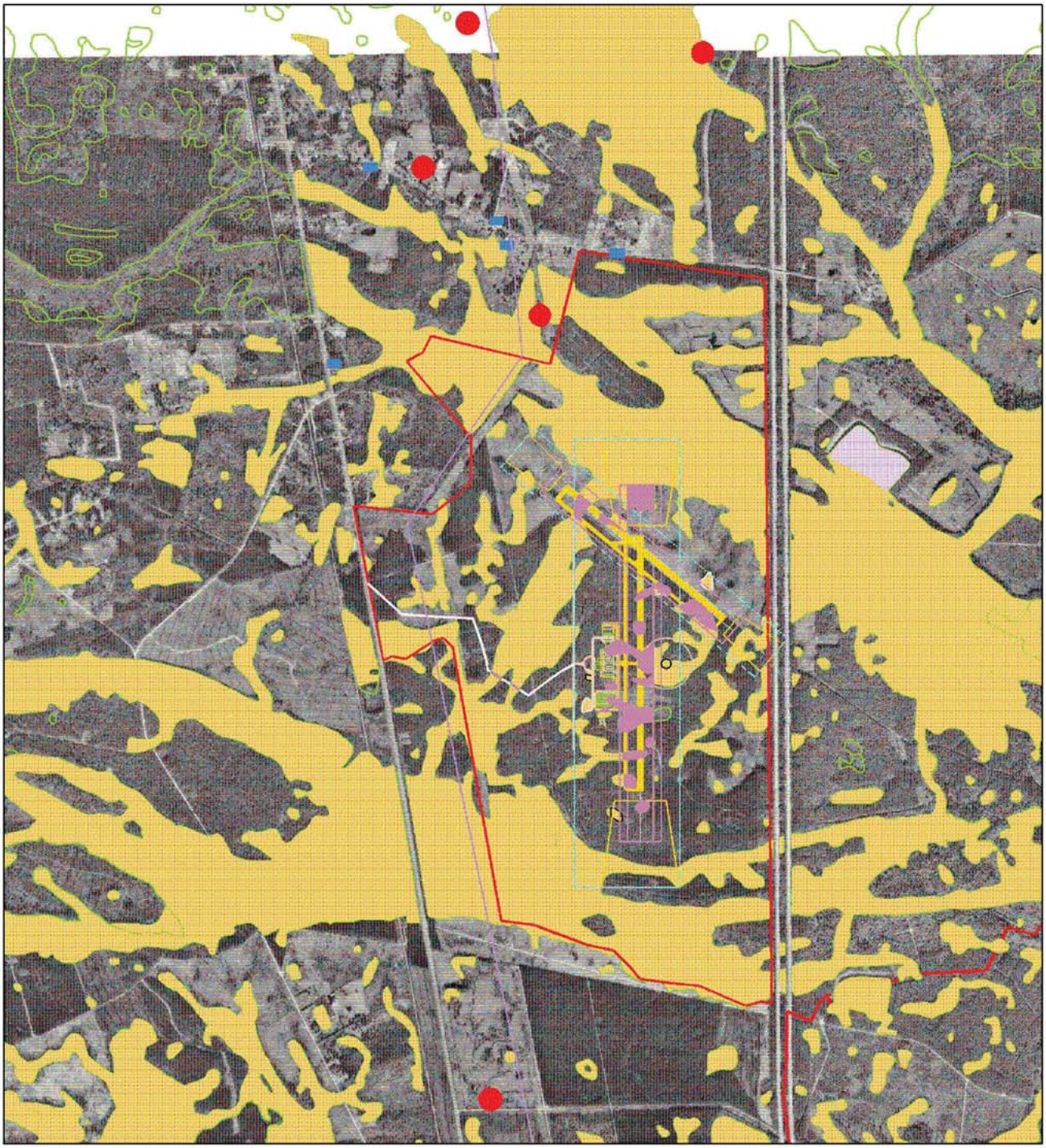
Utility (Electrical) Line
Churches
Palustrine Wetlands
FAA Obstructions
Property Line

N

1,500' 0 1,500' 3,000'
FEET

Figure 9-38

SITE 1 - CONFIGURATION 'E'



