FINAL REPORT

ENVIRONMENTAL ASSESSMENT FOR THE REPLACEMENT ST. MARYS AIRPORT

Prepared by:

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This Environmental Assessment becomes a Federal document when evaluated, signed and dated by the Responsible FAA Official.

_____ _____

Printed name: Date
Responsible FAA Official

TABLE OF CONTENTS

CHAPTER 1 - INTRODUCTION

1.0 INTRODUCTION....1
1.1 THE ENVIRONMENTAL ASSESSMENT....3
1.1.1 The Purpose of the Environmental Assessment....3
1.1.2 Federal Aviation Administration's Environmental Responsibilities....4
1.1.3 Document Organization....4
1.1.4 Cooperating Agency....5
1.2 BACKGROUND....5
1.2.1 History....5
1.2.2 Airport Role....10
1.2.3 Existing Airport Facilities....11
1.3 AVIATION FORECAST SUMMARY....13
1.4 RUNWAY LENGTH ANALYSIS....13
1.5 DESIGN STANDARDS....14
1.6 AIRPORT FACILITY REQUIREMENTS....14
1.7 SUMMARY....15

CHAPTER 2 – PURPOSE AND NEED

2.0 INTRODUCTION....17
2.1 PURPOSE AND NEED FOR THE PROPOSED ACTION....17
2.2 REQUESTED FEDERAL ACTION....18
2.2.1 Airway Facilities....18
2.2.2 Airports....19

CHAPTER 3 - ALTERNATIVES ANALYSIS

3.0 INTRODUCTION....20
3.1 NO-BUILD ALTERNATIVE....21
3.2 BUILD ALTERNATIVES....23
3.2.1 Site 1....23
3.2.2 Site 3....26
3.2.3 Site 9....29
3.3 PREFERRED ALTERNATIVE....31

CHAPTER 4 – AFFECTED ENVIRONMENT

4.1 THE EXISTING AIRPORT....33
4.1.1 Location....33
4.1.2 Existing Airport Facilities....37
4.1.2.1 Airspace....37
4.1.2.2 Airfield....37
4.1.2.3 Landside....37
4.1.2.4 Aviation Support Facilities....40
4.2 UNITS OF LOCAL GOVERNMENT....40
4.3 HUMAN ENVIRONMENT....42
4.3.1 Demographics....42
4.3.1.1 Population Trends....42
4.3.1.2 Employment Trends....42
4.3.2 Land Use Characteristics....44

4.3.2.1 Current Site 44
4.3.2.2 Site Alternatives 46
4.3.2.2.1 Site 1 46
4.3.2.2.2 Site 3 46
4.3.2.2.3 Site 9 46
4.3.3 Quality Growth Resource Team Report 50
4.4 THE NATURAL ENVIRONMENT 50
4.4.1 Topography 50
4.4.2 Geology 50
4.4.3 Climate 51
4.4.4 Water Resources 51
4.4.5 Floodplains 51
4.4.6 Coastal Zones 51
4.4.7 Biotic Communities and Threatened and/or Endangered Species 54
4.4.8 Wetlands 54

CHAPTER 5 - ENVIRONMENTAL CONSEQUENCES

5.0 INTRODUCTION 57
5.1 AIR QUALITY 58
5.1.1 Health Effects of Air Pollutants 58
5.1.2 Regulatory Setting 59
5.1.2.1 Regulations Affecting Air Quality 59
5.1.2.2 Ambient Air Quality Standards 60
5.1.3 Existing Ambient Air Quality Measured in the Region 61
5.1.3.1 Airport Sources of Emissions 61
5.1.3.2 Emissions Inventory Methodology 62
5.1.4 Environmental Consequences 64
5.1.4.1 No-Build Alternative 64
5.1.4.2 Build Alternatives 66
5.1.4.3 Construction Air Quality Impacts 66
5.1.5 Mitigation 67
5.2 CHILDRENS ENVIRONMENTAL HEALTH AND SAFETY RISKS 67
5.2.1 Build Alternatives 67
5.2.2 No-Build Alternative 67
5.2.3 Mitigation 67
5.3 COASTAL RESOURCES 69
5.3.1 Build Alternatives 69
5.3.2 No-Build Alternative 73
5.3.3 Mitigation 73
5.4 NOISE 74
5.4.1 Methodology 74
5.4.2 Build Alternatives 75
5.4.3 No-Build Alternative 75
5.4.4 Mitigation 85
5.5 COMPATIBLE LAND USE 85
5.5.1 Site 1 88
5.5.2 Site 3 88
5.5.3 Site 9 91
5.5.4 No-Build Alternative 91
5.5.5 Mitigation 91
5.6 CONSTRUCTION IMPACTS 94
5.6.1 Build Alternatives 94
5.6.2 No-Build Alternative 94
5.6.3 Mitigation 94

5.6.3.1 Noise 95
5.6.3.2 Dust 95
5.6.3.3 Air Pollution 95
5.6.3.4 Water Pollution 95
5.7 DEPARTMENT OF TRANSPORTATION SECTION 4(f) 96
5.7.1 Build Alternatives 96
5.7.2 No-Build Alternative 96
5.7.3 Mitigation 96
5.8 ENVIRONMENTAL JUSTICE 98
5.8.1 Site 1 98
5.8.2 Site 3 98
5.8.3 Site 9 98
5.8.4 No-Build Alternative 101
5.8.5 Mitigation 101
5.9 FARMLANDS 101
5.9.1 Build Alternatives 101
5.9.2 No-Build Alternative 101
5.9.3 Mitigation 101
5.10 FISH, WILDLIFE, AND PLANTS 103
5.10.1 Build Alternatives 103
5.10.2 No-Build Alternative 106
5.10.3 Mitigation 106
5.11 FLOODPLAINS 107
5.11.1 Site 1 107
5.11.2 Site 3 107
5.11.3 Site 9 107
5.11.4 No-Build Alternative 107
5.11.5 Mitigation 107
5.12 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE 109
5.12.1 Site 1 109
5.12.2 Site 3 109
5.12.3 Site 9 109
5.12.4 No-Build Alternative 111
5.12.5 Mitigation 111
5.13 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES 111
5.13.1 Environment 113
5.13.2 Historic Overview 115
5.13.3 Cultural Resources Screening 115
5.13.3.1 Site 1 116
5.13.3.2 Site 3 118
5.13.3.3 Site 9 120
5.13.3.4 No-Build 122
5.13.4 Mitigation 122
5.14 LIGHT EMISSIONS AND VISUAL IMPACTS 123
5.14.1 Site 1 124
5.14.2 Site 3 124
5.14.3 Site 9 125
5.14.4 No-Build Alternative 125
5.14.5 Mitigation 125
5.15 NATURAL RESOURCES AND ENERGY SUPPLY 125
5.15.1 Build Alternatives 126
5.15.2 No-Build Alternative 126
5.15.3 Mitigation 127
5.16 SECONDARY (INDUCED) IMPACTS 127
5.16.1 Build Alternatives 127
5.16.2 No-Build Alternative 128

5.16.3 Mitigation 128
5.17 SOCIOECONOMIC IMPACTS 128
5.17.1 Site 1 128
5.17.2 Site 3 129
5.17.3 Site 9 129
5.17.4 No-Build Alternative 130
5.17.5 Mitigation 130
5.18 WATER QUALITY 130
5.18.1 Build Alternatives 131
5.18.2 No-Build Alternative 131
5.18.3 Mitigation 131
5.19 WETLANDS 131
5.19.1 Site 1 133
5.19.2 Site 3 135
5.19.3 Site 9 135
5.19.4 No-Build Alternative 137
5.19.5 Mitigation 137
5.20 WILD AND SCENIC RIVERS 140
5.20.1 Build Alternatives 140
5.20.2 No-Build Alternative 140
5.20.3 Mitigation 140

CHAPTER 6 - PUBLIC INVOLVEMENT

LIST OF FIGURES

Figure 1.1 Location Map 2
Figure 1.2 County Location 6
Figure 1.3 Existing Airport 8
Figure 1.4 Kings Bay Airspace 9
Figure 1.5 Airport Layout 12
Figure 1.6 Concept Airport 16
Figure 3.1 Existing Airport Infrastructure 22
Figure 3.2 Site 1 Aerial 24
Figure 3.3 Site 3 Aerial 28
Figure 3.4 Site 9 Aerial 30
Figure 4.1 Existing Airport Boundaries 34
Figure 4.2 City of St. Marys Location 35
Figure 4.3 Airport Location Within City 36
Figure 4.4 Aeronautical Chart 38
Figure 4.5 Existing Airport Infrastructure 39
Figure 4.6 Local Jurisdictions 41
Figure 4.7 Current Airport Surrounding Land Uses 45
Figure 4.8 Site 1 Surrounding Land Uses 47
Figure 4.9 Site 3 Surrounding Land Uses 48
Figure 4.10 Site 9 Surrounding Land Uses 49
Figure 4.11 Watersheds 52
Figure 4.12 Floodplains 53
Figure 4.13 Wetland Inventory 56
Figure 5.1 Proximity of Schools to Existing Airport 68
Figure 5.2 Coastal Barriers Resource System Units 70
Figure 5.3 Georgia Coastal Zone 71
Figure 5.4 Site 1 Existing Noise Contours 77

Figure 5.5 Site 3 Existing Noise Contours 78
Figure 5.6 Site 1 Future Noise Contours 79
Figure 5.7 Site 3 Future Noise Contours 80
Figure 5.8 Site 9 Existing Noise Contours 81
Figure 5.9 Site 9 Future Noise Contours 82
Figure 5.10 Current Airport Existing Noise Contours 83
Figure 5.11 Current Airport Future Noise Contours 84
Figure 5.12 Noise sensitive land uses 86
Figure 5.13 Camden County Land Use 87
Figure 5.14 Site 1 Land Use 89
Figure 5.15 Site 3 Land Use 90
Figure 5.16 Site 9 Land Use 92
Figure 5.17 Current Airport Surrounding Land Uses 93
Figure 5.18 Section 4(f) Lands 97
Figure 5.19 Percentage of Non-Minority Populations 99
Figure 5.20 Percentage of Low-Income Populations 100
Figure 5.21 Farmlands 102
Figure 5.22 Floodplain Depiction 108
Figure 5.23 Camden County Landfill 110
Figure 5.24 Area of Potential Effects 111
Figure 5.25 Specific Soils Map 114
Figure 5.26 Site 1 Cultural Resources Project Area 117
Figure 5.27 Site 3 Cultural Resources Project Area 119
Figure 5.28 Site 9 Cultural Resources Project Area 121
Figure 5.29 Site 1 Wetlands 134
Figure 5.30 Site 3 Wetlands 136
Figure 5.31 Site 9 Wetlands 138
Figure 5.32 Mitigation Bank 139
Figure 5.33 Wild and Scenic Rivers 141
Figure 5.34 St. Marys River Proximity to Site 9 142

LIST OF TABLES

Table 1-1: St. Marys Airport Airside Characteristics 11
Table 1-2: Summary of Facility Requirements 15
Table 3-1: Distances to Other Existing Airports in the Area 23
Table 3-2: Site 1 Development Costs 25
Table 3-3: Site 3 Development Costs 27
Table 3-4: Site 9 Development Costs 31
Table 4-1: Population Forecasts 43
Table 4-2: Per Capita Personal Income Forecasts 43
Table 5-1: National and Georgia Ambient Air Quality Standards 60
Table 5-2: Measured Ambient Concentration on the South georgia and North Florida Coastal Region 62
Table 5-3: Emissions Inventory Summary (Tons Per Year) 65
Table 5-4: Site 9 Parcel Owners 76
Table 5-5: Existing Airport Parcel Owners 76
Table 5-6: Specific Soils Within the Projet Area 113
Table 5-7: Historic and Potentially Historic Structures Within the Site 1 APE 116
Table 5-8: Historic and Potentially Historic Structures Within the Site 3 APE 118
Table 5-9: Archaeological Sites Within the Site 9 APE 120
Table 5-10: Historic and Potentially Historic Structures Within the Site 9 APE 120
Table 5-11: Results of Light Emissions Analysis 125

APPENDICES

APPENDIX A: Aviation Demand Forecasts

APPENDIX B: Runway Length Requirements and Design Standards

APPENDIX C: Facility Requirements

APPENDIX D: Air Quality Analysis

APPENDIX E: Cultural Resource Survey

APPENDIX F: Agency Coordination Letters

APPENDIX G: Public Input

APPENDIX H: List of Preparers

APPENDIX I: Archeological Resource Survey Report for Site 1

CHAPTER 1 - INTRODUCTION

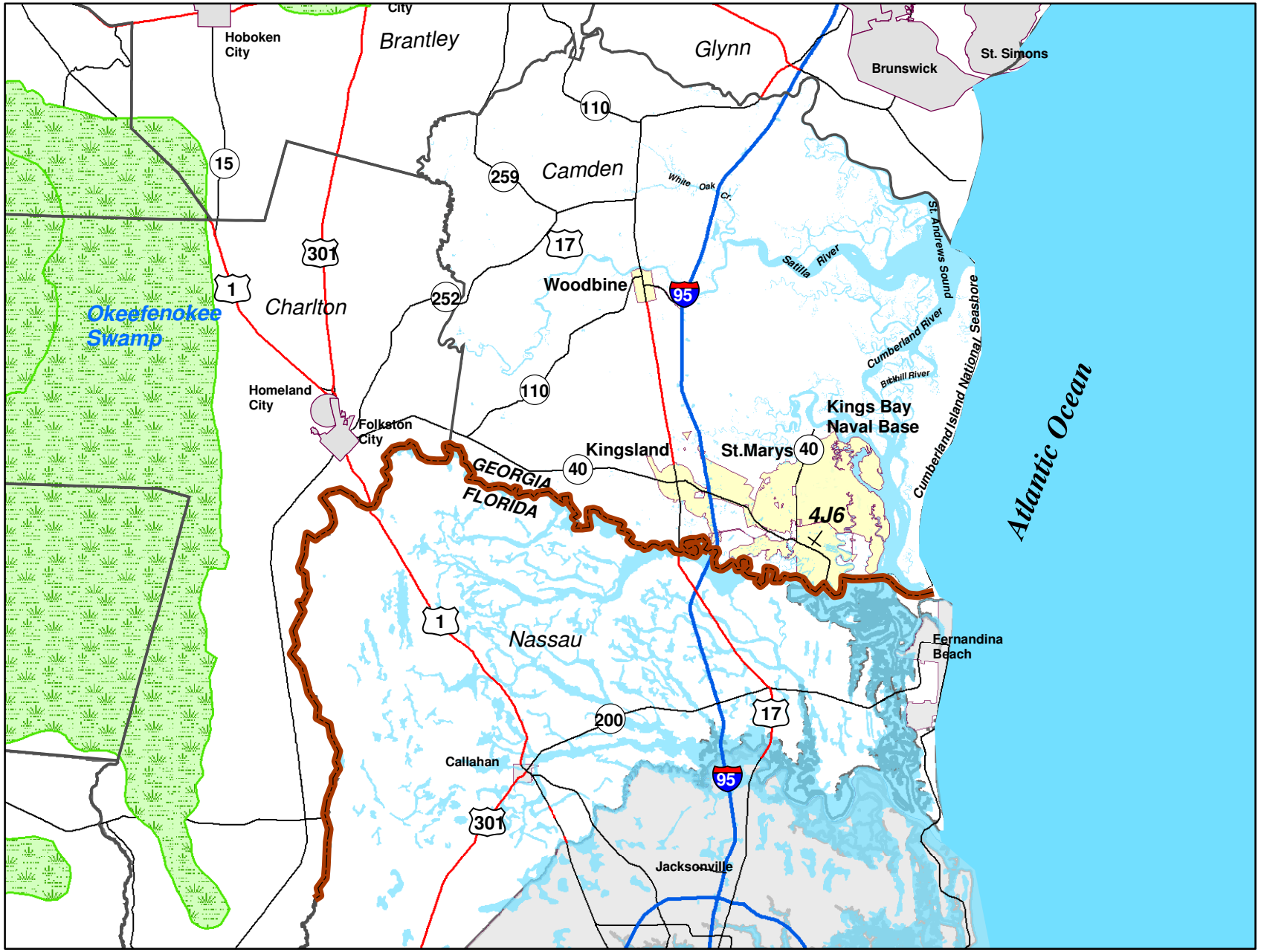
1.0 INTRODUCTION

The St. Marys Airport (4J6 or Airport) is located in the City of St. Marys, Georgia which is situated 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 Airport is located approximately two (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).

In 2005, the City of St. Marys initiated a project to evaluate the feasibility of relocating the Airport to a new site (i.e., an Airport Feasibility and Site Selection Study). Currently, Kings Bay Naval Base (Kings Bay) is located approximately two miles north of the Airport, and is home of the Strategic Weapons Facility Atlantic (SWFLANT), a missile assembly and production facility, along with Submarine Group Ten. Kings Bay 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[1] be implemented over Kings Bay which not only severely restricts current operations at the Airport, but virtually eliminates any future expansion possibilities. As a result of the implementation of these airspace restrictions it was determined that the Airport cannot fulfill its role in the State or Federal aviation system plan and must be relocated. The purpose of this report is to document the environmental impacts associated with the development of those sites identified in the Airport Feasibility and Site Selection Study as possible candidates for construction of a replacement airport.

Federal participation in the relocation of the Airport requires environmental approval pursuant to the National Environmental Policy Act (NEPA), in the form of an Environmental Assessment. An Environmental Assessment (EA) is a document that assesses and evaluates the effects of a proposed project on the surrounding natural, social, human and economic environments. This EA has been prepared in accordance with the requirements of the Airport and Airways Improvement Act of 1982, the Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* (2006), and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, dated June 2004.

[1] Federal Register Vol. 69, No. 38, the Department of Transportation proposed the establishment of Prohibited Area P-50; Kings Bay, GA



Source: RS&H, 2006

Figure 1.1
LOCATION MAP

Pursuant to the requirements of NEPA, the proponent of the project (i.e., the City of St. Marys) must develop a Proposed Action which is the subject of the formal environmental analysis. The development of a Replacement St. Marys Airport is the subject of the Proposed Action of this EA, and in order to meet current and future aviation demand, must include the following elements:

- The acquisition of approximately 525 acres of property for the relocation of the Airport.
- Construction of a primary runway of up to 6,000 feet in length.
- Construction of a full parallel taxiway to the primary runway.
- Construction of a vehicular access road to the Airport.
- Construction of an aircraft apron.
- Construction of aircraft hangars.
- Construction of a General Aviation Terminal.
- Construction of an aviation fuel farm.
- Utility relocations and service extensions to airport facilities
- Environmental mitigation
- Clearing and grubbing of property
- Installation of NAVAIDS

The intent of this EA is to provide the environmental documentation necessary to assist Local, State and Federal officials in evaluating the proposed development. A full range of alternatives developed to implement the Proposed Action will be evaluated in order to identify a preferred alternative that meets the project's purpose and need. This analysis will also include identification of measures to minimize and mitigate potential adverse environmental impacts, and finding by the responsible Federal agency. This Chapter provides information about the EA process and also includes a summary of the current Airport's role and history, provides current data about the Airport's users, and reviews national trends and information concerning future aviation demand associated with the Airport.

1.1 THE ENVIRONMENTAL ASSESSMENT

1.1.1 The Purpose of the Environmental Assessment

In recognizing the importance of protecting the environment, the U.S. Congress enacted the National Environmental Policy Act of 1969 to require Federal agencies to make decisions that are based on a thorough understanding of the environmental consequences associated with certain "federal actions" and take steps that protect, restore and enhance the environment. NEPA requires Federal agencies to treat environmental impact as a primary criterion in evaluating a Proposed Action. It also requires Federal agencies to analyze and consider alternatives to, and the environmental impacts of, Proposed Actions; to disclose and consider mitigation for those impacts; and to provide interested parties with an opportunity to participate in the environmental review process. Federal agencies must also consider a "No Build" Alternative. Furthermore, NEPA requires Federal agencies to consider a Proposed Action's environmental consequences, along with the agency's statutory mission and technical factors related to their areas of expertise. The lead agency for the review of this EA is the Federal Aviation Administration.

1.1.2 Federal Aviation Administration's Environmental Responsibilities

The Federal Aviation Administration (FAA) is responsible for analyzing the environmental impacts and consequences of proposed developments involving airports, and ultimately for approving or disapproving, in the form of a "Federal Action," the associated environmental documents. An Environmental Assessment is being prepared by the City of St Marys, Georgia (referred in this report as the City) for review by the FAA in compliance with NEPA and in accordance with the requirements of FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*, FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions,* and Council of Environmental Quality (CEQ) Regulations (40 CFR 1500-1508) that implement the procedural provisions of NEPA. The purpose of the EA is to consider the environmental effects of the Proposed Action and alternatives to the Proposed Action and to provide decision-makers and the public with sufficient information to make informed decisions in planning for future actions.

In April 2005, the City completed an Airport Feasibility and Site Selection Study which examined the options to relocate the Airport due to its close proximity to the Kings Bay Naval Base and the impact of the airspace restrictions surrounding the base. Pursuant to the findings of this Study, it was determined that it was feasible to relocate the current Airport facility and a total of nine (9) relocation sites were identified for further evaluation. Upon review of the nine (9) sites, the Technical Advisory Committee and Community Advisory Committee (established as part of the Airport Feasibility and Site Selection Study process) recommended that three (3) of the nine (9) sites be brought forward for additional detailed analysis. As part of the Study those three (3) sites received further in-depth review and a final site was selected as the preferred alternative by consensus of both Committees. This EA studies and documents the potential environmental impacts of the final three (3) sites identified in the Airport Feasibility Study and Site Selection Study, along with maintaining the status quo at the current Airport site, which for purposes of this EA, is considered the No-Build Alternative.

1.1.3 Document Organization

Documentation of the EA within this report contains the text of analysis and associated exhibits. The format of this document is as follows:

Chapter 1, Introduction – provides information about the EA and why it is being prepared along with the Airport's role, Airport history, current data about the Airport, national trends and information about future aviation demand forecasts.

Chapter 2, Purpose and Need – provides a discussion of the Purpose and Need of the Proposed Action.

Chapter 3, Alternatives – provides a discussion of the alternatives analyzed as part of the environmental process. Unlike many EAs, a matrix for determining which alternatives meet the Purpose and Need and which alternatives will or will not be retained for detailed analysis in Chapter 5, Environmental Consequences, of this EA will not be prepared, since all three (3) potential sites along with the No-Build Alternative will be carried forward for analysis in Chapter 5.

Chapter 4, Affected Environment – describes the existing environmental conditions in those areas that encompass each site alternative.

Chapter 5, Environmental Consequences – describes the impacts of the various development alternatives on select environmental resource categories.
Chapter 6, Public Involvement – describes the public involvement process associated with the development of this EA.

References – provides a list of the references used in the preparation of this EA.

List of Abbreviations, Acronyms, and Glossary – provides a list of the abbreviations, acronyms, and glossary of terms used in this EA.

Technical Appendices – contains various appendices to this EA related to technical information, coordination, and other reference materials. The following technical appendices are included:

Appendix A - Aviation Activity Forecast derived from the Feasibility Study

Appendix B - Runway Length Requirements and Design Standards

Appendix C – Airport Layout/Facility Requirements

Appendix D – Air Quality Analysis

Appendix E – Cultural Resource Survey

Appendix F – Agency Coordination Letters

Appendix G – Public Input

Appendix H - List of Preparers

Appendix I - Archeological Resource Survey Report for Site 1

1.1.4 Cooperating Agency

The FAA has not required nor has any other agency requested to be a cooperating agency on this project. However, coordination with Federal, State, and local agencies will continue to be an integral part of the EA process.

1.2 BACKGROUND

1.2.1 History

As previously mentioned and depicted in **Figure 1.1**, the St. Marys Airport is located approximately two miles north of the central business district of the City. The City is located in the southeast quadrant of Camden County, which covers an area of approximately 659 square miles in southeast Georgia. The County is approximately 300 miles southeast of Atlanta, Georgia, 109 miles south of Savannah, Georgia, and 42 miles north of Jacksonville, Florida, see **Figure 1.2**.

Source: ESRI (2006)

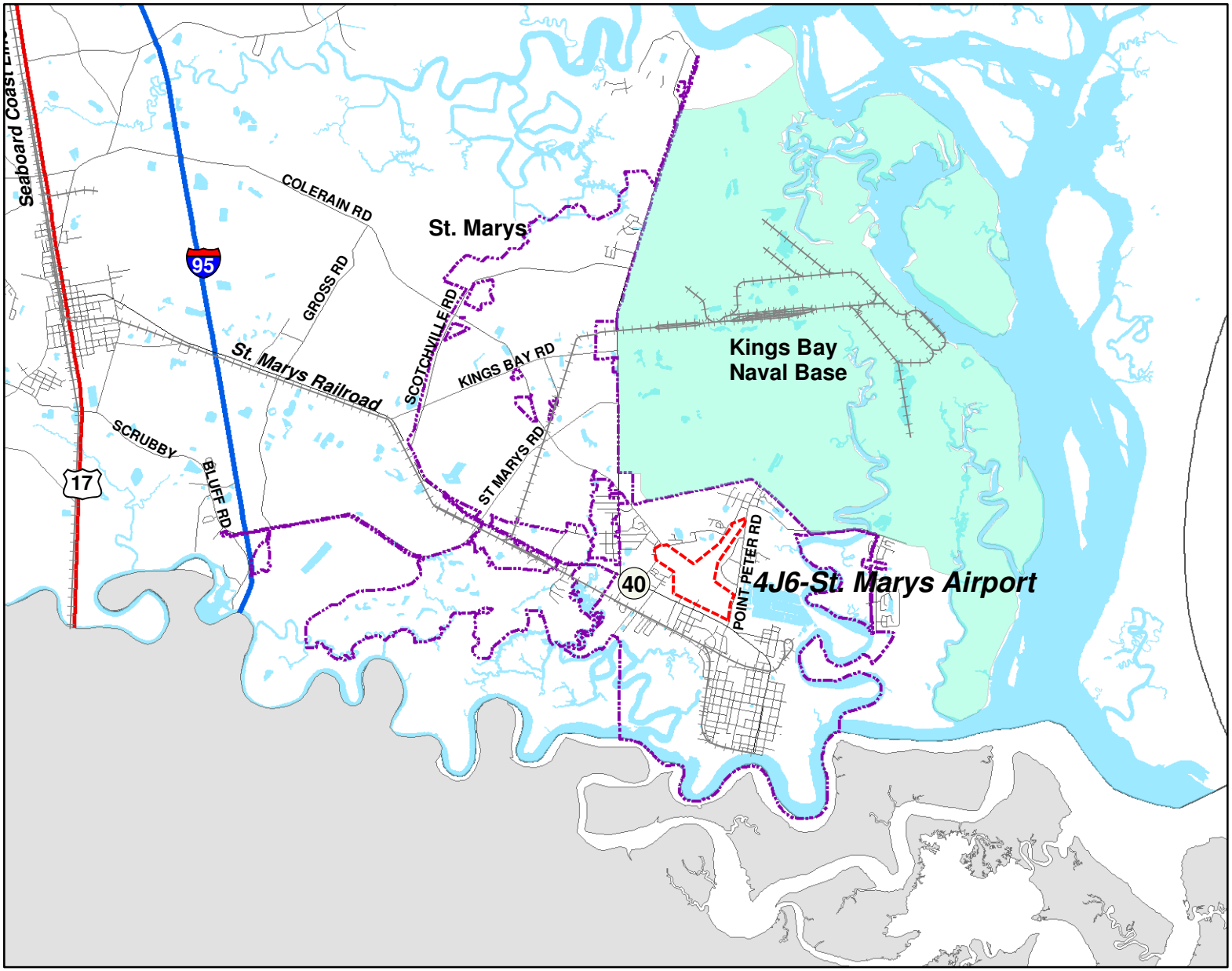
Figure 1.2
LOCATION MAP

The Airport was constructed and operated by the Federal Government on land owned by the City and developed by the federal government as a Navy flight training facility during World War II. The original Airport construction consisted of three runways in a triangle configuration co-located on a 462-acre parcel of property. The Airport now encompasses approximately 286 acres of property as shown in **Figure 1.3**. At the conclusion of World War II, ownership of the improvements and operation of the Airport was relinquished to the City and all Federal Government leases were terminated. A portion of the acreage was deemed surplus for Airport needs and was subsequently released by the FAA.

Immediately after the terrorist attacks of September 11, 2001, the Airport was shut down for three (3) months and the only instrument approach serving the facility was eliminated. Once the Airport was re-opened, temporary flight restrictions were implemented over Kings Bay, which severely impaired aircraft arriving and departing the St. Marys Airport. Subsequently the Pentagon made a formal request to turn the Temporary Flight Restrictions (TFR) into a permanent Prohibited Area, which has recently been formally approved. The following Notice to Airman (NOTAM) language warns pilots about the airspace around St. Marys Airport.

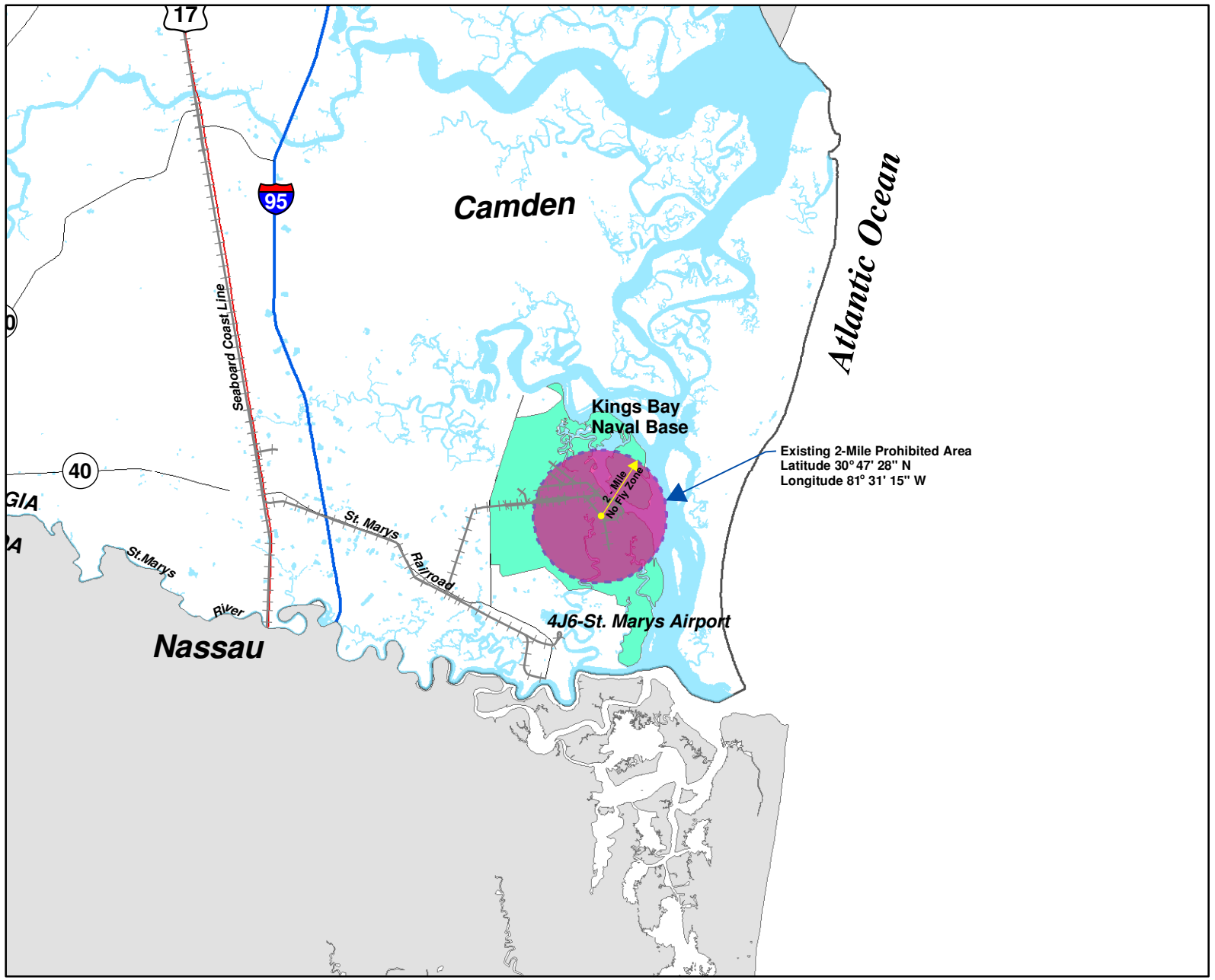
> **5/9063** ZJX GA.. FLIGHT RESTRICTIONS ST. MARYS, GA. THIS IS A MODIFICATION OF INFORMATION PREVIOUSLY ISSUED IN FDC NOTAM 1/2887 TO UPDATE THE NAVIGATION AID REFERENCE. EFFECTIVE IMMEDIATELY UNTIL FURTHER NOTICE. PURSUANT TO 14 CFR SECTION 99.7 SPECIAL SECURITY INSTRUCTIONS. FLIGHT RESTRICTIONS ARE IN EFFECT DUE TO NATIONAL SECURITY. EXCEPT FOR RELIEF AIRCRAFT OPERATIONS UNDER DIRECTION OF THE COMMANDER, KINGS BAY NAVAL BASE. ALL OPERATIONS ARE PROHIBITED WITHIN THE AIRSPACE FROM THE SURFACE UP TO BUT NOT INCLUDING 3000 FEET MSL WITHIN A 2 NAUTICAL MILE RADIUS OF 3048N/08131W AND THE BRUNSWICK /SSI/ VORTAC 198 DEGREE RADIAL AT 15.5 NAUTICAL MILES. JACKSONVILLE TRACON, 904-741-0767, IS IN CHARGE OF THE OPERATION. MACON /MCN/ THE SYSTEM OPERATIONS SUPPORT CENTER/SOSC PHONE, 202-267-3333, IS THE FAA COORDINATION FACILITY.

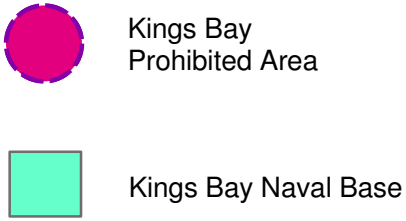
A depiction of the precise limits of the Prohibited Area described above is provided in **Figure 1.4**. The imposition of a Prohibited Area surrounding Kings Bay places severe operational restrictions on the usefulness of St. Marys Airport.

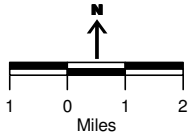


Source: RS&H, 2004

Figure 1.3
ST. MARYS AIRPORT LOCATION







Source: RS&H, 2004

Figure 1.4
KINGS BAY RESTRICTED AIRSPACE

1.2.2 Airport Role

Today, the Airport is owned and operated by the City of St. Marys and occupies 286 acres of land. Several businesses are located on the Airport who conduct and support a variety of operations including: recreational flying, agricultural spraying, corporate/business jet activity, police/law enforcement, forest fire fighting, ultralight activity, and experimental aircraft.

The ultimate goal of the national air transportation system is to provide 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 the development of a National Air 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 the 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 of a city or region. St. Marys Airport is defined as a General Aviation Airport within the NPIAS.

Within the NPIAS several new general aviation airports are also 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 criterion due to the new post September 11, 2001 restrictions placed on the airspace surrounding Kings Bay, and the inability of the Airport to accommodate current and projected GA operations.

The State of Georgia is served by a diverse system of airports that are defined and categorized within the Georgia Aviation System Plan (GASP). In 2001, the Georgia Department of Transportation (GDOT) issued an update to the GASP that provided strategic direction for the continued development of 103 public use airports located in the State of Georgia. 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 aviation 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 personal 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 conform, at a minimum, to the performance recommendations of a Level II facility.

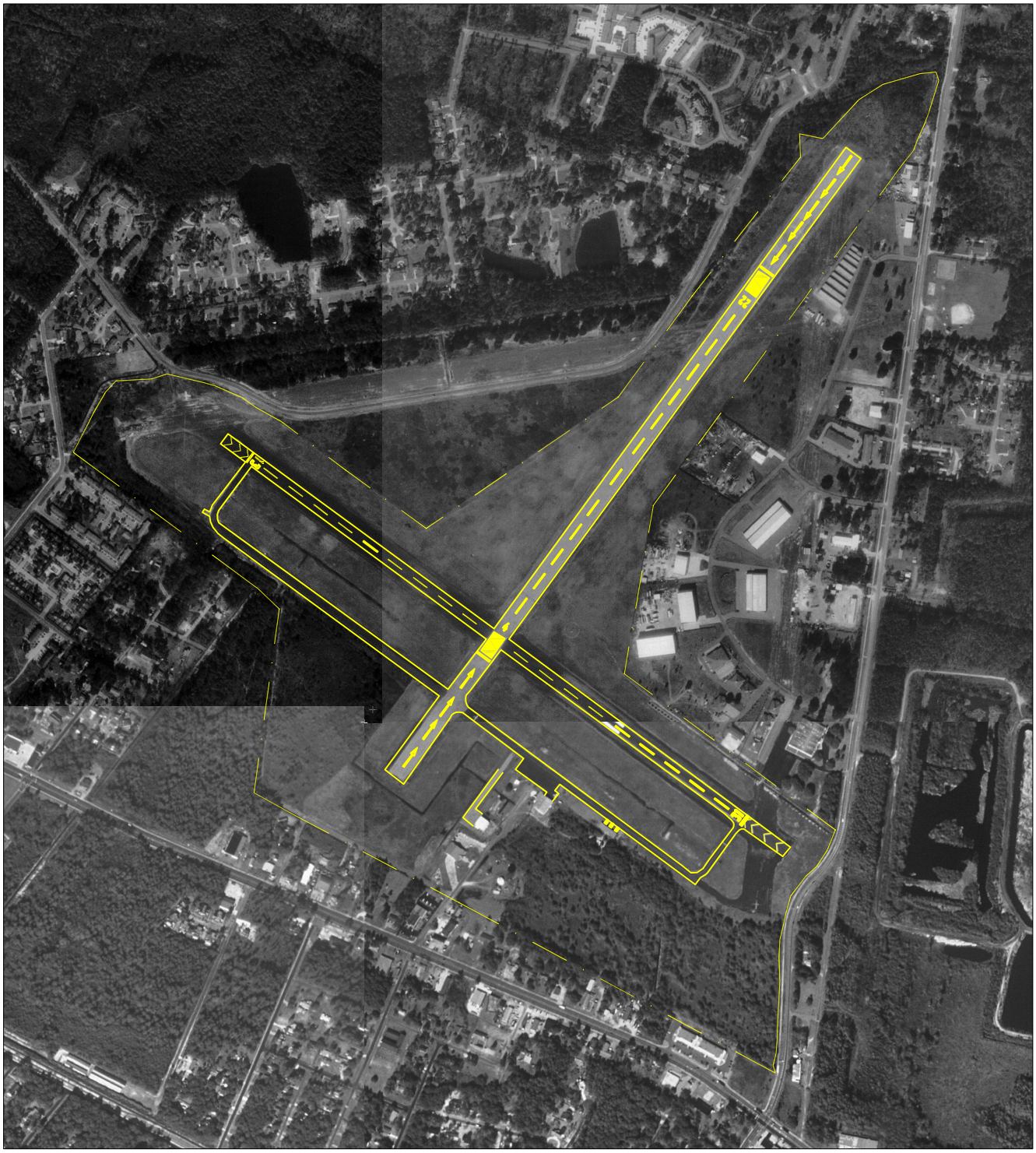
1.2.3 Existing Airport Facilities

The existing infrastructure at the Airport consists of two runways (i.e., Runway 4/22 and 13/31), see **Figure 1.5.** Runway 4/22 measures 5,000' in length and is provided with medium intensity lighting. Runway 13/31 is 4,000' in length and is unlighted. A full length parallel taxiway serves Runway 13/31. Currently, there is no Taxiway lighting. The NAVAIDS consist of a rotating beacon, lighted segmented circle, and a wind cone. The Airport has no approach lighting or weather reporting station. The Airport does have a combined Fixed Base Operator/Terminal building, which offers some ground communications (a public telephone). There are several t-hangar and box hangars located at the airport, in addition to a flight school and sky diving operation. **Table 1-1** also summarizes the Airport's existing facilities.

Table 1-1
ST. MARYS AIRPORT EXISTING FACILITIES

Item	Characteristic
Airport Elevation	24' MSL
Runway 4/22	5,000' x 100'
Runway 13/31	4,000' x 75'
Taxiway	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
Hangar Facilities	Box, T-Hangar

Source: MSE Inc., ALP Report 2002



Source: Georgia State GIS Clearinghouse (2004)

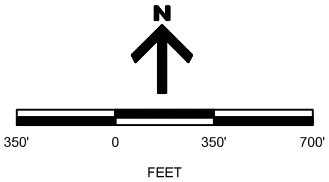


Figure 1.5

EXISTING ST. MARYS AIRPORT

1.3 AVIATION FORECAST SUMMARY

This section provides a summary of the aviation demand forecast that was prepared for the St. Marys Airport by the Georgia Department of Transportation, with further detail provided in **Appendix A**. The primary indicators of activity at a general aviation airport are the number of operations and based aircraft. In this EA, the number of operations are used to evaluate noise and air quality impacts, while based aircraft along with annual operations are used to determine overall facility requirements.

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 this historical data, several different forecasting methodologies (i.e., socioeconomic, trend analysis and market share methodology) were used to project potential future activity levels. A summary of the forecasted activity levels is presented below:

- **Based 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.
- **Fleet Mix**
  - Given the tremendous growth currently being experienced in Camden County and the expressed interest of several developers and other local businesses to utilize a new St. Marys Airport, a four (4) percent annual growth rate for jet activity can be assumed for the new St. Marys Airport.
- **Operations**
  - Using trend analysis as the preferred forecasting methodology, the GASP relied upon the FAA's projections of total annual general aviation hours flown and the national projections of future demand. Annual aircraft operations are expected to grow to 12,522 by 2006, 12,870 in 2011, and 13,596 by 2021.

Should a proposed replacement St. Marys Airport become a reality, actual demand may in fact exceed projections due to the possible elimination of the airspace restrictions which currently constrain the St. Marys Airport.

1.4 RUNWAY LENGTH ANALYSIS

The physical layout of the Airport, current and projected aircraft fleet mix, and the operating requirements of the design (or critical) aircraft typically dictate runway length requirements. The FAA's Airport Design Microcomputer Program was used as an initial screening tool to determine general runway length requirements for the replacement St. Marys Airport. The second method used to calculate runway length is through the use of actual aircraft performance data for the airport's "critical" or "design" aircraft, as recommended by FAA Advisory Circular 150/5325-4B *Runway Length Requirements for Airport Design*. **Appendix B** provides a detailed runway length analysis. The following is a summary this analysis used to derive a recommended runway length.

The design aircraft for the current St. Marys Airport is a Beech King Air. Based on the analysis presented in **Appendix B**, the proposed design aircraft for the replacement airport is a Gulfstream V. In standard conditions, the FAA's recommended takeoff field length for the G-V (does not encompass all aircraft over 60,000 lbs.) is 6,112 ft. It is recommended that the proposed replacement airport provide a primary runway of at least 6,000 feet in length order to accommodate this "design aircraft."

1.5 DESIGN STANDARDS

Determining the design aircraft is instrumental in establishing an airport's design criteria and in turn, selecting the correct Airport Reference Code for the proposed replacement airport. The design aircraft of an airport is based primarily on the most demanding aircraft with the highest approach speed and longest wingspan, which makes substantial use of the airport on a regular basis. Substantial use has been defined as more than 250 annual departures from the airport. The current St. Marys Airport has been designed for B-II aircraft. Summarized in this section are the design standards recommended for the replacement airport and establishment of the corresponding ARC, with the complete analysis provided in **Appendix B.**

FAA Advisory Circular 150/5300-13, *Airport Design*, identifies a coding system which is used to relate airport design criteria to the operational and physical characteristics of an airport's selected "design" aircraft. This code is known as the Airport Reference Code (ARC). The ARC has two components relating to the airport's "design" aircraft. The first component, depicted by a letter, is the aircraft approach category. The approach category relates to the approach speed of the "design" aircraft. An aircraft's approach speed is based upon 1.3 times the stall speed in the landing configuration at the particular aircraft's maximum certified weight. The second component of the ARC, depicted by a Roman numeral, is the airplane design group (ADG) and relates to airplane wingspan. As identified in the previous section, the Gulfstream V has been selected as the "design" aircraft. The Gulfstream V is a Design Group C-III aircraft, and development of the replacement airport should conform to the standards identified to accommodate C-III aircraft.

1.6 AIRPORT FACILITY REQUIREMENTS

In order for the airport to meet the needs of the State and National System Plans, the replacement airport must have certain aviation facilities available for use. Depicted in **Table 1-2** is a summary of the facility requirements necessary for the replacement airport, with more significant detail provided in **Appendix C**.

Table 1-2
SUMMARY OF FACILITY REQUIREMENTS

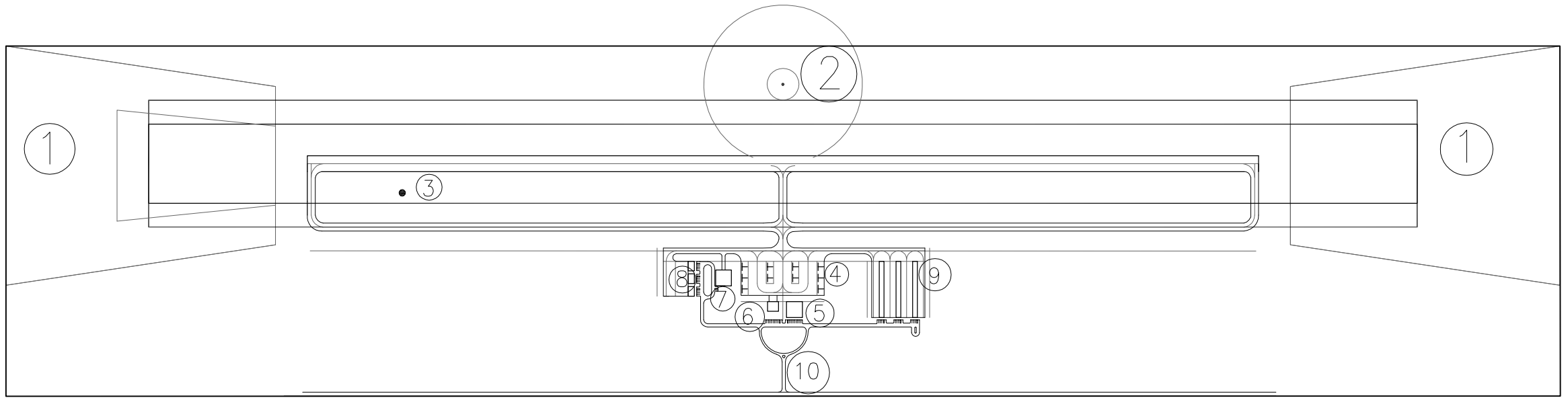
Facility Improvement	Objective
Primary Runway	6,000' x 100"
Parallel Taxiway	Full Length
Runway Lighting	MIRL
Taxiway Lighting	MITL
Land Acquisition	525 acres
PAPI	2
Rotating Beacon	1
Segmented Circle	1
Wind cone	1
Weather	AWOS/ASOS
GCO/Phone	1
T- Hangar Storage	10
Box Hangars	4
Apron	TBD
Auto Spaces	30
Terminal/FBO Space	1,500 sq. ft.
FBO Maintenance Hangar	8,000 sq. ft.
Fuel Farm (100LL/Jet)	2 tanks
Access Road & Infrastructure	As Required

Source: RS&H, 2006

The requirements depicted above will establish an airport that complies with the FAA design requirements for an ARC C-III facility. Overall property acquisition requirements for the Airport were calculated by including the physical landside and airside portions of the facility plus the applicable airspace protection zones off each end of the runway, including transitional surfaces. A total of approximately 525 acres is necessary for development of the replacement Airport, see **Figure 1.6.**

1.7 SUMMARY

This Environmental Assessment is being prepared for the proposed relocation and replacement of the St. Marys Airport. The Airport must be relocated due to its close proximity to the Kings Bay Naval Base, and the current airspace restrictions which have placed significant impediments to future airport operations and growth. The proposed relocation of the Airport will allow it to provide the same aviation services it currently provides, and grow to meet future aviation demand while maintaining compatibility with the surrounding community. Furthermore, the relocation and replacement of the Airport will further enhance its role in the National Plan of Integrated Airport Systems (NPIAS) and the Georgia Aviation System Plan (GASP). The replacement airport will be designed according to FAA standards, and provide the infrastructure necessary to serve the citizens of Camden County well into the 21st Century.



1) 1700' x 1000' x 1510'm RPZ (ALL, NOT LOWER THAN 3/4 MILE VISIBILITY)
2) ASOS WITH CLEAR AREAS (Automated Surface Observing System)
3) WINDSOCK
4) GA APRON
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'x100')
8) CORPORATE HANGAR (2,400 sq. ft., 40'x60')
9) 10 UNIT T-HANGAR
10) ENTRANCE ROAD
11) STATE HIGHWAY

RUNWAY	600,000 sq.ft.
TAXIWAYS	210,525 sq.ft.
APRON	158,450 sq.ft.
ACCESS ROAD	25,050 sq.ft.
T-HANGAR TAXILANES	126,270 sq.ft.
T-HANGAR ACCESS ROAD	21,035 sq.ft.
CORP. HANGAR TAXILANES	56,945 sq.ft.
CORP. HANGAR ACCESS ROAD	26,500 sq.ft.

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ENVIRONMENTAL ASSESSMENT

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED:
REVIEWED BY:
DRAWN BY:
DESIGNED BY:

AEP PROJECT NUMBER
201-5606-002

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SHEET TITLE

SHEET NUMBER
FIGURE 1.6

CHAPTER 2 – PURPOSE AND NEED

2.0 INTRODUCTION

In accordance with Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, this Environmental Assessment (EA) is being prepared by the City of St. Marys in order to meet the requirements of the National Environmental Policy Act (NEPA) of 1969. In this Chapter of the EA, information is provided in order to establish the Purpose and Need for the Proposed Action and to document the requested Federal Action.

2.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

Due to the imposition of Prohibited Airspace associated with the location of the Kings Bay Navy Base, the current St. Marys Airport is being constrained operationally and cannot fulfill its role in the State or Federal aviation system plans. The Proposed Action which is the subject of this EA is the relocation and replacement of the Airport to a location which will enable the facility to not only serve its current and future role, but allow it to grow as demand warrants and maintain compatibility with the surrounding community. Relocation and replacement of the St. Marys Airport has been documented in the Georgia Aviation System Plan and National Plan of Integrated Airport Systems. A description of the major elements associated with implementing the Proposed Action is summarized below:

- Acquisition of approximately 525 acres of property for airport development.
- Associated site clearing and grading for construction of improvements.
- Construction of approximately 1,500 sq. ft. of public use space including restrooms, conference area, and pilot's lounge.
- Construction of a primary runway measuring 6,000 feet in length by 100 feet in width, with associated 20-foot asphalt paved shoulders.
- Construction of a full length parallel taxiway to the primary runway.
- Installation of medium intensity runway lights and medium intensity taxiway lights for the proposed airfield.
- Installation of Runway End Identification Lights (REILs), rotating beacon, Precision Approach Path Indicator (PAPIs), segmented circle, and other navigational aids as required.
- Installation of runway exiting, taxiway hold position signage, and runway/taxiway markings.
- Installation of all required erosion and sedimentation control measures.
- Apply sod and seed to all affected areas.
- Environmental permitting and mitigation, as required.
- Installation and/or relocation of associated utilities.

A graphical depiction of the elements described above (i.e. the proposed Airport Layout Plan) was provided in **Figure 1.6**. The replacement airport will be constructed to provide the necessary infrastructure to support current and future regional aviation demand, meet applicable FAA and State design standards, and be developed to fulfill its current and future role in the State and National Aviation System Plans. Furthermore, the relocated airport will serve current and future population centers, business centers and provide the opportunity for potential intermodal connectivity between rail and highway activities. Finally, the relocated airport will provide an airport system that can offer future expansion possibilities and maintain compatibility with the surrounding community.

The need for the Proposed Action includes providing an airport facility that is unconstrained from local airspace impacts, and to preserve future access for the residents of Southeast Georgia to the State and Federal aviation systems. In addition, development of a new airport will provide continued employment for the local community, and provide a catalyst for future economic development of Camden County. Presently, there are several aviation related businesses located at St. Marys Airport which are candidates for relocation to a replacement facility. Operations at the St. Marys Airport include a variety of activities such as recreational flying, agricultural spraying, corporate/business jets, police/law enforcement, forest fire fighting, ultralights, and experimental aircraft. In general, all activity at the St. Marys Airport has 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 the St. Marys Airport and avoiding potential operational issues associated with the close proximity of the Prohibited Airspace surrounding Kings Bay. Further airspace restrictions and/or the continued diminished aviation activity may result in the closure of several Airport businesses, or potentially the St. Marys Airport itself. The relocation and replacement of the St. Marys Airport is the only option to assure a long-term, viable, airport system providing global access for the residents of Camden County.

2.2 REQUESTED FEDERAL ACTION

The requested Federal Actions associated with this EA are:

- Review and approve the EA for the Replacement of St. Marys Airport, to include the issuance of a Finding of No Significant Impact.
- Unconditional approval of the proposed Airport Layout Plan.
- Possible future Airport Improvement Program (AIP) funding to assist with project implementation.

There are a number of other activities that must be initiated prior to the actual construction of the airport. Those activities include the preparation of the Airport Master Plan, final Airport Layout Plan, property acquisition, environmental permitting and mitigation, and preparation of formal design documents. In addition, the following FAA divisions would be responsible for actions related to this project.

2.2.1 Airway Facilities

The Southern Service Area Technical Operations Division is responsible for any modification to navigation aids/procedures required to support the Proposed Action.

2.2.2 Airports

The Airports Division is responsible for the approval of airport plans, administration of airport development grants, and environmental approvals under the NEPA. This includes approval of the ALP, which documents the Proposed Action and environmental concurrence to support issuance of Federal grant-in aid funds to the City of St. Marys (or other sponsoring agency) for eligible airport development projects.

CHAPTER 3 - ALTERNATIVES ANALYSIS

3.0 INTRODUCTION

In the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA), it states that alternatives are the heart of the environmental process. Those regulations require that the Federal decision-maker perform the following tasks:

- Rigorously explore and objectively evaluate all reasonable alternatives ("reasonable" meaning alternatives that are practicable or feasible from a technical and economic standpoint and common sense), including alternatives not within the jurisdiction of the Federal agency. For alternatives that were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- Devote substantial treatment to each alternative considered in detail, including the No-Build Alternative and the preferred alternative, so that reviewers may evaluate their comparative merits.
- Identify the airport Sponsor's preferred alternative.

This section will examine three airport site alternatives and a no-build alternative. The three sites were selected through a process that involved a Technical Advisory Committee, a Community Advisory Committee, the Airport, the City of St. Marys, and a team of consultants. The selection was the result of findings of the St. Marys Airport Feasibility and Site Selection Study. The Study served as a tool for the evaluation of all reasonable alternatives based on screening/selection criteria established by the Committee participants. The initial screening criterion included the following:

- The replacement airport must fulfill its role in the state and national aviation system plans
- Easy access via interstate and/or state highway system
- Available rail access
- Sufficient available land for airport development
- Minimize acquisition costs
- Minimal environmental impacts
- No airspace/obstruction constraints
- Instrument approach capability
- Compatible with surrounding community
- Close proximity to current and future market, population, and tourism centers
- Available land adjacent to the site for potential commercial/industrial uses
- Supportive of the current and future military mission in Camden County

During the initial screening process these criterion were used to select nine alternative sites for the replacement airport. These nine sites were presented to the Technical Advisory and Community Advisory committees for evaluation. Based on a comprehensive evaluation of the nine site alternatives with respect to the screening criteria discussed above, three final sites were selected for more detailed evaluation and analysis. Upon the selection of the three alternate sites by the Committees, a more in-depth analysis of each of the three sites was conducted in order to select a preferred alternative.

In addition to the criteria discussed above, the following criteria were employed during this final screening:

- Financial feasibility and overall costs associated with development of each site alternative.
- Specific potential environmental impacts associated with each site
- Availability of land for development

A preferred alternative (which for reasons described below is also the only practicable alternative) was then chosen based on the established evaluation criteria and is discussed at the end of this Chapter. However, during the scoping process for preparation of this EA it was decided that all three alternatives should receive equal weight throughout the environmental analysis. Therefore, all three build alternatives, as well as the no-build alternative, will be evaluated fully throughout all Chapters of this document.

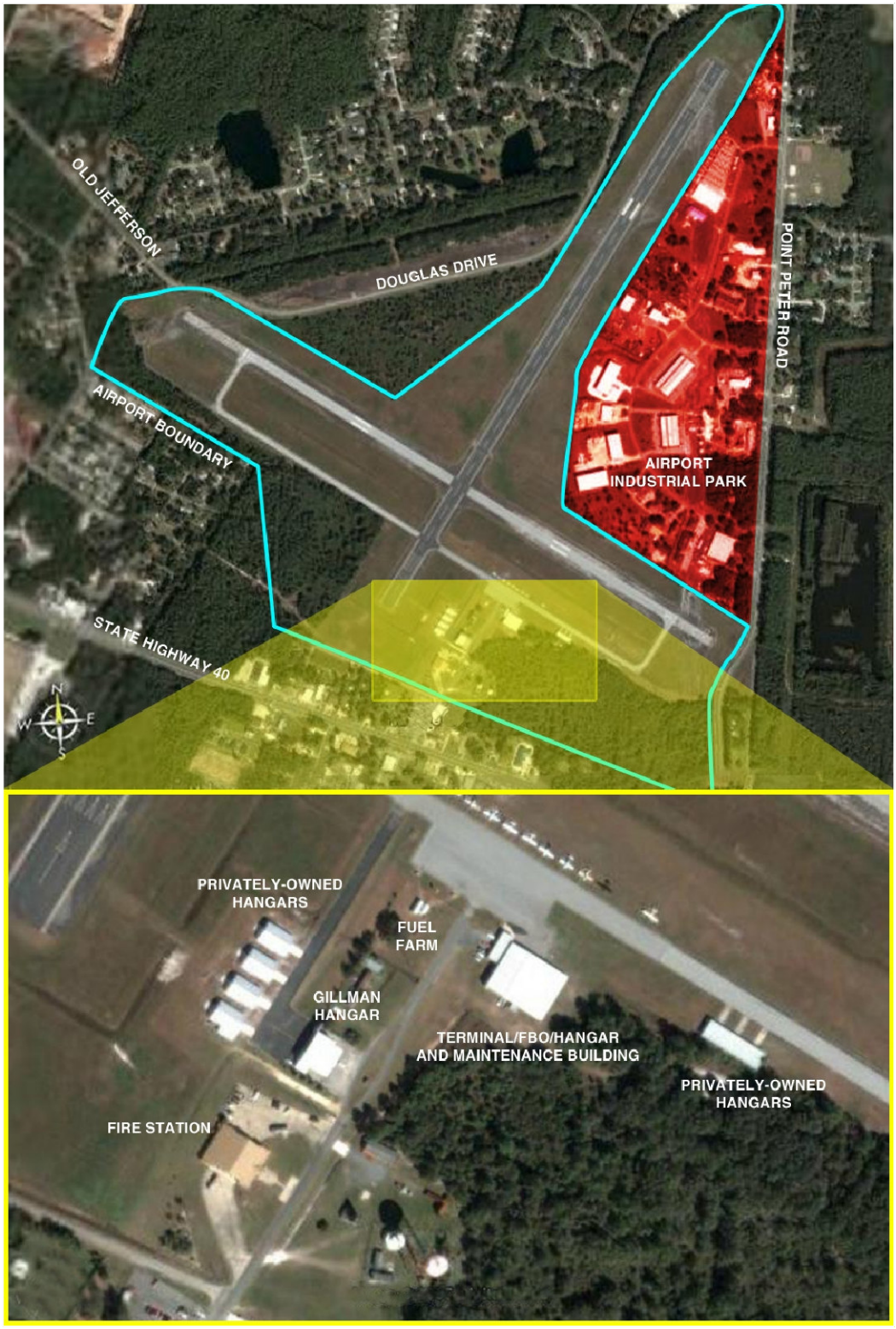
3.1 NO-BUILD ALTERNATIVE

The No-Build alternative proposes to maintain the infrastructure of the St. Marys Airport at the current location, see **Figure 3.1.** The Airport is currently classified as a Level II facility in the Georgia Aviation System Plan (GASP). The attributes and role of a Level II facility are outlined in the GASP and the Airport is currently unable to fulfill this role due to local airspace restrictions, encroachment by development around the Airport, and various obstructions that penetrate the arrival and departure corridors. The closest alternate GASP Level II airport is McKinnon St. Simons Airport. However, a one-hour drive is required to reach the airport from the existing St. Marys Airport and general service area, see **Table 3.1**. This is not consistent with GASP's target coverage of having a Level II airport within 30 minutes of the majority of the State of Georgia's land area.