Source: R,S,&H, 2005

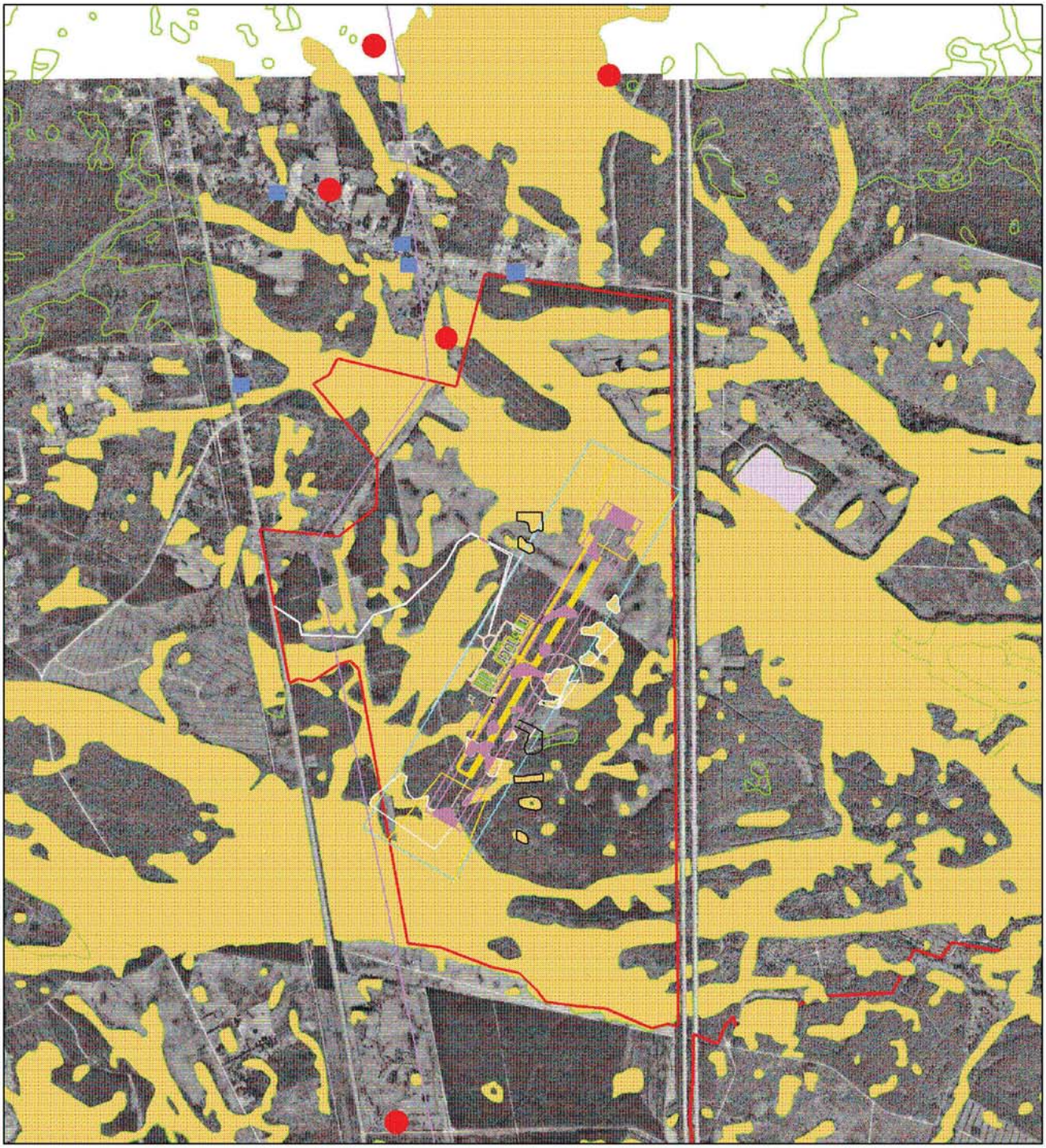
Utility (Electrical) Line
Churches
Palustrine Wetlands
FAA Obstructions
Property Line

N

1,500' 0 1,500' 3,000'
FEET

Figure 9-39

SITE 1 - CONFIGURATION 'F'