The closest commercial service airport, Jacksonville International Airport, is located in the State of Florida, 39 minutes of drive time away from the current St. Marys Airport. The closest general aviation airport is the Fernandina Beach Municipal Airport in the State of Florida. This airport would likely be considered a GASP Level II airport considering its facilities and 5,000 ft. runways. However, this airport is also greater than a 30 minute drive away from the current St. Marys location, and cannot provide sufficient service area geographical coverage for the State of Georgia. For the above reasons, the GASP has recommended that the existing St. Marys Airport be replaced and relocated to a more compatible and appropriate location. Additionally, the National Plan of Integrated Airport Systems (NPIAS) proposes several new general aviation airports, one of which is a replacement St. Marys Airport.

While aviation activity has already decreased in recent years due to the airspace restrictions associated with Kings Bay Naval Base, a further decrease in activity and possibly eventual closure of the Airport is possible should the No-Build alternative be chosen. This will certainly result in negative economic impacts to the region as general aviation does serve a transportation purpose and provide significant economic benefits to the local and surrounding communities. The St. Marys Airport contributes more than $5.9 million in annual expenditures locally, $1.5 million in income for the local community, and the employment of 68 full-time employees at Airport related businesses.

The Purpose and Need of this project are not satisfied by the No-Build alternative. However, in order to meet NEPA's requirements that all reasonable and prudent alternatives have been included, it shall be evaluated throughout the EA for comparison purposes with other alternatives.



Source: RS&H, 2005

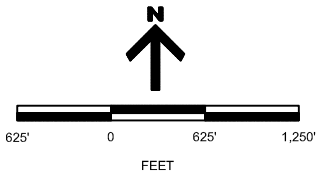


Figure 3.1

Existing Airport Facilities

Table 3-1
DISTANCES TO OTHER EXISTING AIRPORTS IN THE AREA

City, County, State	Airport	Approximate Driving Distance (Miles)	Approximate Driving Time (Min.)	GASP Level
Jacksonville, Duval, FL	Jacksonville Intl.	30	39	N/A
Fernandina Beach, Nassau, FL	Fernandina Beach Municipal	31	45	N/A
Folkston, Charlton, GA	Davis Field	33	58	I
Brunswick, Glynn, GA	Brunswick Golden Isles	51	65	III
Brunswick, Glynn, GA	McKinnon St. Simons	50	65	II
Jekyll Island, Glynn, GA	Jekyll Island	47	65	I
Nahunta, Brantley, GA	Brantley County	56	75	I

Source: 2005 Rand McNally & Company, Georgia Aviation System Plan (GASP)

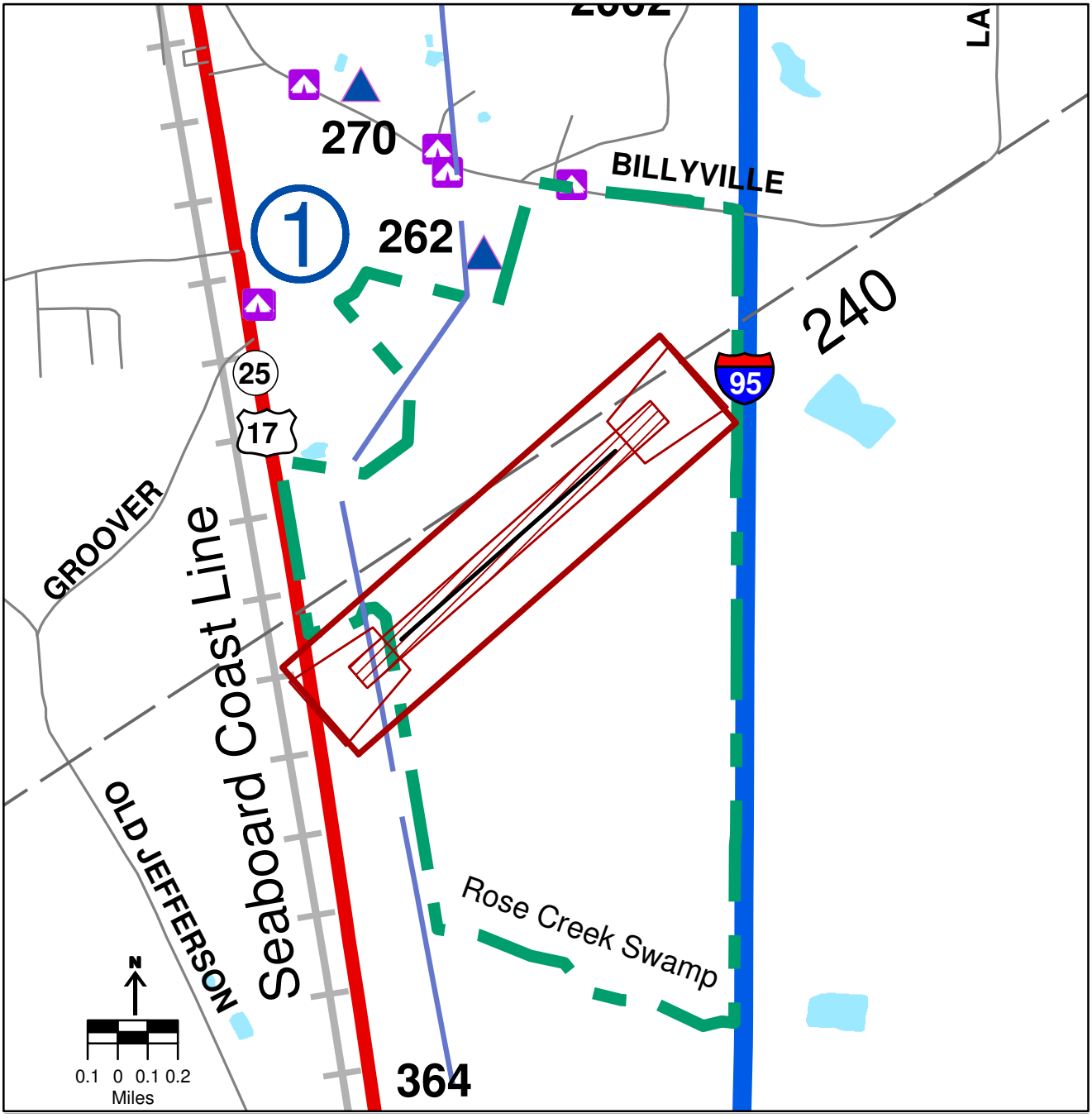
3.2 BUILD ALTERNATIVES

This section outlines the three alternate sites for the proposed relocation of the St. Marys Airport. These three sites are a result of the findings of the Airport Feasibility and Site Selection Study commissioned by the City of St. Marys, and provide options for the establishment of a GASP Level II replacement airport located in Camden County.

3.2.1 Site 1

Site 1 is located approximately three (3) 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 future interchange at Billyville Road. The Site is also approximately one-quarter mile east of potential rail access via the Seaboard Coast Line.

Site 1 encompasses an area of approximately 1,800 acres in total, although only approximately 525 acres of property are needed to construct the replacement airport. Due to the size of the Site, numerous airfield configurations were evaluated in an effort to minimize and avoid the potential for environmental impacts. The portion of land at Site 1 that meets the airspace and operational requirements for the replacement airport, and offers the least environmental impact is depicted in **Figure 3.2**. 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. The development of an airport in the location of Site 1 will not significantly conflict with the surrounding land uses, but due to the permitted uses within the Planned Development district, may require partial re-zoning to eliminate the possibility of future incompatible residential development. In addition, there is a high voltage power line that traverses the property from north to south that will require relocation.



Source: RS&H, (2006)

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- High-Tension Utility Line
- Radial From Brunswick VOR
- Active Railroad Tracks
- Site 1 Parcel Boundary
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 3.2
SITE 1

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. The upland areas of the project site are currently under active silviculture operation. Wetlands at the site are dominated by seasonally flooded, forested systems associated with drainageways.

In order to achieve 95-percent all weather wind coverage using a single runway configuration, an approximate northeast/southwest runway alignment is required. Using this runway alignment as the basis for site planning, a majority of the footprint of the proposed replacement Airport can be accommodated within the boundaries of Site 1, with a small amount of land acquisition necessary for the runway protection zone. This proposed footprint also encompasses the required building areas and entrance road within the boundaries of the Site, which were also located to minimize and avoid potential environmental impacts. The runway 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 and development by the FAA.

As previously mentioned, approximately 525-acres of usable land will be required 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 provide sufficient infrastructure and space for a GASP Level II facility and future long-term expansion. The property owner has indicated a willingness to donate the entire site to the City of St. Marys for the development of the replacement airport, making development of the replacement airport in this location financially feasible.

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 with considerations towards the above-mentioned infrastructure requirements, see **Table 3-2**.

Table 3-2
SITE 1 DEVELOPMENT COSTS

Facility Improvement	Objective	Cost
Runway	6,000' x 100'	$ 5,716,500
Taxiway	Full Parallel	3,598,500
Aircraft Parking Apron		1,333,750
T-Hangar Taxilanes		954,750
Corporate Hangar Area Taxiway/Apron		999,750
Airport Access Road & Auto Parking		216,750
T-Hangar Access Road & Auto Parking		110,375
Corporate Access Road & Auto Parking		126,625
Airfield Electrical & NAVAIDS		669,875
Utility Installation & Relocation		7,000,000
Land Acquisition	525 Acres	0
Environmental Mitigation & Permitting	73 Acres	2,920,000
GCO/Phone	1	18,750
10 Unit T-Hangar (3 Each)	36' x 325'	1,125,000
Corporate Hangars (3 Each)	2,400 S.F.	450,000
Terminal Space	4,200 S.F.	787,500
FBO Hangar	10,000 S.F.	625,000
Fuel Farm	AvGas & Jet A	125,000
Total Estimated Cost		$ 26,778,125

Source: RS&H 2006

3.2.2 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.

Site 3 is bordered predominately by pine plantation, with sparse residential and commercial development. Several unpaved trail roads crisscross the Site. The Site is currently a silviculture operation with some cattle grazing, and a large residence is located within the Site's boundaries, as well as a power line that crosses the northeastern end of the Site.

The property referred to as Site 3 is a tract of land significantly larger than 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 3.3**. The land that encompasses the proposed 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. According to the *Official Code of Camden County, Georgia*[2], the development of an airport in the location depicted in Site 3 is not a "permitted use". However, the Code states that an airfield may be constructed within the agriculture-forestry district upon the issuance of a "special permit". In addition, the construction of an airfield will not significantly conflict with surrounding land uses.

The Site is generally characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. The upland areas of Site 3 are currently under active silviculture operation. Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways. Several manmade ponds are also present at the Site.

In order to achieve 95-percent all weather wind coverage using a single runway configuration, an approximate northeast/southwest runway alignment is required. Using this runway alignment as the basis for site planning, the footprint of the proposed replacement Airport can be accommodated within the boundaries of Site 3. This proposed footprint also encompasses the required building areas and entrance road within the boundaries of the Site. 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.

Approximately 525 acres of usable land is required 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. However, the current landowners have expressed an unwillingness to sell any of the property to the City for development of an airport. Likewise, the City and County are both on record opposing the use of eminent domain for the acquisition of property. Therefore, development of Site 3 is not a practicable alternative.

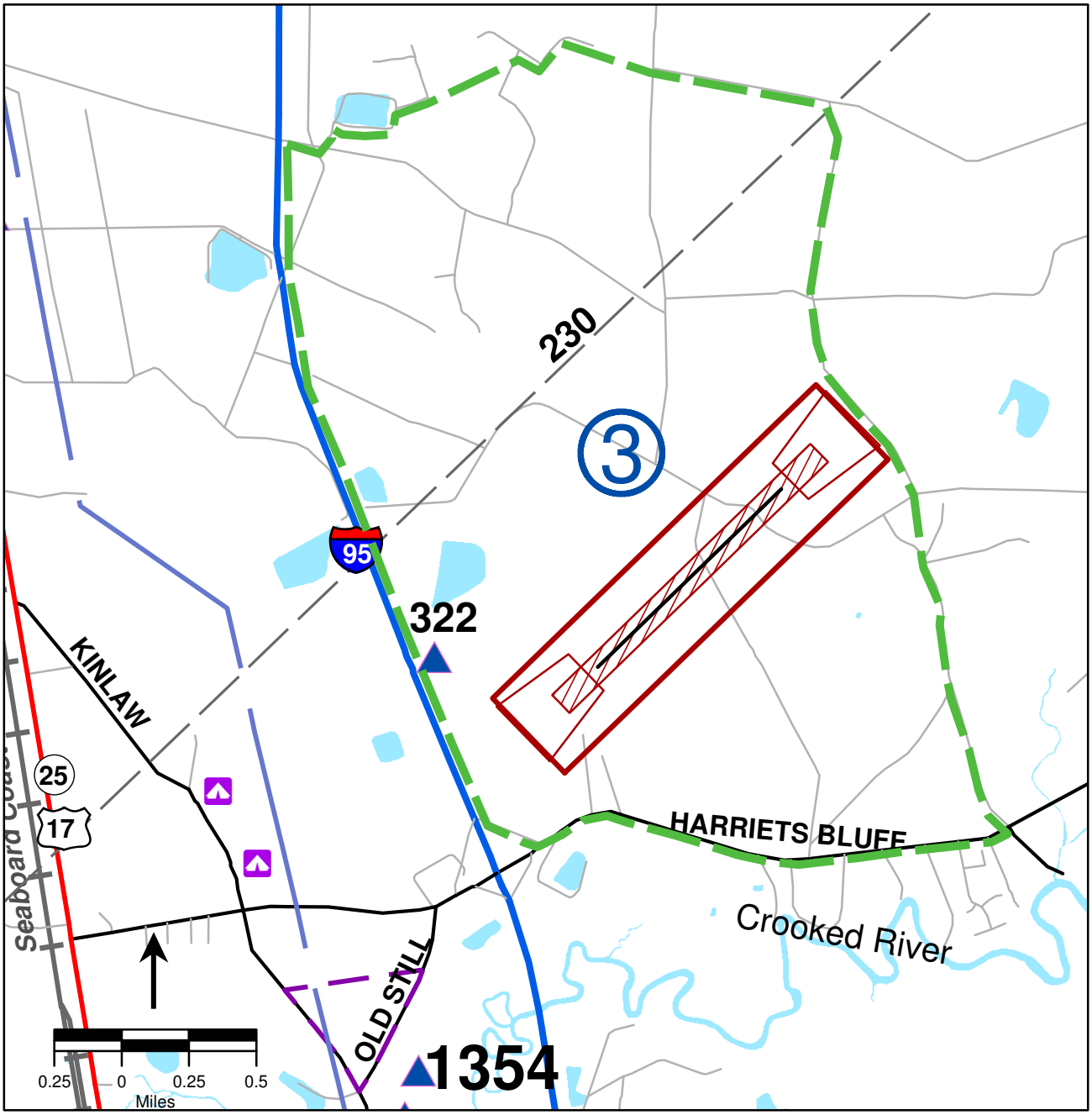
Estimated costs were identified for the proposed replacement airport for St. Marys. These estimated costs have been updated to reflect the anticipated expenditure to develop Site 3, as presented in **Table 3-3**.

[2] The Official Code of Camden County, Georgia was adopted and made effective March 21, 2000.

Table 3-3
SITE 3 DEVELOPMENT COSTS

Facility Improvement	Objective	Cost
Runway	6,000' x 100'	$ 5,716,500
Taxiway	Full Parallel	3,598,500
Aircraft Parking Apron		1,333,750
T-Hangar Taxilanes		954,750
Corporate Hangar Area Taxiway/Apron		999,750
Airport Access Road & Auto Parking		216,750
T-Hangar Access Road & Auto Parking		110,375
Corporate Access Road & Auto Parking		126,625
Airfield Electrical & NAVAIDS		669,875
Utility Installation & Relocation		438,125
Land Acquisition	525 Acres	2,384,695
Environmental Mitigation & Permitting	70 Acres	2,800,000
GCO/Phone	1	18,750
10 Unit T-Hangar (3 Each)	36' x 325'	1,125,000
Corporate Hangars (3 Each)	2,400 S.F.	450,000
Terminal Space	4,200 S.F.	787,500
FBO Hangar	10,000 S.F.	625,000
Fuel Farm	AvGas & Jet A	125,000
Total Estimated Cost		$ 22,480,945

Source: R,S&H 2006



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
- Siite 3 Parcel Boundary
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 3.3
SITE 3

3.2.3 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 Roads. Site 9 is also located approximately 3 miles west of the Seaboard Coast Rail Line**.**

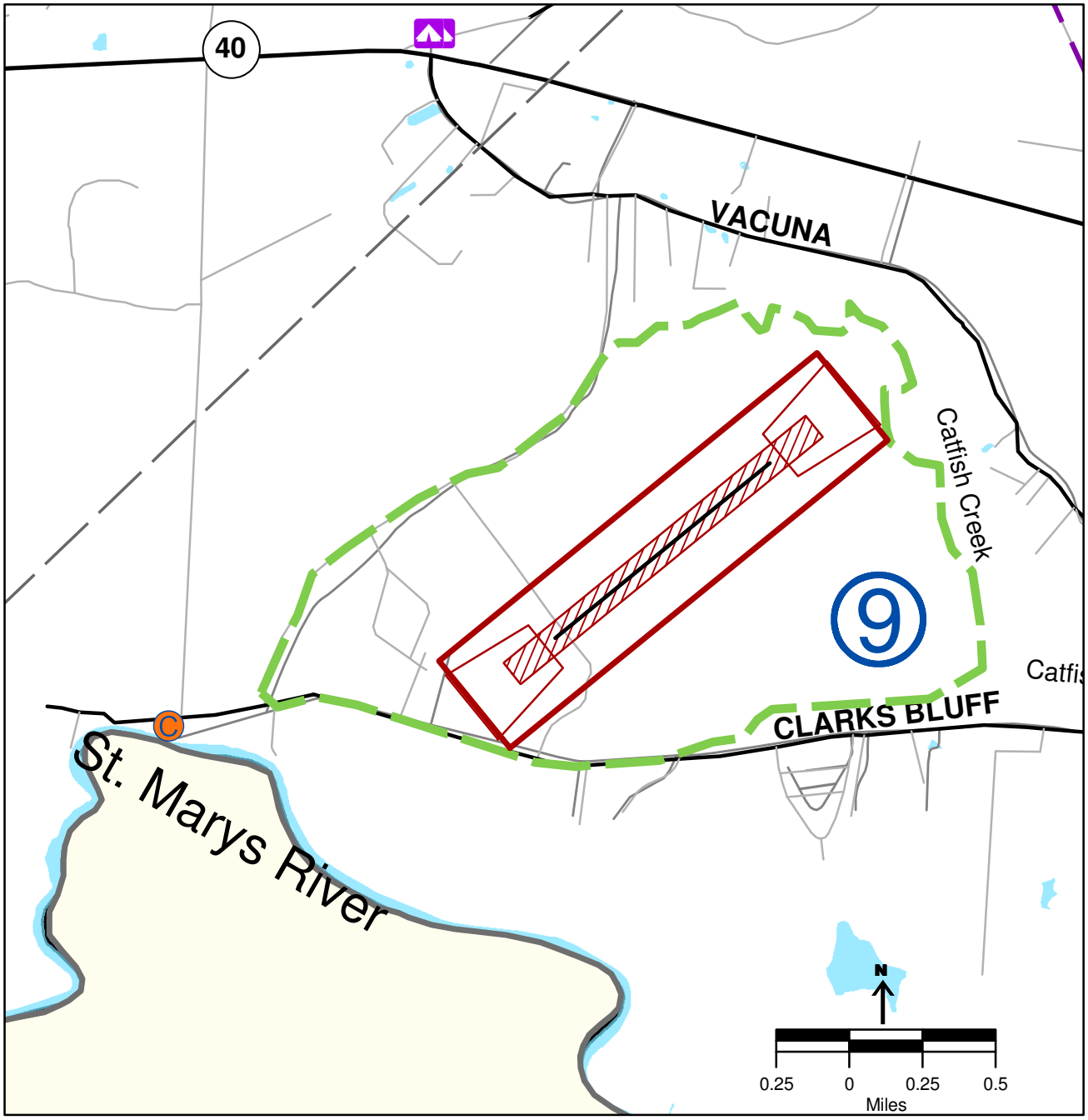
Site 9 is generally bordered by pine plantation and forested wetlands. Sparse residential and commercial development exists in the vicinity of the Site. Several unpaved trail roads cross the Site and locked gates restrict access. The Site is currently a silviculture operation with seasonal game hunting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

The property referred to as Site 9 is a tract of land significantly larger than 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 3.4**. 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**.** According to the *Official Code of Camden County, Georgia*, the development of an airport in the location depicted in Site 9 is not a "permitted use". However, the Code states that an airfield may be constructed within the agriculture-forestry district upon the issuance of a "special permit".

The Site is generally characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainageways. The upland areas of the Site are currently under active silviculture operation. Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways.

Based on a similar analysis conducted for Sites 1 and 3, in order to achieve 95-percent all weather wind coverage using a single runway configuration, an approximate northeast/southwest runway alignment is required. The proposed location of the airfield, building areas and entrance road can be developed entirely within the boundaries of the Site. 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.

In order to develop a replacement airport on Site 9, approximately 525 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. However, the current landowners have expressed an unwillingness to sell any of the property to the City for development of an airport. Likewise, the City and County are both on record opposing the use of eminent domain for the acquisition of property. Therefore, development of Site 9 is not a practicable alternative.



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
- Site 9 Parcel Boundary
- Inactive Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 3.4

SITE 9

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, see Table 3-4.

Table 3-4
SITE 9 DEVELOPMENT COSTS

Facility Improvement	Objective	Cost
Runway	6,000' x 100'	$ 5,716,500
Taxiway	Full Parallel	3,598,500
Aircraft Parking Apron		1,333,750
T-Hangar Taxilanes		954,750
Corporate Hangar Area Taxiway/Apron		999,750
Airport Access Road & Auto Parking		216,750
T-Hangar Access Road & Auto Parking		110,375
Corporate Access Road & Auto Parking		126,625
Airfield Electrical & NAVAIDS		669,875
Utility Installation & Relocation		438,125
Land Acquisition	525 Acres	1,858,875
Environmental Mitigation & Permitting	49 Acres	1,960,000
GCO/Phone	1	18,750
10 Unit T-Hangar (3 Each)	36' x 325'	1,125,000
Corporate Hangars (3 Each)	2,400 S.F.	450,000
Terminal Space	4,200 S.F.	787,500
FBO Hangar	10,000 S.F.	625,000
Fuel Farm	AvGas & Jet A	125,000
Total Estimated Cost		$ 21,115,125

Source: RS&H 2006

3.3 PREFERRED ALTERNATIVE

All three alternatives were evaluated based on their ability to satisfy the project's Purpose and Need. After considerable evaluation concerning the advantages and disadvantages associated with the three site alternatives, the Airport sponsor selected Site 1 as the Preferred Alternative. Site 1 is not only the Sponsor's Preferred Alternative, for the reasons stated below, it is also the only practicable[3] alternative that meets the project's Purpose and Need:

- The proximity of Site 1 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.
- The proximity of Site 1 to possible future rail access.
- The proximity of Site 1 to current and projected population/market centers in Camden County.

[3] Practicable means "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Site 1 is the only alternative available and capable of being developed.

- The proximity of Site 1 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 which makes development of the facility financially feasible.
- The Sponsor's inability to fund from general revenues the local matching share required by state and federal grants that will be used for development. It should be noted that the owner of Site 1 has committed to donating to the Sponsor as much property as necessary for the development of the replacement airport. The value of this donation to the Sponsor will be considered an in-kind contribution towards overall development costs, and should be sufficient to cover any required Sponsor share of federal and state grants.
- Stated objections on the part of the property owners identified for Sites 3 and 9 to sell any property to the City.
- Unwillingness on the part of local units of government to resort to eminent domain proceedings in order to develop the replacement airport.
- A thorough evaluation of potential airfield configuration options within the Site which led to a final configuration that, to the extent possible, minimized and avoided environmental impacts while meeting the project's basic purpose.

Although Site 1 has been selected as the Preferred Alternative, as stated previously, all three site alternatives will be evaluated fully throughout this EA.

CHAPTER 4 – AFFECTED ENVIRONMENT

This Chapter describes the natural and human (i.e., manmade) environment that could be affected by the Proposed Action or any reasonable alternatives. For the purposes of this Environmental Assessment (EA), the Airport environs are considered to include those areas that, as a result of construction activity or airport operations, may be: (1) exposed to significant levels of aircraft noise, (2), affected by air pollutant emissions, (3) affected by pollution or storm water runoff, (4) affected by residential or commercial relocation associated with the development of the replacement airport, or (5) affected by changes in surface transportation patterns. The potentially affected areas to be considered during the EA are those areas encompassed within the boundaries of each site alternative.

4.1 THE EXISTING AIRPORT

The St. Marys Airport was initially constructed and operated by the Federal Government for use as a Naval flight training facility during World War II. The original construction consisted of three runways in a triangle configuration co-located on a 462 acre parcel of land, leased from the City of St. Marys. At the conclusion of World War II, the operation of the Airport was relinquished to the City and all Federal Government leases were terminated. Several tracts of land consisting of 176 acres in total were deemed surplus for Airport needs and subsequently released by the FAA. These parcels were utilized by the City for the construction of an Airport Industrial Park and other uses.

Today, the Airport occupies 286 acres of land as shown in **Figure 4.1**. Several businesses are located on the Airport who conduct a variety of operations to include: recreational flying, agricultural spraying, corporate/business jet activity, police/law enforcement, forest fire fighting, ultralights, and experimental aircraft. A description of the Airport's current location and existing conditions is presented below.

4.1.1 Location

The St. Marys Airport is located approximately two miles north of the central business district of the City of St. Marys. The City is located in the southeast quadrant of Camden County, which covers an area of approximately 659 square miles in southeast Georgia. The County is approximately 300 miles southeast of Atlanta, Georgia, 109 miles south of Savannah, Georgia, and 42 miles north of Jacksonville, Florida, see **Figure 4.2**

The City of St. Marys is nine miles east of Interstate 95 and is home to the Kings Bay Naval Base. The Naval base is home to the Strategic Weapons Facility Atlantic (SWFLANT), a missile assembly and production facility, as well as Submarine Group Ten. The Airport is approximately two miles south of the Kings Bay Naval Base, adjacent to Georgia Highway 40 and Point Peter Road, see **Figure 4.3** Vehicle access to the Airport is achieved via an access road that runs off of Highway 40. State Highway 40 is also the primary route connecting St. Marys to Kingsland. Major improvements are underway to widen Highway 40.

Source: RS&H (2006)

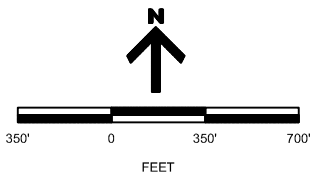
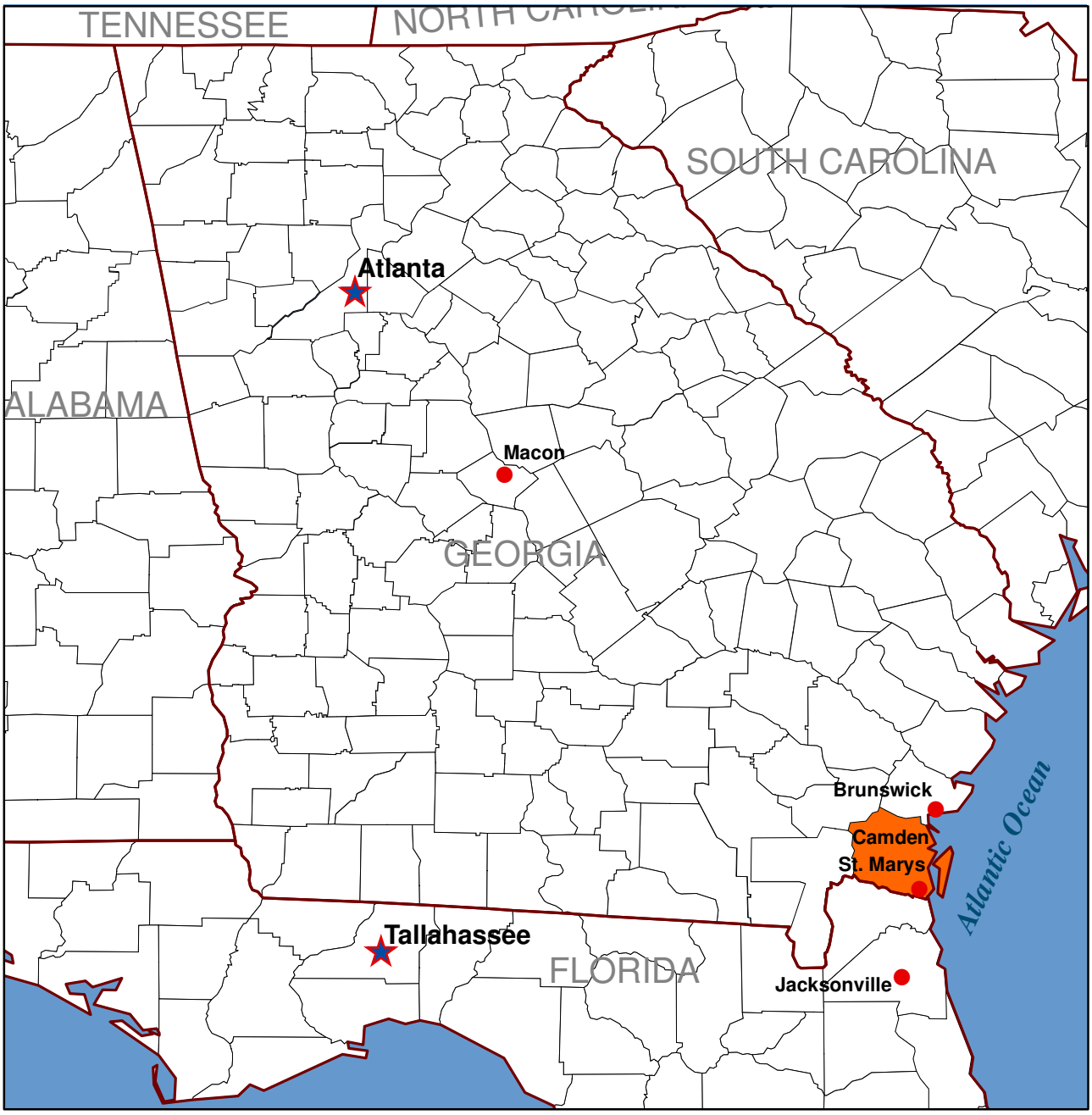


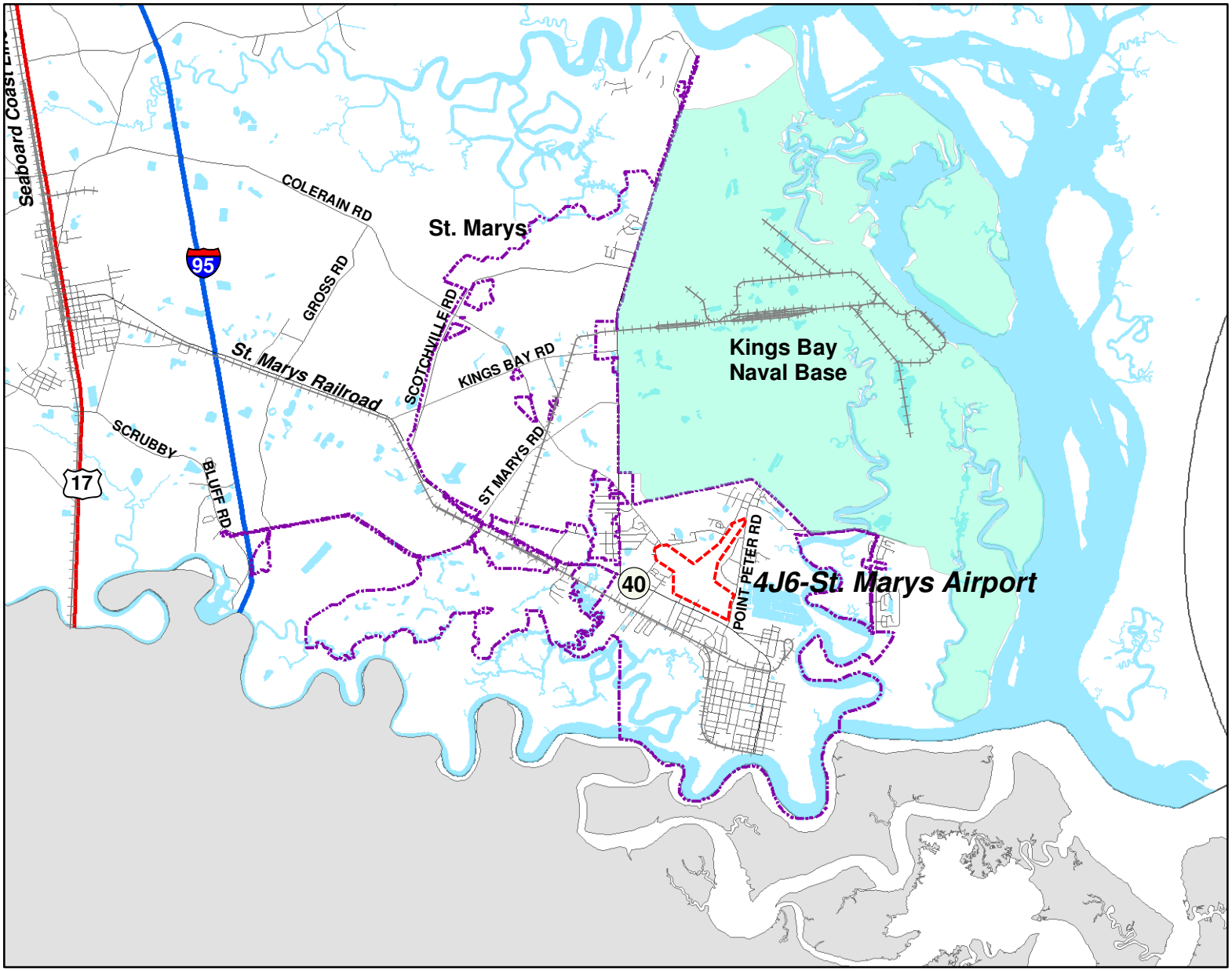
Figure 4.1

EXISTING ST. MARYS AIRPORT



Source: ESRI (2006)

Figure 4.2
LOCATION MAP



Source: RS& H, 2004

Figure 4.3
ST. MARYS AIRPORT LOCATION

4.1.2 Existing Airport Facilities

The following is a summary of the existing airport facility.

4.1.2.1 Airspace

The St. Marys Airport is currently located in close proximity to the Prohibited Airspace associated with the Kings Bay Naval Base. Prohibited Airspace is defined as an area within which the flight of aircraft is prohibited, see **Figure 4.4**

4.1.2.2 Airfield

The airfield facilities include runways, taxiways, airfield lighting, and visual navigational aids. **Figure 4.5** depicts the runway and taxiway system for the Airport. The Airport's runways are configured in a T-configuration. The primary runway is Runway 4/22, which is orientated in a northeast/southwest direction, has an overall length of 5,000 feet and is 100 feet in width. Runway 4/22 is equipped with Medium Intensity Runway Lights (MIRLs) and has non-precision instrument approach markings at each end. This runway's pavement is asphalt and its strength is listed at 20,000 pounds for Single-Wheel-Gear (SWG). The runway, according to FAA criteria, is considered a Basic Transport runway.

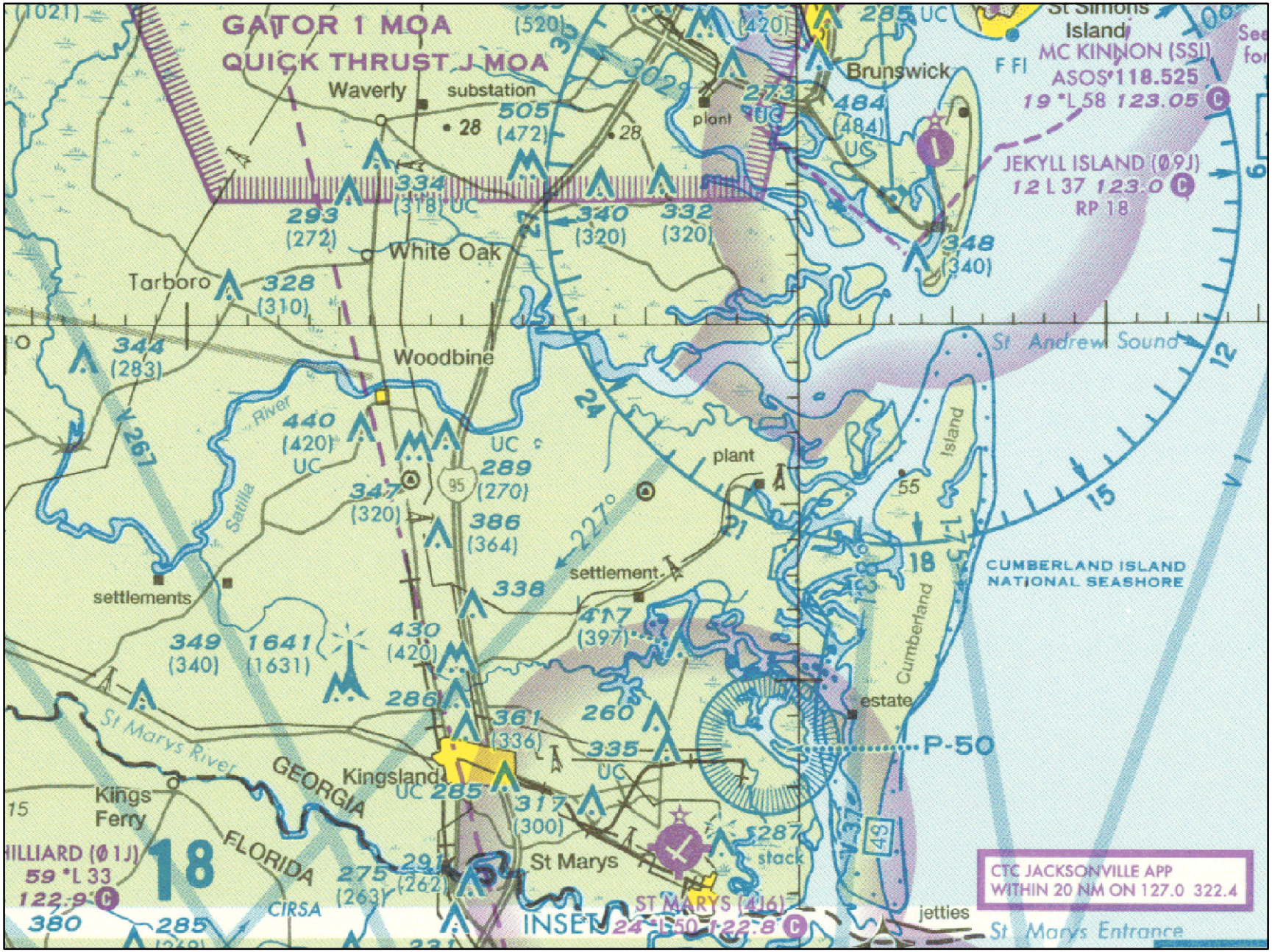
Runway 13/31 is the crosswind runway and is orientated in a northwest/southeast direction with an overall length of 4,000 feet and a width of 75 feet. The runway has a full parallel taxiway on the southwest side. The runway is not lighted and has basic runway markings. The runway's pavement is asphalt and there are no published reports as to the pavement's strength. The runway, according to FAA criteria, is considered a General Utility runway.

The taxiway shown in **Figure 4.5** provides access to and between the runways. The taxiway is constructed of asphalt, is in poor condition, and is not lighted. Approximately 8,900 square yards of parking apron is provided for general aviation. This apron is located north of St. Marys Aviation and is constructed of asphalt.

4.1.2.3 Landside

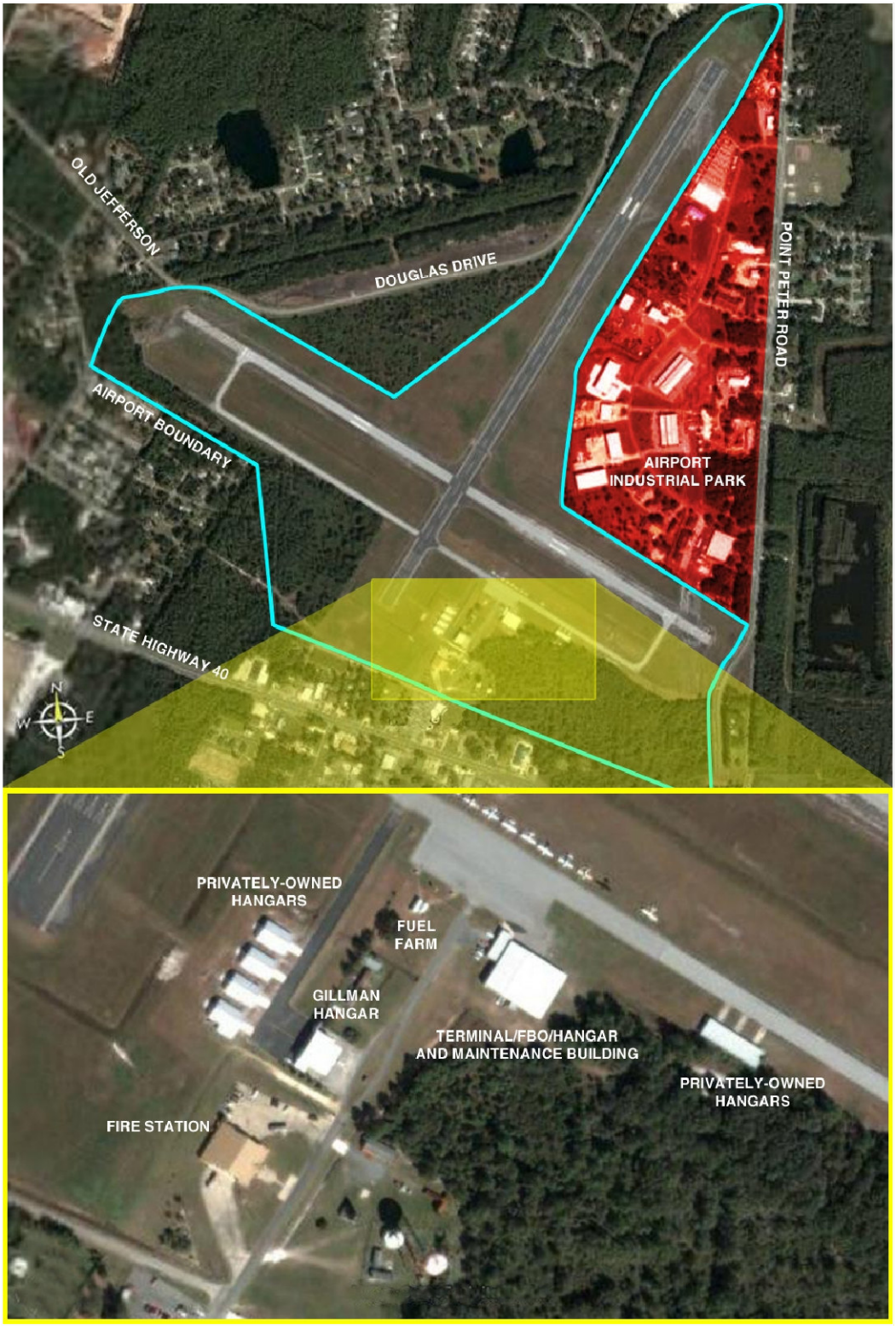
The current landside facilities include three T-hangars that measure 40'x40', located east of St. Marys Aviation. Additionally, there are four larger (40'x60') hangars located southwest of St. Marys Aviation. St. Marys Aviation occupies the FBO/terminal building which measures 20'x50', and is connected to a maintenance hangar that measures 40'x200'. There is a covered extension to the maintenance hangar that measures 50'x100' and does not currently have walls.

The Gillman hangar, which houses the two businesses, is located west of the access road across from the water tower. The Gillman hangar has a connection to the taxiway, apron space, and auto parking. Additionally, a City of St. Marys fire station is located on the west side of the access road, south of the Gillman hangar, see **Figure 4.5**



Source: FAA - Sectional Raster Aeronautical Charts (2006)
Georgia State GIS Clearinghouse (2004)
RS&H, Inc. (2006)

Figure 4.4
VFR SECTIONAL CHART
February 2007



Source: RS&H, 2005

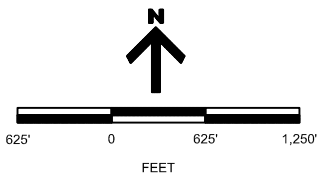


Figure 4.5

Existing Airport Facilities

4.1.2.4 Aviation Support Facilities

To sustain day-to-day activities, the following support facilities are an important part of the Airport: Fixed Base Operations (FBO), Airport fuel facilities, utilities, aircraft storage, and an airport maintenance facility. St. Marys Aviation is the only FBO on the field, and provides fuel, maintenance, parking, tiedowns, aircraft storage, and flight instruction. Additionally, there are three businesses that provide flight instruction, maintenance and hangar services, and skydiving services.

Airport Rescue and Fire Fighting services are provided by the St. Marys Fire Department located just south of the airfield on the Airport's access road.

Auto parking is very limited around the St. Marys Airport. St Marys Aviation has five paved spaces, while the Gillman hangar, which houses the flight school and skydiving business, has eight paved spaces.

4.2 UNITS OF LOCAL GOVERNMENT

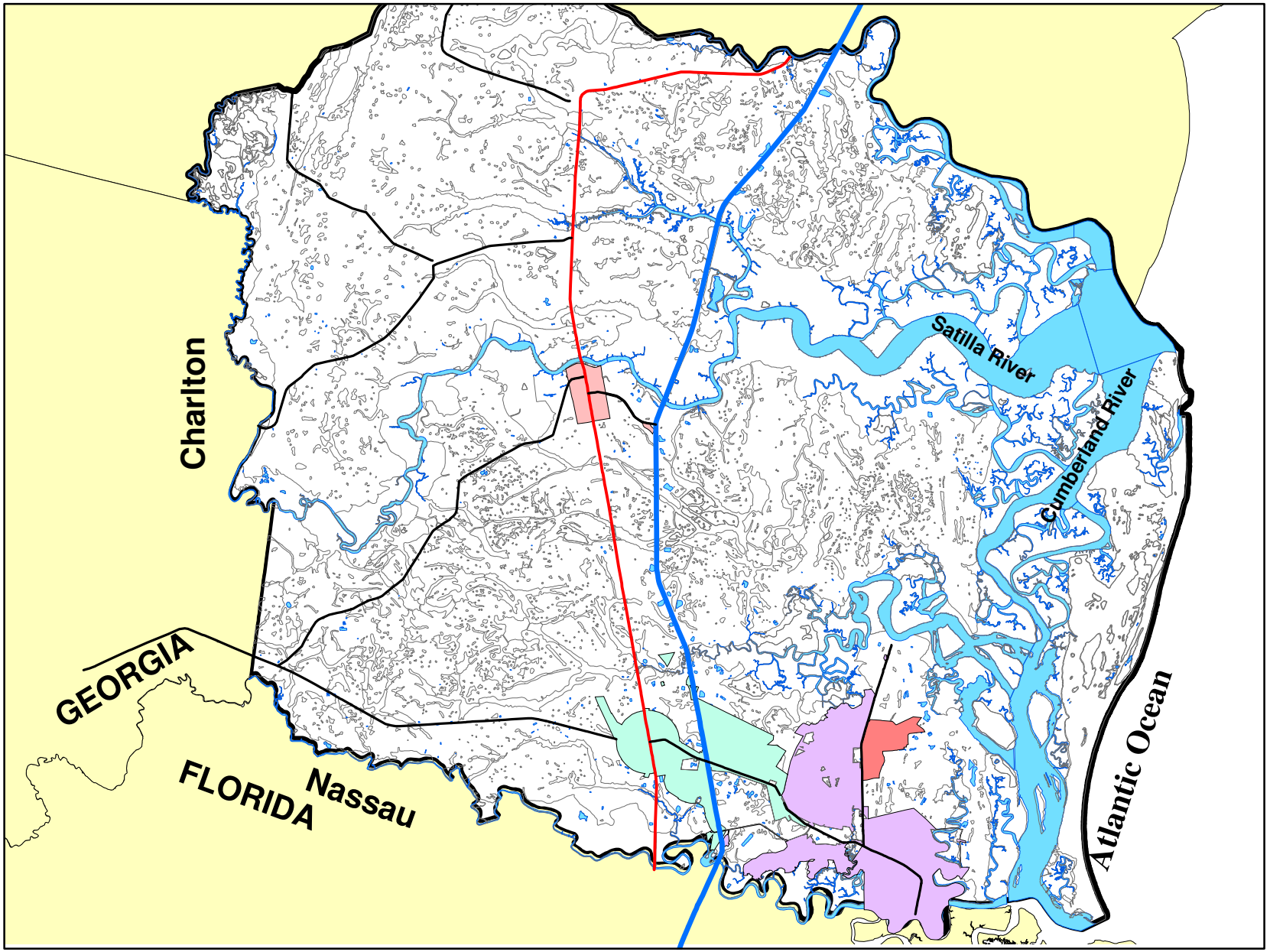
The property for the St. Marys Airport lies within the political jurisdiction of the City of St. Marys. The City of St. Marys has two main divisions of government, legislative and administrative/services. The legislative division is comprised of six Council Members and the Mayor, which are elected to serve two-year terms. The administrative/services division carries out the policies set by the City Council, under the direct day-to-day oversight of the City Manager. While the Airport is owned and operated by the City, an Advisory Board, known as the Airport Authority, provides direction and recommendations to City Council members and the City Manager. The Airport Authority consists of five members that are appointed by the Mayor and City Council to serve four-year terms.

The City of Kingsland, the second largest city in Camden County, is governed by a Mayor and a four-member city council. The City currently does not control a public airport in the area.

The City of Woodbine is a small town in northern Camden County whose administration is made up of a Mayor and four city council members. The City currently does not control a public airport in the area.

The above cities are located within the jurisdiction of Camden County, Georgia, see **Figure 4.6**. The County government is composed of a five member board of commissioners, one from each district. The commissioners each serve a term of four years. In addition, the board appoints a County administrator who oversees and directs the everyday operations of the county; expends county funds within guidelines established by the board; and prepares and manages the county budget. The County does not currently control a public airport within its jurisdiction.

The Camden County Comprehensive Plan recommends that Camden County and the cities of Kingsland, St. Marys, and Woodbine should examine the issue of joint control and responsibility for the Airport.



Source: FGDC (2004)
Georgia State GIS Clearinghouse (2004)
RS&H, Inc. (2006)

Figure 4.6

Camden County Cities

4.3 HUMAN ENVIRONMENT

This section provides an overview of the human environment (i.e., manmade) surrounding the St. Marys Airport and the selected site alternatives. Items addressed in this section include demographics, land-use characteristics, zoning regulations and other major development.

4.3.1 Demographics

The primary service region for the replacement airport is considered to be Camden County. The population and economy of Camden County will generate the majority of demand at the replacement airport. Demographic data are reviewed to illustrate expected continuing growth trends for this region.

4.3.1.1 Population Trends

Population trends are an important indicator of the potential growth in aviation demand for a region. According to the 2000 U.S. Census, Camden County has a population of 43,664. A majority of the Airport's traffic is derived from Camden County alone as surrounding regions have access to other airports. Between the years 1990 to 2000, Camden County's population increased by approximately 45 percent, while the population of the State of Georgia increased by only 26 percent over the same time period.

The projected average annual growth rate of the population within Camden County is expected to outpace the State of Georgia between the years of 2000 and 2025. A forecasted annual growth rate of 2.7 percent is expected in Camden County, while an annual rate of 1.4 percent is forecast for the State of Georgia. Historical and projected population data for both the County and the State is provided in **Table 4-1**.

4.3.1.2 Employment Trends

According to the 2000 Census, the educational, health, and social services industry is the largest employer in Camden County. This is also the case in the City of St. Marys. Historically, the Kings Bay Naval Base and the Gilman Paper Company[4] have served as major employers for the City and County.

The per capita income for Camden County grew by about 40 percent between the years of 1990 and 2000. The per capita income for the State of Georgia grew by about 55 percent over the same time period. Projections show that the per capita income in Camden County will increase another 34 percent by the year 2010, see **Table 4-2**.

[4] Closed in 2001.

Table 4-1
POPULATION FORECASTS

											Avg. Annual Growth Rate	**Forecast Avg. Annual Growth Rate**
Jurisdiction	1980	1985	1990	1995	2000	**2005**	**2010**	**2015**	**2020**	**2025**	1980-2000	**2000-2025**
State of Georgia	5,457,566	5,967,891	6,478,216	7,332,335	8,186,453	**8,868,675**	**9,550,897**	**10,233,118**	**10,233,118**	**11,597,562**	2.14%	**1.40%**
Camden County	13,371	21,769	30,167	36,916	43,664	**51,237**	**58,811**	**66,384**	**73,957**	**81,530**	5.70%	**2.70%**

Source: Georgia Department of Community Affairs

Table 4-2
PER CAPITA PERSONAL INCOME FORECASTS

											Avg. Annual Growth Rate	**Forecasted Avg. Annual Growth Rate**
Jurisdiction	1980	1985	1990	1995	2000	**2005**	**2010**	**2015**	**2020**	**2025**	1980-2000	**2000-2025**
Camden County	$5,330	$8,520	$11,710	$14,078	$16,445	**$19,224**	**$22,003**	**$24,781**	**$27,560**	**$30,339**	7.00%	**2.60%**
City of Kingsland	$5,088	$7,835	$10,582	$12,790	$14,997	**$17,474**	**$19,952**	**$22,429**	**$24,906**	**$27,383**	6.40%	**2.60%**
City of St. Marys	$6,138	$8,664	$11,189	$14,644	$18,099	**$21,089**	**$24,080**	**$27,070**	**$30,060**	**$33,050**	6.20%	**2.60%**
City of Woodbine	$6,111	$8,221	$10,330	$12,020	$13,709	**$15,609**	**$17,508**	**$19,408**	**$21,207**	**$23,207**	4.50%	**2.20%**

Source: Georgia Department of Community Affairs

4.3.2 Land Use Characteristics

This section describes the current land uses and zoning in Camden County. The area of potential effect as it relates to potential land use impacts was defined to be the area that would fall within the 65 DNL (day-night average sound level) noise exposure area for the existing site as well as the three selected alternatives, with sufficient buffer to encompass the future areas that may be exposed to the 65 DNL with implementation of the Proposed Action.

A comprehensive plan was co-sponsored by Camden County, the City of St. Marys, the City of Woodbine, and the City of Kingsland to include zoning regulations for the entire County. The county has several zoning classifications and the zoning classifications that surround the potential sites are listed below:

- PD – Planned Development
  This district is reserved for establishment of shopping centers, planned residential areas, planned industrial developments and similar types of large-scale compatible use developments.

- RESIDENTIAL – Both single and multi family residential. These land uses are for single and multi-family dwellings and related recreational, religious and educational facilities needed to provide the basic elements of a balanced and attractive residential area. This use may also range to apartment uses.

- A/F – Agricultural/Forestry
  This district is to provide land for the production of agricultural products such as field crops, livestock, poultry and other conventional agricultural and forestry pursuits.

- INDUSTRIAL
  This district is created to provide land for industrial, manufacturing and warehousing operations which require buildings and open areas for fabricating, processing, extracting or repairing equipment, raw materials, manufactured products or wastes.

4.3.2.1 Current Site

The City of St. Marys has established certain height limitation zones for the purpose of restricting the height of objects around the Airport and promoting the health, safety, and general welfare of the inhabitants of St. Marys by preventing the creation of hazards to aircraft, thereby protecting the lives and property of the users of such airports and of occupants of land in their vicinity. These zones include all of the land lying beneath the approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces as they apply to the St. Marys Airport.

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 two 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 overflights of the Kings Bay Naval Base, see **Figure 4.7**.

Legend

County Zoning

ZONING

- Conservation-Preservation
- Planned Development
- Industrial
- Residential
- Commercial
- Business
- Agricultural
- KingsBayBase
- CamdenSchools
- CamdenChurches

Source: Camden County Plannning and Zoning Department (2006)

0 0.2 0.4 0.8 1.2 Miles

Figure 4.7

EXISTING AIRPORT ZONING AND SURROUNDING AREAS

4.3.2.2 Site Alternatives

Camden County codes provide for the development and protection of airports and airport operations. The County has identified airport landing strips as a permitted open space use within the County's flood hazard district. Additionally, any tower or antenna erected within the County that the County deems may interfere with the use of the airways of the County or with the operation of existing or proposed airport facilities is subject to review by the State of Georgia Airport Division of the Department of Transportation.

4.3.2.2.1 Site 1

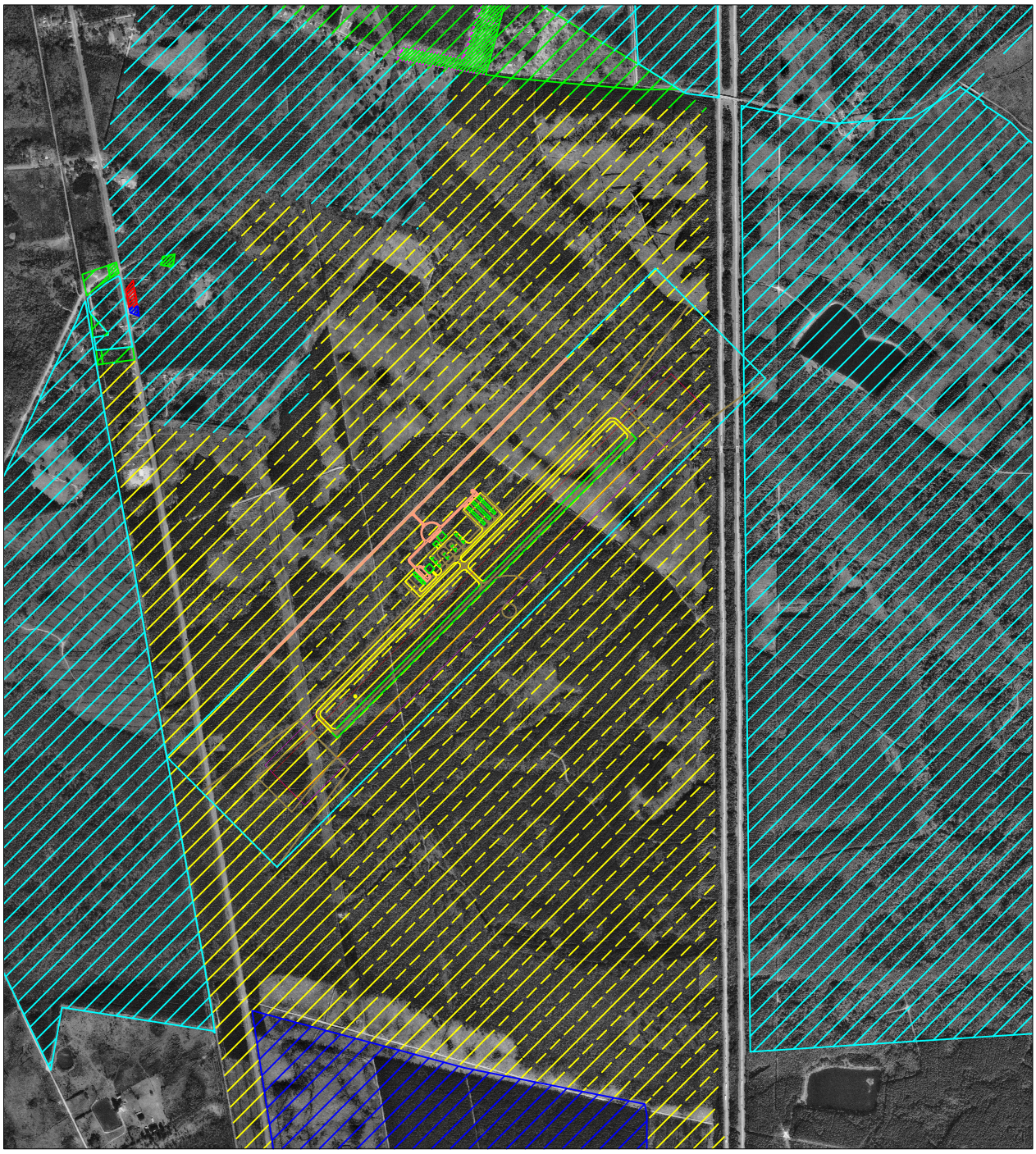
The land that encompasses Site 1 is currently zoned "Planned Development" as reflected in the Camden County Comprehensive Plan. A “Planned Development” district is reserved for establishment of shopping centers, planned residential areas, planned industrial developments and similar types of large-scale compatible use developments. The land adjoining Site 1 is a mixture of agriculture, commercial, and limited residential uses, see **Figure 4.8**

4.3.2.2.2 Site 3

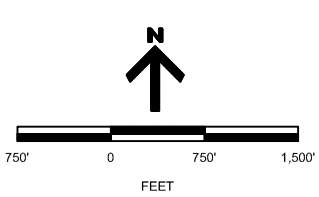
The land that encompasses the location of the replacement airport within Site 3 is currently zoned agriculture-forestry, as reflected in the Camden County Comprehensive Plan. The Camden County Comprehensive Plan states that land zoned as “agriculture-forestry” is intended for the use of agricultural and timber production. The property adjoining Site 3 is a mixture of agriculture and limited residential uses, see **Figure 4.9**

4.3.2.2.3 Site 9

The land that encompasses the location of the replacement 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 4.10**



Source: RS&H, 2005



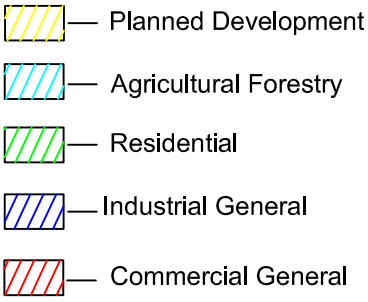
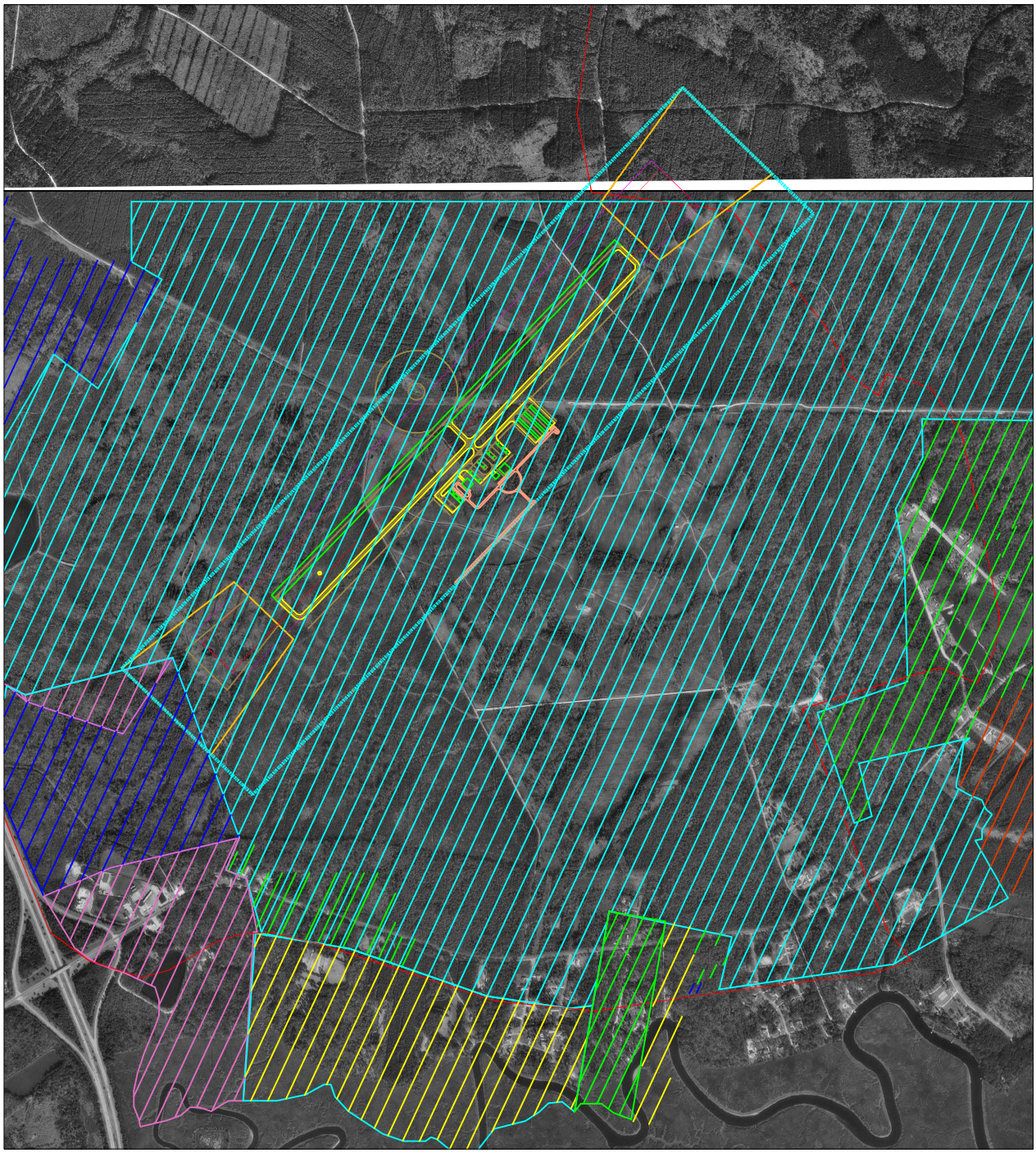
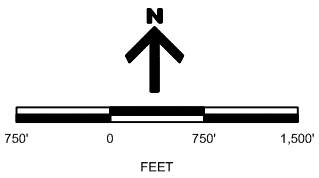


Figure 4.8

SITE 1 - LANDUSE ZONING



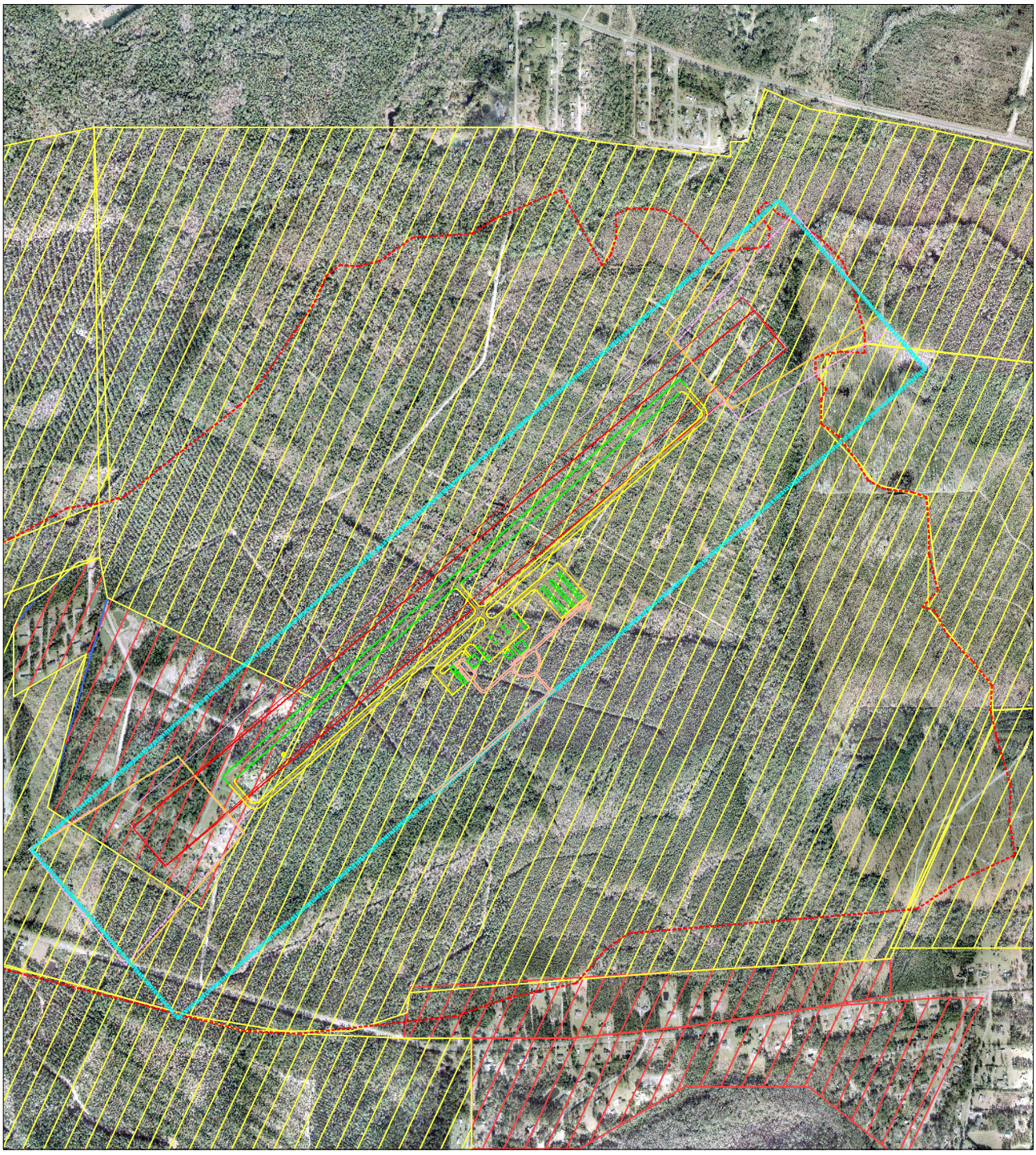
Source: RS&H, 2005



- Agricultural Forestry
- Agricultural Residential
- Central Business District
- Commercial General
- Industrial General

Figure 4.9

SITE 3 - LANDUSE ZONING



Source: RS&H, 2005

N

750' 0 750' 1,500'

FEET

— Agricultural Forestry

— Residential

— Agricultural Residential

Figure 4.10

SITE 9 - LANDUSE ZONING

4.3.3 Quality Growth Resource Team Report

The Quality Growth Resource Team for Camden County was brought together in September 2004 through collaboration with Camden County; the cities of Kingsland, St. Marys, and Woodbine; the Georgia Department of Community Affairs (DCA); and the Georgia Quality Growth Partnership (GQGP). The purpose of the team was to develop a report that guides the planning and decision-making that will promote more quality growth in the community.

Recommendations contained within the report include the creation of redevelopment ideas for the current St. Marys Airport site should the Airport be relocated. Some ideas given in the report include creating a neo-traditional village-styled community to include a portion of the coastal Georgia Greenway Trail. The report notes that the current Airport site does have some limiting factors that must be determined and considered early in the re-development process.

4.4 THE NATURAL ENVIRONMENT

Camden County is generally flat and characterized by pine forest, live oak hammocks, bayheads and tupelo gum/cypress swamps. Much of the area is managed for silviculture consisting of densely forested pine plantation of slash, loblolly, and longleaf pine. Naturally occurring pine forests with less intensive management are populated with a mixture of pines and other species such as mesic oaks, hickory, magnolia, bay, palmetto, and dogwood. Brackish and freshwater marshes extend inland and up rivers and streams throughout the County. These marshes and swamps serve to recharge the shallow groundwater aquifer, reduce the duration and magnitude of flood events and protect the shoreline during storm events. These wetlands also provide important habitat for wildlife, including endangered and threatened species such as the bald eagle and wood stork. This section provides an overview of the natural environment that exists in Camden County including topography, geology, climate, water resources, floodplains, coastal zones, biotic communities, threatened and endangered species, and wetlands.

4.4.1 Topography

Camden County is a part of the Atlantic Coastal Plain that stretches from Massachusetts to the Florida Peninsula and around the Gulf of Mexico. The Atlantic and Gulf Coastal plains meet in Georgia as Georgia and Florida together represent the corner of North America's Atlantic/Gulf Coastal Plain. Together, the coastal plains cover more than half of Georgia. The rivers in the Atlantic Coastal Plain drain into the Atlantic Ocean.

The area's elevation ranges from zero to about 80 feet above mean sea level. The elevation of the land at the Airport Reference Point of the St. Marys Airport is 24 feet above mean sea level.

4.4.2 Geology

The Coastal Plain is a region of Cretaceous and Cenozoic sedimentary rocks and sediments. The sedimentary rocks of the Coastal Plain partly consist of sediment eroded from the Piedmont region over the last 100 million years or so, and partly of limestone generated by marine organisms and processes at sea. The lower Coastal Plain consists of a series of Quaternary beach complexes that parallel the modern coast and are younger near the coast. These beach complexes make subtle ridges throughout the area. The most economically significant mineral resource of the Coastal Plain is kaolin, a clay-rich rock that is mined in pits near the Fall Line. Kaolinite, the dominant mineral in kaolins, is used in a variety of industries from pharmaceuticals to paper. A major geological resource in the Coastal Plain is groundwater. The less porous rocks of the other

regions of Georgia provide less groundwater, but the aquifers of the Coastal Plain provide groundwater for domestic consumption, industry, and for agricultural irrigation. Geological hazards in the Coastal Plain include sinkholes and coastal erosion.

4.4.3 Climate

The climate in Camden County is a humid subtropical climate with mild winters and hot moist summers. The average annual precipitation is around 50 to 52 inches of rain per year. A precipitation maximum occurs in June and July, when thunderstorm activity along with the increased likelihood of cyclonic activity in the southeastern United States may bring 4 to 7 inches of precipitation monthly. The average yearly temperature is 69 degrees, with an average temperature of 89 degrees in July.

4.4.4 Water Resources

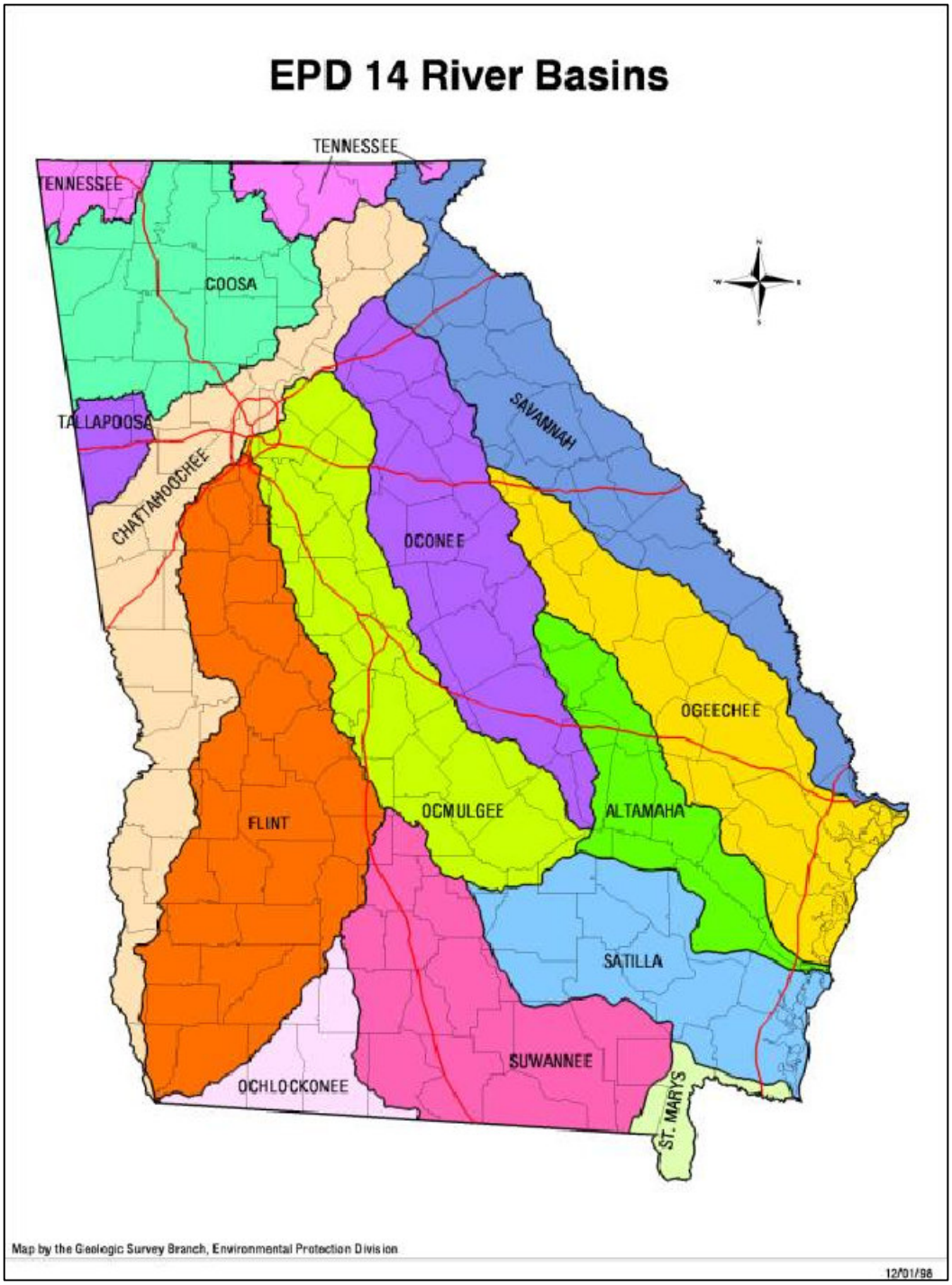
The quality of water is vital to support society's needs and to sustain rich and diverse ecosystems in Georgia. Camden County lies on the Floridian aquifer system. This is one of the most productive aquifer systems in the United States. A majority of Camden County's water resources are retrieved from the ground water generated by the aquifer system. Additionally, the Satilla and St. Marys River watersheds flow through the Camden County area. The Satilla River basin is composed primarily of the Satilla River, Little Satilla River, and Turtle River. The Satilla River flows through several Georgia counties before reaching the Atlantic Ocean. Approximately 3,940 square miles of land area drain into the Satilla River basin or watershed. The St. Marys River flows north and east into the Atlantic Ocean. The river basin drains approximately 765 square miles of water drainage. Surface water resources are limited as the only significant tributaries are those of the North Prong St. Marys tributary and Spanish Creek, see **Figure 4.11.**

4.4.5 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 one-percent chance of occurring in 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. **Figure 4.12** depicts those areas that encompass each site alternative that have been determined to be floodplains.

4.4.6 Coastal Zones

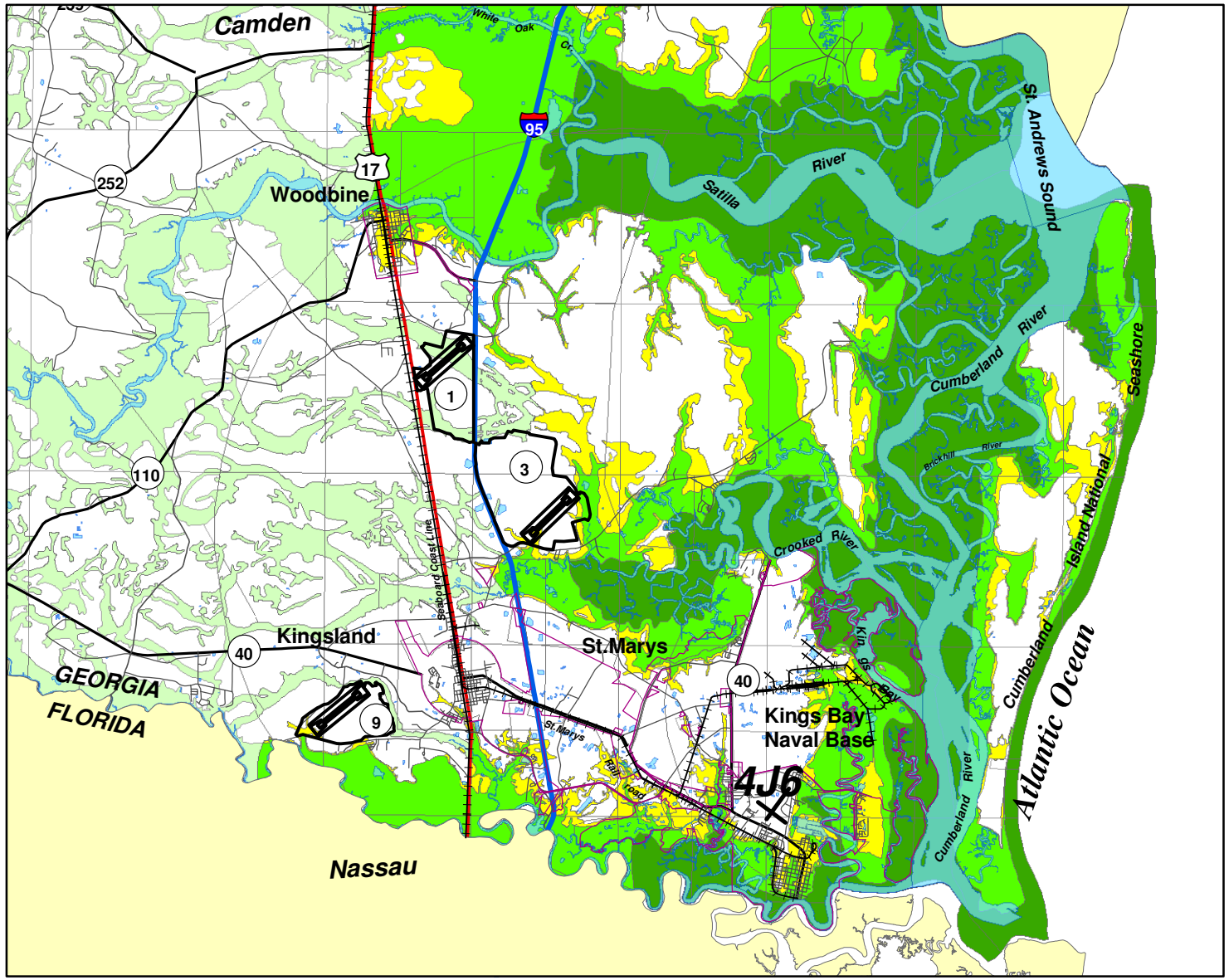
The influence of the ocean on Georgia's coastal plain extends approximately 60 miles inland. Georgia's eight-foot tidal range pushes seawater up the coastal rivers twice daily. This salty tidal water influences the plants, fish, and ecology of the coastal rivers and, consequently, human activity. The coastal area is important economically for a number of industries, including shrimping, crabbing, recreational fishing, tourism, and manufacturing. The area is an interrelated system of productive coastal marine waters, barrier islands, estuaries, coastal marshlands, rivers, and associated upland areas. Cumberland Island and other barrier islands near the Florida border buffer the marshes and mainland from the forces of the Atlantic Ocean. Moving inland, a broad band of coastal marshlands separates the barrier islands from the mainland. The marshes are dominated by cordgrass (*Spartina alterniflora*), which supports a highly productive food chain.



Source: GeorgiaRivers.com

Figure 4.11

Georgia River Basins



Area inundated by 100-year flooding, which no Base Flood Elevatrions have been determined.

Area inundated by 100-year flooding, for which Base Flood Elevations have been determined.

Area inundated by 100-year flooding with velocity hazard; Base Flood Elevations have been determined.

Area inundated by 500-year flooding; area inundated by 100-year flooding with average depths of less than 1' or with drainage areas less than 1-sq.mi.; or an area protected by levees from 100-year flooding.

Area determined to be outside of the 100-year and 500-year floodplain.

4J6 - St. Marys Airport

N

3 0 3 6

Miles

Source: Georgia State GIS Clearinghouse
RS&H, 2004

Figure 4.12
FLOODPLAIN MAP

Further to the west, brackish and freshwater marshes and swamps extend inland up rivers and streams. This area is generally flat and occupied by live oak, tupelo gum, and cypress swamps. These marshes and swamps serve to recharge the shallow groundwater aquifer and reduce the duration and magnitude of flood events.

4.4.7 Biotic Communities and Threatened and/or Endangered Species

The U. S. Fish & Wildlife Service (FWS) and Georgia Department of National Resources (GDNR) protect threatened and endangered species of fauna and flora within the State of Georgia. The state and/or federally listed fauna discussed in this section are generally known to occur within Southeastern Georgia.

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.

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.

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.

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 Bald Eagle generally nests in large trees near open bodies of water, which provide optimum foraging habitat.

More detailed analysis of the presence of listed species of flora and fauna is provided in Chapter 5.

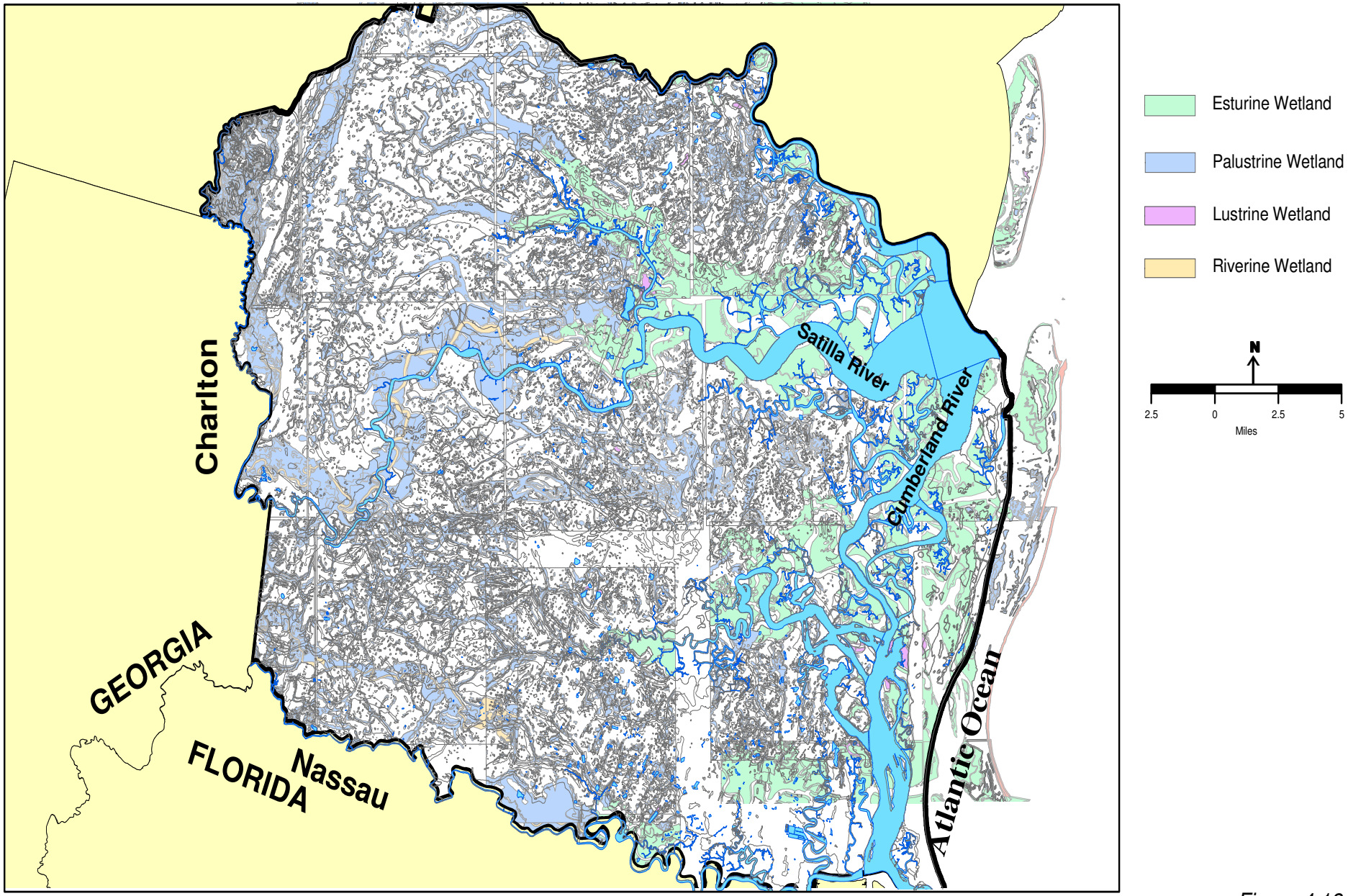
4.4.8 Wetlands

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 (USACE). Those wetlands systems 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) 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% area 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 to 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.

The wetland areas identified within Camden County are depicted in **Figure 4.13**. A more detailed analysis of the wetlands associated with each site alternative is provided in Chapter 5.



Source: FGDC (2004)
Georgia State GIS Clearinghouse (2004)
RS&H, Inc. (2006)

Figure 4.13

CAMDEN COUNTY WETLANDS

CHAPTER 5 - ENVIRONMENTAL CONSEQUENCES

5.0 INTRODUCTION

This Chapter presents an analysis of the reasonably foreseeable environmental consequences of the Build and No-Build alternatives presented in Chapter 3 of this document. The focus of this analysis is upon resources that would be directly, indirectly and cumulatively affected by these alternatives in the area of potential affect. This area of the Proposed Action's potential environmental affect includes the geographic area within which direct and indirect impacts generated by the Proposed Action could reasonably be expected to occur and thus cause a change in the environmental qualities possessed by the affected area. In addition, reasonable mitigation measures will be discussed in sufficient detail to describe both the benefits of the measures and the steps necessary to reduce any potentially significant impacts below applicable significance thresholds.

FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, both require the above mentioned evaluation to be presented as it relates to specific environmental impact categories for each alternative. For some impact categories, this determination was made through calculation, measurement, or observation. For other impact categories, this determination is established through correspondence with appropriate federal, state, or local agencies. This Chapter will assess the environmental consequences of the Build and No-Build alternatives for the impact categories outlined in FAA Order 1050.1E and presented below.

Section	Impact Categories
5.1	Air Quality
5.2	Children's Environmental Health and Safety Risks
5.3	Coastal Resources
5.4	Noise
5.5	Compatible Land Use
5.6	Construction Impacts
5.7	Department of Transportation Act: Section 4(f)
5.8	Environmental Justice
5.9	Farmlands
5.10	Fish, Wildlife and Plants
5.11	Floodplains
5.12	Hazardous Materials, Pollution Prevention, and Solid Waste
5.13	Historical, Architectural, Archeological, and Cultural Resources
5.14	Light Emissions and Visual Impacts
5.15	Natural Resources and Energy Supply
5.16	Secondary (Induced) Impacts
5.17	Socioeconomic Impacts
5.18	Water Quality
5.19	Wetlands
5.20	Wild and Scenic Rivers

5.1 AIR QUALITY

A description of the air pollutants of concern in this Environmental Assessment (EA), the regulatory setting governing the project, the affected local environment, explanation of the analysis methodologies and the assessment of impacts are presented in this section. The air quality analysis for the Proposed Action was prepared in accordance with National Environmental Policy Act requirements as specified in the Council on Environmental Quality's regulations[5], the Federal Aviation Administration's (FAA's) *Order 5050.4A, Airports Environmental Handbook*, and the FAA's *Air Quality Procedures For Civilian Airports & Air Force Bases*[6]. The air quality assessment also includes an emissions inventory analysis. Pollutant inventories were prepared for volatile organic compounds (VOCs), oxides of nitrogen (NOx), carbon monoxide (CO), sulfur dioxide (SO_2), and particulate matter (PM10/PM2.5). The analysis evaluates the 2001 Existing Conditions and the Build and No-Build alternatives in the forecast years of 2006, 2011, and 2021.

5.1.1 Health Effects of Air Pollutants

Public awareness of the effects of air pollution has increased noticeably in recent years. This is evidenced by the passage of the Clean Air Act in 1970 and subsequent major Amendments in 1977 and 1990. Air pollution is of concern because of its demonstrated effects on human health. Of special concern are the respiratory effects of the pollutants, as well as their general toxic effects. The air pollutants of concern in the assessment of impacts from airport-related sources are listed here, along with a description of their potential health effects:

Volatile Organic Compounds (VOC's) are a general class of compounds containing hydrogen and carbon, and are a precursor to the formation of the pollutant ozone (see below). While concentrations of VOCs in the atmosphere are not generally measured, ground-level ozone is measured and used to assess potential health effects. Emissions of VOCs and nitrogen oxides (NOx) react in the presence of sunlight to form ozone in the atmosphere. These reactions occur over periods of hours to days during atmospheric dilution and transport downwind. Accordingly, ozone is regulated as a regional pollutant and is not assessed on a project-specific basis.

When combustion temperatures are extremely high, as in aircraft engines, atmospheric nitrogen gas may combine with oxygen gas to form various oxides of nitrogen. Of these, nitric oxide (NO) and nitrogen dioxide (NO_2) are the most significant air pollutants. This group of pollutants is generally referred to as nitrogen oxides or NOx. Nitric oxide is a colorless and odorless gas. It is relatively harmless to humans but quickly converts to NO_2. Nitrogen dioxide has been found to be a lung irritant capable of producing pulmonary edema, and can lead to respiratory illnesses such as bronchitis and pneumonia. Nitrogen oxides, along with VOCs, are also precursors to ozone formation.

Ozone is a strong oxidizer and a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues, and respiratory functions. Exposure to ozone can impair the ability to perform physical exercise, can result in symptoms such as tightness in the chest, coughing, and wheezing, and can ultimately result in asthma, bronchitis, and emphysema.

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5 *Regulations for Implementing the National Environmental Policy Act*. 40 CFR Parts 1500-1508 (43 FR 55978, November 29, 1978; amended 51 FR 15618, April 25, 1986).

6 *Air Quality Procedures for Civilian Airports & Air Force Bases*. U.S. Department of Transportation, Federal Aviation Administration, Office of Environment and Energy, and U.S. Air Force. Washington, DC. Report Number FAA-AEE-97-03. April 1997. *Addendum*, September 2004. This guidance supplements the FAA *Airport Environmental Handbook (*Order 5050.4A).

Carbon monoxide (CO) is a colorless and odorless gas, which is a product of incomplete combustion. CO is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches and nausea, and at sustained high concentration levels can lead to coma and death.

Sulfur dioxide (SO_2) is a colorless and odorless gas which is formed during the combustion of fuels containing sulfur compounds. It can cause irritation and inflammation of tissues with which it comes into contact. Inhalation can cause irritation of the mucous membranes causing bronchial damage, and it can exacerbate pre-existing respiratory diseases such as asthma, bronchitis, and emphysema. Exposure to SO_2 can cause damage to vegetation, corrosion damage to many materials, and soiling of clothing and buildings.

Particulate matter is made up of small solid particles and liquid droplets. PM10 refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers and smaller, and PM2.5 refers to particulate matter with an aerodynamic diameter of 2.5 micrometers and smaller. Particulates enter the body by way of the respiratory system. Particulates over 10 micrometers in size are captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli). Particulates, especially PM2.5, have been associated with increased incidence of respiratory diseases such as asthma, bronchitis, and emphysema; cardiopulmonary disease; and cancer.

Lead is no longer considered to be a pollutant of concern for transportation projects because the major source of lead emissions to the atmosphere had been from motor vehicles burning fuels with lead-containing additives. However, emissions from this source have been nearly eliminated as unleaded fuels have replaced leaded fuels nationwide. Therefore, lead emissions are not assessed in this EA.

5.1.2 Regulatory Setting

This section describes the applicable regulations that govern air quality in the area of potential effect at both the Federal and state levels. This section also describes the procedures that will be needed to demonstrate compliance with these regulations and related criteria.

5.1.2.1 Regulations Affecting Air Quality

The air quality statutes and regulations that are applicable to the Proposed Action include the Clean Air Act of 1970[7], the 1977 Clean Air Act Amendments[8], the 1990 Clean Air Act Amendments (CAAA)[9], and the National Ambient Air Quality Standards[10] (NAAQS). Georgia's Ambient Air Quality Standards are similar to the NAAQS. Conformity of the project with the State Implementation Plan is not assessed in this analysis because the Proposed Action is located in an area designated by the U.S. Environmental Protection Agency (EPA) as attainment (in compliance with applicable standards) for all criteria pollutants and therefore is exempt from conformity requirements.

7 *The Clean Air Act of 1970*, U. S. Congress, Public Law 91-604, 42 U.S.C. §7401.
8 *The 1977 Clean Air Act Amendments*, U.S. Congress, Public Law 95-95, 42 U.S.C. §7401.
9 *The 1990 Clean Air Act Amendments*, U.S. Congress, Public Law 101-549, 42 U.S.C. §7401.
10 *National Ambient Air Quality Standards.* 40 CFR 50, Section 121.

5.1.2.2 Ambient Air Quality Standards

Under the authority of the Clean Air Act and the CAAA, the EPA established a set of National Ambient Air Quality Standards (NAAQS) for various air pollutants. These standards are intended to protect public health and welfare. Primary air quality standards are established at levels that are designed to protect the public health from harm with an adequate margin of safety. Secondary standards are set at levels necessary to protect the public welfare (buildings, clothing, and vegetation) from any known or anticipated adverse effects of a pollutant. The pollutants that are relevant to this project include ozone, NO_2, CO, SO_2, PM10, and PM2.5. The State of Georgia Ambient Air Quality Standards (GAAQS) are identical to the National standards. These standards are summarized in **Table 5-1.**

Table 5-1
NATIONAL AND GEORGIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Standard Type	Averaging Period	Standard Value[a]
NO_2	Primary and Secondary	Annual arithmetic mean	0.053 ppm[b] (100 $\mu g/m^3$)[c]
Ozone	Primary and Secondary	8-Hour average[d]	0.08 ppm (155 $\mu g/m^3$)[e]
CO	Primary (no Secondary[f]) Primary (no Secondary[f])	8-Hour average 1-Hour average	9 ppm (10 mg/m^3)[g] 35 ppm (40 mg/m^3)
SO_2	Primary Primary Secondary	Annual arithmetic mean 24-Hour average 3-Hour average	80 $\mu g/m^3$ (0.03 ppm) 365 $\mu g/m^3$ (0.14 ppm) 1300 $\mu g/m^3$ (0.5 ppm)
PM10	Primary and Secondary Primary and Secondary	Annual arithmetic mean 24-Hour average	50 $\mu g/m^3$ [h] 150 $\mu g/m^3$
PM2.5	Primary and Secondary Primary and Secondary	Annual arithmetic mean 24-Hour average	15.0 $\mu g/m^3$ [i] 65 $\mu g/m^3$ [j]
Lead	Primary and Secondary	Quarterly mean	1.5 $\mu g/m^3$

a Short-term standards (1 to 24 hours) are not to be exceeded more than once per calendar year.

b ppm: parts per million.

c $\mu g/m^3$: micrograms per cubic meter.

d The one-hour average ozone standard was repealed on June 15, 2005.

e To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

f Former national secondary standards for carbon monoxide have been repealed.

g mg/m^3: milligrams per cubic meter.

h To attain this standard, the 3-year average of the weighted annual mean PM10 concentration at each monitor within an area must not exceed 50 ug/m^3.

i To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 ug/m^3.

j To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 ug/m^3.

Sources: National – 40 CFR 50, Section 121; State - Rules and Regulations of the State of Georgia, Chapter 391-3-1.

5.1.3 Existing Ambient Air Quality Measured in the Region

This section summarizes measured ambient air quality data for the southern Georgia and northern Florida coastal region. The Georgia Department of Natural Resources, Environmental Protection Division (EPD), the Florida Department of Environmental Protection (DEP) and the EPA maintain a network of monitoring stations that routinely measures pollutant concentrations in the ambient air and provide data to assess compliance with the NAAQS and the Georgia Ambient Air Standards (GAAQS) and to evaluate the impact of pollution control strategies. The monitored pollutants of concern in this analysis are ozone, NO_2, CO, PM10, PM2.5, and SO_2. While there are no monitoring stations within Camden County, Georgia, there are several monitoring stations in the surrounding counties, both in Georgia and Florida. **Table 5-2** presents the maximum concentrations for these pollutants measured at the nearest representative monitoring station in the southern Georgia and northern Florida coastal region for the most recent three full years of data (2003-2005). These data can be compared to the NAAQS and GAAQS. **Table 5-2** shows that existing ambient concentrations in the project region are expected to be well within the NAAQS and GAAQS. The analysis methodology, databases, and assumptions used in the air quality analysis are described below. The specific data used are presented in more detail in **Appendix D**.

5.1.3.1 Airport Sources of Emissions

Air pollutants are emitted from a variety of sources at an airport. These sources include aircraft engines; aircraft ground support equipment (GSE); motor vehicles on the airport roadways, in parking facilities, and at terminal curbsides; and miscellaneous sources such as aircraft maintenance, fuel storage and handling, and building space heating. Because the Proposed Action is the development of a relatively small, Georgia Aviation System Plan (GASP) Level II general aviation airport, the predominant sources of air pollutant emissions for this project include aircraft engines, aircraft GSE, and motor vehicles traveling to and from the Airport. Other emission sources are negligible from an overall air quality perspective. The airport layout, aircraft fleet mix, and aircraft operations levels are projected to be the same for all of the Build alternative airport sites; therefore, there would be no differences in aircraft or GSE emissions among the different alternative sites. The only variable in terms of air pollutant emission sources among the different alternative sites is the motor vehicle travel distance. The average travel distance from the towns in the airport's market area varies with the alternative site locations. Data were compiled on existing and forecast aircraft fleet mixes, aircraft engine identifications, aircraft operation levels, aircraft operating times-in-mode, motor vehicle fleet mix, motor vehicle trips, and motor vehicle trip distances and speeds.

Table 5-2
MEASURED AMBIENT CONCENTRATIONS IN THE SOUTH GEORGIA AND NORTH FLORIDA COASTAL REGION

Pollutant	Measurement Station Location	Averaging Period*	Statistic (Units)	Measured Concentrations		
				2003	2004	2005
CO	Rosselle and Copeland Jacksonville, FL	1-Hour	Maximum (ppm)	4	3.6	3
		8-Hour	Maximum (ppm)	3	2.8	1.9
NO_2	2900 Bennett St. Jacksonville, FL	Annual	Arithmetic Mean (ppm)	0.014	0.014	0.013
Ozone	13333 Lanier Rd. Jacksonville, FL	1-Hour	Maximum (ppm)	0.084	0.09	0.096
		8-Hour	Maximum (ppm)	0.072	0.082	0.08
SO_2	1840 Cedar Bay Rd. Jacksonville, FL	3-Hour	Maximum (ppm)	0.045	0.057	0.075
		24-Hour	Maximum (ppm)	0.012	0.013	0.015
		Annual	Arithmetic Mean (ppm)	0.002	0.002	0.002
PM2.5	9429 Merrill Rd. Jacksonville, FL	24-Hour	Maximum ($\mu g/m^3$)	29	40	47
		Annual	Arithmetic Mean ($\mu g/m^3$)	9.8	10.8	10.7
PM10	2221 Buckman St. Jacksonville, FL	24-Hour	Maximum ($\mu g/m^3$)	60	41	74
		Annual	Arithmetic Mean ($\mu g/m^3$)	22	21	23
Lead	Brunswick Coastal College, Brunswick, GA	1st Quarter	Arithmetic Mean ($\mu g/m^3$)	0	0	0
		2nd Quarter	Arithmetic Mean ($\mu g/m^3$)	0	0	0
		3rd Quarter	Arithmetic Mean ($\mu g/m^3$)	0	0	n/a
		4th Quarter	Arithmetic Mean ($\mu g/m^3$)	0	0	n/a

* $\mu g/m^3$ means micrograms per cubic meter; ppm means parts per million.

Source: U. S. Environmental Protection Agency AIRData Website (http://www.epa.gov/air/data). Monitor Values Report accessed January 5, 2006.

5.1.3.2 Emissions Inventory Methodology

Emissions inventories are quantities of air pollutants emitted over a given time period, which provide information about pollutant contributions from various sources. Emissions are estimated by multiplying emission factors by source activity. Emission factors are the emissions from a single source for a unit of time or distance (e.g., a single aircraft engine operating at a specific throttle

setting for one hour). The source activity for such a factor would be the number of engine-hours operated in a given time period, such as one day.

To estimate the emissions, FAA's Emissions and Dispersion Modeling System[11] (EDMS) computer model, Version 4.3, was used. Average annual emissions of VOC, NOx, CO, SO_2, PM10, and PM2.5 from aircraft, GSE, and motor vehicle sources associated with the Proposed Action were estimated. The EDMS internal database of emission factors was used to calculate aircraft engine emissions. The aircraft emissions analysis was based on the mix of aircraft and engine types at the proposed Replacement St. Marys Airport, and operating times-in-mode for four specific operating modes, namely: approach, landing, takeoff, and taxi/idle. Default modal times built into the EDMS model were used for the approach, landing, and takeoff modes. Times for the taxi/idle mode were developed specifically for this project. No changes in the taxi/idle times were projected for any of the future project alternatives.

EDMS also includes a database of "default" GSE usage data including aircraft-specific GSE fleets, equipment operating times, and emission factors. These EDMS data were used to estimate emissions from GSE at the St. Marys Airport. Most of the aircraft in the St. Marys fleet mix do not require GSE. Of those that do use GSE, most of the EDMS default GSE operations apply to the Canadair Challenger Jet and Gulfstream II aircraft. Moreover, the EDMS data are based on surveys of GSE operation at large commercial-service airports that have full service facilities. The actual amount of GSE usage at St. Marys may be less. For example, EDMS assigns fuel tanker activity to regional jets but, hypothetically, an airline using regional jets in shuttle service between St. Marys and Atlanta might be more likely to refuel the aircraft in Atlanta. For these reasons, the estimates of GSE emissions at St. Marys are probably conservative (i.e., overstated).

Motor vehicle emission factors were calculated using the most recent approved version of the EPA MOBILE program (currently MOBILE6.2[12]). The specific MOBILE6.2 input values were developed with EPD. The input parameters and their values that were used in MOBILE6.2 are shown in the example MOBILE6.2 input file presented in the **Appendix D**. EDMS uses the MOBILE6.2-generated emission factors to estimate motor vehicle emissions. Differences in motor vehicle emissions are a direct function of the changes in daily vehicle-miles traveled (VMT) and pollutant emission rates. The trip distances, vehicle volumes, vehicle fleet mix, and speeds for the project are based on the project traffic studies.

Emissions were compiled for the 2001 Existing Conditions, and the No-Build and Build Alternatives (sites) in 2006, 2011, and 2021.

[11] Federal Aviation Administration, Office of Environment and Energy. *Emissions and Dispersion Modeling System*. Washington, DC. Version 4.3 released August 11, 2005.

[12] *User's Guide to MOBILE6.1 and MOBILE6.2 Mobile Source Emission Factor Model*. U.S. Environmental Protection Agency, Assessment and Standards Division, Office of Transportation and Air Quality. Report no. 420-R-02-028. Ann Arbor, MI. October 2002. Model released as approved final version of MOBILE6.2 by memorandum *Announcement of WEB Posting of Updated MOBILE6.2* from Gene Tierney, Director, Air Quality Modeling Center, Office of Transportation and Air Quality, U.S. Environmental Protection Agency. November 12, 2002.

5.1.4 Environmental Consequences

Emissions for the 2001 existing conditions and the No-Build and Build alternatives for 2006, 2011, and 2021 are shown in **Table 5-3**. As shown in **Table 5-3**, existing emissions were estimated to be approximately 2.77 tons per year (tpy) of VOC, 1.61 tpy of NOx, 74.9 tpy of CO, 0.14 tpy of SO_2, 0.04 tpy of PM10, and 0.03 tpy of PM2.5. These results are typical of general aviation airports without scheduled air carrier service that have activity levels comparable to those at St. Marys (there were 12,250 operations at the Airport in 2001).

5.1.4.1 No-Build Alternative

The No-Build Alternative would not involve the relocation of St. Marys Airport. The Airport would remain at its current site. The aircraft fleet mix for all of the alternatives is projected to change by 2006 and then remain constant for the rest of the project study years. The fleet mix change includes increases in turboprop and turbine engine powered aircraft and decreases in piston engine powered aircraft. Future annual aircraft operations are estimated to increase from 12,250 in 2001 to 12,522 in 2006, 12,870 in 2011, and 13,596 in 2021. Because the operations levels are the same for each of the alternative sites and only vary from year to year, emissions levels from aircraft and GSE are also the same for each of the alternative sites for a given year. Since motor vehicle trips are calculated based on aircraft operations and fleet mix (i.e., projected enplanements), the number of vehicle trips also remains the same for each alternative site, varying only from year to year. The number of motor vehicle trips in 2001 is 6,964, and is estimated to increase to 7,181 in 2006, 7,546 in 2011, and 8,043 in 2021. The factor that differs among the alternative sites is the average motor vehicle trip distance. The trip distance calculated for the No-Build Alternative is 5.3 miles.

As shown in **Table 5-3**, CO emissions from aircraft, GSE, and motor vehicles with the No-Build Alternative are estimated to increase from the existing conditions estimate of 74.9 tpy to 76.0 tpy in 2006, 77.2 tpy in 2011, and 80.6 tpy in 2021. VOC emissions are estimated to increase to 2.88 tpy in 2006, 2.88 tpy in 2011, and 2.93 tpy in 2021. These increases are due to the forecasted growth in aircraft operations and motor vehicle trips. NOx emissions are estimated to increase to 2.17 tpy in 2006, and then decrease to 1.98 tpy in 2011 and 1.89 tpy in 2021. The initial increase in NOx emissions in 2006 is due to the aircraft fleet mix change and the growth in aircraft operations and motor vehicle trips. The subsequent decreases in NOx emissions are due to more efficient NOx emission controls projected for future aircraft and motor vehicle engines. SO_2 emissions are relatively low and increase in a pattern similar to that of CO and VOC emissions, specifically to 0.19 tpy in 2006, 0.19 tpy in 2011, and 0.20 tpy in 2021. The relatively low PM10 and PM2.5 emissions show almost no change in the 2006 emissions from the existing emissions, but do show increases in the 2011 and 2021 emissions. The increases in the PM emissions are due to higher emission factors assigned within EDMS to future diesel-fueled GSE.

Table 5-3
EMISSIONS INVENTORY SUMMARY (TONS PER YEAR)

	2001	2006			
Pollutant	**Existing Conditions**	**No-Build**	**Build Site 1**	**Build Site 3**	**Build Site 9**
CO	74.92	76.02	82.49	78.56	79.63
VOC	2.77	2.88	3.28	3.04	3.10
NOx	1.61	2.17	2.48	2.29	2.34
SO_2	0.14	0.19	0.20	0.19	0.20
PM10	0.04	0.03	0.04	0.04	0.04
PM2.5	0.03	0.03	0.04	0.03	0.03

	2011			
Pollutant	**No-Build**	**Build Site 1**	**Build Site 3**	**Build Site 9**
CO	77.22	82.41	79.26	80.12
VOC	2.88	3.18	3.00	3.05
NOx	1.98	2.23	2.08	2.12
SO_2	0.19	0.19	0.19	0.19
PM10	0.06	0.07	0.06	0.07
PM2.5	0.06	0.06	0.06	0.06

	2021			
Pollutant	**No-Build**	**Build Site 1**	**Build Site 3**	**Build Site 9**
CO	80.61	84.60	82.18	82.84
VOC	2.93	3.08	2.99	3.02
NOx	1.89	2.02	1.94	1.96
SO_2	0.20	0.20	0.20	0.20
PM10	0.09	0.10	0.09	0.09
PM2.5	0.08	0.08	0.08	0.08

Source: KMCHNG

5.1.4.2 Build Alternatives

The Build Alternatives include the three proposed airport relocation sites. As stated previously, the only difference between the No-Build and Build Alternatives' emissions for each of the study years is the motor vehicle travel distance. Therefore, emissions changes for each of the Build Alternative sites for the future study years follow the same patterns as the No-Build Alternative emissions. The emissions are shown in **Table 5-3**. For the build alternatives the differences in emissions among the sites are due entirely to the different motor vehicle travel distances. The average trip distance calculated is 13.76 miles for Site 1, 8.62 miles for Site 3, and 10.02 miles for Site 9. Because motor vehicles emit CO in greater total mass than other pollutants, the effects of varying trip distances on emissions can be seen best in the CO emissions among the different sites for each of the study years.

5.1.4.3 Construction Air Quality Impacts

The project will include site preparation and excavation, and construction of the replacement airport. Such construction activities can result in short-term impacts on ambient air quality. These potential impacts include increased emissions from motor vehicles on the access roads due to traffic disruption, fugitive dust emissions, and direct emissions from construction equipment and trucks. These impacts will be temporary, and will affect only the immediate vicinity of the construction sites and access routes. A number of regulations and guidelines require mitigation of these potential impacts. All construction will be performed in accordance with the provisions of FAA Advisory Circular 150/5370-10A, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*.

Traffic disruption, such as that from construction vehicles accessing the work sites, can lead to increased traffic congestion and consequent increases in motor vehicle exhaust emissions. These potential adverse effects can be mitigated by implementing proper traffic management techniques during the construction period. These techniques could include specifying truck routes, establishing staging areas for equipment and materials, designating parking areas for construction workers' vehicles, providing traffic control at the site accesses, and minimizing the volumes of construction-related vehicles during regional peak traffic periods.

Fugitive dust emissions can occur during ground excavation, material handling and storage, movement of equipment at the site, and transport of material to and from the site. Fugitive dust is most likely to be a problem during periods of intense activity and would be accentuated by windy and/or dry weather conditions. Good 'housekeeping' practices such as wetting, paving, landscaping, or chemically treating exposed earth areas, covering dust-producing materials during transport, limiting dust-producing construction activities during high wind conditions, and providing street sweeping or tire washes for trucks leaving the site, can minimize the impacts from fugitive dust.

Compared with emissions from other motor vehicle sources in the region, emissions from construction equipment and trucks are generally insignificant with respect to compliance with the NAAQS and GAAQS. Excessive idling of engines should be prohibited. All construction equipment should be properly operated and maintained so as to prevent any adverse effects on local air quality.

5.1.5 Mitigation

The air quality analysis has demonstrated that the project will lead to slight increases in emissions but the increases will be insignificant. The differences in emissions among the build alternatives are also insignificant. All ambient concentrations are expected to remain within the NAAQS and GAAQS. Consequently, no air quality mitigation measures are required for project operation. Potential air quality impacts during construction can be minimized by the mitigation measures described above.

5.2 CHILDRENS ENVIRONMENTAL HEALTH AND SAFETY RISKS

Pursuant to Executive Order 13045, Federal agencies are directed to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. Therefore, an airport development project funded by Federal monies shall ensure implementation of the Order.

The President's Task Force on Environmental Health Risks and Safety Risks To Children has identified both the development of asthma in children and the environmental safety of schools as potential risks. Asthma among children has been identified as being a result of impurities in the air. These impurities can be caused by pollution created by aircraft operating in the vicinity of children.

In order to determine the affects on children due to the location of the Proposed Action, all three proposed sites were analyzed to determine their proximity to schools and/or recreational areas.

5.2.1 Build Alternatives

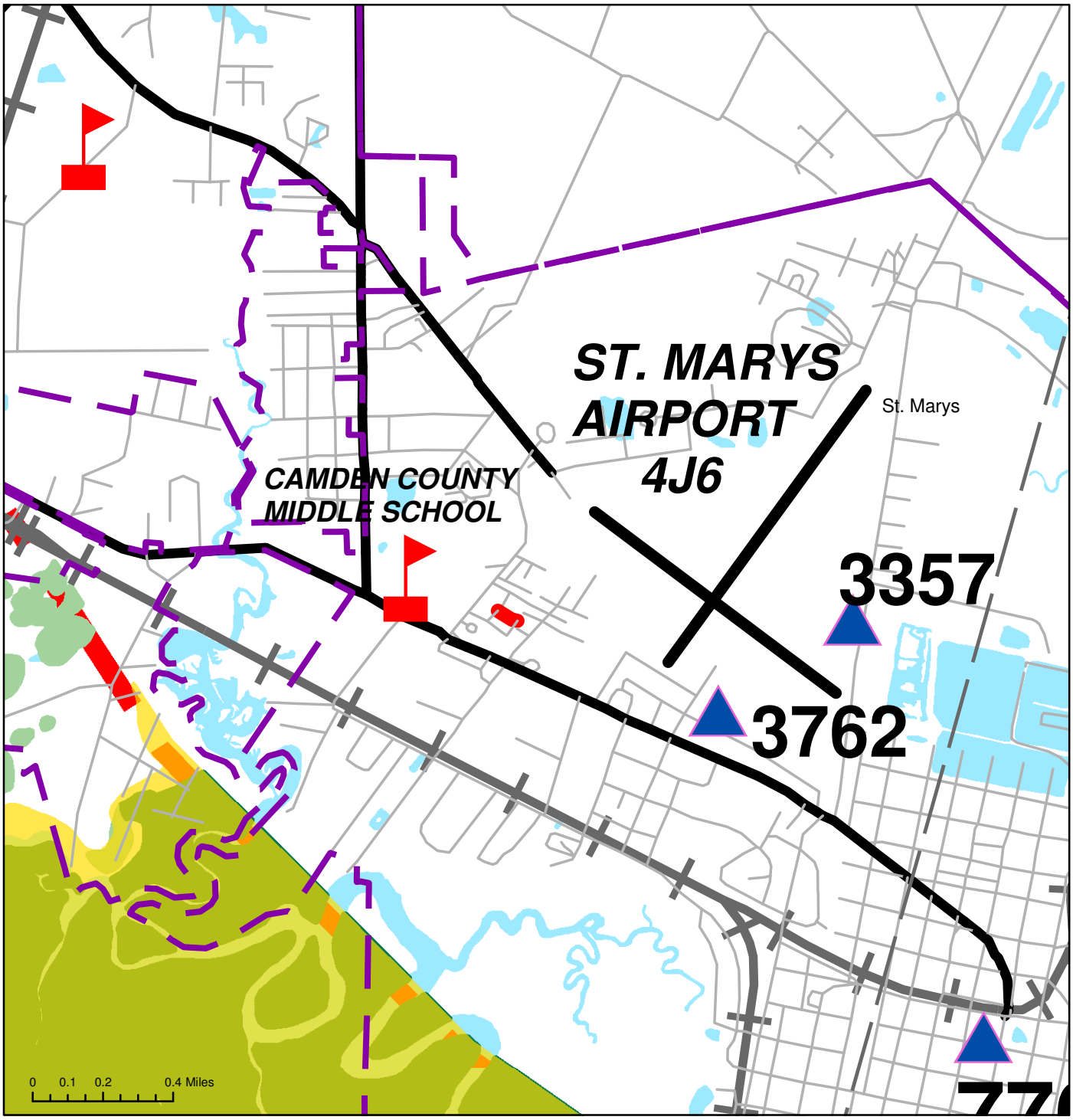
An examination of available data and aerial views shows that no schools or recreational areas exist in the immediate vicinity of any of three proposed site alternatives. The closest known schools are located approximately three miles to the northwest of Site 1, four miles to the southwest of Site 3, and four miles to the northeast of Site 9. No significant or adverse impacts on children are expected from locating the airport any of the three proposed site alternatives.

5.2.2 No-Build Alternative

The current St. Marys Airport is located within ½ mile of a newly constructed St. Marys Middle School. The School is located immediately to the southwest of the departure end of Runway 31, (see **Figure 5.1**). However, the school's location is outside of the 65 DNL noise contours of the existing airport and should not pose a health or safety risk to children attending the school.

5.2.3 Mitigation

When considering the Build alternatives, there is no mitigation necessary as all three of the proposed sites pose no potential hazards that will adversely affect children. In addition, the intent to potentially develop on the above proposed sites shall be made public so as to prevent the construction of infrastructure (e.g., nearby schools) from creating a situation where children's health and safety would be a concern.



Source: Georgia State GIS Clearinghouse (2004)
RS&H, Inc. (2006)

- Camden County Municipalities
- Prospective Airport Development Site
- Interstate Highway
- U.S. Route
- State Routes & Primary Roadways
- County & Secondary Roadways
- Inactive Railroad Tracks
- Active Railroad Tracks
- Revised Study Area
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

Figure 5.1
CURRENT AIRPORT LOCATOIN AND SURROUNDING SCHOOLS

5.3 COASTAL RESOURCES

The Coastal Barriers Resources Act (CBRA) and the Coastal Zone Management Act (CZMA) govern Federal activities that affect designated coastal barriers and coastal zones. The CBRA prohibits, with some exceptions, Federal financial assistance for development within the Coastal Barriers Resources System. The CZMA and the National Oceanic and Atmospheric Administration (NOAA) provide procedures for ensuring that a proposed action is consistent with approved coastal zone management programs.