Source: R,S,&H, 2005

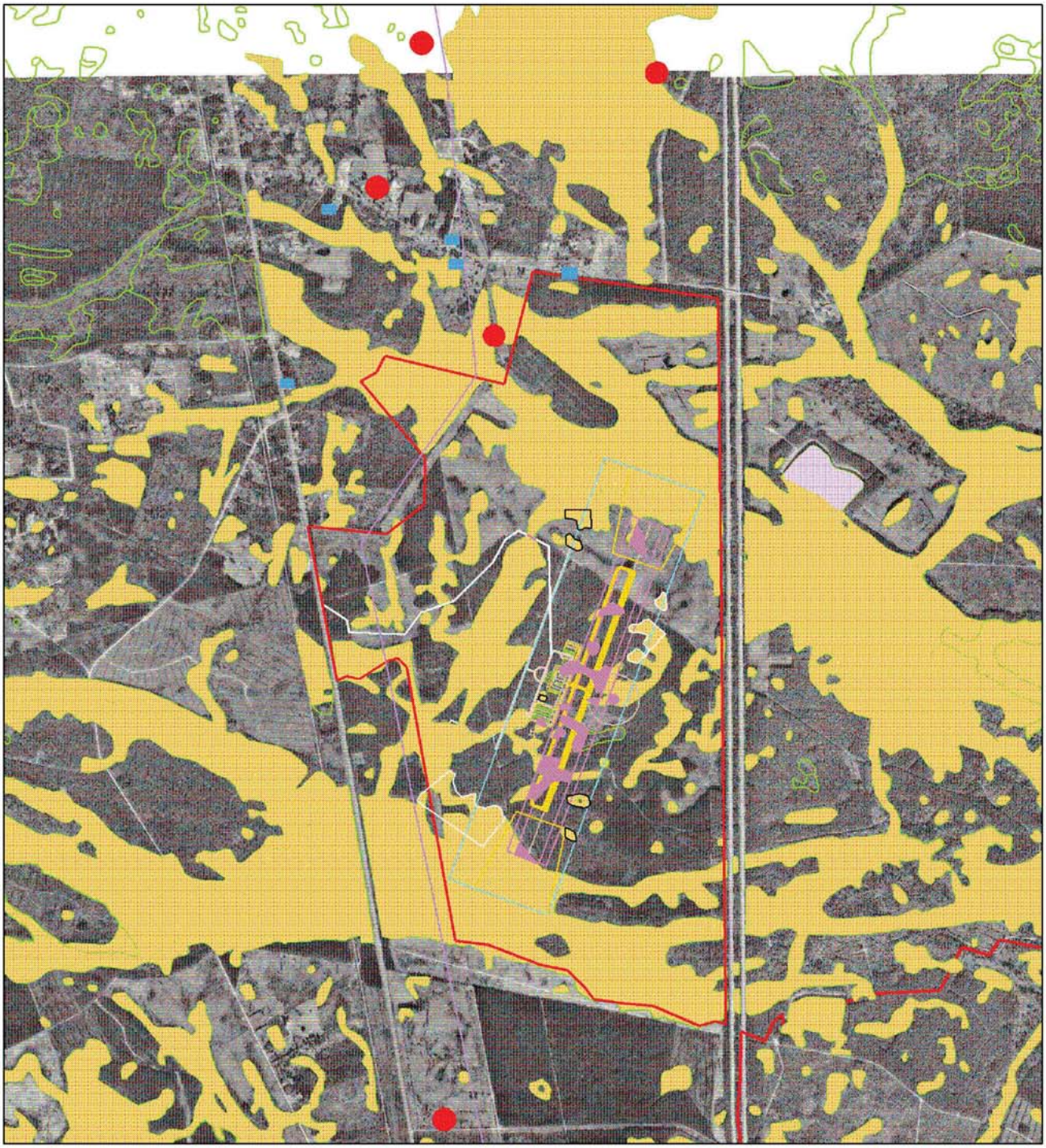
Utility (Electrical) Line
Churches
Palustrine Wetlands
FAA Obstructions
Property Line

N

1,500' 0 1,500' 3,000'
FEET

Figure 9-40

SITE 1 - CONFIGURATION 'G'