Airport facilities are generally of coastal management concern when their construction or expansion may have significant impacts on coastal resources, including possible freshwater wetland impacts. The state of Georgia has a Coastal Zone Management Program and Camden County falls within the jurisdiction of this program. All Federal, State, and local reviewing agencies proposing activities within the defined Coastal Zone must determine the action's consistency with the Coastal Zone Management Act of 1972 or the statutes established under the Georgia Coastal Zone Management Program.

Locations of Coastal Barrier Resource System Units were identified and an examination of the Georgia Coastal Comprehensive Plan was undertaken in order to determine the possible affects of the Build and No-Build alternatives.

5.3.1 Build Alternatives

An examination of the Coastal Barriers Resource System in the State of Georgia shows that Sites 1, 3, and 9 do not fall within any established unit boundaries of the System, see **Figure 5.2**.

However, all three build alternatives do fall under the Georgia Coastal Comprehensive Plan service area, see **Figure 5.3**. In order for the development of the Proposed Action to be consistent with the Georgia Coastal Zone Management Program, it must be consistent with the policies of the Program to the maximum extent practicable.

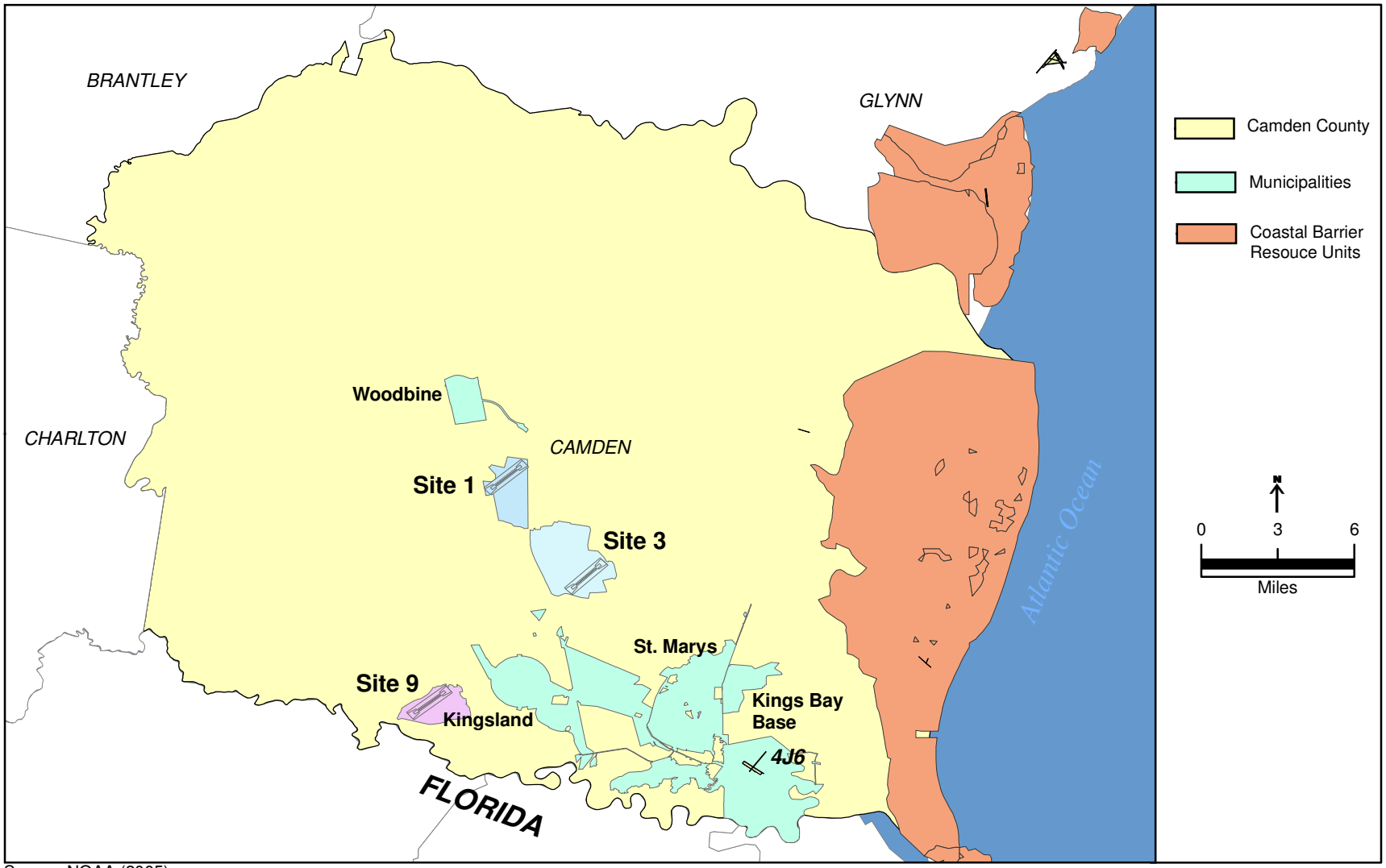
Transportation activities occurring within the coastal zone are subject to the following policies in order to receive a consistency determination from Georgia's Coastal Resources Division.

- **Coastal Marshlands Protection Act and the Shore Protection Act**

  Transportation activities occurring within the jurisdiction of the Coastal Marshlands Protection Act or the Shore Protection Act require a permit from the Coastal Resources Division.

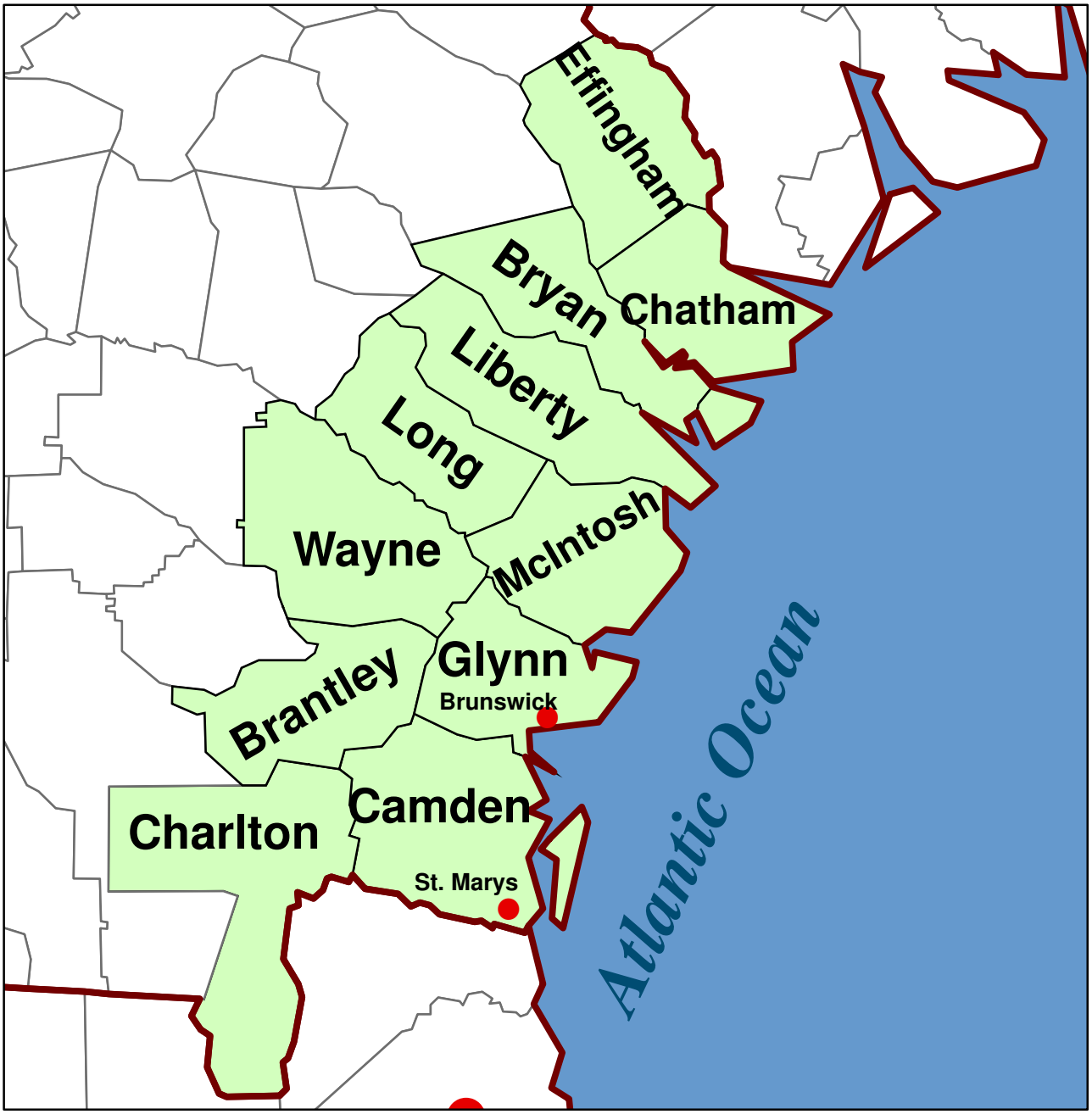
  The wetlands located within the area of potential affects are not located within the jurisdiction of the Coastal Marshlands Protection Act, which is defined as the estuarine area that includes all tidally influenced waters, marshes, and marshlands lying within a tide-elevation range from 5.6 feet above mean high-tide level and below. The wetlands located on Sites 1, 3 and 9 are not tidally influenced wetlands.

  In addition, the Shore Protection act provides for the protection and management of Georgia's shoreline features including sand dunes, beaches, sandbars, and shoals. Sites 1, 3 and 9 are not located within any areas containing these features.



Source: NOAA (2005)
Georgia GIS Clearinghouse (2005)

Figure 5.2
COASTAL BARRIER RESOURCE UNITS



Source: ESRI (2006)

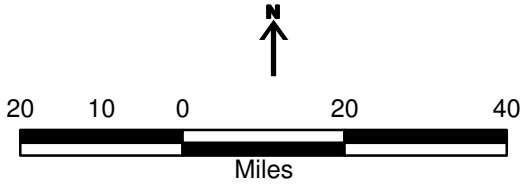


Figure 5.3
Georgia Coastal Management Program Service Area

- **Erosion and Sedimentation Act**

  Land-disturbing activities are subject to the jurisdiction of the Erosion and Sedimentation Act. However, construction or maintenance projects financed by the Georgia Department of Transportation are exempt from the provisions of this act provided that the projects conform to the specifications used by the Georgia Department of Transportation for control of soil erosion. Additionally, exemptions are also provided to land-disturbing activities by any airport authority, provided that the activities conform as far as practicable with the minimum standards set forth in the Act at Code Section 12-7-6[13]. This Section requires the proper design, installation, and maintenance of Best Management Practices for all land-disturbing activities.

- **Georgia Water Quality Control Act**

  This Act grants the Department of Natural Resources, Environmental Protection Division the authority to ensure that water uses in the State of Georgia are used prudently, are maintained or restored to a reasonable degree of purity, and are maintained in adequate supply. The Act requires transportation facilities that may withdraw, divert, or impound any surface waters of the State to obtain a permit to do so under the Georgia Water Quality Control Act.

  Sites 1, 3 and 9 are subject to the above provisions as the Proposed Action would require the diversion of surface waters currently existing at the sites. Therefore a permit issued under the Georgia Water Quality Control Act may be required to be obtained from the Environmental Protection Division to ensure consistency with the Georgia Coastal Zone Management Program.

- **Georgia Comprehensive Solid Waste Management Act and Georgia Hazardous Waste Management Act**

  Transportation facilities must dispose of their wastes in accordance with State law. Specifically, the development and operation of transportation related facilities must comply with the Georgia Comprehensive Solid Waste Management Act and the Georgia Hazardous Waste Management Act.

  A substantial increase in Solid Waste is not expected from the Proposed Action as the current level of waste created by the existing St. Marys Airport is minimal and will likely be maintained with the closing of the existing Airport and opening of a replacement St. Marys Airport. However, a short-term increase in solid waste can be expected from construction activities during the construction phase of the Proposed Action. According to the Georgia Department of Community Affair's *2005 Solid Waste Management Update,* there is sufficient landfill capacity in Camden County for the next 10 to 19 years. Any foreseeable solid waste created by the Proposed Action can be accommodated in the future.

  As stated in Section 5.12 of this document, none of the areas potentially affected by the Proposed Action are on the National Priorities List. Therefore, no hazardous waste is expected to be discovered and transported as a result of the Proposed Action. However, should previously non-documented hazardous waste be discovered during construction

[13] *Georgia Erosion and Sedimentation Act of 1975*, Georgia General Assembly, Georgia Code 12-7

activities, the procedure outlined in Section 5.12 of this EA will be adhered to in order to comply with the Georgia Hazardous Waste Management Act.

- **Endangered Wildlife Act, Game and Fish Code, and the Wildflower Preservation Act**

  The Endangered Wildlife Act and the Wildflower Preservation Act protect animal and plant species that are rare, unusual, or in danger of extinction. In addition, the Game and Fish Code vests ownership of all wildlife in the State, and declares that custody of the State's wildlife is vested with the Department of Natural Resources.

  As stated in Section 5.10 of this document, Sites 1, 3 and 9 are not located within any area designated as critical habitat by the United States Fish and Wildlife Service (FWS). Also, no endangered and/or threatened plant species listed by both FWS and GDNR are known to occur at the Site or were observed during the Site inspection.

  There are some listed animal species that may be present on any of the three Build Alternatives; however, none of the listed species were observed during the site inspections nor are there expected to be any adverse impacts as a result of the Proposed Action. Rare, unusual, and endangered plant and animal species that may occur on any of the Build Alternatives are discussed in more detail in Section 5.10 of this EA.

As the Federal Agency proposing activity within a predefined Coastal Zone, the United States Department of Transportation (USDOT), Federal Aviation Administration (FAA) must determine whether the Proposed Action would be consistent with the Coastal Zone Management Act of 1972. Should a determination of consistency be reached by the FAA, then information, data, and analysis provided in this document shall be provided to the Georgia Coastal Resources Division along with any supporting information required. The Coastal Resources Division is then required to seek public comment during the review process when making its consistency determination. If all relevant State permits are obtained within six months of submitting the State and federal permit applications to the relevant State agency, then the issuance of these State permits constitutes the State's federal consistency concurrence and the federal agency may issue its approvals. The Coastal Resources Division shall assist in tracking permit issuances and notify federal agencies once all relevant State permits have been received.

5.3.2 No-Build Alternative

The current St. Marys Airport is not located within the unit boundaries of the Coastal Barriers Resource System in the State of Georgia, see **Figure 5.2.** The Airport does fall under the Georgia Coastal Comprehensive Plan, see **Figure 5.3.** Continued operation of the current St. Marys Airport, further development not included, is likely consistent with the Georgia Coastal Comprehensive Plan.

5.3.3 Mitigation

As previously described, the provisions set forth in the following Acts shall be complied with to the fullest extent as required by the State of Georgia Coastal Management Program.

- Endangered Wildlife Act
- Game and Fish Code
- Georgia Erosion and Sedimentation Act
- Georgia Comprehensive Solid Waste Management Act
- Georgia Hazardous Waste Management Act

- Georgia Water Quality Control Act
- The Wildflower Preservation Act

In addition to compliance with the above Acts, a Section 401 Water Quality Certification from the Environmental Protection Division will be required due to the impact on wetland areas that the Proposed Action will likely create.

The mitigation steps outlined in the ***Fish, Wildlife, and Plants***; ***Construction Impacts***; ***Water Quality***; **and** ***Hazardous Materials, Pollution Prevention, and Solid Waste*** sections of this Chapter also provide mitigation steps required to obtain a consistency determination for the Proposed Action.

5.4 NOISE

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on the surrounding area. Therefore, noise related patterns, based on future aviation activity, must be analyzed to determine their impacts on the surrounding areas. Presented in this section is a description of the methodology employed to develop the appropriate noise contours for the existing St. Marys Airport as well as a future airport located on any of the three proposed build alternatives.

5.4.1 Methodology

Noise contours were developed based on year 2021 projections using the FAA's Integrated Noise Model (INM). The projections are based on the aircraft operations forecast provided in **Appendix A**. These projections are a result of the Georgia Aviation System Plan's aviation activity forecast developed in 2002 based on data collected through the year 2001. Therefore, the activity for a 20 year period carries the forecast through the year 2021.

The model is designed as a conservative planning tool and uses the "Yearly Day-Night Average Sound Level" (DNL) to describe noise and accounts for the increased sensitivity to noise at night. DNL is the preferred metric by the FAA, EPA, and the Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure.

The INM incorporates procedures that correlate noise, thrust settings, and flight profiles for most of the civilian and military aircraft operating in the United States. However, the user must supply some input data in order to develop an INM model.

Due to the fact that the St. Marys Airport does not have an operating control tower, the data used for input into the INM model was derived from the forecast outlined in **Appendix A** of this document. However, given that the INM model does not provide an aircraft type to simulate helicopter traffic, helicopter operations were removed from the forecast. The projected yearly operations for the year 2021 are 13,595 (12,643 excluding Helicopter Operations) at all three proposed new airport sites. A forecasted fleet mix of 70-percent Single-Engine Piston aircraft, 7.5-percent Light Twin-Engine aircraft, 7.5-percent Turbo-Prop aircraft, and eight (8) percent Corporate Jet aircraft was used for the INM input.

The input for the time of day that the operations occur is important due to the weighting of nighttime events in the INM model. For all aircraft types, 95-percent of the operations were estimated to be daytime operations, while five percent were estimated to be nighttime operations.

A northeast/southwest runway orientation was assumed based on prevailing wind data that also indicated that departures and arrivals in the southwest direction will likely occur 70 percent of the time while the northeast direction is likely to be utilized 30 percent of the time.

Future flight tracks have been estimated using probable instrument approach orientations and standard traffic pattern locations. It is expected that no special flight patterns will be adopted for the new airport and that the airport will operate under standard conditions for a non-towered, general aviation airport.

Noise exposure values of DNL 75, 70, and 65 were used as the criteria levels for the noise analysis. The results achieved by the INM model using the above methodology are presented in the following sections.

5.4.2 Build Alternatives

The INM output for the existing (2009) (Implementation of the Proposed Action) and future (2021) conditions at Sites 1 and 3 are depicted in **Figures 5.4 through 5.7**. It can be determined from the figures that the noise contours are located completely within the boundaries of the proposed airport sites and will not create negative impacts to the surrounding land uses. The resulting noise analysis also shows that by locating the airport on each respective site, an increase of 1.5 DNL or greater in any noise sensitive area within the 65 DNL contour will not occur over the 20 year period.

The INM output for the existing (2009) and future (2021) conditions at Site 9 are depicted in **Figures 5.8 and 5.9,** respectively. It can be determined from the figures that the noise contours are located predominately within the boundaries of the proposed airport site; however, there are some conflicting land uses that are encompassed within the 65, 70, and 75 DNL contours on the southwest side of the airport. Within the noise contours and within the airport boundary itself, are single family residential dwellings that would require acquisition and relocation of the residents. Sites 1 and 3 have one affected parcel owner, respectively. The affected parcels of land for Site 9 are identified in **Table 5-4** using ID numbers that correspond with those identified in **Figures 5.8 and 5.9**.

5.4.3 No-Build Alternative

The INM output for the existing (2009) and future (2021) conditions at the existing St. Marys Airport are depicted in **Figures 5.10 and 5.11** respectively. It can be determined from **Figure 5.10** that 65, 70 and 75 DNL contours on the North and Southeast sides of the airport do extend beyond airport property and cover approximately 35 acres of off-airport property. While a majority of this area is within the Airport-Industrial District, a portion of the 65 DNL covers an area to the northeast of the Airport that is currently zoned single family residential. Approximately 12 residences fall under the 65 DNL in this area. These residences are identified in **Figure 5.10** and listed in **Table 5-5** using ID numbers that correspond to those identified in the figure.

An examination of the Year 2021 noise contours indicates a reduction in off-airport acreage that the 65, 70 and 75 DNL contours cover to approximately 10 total acres. Future conditions seem to indicate that although portions of the 65 DNL extend beyond airport property, they all remain within the area zoned as the Airport-Industrial District.

Table 5-4
SITE 9 PARCEL OWNERS

ID	Owner	Parcel Number
1	Edward R. Canady	070B 005
2	Duke R. Martin, Jr.	070B 006
3	Ruby Easterling	070B 007
4	Franklin H. Ford	070B 008
5	Franklin H. Ford	070B 009
6	Timothy B. Klein	070B 010
7	Nels W. Palm, III	070B 011
8	William Stewart	070B 012
9	Glen M. & Ly Kirk	070B 013
10	William Crabtree	070B 014
11	Lynn C. Barton	070B 015
12	John M. Childree	070B 016
13	Tony P. & Jennifer M. Sheppard	070B 017
14	James F. Kehoe	070B 018
15	Cathy C. Logan	070B 026
16	Dorsey E. Popham	070B 027
17	Patric Thornhill	070B 028
18	Patric Thornhill	070B 029
19	Christina L. Betz	070B 030
20	Linda A. Brewer	070B 031
21	Neil J. & Shirley A. Bamford	070B 032
22	Neil J. Bamford	070B 033

Source: http://www.camdencountymaps.com

Table 5-5
EXISTING AIRPORT PARCEL OWNERS

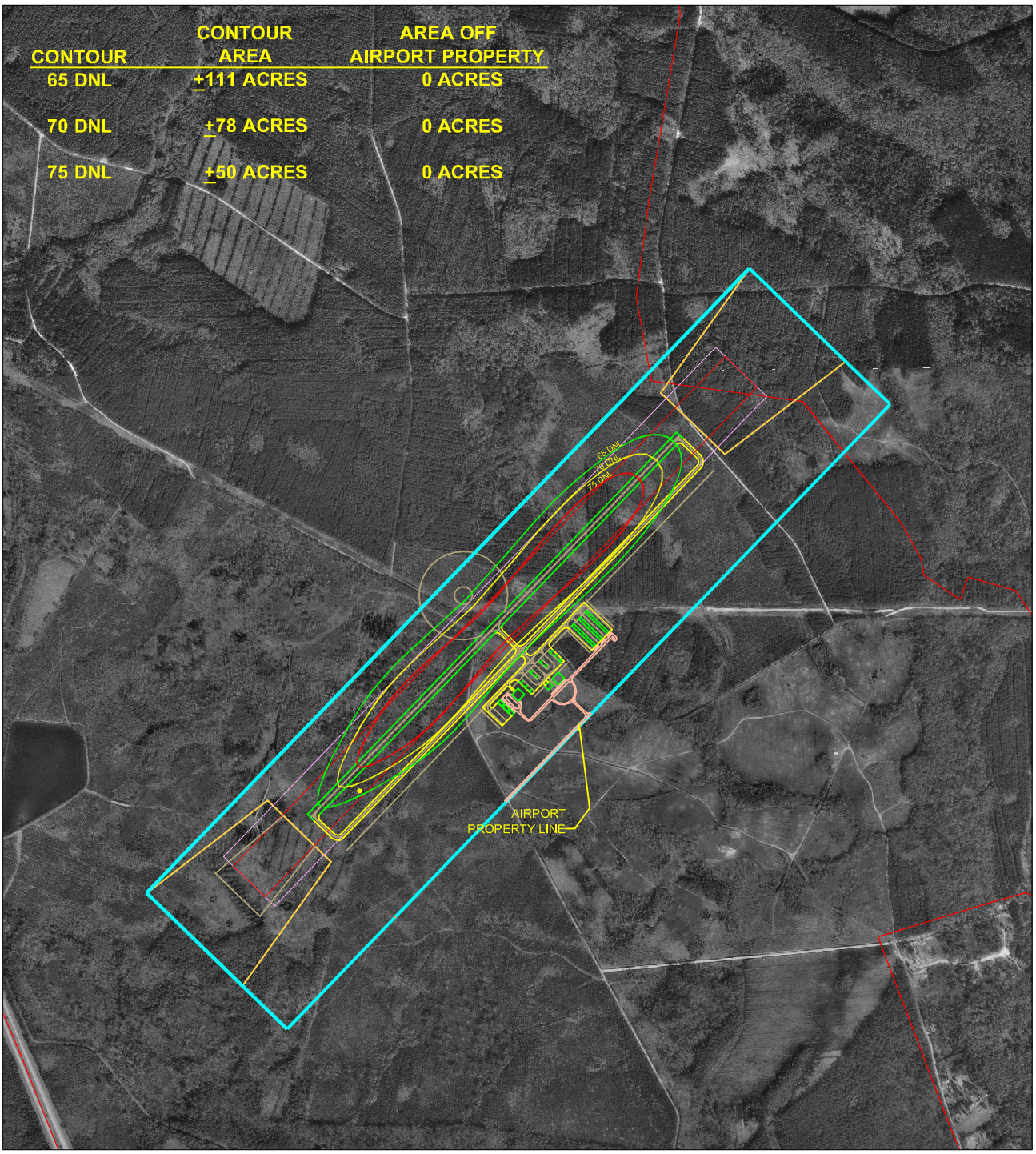
ID	Owner	Parcel Number
1	Mark Mullis	135G 003
2	Martin L. Reaves	135G 004
3	Andrew J. Tomlin	135G 005
4	Ronald C. Rein	135G 006
5	Paul L. Barnes	135G 007
6	Roy W. & Catherine Millsaps	135G 008
7	Kevin A & Saralee M. Talbot	135G 009
8	Teresa F. Potter	135G 010
9	Kelley C. Messer	135G 011
10	KLC Realty Trust	135G 012
11	Barry D & Kathleen Jo Ordway	135G 013
12	David L & H Winn	135G 014

Source: http://www.camdencountymaps.com

Source: RS&H (2005), INM 6.0

Figure 5.4

SITE 1 - EXISTING (2009) NOISE CONTOURS



Source: R,S&H (2005), INM 6.0

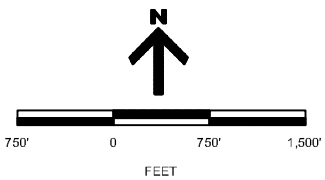
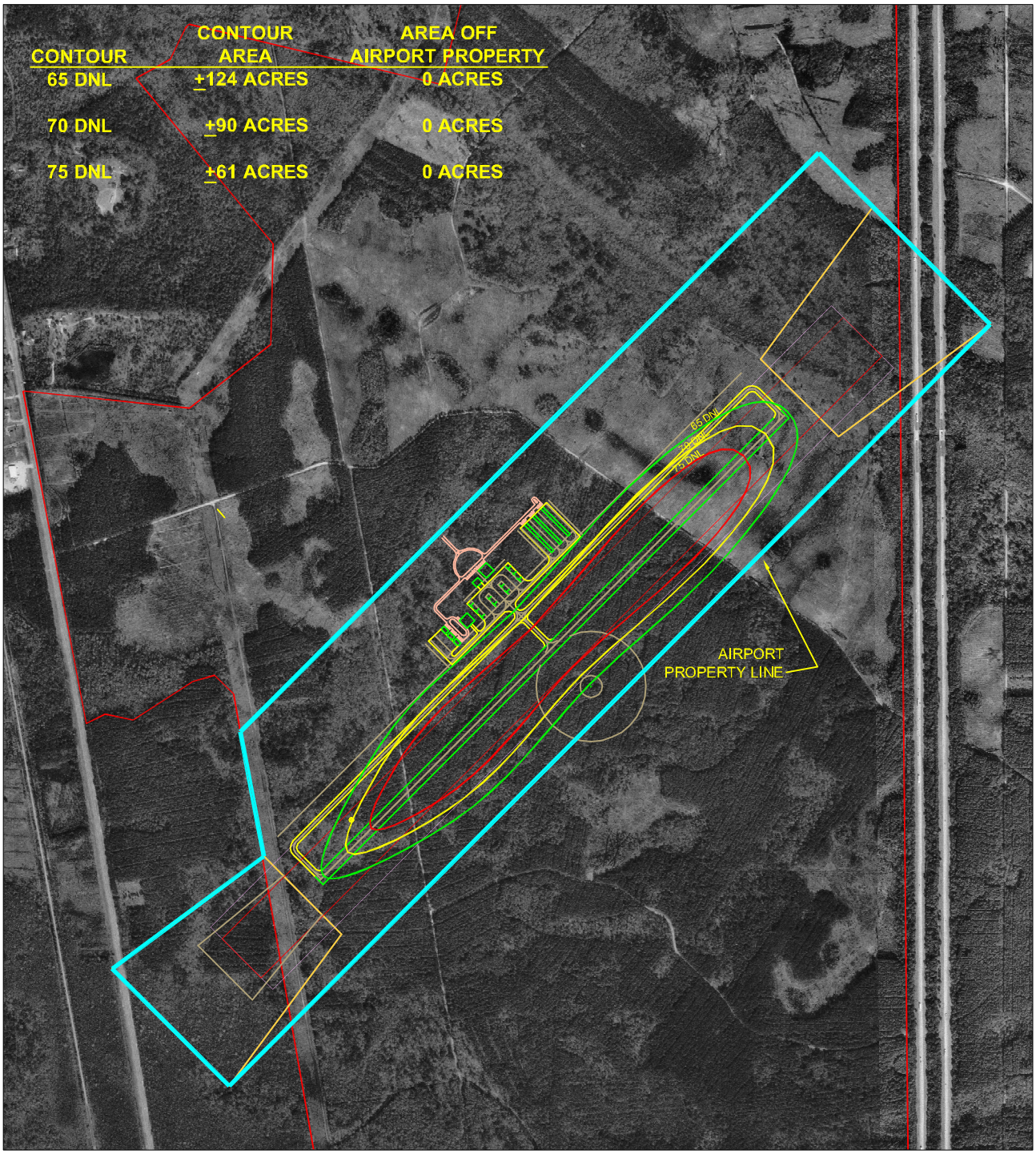


Figure 5.5

SITE 3 - EXISTING (2009) NOISE CONTOURS



Source: RS&H (2005), INM 6.0

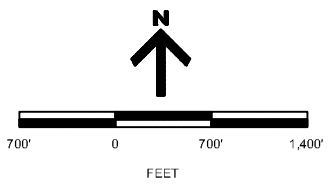
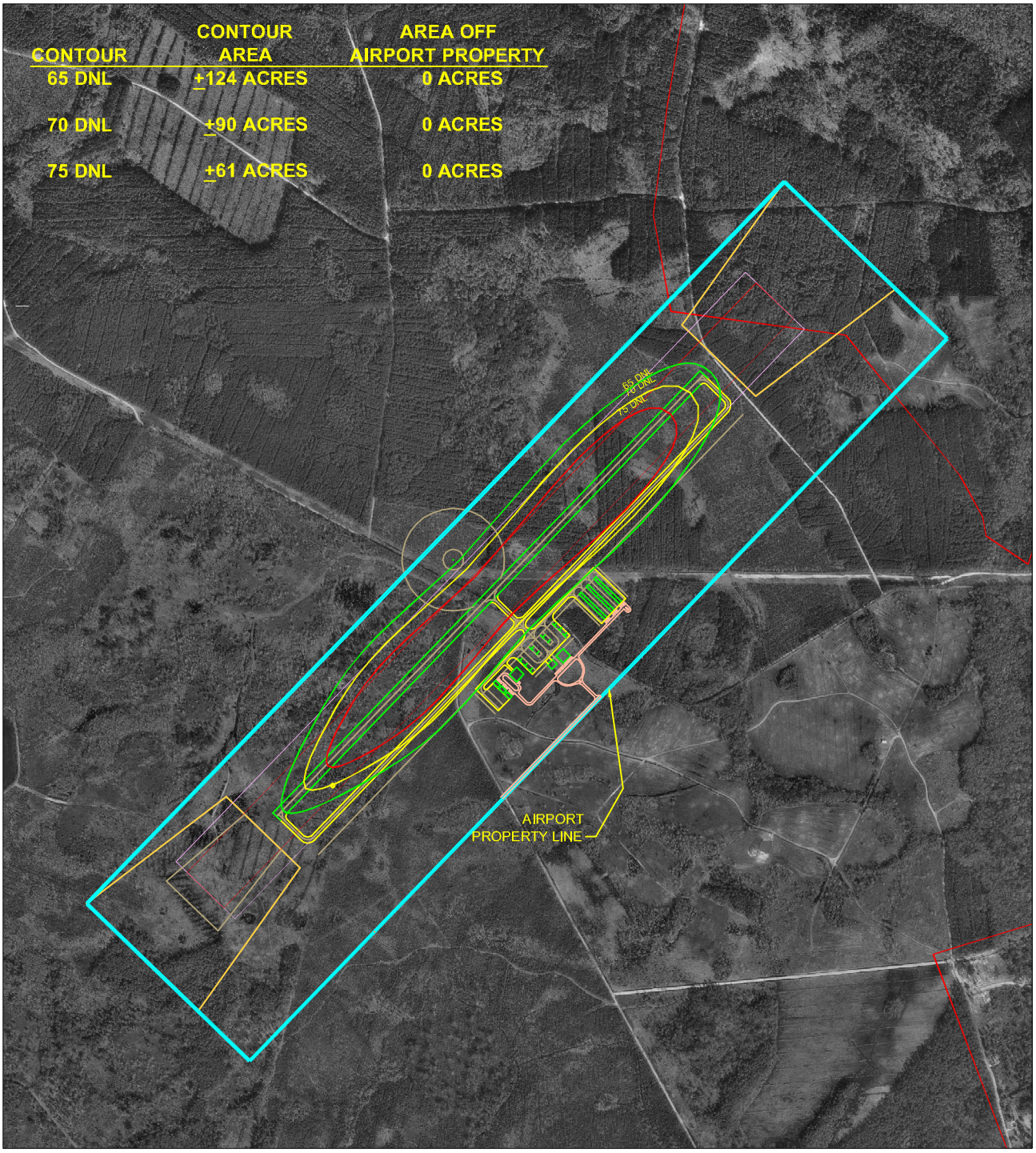


Figure 5.6

SITE 1 - FUTURE (2021) NOISE CONTOURS



Source: R,S&H (2005), INM 6.0

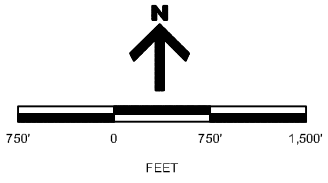
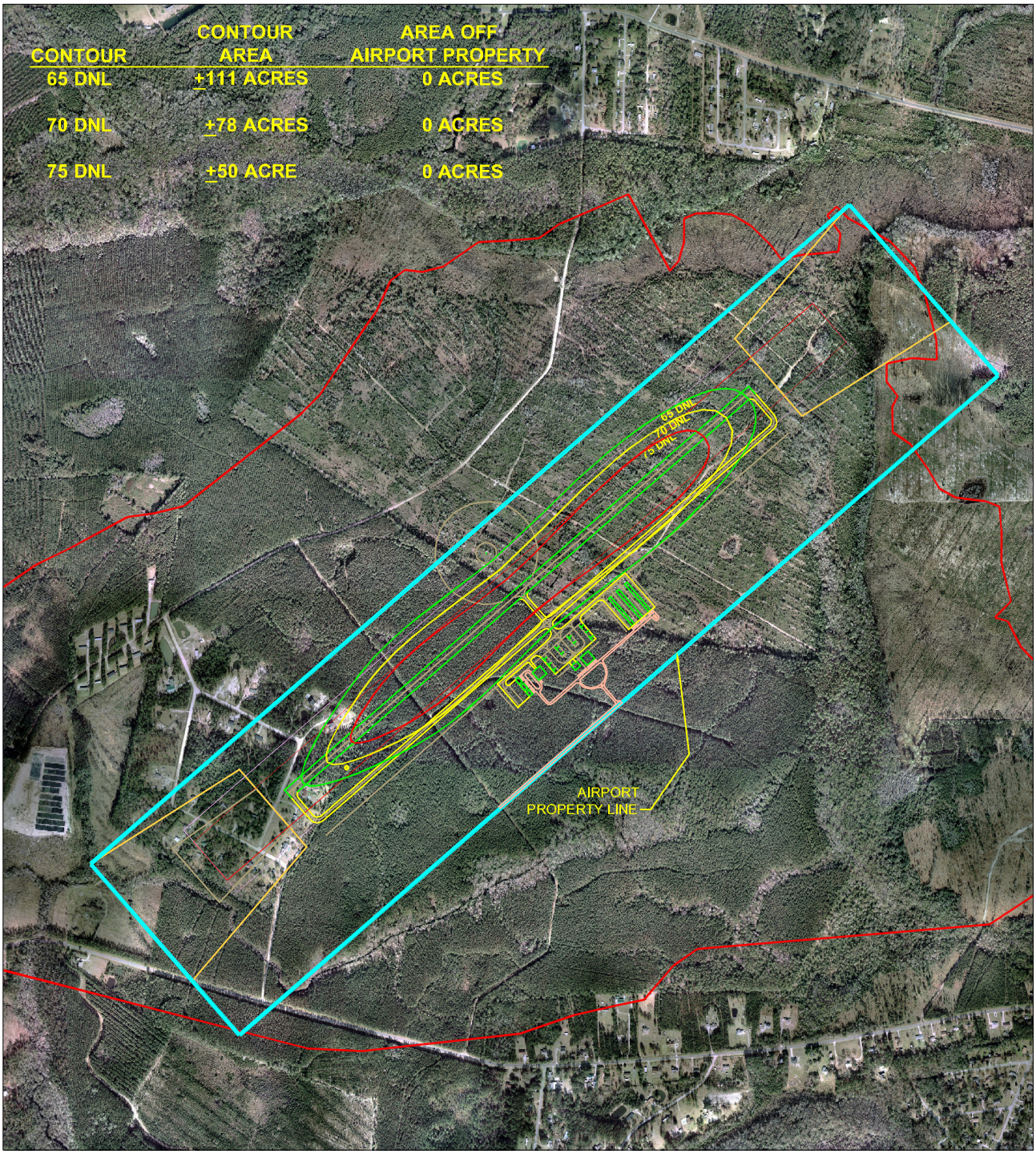


Figure 5.7

SITE 3 - FUTURE (2021) NOISE CONTOURS



Source: R,S&H, 2005, INM 6.0

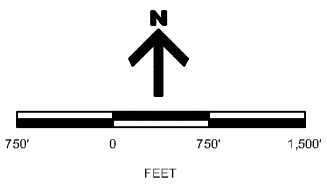
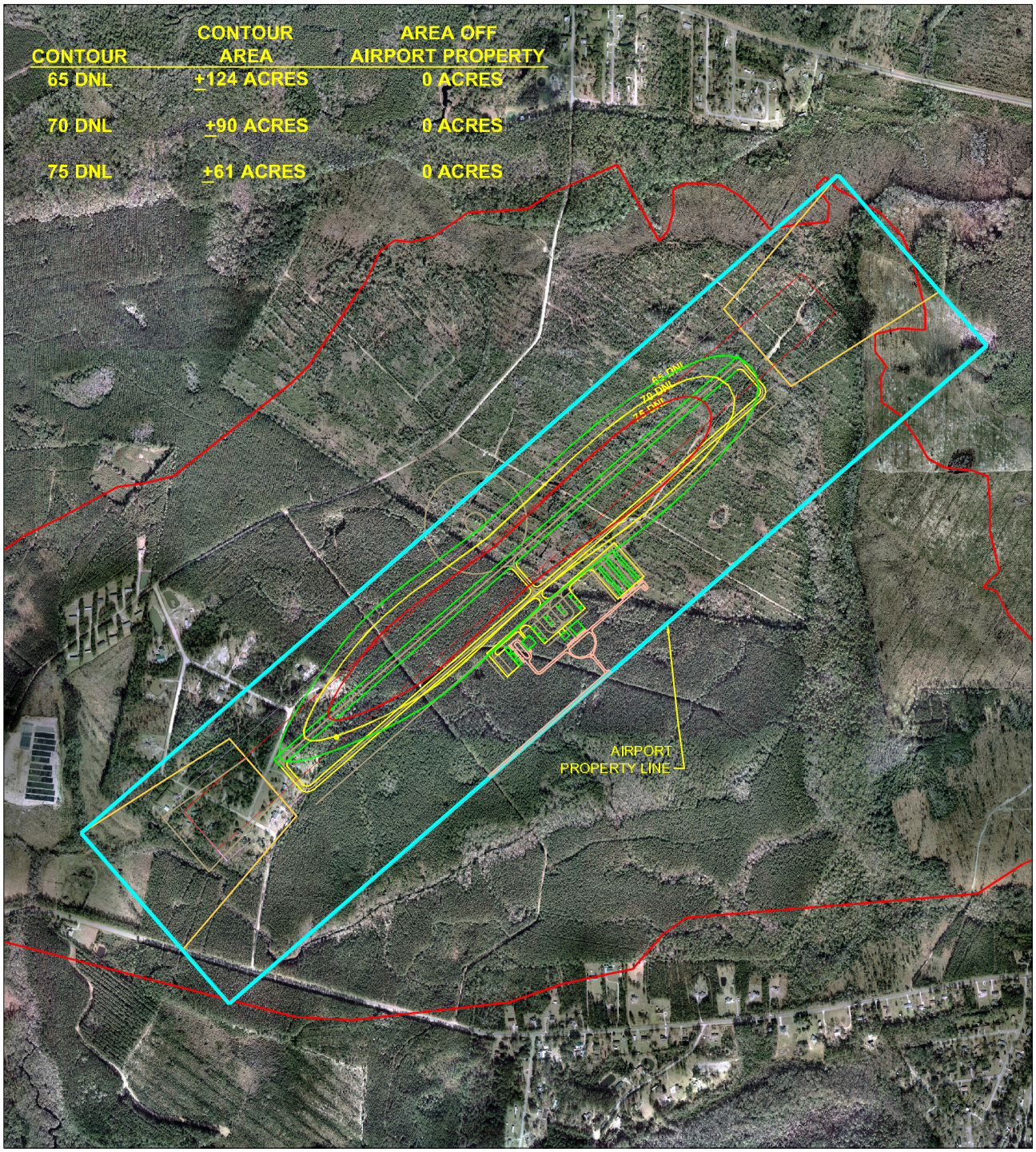


Figure 5.8

SITE 9 - EXISTING (2009) NOISE CONTOURS



Source: R,S&H, 2005, INM 6.0

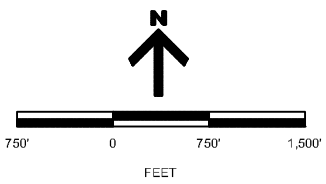
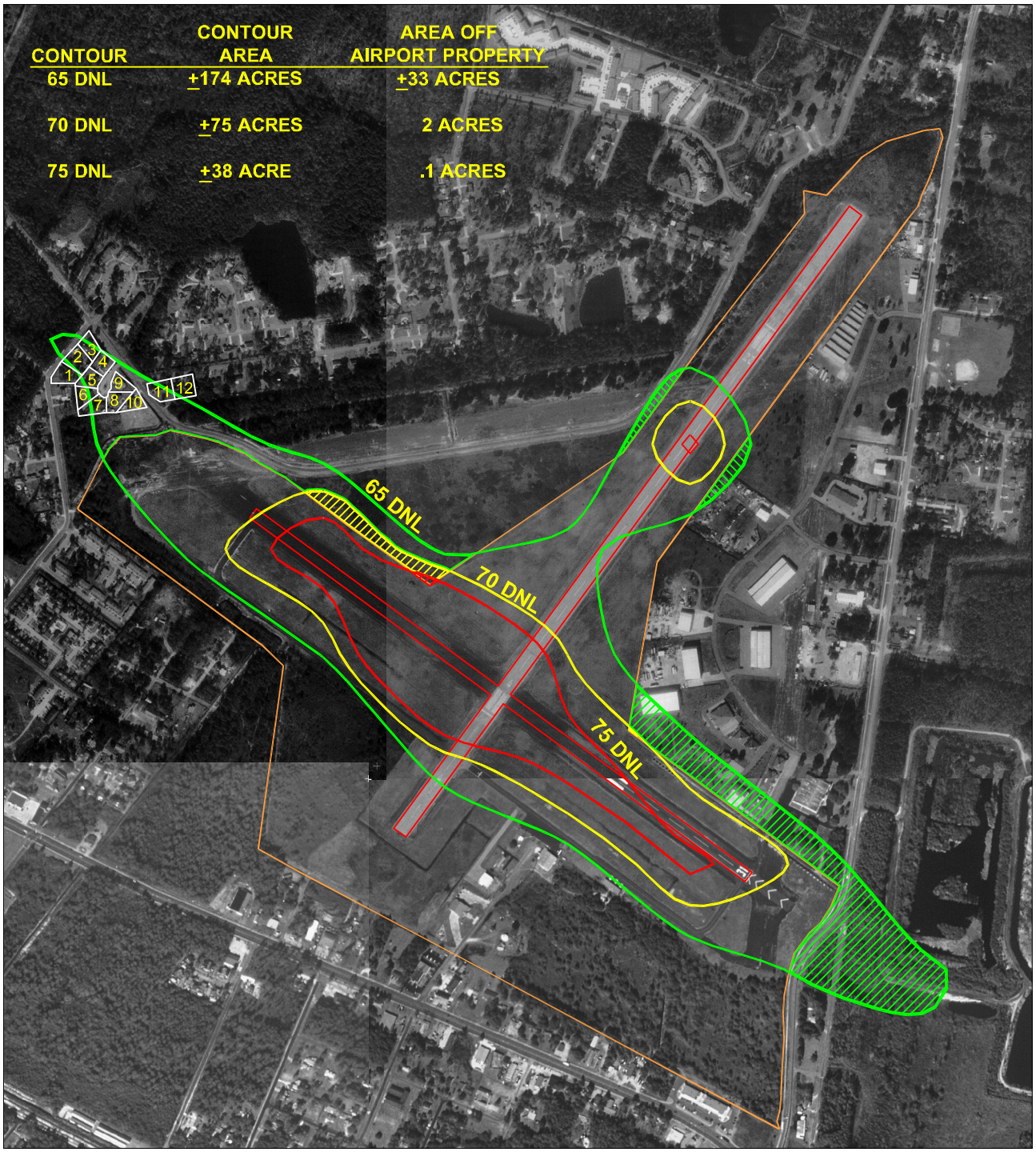


Figure 5.9

SITE 9 - FUTURE (2021) NOISE CONTOURS



Source: Georgia State GIS Clearinghouse (2004), INM 6.0

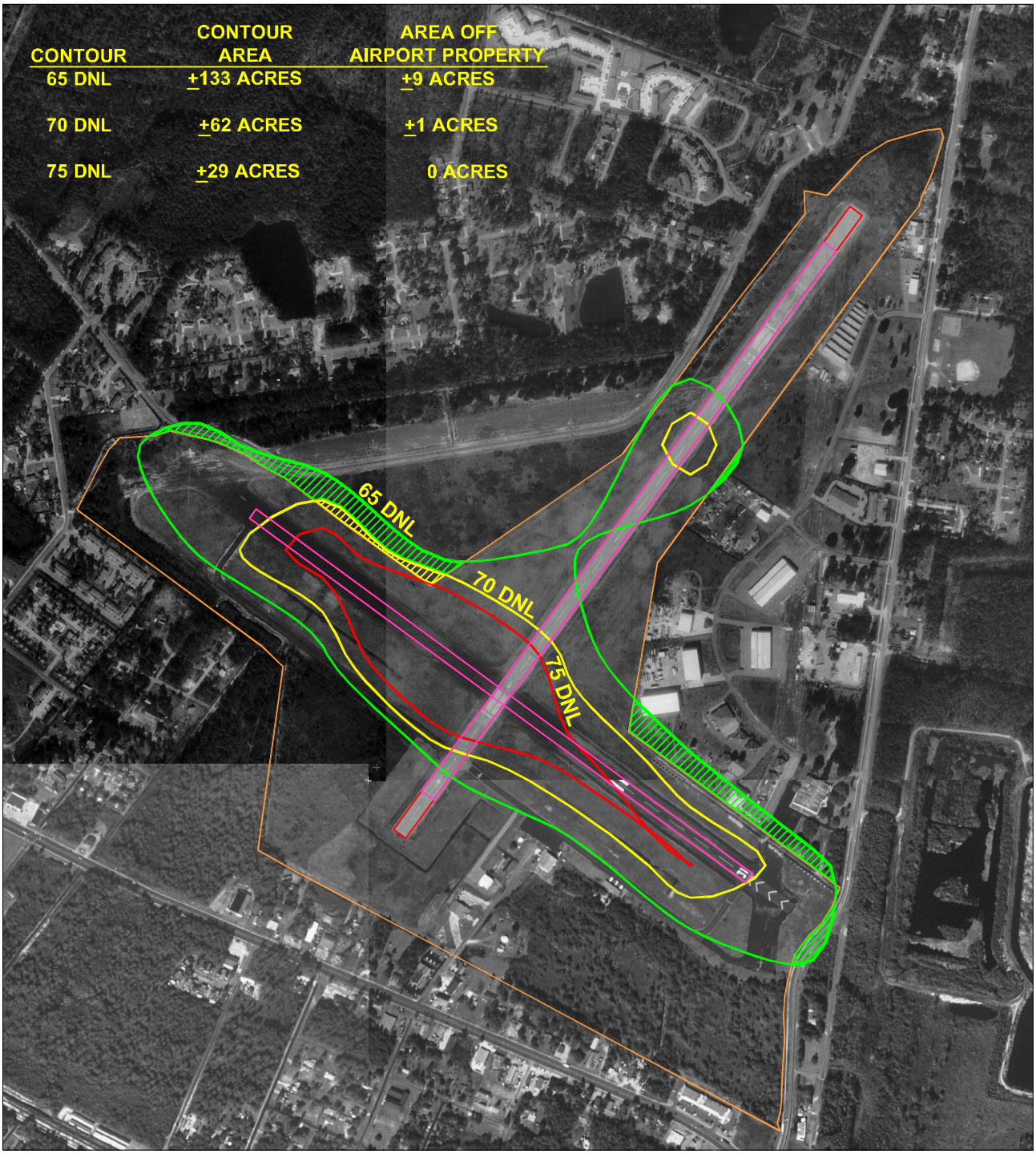
N

500' 0 500' 1,000'

FEET

Figure 5.10

ST. MARYS AIRPORT- EXISTING CONDITIONS (2009)



Source: Georgia State GIS Clearinghouse (2004), INM 6.0

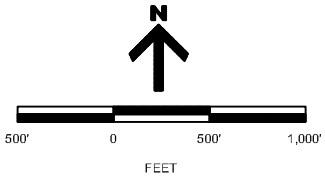


Figure 5.11

EXISTING ST. MARYS AIRPORT- FUTURE CONDITIONS

5.4.4 Mitigation

Under the forecast conditions for the Proposed Action on Sites 1 and 3, no mitigation actions will be required. As it pertains to Site 9, acquisition of property on the southwest side of Site 9 would be required as well as relocation of the residents that currently occupy the affected dwellings. In such a case the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 are applicable given a federally assisted program is involved. However, if the development of Site 9 can be shifted to the northeast, acquisition of residential properties may not be required.

5.5 COMPATIBLE LAND USE

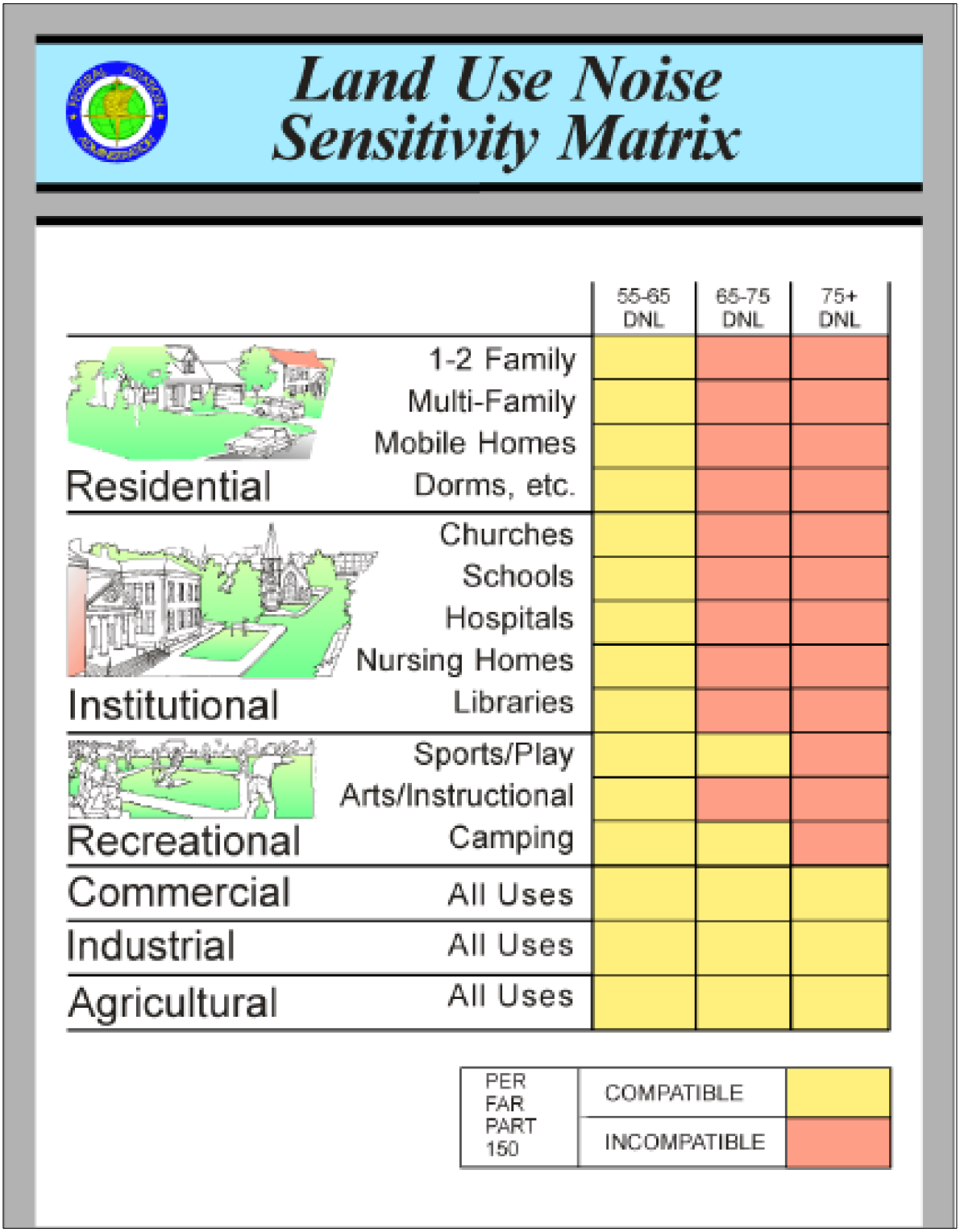
FAA Order 1050.1E *Environmental Impacts: Policies and Procedures* states that the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. Therefore, there must be assurances that zoning laws, current infrastructure, and the adoption of new zoning regulations are compatible with the proposed new airport's location and its forecasted noise contours.

Significance thresholds for DNL levels have been established when evaluating the compatibility of surrounding land uses. These are provided in FAA Order 1050.1E and will be used in determining the significance of noise impacts. In general, residences, schools, hospitals, nursing homes, and places of public assembly, including places of worship, are considered noise-sensitive areas and are not generally compatible with aircraft operations when located within the 65 DNL noise contour. A general outline of noise sensitive land uses provided by the FAA is shown in **Figure 5.12.**

Currently, the City of St. Marys has adopted zoning regulations for the establishment of an Airport-Industrial District, the purpose of which is to restrict the height of objects around the Airport as well as promoting the health, safety, and general welfare of the inhabitants of St. Marys. As a result, no use may be made of land or water within any Airport Industrial District in such a manner as to create: electrical interference with navigational signals or radio communication between the airport and aircraft; lighting that makes it difficult for pilots to distinguish between airport lights and others; or obstructions that penetrate FAA established imaginary surfaces.

Camden County currently regulates the erection of towers by requiring a prior review of a proposed tower by the Department of Transportation. In addition, Camden County encompasses a variety of different land uses, especially near populated areas. However, the three site alternatives presented here are located in relatively unpopulated areas and the land uses generally surrounding these sites are compatible with an airport's operation, see **Figure 5.13.**

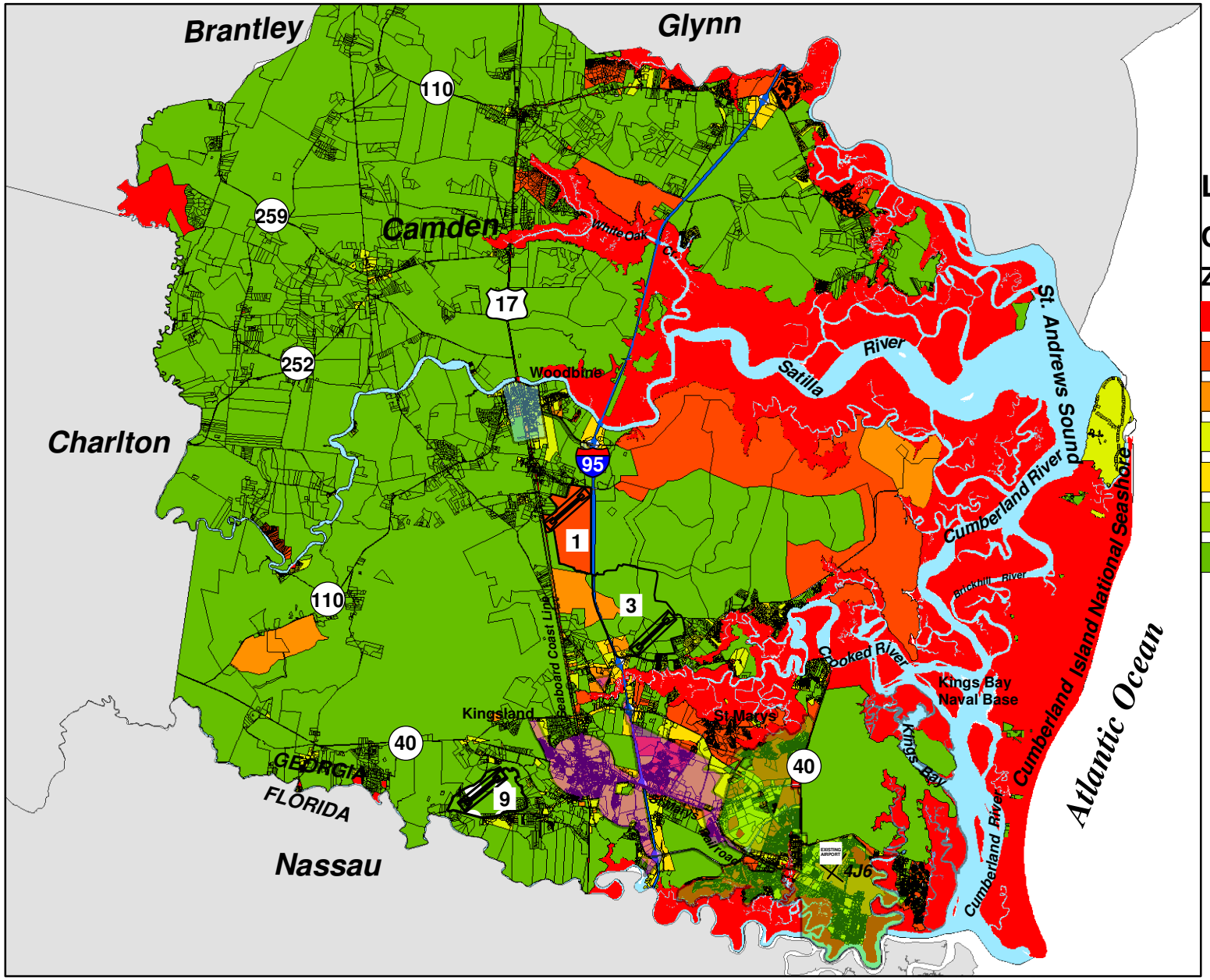
Presented here is a more detailed discussion of each Build and No-Build alternative as they relate to their surrounding land uses.



Source: FAA

Figure 5.12

Noise Sensitive Land Uses



Legend

County Zoning

ZONING

- Conservation-Preservation
- Planned Development
- Industrial
- Residential
- Commercial
- Business
- Agricultural

Source: Camden County Plannning and Zoning Department (2006)

N

0 1.5 3 6 9 Miles

Figure 5.13

CAMDEN COUNTY ZONING

5.5.1 Site 1

The land that encompasses Site 1 is currently zoned "Planned Development" as reflected in the Camden County Comprehensive Plan. Development of an airport within an area zoned as "Planned Development" is a permitted use under the code. The land adjoining Site 1 is a mixture of agriculture, commercial and limited residential uses, see **Figure 5.14**. The development of an airport in the location of Site 1 will not conflict with the surrounding land uses, and should not require a re-zoning of the Site or any adjoining properties.

The noise contours presented in the Noise section of this chapter are located entirely within the boundaries of the proposed airport site and will not create negative impacts to the surrounding land uses. There are several churches to the north and east of the proposed airport site, the closest of which is due north of the site on Billyville Road and is well outside of the 65 DNL noise contours.

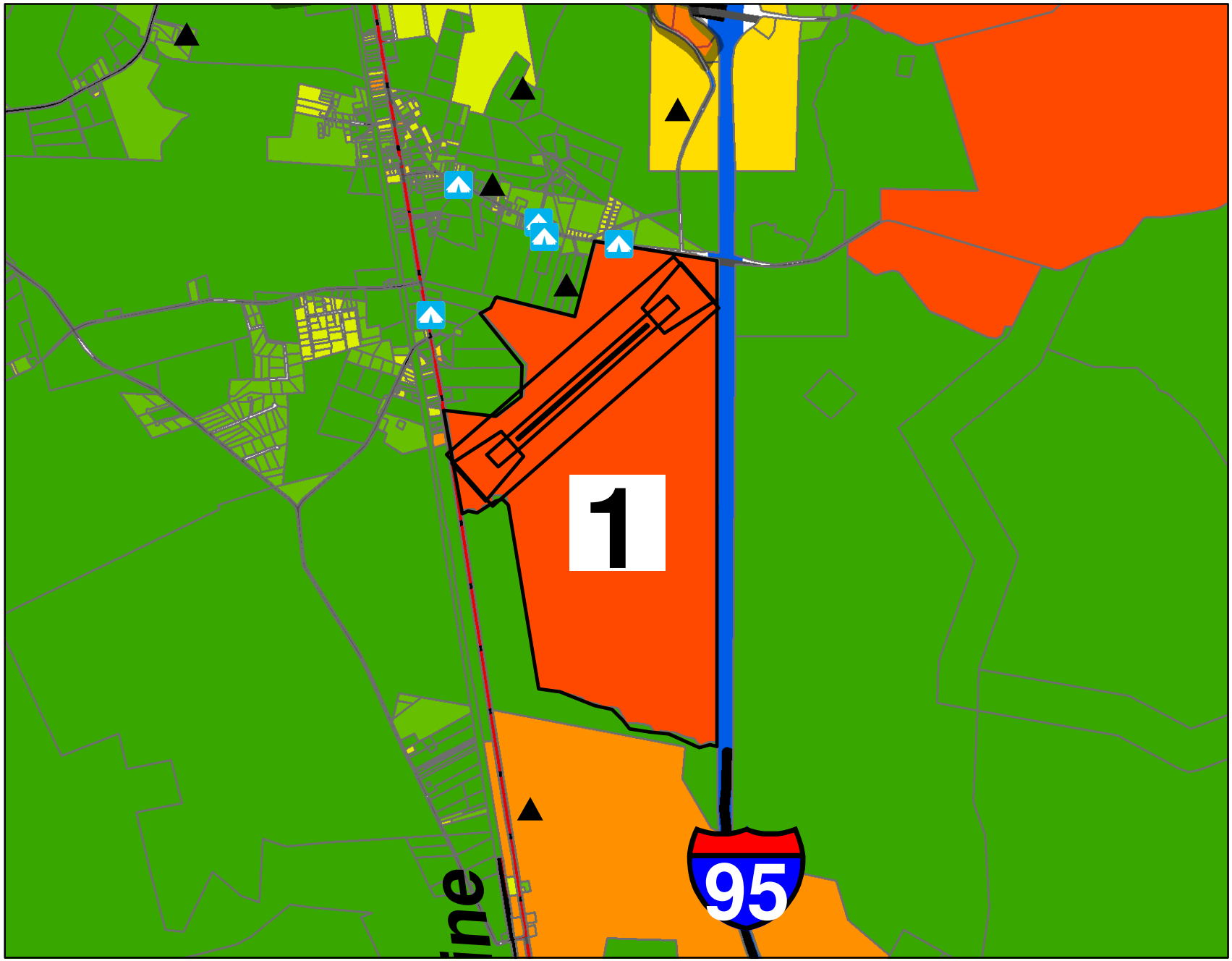
There are two towers located to the northeast of the site that are 262 ft. and 270 ft. above ground level (AGL) in height. Additionally, a 364 ft. AGL tower is located just south of the proposed site. A Georgia Power Line runs from north to south through the site and will need to be relocated.

5.5.2 Site 3

The land that encompasses Site 3 is currently zoned Agriculture-Forestry, as reflected in the Camden County Comprehensive Plan. Within the Agriculture-Forestry District an airport is not a permitted use. However, an airport may be developed on Site 3 upon the issuance of a special permit in accordance with the Camden County Zoning Code. The property adjoining Site 3 is a mixture of agricultural, industrial and limited residential uses, see **Figure 5.15**. The development of an airport on the location depicted in Site 3 will not significantly conflict with the surrounding land uses.

The noise contours presented in the Noise section of this chapter are located entirely within the boundaries of the proposed airport site and will not create negative impacts to the surrounding land uses.

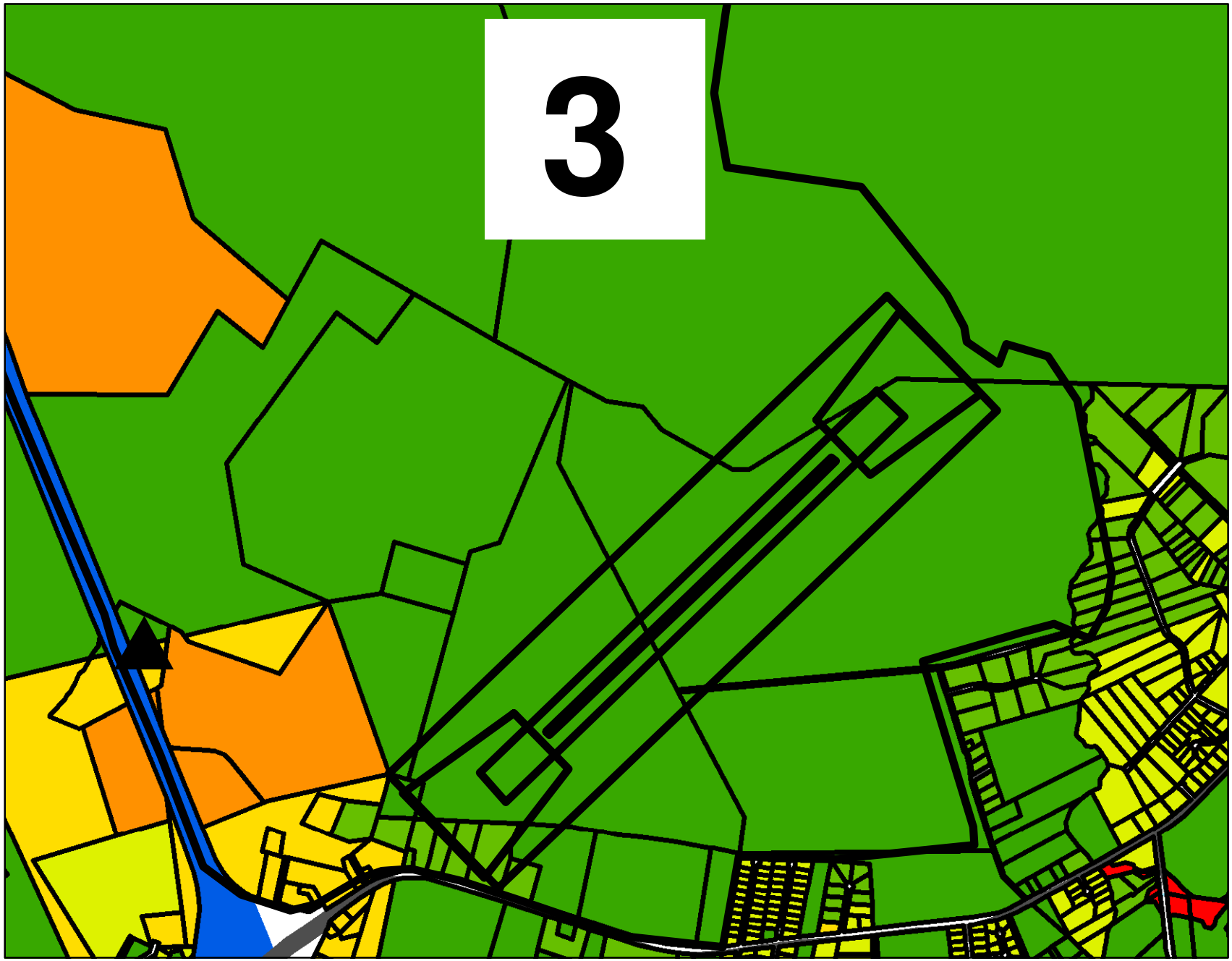
Two churches are co-located approximately one mile to the southeast of the proposed site, however they are well outside of the 65 DNL noise contours for the proposed location. In addition, a tower that is 322 ft. AGL in height is located on the western edge of the proposed location.



Source: Camden County Plannning and Zoning Department (2006)

Figure 5.14

SITE 1 SURROUNDING ZONING



Source: Camden County Plannning and Zoning Department (2006)

0 0.15 0.3 0.6 0.9 Miles

Figure 5.15
SITE 3 SURROUNDING ZONING

5.5.3 Site 9

The land that encompasses Site 9 is currently zoned both Agriculture-Forestry as well as Agricultural-Residential, as reflected in the Camden County Comprehensive Plan, see **Figure 5.16**. Within the Agriculture-Forestry District an airport is not a permitted use. However, an airport may be developed within such a district upon the issuance of a special permit in accordance with the Camden County Zoning Code. The portion of the site zoned Agricultural-Residential will have to be rezoned, since an airport is not a generally permitted use, nor is it permitted through a special permit process.

The noise contours presented in Section 5.4 of this Chapter are located predominately within the boundaries of the proposed airport site, however, the residential development to the southwest is partially located within the 65 DNL noise contour and will be incompatible with airport development on the site. Approximately one mile to the north and east of the site lies a church, however, it is well outside of the 65 DNL noise contour. Additionally, a cemetery is located approximately one mile to the southwest of the site, but is also well outside of the 65 DNL noise contour.

There are two towers co-located to the north of the site that are 1631 ft. and 220 ft. AGL in height which present significant airspace conflicts with developing Site 9.

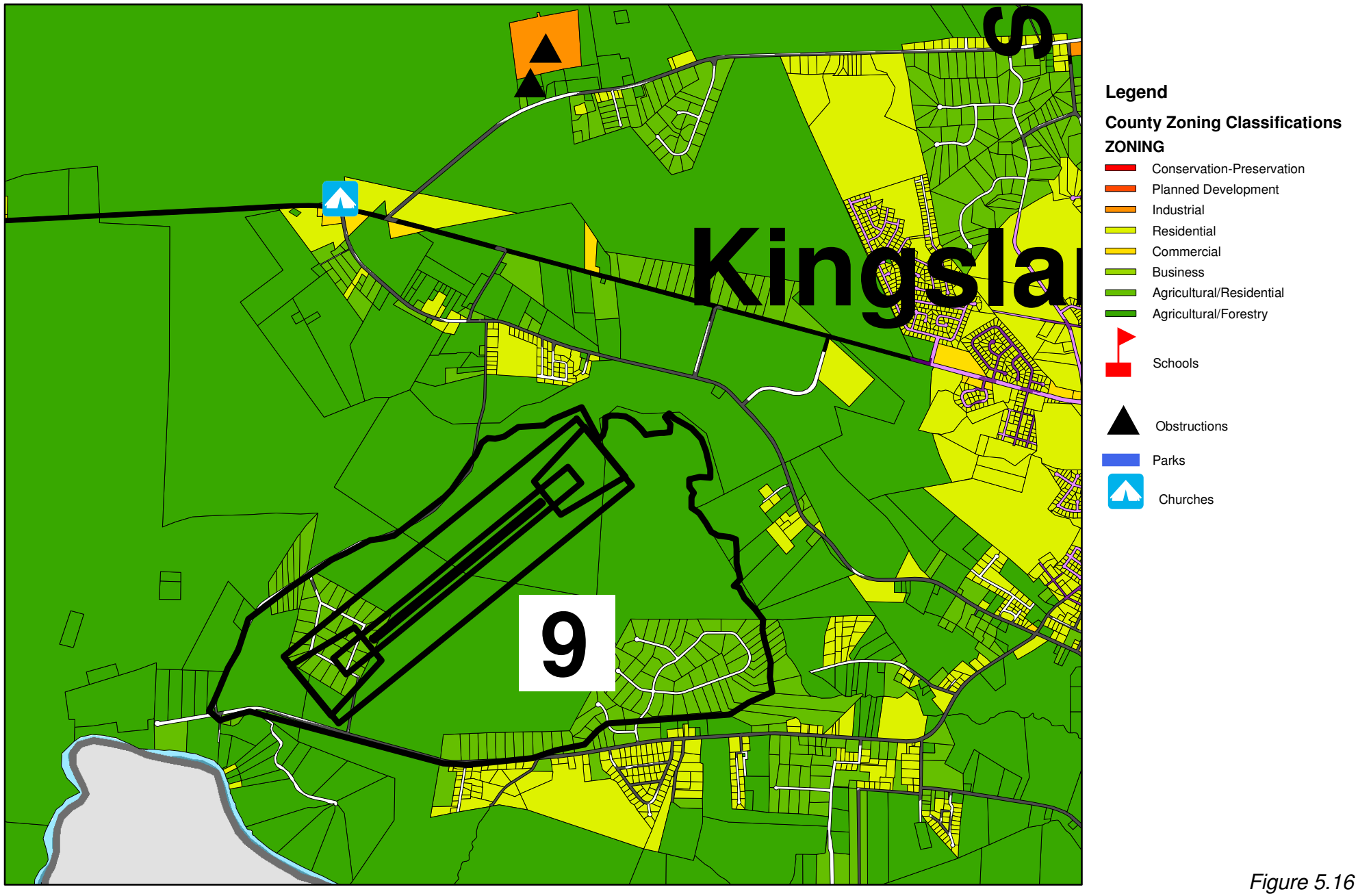
5.5.4 No-Build Alternative

Future development of the current St. Marys Airport would necessitate impacting surrounding residential and commercial developments, as well as potential continued impacts to the Kings Bay Naval Base, see **Figure 5.17**. In addition, due to a majority of aircraft operations shifting to Runway 13/31 due to the location of the Prohibited Airspace associated with Kings Bay, noise contours boundaries for Runway 13/31 have increased on the departure ends of the runway. A residential area to the northwest of the Airport falls within the current 65 DNL noise contour.

5.5.5 Mitigation

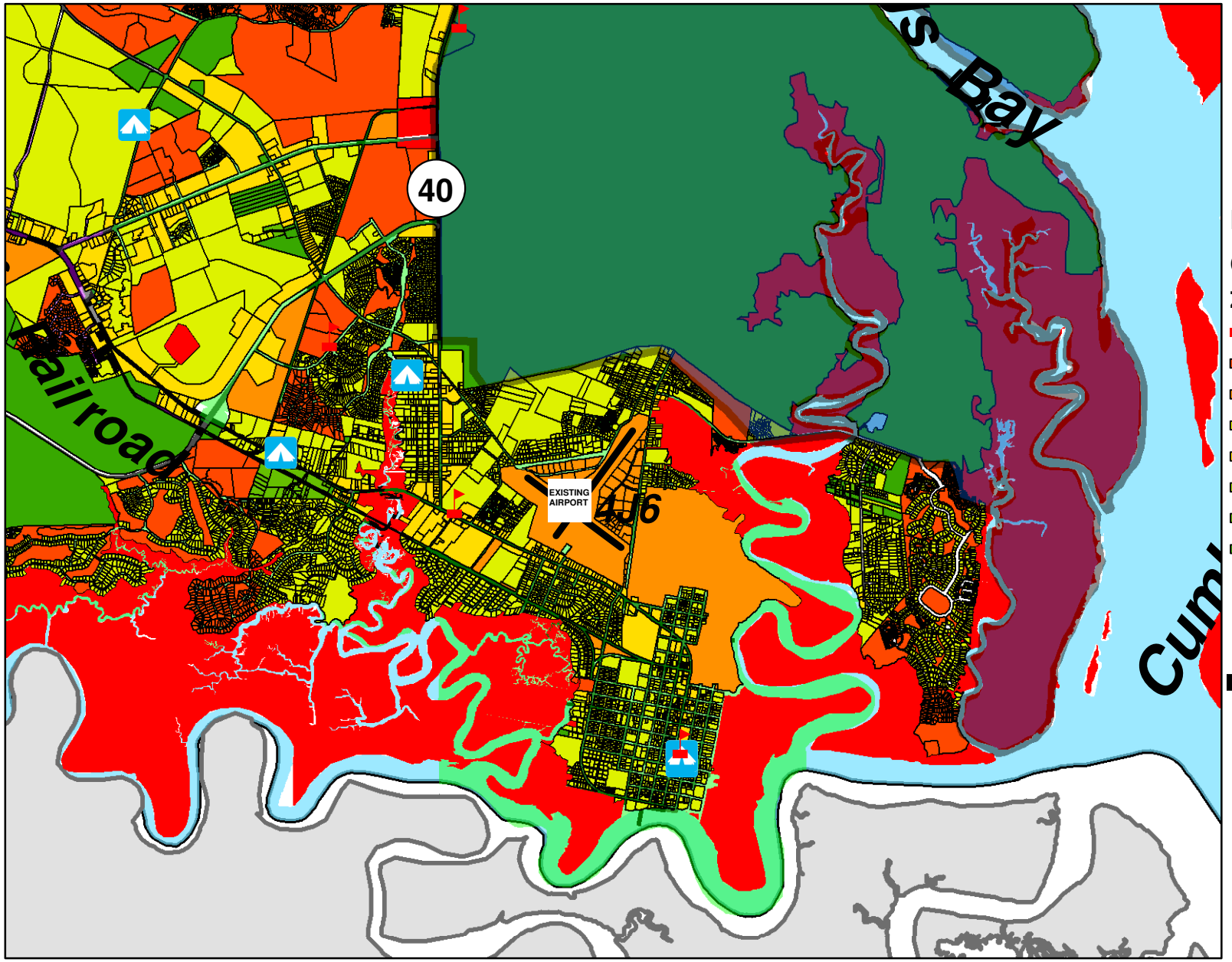
Based on the above information and analysis, the Build and No-Build alternatives vary in their impacts. Site 1 is the only site that is currently zoned “Planned Development” and would not require re-zoning in the future. Site 3 would require either re-zoning or the issuance of a special permit in order for an airport to be a permitted land use. A portion of Site 9 would also require either re-zoning or the issuance of a special permit in order for an airport to be a permitted land use, while the portion currently containing residential dwellings will require rezoning, land acquisition and possible relocation assistance for affected residents. This should include all residential properties within the 65 DNL.

Height zoning and other land use regulations, such as those currently in effect in the City of St. Marys, should be considered and if necessary adopted by the political entity that eventually controls the land area around the proposed replacement airport site.



Source: Camden County Plannning and Zoning Department (2006)

Figure 5.16
SITE 9 SURROUNDING ZONING



Source: Camden County Plannning and Zoning Department (2006)

Figure 5.17
CURRENT AIRPORT ZONING

The No-Build Alternative may require FAA noise control measures such as increased sound insulation and/or avigation easements in order to mitigate for the affected residences northwest of the current airport.

5.6 CONSTRUCTION IMPACTS

Construction activities for development of the Proposed Action will likely have temporary environmental impacts. These impacts may include: noise from construction equipment in transit and on-site; dust resulting from the delivery of materials and the disturbance of surface soils on-site; air pollution as a result of vehicles and equipment used on-site; and water pollution resulting from erosion due to earthwork and the use of contaminants required for completing construction related tasks.

Noise from construction activities generally occurs in daylight hours, while air pollution impacts include reduced visibility, unsightly coatings on nearby buildings and discomfort for dust sensitive individuals as a result of fugitive dust particles. Vehicle emissions from construction equipment and other associated activity will also have a temporary and localized impact on air quality and water pollution resulting from erosion and sedimentation in the vicinity of the construction site.

Presented here are the expected impacts should the Proposed Action be implemented at any of the proposed site alternatives.

5.6.1 Build Alternatives

Should construction occur at Sites 1, 3 or 9, impacts would include: noise, air pollution, and dust from construction equipment; noise and dust from the delivery of construction materials; as well as short-term water quality and soil erosion impacts on exposed areas.

Noise generated by construction equipment would vary greatly depending on the equipment type and model, mode and duration of operation, and specific type of work in progress. However, any adverse impacts resulting from construction noise are anticipated to be localized and temporary. Dust emissions are anticipated to impact some adjoining properties, but the area impacted by dust emissions should be fairly small and located immediately adjacent to the construction area. It is expected that potential air quality impacts will occur in surrounding areas as construction equipment will generate a certain level of emissions previously identified in Section 5.1. It is also expected that short-term water quality impacts may occur due to suspended sediments during precipitation events as well as the likelihood of pollutants associated with fuels, lubricants, and solvents required for the operation of construction equipment and materials required for construction. Additionally, a National Pollutant Discharge Elimination System (NPDES) permit will be required given that construction will disturb more than one acre.

5.6.2 No-Build Alternative

There are no potential impacts associated with the No-Build alternative as no construction will take place.

5.6.3 Mitigation

FAA Advisory Circular 150/5370-10B *Standards for Specifying Construction of Airports* will be incorporated into the construction planning to minimize environmental impacts to construction activities. The extent of these impacts is subject to Federal, State and/or local laws, ordinances

and regulations. The potential impacts noted above are discussed further below, with measures identified to conform to Federal, State and local requirements.

5.6.3.1 Noise

To reduce the potential impact of construction noise, all motorized construction equipment will be required to have mufflers constructed in accordance with the equipment manufacturer's specification or a system of equivalent noise reducing capabilities. Construction activities will also be limited to daylight hours unless special permission is obtained from local authorities and the phases of the project occurring at nighttime are to be completed within a specified time frame.

5.6.3.2 Dust

A strict control on dust shall be maintained throughout the project duration as a number of Best Management Practices (BMPs) will be utilized during development. These measures include minimizing land disturbance, stabilizing the surfaces of dirt piles if not removed immediately, using dust suppressants on traveled paths which are not paved, and appropriate construction sequencing.

5.6.3.3 Air Pollution

All necessary precautions will be taken to minimize air pollution generated by construction equipment. To reduce engine combustion emissions, construction equipment will be maintained to the level required to reduce the potential of releasing particulate and gaseous matter into the air.

5.6.3.4 Water Pollution

Temporary measures to control water pollution will be required to reduce effects of on-site construction equipment or construction materials, pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials. These measures include the use of berms, fiber mats, gravel, mulches, slope drains, temporary dikes, basins and ditches with each phase of construction to control erosion and sedimentation and prevent degradation of off-airport surface water quality. Temporary erosion control measures may also be implemented outside the limits of the construction area if determined necessary and/or are the direct result of on-site construction activities.

In addition to the above temporary measures, permanent erosion and water pollution control methods shall also be considered. These measures include the following:

- Schedule landscaping and other slope protection methods as soon as the land has been graded to its final contour.
- Installation of permanent storm water control facilities.
- Intercept runoff before it reaches steep slopes using diversion dikes, swales, or other barriers.
- The construction of check dams and other energy dissipation structures to slow runoff velocity and assist in the settlement of sediments.

5.7 DEPARTMENT OF TRANSPORTATION SECTION 4(f)

Section 4(f) of the Department of Transportation Act of 1966, provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, wildlife and waterfowl refuge, or land from a historic site of National, State, or local significance unless there is no feasible or prudent alternative and the use of such land includes all possible planning to minimize harm resulting from the use.

The land in the immediate vicinity of the Build and No-Build Alternatives was examined to determine the extent to which the Proposed Action would likely impact Section 4(f) Lands.

5.7.1 Build Alternatives

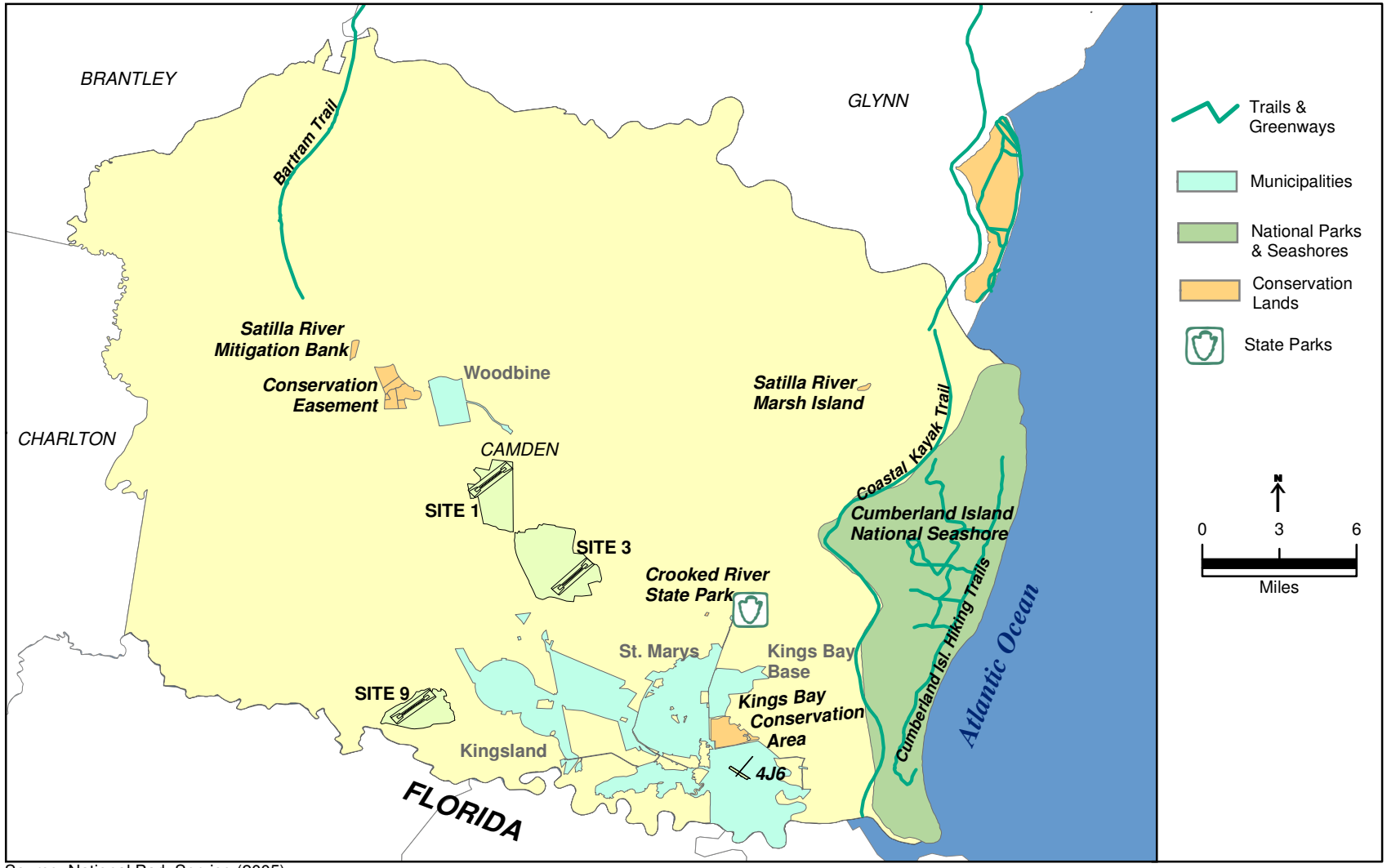
An examination of Sites 1, 3 and 9 shows that no public parks, recreation areas, wildlife or waterfowl refuges occur at or near the site, see **Figure 5.18**. Documented historic sites will be discussed in detail in Section 5.13.

5.7.2 No-Build Alternative

The land associated with the current St. Marys Airport is not being used as a public park, recreation area, wildlife or waterfowl refuge, see **Figure 5.18.**

5.7.3 Mitigation

No mitigation is needed, as the build and no-build alternatives do not currently impact any Section 4(f) lands.



Source: National Park Service (2005)
Georgia GIS Clearinghouse (2005)

Figure 5.18
SECTION 4(f) LANDS

5.8 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations* and Order Department of Transportation (DOT) 5610.2, *Environmental Justice in Minority and Low-Income Populations* encourage the consideration of environmental justice impacts, especially to determine whether a disproportionately high and adverse impact may occur to minority and low income populations. The United States DOT defines disproportionate or adverse affect as one that "…is predominately borne…and suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse affect that will be suffered by the non-minority population and/or non-low-income population". Therefore, a demographic analysis that identifies and addresses potential impacts, as well as accommodation for meaningful public involvement in the Proposed Action by minority and low-income populations shall be addressed.

Census data retrieved from the 2000 Census has been prepared in map form and presented in **Figures 5.19 and 5.20.** The data is broken down into 5-digit zip code tabulation areas and presents the percentage of individuals living below the poverty level along with the percentage of non-minority individuals within each tabulation area.

5.8.1 Site 1

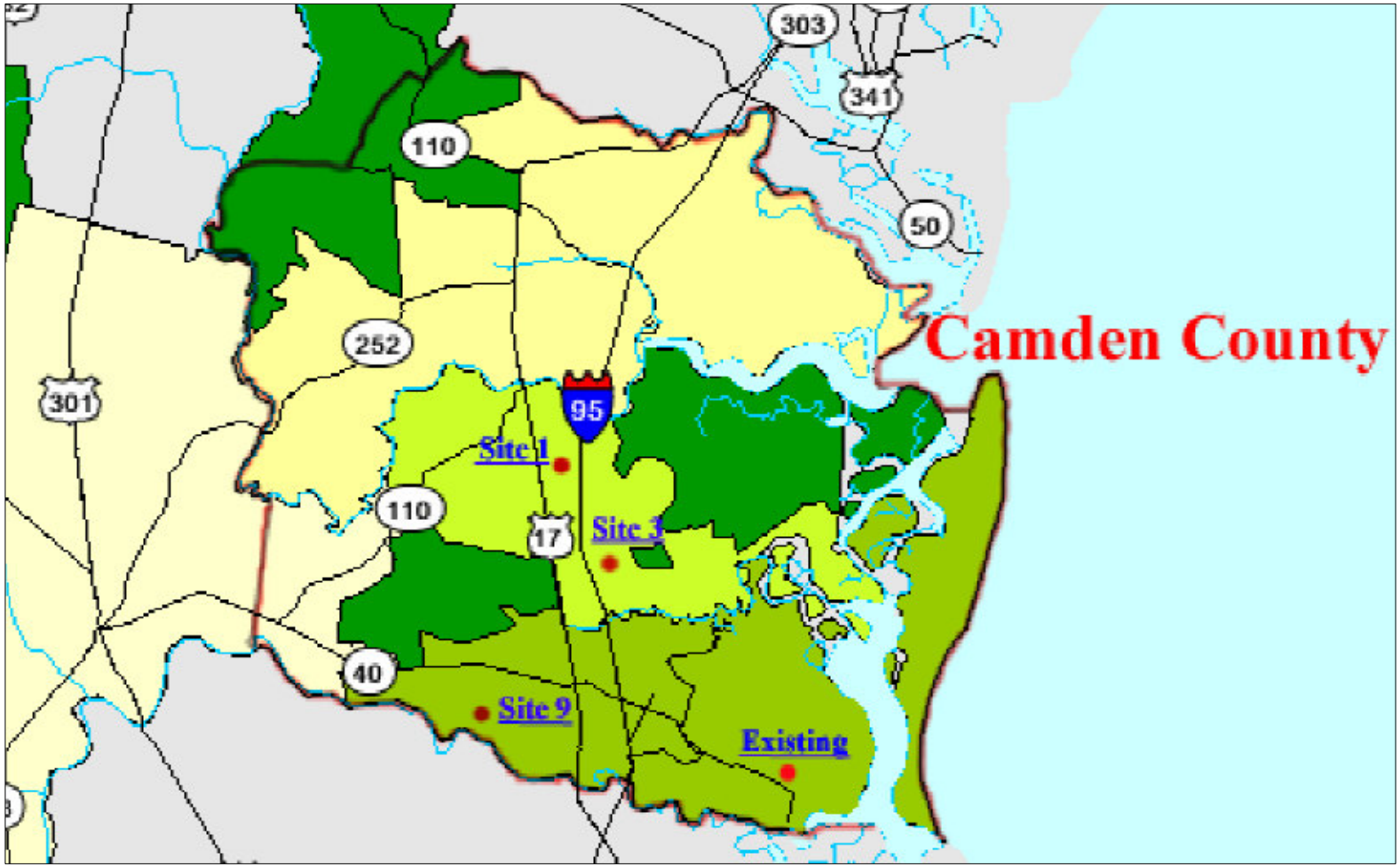
It can be interpreted from the figures that the population of the tabulation area encompassing Site 1 is approximately 71% non-minority individuals. When comparing this tabulation area to other areas of the County, **Figure 5.19** shows that areas to the north of Site 1 have higher percentages of minority ethnic populations. **Figure 5.20** shows that Site 1 is located within an area where approximately 7.4% of the population lives below the poverty level. When examining the County as a whole, Site 1 is located in an area of low levels of poverty in comparison to other tabulation areas in the County. In addition, there are no known low-income housing developments located on or adjacent to the Site.

5.8.2 Site 3

It can be interpreted from the figures that the population of the tabulation area encompassing Site 3 is approximately 71% non-minority individuals. When comparing this tabulation area to other areas of the County, **Figure 5.19** shows that areas to the north of Site 3 have higher percentages of minority ethnic populations. **Figure 5.20** shows that Site 3 is located within an area where 7.4% of the population lives below the poverty level. When examining the County as a whole, Site 3 is located in an area of low levels of poverty in comparison to other tabulation areas in the County. There is one residence on the Site that would require relocation, however, there are no known low-income housing developments located on or adjacent to the Site.

5.8.3 Site 9

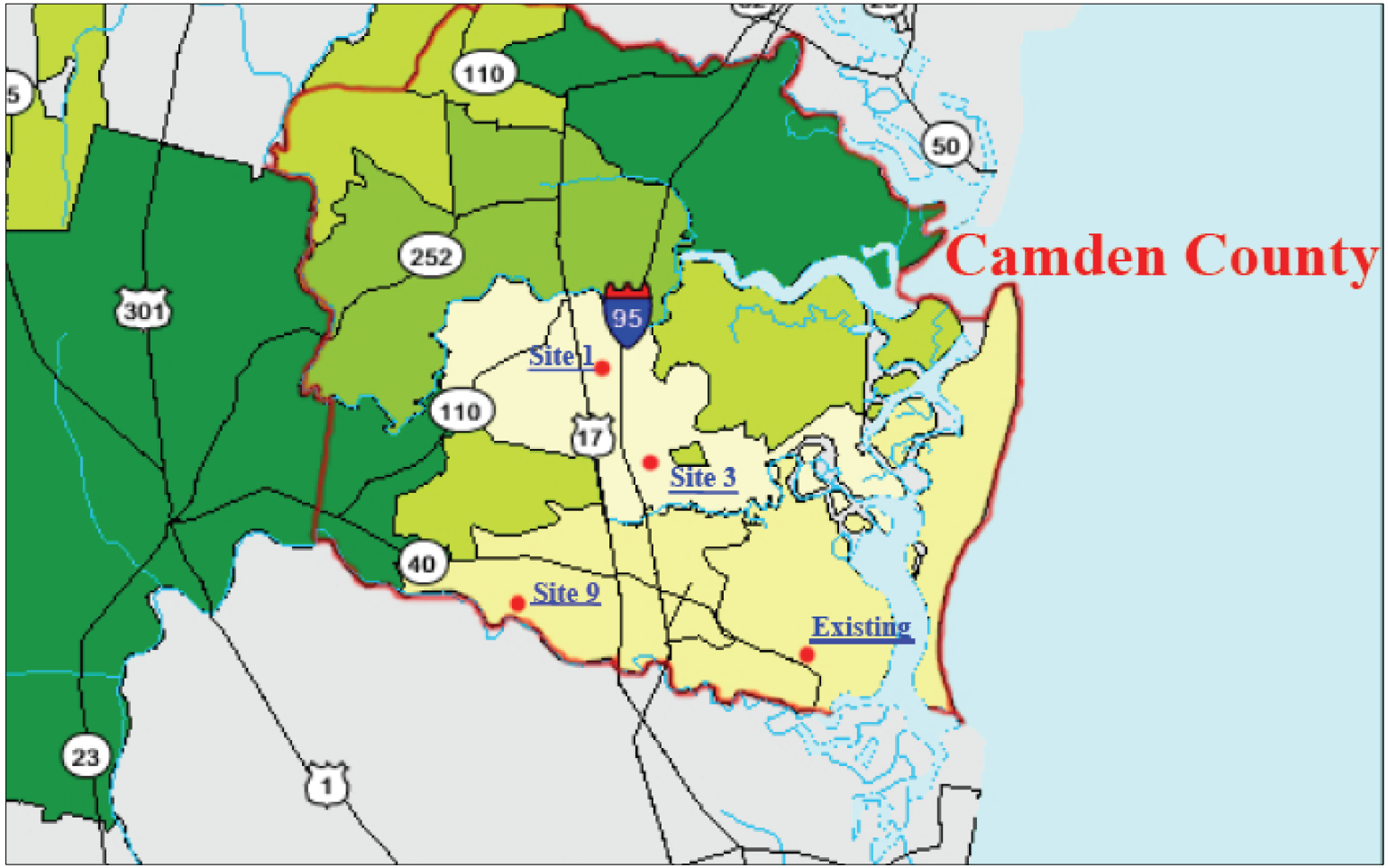
Figure 5.19 shows the area encompassing Site 9 is approximately 76% Non-Minority. This is in comparison to other areas of the County, which have a higher percentage of minority ethnic groups. Additionally, **Figure 5.20** shows that Site 9 is located within an area where 7.8% of the population lives below the poverty level. When examining the County as a whole, Site 9 is located in an area of low poverty levels in comparison to other tabulation areas within the County. On the southwest end of the Site there are 13 individual parcels of land, 10 of which have residential dwellings. Relocation will be required of those residents that currently reside on these parcels; however, there are no known low-income housing developments located on or adjacent to the Site.



Source: U.S. Census Bureau, 2006

Figure 5.19

Percentage of Non-Minority Populations



Source: U.S. Census Bureau, 2006

N

7.4 %
7.8 %
9.6 - 11.5 %
14.0 %
18.2 - 18.7 %

Figure 5.20

PERCENTAGE OF LOW INCOME POPULATIONS

5.8.4 No-Build Alternative

Figure 5.19 shows the area encompassing the existing Airport is approximately 76% non-minority. This is in comparison to other areas of the County, which have a higher percentage of minority ethnic groups. Additionally, **Figure 5.20** shows that the existing Airport is located within an area where 7.8% of the population lives below the poverty level. When examining the County as a whole, the existing Airport is located in an area of low poverty levels in comparison to other tabulation areas within the County. In addition, there are no known low-income housing developments located on adjacent to the Site.

5.8.5 Mitigation

When assessing the locations of the proposed new airport sites, it can be interpreted from **Figure 5.19** and **Figure 5.20** that locating the Airport on any of the three sites will likely not have a disproportionate or adverse impact on low income or minority groups. Therefore, no mitigation is required for any of the three sites based on the current census data.

5.9 FARMLANDS

The Farmland Protection Policy Act (FPPA) (7 U.S.C. 4201-4209) regulates Federal actions with the potential to convert "Farmland" to non-agricultural uses. "Farmland" is defined as "prime or unique farmlands (as furthermore defined in Section 1540(c)(1) of the FPPA) that is determined by the appropriate state or unit of local government to be farmland of statewide or local importance."

5.9.1 Build Alternatives

An examination of United States Department of Agriculture (USDA) Natural Resource Conservation Agency Important Farmland Maps shows no Prime or Unique farmland in the vicinity of Sites 1, 3 or 9, see **Figure 5.21.**

5.9.2 No-Build Alternative

The current site does not affect any "prime or unique farmlands", see **Figure 5.21.**

5.9.3 Mitigation

There is no mitigation currently required as the farmlands protected pursuant to the provisions of the FPPA will not be affected by the Proposed Action.

Source: National Resource Conservation Agency

Areas identified as prime farmland

Areas protected from flooding; or not frequently flooded during the growing season.

N

50 25 0 50

Miles

Figure 5.21
PRIME AND UNIQUE FARMLAND

5.10 FISH, WILDLIFE, AND PLANTS

Provisions have been set forth in the environmental process for the protection of fish, wildlife, and plants of local and National significance. The Endangered Species Act, The Sikes Act, The Fish and Wildlife Coordination Act, The Fish and Wildlife Conservation Act, and The Migratory Bird Treaty Act are among these provisions. Coordination with the United States Fish and Wildlife Service (FWS) and the Georgia Department of Natural Resources (GDNR) shall take place throughout the process to insure that the Proposed Action does not jeopardize the continued existence of an endangered or threatened species, or to a lesser extent, have a significant impact on non-listed species. If an agency determines that a Proposed Action "may affect" a threatened or endangered species, then such agency must consult with the FWS, National Marine Fisheries Service (NMFS), or GDNR, to ensure that the agency action is not likely to jeopardize the continued existence of any Federal or State listed endangered or threatened species, or result in the destruction or adverse modification of critical habitat.

In addition, the Federal Aviation Administration (FAA) has issued Advisory Circular (A/C) 150/5200-33A, *Hazardous Wildlife Attractants On or Near Airports*, as recommended guidance for land uses that have the potential to attract hazardous wildlife on or near public-use airports. Airports that are receiving federal funds to improve airport facilities, or in the case of this EA to build a new general aviation airport, must follow the standards established in the A/C.

The A/C defines separation criteria for hazardous wildlife attractants on or near airports served by turbine powered aircraft. Those separation distances are defined as follows:

- 10,000 feet from the nearest air operations area.
- 5 miles from the farthest edge of the air operations area and the wildlife hazardous attractant, if the attractant could cause movement of wildlife into or across the approach and departure airspace.

The basis for this separation criteria is predicated on the fact that 78% of all bird strikes occur under 1,000 feet above ground level, and 90% occur under 3,000 feet. Wildlife attractants include such things as waste disposal operations (i.e., landfills), storm water management facilities, wetlands, dredge spoil containment areas, agricultural activities, golf courses and other varying land uses. Whenever possible the location of a new airport must conform to the separation standards defined above. However, where alternatives sites are not practicable, a wildlife hazard management biologist, in consultation with the FWS, U.S. Army Corps of Engineers and state wildlife management agency, should evaluate the wildlife hazards and prepare a Wildlife Hazard Management Plan that includes the methods of minimizing the hazards.

Presented in this section is an evaluation of the Flora and Fauna found and known to inhabit the areas encompassed by the Build and No-Build Alternatives. The evaluation includes an analysis of threatened and endangered species along with their likelihood to inhabit the area encompassed by the Proposed Action.

5.10.1 Build Alternatives

Sites 1, 3 and 9 are 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 any of the Sites 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. It is expected that no migratory birds will be harmed should a proposed new airport be constructed on any of the Build Alternatives as there is no evidence of their existence on any of the Sites. Additionally, the use of native plants will be utilized for landscaping purposes and the introduction of invasive species will be avoided should a proposed new airport be constructed. In order to ascertain existing habitat conditions and assess the presence of listed species, preliminary site inspections were conducted by qualified biologists in December 2004 and January 2005, with more extensive surveys conducted in January, March and April of 2006. The surveys were conducted on foot and covered approximately 80 percent of Sites 1 and 9 with much more limited surveys on Site 3 due to property owner opposition. The following State and/or Federally listed fauna may occur on Sites 1, 3 and 9.

Reptiles and Amphibians
Gopher Tortoise (*Gopherus polyphemus*) State (S), Threatened (T)
Eastern Indigo Snake (*Drymarchon corais couperi*) Federal (F), T; S, T
Flatwood Salamander (*Ambystoma cingulatum*) 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 each proposed 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 each proposed Site, however none were observed during the survey. As a precautionary measure, all persons working on-site will be instructed in the protected status of the Eastern Indigo snake and the ramifications of harassing or injuring one. Additionally, all workers will be made aware of the distinguishing features of this species. A color poster of the snake and copies of an informative brochure will be placed in a prominent location on-site. Any suspected indigo snake sightings will be immediately reported to the FWS's Coastal Sub Office in Brunswick, Georgia. These guidelines will be followed regardless of which site is chosen. No adverse impacts to this species are anticipated by any of the proposed Build Alternatives.

While no surveys were conducted, efforts were made to ascertain the possible likelihood of flatwood salamanders existing within either Site 1 or 9. This effort was a combination of a field review of potential adult salamander habitat, correspondence with Georgia Department of Natural Resources (GDNR) staff and literature review. The literature review centered on two documents prepared for the Georgia Department of Transportation. The key findings of this effort are summarized below.

1. Assessments of Sites 1 and 9 demonstrated that both have been extensively altered by long-term silvicultural practices including bedding and fire suppression.
2. Both reports indicate that silvicultural practices, particularly bedding and fire suppression drastically and negatively impacts the habitat required by adult flatwood salamanders.

3. Bedding and root raking alters the habitat by removing grasses required by preferred prey and destroys subterranean voids used by adults.
4. Fire suppression impacts the grassy transitional areas between the upland and wetland habitats required for egg deposition and ultimately successful reproduction. These grassy areas are perpetuated by frequent fires and suppression of these fires leads to successional species taking over.
5. Flatwood salamanders have never been found, recently or historically, within Camden County GA (the location of all three sites).

These key facts strongly indicate that flatwood salamanders do not currently exist nor have they been historically documented within Sites 1 and 9. However, during coordination activities, FWS staff indicated that while it is unlikely that flatwood salamanders exist onsite, they will still require that a survey be conducted to formally determine presence or absence. Given the FWS's opinion, it is recommended that a flatwood salamander survey be conducted, following FWS and GDNR guidelines, for the selected site during the next project phase.

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. Sites 1 and 9 were reviewed for the existence of suitable nesting or foraging habitat. Both sites have been actively managed for pine tree production and have been periodically harvested. This activity has had a sizable impact on foraging habitat and has eliminated the nesting trees due to the harvesting activities; no trees are older than approximately 20 years. Only a small portion of the proposed Site 1 footprint occurs in pines approximately 20 years old, while the southwest 1/3 of Site 9 has pines of this age. These areas are not suitable foraging habitat for Red-cockaded Woodpeckers due to the thick nature of the sub-canopy and density of the pine trees themselves. All other areas on both sites are much younger or have been recently harvested. No adverse impacts to this species are anticipated by any of the proposed project alternatives on Sites 1 and 9.

Due to opposition from the existing property owner, no field reviews have been conducted on Site 3 except for a brief visit during the site selection phase of this project. However, during this brief visit, one portion of the southeastern section was observed as having potentially suitable foraging habitat. The pine trees appeared to be approximately 25+ years old, the sub-canopy had been maintained so it was suitably open, and the stand had been thinned at some point. If Site 3 is determined to be the preferred alternative, additional site work will be conducted to ascertain the extent of suitable foraging habitat and to determine if suitable nesting habitat occurs within ½ mile of the area.

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. The wetlands found on-site provide poor nesting and marginal foraging habitat. According to data provided by FWS, several active rookeries reside within 15 miles of Site 1 and 11 miles of both Site 3 and Site 9. While Wood Storks will only travel as far as required to forage, these sites are within the generally accepted core foraging areas. In order to minimize any potential impacts that any proposed alternative would have on Wood Stork foraging habitat, all wetland impacts will be mitigated within the same general area or in a FWS approved area in order to avoid reducing suitable foraging habitat for any known nesting colony. No adverse impacts to this species are anticipated by any of the proposed project alternatives.

The Bald Eagle generally nests in large trees near open bodies of water, which provide optimum foraging habitat. According to data provided by FWS, the closest known nest resides within 6 miles of Site 1, 5 miles of Site 3, and 11 miles of site 9. These clearly fall outside of any protection zones and will not be directly impacted by any of the proposed project alternatives. While conducting field reviews of Sites 1 and 9 in January, March and April of 2006, and during previous project phases, no Bald Eagles were observed. Due to opposition from the existing property owner, no field reviews have been conducted on Site 3 except for a brief visit during the site seleciton phase of this project. At that time no Bald Eagles were observed onsite. No adverse impacts to this species are anticipated by any of the proposed project alternatives.

5.10.2 No-Build Alternative

The No-Build alternative would result in no effects to any Federal or State listed endangered or threatened species, or result in the destruction or adverse modification of critical habitat.

5.10.3 Mitigation

There are currently no threatened or endangered species expected to be significantly impacted by the Proposed Action. However, coordination with the FWS and GDNR should occur throughout the process should species that are not currently considered threatened or endangered be found on-site at a later date, as well as possible impacts on non-listed species. In addition, the following steps should be taken to ensure no significant impacts to threatened or endangered species occurs should such species be found during development of any of the three build alternatives.

- All persons working on-site will be instructed in the protected status of the Eastern Indigo snake and the ramifications of harassing or injuring one. Additionally, all workers will be made aware of the distinguishing features of this species. A color poster of the snake and copies of a species specific handout will be placed in a prominent location on-site. Any suspected indigo snake sightings will be immediately reported to the appropriate FWS and GDNR offices. These guidelines will be followed regardless of which site is chosen.
- If the Proposed Action includes removing pine stems greater than or equal to thirty years of age from Pine or Pine Hardwood (fifty percent or more pine) communities (potential foraging habitat of the Red-cockaded Woodpecker) on Site 1, then suitable nesting habitat (pine stems greater than or equal to sixty years of age) should be surveyed for any colonies of red-cockaded woodpeckers within one-half mile of the project's impact.
- FAA Advisory Circular 150/5200-33A, *Hazardous Wildlife Attractants On or Near Airports,* will be followed as far as land use practices that attract or sustain hazardous wildlife populations on or near a replacement airport. In addition, in accordance with the recommendations of the A/C, a Wildlife Hazardous Management Program will be established at the chosen site.
- It is recommended that a flatwood salamander survey be conducted, following FWS and GDNR guidelines, for the selected site during the next project phase.

5.11 FLOODPLAINS

Executive Order 11988, *Floodplain Management* directs Federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Floodplains are defined as "lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in a given year (100 year floodplain)" Therefore, the objective will be to avoid, to the extent practicable, any impacts within the 100-year floodplain. The boundaries of any floodplains located in the vicinity of any of the Build or No-Build alternatives are depicted in **Figure 5.22**.

The Flood Data depicted in **Figure 5.22** is derived from the Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA). The FIRM maps are the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program. The results of a close examination of the above-mentioned maps are presented in this section.

5.11.1 Site 1

There is a floodplain that crosses the northern and southern portions of the Site, as well as an associated wetland that is dominated by a seasonally flooded, forested system associated with the drainageways. The selection of Site 1 for a proposed new St. Marys Airport will result in approximately 59 acres of potentially affected floodplains located in the 100-year floodplain.

5.11.2 Site 3

There would be no floodplain impacts by the development in the proposed configuration on Site 3.

5.11.3 Site 9

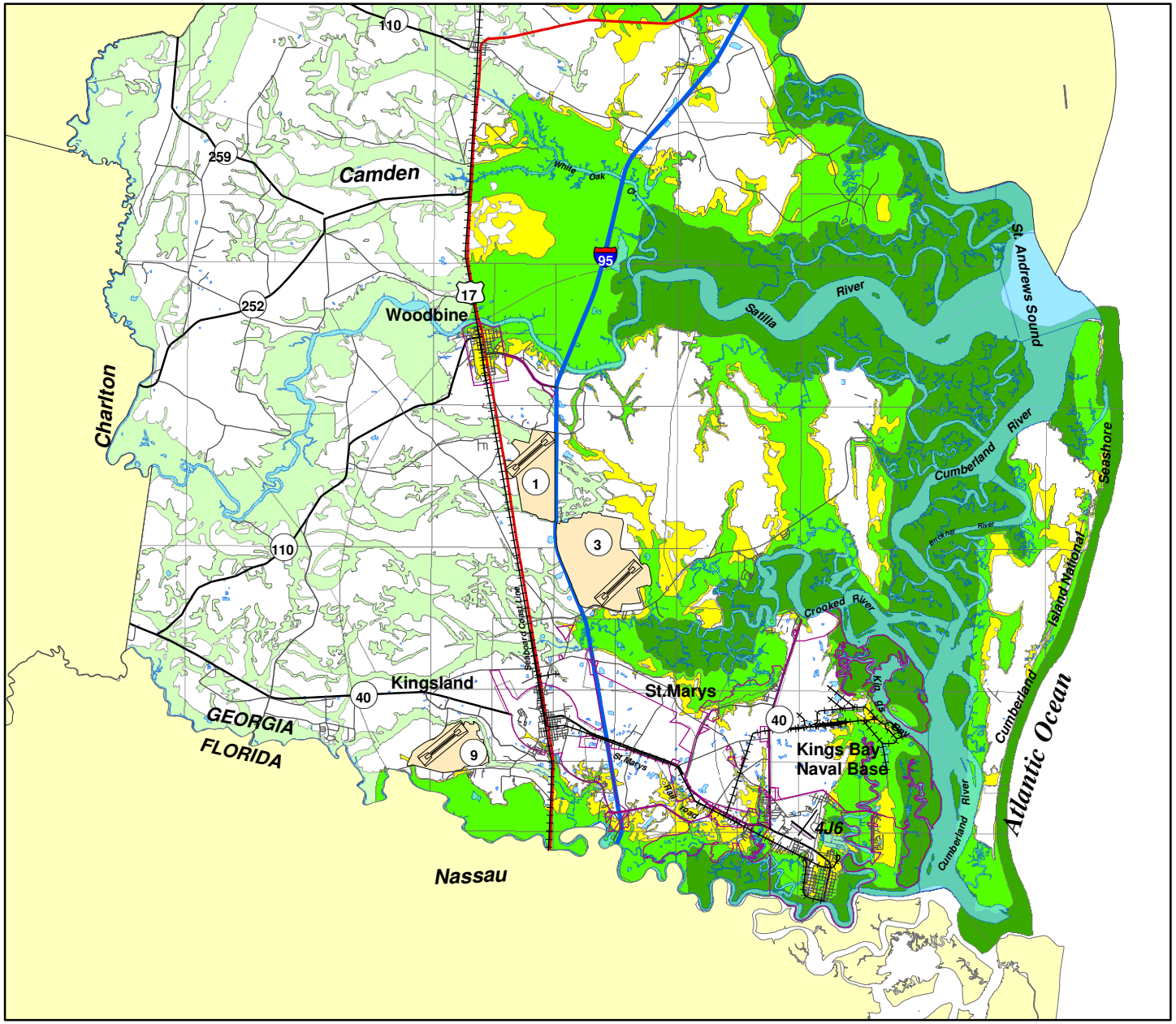
There would be no floodplain impacts by the development in the proposed configuration on Site 9.

5.11.4 No-Build Alternative

There would be no floodplain impacts resulting from the No-Build alternative.

5.11.5 Mitigation

In order to minimize impacts on floodplains, certain mitigation measures will be taken should Site 1 be selected for a replacement St. Marys Airport. Mitigation, either compensatory or on-site, will be determined through coordination with FEMA, state and local regulatory agencies during subsequent project phases. Any mitigation options will ensure that the proposed project will not result in upstream flooding hazard and will not result in the potential for interruption or termination of emergency services or emergency evacuation routes. Mitigation measures for base floodplain encroachments would include committing to special flood related design criteria; elevating facilities above base flood level; locating non-conforming structures and facilities out of the floodplain; and minimizing the fill placed in floodplains. Should compensatory storage be required, appropriate actions will be taken to ensure a like number of acreage for storage. Mitigation will not be required for Sites 3 and 9.



Area inundated by 100-year flooding, which no Base Flood Elevatrions have been determined.

Area inundated by 100-year flooding, for which Base Flood Elevations have been determined.

Area inundated by 100-year flooding with velocity hazard; Base Flood Elevations have been determined.

Area inundated by 500-year flooding; area inundated by 100-year flooding with average depths of less than 1' or with drainage areas less than 1-sq.mi.; or an area protected by levees from 100-year flooding.

Area determined to be outside of the 100-year and 500-year floodplain.

3 Prospective Airport Relocation Sites

4J6 - St. Marys Airport

N

1 0 1 2
Miles

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

Figure 5.22
Floodplain Map

5.12 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Federal actions to fund, approve or conduct certain airport improvement projects require consideration of the potential for hazardous material, pollution prevention and solid waste impacts. Several laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances, and wastes. The two statutes most relevant for consideration of potential environmental impacts associated with the Proposed Action are the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. It should also be assured that any proposed action does not involve property listed on the National Priorities List (NPL) established by the Environmental Protection Agency (EPA).

In addition, the FAA has set forth recommendations as to the proximity of an airport to solid waste landfills. The FAA has recommended that a landfill shall not be within:

- 5,000 ft. of an airport serving piston-powered aircraft
- 10,000 ft. of an airport serving jet aircraft
- Five statute miles if the landfill is located on the approach or departure path of aircraft.
- New landfills should not be constructed within six statute miles of an existing airport.

The remainder of this section evaluates the potential for hazardous material, pollution prevention and solid waste impacts generated by the Build and No-Build Alternatives.

5.12.1 Site 1

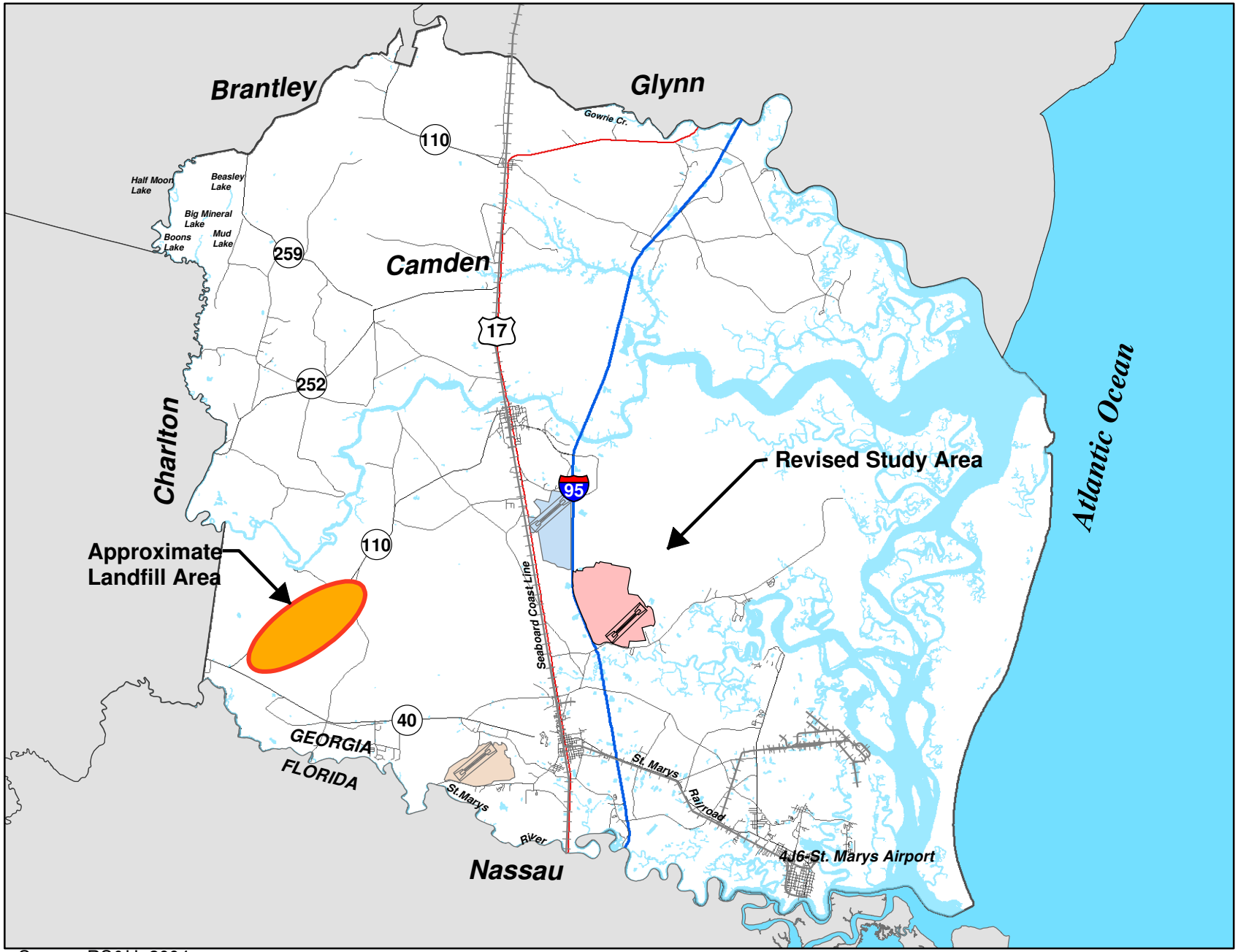
A slight increase in the generation of solid waste can be anticipated over the long-term as a result of growth in aviation activity at the airport. In addition, a short-term increase can be expected from construction activities associated with the development of the proposed new airport on Site 1. Analysis of solid waste landfills in the area shows that one landfill exists in Camden County, see **Figure 5.23**. The landfill is located in southwest Camden County, well outside of the area encompassing Site 1 and is not a factor. There are currently no NPL sites located within Camden County.