Source: R,S,&H, 2005

Utility (Electrical) Line
Churches
Palustrine Wetlands
FAA Obstructions
Property Line

N

1,500' 0 1,500' 3,000'
FEET

Figure 9-41

SITE 1 - CONFIGURATION 'H'

SECTION 10 – PUBLIC PARTICIPATION

Throughout the preparation of the Airport Feasibility and Site Selection Study a significant effort was made to educate and inform the public concerning the goals, objectives and recommendations of the Study, in addition to allowing the opportunity for public input to the consultant team and other officials. As previously mentioned, two advisory committees were established (i.e., the Technical Advisory Committee and Community Advisory Committee) and those individuals participating on the Committees are listed in Appendix A. A project website was established (as a link from the City of St. Marys website) and all handout materials, presentations, reports and materials presented to the Advisory Committees were posted to the site in electronic format for ease of access and review by the public. On March 28, 2005 a workshop was conducted with the St. Marys City Council and included a complete review of the Draft Airport Feasibility and Site Selection Report and an opportunity for City Council to provide feedback and listen to public input. Finally, on April 6, 2005, a Public Information Workshop was conducted during which the consultant team presented the results of the Study, and the public was afforded an opportunity to comment and provide feedback to the consultant team and those elected officials in attendance.

Appendix A

The following is a list of the members who served on the Technical and Community Advisory Committee's. These members attended meetings and provided comments during the development of the Airport Feasibility and Site Selection Study.

Technical Advisory Committee

Ms. Deborah Hase, Mayor
City of St. Marys

Mr. William Shanahan, City Manager
City of St. Marys

Mr. Robert "Bobby" Marr, Public Works Director
City of St. Marys

Mr. Max Tinsley, Planning Director
City of St. Marys

Mr. Paul Lo, Program Manager
Federal Aviation Administration
Atlanta Airports District Office

Mr. Parks Preston, Environmental Specialist
Federal Aviation Administration
Atlanta Airports District Office

Ms. Carol Comer
Georgia Department of Transportation

Mr. Ed Ratigan
Georgia Department of Transportation

Mr. Gary Raymond
Federal Aviation Administration – Flight Procedures
Atlanta Airports District Office

Mr. Bob Minter, AOPA
Regional Representative – AOPA

Mr. Charles Akridge, Planning Director
Camden County

Mr. Paul Smith, Planning Director
Coastal Georgia Regional Development Council

Mr. Matt LeCerf, Planning & GIS Director
City of Kingsland

Mr. Lee Spell, Deputy City Manager
City of Kingsland

Mr. Ken Hase

Mr. Len Scullion, P.E.
General Manager, Johnson Controls-HILL, L.L.C.

Jeff Stanford
St. Marys Aviation

Richard Russell
St. Marys Airport Authority

Greg Moore
St. Marys Airport Authority

Peg Blitch
State Senator

Walt Natzic
Camden Partnership

Gwen Mungin, City Manager
City of Kingsland

Community Advisory Committee

Ms. Deborah Hase, Mayor
City of St. Marys

Ms. Cecily Hill, State Representative

Ms. Peg Blitch, State Senator

Mr. William Shanahan, City Manager
City of St. Marys

Mr. Bob Minter
Regional Representative – AOPA

Mr. Dick Russell, Chair
St. Marys Airport Authority

Mr. Kenneth Smith, Mayor
City of Kingsland

Mr. W. Burford Clark, Jr., Mayor
City of Woodbine

Mr. David L. Rainer, Chair
Camden County Commission

Mr. Bob Noble, Executive Director
Camden County Joint Development Authority

Mr. James McGhin, Director
Industrial Development Authority of St. Marys

Capt. Mike McKinnon , Commanding Officer
Kings Bay Naval Base

Ms. Carla Carper, President
Camden - Kings Bay Chamber of Commerce

Mr. Walt Yourstone
Camden Partnership

Ms. Sandra Rayson, City Administrator
City of Woodbine

Mr. Mark J. McAnaw
City of Woodbine City Council

Sandra Rayson,
City Administrator, Woodbine

Greg Bird
Bird Aviation, St. Marys