5.12.2 Site 3

A slight increase in the generation of solid waste can be anticipated over the long-term as a result of growth in aviation activity at the airport. In addition, a short-term increase can be expected from construction activities associated with the development of the proposed new airport on Site 3. The landfill located in southwest Camden County is well outside of the area encompassing Site 3 and is not a factor. There are currently no NPL sites located within Camden County.

5.12.3 Site 9

A slight increase in the generation of solid waste can be anticipated over the long-term as a result of growth in aviation activity at the airport. In addition, a short-term increase can be expected from construction activities associated with the development of the proposed new airport on Site 9. The landfill located in southwest Camden County is well outside of the area encompassing Site 9 and is not a factor. There are currently no NPL sites located within Camden County.



Source: RS&H, 2004

Figure 5.23
CAMDEN COUNTY LANDFILL

5.12.4 No-Build Alternative

There are no expected impacts from the No-Build Alternative.

5.12.5 Mitigation

In the event construction activities encounter conditions not identified in this report (i.e., chemical drums/containers, non-aqueous phase liquids or other suspect materials), it is recommended that further waste characterization be performed to ensure the proper handling and disposal requirements for these materials are met. The construction contracts prepared for actual construction of a replacement St. Marys Airport will include a provision that in the event previously unknown contaminants are discovered during construction, or a spill occurs during construction, work should stop until the National Response Center (NRC) is notified at 800.424.8802.

5.13 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) of 1966, as amended, establishes the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP) within the National Park Service (NPS). Section 110 of the NHPA governs Federal agencies responsibilities to preserve and use historic buildings; designate an agency Federal Preservation Officer (FPO); and identify, evaluate, and nominate eligible properties under the control or jurisdiction of the agency to the National Register. Section 106 of the NHPA requires Federal agencies to consider the effects of their undertaking on properties on or eligible for inclusion in the NRHP.

An investigation of the site alternatives was conducted in order to comply with the cultural resources provisions of the National Environmental Policy Act of 1969 (PL 91-190, as amended); Section 106 of the NHPA of 1966 (PL 89-190, as amended) and it's implementing regulation 36 CFR Part 800 (Protection of Historic Properties); and the Archaeological and Historic Preservation Act of 1974 (PL 86-523). The investigation was conducted with consideration given to the Federal Aviation Administration's (FAA) Order 5050.4A, *Airport Environmental Handbook*, revised October 8, 1995. The qualifications of the Principal Investigator meet and exceed the standards established within the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (36 CFR Part 61).

This section presents the results of a cultural resource screening for three site alternatives (Site 1, Site 3, and Site 9) associated with the Proposed Action. As part of the EA, the cultural resource screening was designed to provide information on historical and archaeological properties within the defined areas of potential effects and to determine how those properties might effect the selection of an individual site alternative. A complete copy of the Cultural Resource Screening report is provided in **Appendix E**.

The area of potential effects (APE) for this project is defined as the area that potentially would be affected by the construction of the airport as well as considering the possible effects that noise, air quality, vibration, and potential change in land use might have on historic properties. For all three sites, the cultural resource screening will extend one-mile from the airport boundaries, see **Figure 5.24**. The APE is analogous to the "area of the proposed action's potential environmental impact" discussed in FAA Order 5050.4A, Paragraph 47(e)(8)(b).

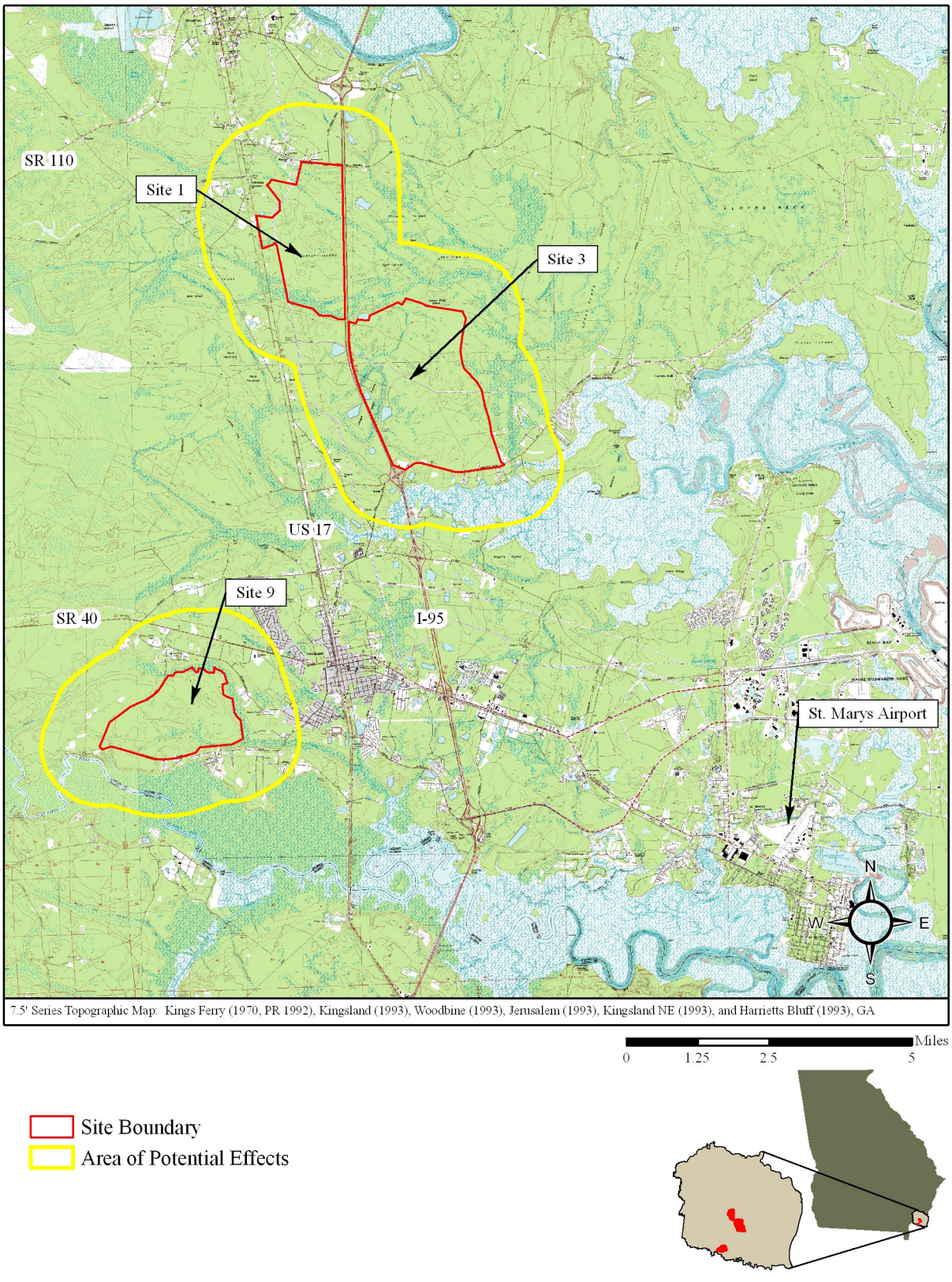


Figure 5.24
Area of Potential Effects

Source: Southeastern Archaeological Research Inc., 2006

5.13.1 Environment

The three site alternatives are located in central and southern Camden County, Georgia within the Barrier Island Sequence of the Coastal Plains Province. The Barrier Island Sequence includes the coastal barrier islands along the Atlantic coast and approximately 40 to 50 miles of the adjacent, interior mainland. The well drained inland areas typically support an environment dominated by long-leaf pine, loblolly pine, and various species of oak. Conversely, pond pine, slash pine, saw palmetto, gallberry, and wiregrass are found throughout the poorly drained flatwoods. Hardwood communities composed of oak, sweet gum, red bay, magnolia, and pignut hickory occupy areas adjacent to freshwater streams and floodplains (Georgia Museum of Natural History 2006).

There are two important river systems within the general project area. The Satilla River, located approximately two miles north of Site 1, is a typical black water river surrounded by extensive cypress and black gum swamps. The river supports very little development and is subjected to only minor agricultural runoff. The Satilla has an average flow of 85 m^3 and drains approximately 9,143 km^2 (University of Georgia Department of Marine Sciences [UGAMARSCI] 2002). The St. Marys River, located just south of Site 9, forms the border between Georgia and Florida. Also considered a black water river, the river has a drainage area of 3,600 km2, part of which is associated with the Okefenokee Swamp. The average flow of the river is relatively slow at 20 m3 (UGAMARSCI 2002). The Crooked River, which is much smaller than the St. Marys and Satilla rivers, is located just south of Site 3 and is contained completely within the Satilla River drainage.

Soils within the Coastal Plain Province are sand and sandy clay of marine origin and generally acidic in nature. These soils generally have low fertility caused by excessive leaching (Georgia Museum of Natural History 2006). Specific soil types for the project area are listed in **Table 5-6** and shown in **Figure 5.25**.

Table 5-6
SPECIFIC SOILS WITHIN PROJECT AREA

Soil Type	Drainage Characteristics	Associated Environment
Albany fine sand	Level to gently sloping; somewhat poorly drained	Found in low-lying uplands
Bladen loam	Level to gently sloping; poorly drained	Found in fluvial or marine terraces
Bohicket-Capers association	Level to gently sloping; very poorly drained	Found in broad tidal flats
Brookman clay loam	Level to gently sloping; very poorly drained	Found in broad, shallow depressions of the flatwoods
Cainhoy fine sand	Level to sloping; excessively drained	Found on uplands
Kingsland mucky peat	Very poorly drained organic soil	Found on flood plains of streams that are flooded daily by tides
Mandarin fine sand	Level to gently sloping; somewhat poorly drained	Found ridges and knolls
Megget fine sandy loam	Level to gently sloping; poorly drained	Found on flood plains and low terraces
Olustee sand	Level to gently sloping; poorly drained	Found on broad low-lying areas
Pelham loamy sand	Level to gently sloping; poorly drained	Found along drainageways
Pottsburg sand	Level to gently sloping; somewhat poorly drained	Found on low-lying uplands
Rains fine sandy loam	Level to gently sloping; poorly drained	Found on broad flats and in slight depressions
Rutlege fine sand	Level to gently sloping; very poorly drained	Found on upland flats
Sapelo fine sand	Level to gently sloping; somewhat poorly drained	Found on nearly level flatwoods

Source: Southeastern Archaeological Research, Inc.

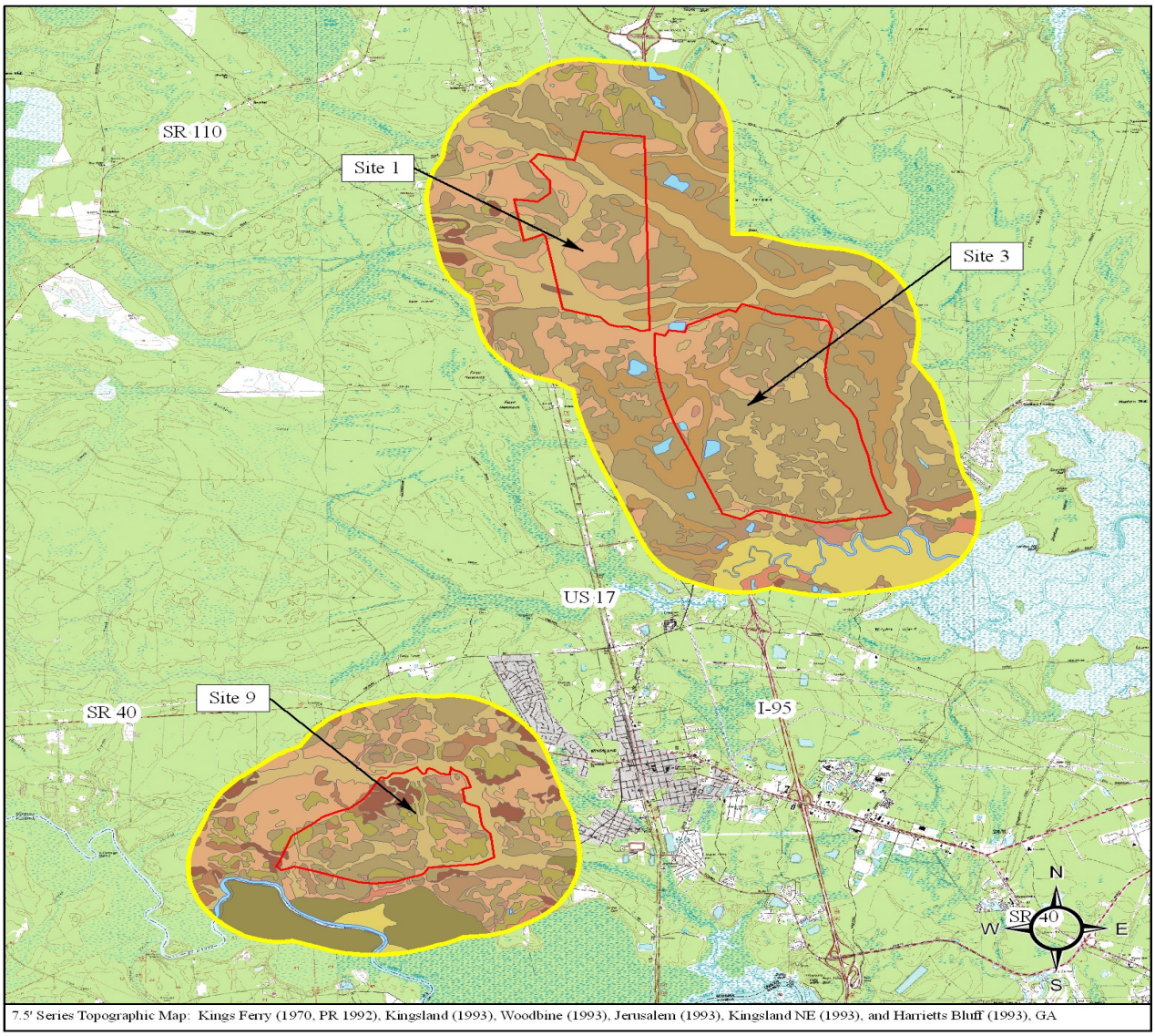


Figure 5.25
Specific Soils Map

Source: Southeastern Archaeological Research Inc., 2006

5.13.2 Historic Overview

European settlement in the area that would become Camden County began way before Georgia statehood. French explorer Jean Ribault landed in the vicinity in 1562 and Spanish missions were established on St. Catherine's Island by 1566. By the 1660s, European competition for land rights in the New World were slowly escalating as King Charles II "claimed" southern Georgia for England with several strategic land grants as the Spanish mission system in Georgia was on the decline (Hamby and Raymer 1996; New Georgia Encyclopedia [NGE] 2006).

Georgia became an official English colony in 1732. The city of Savannah was established one year later. By 1758, Georgia possessed seven parishes. The southern two, St. Thomas and St. Marys parishes, were combined in 1777 to form Camden County. Less than a year later, Georgia ratified the U.S. Constitution and became the fourth state admitted to the Union.

Camden County was named after Charles Pratt, Earl of Camden, who was a staunch supporter of the American colonies prior to the Revolutionary War (NGE 2006). Established in 1787, the town of St. Patrick served as the first county seat. Five years later, St. Marys replaced St. Patrick as county seat. In 1800, the county seat again changed hands to the city of Jefferson, established in the vicinity of St. Patrick, which practically disappeared after initially losing the county seat. By 1802, a courthouse and jail had been established in Jefferson, which was thriving on the development of the plantation economy. After the Civil War and destruction of the plantation system, Jefferson began to decline and the county seat was once again moved to the city of St. Marys. The county seat remained in St. Marys until 1923 when it was moved to Woodbine, the current Camden County seat (NGE 2006).

During the Antebellum Era, the Camden County economy rested heavily on the backs of plantation system and the cotton and rice industry that sustained the region. After the Civil War, the post-plantation economy of the late nineteenth century was strengthened by the naval stores industries of timber and turpentine. This would subsequently evolve into the pulp wood and paper manufacturing industry so common today.

5.13.3 Cultural Resources Screening

Environmentally based predictive models work by correlating the location of known archaeological sites with the ecological landscapes with which they are associated. They then predict that unknown sites should be present in areas with the same or similar sets of characteristics. The result is the development of high, moderate, and low probability areas based on corresponding site location criteria. Environmental variables of high probability areas are similar or equal to environmental variables associated with known archaeological site locations, while low probability areas are more dissimilar than associated characteristics of extant archaeological locations.

The vast majority of the soils within the boundaries of the proposed site alternatives and their associated APEs are somewhat poorly drained to very poorly drained, which in some areas is used as a primary evaluation tool for determining the relative potential for the recovery of previously unrecorded archaeological sites. Typically, poorly drained soils are considered to have a low probability of containing unrecorded archaeological sites. However, well drained to excessively well drained soils only account for 1.8 percent of the total acreage in a two county (Camden and Glynn counties) region (Rigdon and Green 1977). As a result, other variables such as distance to freshwater, distance to previously recorded archaeological sites, and current land conditions and previous land use may provide greater insight into archaeological site recovery potential. These variables are discussed below within the context of each proposed site alternative.

5.13.3.1 Site 1

Site 1 measures approximately 1,871 acres and is located between I-95 and US 17, approximately three miles south of the city of Woodbine, see **Figure 5.26**. According to the Georgia NAHRGIS database, there are no previously recorded archaeological sites within the proposed site boundary and its associated APE. The landscape within the site boundary is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, moderate probability areas have been outlined near the northern and southern wetlands in areas near freshwater and that appear to have not been disturbed by silvicultural activities. The remainder of Site 1 is considered to have a low probability of containing archaeological sites.

According to the Georgia NAHRGIS database, there are no previously recorded historic structures within the proposed site boundary and its associated APE. A review of the Camden County GIS website (http://www.camdencountymaps.com), which contains parcel and construction information, resulted in the identification of 34 previously unrecorded historic and potentially historic structures, none of which were located within the Site 1 boundary. Construction dates ranged from 1900 to 1960. The 1900 construction date is typically used when the date of construction is not known. As a result, pictures, provided by the GIS website, were used to determine the historic nature of individual structures. Not all structures listed with the 1900 construction were determined to be historic. Historic and potentially historic structures and locations are listed **Table 5-7**. Based on a cursory evaluation, many of the buildings appeared to have experienced non-historic alterations, including being wrapped in vinyl siding, non-historic window replacements, non-historic porch enclosures, and/or non-historic additions. Their significance is also limited by their common architectural type and lack of distinguishing characteristics. Due to the above-mentioned alterations and limited significance many of the buildings no longer exhibit their historic physical integrity and none of the structures appears eligible for listing in the National Register of Historic Places (NRHP).

Table 5-7
HISTORIC AND POTENTIALLY HISTORIC STRUCTURES WITHIN THE SITE 1 APE

Location	Date	Location	Date
Old Jefferson HWY	1953	47 Billyville Road	1951
Old Jefferson HWY	1930	Billyville Road	1960
Billyville Road	1900	382 Billyville Road	1960
Billyville Road	1900	Billyville Road	1955
221 Floyd Lane	1960	249 Billyville Road	1960
258 Gap Swamp Road	1900	390 Billyville Cutoff	1944
1116 Billyville Road	1948	Billyville Cutoff	1950
761 Billyville Road	1960	4788 Old Dixie HWY	1950
681 Billyville Road	1957	Old Granger Circle	1955
958 Billyville Road	1900	76 Trader Lane	1960
894 Billyville Road	1950	4579 HWY 17 N	1955
884 Billyville Road	1955	HWY 17 N	1900
0 Billyville Road	1900	120 Baker Avenue	1955
Billyville Road	1900	210 Baker Avenue	1957
355 Billyville Road	1930	HWY 17 N	1958
Billyville Road	1959	HWY 17 N	1900
29 Billyville Road	1960	12077 HWY 17 N	1955

Source: Southeastern Archaeological Research, Inc.

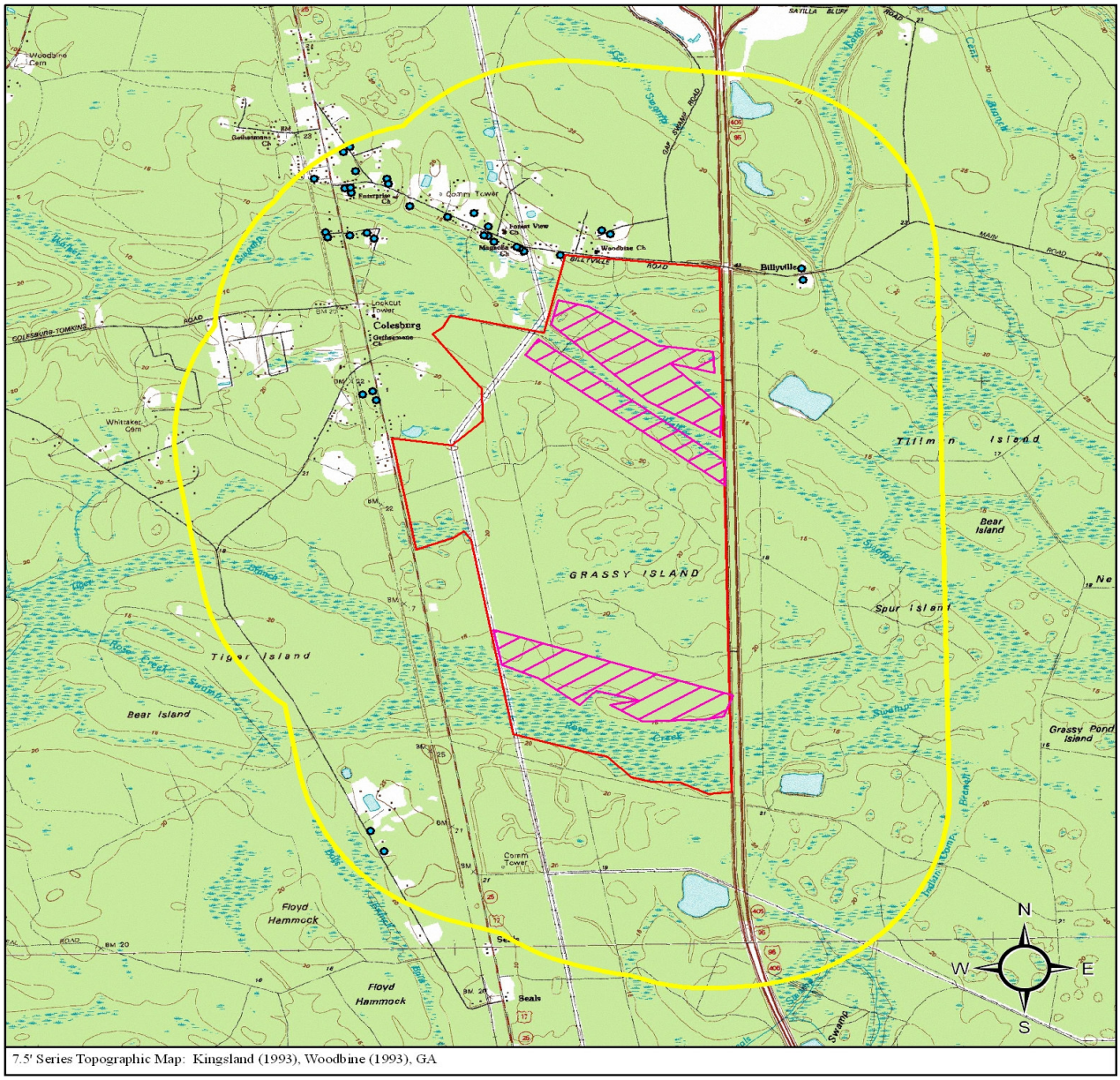


Figure 5.26
Site 1 Cultural Resources Project Area

Source: Southeastern Archaeological Research Inc., 2006

At the request of the Georgia Department of Natural Resources, Historical Protection Division, an Archeological Resource Survey was performed for Site 1, limited to the land area that would be disturbed during development of the replacement airport. The findings of this survey concluded that there are no significant archeological resources associated with Site 1. A complete copy of the report is included in **Appendix I.**

5.13.3.2 Site 3

Site 3 is approximately 3,812 acres and is located along the east side of I-95 north of Harriett's Bluff Road, see **Figure 5.27**. According to the NAHRGIS database, there are no previously recorded archaeological sites within the proposed site boundary and its associated APE. The landscape within the site boundary is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, moderate probability areas have been outlined along the southern portion of the project area near the Crooked River and a small group of wetlands located on the western side of the project boundary. These areas are near fresh water and appear to have minimal disturbance from silvicultural activities. The remainder of Site 3 is considered to have a low probability of containing archaeological sites.

According to the Georgia NAHRGIS database, there are no previously recorded historic structures within the proposed Site 3 boundary and its associated APE. A review of the Camden County GIS website resulted in the identification of 19 previously unrecorded historic and potentially historic structures, two of which are located near the southern boundary of Site 3. Construction dates ranged from 1900 to 1960. The 1900 construction date is typically used when the date of construction is not known. As a result, pictures, provided by the GIS website, were used to determine the historic nature of individual structures. Not all structures listed with the 1900 construction were determined to be historic. Historic and potentially historic structures and locations are listed in **Table 5-8**. Based on a cursory evaluation, many of the buildings appeared to have experienced non-historic alterations, including being wrapped in vinyl siding, non-historic window replacements, non-historic porch enclosures, and/or non-historic additions. Their significance is also limited by their common architectural type and lack of distinguishing characteristics. Due to the above-mentioned alterations and limited significance many of the buildings no longer exhibit their historic physical integrity and none of the structures appears eligible for listing in the National Register of Historic Places (NRHP).

Table 5-8
HISTORIC AND POTENTIALLY HISTORIC STRUCTURES WITHIN THE SITE 3 APE

Location	Date	Location	Date
Kinlaw Road	1926	William Morris Road	1900
5253 Old Still Road	1945	120 Brazell Lane	1948
Old Still Road	1938	Brazell Lane	1949
1208 Kinlaw Road	1941	904 Brazell Lane	1950
Kinlaw Road	1900	11 Holzendorf Lane	1900
1026 Kinlaw Road	1900	2518 Harrietts Bluff Road	1900
1150 Kinlaw Road	1944	2652 Harrietts Bluff Road	1958
Kinlaw Road	1960	1132 Harrietts Bluff Road	1900
Kinlaw Road	1900	2133 Harrietts Bluff Road	1900
William Morris Road	1900		

Source: Southeastern Archaeological Research, Inc.

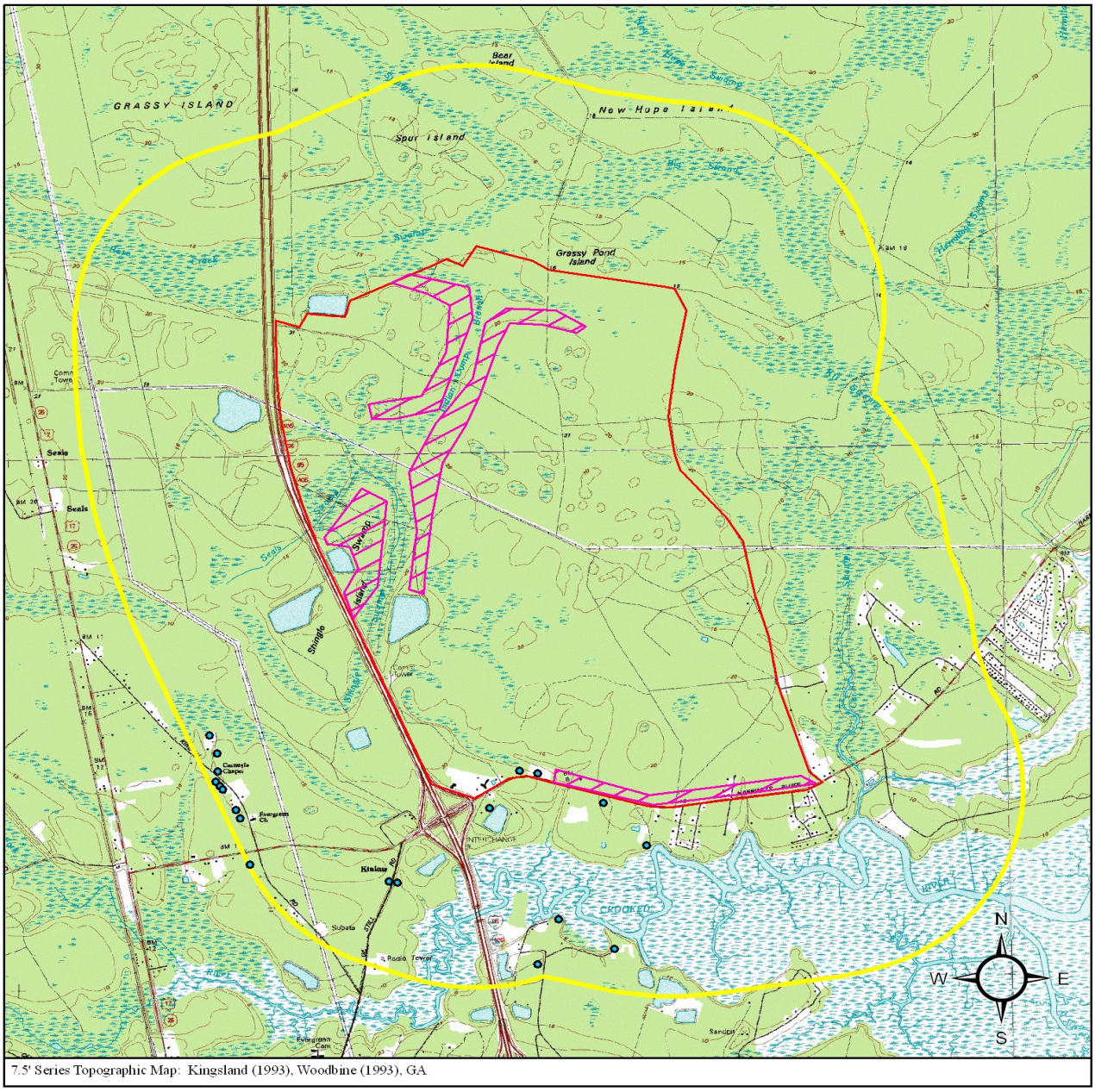


Figure 5.27
Site 3 Cultural Resources Project Area

Source: Southeastern Archaeological Research Inc., 2006

5.13.3.3 Site 9

Site 9 measures approximately 1,568 acres and is located between Vacuna Road and Clarks Bluff Road, see **Figure 5.28**. According to the NAHRGIS database, there are five previously recorded archaeological sites within the APE, none of which are located within the boundaries of the site. The sites are listed and described in **Table 5-9** below.

The landscape within the site boundary, like that of Site 1 and Site 3, is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, moderate probability areas have been outlined along the wetlands surrounding the northern, eastern, and southern site boundary and the small creek in the southwestern corner, as these areas are potential sources of freshwater. Silviculture disturbance in some of these areas appears to minimal; however, it does exist. The remainder of Site 9 is considered to have a low probability of containing archaeological sites.

According to the Georgia NAHRGIS database, there are no previously recorded historic structures within the proposed site boundary and its associated APE. A review of the Camden County GIS website resulted in the identification of 26 previously unrecorded historic and potentially historic structures, none of which were located within the Site 9 boundary. Construction dates ranged from 1900 to 1960. The 1900 construction date is typically used when the date of construction is not known. As a result, pictures, provided by the GIS website, were used to determine the historic nature of individual structures. Not all structures listed with the 1900 construction were determined to be historic. Historic and potentially historic structures and locations are listed below. Based on a cursory evaluation identical to the one done for sites 3 and 9, none of the structures appears to be eligible for listing on the NRHP, see **Table 5-10**.

Table 5-9
ARCHAEOLOGICAL SITES WITHIN THE SITE 9 APE

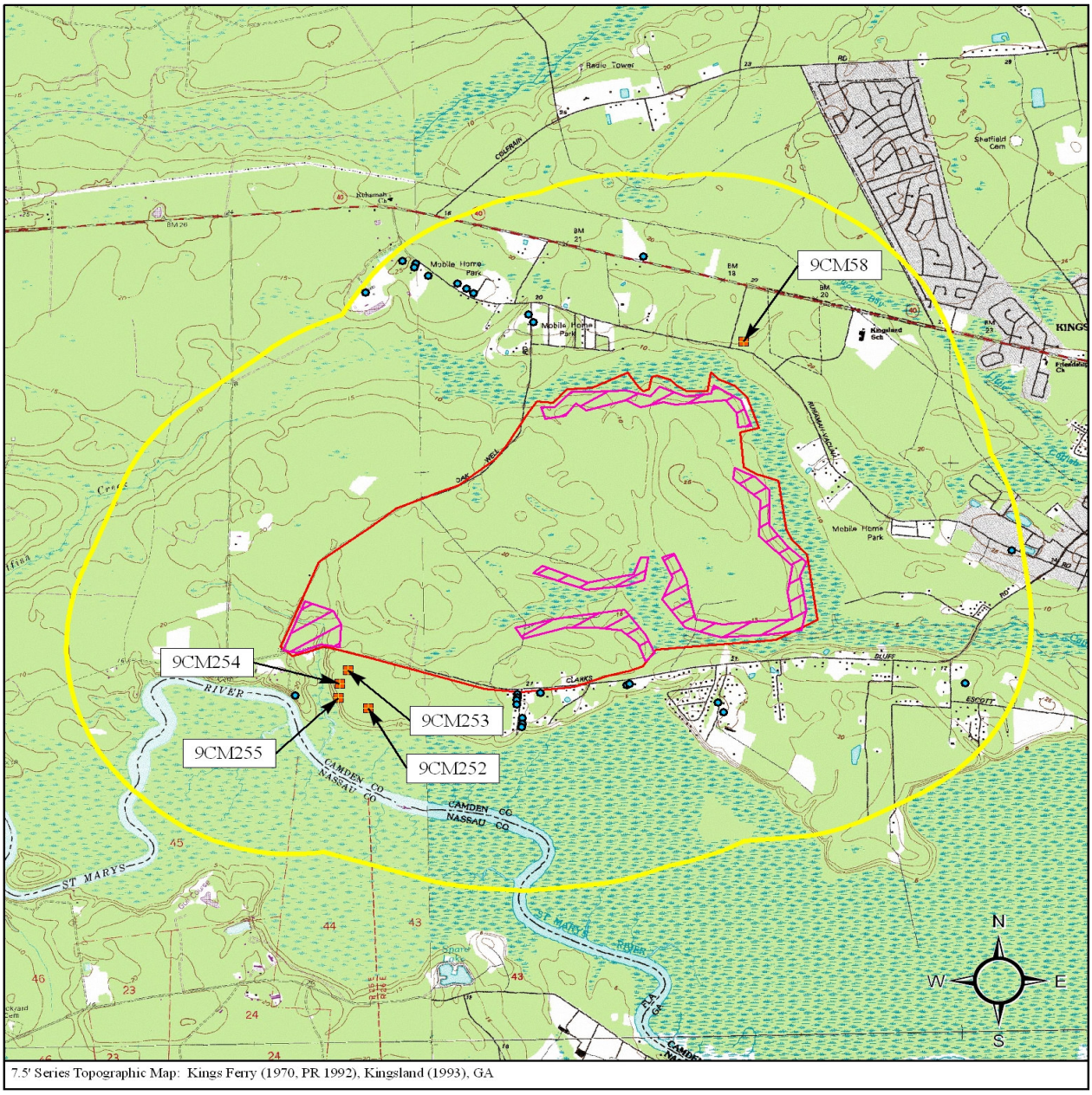
Site ID	Site Name	Site Type	Cultural Association	NRHP Eligibility
9CM58	Swampwolf Site	Artifact scatter	Deptford	Ineligible
9CM252	N/A	Artifact scatter	Deptford, Sand Pedro	Ineligible
9CM253	N/A	Artifact scatter	Prehistoric, Historic	Ineligible
9CM254	N/A	Artifact scatter	Early Woodland, Historic	Ineligible
U9CM255	N/A	Artifact scatter	Historic	Ineligible

Source: Southeastern Archaeological Research, Inc.

Table 5-10
HISTORIC AND POTENTIALLY HISTORIC STRUCTURES WITHIN THE SITE 9 APE

Location	Date	Location	Date
4230 Vacuna Road	1900	247 Peeples Road	1950
13509 HWY 40 W	1950	186 Peeples Road	1950
66 Oakwell Road	1912	Clarks Bluff Road	1940
4485 Vacuna Road	1900	Clarks Bluff Road	1940
192 Merck Trail	1945	42 Merck Trail	1950
1594 Vacuna Road	1900	3855 Clarks Bluff Road	1900
4120 Vacuna Road	1957	42 Cooner Avenue	1900
459 Lewis Road	1900	1017 Cooner Avenue	1940
4429 Vacuna Road	1900	Cooner Avenue	1900
30 Lynch Lane	1900	1066 Cooner Avenue	1900
1685 Vacuna Road	1951	161 Cooner Avenue	1900
649 Vacuna Road	1950	181 Cooner Avenue	1950
43 Escott Road	1940	3729 Clarks Bluff Road	1940

Source: Southeastern Archaeological Research, Inc.



Site Boundary
Area of Potential Effects
Moderate Probability Area
Unrecorded Historic Structures
Archaeological Sites

Miles
0 0.25 0.5 1

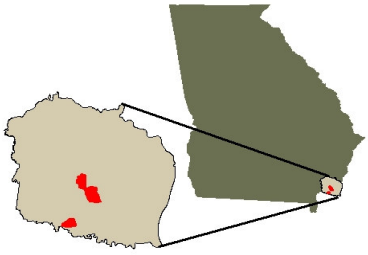


Figure 5.28
Site 9 Cultural Resources Project Area

Source: Southeastern Archaeological Research Inc., 2006

5.13.3.4 No-Build

The existing St. Marys Airport was built over 50 years ago and maintains some historic fabric. If any construction is planned in the future, or if the Airport will be abandoned, reused or sold, a cultural resource survey or screening may be required. No construction is planned at the existing St. Marys Airport; therefore, the no-build alternative will not affect historic or archaeological resources.

5.13.4 Mitigation

There is no current mitigation required on either the Build or No-Build alternatives. However, although a project area may receive a complete cultural resource assessment survey, it is impossible to ensure that all cultural resources will be discovered. Even at sites that have been previously identified and assessed, there is a potential for the discovery of previously unidentified archaeological components, features, or human remains that may require investigation and assessment. Therefore, a procedure had been developed for the treatment of any unexpected discoveries that may occur during site development. During development of the Proposed Action, this procedure will be included in all construction contracts.

If unexpected cultural resources are discovered, the following steps should be taken within two days (Saturdays, Sundays and Legal Holidays excluded) (Official Code of Georgia Annotated (OCGA) 12-3-52).

1) Initially, all work in the immediate area of the discovery should cease and reasonable efforts should be made to avoid or minimize impacts to the cultural resources.

2) A qualified Professional Archaeologist should be contacted immediately and should evaluate the nature of the discovery.

3) The Archaeologist will contact the Deputy State Historic Preservation Officer (SHPO) and the Office of the State Archaeologist at the Georgia Department of Natural Resources (DNR).

4) As much information as possible concerning the cultural resource, such as resource type, location, and size, as well as any information on its significance, should be provided to the SHPO.

5) Consultation with the SHPO should occur in order to obtain technical advice and guidance for the evaluation of the discovered cultural resource.

6) If necessary, a mitigation plan should be prepared for the discovered cultural resource. This plan should be sent to the SHPO for review and comment. The SHPO should be expected to respond with preliminary comments within two working days, with final comments to follow as quickly as possible.

7) If a formal data recovery mitigation plan is required, development activities in the near vicinity of the cultural resource should be avoided to ensure that no adverse impact to the resource occurs until the mitigation plan can be executed.

If human remains are encountered during site development, the stipulations of OCGA 31-21-6 should be followed. All work in the near vicinity of the human remains should cease and reasonable efforts should be made to avoid and protect the remains from additional impact. In

cases of inclement weather, the human remains should be protected with tarpaulins. A qualified Professional Archaeologist should be retained to investigate the reported discovery, inventory the remains and any associated artifacts, and assist in coordinating with state and local officials.

1) Any person who accidentally or inadvertently discovers or exposes human remains shall immediately notify the local law enforcement agency with jurisdiction in the area where the human remains are located.

2) Any law enforcement agency notified of the discovery or disturbance of interred human remains shall immediately report such notification to the coroner or medical examiner of the county where the human remains are located, who shall determine whether investigation of the death is required under OCGA 45-16-24. If investigation of the death is not required, the coroner or medical examiner shall immediately notify the local governing authority of the county or municipality in which the remains are found and the Georgia Department of Natural Resources. If the remains are believed to be those of one or more aboriginal or prehistoric ancestors of or American Indians, then the DNR shall notify the Georgia Council on American Indian Concerns. All land disturbing activities likely to disturb the human remains shall cease until:

   - The county coroner or medical examiner, after determining that investigation of the death is required, has completed forensic examination of the site;
   - A permit is issued for land use change and disturbance to OCGA 36-72-4; a permit is issued or a contract is let pursuant to subsection (d) of OCGA 12-3-52; or written permission is obtained from the landowner for the conduct of an archaeological excavation; or
   - If such a permit is not sought, the DNR arranges with the landowner for the protection of the remains.

5.14 LIGHT EMISSIONS AND VISUAL IMPACTS

Aviation lighting is required for security, obstruction clearance and navigation and is the chief contributor to light emissions from airports. An analysis is necessary when projects introduce new airport lighting facilities that may affect residential or other sensitive land uses. Only in unusual circumstances, for example, when high intensity strobe lights shine directly into a residence, is the effect of light emissions considered sufficient to warrant special study and planning to reduce such effects.

Proposed lighting is evaluated primarily in terms of potential for human annoyance. FAA Order 5050.4A *Airport Environmental Handbook* states that the following information shall be provided whenever the potential for annoyance by airport lighting exists:

- Site location of lights or light systems.
- A brief description of the light system as to its purpose, method if installation, beam angle, intensity, color, flashing sequence, and other pertinent characteristics of the particular system and its use.
- Measures to lessen any annoyance, such as shielding or angular adjustments.

The build alternatives would involve the installation of a complete approach lighting system, a runway lighting system, a rotating beacon, a lighted segmented circle, along with other required lighting needs (terminal building exterior and interior lighting, floodlights, security lighting, street lights, etc.). In addition, the plans also provide for the installation of taxiway lights for the taxiways associated with the primary runway, and a Precision Approach Pathway Indicator.

The approach lighting system is planned to include a Medium Intensity Approach Lighting System (MALS) with flashing Runway Alignment Indicator Lights (RAIL), collectively abbreviated MALSR. The beams emitted from the MALSR fixtures are narrowly focused and are oriented along the extended runway centerline and upward toward the aircraft approach path. For these reasons, the light emissions analysis considered only the area in the immediate vicinity of the MALSR fixtures and the area along the extended runway centerline out to 1,000 feet beyond the end of the RAIL array. This definition of the lighting study area is quite conservative (tending to overstate the area of potential impact) due to the narrow focus and orientation of the beams.

The MALS consists of an array of fixtures located at ground level at the end of the runway. The runway ends generally will be located 1,500 feet (the length of the Runway Protection Zone) or more inside the airport boundary. Due to their location the MALS will not produce impacts at off-airport locations. The RAIL array consists of several flashing strobe lights located on a line of low poles or towers, extending out to 2,400 feet beyond the runway end. The height of the poles typically increases with increasing distance from the runway end, corresponding to the angle of descent for an approaching aircraft. The RAIL array extends beyond the airport boundary in some cases, and was the focus of the light emissions analysis.

Because the area immediately abutting each build alternative site is uninhabited, most of the proposed lighting would not have any potential for annoyance. Only the approach lighting system has the potential for impacts outside the proposed airport property boundary.

Aerial photographs and maps were used to identify light-sensitive land uses located outside the proposed Runway Protection Zones but within the lighting study area. Primary attention was paid to the nearest residences, and secondary attention to any other structures or sensitive uses. **Table 5-11** presents the results of the light emissions assessment, and the potential for impacts at each site is described below.

5.14.1 Site 1

The area adjacent to the northern boundary of the proposed site is zoned agricultural/residential. No sensitive land uses are located within the light emissions study area for Site 1. No light emissions impacts are anticipated due to development of the airport on Site 1.

5.14.2 Site 3

Adjacent lands on the eastern and southern boundaries have various established commercial and residential developments that are beyond the lighting study area. The RAIL array for the Runway 05 approach would extend to about 200 feet from an existing commercial area southwest of the proposed airport. However, the beam from an outer RAIL light observed from the ground at this distance is relatively unobtrusive. Also, commercial uses are relatively insensitive to light and glare. No light emissions impacts are anticipated due to development of the airport on Site 3.

5.14.3 Site 9

Site 9 is bordered to the southwest by the Wainright Road neighborhood of existing residences. However, these residences are located entirely in the path of the proposed runway or elsewhere within the proposed airport boundary. It is assumed that all of the residences would be purchased in the event of development of the Airport on Site 9. Thus, these residences were not considered further in the light emissions assessment.

Also at the southwest end of Site 9 but farther from the runway, near the outer end of the RAIL array, are located two buildings that appear to be residential or combined residential and commercial. The nearest building is about 300 feet from the RAIL array. The beam from an outer RAIL light observed from the ground at this distance is unobtrusive. Also, commercial uses, if they exist at this location, are relatively insensitive to light and glare. No light emissions impacts are anticipated due to development of the airport on Site 9.

5.14.4 No-Build Alternative

With the No-Build Alternative the airport would not be relocated, existing lighting conditions would continue, and no new light and glare impacts would occur.

Table 5-11
RESULTS OF LIGHT EMISSIONS ANALYSIS

Site No.	Approach Runway End*	Nearest Residence		Nearest Non-Residential Use	
		Approximate Distance from RAIL Array	Potential for Annoyance	Approximate Distance from RAIL Array	Land Use and Potential for Annoyance
1	5	>1000 feet	N.A.**	>1000 feet	N.A.
	23	>1000 feet	N.A.	>1000 feet	N.A.
3	5	>1000 feet	N.A.	200 feet	Commercial; none
	23	>1000 feet	N.A.	>1000 feet	N.A.
9	5	300 feet	None.	>1000 feet	N.A.
	23	>1000 feet	N.A.	>1000 feet	N.A.

Source: KMCHNG

* Runway heading refers to the direction of flight for an aircraft on final approiach. For example, an aircraft approaching Runway 05 is flying northeast, and the potential impact area for light emissions is southwest of the southwestern end of the runway.

** Not applicable. Location is outside of lighting study area.

5.14.5 Mitigation

No light emissions impacts are anticipated due to development of the airport on any of the alternative sites. Therefore, no mitigation is required.

5.15 NATURAL RESOURCES AND ENERGY SUPPLY

It is the policy of the FAA, consistent with NEPA and the CEQ regulations, to encourage the development of facilities that exemplify the highest standards of design including principles of sustainability. These high standards should apply to the conservation of resources such as energy.

The effects of airport development on energy and natural resources are generally related to the amount of energy required for aircraft, ground support vehicles, airport lighting, terminal buildings and other facilities, and motor vehicle travel. FAA Order 5050.4A, *Airport Environmental Handbook*, notes that two types of energy use must be considered in determining the environmental impact of a proposed development:

- That which relates to major changes in stationary sources such as a terminal building, airfield lighting, etc. The proposed development shall be examined to identify any proposed major changes in stationary facilities that would have a measurable effect on local supplies.
- That which involves the movement of aircraft or ground vehicles. Increased consumption of fuel by aircraft need only be examined if the time required for aircraft operations would increase substantially without offsetting efficiencies in operational procedures. The fuel consumption of ground vehicles shall be examined only if the action would add appreciably to access time or if there would be a substantial change in movement patterns for on-airport service or other vehicles.

The *Airport Environmental Handbook* also states that use of natural resources may become an issue warranting discussion only if the airport requires use of unusual materials or materials that are in short supply. Most day-to-day airport operations do not require use of any natural resources that are unusual or in short supply.

5.15.1 Build Alternatives

The proposed layout plans for each of the build alternatives are essentially the same. None of the build alternatives will differ appreciably in aircraft operations, airside service operations, or groundside operations. Accordingly, there will be no significant change in energy usage (fuel consumption) by any of the users. Changes in fuel consumption by motor vehicles accessing the airport will vary among the alternative sites but these variations are insignificant. Construction of the proposed Build alternatives would require only conventional resources and building materials that are readily available.

The electrical usage resulting from the Build alternatives will increase due to the proposed runway and taxiway lighting systems. Georgia Power Company has a total generation capacity of approximately 14,000 megawatts[14], and in 2004 supplied approximately 89 billion kWh to its customers[15]. A comparison of the project's relative level of increase in the airport's electrical demand to the overall electrical generation capacity of Georgia Power indicates that the project will not have a significant impact on the regional electrical utility system.

5.15.2 No-Build Alternative

There will be no significant impacts resulting from the selection of the No-Build alternative.

14 Georgia Power Generating Plants. Available: http://www.southernco.com/gapower/about. Accessed January 6, 2006.

15 Georgia Power 2004 Annual Report. Available: http://investor.southerncompany.com/investor. Accessed January 6, 2006.

5.15.3 Mitigation

The build alternatives will result in increased consumption of energy, principally electricity. This increase is insignificant and will not have a significant impact on the ability of the electrical supply system of the region to meet demand. No use of resources that are unusual or in short supply is anticipated. Therefore, no mitigation is necessary for the Build or No-Build alternatives energy usage.

5.16 SECONDARY (INDUCED) IMPACTS

A proposal to replace the existing St. Marys airport could possibly involve the potential for secondary and/or induced impacts on surrounding communities. The impacts could include: shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by airport development. In addition, airports bring essential services to a community that include more efficient medical care through an air ambulance service, support for law enforcement and firefighters, and expedited delivery of mail and freight. These services are likely to make a community more appealing to businesses and residents.

Although the impacts of a small General Aviation airport are likely minimal, some impacts can be expected. For instance, airport users purchase goods and services from Fixed Base Operators (FBO's), rent hotel rooms and cars, and eat at local restaurants. Consequently, these affected businesses must employ local residents and these residents must have places to live. Those who reside in the surrounding communities in turn create local public service demands and those demands must be met by both the local government entities and private businesses. This scenario creates secondary economic effects, indirect shifts in population, and induced public service demands. However, it must be understood that these impacts are expected to be minimal due to the relative size of a replacement St. Marys Airport.

Below is an examination of these possible impacts and effects as they relate to both the Build and No-Build alternatives.

5.16.1 Build Alternatives

A shift of portions of the population, whether from organic population growth or the relocation of current populations, can be expected given the economic impacts a new airport would have. It is expected that the businesses that reside at the current St. Marys airport will relocate to the replacement St. Marys Airport and employ a like amount of employees. Currently, there are approximately 21 full time employees working for on-airport businesses at the existing St. Marys Airport. In addition, the creation of new employment opportunities in the vicinity of each site would be the result of the services that an airport itself provides along with the services that airport users will likely demand in the surrounding areas. Given the forecasted increase in operations over the next 20 years and the increase in jet traffic along with the increased services that corporate jet passengers will likely demand, employment at the new airport will likely rise slightly over the same time period. However, any shifts in population, increased public service demands, and changes to business and economic activity due to the Proposed Action would be minor in nature.

Due to the fact that Proposed Action is considered one independent project, it will not likely lead to further infrastructure development in the reasonably foreseeable future as a majority of the required infrastructure will be developed as a part of this project. However, the introduction of water, sewer, electrical, cable, etc., to the area would create a more appealing area for secondary developments. These developments may or may not serve the support services resulting from the development of the replacement airport. It should be understood that any additional development directly related to the airport will be minimal due to the airport's current and forecasted size and number of operations.

Unrelated to the development of a replacement airport, there are transportation improvements planned or in progress along the Interstate 95 corridor, which include lane widening and the possible construction of a new interchange at Billyville Road.

5.16.2 No-Build Alternative

There are no expected shifts in patterns of population movement and growth or a change in public service demands as a result of the No-Build Alternative.

5.16.3 Mitigation

No mitigation is required as a result of the selection of any of the Build or No-Build alternatives.

5.17 SOCIOECONOMIC IMPACTS

The extensive relocation of residents and community businesses; disruption of local traffic patterns; and the substantial loss in community tax base are all examples of socioeconomic impacts that the FAA considers significant. If acquisition of real property or displacement of persons is involved, 49 CFR part 24 [implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act)], as amended must be met for Federal projects and projects involving Federal funding.

A majority of the socioeconomic impacts occur as a result of the use of aviation services. These impacts include: regional expenditures made by air passengers who visit the region (at hotels, restaurants, museum visits, etc.); general expenditures by the region's residents associated with their use of aviation; and local firms having economic activity which is dependent upon the airport.

Discussed below is an examination of the above-mentioned socioeconomic effects that could result from the Build and No-Build Alternatives.

5.17.1 Site 1

The development of a replacement St. Marys Airport on Site 1 would require the acquisition of currently undeveloped land. Approximately 525-acres of land would have to be acquired, a majority of which is owned by the Sea Island Company and will be donated for the purposes of airport development. A small portion of vacant land (approximately 80-acres) on an adjacent parcel will have to be purchased from a private land owner. The displacement of persons is not expected should Site 1 be selected for development of a replacement St. Marys Airport. The site's boundaries do not encompass any residences and the 65 DNL noise contour remains within property boundaries.

During development of the site there may be impacts from construction vehicles and materials delivery on the local traffic patterns. These are projected to be short-term impacts as the airport itself will not likely lead to a substantial increase in automobile traffic in the area.

Currently, there are four businesses in operation at the existing St. Marys Airport. These include: Bird Aviation, St. Marys Aviation, St. Marys Flight School, and St. Marys Skydiving. Businesses that are currently located on the St. Marys Airport will likely relocate to the new airport. The economic impact is unknown, but an adverse impact on airport related businesses is not expected. In addition, a future increase in operations at the proposed new airport will likely lead to increased revenues for on-airport establishments in the long-term.

An increase in operations will likely lead to an increase in fuel sales, local hotel/motel revenues, and local restaurant revenues. All of which have associated taxes that benefit the local tax base. Therefore the local tax base will likely be increased in the area through a forecasted increase in operations at the airport.

5.17.2 Site 3

The development of a replacement St. Marys Airport on Site 3 would require the acquisition of currently undeveloped land and a single-family residence. The acquisition of a 525-acre portion of three different parcels, all owned by one land owner, will be required for airport development. One residence will require relocation as a result of the land acquisition as the land associated with the residence falls within the proposed runway safety area.

During development of the site there may be impacts from construction vehicles and materials delivery on the local traffic patterns. These are projected to be short-term impacts as the airport itself will not likely lead to a substantial increase in automobile traffic in the area.

As noted earlier, businesses that are currently located on the St. Marys Airport will likely relocate to the new airport. The economic impact is unknown, but an adverse impact on airport related businesses is not expected. In addition, a future increase in operations at the proposed new airport will likely lead to increased revenues for on-airport businesses in the long term.

An increase in operations will likely lead to an increase in fuel sales, local hotel/motel revenues, and local restaurant revenues, all of which have associated taxes that benefit the local tax base. The local tax base will likely be increased in the area through a forecasted increase in operations at the airport.

5.17.3 Site 9

The development of a replacement St. Marys Airport on Site 9 would require the acquisition of multiple parcels for a 525-acre airport development. The parcels are held by multiple land owners and include the portions of a residential neighborhood. Approximately 13 parcels in the residential neighborhood would require acquisition, all of which lie within the proposed runway protection zone or runway safety area. Of the 13 parcels expected to be impacted, ten currently contain homes. All of the homes located in the neighborhood are single-family dwellings and do not appear to be low-income housing in nature; however, the total number of individuals impacted is uncertain. There is a potential to shift the location of the runway to the northeast and potentially avoid impacts to the residential area, which will be explored in further detail if this site is ultimately selected.

During development of the site there may be impacts from construction vehicles and materials delivery on the local traffic patterns. These are projected to be short-term impacts as the airport itself will not likely lead to a substantial increase in automobile traffic in the area.

As noted earlier, businesses that are currently located on the St. Marys Airport will likely relocate to the new airport. The economic impact is unknown, but short term costs will likely be endured by the applicable businesses. However, a future increase in operations at the proposed new airport will likely lead to increased revenues for on-airport businesses in the long term.

An increase in operations will likely lead to an increase in fuel sales, local hotel/motel revenues, and local restaurant revenues. All of which have associated taxes that benefit the local tax base. The local tax base will likely be increased in the area through a forecasted increase in operations at the airport.

5.17.4 No-Build Alternative

The No-Build Alternative would result in no additional adverse socioeconomic impacts.

5.17.5 Mitigation

No adverse socioeconomic impacts are expected with the development of the Proposed Action on either Site 1 or Site 3. There are potential minimal impacts as a result of development on Site 9. The airport sponsor, by law, has the responsibility to ensure uniform and equitable treatment of persons affected by Federally assisted airport land acquisition programs, within the provisions and entitlements of the Uniform Act. It is the sponsor's obligation under the Uniform Act to provide an adequate relocation assistance program that ensures the prompt and equitable relocation and reestablishment of persons displaced as a result of it's Federally assisted airport projects. Real property appraisal, acquisition, and relocation assistance will be conducted via guidance provided in Advisory Circular 150/5100-17 *Land Acquisition and Relocation Assistance For Airport Improvement Program Assisted Projects* and FAA Order 5100.37 *Land Acquisition and Relocation for Airport Development Projects.*

If proper steps are taken in the mitigation of any social impacts as a result of relocation, it is obvious that a sustainable General Aviation airport would likely benefit the community in the long-term. Additionally, on-airport businesses would likely benefit from relocating to a replacement St. Marys Airport. Consultation with local transportation, housing, economic development, relocation and social agency officials, and community groups regarding the social impacts of the proposed action shall take place to minimize any negative impacts associated with the Proposed Action.

5.18 WATER QUALITY

In order to document the compliance with State and Federal water quality standards developed as part of the Federal Water Pollution Control Act (FWPCA), as amended by the Clean Water Act of 1977, surface and ground water quality impacts from the proposed construction and operational activities associated with the development on Sites 1,3, or 9 should be evaluated. This Act provides authority to Federal, State and local government agencies to establish water quality standards, to control discharges into surface and subsurface waters, to develop waste treatment plants and practices, and to issue permits for discharges, including dredge and fill material, into bodies of water.

In addition, Federal regulations are established for the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit Program, which requires local governments to develop programs to prevent pollutants from entering municipal storm sewer systems. This function is executed through the Georgia Department of Natural Resources Water Resources Branch of the Environmental Protection Division.

A majority of Camden County's water resources are retrieved from the ground water generated by the Floridian aquifer system. Additionally, the Cumberland-St. Simons, Satilla, and St. Marys River watersheds flow through the Camden County area. The Satilla watershed is composed primarily of the Satilla River, Little Satilla River, and Turtle River. The Satilla River flows through several Georgia counties before reaching the Atlantic Ocean. The St. Marys River flows north and east into the Atlantic Ocean and primarily makes up the St. Marys watershed. The Cumberland-St. Simons watershed is composed of resources from both the Satilla and St. Marys River basins. Surface water resources are limited, as the only significant tributaries are those of the North Prong St. Marys tributary and Spanish Creek.

5.18.1 Build Alternatives

Construction of the Proposed Action on Sites 1, 3 and 9 has the potential to result in short-term water quality impacts as a result of construction activities. These impacts may include suspended sediments during and shortly after precipitation events as well as possible diversion, draining, control, or other modification of wetlands on the site. However, there are no known sole or principal drinking water resources designated by the EPA on the site.

5.18.2 No-Build Alternative

There are no impacts expected as a result of the No-Build Alternative.

5.18.3 Mitigation

Guidelines established in FAA Advisory Circular 150/5370-10B *Standards for Specifying Construction of Airports* will be incorporated in project design specifications to further mitigate potential impacts. These guidelines include temporary measures to control water pollution, soil erosion, and filtration through the use of berms, fiber mats, gravels, mulches, slope drains, and other erosion control methods. Erosion and sedimentation control measures will be implemented during construction and periodic inspections will be conducted in the post-construction phase.

Compliance with the requirements and procedures of an NPDES permit prior to the initiation of construction activities will prevent substantial contamination of water resources. Overall, the impacts are expected to be short-term and localized. Due to the relatively small size and scope of the proposed new airport, impacts related to the construction of the airfield as well as any highway improvements are not expected to be substantial.

5.19 WETLANDS

Executive Order 11990, *Protection of Wetlands,* defines wetlands as “those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.” Federal agencies are required to minimize the destruction, loss, or degradation of wetlands. Specifically, Section 404 of the Clean Water Act (33 U.S.C. 1344) places the responsibility to regulate all fill activities

performed in the waters of the United States with the US Army Corps of Engineers (USACE). Since the development of a replacement St. Marys Airport will potentially require the disturbance and filling of jurisdictional wetlands, compliance with the Clean Water Act and USACE requirements is essential. The protection, preservation, and enhancement of the Nation's wetlands, to the fullest extent practicable during the planning, construction, funding, and operation of transportation facilities and projects, are also to be assured by the Federal Aviation Administration.

Palustrine wetlands like those found at various locations in Camden County Georgia are not regulated by the Georgia Department of Natural Resources (GDNR). GDNR only regulates tidally influenced marshlands. However, the Federal government, through the 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 USACE. 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. However, isolated wetlands that are connected to lakes or streams by ditches are considered jurisdictional wetlands by USACE and thus regulated. All of the wetland areas in the project vicinity are part of the Satilla River, Crooked River or St. Mary's River systems and appear to be within the jurisdictional purview of USACE.

In order to impact jurisdictional wetlands associated with the Proposed Action, a Section 404 permit must be granted by the USACE. During the analysis of the permit, the USACE will apply Section 404(b)(1) guidelines which require the permit applicant to:

- Avoid unnecessary environmental impacts by preparing an analysis of available off and on-site alternatives that would potentially result in less adverse impacts than the proposed project.
- To the maximum extent practicable, minimize the unavoidable adverse impacts of the preferred alternative.
- Provide a compensatory mitigation plan to replace the wetlands functions lost as a result of the unavoidable adverse impacts associated with the project.

The USACE can only issue a permit for the least environmentally damaging practicable alternative that meets the project's basic purpose. If there is an otherwise practicable alternative, an area not presently owned or under consideration as a potential site for the replacement airport which can reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed project may be considered.

In Chapter 3, Alternatives Analysis of this EA, an analysis of each site alternative was presented and the Sponsor's Preferred Alternative identified (i.e., Site 1). Not only is Site 1 the Preferred Alternative, for the reasons stated in Chapter 3, it is the only practicable alternative. The portion of Site 1 identified for development in Section 5.19.1 below was derived from an in-depth analysis of various airfield configuration alternatives in order to arrive at the alternative that created the least overall wetland impact (i.e., the proposed airfield configuration was designed to avoid unnecessary environmental impacts that result in the least adverse impact for the proposed project). Furthermore, the building envelope and support infrastructure necessary to replace the existing St. Marys airport was sited, to the maximum extent practicable, to minimize the unavoidable adverse impacts associated with overall development of the site. Mitigation options discussed in this section are designed to provide a compensatory mitigation plan to replace wetland functions lost as a result of the unavoidable impacts associated with development of Site 1, in the configuration described below, as a replacement airport.

Wetland boundaries for all three sites were determined using aerial interpretation with extensive ground truthing. Formal wetland delineations and wetland quality assessments will be conducted during the next project phase and will be confirmed by the USACE during the permitting process.

5.19.1 Site 1

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainage ways. Drainage of the site flows southeastward to the Rose Creek Swamp, which ultimately discharges to the Satilla River. Examination of the United States Geological Survey (USGS) Woodbine, Georgia topographic quadrangle map revealed that elevations range between slightly over +20' and under +10' above mean sea level.

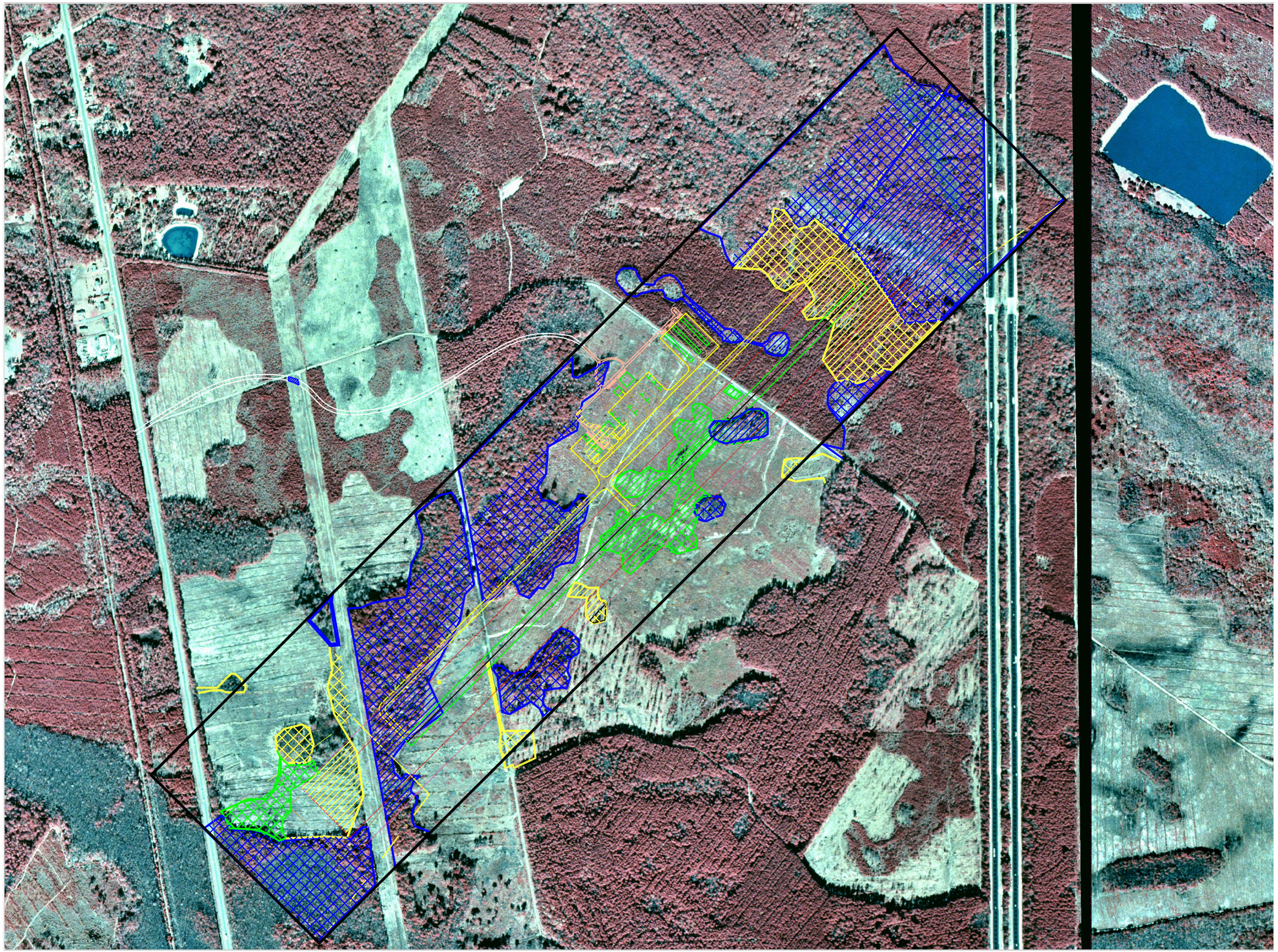
An examination of the *Soil Survey of Camden and Glynn Counties, Georgia* produced by the U. S. Department of Agriculture, Soil Conservation Service (SCS; currently known as the Natural Resources Conservation Service, NRCS) revealed four soil types found within the Site area. The soil types are:

- 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.

Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways. After the selection of Site 1 as the Preferred Alternative, numerous runway airfield configurations were developed in an attempt to minimize and avoid, to the extent practicable, unnecessary impacts to the wetland system. Based on a runway orientation of northeast/southwest which presents the minimal amount of impact to the site (considering other safety and operational considerations), approximately 40 acres of high quality wetlands, 19 acres of medium quality wetlands, and 14 acres of low quality wetlands will need to be filled for development.

In addition, secondary impacts will occur as a result of disturbance to wetlands not being filled due to the topping and/or removal of trees and other obstructions to meet FAA obstruction clearance requirements. Of the disturbed (not filled) wetlands, approximately 133 acres will be of high quality, approximately 15 acres will be medium quality, and approximately 7 acres will be of low quality. All of the wetland areas in the vicinity of Site 1 are part of the Satilla River system and appear to potentially be within the jurisdictional purview of USACE, see **Figure 5.29.**



Airport Property Line

High Quality Wetlands

Medium Quality Wetlands

Low Quality Wetlands

Filled Wetlands

Disturbed Wetlands

N

500' 0 500' 1,000'

FEET

Source: RS&H,2006

FIGURE 5.29

SITE 1 - WETLANDS

February 2007

5.19.2 Site 3

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainage ways. 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.

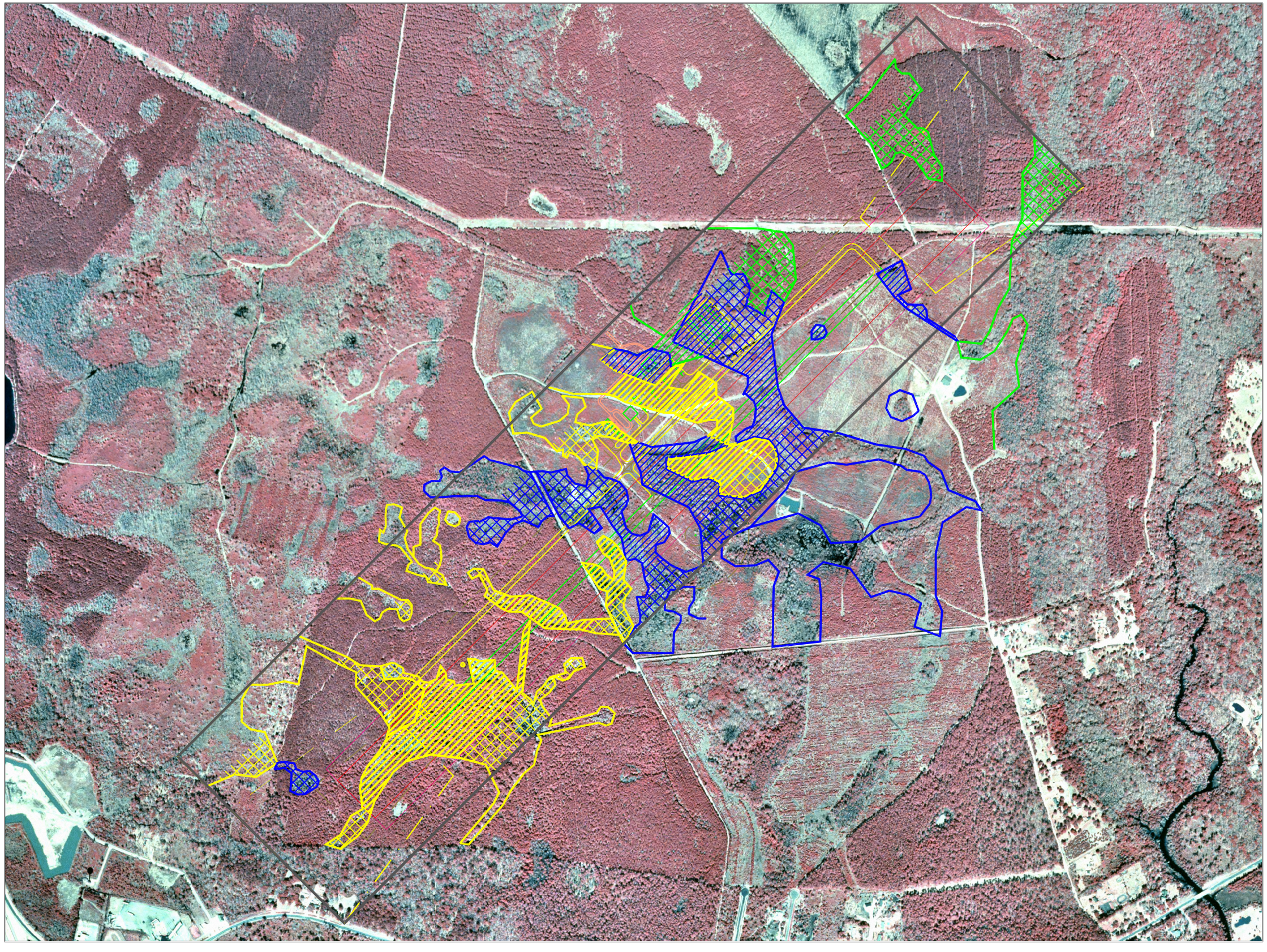
Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways. Palustrine wetlands like those found at the Site are not regulated by the GDNR. Based on a runway orientation of northeast/southwest, approximately 28 acres of high quality wetlands, 41 acres of medium quality wetlands, and 1 acre of low quality wetlands will need to be filled for development. In addition, secondary impacts will occur as a result of disturbance to wetlands not being filled due to the topping and/or removal of trees and other obstructions to meet FAA obstruction clearance requirements. Of the disturbed wetlands, approximately 28 acres will be of high quality, approximately 25 acres will be medium quality, and approximately 25 acres will be of low quality. All of the wetland areas in the Site vicinity are part of the Crooked River system and appear to potentially be within the jurisdictional purview of USACE, see **Figure 5.30.**

5.19.3 Site 9

The Site is characterized by low ancient dune ridges that have been converted to pine plantation interspersed with forested wetland drainage ways. 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)



Airport Property Line

High Quality Wetlands

Medium Quality Wetlands

Low Quality Wetlands

Filled Wetlands

Disturbed Wetlands

N

500' 0 500' 1,000'

FEET

FIGURE 5.30

SITE 3 - WETLANDS

Source: RS&H,2006

- 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 NTCHS classifies all of these soil types except Albany fine sand as hydric.

Wetlands at the Site are dominated by seasonally flooded, forested systems associated with drainageways. Palustrine wetlands like those found at the Site are not regulated by the GDNR. Based on a runway orientation of northeast/southwest, approximately 3 acres of high quality wetlands, 4 acres of medium quality wetlands, and 42 acres of low quality wetlands will need to be filled for development. In addition, secondary impacts will occur as a result of disturbance to wetlands not being filled due to the topping and/or removal of trees and other obstructions to meet FAA obstruction clearance requirements. Of the disturbed wetlands, approximately 8 acres will be of high quality, approximately 23 acres will be medium quality, and approximately 35 acres will be of low quality. All of the wetland areas in the vicinity of the Site are part of the Catfish Creek system and appear to potentially be within the jurisdictional purview of USACE, see **Figure 5.31.**

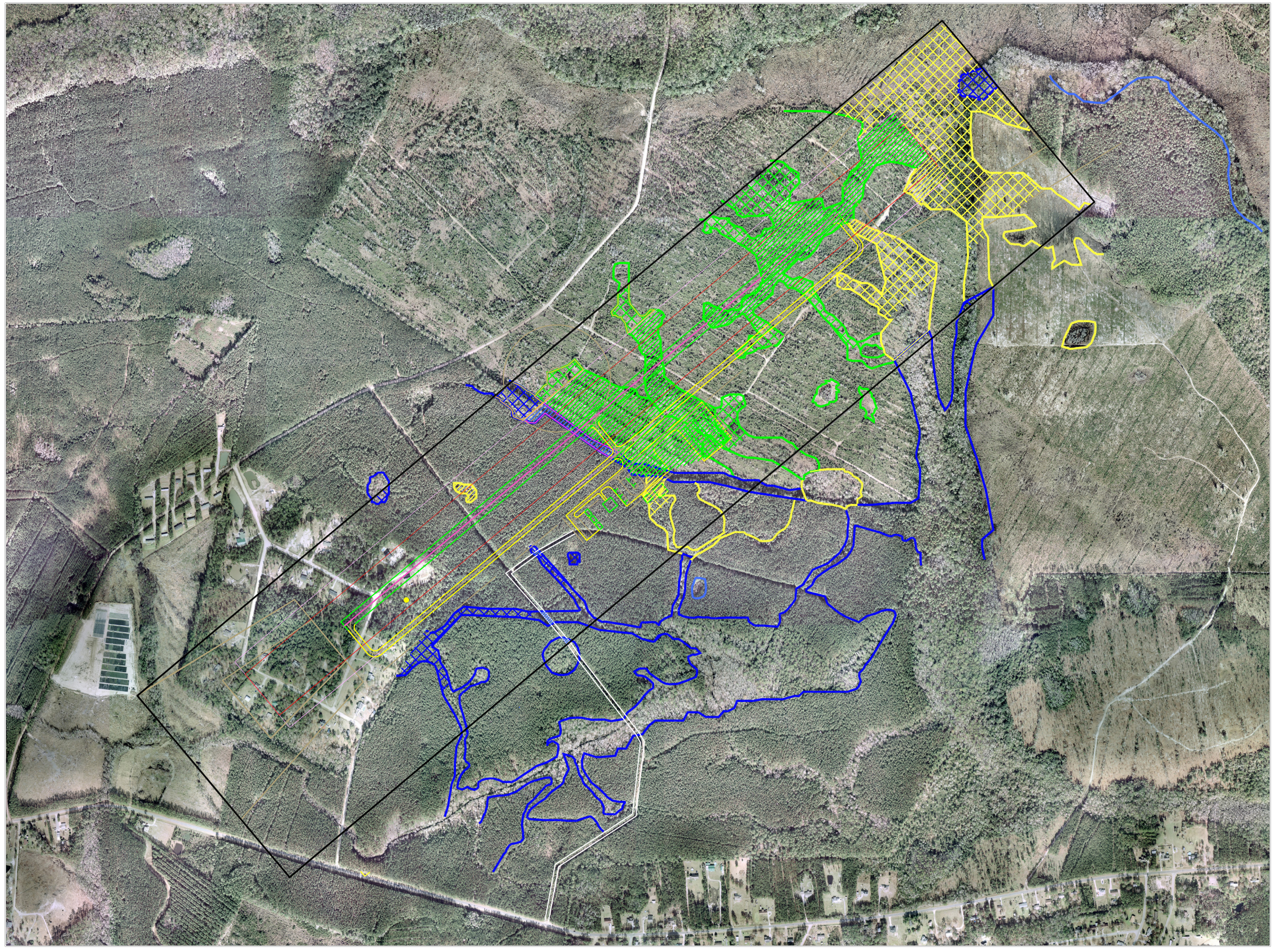
5.19.4 No-Build Alternative

There are no expected wetland impacts as a result of the No-Build alternative.

5.19.5 Mitigation

Mitigation will be required for any wetland impacts over one-tenth of an acre, and will be undertaken in accordance with USACE requirements. The FAA promotes wetland banking as a mitigation tool for aviation related projects that must occur in wetlands due to aeronautical requirements (e.g., unavoidable construction of a runway in a wetland due to prevailing wind). The FAA has developed a policy supporting the use of a wetland banking mitigation strategy. If a suitable mitigation area site cannot be found at or near the project site, wetland mitigation will occur at a mitigation bank. Currently three USACE approved mitigation banks cover at least a portion of Camden County (i.e., Marshlands Mitigation Bank, Satilla River Mitigation Bank, and Wilkinson-Oconee Mitigation Bank). Additional mitigation can occur onsite by allowing the wetland systems that are impacted due to FAA mandated vertical clearance constraints (i.e., those not to be filled) to re-vegetate as a herbaceous or shrub wetland system.

Unavoidable wetland losses will be mitigated and replacement ratios determined according to guidelines set forth by the USACE. Mitigation areas will comply with FAA Advisory Circular 150/5200-33 *Hazardous Wildlife Attractants On or Near Airports,* which provides criteria for the location of wetland mitigation areas within 10,000 feet of an airport serving jet aircraft and within five (5) miles of approach/departure airspace (i.e., in alignment with the runway ends). A new mitigation bank proposed to be located in proximity to Sites 1 and 3 is presented in **Figure 5.32.**



Airport Property Line

High Quality Wetlands

Medium Quality Wetlands

Low Quality Wetlands

Filled Wetlands

Disturbed Wetlands

N

500' 0 500' 1,000'

FEET

Source: RS&H,2006

FIGURE 5.31

SITE 9 - WETLANDS

Source: RS&H, 2005

N

1750' 0 1750' 3,500'

FEET

Figure 5.32

PROPOSED MITIGATION BANK

5.20 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act of 1968, as amended, describes those river segments designated as, or eligible to be included in, the Wild and Scenic Rivers System. Impacts should be avoided or minimized to the extent possible when the rivers or river segments that fall under this Act may be affected by a proposed action. In addition, the President's 1979 Environmental Message Directive on Wild and Scenic Rivers directs Federal agencies to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory as having potential for designation under the Wild and Scenic Rivers Act.

The only designated Wild and Scenic River in the State of Georgia is the Chattooga River. The River is in northern Georgia on the borders of North and South Carolina. However, the St. Marys River, which acts as the southern border of Camden County, between the County and the State of Florida, is currently listed in the Nationwide Rivers Inventory as having potential for designation under the Wild and Scenic Rivers Act.

5.20.1 Build Alternatives

Sites 1 and 3 are located well south of the Chattooga River and north of the St. Marys River. Development on these sites will have no impact on either of these rivers, see **Figure 5.33.**

Site 9 is located well south of the Chattooga River and development on this site will have no impact on this river. However, the site is located approximately ¼ mile north of the St. Marys River. Development of a replacement St. Marys Airport on this site has the potential to impact the St. Marys River, see **Figure 5.34.**

5.20.2 No-Build Alternative

The No-Build alternative will result in no impacts to either the Chattooga River to the north or the St. Marys River to the south.

5.20.3 Mitigation

All necessary precautions will be taken in order to avoid adverse effects to the St. Marys River should development take place on Site 9. The Council on Environmental Quality's (CEQ) Memorandum on *Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory* and the CEQ Memorandum on *Procedures for Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory* will be used to guide the process.

Although construction would likely remain well north of the river, nearby streams or surface water may drain into the St. Marys River. The following steps can be taken to prevent contamination of these streams or applicable surface water.

- Revegetating and stabilizing the banks of these streams to protect against sedimentation.
- Limestone placed within the streams to help clear the water of impurities.
- Fences may be erected along stream banks to prevent equipment or animals from destroying unstable stream beds.
- Specialized culverts with open bottoms to protect delicate stream beds may also be used where needed.

Source: National Park Service

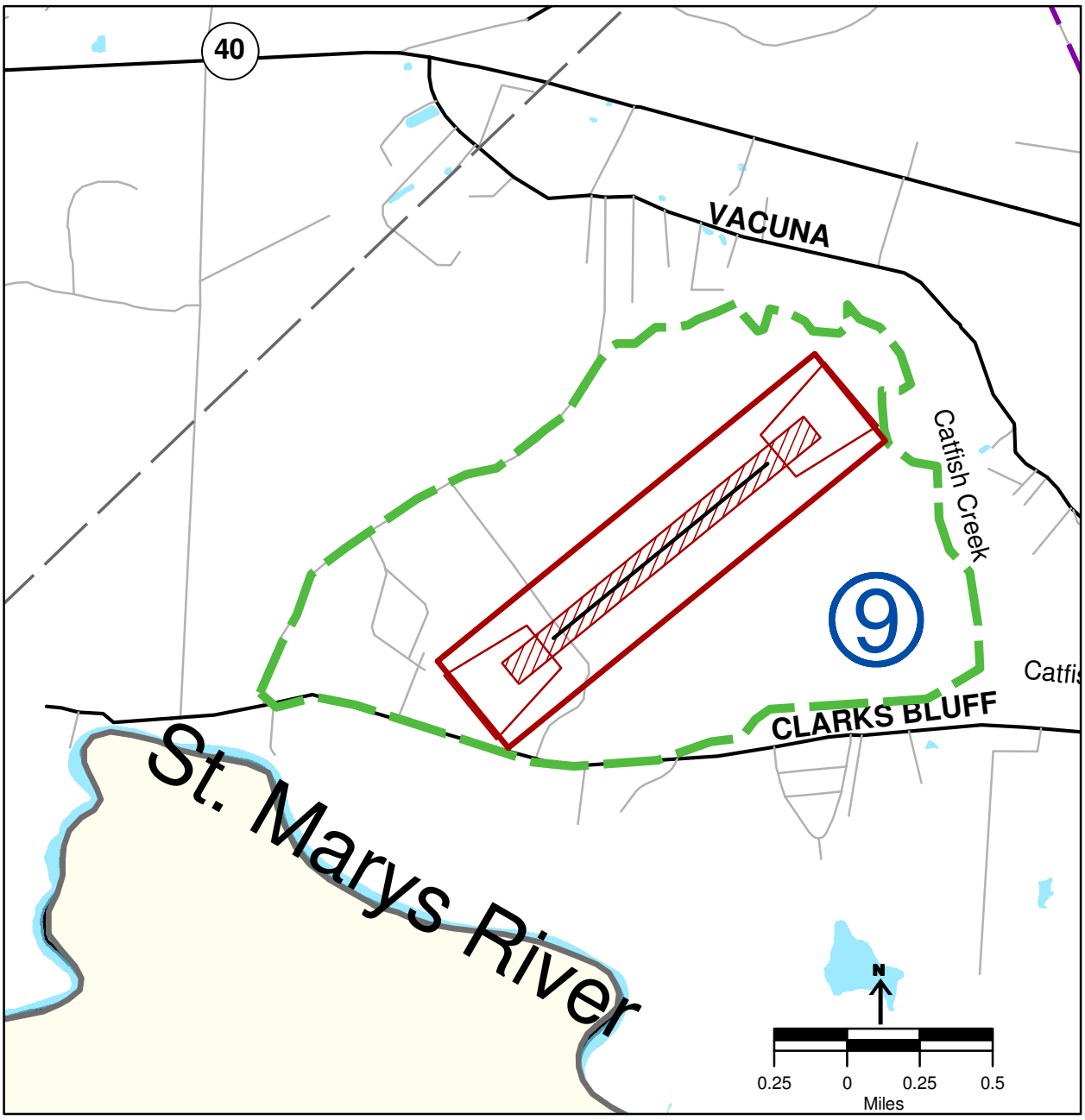
Chattooga River

N

60 30 0 60

Miles

Figure 5.33
WILD & SCENIC RIVERS



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

- Interstate Highway
- U.S. Route
- State Routes
- County Roadways
- Inactive Railroad Tracks
- Radial From Brunswick VOR
- Active Railroad Tracks
- Prospective Property Boundary
- Prospective Safety Areas

Figure 5.34

Site 9 and the St. Marys River

CHAPTER 6 – PUBLIC INVOLVEMENT

The following agencies and interested parties were consulted during preparation of the Environmental Assessment:

A. Local/Regional/State Agencies:

City of St. Marys
Camden County
Coastal Georgia Regional Development Council
Georgia Department of Transportation
Georgia Department of Natural Resources
Georgia Department of Community Affairs

B. Federal Agencies:

U.S. Department of the Interior – National Park Service
U.S. Department of the Interior – Bureau of Land Management
U.S. Department of Commerce – National Marine Fisheries
U.S. Department of Agriculture – Forestry Service
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
Federal Emergency Management Agency
Federal Aviation Administration

The Draft Environmental Assessment Report was produced and transmitted on September 1, 2006 to the Clearinghouse of the State of Georgia (for state departmental coordination) and the various agencies and entities identified above. Furthermore, the Draft Environmental Assessment Report was on file for a period of at least 60 days at the offices of the City of St. Marys, and St. Marys Public Library. Copies of the coordination letters sent to the above referenced agencies, in addition to the letter/comments received from these agencies pertaining to the Draft Environmental Assessment Report, are included in **Appendix F**. All comments received concerning the Draft Environmental Assessment were reviewed and where applicable, addressed in the final report.

On October 11, 2006 a Public Information Workshop was held to allow the consultant team to present the findings documented in the Draft Environmental Assessment Report. Notice of the Public Information Workshop was advertised in the Camden County Tribune & Southeastern Georgian on September 15, 22 and 29. The Public Information Workshop was conducted in an open house type format using the cafeteria of the St. Marys Elementary School. This format allowed the consultant team to staff various stations and interact with the public to answer any questions. In addition, a Public Hearing was held on October 16, 2006 in the cafeteria of the St. Marys Elementary School. This Public Hearing afforded interested citizens the opportunity to make public comments on the record concerning the Draft Environmental Assessment Report. Notice of the Public Hearing was published in the Camden County Tribune & Southeastern Georgian on September 15, 22 and 29. Comments received from the public pursuant to project coordination meetings, Public Information Workshop and the Public Hearing, are included in **Appendix G**. In addition, a copy of the complete transcript from the Public Hearing and written comments received are included in **Appendix G**. All comments received during the Public Information Workshop and Public Hearing were reviewed and where applicable, addressed in the final report.

The individuals who participated in the preparation of this EA are listed in **Appendix H**.

AVIATION DEMAND FORECASTS

INTRODUCTION

The primary indicators of activity at a general aviation airport are the number of aircraft operations and based aircraft. During the preparation of an Environmental Assessment (EA) the number of aircraft operations is used to evaluate noise and air quality impacts, while based aircraft along with aircraft operations are used to determine facility requirements, which in the case of the Replacement St. Marys Airport, will help to determine the overall development footprint. The data necessary to provide a reliable forecast based on these primary indicators is often difficult acquire at small airports without air traffic control towers. Therefore, other methodologies must be employed. For instance, a trend or market share analysis based on a more general forecast could be employed. In this case, trends in regional, statewide, and national growth for general aviation are compared to a local airport's historic impact in order to create a forecast for the local airport. Another methodology that is used incorporates the forecast from a region of the statewide system plan when local data is not available. For purposes of this EA the 2002 Georgia Aviation System Plan (GASP) was used to develop the forecast for the Replacement St. Marys Airport.

During development of the 2002 GASP, overall aviation activity projections were developed for the entire State and used to assess the need for future system-wide 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 referenced various FAA studies that have determined that as an airport's annual operational demand reaches 60 percent or more of the airport's calculated airfield operating capacity, delays to aircraft on the ground and in the air begin to increase. Statewide, sufficient operational capacity exists to meet Georgia's projected operational demand. This forecast is used in the following sections to project operations, based aircraft, and fleet mix for a proposed Replacement St. Marys Airport.

ST. MARYS ACTIVITY PROJECTIONS

For all general aviation (GA) airports in the State, the GASP developed projections for based aircraft, fleet mix, and aircraft 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, 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 a proposed Replacement St. Marys Airport.

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, 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.

Utilizing 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.

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 GA aircraft fleet mix and annual operations forecasts are summarized in the following sections.

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 fleet as compared to Georgia's aircraft fleet mix. **Table A-1** depicts the historic (2000), 2013 and 2021 national general aviation fleet mixes as presented in the GASP.

Table A-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	15%	16%	16%

Source: Georgia Aviation System Plan, 2002

Specific local conditions that may affect the fleet mix should also be taken into consideration. The Sea Island Resort Community currently utilizes the McKinnon St. Simons Island Airport (SSI) for many of its corporate jet operations. Its corporate jet fleet consists of the Gulfstream-V, the Cessna Citation Excel, and other aircraft provided through its contract with NetJets Inc. Sea Island has expressed an interest in operating out of a Replacement St. Marys Airport, should one be built. Additionally, other jet aircraft in the area that currently utilize SSI, due to a lack of runway infrastructure currently in Camden County, will likely transfer operations to a proposed new St. Marys Airport that provides the proper airspace and airfield infrastructure. A review of the SSI Master Plan Update, completed in March of 2005, shows an annual growth rate for jet aircraft of 4.25 percent through the year 2020. Given the close proximity of Glynn County to Camden County, the expressed interest of Sea Island to utilize a new St. Marys Airport, and the likely increase in popularity of micro-jets in the next 20 years, a similar annual growth rate can be assumed for the new St. Marys Airport.

Assuming a four percent annual growth rate for jet aircraft combined with growth rates for other aircraft types that mirror the GASP forecasts, the following fleet mix depicted in **Table A-2** can be assumed.

Table A-2
FORECASTED FLEET MIX

Aircraft Type	2001 Fleet Mix	2006 Fleet Mix	2011 Fleet Mix	2021 Fleet Mix
Single Engine Piston	76%	75%	73%	70%
Multi-Engine/Turboprop	15%	15%	15%	15%
Jet	5%	5%	6%	8%
Helicopter and Other	4%	5%	6%	7%

Source: RS&H, Inc., 2006

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 and as mentioned earlier, takeoffs and landings are not accurately counted, 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 12,521 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.

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 total of 22 in 2001. Additionally, the Airport totaled about 12,251 annual operations by 2001. However, due to the subsequent airspace restrictions following the September 11th attacks, based aircraft quickly dropped to a total of 15 while annual operations dropped to approximately 10,500 in 2002.

Should a proposed Replacement St. Marys Airport become a reality, the Airport's total based aircraft are expected to reach 27 by the year 2021 and annual aircraft operations are projected to increase to 13,595.

Table A-3 depicts a summary of the overall forecasts as presented in the GASP along with the associated fleet mix projections. By the end of the planning period, operations are expected to reach nine percent 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 A-3
SUMMARY OF ACTIVITY FORECASTS

	Existing 2001	2006	2011	2021
Based Aircraft	22	23	25	27
Local Operations	4901	5008	5148	5438
Itinerant Operations	7350	7513	7722	8157
Total Operations	12251	12521	12870	13595
Total Operations By Fleet Mix				
Single-Engine	9310	9391	9395	9517
Multi-Engine/Turboprop	1838	1878	1931	2039
Jet	613	626	772	1088
Helicopter/Other	490	626	772	952

Source: RS&H, Inc., Georgia Aviation System Plan, 2002

PROPOSED DESIGN STANDARDS & RUNWAY LENGTH REQUIREMENTS

INTRODUCTION

A final determination of the land area necessary for development of a replacement St. Marys Airport depends principally on airfield design characteristics and overall runway length requirements. Selection of the applicable airfield design standard and initial length of the primary runway includes an assessment of the Airport's current and projected aircraft activity levels, analysis of the various categories of aircraft projected to use the Airport, as well as selection of a specific design aircraft. Appendix A presented a summary of aviation forecasts for use in helping to define the design aircraft, and this Appendix will set forth the analysis used in selecting the applicable design standards in accordance with Federal Aviation Administration (FAA) Advisory Circular (A/C) 150/5300-13, *Airport Design.* In addition, a runway length analysis is presented in this Appendix to further define the dimensions and characteristics of the primary runway.

DESIGN STANDARDS

The selection of the appropriate design standards for the development of airfield facilities is based primarily upon the characteristics of the aircraft expected to use the airport. The most critical characteristics are the approach speed and size of the design aircraft. FAA A/C 150/5300-13*, Airport Design,* identifies a coding system used to relate airport design criteria to the operational and physical characteristics of an airport's selected "critical" (i.e., design) aircraft. This code system is known as the Airport Reference Code (ARC). The ARC has two components relating to the airport's "critical" aircraft. The first component, depicted by a letter, is the aircraft approach category. The approach category relates to the approach speed of the design aircraft. An aircraft's approach speed is based upon 1.3 times the stall speed in the landing configuration at the particular aircraft's maximum certified weight. The five approach categories used in airport planning are as follows.

- **Category A-** Speed less than 91 knots
- **Category B-** Speed 91 knots or more, but less than 121 knots
- **Category C-** Speed 121 knots or more, but less than 141 knots
- **Category D-** Speed 141 knots or more, but less than 166 knots
- **Category E-** Speed 166 knots or more

The second component of the ARC, depicted by a Roman numeral, is the airplane design group (ADG) and relates to airplane wingspan. The six groups are as follows.

- **Group I-** Up to but not including 49 feet
- **Group II-** 49 feet up to but not including 79 feet
- **Group III-** 79 feet up to but not including 118 feet
- **Group IV-** 118 feet up to but not including 171 feet
- **Group V-** 171 feet up to but not including 214 feet

- **Group VI-** 214 feet up to but not including 262 feet

Presented in **Table B-1** is a compilation of some common single-engine piston, twin-engine piston, turboprop, and Business Jet aircraft, and their associated ARCs.

Table B-1
COMMON GENERAL AVIATION AND BUSINESS AIRCRAFT

Common Aircraft	Approach Speed (knots)	Wingspan (feet)	Airport Reference Code	Maximum Takeoff Weight (lbs.)
Single-Engine Piston				
Cessna 150	55	32.9	AI	1,600
Cessna 172	64	35.6	AI	2,500
Piper Cherokee	66	30	AI	2,400
Twin-Engine Piston				
Beech Baron 58	96	37.8	BI	5,500
Piper Navajo	100	40.7	BI	6,200
Turboprop				
Beech Super King Air B200	103	54.5	BII	12,500
Cessna 441	100	49.3	BII	9,925
Business Jet				
Cessna Citation I	108	47.1	BI	11,850
Cessna Citation II	108	51.7	BII	13,300
Cessna Citation III	114	53.5	BII	22,000
Learjet 35	143	39.5	DI	18,300
Bombardier Challenger	125	61.8	CII	41,250
Gulfstream III	136	77.8	CII	68,700
Gulfstream IV	145	77.8	DII	71,780
Gulfstream-V/550/500	135	93.5	CIII	91,400
Bombardier Global Express	129	94	CIII	98,000

Source: Reynolds, Smith and Hills, Inc., 2006

CRITICAL DESIGN AIRCRAFT

Determining the design aircraft is instrumental in selecting an airport's design criteria and in turn, applying the correct ARC for the proposed replacement airport. Selection of the design aircraft is based primarily on the most demanding aircraft with the highest approach speed and longest wingspan which makes substantial use of the airport on a regular basis. The FAA defines substantial use of an airport as 500 or more annual aircraft operations.

The current St. Marys Airport has been designed for B-II aircraft, with the selection of the Beech King Air as the design aircraft. Airfield design standards associated with an ARC B-II Airport are presented in **Table B-2**. In order to ensure maximum flexibility and greatest long-term return-on-investment in facilities constructed for the proposed replacement airport, a closer examination and selection of the applicable ARC for the replacement airport is required.

Table B-2
AIRFIELD DESIGN STANDARDS

Item	ARC B-II
Runway Length	As Required
Runway Width	75'
Runway Shoulder Width	10'
Runway Blast Pad Width	95'
Runway Blast Pad Length	150'
Runway Safety Area Width	150'
Runway Safety Area Length (beyond Rwy end)	300'
Runway Object Free Area Width	500'
Runway Object Free Area Length (beyond Rwy end)	300'
Taxiway Width	35'
Taxiway Shoulder Width	10'
Taxiway Safety Area Width	79'
Taxiway Object Free Area Width	131'
Taxilane Object Free Area Width	115'
Runway Centerline to Taxiway Centerline	240'
Runway Centerline to Aircraft Parking Area	200'
Taxiway Centerline to Parallel Taxiway/Taxilane	105'
Taxiway Centerline to Fixed or Mobile Object	65.5'
Taxilane Centerline to Fixed or Mobile Object	57.5'

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

Discussions with various aircraft owners and operators who currently utilize St. Marys and St. Simons Island Airport indicate that several are likely to operate at a replacement St. Marys Airport on a frequent basis. The most common types of aircraft in use by these operators are an assortment of light single and multi-engine aircraft, as well as light to medium size jet aircraft such as the Cessna Citation, Gulfstream II-V, and Learjet series. The most "critical" aircraft currently in use from a design perspective is the Gulfstream V (G-V), with an ARC of C-III. The activity forecasts discussed in Appendix A indicate that currently there are approximately 626 annual operations by jet aircraft at St. Marys Airport, which is expected to grow to approximately 1,100 annual operations by 2021. Insufficient information is available to accurately predict the exact aircraft fleet mix (i.e., types of aircraft and specific number of operations) with any reasonable certainty. However, it seems reasonable to assert that the G-V will be an active part of the fleet mix upon opening the replacement airport and well into the future. Construction of a replacement airport which conforms to ARC C-III design standards may be the most prudent investment in the long-term.

Future industry trends should also be taken into account when determining the design criteria for the replacement airport. At the 2005 National Business Aviation Association Conference in Orlando, Florida, Rolls-Royce, a prominent aircraft engine manufacturer, released its projections for business jet sales for the next 20 years. The forecast noted that long-range and ultra-long range aircraft deliveries are growing at a high level. These are aircraft that can fly long distances, such as the G-V, its sister aircraft the Gulfstream 550 and the Bombardier Global Express (all ARC C-III aircraft). For instance, the Gulfstream 550 has a range of 6,750 nautical miles, which will allow it to fly from St. Marys, Georgia to Russia, areas of northern China and portions of the Middle East,

non-stop. The Rolls-Royce forecast also points to an increase in ultra-long range products in the industry as a reason for consumers to opt for the larger aircraft as competition brings the price of these aircraft down, and the number of options for buyers to choose from makes this category of aircraft more appealing. Industry forecasts project approximately 3,650 jets in the large business jet category will be sold in the next 20 years.

Another factor in the projected increase in long-range jet usage is the emerging economies of the world and the increased international travel by businesses as many firms grow their operations internationally over the next 20 years. The emerging economies of China, Russia, and India are increasingly lucrative for U.S. corporations. International business travel is likely to be a growing trend in the next 20 years and the use of ultra-long range jets will be one of the tools that drive international commerce. In addition to these factors, Gulfstream Aircraft currently has major manufacturing and finishing facilities in nearby Savannah and Brunswick, Georgia. A replacement St. Marys Airport would likely be a candidate location for test flights in the local area.

When analyzing the existing regional aviation demand and future trends in aviation and the global world economy, it is apparent that a new airport built to C-III standards would not only safely accommodate the aircraft utilizing the airport well into the future, but also position the proposed new airport to become an economic stimulus to the region. The incremental costs associated with the development of a new airport built to C-III, as opposed to B-II standards, are minimal over the long-term. **Table B-3** is a side-by-side comparison of the airfield design standards associated with a B-II and C-III aircraft.

Table B-3
COMPARISON OF AIRFIELD DESIGN STANDARDS

Item	ARC C-III	ARC B-II
Runway Length	As Required	As Required
Runway Width	100'	75'
Runway Shoulder Width	20'	10'
Runway Blast Pad Width	140'	95'
Runway Blast Pad Length	200'	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	50'	35'
Taxiway Shoulder Width	20'	10'
Taxiway Safety Area Width	118'	79'
Taxiway Object Free Area Width	186'	131'
Taxilane Object Free Area Width	162'	115'
Runway Centerline to Taxiway Centerline	400'	240'
Runway Centerline to Aircraft Parking Area	500'	200'
Taxiway Centerline to Parallel Taxiway/Taxilane	140'	105'
Taxiway Centerline to Fixed or Mobile Object	93'	65.5'
Taxilane Centerline to Fixed or Mobile Object	81'	57.5'

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

RUNWAY LENGTH REQUIREMENTS

Runway length is determined by the performance characteristics of a group of aircraft (or specific design aircraft) using the airport, and the site-specific conditions that affect aircraft performance. Site-specific conditions include airport elevation, probable runway conditions, and the mean temperature of the hottest month of the year. The FAA's Airport Design Microcomputer Program was used as an initial screening tool to determine general runway length requirements for the proposed replacement St. Marys Airport, see **Table B-4.** The software generates "planning level" runway lengths that may be used to provide a basis for which to determine a final runway length.

Table B-4
AIRCRAFT RUNWAY LENGTH REQUIREMENTS

Aircraft Category	Recommended Runway Length
Small airplanes (Less than 12,500 lbs.)	
100% of fleet (Less than 10 seats)	3,680 feet
Small airplanes (Less than 12,500 lbs.)	
100% of fleet (10 or more seats)	4,280 feet
Large airplanes (Between 12,501 lbs.-60,000 lbs.)	
75% of fleet @ 60% Useful Load	5,370 feet
75% of fleet @ 90% Useful Load	7,000 feet
100% of fleet @ 60% Useful Load	5,630 feet
100% of fleet @ 90% Useful Load	8,520 feet
Large Airplanes (Greater than 60,000 lbs.)	
500 Mile Stage Length	5,050 feet
1,000 Mile Stage Length	6,000 feet
2,000 Mile Stage Length	7,660 feet
3,000 Mile Stage Length	9,030 feet

Source: FAA Airport Design Microcomputer Program AD 4.2D

In addition to the above analysis, runway lengths were calculated using actual aircraft performance data for the airport's design aircraft as recommended by FAA A/C 150/5325-4B *Runway Length Requirements for Airport Design*. In standard conditions, the FAA's recommended takeoff field length for the G-V specifically (does not encompass all aircraft over 60,000 lbs.) is 6,112 ft. This is assuming that the aircraft operated at Maximum Gross Takeoff Weight (MTOW). This is highly unusual as this assumes full fuel, maximum baggage and maximum passengers for a nearly 8,000 mile trip. This stage length is likely to occur infrequently out of the St. Marys Airport. Therefore, a more modest 6,000 ft. runway would serve a majority of the G-V operations safely and economically.

Table B-5 also presents a compilation of takeoff distances for commonly used business aircraft. It can be ascertained from the table that a 6,000 ft. runway would serve a majority of business jet aircraft operations. Even though the takeoff distances for the Bombardier Challenger 800, Bombardier Global Express, and the G-V are more than 6,000 ft, these numbers are calculated based on the MTOW of these aircraft, and as discussed earlier, operations at this takeoff weight are not likely to take place frequently out of a replacement St. Marys Airport.

Table B-5
COMMON BUSINESS AIRCRAFT TAKEOFF DISTANCES

Aircraft	Balanced Field Length at Maximum Gross Takeoff Weight
Bombardier	
Learjet 40	4,326 ft.
Learjet 60	5,450 ft.
Challenger 604	5,840 ft.
Challenger 800	6,295 ft.
Global Express	6,190 ft.
Cessna	
Citation Mustang	3,120 ft.
Citation Bravo	3,600 ft.
Citation X	5,140 ft.
Gulfstream	
G-II	5,850 ft.
G-III	5,111 ft.
G-IV	5,098 ft.
G-V	6,112 ft.

Source: Air Transport Intelligence

SUMMARY

The analysis presented in this Appendix indicates that a 6,000 ft. runway would be adequate for a replacement St. Marys Airport. While a runway of this length accommodates a majority of business aircraft operations, it also allows a level of flexibility that would make the Airport more appealing to operators wishing to access the region. In addition, a runway of adequate length also provides adequate capacity for airport operations in the future. A runway with dimensions that do not allow increased operations in and out of the airport as well as changes in aircraft design trends, will likely hamper future airport growth potential and require a larger investment in the long-term.

FACILITY REQUIREMENTS

AIRFIELD REQUIREMENTS

The determination of airfield requirements includes an assessment of the airport's ability to handle forecast activity levels, analysis of its compliance with design and safety standards, and a determination of design standards for new facilities. Appendix B identified Airport Reference Code (ARC) Category C-III for use of determining design standards for a Replacement St. Marys Airport. This Appendix will outline the design requirements for the specified ARC as required by the Federal Aviation Administration (FAA) and the FAA's AC 150/5300-13 *Airport Design*.

Runway Requirements

This section will examine runway requirements with respect to dimensional criteria, orientation, length, width, and pavement design strength.

Runway Orientation

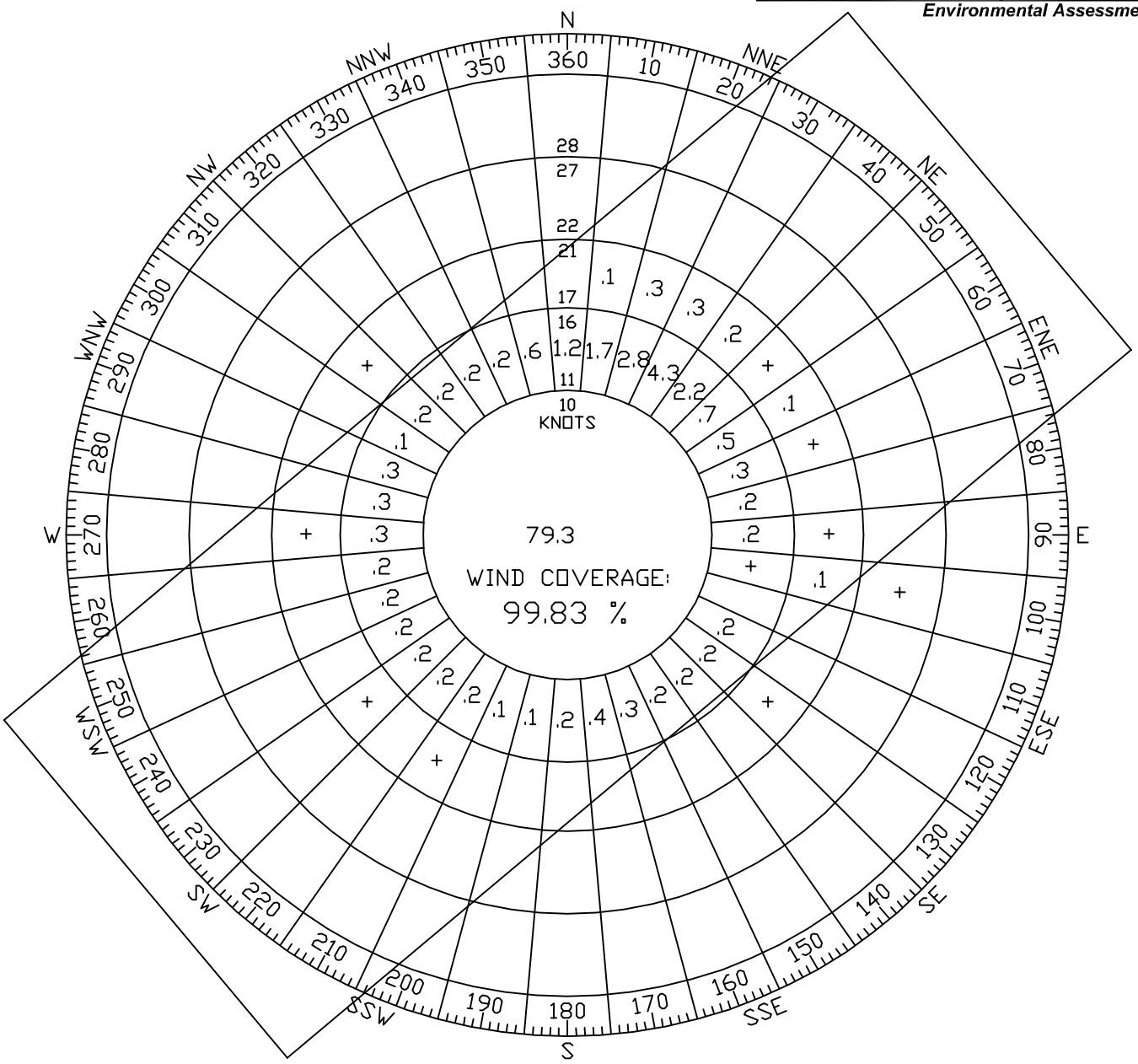
Runway orientation is primarily a function of wind coverage requirements for the existing and projected aircraft fleet mix. Additionally, airspace availability, environmental factors, obstructions to air navigation, topography, and wildlife hazards were examined to determine an optimum runway orientation.

An examination of the surrounding airspace took place in the Airport Feasibility and Site Selection Study for the City of St. Marys. The alternatives presented in the Environmental Assessment have been scrutinized as to their location in relation to military airspace in particular, as well as other congested airspace in the region. However, in order to fully utilize a proposed new airport, a non-precision approach would be justified so that the runway may remain in operation during inclement weather. The nearby Brunswick VOR provides a suitable NAVAID off of which a Non-precision approach may be built. To take full advantage of such an approach, the runway should be orientated in the general direction of the Brunswick VOR.

A wind analysis was conducted that took into consideration the wind velocity and direction as related to the existing and forecasted operations during visual and instrument meteorological conditions. The wind roses provided in **Figures C-1 and C-2** show the resulting wind analysis for Instrument Meteorological Conditions and Visual Meteorological Conditions. With consideration towards the wind analysis and all of the above factors, it has been determined that a runway orientation of 05-23 is the optimum orientation for a Replacement St. Marys Airport.

Runway Length

Runway length is determined by the performance characteristics of a group of aircraft (ARC C-III) using the airport and the site-specific conditions that affect aircraft performance. This analysis is documented in Appendix B and concludes that a runway length of 6,000 ft. is adequate for the conditions and aircraft that will likely be present at a replacement St. Marys Airport.



IFR WIND ROSE

Source: Georgia State GIS Clearinghouse (2004)

STATION: COMPOSITE WIND ROSE
BRUNSWICK-MACON, GA

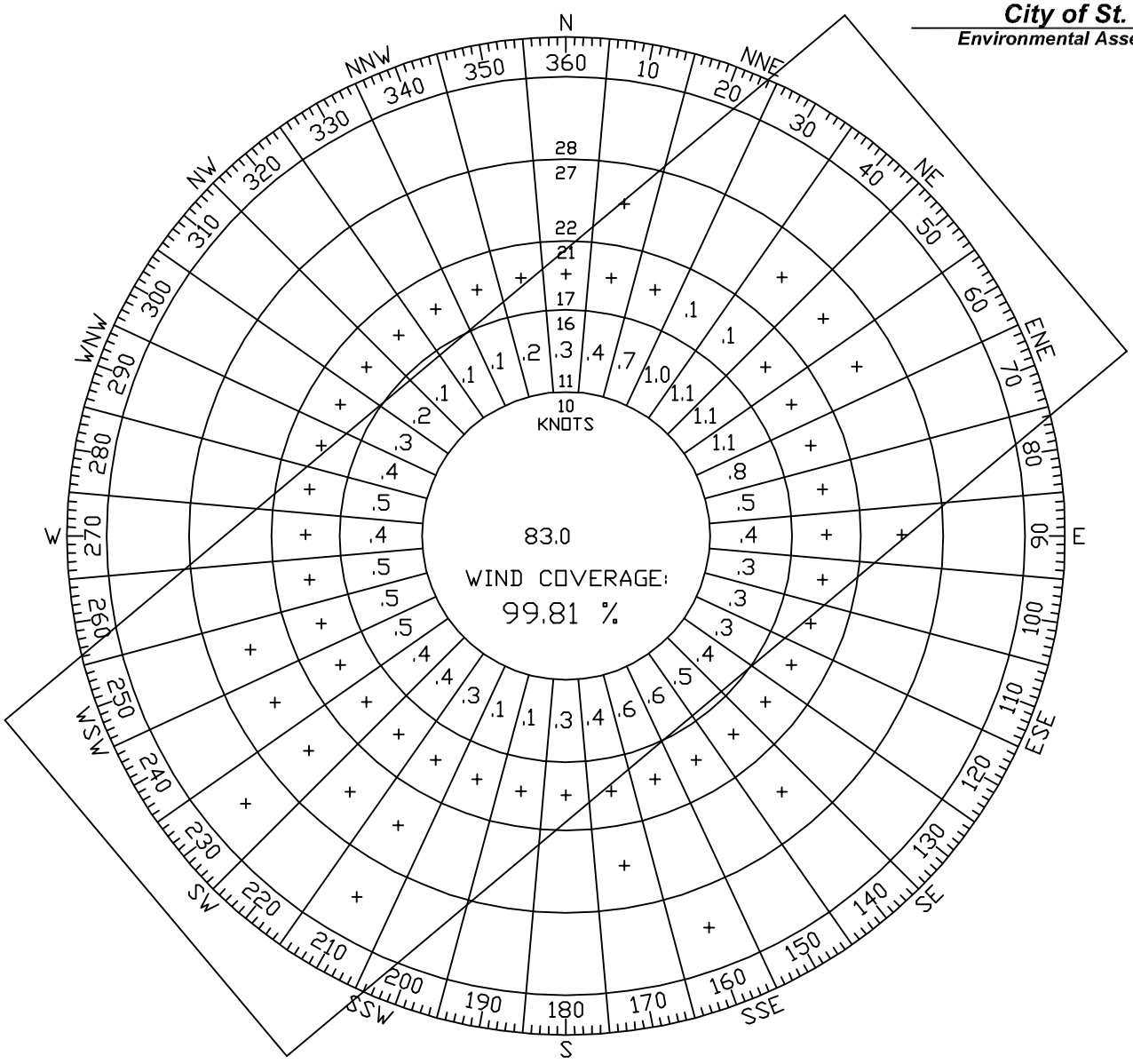
PERIOD OF RECORD: 1994-2003

OBSERVATIONS: 72,213

RUNWAY COVERAGE:
5/23
10.5 KTS 95.63
13 KTS 98.26
16 KTS 99.83

Figure C.1

EXISTING ST. MARYS AIRPORT



VFR WIND ROSE

RUNWAY COVERAGE
5/23

10.5	KTS	95.05
13	KTS	97.69
16	KTS	99.81

Source: Georgia State GIS Clearinghouse (2004)

STATION: COMPOSITE WIND ROSE
BRUNSWICK-MALCOM, GA

PERIOD OF RECORD: 1994-2003

OBSERVATIONS: 72,213

Figure C.2

EXISTING ST. MARYS AIRPORT

Runway Width

The required runway width is a function of the approach minimums, airplane approach category, and airplane design group for the design aircraft using the runway. FAA AC 150/5300-13, *Airport Design*, discusses the runway width requirements for an ARC C-III airport. The A/C states that a runway width of 100 ft. and a runway shoulder width of 20 ft. are required for a C-III airport.

Other Runway Dimension Criteria

Additional runway criterion has been established by AC 150/5300-13, *Airport Design*. The runway requirements are outlined in **Table C-1** below.

Table C-1
RUNWAY CRITERIA

Item	ARC C-III Requirements
RSA Width	500 ft.
RSA Length Prior To Landing Threshold	600 ft.
RSA Length Beyond RWY End	1,000 ft.
Runway Object Free Area Width	800 ft.
Runway Object Free Area Length Beyond RWY End	1,000 ft.

Source: FAA AC 150/5300-13 *Airport Design*

Runway Pavement Design Strength

The required pavement design strength is an estimate based on average levels of activity, and is expressed in terms of aircraft landing gear type and geometry. This is determined based on the "critical design aircraft". As mentioned earlier, the "critical design aircraft" is the Gulfstream-V and will be used to determine the pavement design strength. Pavement design and load distributions will be based on FAA AC 150/5320-6 *Airport Pavement Design and Evaluation*.

Taxiway Requirements

The taxiway system must provide safe and efficient aircraft movement to and from the runways and the aprons that serve general aviation facilities. The design criterion for taxiways is also provided in FAA AC 150/5300-13 *Airport Design*. However, additional examination of the location and type of runway exit taxiways as well as perimeter taxiways and holding bays is required to provide an efficient taxiway system.

The Replacement St. Marys Airport will require a basic taxiway system consisting of a full length parallel taxiway, an apron, and connecting transverse taxiways between the runway, parallel taxiway, and the apron. *Table C-2* provides the FAA's minimum requirements for such facilities.

Table C-2
TAXIWAY REQUIREMENTS

Item	ARC C-III Requirements
Taxiway Width	50 ft.
Taxiway Edge Safety Margin	10 ft.
Taxiway Shoulder Width	20 ft.
Taxiway Safety Area Width	118 ft.
Taxiway Object Free Area Width	186 ft.
RWY Centerline to Parallel Taxiway	400 ft.
RWY Centerline to Aircraft Parking Area	500 ft.

Source: FAA AC 150/5300-13 *Airport Design*

NAVAID Facilities

Aids to navigation (i.e., NAVAIDS) provide pilots with information to assist them in locating the airport and to provide horizontal and/or vertical guidance during landing. Navigational aids also permit access to the airport during poor weather conditions. The need for new or additional navigational aids is a function of the fleet mix, the percentage of time that poor weather conditions are present, and the cost of users not being able to use the airport when it is not accessible. Important navigational aids include approach lighting systems (ALS), Precision Approach Path Indicators (PAPI) or other visual approach slope indicators, Runway and taxiway lighting, airport beacons, and wind cones.

Assuming that a non-precision approach at a Replacement St. Marys Airport has visibility minimums of one statute mile, specific standards will apply. **Figure C-3** provides the FAA NAVAID and design criteria for a non-precision Approach, which was mentioned earlier as a recommendation for a Replacement St. Marys Airport.

Visibility Minimums[1]	< 3/4-statute mile	< 1-statute mile	1-statute mile	>1-statute mile	Circling
Height Above Touchdown [2]	300	340	400	450	Varies
TERPS Paragraph 251	34:1 clear	20:1 clear	20:1 clear or penetrations lighted for night minimums (See AC 70/7460-1)		
Airport Layout Plan[4]	Required				Recommended
Minimum Runway Length	4,200 ft (1,280 m) (Paved)	3,200 ft (975 m)[5] (Paved)	3,200 ft (975 m)[5,6]		
Runway Markings (See AC 150/5340-1)	Precision	Nonprecision[6]			Visual (Basic)[6]
Holding Position Signs & Markings (See AC 150/5340-1 and AC 150/5340-18)	Precision	Nonprecision			Visual (Basic)[6]
Runway Edge Lights[7]	HIRL / MIRL		MIRL / LIRL		MIRL / LIRL (Required only for night minima)
Parallel Taxiway [8]	Required		Recommended		
Approach Lights[9]	MALSR, SSALR, or ALSF Required	Required [10]	Recommended[10]		Not Required
Runway Design Standards, e.g. Obstacle Free Zone (OFZ)[11]	<3/4-statute mile approach visibility minimums	≥ 3/4-statute mile approach visibility minimums			Not Required
Threshold Siting Criteria To Be Met [12]	Appendix 2, Paragraph 5h Criteria	Appendix 2, Paragraph 5g Criteria	Appendix 2, Paragraph 5 a,b,c,d,e Criteria		Appendix 2, Paragraph 5a,b Criteria
Survey Required for Lowest Minima (See Table A16-2)	Line 5	Line 4	Line 3		Line1,2,3

1. Visibility minimums are subject to the application of FAA Order 8260.3 (TERPS) and associated orders or this table, whichever is higher
2. The Height Above Touchdown (HAT) indicated is for planning purposes only. Actual obtainable HAT is determined by TERPS.
3. This is a new airport surface (see paragraph 306).
4. An ALP is only required for obligated airports in the NPIAS; it is recommended for all others.
5. Runways less than 3,200' are protected by 14 CFR Part 77 to a lesser extent. However runways as short as 2400 feet could support an instrument approach provided the lowest HAT is based on clearing any 200-foot obstacle within the final approach segment.
6. Unpaved runways require case-by-case evaluation by regional Flight Standards personnel.
7. Runway edge lighting is required for night minimums. High intensity lights are required for RVR-based minimums.
8. A parallel taxiway must lead to the threshold and, with airplanes on centerline, keep the airplanes outside the OFZ.
9. To achieve lower visibility minimums based on credit for lighting, a TERPS specified approach lighting system is required.
10. ODALS, MALS, SSALS, SALS are acceptable.
11. Indicates what chart should be followed in the related chapters in this document.
12. Circling procedures to a secondary runway from the primary approach will not be authorized when the secondary runway does not meet threshold siting (reference Appendix 2), OFZ (reference paragraph 306), and TERPS paragraph 251 criteria.

Figure C-3 **NONPRECISION APPROACH REQUIREMENTS**

LANDSIDE REQUIREMENTS

General Aviation users need aircraft storage facilities, transient and based parking aprons, terminal facilities, auto parking, and vehicle access from adjacent roads. The requirements are based on methodologies outlined in FAA AC 150/5300-13, *Airport Design*.

Aircraft Storage Facilities

The percentage of aircraft that require storage at a particular airport is a function of the fleet mix and local climate. Obviously in northern climates the colder weather drives the need for aircraft hangar space while in the south, protection from the sun and adverse tropical weather can be an issue. It should also be noted that the increasing value of aircraft due to more and more complex equipment and accessories drives demand for hangar capacity and there should be a sufficient amount of capacity so not to lose based aircraft to nearby airports.

Based on these factors it can be safely assumed that 40 percent of small single-engine aircraft, 75 percent of small multi-engine aircraft, and 100 percent of turbine aircraft require hangar space of some sort. Using fleet mix values from the forecast section and a planning assumption of 1,200 square feet per based small single-engine aircraft, and 2,000 square feet per based multi-engine/turbine aircraft, the aircraft storage requirements presented in **Table C-3** were derived for the year 2011.

Table C-3
AIRCRAFT STORAGE REQUIREMENTS

Aircraft Type	Storage Needs
Small Single-Engine	9,600 Square Feet
Small Multi-Engine	8,000 Square Feet
Jet/Other	4,000 Square Feet

Source: FAA AC 150/5300-13 *Airport Design*

Transient Parking Apron

The transient apron provides parking for airplanes, access to terminal facilities, fueling, and surface transportation. Approximately 8,000 square yards of transient apron space will be required based on methodology outlined in AC 150/5300-13 *Airport Design* and includes expansion that will be required by 2011.

Based Aircraft Parking Apron

The area needed for based airplanes should be smaller per airplane than that needed for transient aircraft. This is due to closer clearance allowed between the aircraft and a broader knowledge as to what type of aircraft will use the apron space. Assuming 70 percent of the aircraft not using hangar space choose to tie-down their aircraft on paved surfaces and 30 percent choose the less expensive option of unpaved surfaces, approximately 2,100 square yards of based aircraft parking apron will be required by 2011.

Terminal Facilities

Although the level of operations at a Replacement St. Marys Airport may not warrant substantial general aviation terminal facilities initially, the airport's unique role with business jet traffic does

warrant a facility that welcomes visitors to the region in a professional manner. Additionally, the current St. Marys Airport has one Fixed Based Operator (FBO) and flight training facility that would likely need to be relocated or replaced at a Replacement St. Marys Airport. Therefore, a new or relocated FBO could likely provide the facilities needed to properly welcome business traffic to the region and likely attract more in the future. More specifically, the facilities should consist of fuel storage tanks (Jet Fuel and AvGas), self-service fueling facilities, pilot lounges, conference room, phone, spacious waiting room, and a snack bar or coffee shop. Many of these facilities are often required by NetJets, Inc. and other business jet operators before they will consider using the FBO to accommodate their clients.

Auto Parking and Vehicle Access

Vehicle access can be achieved via a single access road from an adjacent highway as all site alternatives are located within close proximity of a major highway.

The amount of auto parking required is a function of the number of based aircraft and employees at the airport. The Georgia Aviation System Plan (GASP) requires that a minimum of one space be provided for each based aircraft as well as an additional 50 percent for visitors and employees. This methodology requires approximately 38 parking spaces by 2011 and an additional three (3) spaces by 2021.

Enough paved area should be available to accommodate the above mentioned parking spaces, handicapped parking, and staging areas for taxis and limos.

Fuel Storage

The fuel farm at the existing St. Marys Airport consists of one 12,000 gallon Jet A tank, and one 10,000-gallon Avgas tank. Should a new airport be built and the business jet operations increase substantially, there will likely be the need for additional Jet A fueling capacity in the short term and additional Avgas fueling capacity in the long term.

Land Requirements

The above requirements establish an airport that meets the FAA requirements for a C-III facility. Giving consideration to runway protection zones and all ancillary facilities a land use requirement of approximately 525 acres has been established in order to construct a safe and efficient airport that meets the needs of the surrounding communities.

Appendix D Table of Contents

Appendix Table of Contents 1

1. Mobile 6.2 Input File – Summer Inputs 2

2. Mobile 6.2 Input File – Winter Inputs 4

3. Mobile 6.2 Input File – Vehicle Registration Distribution 6

4. Mobile 6.2 Output File – Summer 9

5. Mobile 6.2 Output File – Winter 21

6. Mobile 6.2 Emission Factors and EDMS Input Table – Motor Vehicles 33

7. EDMS Input Table – Aircraft and Roadway Data 34

8a. EDMS Output Table – 2001 Existing Conditions 35

8b. EMDS Output Tables – 2006 No Build 38

8c. EDMS Output Tables – 2006 Site 1 41

8d. EDMS Output Tables – 2006 Site 3 44

8e. EDMS Output Tables – 2006 Site 9 47

8f. EDMS Output Tables – 2011 No Build 50

8g. EDMS Output Tables – 2011 Site 1 53

8h. EDMS Output Tables – 2011 Site 3 56

8i. EDMS Output Tables – 2011 Site 9 59

8j. EDMS Output Tables – 2021 No Build 62

8k. EDMS Output Tables - 2021 Site 1 65

8l. EDMS Output Tables – 2021 Site 3 68

8m. EDMS Output Tables – 2021 Site 9 71

1. Mobile 6.2 Input File – Summer Inputs

```
MOBILE6 INPUT FILE :
*  St. Mary's Airport Relocation EA  Mobile 6.2  Summer SMSummer.i51   01/09/2006
* Data Common to all Runs and Scenarios
*
REPORT FILE        : c:\StMarys\Mobile62\SMsummer.o6m
PARTICULATES       :
POLLUTANTS         : HC NOx
SPREADSHEET        :

RUN DATA           :
* Run Conditions during Summer months
* Data Common to all Scenarios in this Run
*
EXPRESS HC AS VOC  :
MIN/MAX TEMP       : 67.2  86.3
FUEL RVP           : 8.7
REG DIST           : C:\APPS\MOBILE62\RUN\STMARYS\02REG146.D

SCENARIO RECORD    : St Mary's 2001 Existing Conditions (July with PM2.5)
CALENDAR YEAR      : 2001
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2001 Existing Conditions (July with PM10)
CALENDAR YEAR      : 2001
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2006 Future Conditions (July with PM2.5)
CALENDAR YEAR      : 2006
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2006 Future Conditions (July with PM10)
CALENDAR YEAR      : 2006
EVALUATION MONTH   : 7
```

```
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2011 Future Conditions (July with PM2.5)
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2011 Future Conditions (July with PM10)
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2021 Future Conditions (July with PM2.5)
CALENDAR YEAR      : 2021
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2021 Future Conditions (July with PM10)
CALENDAR YEAR      : 2021
EVALUATION MONTH   : 7
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV


END OF RUN         :
```

2. Mobile 6.2 Input File – Winter Inputs

```
MOBILE6 INPUT FILE :
*  St. Mary's Airport Relocation EA  Mobile 6.2 Winter  SMWinter.i51   1/09/2006
* Data Common to all Runs and Scenarios
*
REPORT FILE        : c:\StMarys\Mobile62\SMwinter.o6m
PARTICULATES       :
POLLUTANTS         : CO
SPREADSHEET        :

RUN DATA           :
*
* Run Conditions during Winter months
* Data Common to all Scenarios in this Run
*
EXPRESS HC AS VOC  :
MIN/MAX TEMP       : 49.3  71.0
FUEL RVP           : 11.5
REG DIST           : C:\APPS\MOBILE62\RUN\STMARYS\02REG146.D

SCENARIO RECORD    : St Mary's 2001 Existing Conditions (January with PM2.5)
CALENDAR YEAR      : 2001
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2001 Existing Conditions (January with PM10)
CALENDAR YEAR      : 2001
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2006 Future Conditions (January with PM2.5)
CALENDAR YEAR      : 2006
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2006 Future Conditions (January with PM10)
CALENDAR YEAR      : 2006
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
```

```
PARTICLE SIZE      : 10
DIESEL SULFUR      : 300
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2011 Future Conditions (January with PM2.5)
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2011 Future Conditions (January with PM10)
CALENDAR YEAR      : 2011
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2021 Future Conditions (January with PM2.5)
CALENDAR YEAR      : 2021
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 2.5
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

SCENARIO RECORD    : St Mary's 2021 Future Conditions (January with PM10)
CALENDAR YEAR      : 2021
EVALUATION MONTH   : 1
AVERAGE SPEED      : 50 ARTERIAL
PARTICLE SIZE      : 10
DIESEL SULFUR      : 15
PARTICULATE EF     : PMGZML.CSV  PMGDR1.CSV  PMGDR2.CSV  PMDZML.CSV  PMDDR1.CSV  PMDDR2.CSV

END OF RUN         :
```

3. Mobile 6.2 Input File – Vehicle Registration Distribution

```
REG DIST
*
* Data provided by John Morton (404-363-7039) of the Planning and Development Unit,
* Georgia Environmental Protection Department.
*
* The file REGDATA.D contains the default MOBILE6 values for the distribution of
* vehicles by age for July of any calendar year.  There are sixteeen (16)
* sets of values representing 16 combined gasoline/diesel vehicle class
* distributions.  These distributions are split for gasoline and diesel
* using the separate input (or default) values for diesel sales fractions.
* Each distribution contains 25 values which represent the fraction of
* all vehicles in that class (gasoline and diesel) of that age in July.
* The first number is for age 1 (calendar year minus model year plus one)
* and the last number is for age 25.  The last age includes all vehicles
* of age 25 or older.  The first number in each distribution is an integer
* which indicates which of the 16 vehicle classes are represented by the
* distribution.  The sixteen vehicle classes are:
*
*  1  LDV    Light-Duty Vehicles (Passenger Cars)
*  2  LDT1   Light-Duty Trucks 1 (0-6,000 lbs. GVWR, 0-3750 lbs. LVW)
*  3  LDT2   Light Duty Trucks 2 (0-6,001 lbs. GVWR, 3751-5750 lbs. LVW)
*  4  LDT3   Light Duty Trucks 3 (6,001-8500 lbs. GVWR, 0-3750 lbs. LVW)
*  5  LDT4   Light Duty Trucks 4 (6,001-8500 lbs. GVWR, 3751-5750 lbs. LVW)
*  6  HDV2B  Class 2b Heavy Duty Vehicles (8501-10,000 lbs. GVWR)
*  7  HDV3   Class 3 Heavy Duty Vehicles (10,001-14,000 lbs. GVWR)
*  8  HDV4   Class 4 Heavy Duty Vehicles (14,001-16,000 lbs. GVWR)
*  9  HDV5   Class 5 Heavy Duty Vehicles (16,001-19,500 lbs. GVWR)
* 10  HDV6   Class 6 Heavy Duty Vehicles (19,501-26,000 lbs. GVWR)
* 11  HDV7   Class 7 Heavy Duty Vehicles (26,001-33,000 lbs. GVWR)
* 12  HDV8A  Class 8a Heavy Duty Vehicles (33,001-60,000 lbs. GVWR)
* 13  HDV8B  Class 8b Heavy Duty Vehicles (>60,000 lbs. GVWR)
* 14  HDBS   School Busses
* 15  HDBT   Transit and Urban Busses
* 16  MC     Motorcycles (All)
*
* The 25 age values are arranged in two rows of 10 values followed by a row
* with the last 5 values.  Comments (such as this one) are indicated by
* an asterisk in the first column. Empty rows are ignored.  Values are
* read "free format," meaning any number may appear in any row with as
* many characters as needed (including a decimal) as long as 25 values
* follow the initial integer value separated by a space.
*
* If all 16 vehicle classes do not need to be altered from the default
* values, then only the vehicle classes that need to be changed need to
* be included in this file.  The order in which the vehicle classes are
* read does not matter, however each vehicle class set must contain 25
* values and be in the proper age order.
```

```
* _____________________________________________________________________
*
* This file specifies the local registration distribution by age
* (MOBILE6 defaults for heavy-heavy-duties) for the Georgia counties
* outside the 13-county Atlanta nonattainment area.  Sources of registration
* data:  R. L. Polk & Co.'s National Vehicle Population Profile (R) as of
* October 2002 and R. L. Polk & Co.'s TIPNet (R) as of March 2003.
*
* LDV
1 0.0166 0.0555 0.0576 0.0667 0.0643 0.0601 0.0639 0.0618 0.0737 0.0620
  0.0583 0.0498 0.0445 0.0411 0.0392 0.0335 0.0274 0.0227 0.0193 0.0146
  0.0090 0.0054 0.0046 0.0041 0.0444

* LDT1
2 0.0230 0.1001 0.0930 0.0999 0.0789 0.0778 0.0648 0.0613 0.0608 0.0560
  0.0473 0.0325 0.0299 0.0212 0.0252 0.0235 0.0209 0.0173 0.0123 0.0095
  0.0057 0.0035 0.0022 0.0020 0.0312

* LDT2
3 0.0017 0.0056 0.0363 0.0263 0.0247 0.0575 0.0809 0.0001 0.0157 0.0361
  0.0494 0.0449 0.0441 0.0680 0.0717 0.0754 0.0481 0.0678 0.0641 0.0569
  0.0424 0.0375 0.0446 0.0000 0.0000

* LDT3
4 0.0488 0.1305 0.1196 0.0929 0.0932 0.0569 0.0637 0.0642 0.0680 0.0536
  0.0292 0.0223 0.0137 0.0157 0.0180 0.0157 0.0165 0.0204 0.0199 0.0158
  0.0101 0.0065 0.0049 0.0000 0.0001

* LDT4
5 0.0148 0.0431 0.0576 0.0643 0.0645 0.0464 0.0509 0.0533 0.0808 0.0736
  0.0587 0.0510 0.0410 0.0524 0.0608 0.0489 0.0276 0.0278 0.0254 0.0266
  0.0178 0.0080 0.0045 0.0000 0.0000

* HDV2B
6 0.0463 0.0972 0.0888 0.0870 0.0898 0.0332 0.0705 0.0543 0.0514 0.0408
  0.0360 0.0261 0.0202 0.0239 0.0340 0.0366 0.0233 0.0337 0.0331 0.0277
  0.0169 0.0148 0.0128 0.0003 0.0013

* HDV3
7 0.0350 0.0881 0.1100 0.0971 0.1131 0.0367 0.0527 0.0430 0.0537 0.0422
  0.0330 0.0273 0.0229 0.0294 0.0315 0.0310 0.0271 0.0338 0.0238 0.0205
  0.0097 0.0078 0.0051 0.0019 0.0236

* HDV4
8 0.0232 0.0620 0.0754 0.1037 0.1031 0.0472 0.0811 0.0504 0.0697 0.0474
  0.0408 0.0272 0.0265 0.0335 0.0497 0.0435 0.0218 0.0131 0.0178 0.0169
  0.0100 0.0074 0.0036 0.0000 0.0247

* HDV5
9 0.0367 0.0651 0.0772 0.0947 0.1175 0.0260 0.0646 0.0500 0.0456 0.0277
  0.0186 0.0176 0.0102 0.0129 0.0073 0.0097 0.0125 0.0077 0.0080 0.0104
```

```
  0.0090 0.0062 0.0108 0.0013 0.2526

* HDV6
10 0.0175 0.0287 0.0410 0.0703 0.0680 0.0536 0.0386 0.0337 0.0488 0.0287
   0.0245 0.0225 0.0199 0.0197 0.0188 0.0251 0.0230 0.0236 0.0248 0.0202
   0.0134 0.0135 0.0117 0.0092 0.3013

* HDV7
11 0.0402 0.0289 0.0490 0.0589 0.0562 0.0450 0.0378 0.0408 0.0614 0.0387
   0.0325 0.0338 0.0395 0.0468 0.0484 0.0516 0.0428 0.0419 0.0447 0.0360
   0.0169 0.0153 0.0202 0.0280 0.0448

* HDV8A
12 0.0303 0.0377 0.0542 0.0842 0.0956 0.0830 0.0707 0.0679 0.0869 0.0554
   0.0500 0.0309 0.0262 0.0287 0.0357 0.0315 0.0265 0.0202 0.0233 0.0164
   0.0076 0.0063 0.0071 0.0059 0.0177

* HDV8B
* USES THE DEFAULT EPA VEHICLE REGISTRATION DISTRIBUTION DATA
13 0.0388 0.0726 0.0679 0.0635 0.0594 0.0556 0.0520 0.0486 0.0455 0.0425
   0.0398 0.0372 0.0348 0.0326 0.0304 0.0285 0.0266 0.0249 0.0233 0.0218
   0.0204 0.0191 0.0178 0.0167 0.0797

* HDBS
14 0.0460 0.0512 0.0594 0.0687 0.0621 0.0594 0.0549 0.0593 0.0736 0.0275
   0.0581 0.0485 0.0648 0.0703 0.0320 0.0519 0.0143 0.0138 0.0141 0.0113
   0.0106 0.0074 0.0076 0.0084 0.0247

* HDBT
15 0.0233 0.0355 0.0770 0.0943 0.0537 0.0513 0.0476 0.0649 0.0252 0.0443
   0.0355 0.0406 0.0201 0.1218 0.0448 0.0555 0.0201 0.0238 0.0191 0.0243
   0.0224 0.0303 0.0247 0.0000 0.0000

* MC
16 0.0005 0.0956 0.1115 0.0929 0.0740 0.0577 0.0520 0.0483 0.0400 0.0363
   0.0317 0.3593 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
   0.0000 0.0000 0.0000 0.0000 0.0000
```

4. Mobile 6.2 Output File – Summer

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                *
* Input file: STMARYS\SMSUMMER.I51 (file 1, run 1).                         *
*****************************************************************************

* Reading Registration Distributions from the following external
* data file: C:\APPS\MOBILE62\RUN\STMARYS\02REG146.D
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (July with PM2.5)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
```

```
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                    Calendar Year:  2001
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  67.2 (F)
              Maximum Temperature:  86.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   8.7 psi
                    Weathered RVP:   8.5 psi
              Fuel Sulfur Content:  299. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4831    0.2501    0.1274              0.0395    0.0013    0.0028    0.0906    0.0052    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      1.979     3.061     1.633     2.579     1.754    0.728     1.004     0.498      2.69     2.062
     Composite NOX :      1.479     1.776     1.479     1.676     5.575    1.841     1.902    15.794      1.40     3.013
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (July with PM10)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2001
```

```
                     Month:  July
                  Altitude:  Low
          Minimum Temperature:  67.2 (F)
          Maximum Temperature:  86.3 (F)
            Absolute Humidity:   75. grains/lb
               Nominal Fuel RVP:   8.7 psi
                  Weathered RVP:   8.5 psi
          Fuel Sulfur Content:  299. ppm

          Exhaust I/M Program:  No
             Evap I/M Program:  No
                  ATP Program:  No
             Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4831	0.2501	0.1274		0.0395	0.0013	0.0028	0.0906	0.0052	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	1.979	3.061	1.633	2.579	1.754	0.728	1.004	0.498	2.69	2.062
Composite NOX :	1.479	1.776	1.479	1.676	5.575	1.841	1.902	15.794	1.40	3.013

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (July with PM2.5)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2006
                           Month:  July
                        Altitude:  Low
              Minimum Temperature:  67.2 (F)
              Maximum Temperature:  86.3 (F)
                Absolute Humidity:   75. grains/lb
                   Nominal Fuel RVP:   8.7 psi
                      Weathered RVP:   8.5 psi
              Fuel Sulfur Content:   33. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
```

```
                    ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4149    0.2943    0.1493              0.0401    0.0008    0.0023    0.0934    0.0049    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      1.232     2.016     1.103     1.709     1.199    0.630     0.455     0.349      2.68     1.364
    Composite NOX :      0.939     1.406     1.256     1.355     4.101    1.598     1.100    10.293      1.40     2.127
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (July with PM10)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
           The user supplied arterial average speed of 50.0
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
             there are no sales for vehicle class HDGV8b

                  Calendar Year:  2006
                          Month:  July
                       Altitude:  Low
             Minimum Temperature:  67.2 (F)
             Maximum Temperature:  86.3 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   8.7 psi
                   Weathered RVP:   8.5 psi
             Fuel Sulfur Content:   33. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4149    0.2943    0.1493              0.0401    0.0008    0.0023    0.0934    0.0049    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      1.232     2.016     1.103     1.709     1.199    0.630     0.455     0.349      2.68     1.364
    Composite NOX :      0.939     1.406     1.256     1.355     4.101    1.598     1.100    10.293      1.40     2.127
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (July with PM2.5)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  67.2 (F)
              Maximum Temperature:  86.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   8.7 psi
                    Weathered RVP:   8.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3500	0.3365	0.1707		0.0404	0.0003	0.0025	0.0949	0.0046	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.850	1.532	0.761	1.272	0.797	0.182	0.250	0.254	2.59	1.012
Composite NOX :	0.644	1.182	0.899	1.087	2.096	0.469	0.538	5.836	1.40	1.423

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (July with PM10)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.
```

```
* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  67.2 (F)
              Maximum Temperature:  86.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   8.7 psi
                    Weathered RVP:   8.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3500    0.3365    0.1707              0.0404    0.0003    0.0025    0.0949    0.0046    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.850     1.532     0.761     1.272     0.797    0.182     0.250     0.254      2.59     1.012
    Composite NOX :      0.644     1.182     0.899     1.087     2.096    0.469     0.538     5.836      1.40     1.423
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (July with PM2.5)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
```

```
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2021
                            Month:  July
                         Altitude:  Low
              Minimum Temperature:  67.2 (F)
              Maximum Temperature:  86.3 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:   8.7 psi
                    Weathered RVP:   8.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2912	0.3735	0.1894		0.0412	0.0003	0.0028	0.0971	0.0044	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.413	0.626	0.396	0.549	0.343	0.063	0.102	0.178	2.59	0.472
Composite NOX :	0.325	0.637	0.465	0.579	0.579	0.086	0.165	1.426	1.40	0.589

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (July with PM10)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
```

```
 M 48 Warning:
             there are no sales for vehicle class LDDT12

                   Calendar Year:  2021
                           Month:  July
                        Altitude:  Low
             Minimum Temperature:  67.2 (F)
             Maximum Temperature:  86.3 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:   8.7 psi
                   Weathered RVP:   8.5 psi
             Fuel Sulfur Content:   30. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2912	0.3735	0.1894		0.0412	0.0003	0.0028	0.0971	0.0044	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.413	0.626	0.396	0.549	0.343	0.063	0.102	0.178	2.59	0.472
Composite NOX :	0.325	0.637	0.465	0.579	0.579	0.086	0.165	1.426	1.40	0.589

```
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STMARYS\SMSUMMER.I51 (file 1, run 1).                      *
**************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (July with PM2.5)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2001
                                  Month:  July
                 Gasoline Fuel Sulfur Content:  299. ppm
                   Diesel Fuel Sulfur Content:  300. ppm
                         Particle Size Cutoff:  2.50 Microns
                             Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4831	0.2501	0.1274		0.0395	0.0013	0.0028	0.0906	0.0052	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0042	0.0067	0.0052	0.0062	0.0628	------	------	------	0.0142	0.0069
ECARBON:	------	------	------	------	------	0.1998	0.0906	0.2744	------	0.0254
OCARBON:	------	------	------	------	------	0.0564	0.1304	0.1369	------	0.0128
SO4:	0.0040	0.0072	0.0056	0.0067	0.0093	0.0036	0.0052	0.0189	0.0009	0.0066
Total Exhaust PM:	0.0082	0.0140	0.0108	0.0129	0.0721	0.2598	0.2262	0.4301	0.0151	0.0517
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0066	0.0010	0.0024
Total PM:	0.0155	0.0213	0.0181	0.0202	0.0796	0.2671	0.2336	0.4420	0.0214	0.0594
SO2:	0.0689	0.0857	0.1123	0.0947	0.1729	0.0688	0.1000	0.2697	0.0328	0.1008
NH3:	0.0991	0.0892	0.0976	0.0920	0.0451	0.0068	0.0068	0.0270	0.0113	0.0869

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
* St Mary's 2001 Existing Conditions (July with PM10)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2001
                                 Month:  July
              Gasoline Fuel Sulfur Content:  299. ppm
                Diesel Fuel Sulfur Content:  300. ppm
                     Particle Size Cutoff: 10.00 Microns
                         Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4831	0.2501	0.1274		0.0395	0.0013	0.0028	0.0906	0.0052	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0046	0.0076	0.0059	0.0071	0.0775	------	------	------	0.0205	0.0081
ECARBON:	------	------	------	------	------	0.2172	0.0985	0.2982	------	0.0276
OCARBON:	------	------	------	------	------	0.0613	0.1417	0.1488	------	0.0140
SO4:	0.0040	0.0072	0.0056	0.0067	0.0093	0.0036	0.0052	0.0189	0.0009	0.0066
Total Exhaust PM:	0.0087	0.0149	0.0115	0.0137	0.0867	0.2821	0.2454	0.4659	0.0214	0.0562
Brake:	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125
Tire:	0.0080	0.0080	0.0080	0.0080	0.0087	0.0080	0.0080	0.0264	0.0040	0.0097
Total PM:	0.0292	0.0354	0.0320	0.0343	0.1080	0.3026	0.2660	0.5048	0.0379	0.0784
SO2:	0.0689	0.0857	0.1123	0.0947	0.1729	0.0688	0.1000	0.2697	0.0328	0.1008
NH3:	0.0991	0.0892	0.0976	0.0920	0.0451	0.0068	0.0068	0.0270	0.0113	0.0869

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (July with PM2.5)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2006
                                 Month:  July
              Gasoline Fuel Sulfur Content:   33. ppm
                Diesel Fuel Sulfur Content:  300. ppm
                     Particle Size Cutoff:  2.50 Microns
                         Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4149	0.2943	0.1493		0.0401	0.0008	0.0023	0.0934	0.0049	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0039	0.0046	0.0040	0.0044	0.0519	------	------	------	0.0142	0.0057
ECARBON:	------	------	------	------	------	0.1308	0.0376	0.1764	------	0.0167
OCARBON:	------	------	------	------	------	0.0369	0.0541	0.0886	------	0.0084
SO4:	0.0003	0.0006	0.0005	0.0006	0.0015	0.0035	0.0058	0.0186	0.0001	0.0022
Total Exhaust PM:	0.0042	0.0052	0.0045	0.0050	0.0533	0.1712	0.0975	0.2836	0.0143	0.0330
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0066	0.0010	0.0024
Total PM:	0.0115	0.0126	0.0118	0.0123	0.0608	0.1786	0.1048	0.2955	0.0206	0.0408
SO2:	0.0075	0.0095	0.0126	0.0106	0.0185	0.0670	0.1106	0.2659	0.0036	0.0337
NH3:	0.1015	0.0992	0.1011	0.0998	0.0451	0.0068	0.0068	0.0270	0.0113	0.0908

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (July with PM10)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
                          Calendar Year:  2006
                                  Month:  July
                Gasoline Fuel Sulfur Content:   33. ppm
                  Diesel Fuel Sulfur Content:  300. ppm
                        Particle Size Cutoff: 10.00 Microns
                            Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:              <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4149    0.2943    0.1493              0.0401    0.0008    0.0023    0.0934    0.0049    1.0000
-------------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
            GASPM:    0.0042    0.0051    0.0044    0.0049    0.0598    ------    ------    ------    0.0205    0.0064
          ECARBON:    ------    ------    ------    ------    ------    0.1422    0.0409    0.1917    ------    0.0181
          OCARBON:    ------    ------    ------    ------    ------    0.0401    0.0588    0.0963    ------    0.0092
              SO4:    0.0003    0.0006    0.0005    0.0006    0.0015    0.0035    0.0058    0.0186    0.0001    0.0022
  Total Exhaust PM:    0.0045    0.0057    0.0049    0.0055    0.0612    0.1858    0.1054    0.3066    0.0206    0.0359
            Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
             Tire:    0.0080    0.0080    0.0080    0.0080    0.0086    0.0080    0.0080    0.0263    0.0040    0.0097
         Total PM:    0.0251    0.0263    0.0254    0.0260    0.0824    0.2064    0.1260    0.3455    0.0371    0.0582
              SO2:    0.0075    0.0095    0.0126    0.0106    0.0185    0.0670    0.1106    0.2659    0.0036    0.0337
              NH3:    0.1015    0.0992    0.1011    0.0998    0.0451    0.0068    0.0068    0.0270    0.0113    0.0908
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (July with PM2.5)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2011
                                  Month:  July
                Gasoline Fuel Sulfur Content:   30. ppm
                  Diesel Fuel Sulfur Content:   15. ppm
                        Particle Size Cutoff:  2.50 Microns
                            Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:              <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3500    0.3365    0.1707              0.0404    0.0003    0.0025    0.0949    0.0046    1.0000
-------------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
            GASPM:    0.0038    0.0038    0.0036    0.0037    0.0257    ------    ------    ------    0.0142    0.0043
          ECARBON:    ------    ------    ------    ------    ------    0.0378    0.0148    0.0866    ------    0.0083
          OCARBON:    ------    ------    ------    ------    ------    0.0107    0.0213    0.0434    ------    0.0042
              SO4:    0.0002    0.0005    0.0004    0.0004    0.0018    0.0002    0.0003    0.0009    0.0001    0.0005
  Total Exhaust PM:    0.0040    0.0043    0.0041    0.0042    0.0275    0.0486    0.0364    0.1309    0.0143    0.0172
            Brake:    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053
             Tire:    0.0020    0.0020    0.0020    0.0020    0.0022    0.0020    0.0020    0.0066    0.0010    0.0024
         Total PM:    0.0113    0.0116    0.0114    0.0115    0.0350    0.0560    0.0438    0.1428    0.0206    0.0250
              SO2:    0.0068    0.0088    0.0115    0.0097    0.0165    0.0030    0.0056    0.0132    0.0033    0.0092
              NH3:    0.1017    0.1016    0.1017    0.1016    0.0451    0.0068    0.0068    0.0270    0.0113    0.0916
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (July with PM10)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2011
                                  Month:  July
                Gasoline Fuel Sulfur Content:   30. ppm
                  Diesel Fuel Sulfur Content:   15. ppm
```

```
                    Particle Size Cutoff: 10.00 Microns
                        Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3500    0.3365    0.1707              0.0404    0.0003    0.0025    0.0949    0.0046    1.0000
-------------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
            GASPM:    0.0041    0.0042    0.0039    0.0041    0.0288    ------    ------    ------    0.0205    0.0048
          ECARBON:    ------    ------    ------    ------    ------    0.0411    0.0161    0.0941    ------    0.0090
          OCARBON:    ------    ------    ------    ------    ------    0.0116    0.0232    0.0471    ------    0.0045
              SO4:    0.0002    0.0005    0.0004    0.0004    0.0018    0.0002    0.0003    0.0009    0.0001    0.0005
  Total Exhaust PM:    0.0043    0.0046    0.0044    0.0045    0.0306    0.0528    0.0396    0.1422    0.0206    0.0188
            Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
             Tire:    0.0080    0.0080    0.0080    0.0080    0.0086    0.0080    0.0080    0.0262    0.0040    0.0097
         Total PM:    0.0249    0.0252    0.0249    0.0251    0.0517    0.0734    0.0601    0.1809    0.0371    0.0410
              SO2:    0.0068    0.0088    0.0115    0.0097    0.0165    0.0030    0.0056    0.0132    0.0033    0.0092
              NH3:    0.1017    0.1016    0.1017    0.1016    0.0451    0.0068    0.0068    0.0270    0.0113    0.0916
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (July with PM2.5)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #

                            Calendar Year:  2021
                                    Month:  July
                Gasoline Fuel Sulfur Content:   30. ppm
                  Diesel Fuel Sulfur Content:   15. ppm
                        Particle Size Cutoff:  2.50 Microns
                            Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2912    0.3735    0.1894              0.0412    0.0003    0.0028    0.0971    0.0044    1.0000
-------------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
            GASPM:    0.0037    0.0035    0.0035    0.0035    0.0115    ------    ------    ------    0.0142    0.0036
          ECARBON:    ------    ------    ------    ------    ------    0.0102    0.0043    0.0222    ------    0.0022
          OCARBON:    ------    ------    ------    ------    ------    0.0029    0.0062    0.0113    ------    0.0011
              SO4:    0.0002    0.0004    0.0004    0.0004    0.0020    0.0002    0.0003    0.0009    0.0001    0.0005
  Total Exhaust PM:    0.0039    0.0039    0.0039    0.0039    0.0135    0.0132    0.0108    0.0345    0.0143    0.0073
            Brake:    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053
             Tire:    0.0020    0.0020    0.0020    0.0020    0.0021    0.0020    0.0020    0.0066    0.0010    0.0024
         Total PM:    0.0112    0.0113    0.0112    0.0113    0.0210    0.0206    0.0182    0.0463    0.0206    0.0151
              SO2:    0.0068    0.0088    0.0115    0.0097    0.0163    0.0029    0.0056    0.0132    0.0033    0.0095
              NH3:    0.1017    0.1017    0.1017    0.1017    0.0451    0.0068    0.0068    0.0270    0.0113    0.0914
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (July with PM10)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # #

                            Calendar Year:  2021
                                    Month:  July
                Gasoline Fuel Sulfur Content:   30. ppm
                  Diesel Fuel Sulfur Content:   15. ppm
                        Particle Size Cutoff: 10.00 Microns
                            Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
```

GVWR:	<6000	>6000	(All)						
VMT Distribution:	0.2912	0.3735	0.1894		0.0412	0.0003	0.0028	0.0971	0.0044	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0040	0.0038	0.0038	0.0038	0.0127	------	------	------	0.0205	0.0039
ECARBON:	------	------	------	------	------	0.0111	0.0047	0.0242	------	0.0024
OCARBON:	------	------	------	------	------	0.0031	0.0067	0.0123	------	0.0012
SO4:	0.0002	0.0004	0.0004	0.0004	0.0020	0.0002	0.0003	0.0009	0.0001	0.0005
Total Exhaust PM:	0.0042	0.0042	0.0042	0.0042	0.0147	0.0144	0.0117	0.0374	0.0206	0.0080
Brake:	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125
Tire:	0.0080	0.0080	0.0080	0.0080	0.0086	0.0080	0.0080	0.0262	0.0040	0.0098
Total PM:	0.0247	0.0248	0.0248	0.0248	0.0358	0.0349	0.0323	0.0761	0.0371	0.0303
SO2:	0.0068	0.0088	0.0115	0.0097	0.0163	0.0029	0.0056	0.0132	0.0033	0.0095
NH3:	0.1017	0.1017	0.1017	0.1017	0.0451	0.0068	0.0068	0.0270	0.0113	0.0914

5. Mobile 6.2 Output File – Winter

```
*******************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                                  *
* Input file: STMARYS\SMWINTER.I51 (file 1, run 1).                           *
*******************************************************************************

* Reading Registration Distributions from the following external
* data file: C:\APPS\MOBILE62\RUN\STMARYS\02REG146.D
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)
  M 49 Warning:
                1.00     MYR sum not = 1. (will normalize)

* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (January with PM2.5)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
```

```
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                    Calendar Year:  2001
                           Month:  Jan.
                        Altitude:  Low
              Minimum Temperature:  49.3 (F)
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:  299. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4886    0.2487    0.1252              0.0389    0.0013    0.0028    0.0891    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :     30.53     49.74     31.56     43.65     19.96     1.567     1.711     2.613     10.04    32.313
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (January with PM10)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2001
                           Month:  Jan.
```

```
                    Altitude:  Low
             Minimum Temperature:  49.3 (F)
             Maximum Temperature:  71.0 (F)
               Absolute Humidity:   75. grains/lb
                Nominal Fuel RVP:  11.5 psi
                   Weathered RVP:  11.5 psi
             Fuel Sulfur Content:  299. ppm

             Exhaust I/M Program:  No
                Evap I/M Program:  No
                     ATP Program:  No
                Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4886	0.2487	0.1252		0.0389	0.0013	0.0028	0.0891	0.0054	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	30.53	49.74	31.56	43.65	19.96	1.567	1.711	2.613	10.04	32.313

```
* # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (January with PM2.5)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2006
                           Month:  Jan.
                        Altitude:  Low
              Minimum Temperature:  49.3 (F)
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:   33. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

```
       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4206    0.2930    0.1469              0.0394    0.0008    0.0023    0.0920    0.0050    1.0000
  -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :     20.12     32.18     21.08     28.48     10.71     1.541     0.773     1.939     10.04    21.641
  -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (January with PM10)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2006
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  49.3 (F)
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:   33. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4206    0.2930    0.1469              0.0394    0.0008    0.0023    0.0920    0.0050    1.0000
  -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :     20.12     32.18     21.08     28.48     10.71     1.541     0.773     1.939     10.04    21.641
  -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (January with PM2.5)
```

```
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  49.3 (F)
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3542    0.3365    0.1686              0.0397    0.0003    0.0025    0.0935    0.0048    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite CO  :     15.80     23.97     15.93     21.29      7.45     0.793     0.449     1.075     10.04    16.791
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (January with PM10)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
```

```
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2011
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  49.3 (F)
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3542    0.3365    0.1686              0.0397    0.0003    0.0025    0.0935    0.0048    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :     15.80     23.97     15.93     21.29      7.45     0.793     0.449     1.075     10.04    16.791
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (January with PM2.5)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
```

```
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2021
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  49.3 (F)
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                 <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2899    0.3773    0.1890              0.0406    0.0003    0.0028    0.0956    0.0046    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite CO  :      12.01     16.14     11.91     14.73      6.49     0.540     0.269     0.290     10.04    12.160
  ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (January with PM10)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2021
                            Month:  Jan.
                         Altitude:  Low
              Minimum Temperature:  49.3 (F)
```

```
              Maximum Temperature:  71.0 (F)
                Absolute Humidity:   75. grains/lb
                 Nominal Fuel RVP:  11.5 psi
                    Weathered RVP:  11.5 psi
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  No
                 Evap I/M Program:  No
                      ATP Program:  No
                 Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2899	0.3773	0.1890		0.0406	0.0003	0.0028	0.0956	0.0046	1.0000
Composite Emission Factors (g/mi):										
Composite CO :	12.01	16.14	11.91	14.73	6.49	0.540	0.269	0.290	10.04	12.160

```
**************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                             *
* Input file: STMARYS\SMWINTER.I51 (file 1, run 1).                      *
**************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (January with PM2.5)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #

                           Calendar Year:  2001
                                   Month:  Jan.
              Gasoline Fuel Sulfur Content:  299. ppm
                Diesel Fuel Sulfur Content:  300. ppm
                     Particle Size Cutoff:  2.50 Microns
                        Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.4886	0.2487	0.1252		0.0389	0.0013	0.0028	0.0891	0.0054	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0042	0.0068	0.0053	0.0063	0.0639	------	------	------	0.0142	0.0069
ECARBON:	------	------	------	------	------	0.2006	0.0918	0.2872	------	0.0261
OCARBON:	------	------	------	------	------	0.0566	0.1321	0.1431	------	0.0132
SO4:	0.0041	0.0073	0.0056	0.0067	0.0090	0.0036	0.0052	0.0189	0.0009	0.0065
Total Exhaust PM:	0.0082	0.0140	0.0109	0.0130	0.0729	0.2608	0.2291	0.4492	0.0151	0.0528
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0066	0.0010	0.0024
Total PM:	0.0156	0.0214	0.0182	0.0203	0.0804	0.2681	0.2365	0.4611	0.0214	0.0605
SO2:	0.0689	0.0857	0.1122	0.0946	0.1735	0.0689	0.0998	0.2701	0.0328	0.1004
NH3:	0.0990	0.0890	0.0975	0.0918	0.0451	0.0068	0.0068	0.0270	0.0113	0.0870

```
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2001 Existing Conditions (January with PM10)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #

                           Calendar Year:  2001
                                   Month:  Jan.
              Gasoline Fuel Sulfur Content:  299. ppm
```

```
                Diesel Fuel Sulfur Content:  300. ppm
                      Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:              <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4886    0.2487    0.1252              0.0389    0.0013    0.0028    0.0891    0.0054    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
               Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:     0.0046    0.0077    0.0060    0.0071    0.0792    ------    ------    ------    0.0205    0.0081
            ECARBON:    ------    ------    ------    ------    ------    0.2180    0.0998    0.3122    ------    0.0284
            OCARBON:    ------    ------    ------    ------    ------    0.0615    0.1436    0.1555    ------    0.0143
               SO4:     0.0041    0.0073    0.0056    0.0067    0.0090    0.0036    0.0052    0.0189    0.0009    0.0065
   Total Exhaust PM:    0.0087    0.0149    0.0116    0.0138    0.0882    0.2831    0.2486    0.4866    0.0214    0.0574
             Brake:     0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:     0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0264    0.0040    0.0096
          Total PM:     0.0292    0.0355    0.0321    0.0344    0.1095    0.3037    0.2691    0.5255    0.0379    0.0796
               SO2:     0.0689    0.0857    0.1122    0.0946    0.1735    0.0689    0.0998    0.2701    0.0328    0.1004
               NH3:     0.0990    0.0890    0.0975    0.0918    0.0451    0.0068    0.0068    0.0270    0.0113    0.0870
 -------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (January with PM2.5)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                           Calendar Year:  2006
                                   Month:  Jan.
                Gasoline Fuel Sulfur Content:   33. ppm
                  Diesel Fuel Sulfur Content:  300. ppm
                        Particle Size Cutoff:  2.50 Microns
                            Reformulated Gas:  No

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:              <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4206    0.2930    0.1469              0.0394    0.0008    0.0023    0.0920    0.0050    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
               Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
              GASPM:    0.0039    0.0046    0.0040    0.0044    0.0522    ------    ------    ------    0.0142    0.0057
            ECARBON:    ------    ------    ------    ------    ------    0.1318    0.0389    0.1818    ------    0.0169
            OCARBON:    ------    ------    ------    ------    ------    0.0372    0.0560    0.0913    ------    0.0086
               SO4:     0.0003    0.0006    0.0005    0.0006    0.0014    0.0035    0.0058    0.0186    0.0001    0.0022
   Total Exhaust PM:    0.0042    0.0052    0.0045    0.0050    0.0536    0.1725    0.1007    0.2917    0.0143    0.0334
             Brake:     0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053    0.0053
              Tire:     0.0020    0.0020    0.0020    0.0020    0.0022    0.0020    0.0020    0.0066    0.0010    0.0024
          Total PM:     0.0115    0.0126    0.0119    0.0123    0.0611    0.1798    0.1081    0.3036    0.0206    0.0411
               SO2:     0.0075    0.0095    0.0126    0.0105    0.0185    0.0671    0.1106    0.2660    0.0036    0.0333
               NH3:     0.1014    0.0991    0.1011    0.0998    0.0451    0.0068    0.0068    0.0270    0.0113    0.0909
 -------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2006 Future Conditions (January with PM10)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                           Calendar Year:  2006
                                   Month:  Jan.
                Gasoline Fuel Sulfur Content:   33. ppm
                  Diesel Fuel Sulfur Content:  300. ppm
                        Particle Size Cutoff: 10.00 Microns
                            Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.4206	0.2930	0.1469		0.0394	0.0008	0.0023	0.0920	0.0050	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0042	0.0052	0.0044	0.0049	0.0603	------	------	------	0.0205	0.0064
ECARBON:	------	------	------	------	------	0.1433	0.0423	0.1976	------	0.0184
OCARBON:	------	------	------	------	------	0.0404	0.0609	0.0992	------	0.0093
SO4:	0.0003	0.0006	0.0005	0.0006	0.0014	0.0035	0.0058	0.0186	0.0001	0.0022
Total Exhaust PM:	0.0045	0.0058	0.0049	0.0055	0.0617	0.1872	0.1090	0.3154	0.0206	0.0363
Brake:	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125
Tire:	0.0080	0.0080	0.0080	0.0080	0.0086	0.0080	0.0080	0.0263	0.0040	0.0097
Total PM:	0.0251	0.0263	0.0255	0.0260	0.0829	0.2077	0.1295	0.3542	0.0371	0.0585
SO2:	0.0075	0.0095	0.0126	0.0105	0.0185	0.0671	0.1106	0.2660	0.0036	0.0333
NH3:	0.1014	0.0991	0.1011	0.0998	0.0451	0.0068	0.0068	0.0270	0.0113	0.0909

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (January with PM2.5)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2011
                                  Month:  Jan.
              Gasoline Fuel Sulfur Content:   30. ppm
                Diesel Fuel Sulfur Content:   15. ppm
                     Particle Size Cutoff:  2.50 Microns
                        Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3542	0.3365	0.1686		0.0397	0.0003	0.0025	0.0935	0.0048	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0038	0.0038	0.0036	0.0037	0.0270	------	------	------	0.0142	0.0044
ECARBON:	------	------	------	------	------	0.0383	0.0153	0.0922	------	0.0087
OCARBON:	------	------	------	------	------	0.0108	0.0220	0.0461	------	0.0044
SO4:	0.0002	0.0005	0.0004	0.0004	0.0018	0.0002	0.0003	0.0009	0.0001	0.0005
Total Exhaust PM:	0.0040	0.0043	0.0041	0.0042	0.0288	0.0493	0.0375	0.1392	0.0143	0.0179
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0066	0.0010	0.0024
Total PM:	0.0113	0.0116	0.0114	0.0115	0.0363	0.0566	0.0449	0.1511	0.0206	0.0256
SO2:	0.0068	0.0088	0.0115	0.0097	0.0165	0.0030	0.0056	0.0132	0.0033	0.0092
NH3:	0.1017	0.1016	0.1017	0.1016	0.0451	0.0068	0.0068	0.0270	0.0113	0.0917

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2011 Future Conditions (January with PM10)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2011
                                  Month:  Jan.
              Gasoline Fuel Sulfur Content:   30. ppm
                Diesel Fuel Sulfur Content:   15. ppm
                     Particle Size Cutoff: 10.00 Microns
                        Reformulated Gas:  No
```

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.3542	0.3365	0.1686		0.0397	0.0003	0.0025	0.0935	0.0048	1.0000

Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0041	0.0042	0.0039	0.0041	0.0303	------	------	------	0.0205	0.0048
ECARBON:	------	------	------	------	------	0.0417	0.0166	0.1002	------	0.0094
OCARBON:	------	------	------	------	------	0.0118	0.0239	0.0501	------	0.0047
SO4:	0.0002	0.0005	0.0004	0.0004	0.0018	0.0002	0.0003	0.0009	0.0001	0.0005
Total Exhaust PM:	0.0043	0.0046	0.0044	0.0046	0.0321	0.0536	0.0408	0.1512	0.0206	0.0194
Brake:	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125
Tire:	0.0080	0.0080	0.0080	0.0080	0.0086	0.0080	0.0080	0.0262	0.0040	0.0097
Total PM:	0.0249	0.0252	0.0249	0.0251	0.0532	0.0741	0.0613	0.1900	0.0371	0.0417
SO2:	0.0068	0.0088	0.0115	0.0097	0.0165	0.0030	0.0056	0.0132	0.0033	0.0092
NH3:	0.1017	0.1016	0.1017	0.1016	0.0451	0.0068	0.0068	0.0270	0.0113	0.0917

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (January with PM2.5)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2021
                                 Month:  Jan.
               Gasoline Fuel Sulfur Content:   30. ppm
                 Diesel Fuel Sulfur Content:   15. ppm
                       Particle Size Cutoff:  2.50 Microns
                          Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2899	0.3773	0.1890		0.0406	0.0003	0.0028	0.0956	0.0046	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0037	0.0035	0.0035	0.0035	0.0117	------	------	------	0.0142	0.0036
ECARBON:	------	------	------	------	------	0.0103	0.0044	0.0229	------	0.0022
OCARBON:	------	------	------	------	------	0.0029	0.0063	0.0116	------	0.0011
SO4:	0.0002	0.0004	0.0004	0.0004	0.0020	0.0002	0.0003	0.0009	0.0001	0.0005
Total Exhaust PM:	0.0039	0.0039	0.0039	0.0039	0.0138	0.0133	0.0109	0.0354	0.0143	0.0074
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0021	0.0020	0.0020	0.0066	0.0010	0.0024
Total PM:	0.0112	0.0113	0.0112	0.0113	0.0212	0.0206	0.0182	0.0473	0.0206	0.0152
SO2:	0.0068	0.0088	0.0115	0.0097	0.0163	0.0029	0.0056	0.0132	0.0033	0.0094
NH3:	0.1017	0.1017	0.1017	0.1017	0.0451	0.0068	0.0068	0.0270	0.0113	0.0916

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* St Mary's 2021 Future Conditions (January with PM10)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2021
                                 Month:  Jan.
               Gasoline Fuel Sulfur Content:   30. ppm
                 Diesel Fuel Sulfur Content:   15. ppm
                       Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  No
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2899	0.3773	0.1890		0.0406	0.0003	0.0028	0.0956	0.0046	1.0000
Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	------	------	------	0.0000	0.0000
GASPM:	0.0040	0.0038	0.0038	0.0038	0.0130	------	------	------	0.0205	0.0039

ECARBON:	------	------	------	------	------	0.0112	0.0047	0.0249	------	0.0024
OCARBON:	------	------	------	------	------	0.0031	0.0068	0.0126	------	0.0012
SO4:	0.0002	0.0004	0.0004	0.0004	0.0020	0.0002	0.0003	0.0009	0.0001	0.0005
Total Exhaust PM:	0.0042	0.0042	0.0042	0.0042	0.0150	0.0145	0.0118	0.0384	0.0206	0.0080
Brake:	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125
Tire:	0.0080	0.0080	0.0080	0.0080	0.0086	0.0080	0.0080	0.0262	0.0040	0.0097
Total PM:	0.0247	0.0248	0.0248	0.0248	0.0361	0.0350	0.0324	0.0772	0.0371	0.0303
SO2:	0.0068	0.0088	0.0115	0.0097	0.0163	0.0029	0.0056	0.0132	0.0033	0.0094
NH3:	0.1017	0.1017	0.1017	0.1017	0.0451	0.0068	0.0068	0.0270	0.0113	0.0916

6. Mobile 6.2 Emission Factors and EDMS Input Table – Motor Vehicles

St Mary's Airport
Mobile 6.2 Emission Factors
EDMS Input Data

	2001	2006	2011	2021
VOC	2.27344	1.47171	1.06432	0.48762
NOx	1.57772	1.14818	0.86601	0.45424
SO2	0.08159	0.00932	0.00820	0.00822
CO	36.77336	24.14584	18.44884	13.31473
PM2.5	0.01900	0.01231	0.01153	0.01126
PM10	0.03295	0.02596	0.02507	0.02477

Prepared by TEE, KM CHNG Environmental Inc.
12/27/2005
Utilized Mobile 6.2 Inputs Files: SMsummer.i51 and SMwinter.i51
Output files: SMSUMMER.O6M, SMSUMMER.PM, SMSUMMER.TAB,
SMWINTER.O6M, SMWINTER.PM and SMWINTER.TAB

QA'd by TJL 01/10/2006

7. EDMS Input Table – Aircraft and Roadway Data

St Mary's Airport Relocation EA
EDMS Input Data

Prepared by: TEE
Date: 12/7/2005 Updated:
QA: TJL
Date: 1/10/2006

Aircraft

Aircraft	Aircraft (in study)	Engine	2001 LTOs	2006 LTOs	2011 LTOs	2021 LTOs	Taxi/ Idle Time (min)
Cessna 172	Cessna 172 Skyhawk	TSIO-360C	4655	4383	4505	4759	10
Beech Baron 58	Piper Navajo	TIO-540-J2B2	551	563	579	612	10
Beech King Air 200	Beech King Air 200	PT6A-41	245	250	257	272	5
Cessna 441	Cessna 441 Conquest 2	TPE331-8	123	125	129	136	5
Gulfstream II	Gulfstream II	SPEY-Mk511-8	31	94	97	102	5
Lear 35	Learjet 35/36	TFE 731-2-2B	123	157	161	170	5
Cessna Citation 500	500 Citation	JT15D-1A & 1B	123	157	161	170	5
Canadair Challenger Jet	CL600	CF34-3B	31	94	97	102	5
Helicopter and Other	Bell 206	250B17B	245	438	450	476	5
		Total Operations	12250	12522	12870	13596	
		Total LTOs	6125	6261	6435	6798	
			6127	6261	6436	6799	

Vehicles

	2001	2006				2011				2021		
Vehicle	Existing Airport	NB	Site 1	Site 3	Site 9	NB	Site 1	Site 3	Site 9	NB	Site 1	Site 3
Passenger Vehicle (per/day)	19.08	19.67	19.67	19.67	19.67	20.67	20.67	20.67	20.67	22.04	22.04	22.04
Truck/SUV (per/day)	19.08	19.67	19.67	19.67	19.67	20.67	20.67	20.67	20.67	22.04	22.04	22.04
Total Daily Vehicle Trips	38.16	39.35	39.35	39.35	39.35	41.35	41.35	41.35	41.35	44.07	44.07	44.07
	38.16	39.35	39.35	39.35	39.35	41.35	41.35	41.35	41.35	44.07	44.07	44.07
Total Yearly Trips	13928.33	14361.92	14361.92	14361.92	14361.92	15092.33	15092.33	15092.33	15092.33	16086.75	16086.75	16086.75
Total Yearly Trips per vehicle type	6964.17	7180.96	7180.96	7180.96	7180.96	7546.17	7546.17	7546.17	7546.17	8043.38	8043.38	8043.38
Speed (mph)	50	50	50	50	50	50	50	50	50	50	50	50
One-way Distance (miles)	5.3	5.3	13.76	8.62	10.02	5.3	13.76	8.62	10.02	5.3	13.76	8.62
Round Trip Distance (miles)	10.6	10.6	27.52	17.24	20.04	10.6	27.52	17.24	20.04	10.6	27.52	17.24

	2001	2006				2011				2021		
	Existing Airport	NB	Site 1	Site 3	Site 9	NB	Site 1	Site 3	Site 9	NB	Site 1	Site 3
Based Aircraft	22	23	23	23	23	25	25	25	25	27	27	27
Operations (per year)	12250	12522	12522	12522	12522	12870	12870	12870	12870	13596	13596	13596
Itinerant Operations (per year)	7350	7513	7513	7513	7513	7722	7722	7722	7722	8157	8157	8157
Operations (per day)	33.56	34.31	34.31	34.31	34.31	35.26	35.26	35.26	35.26	37.25	37.25	37.25
Itinerant Operations (per day)	20.14	20.58	20.58	20.58	20.58	21.16	21.16	21.16	21.16	22.35	22.35	22.35
Local Operations (per day)	13.42	13.72	13.72	13.72	13.72	14.10	14.10	14.10	14.10	14.90	14.90	14.90
Itinerant Vehicles	20.14	20.58	20.58	20.58	20.58	21.16	21.16	21.16	21.16	22.35	22.35	22.35
Local Vehicles	3.36	3.43	3.43	3.43	3.43	3.53	3.53	3.53	3.53	3.73	3.73	3.73
Based Vehicles	14.67	15.33	15.33	15.33	15.33	16.67	16.67	16.67	16.67	18.00	18.00	18.00
Total Daily Vehicle Trips	38.16	39.35	39.35	39.35	39.35	41.35	41.35	41.35	41.35	44.07	44.07	44.07

Utilized data provided by Reynolds, Smith and Hill, Inc. on 12/2005 to determine inputs
Prepared by TEE, KM Chng Environmental Inc. on 12/27/2005

8a. EDMS Output Table – 2001 Existing Conditions

St. Mary's Airport								
2001 Existing Emissions Inventory								
Tons/Year								
NAME	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	60.4177	2.0602	2.0602	2.0591	0.6823	0.0540	0.0044	0.0044
GSE/APU	8.5132	0.3627	0.3274	0.3406	0.6680	0.0728	0.0265	0.0254
Roadways	5.9844	0.0000	0.0000	0.3704	0.2568	0.0132	0.0055	0.0033
Total	74.9153	2.4229	2.3876	2.7701	1.6072	0.1400	0.0364	0.0331
Pounds/Year								
NAME	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	120835	4120	4120	4118	1365	108	9	9
GSE/APU	17026	725	655	681	1336	146	53	51
Roadways	11969	0	0	741	514	26	11	7
Total	149831	4846	4775	5540	3214	280	73	66
Kilograms/Year								
NAME	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	54810	1869	1869	1868	619	49	4	4
GSE/APU	7723	329	297	309	606	66	24	23
Roadways	5429	0	0	336	233	12	5	3
Total	67962	2198	2166	2513	1458	127	33	30

St. Mary's Airport
2001 Existing Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	Approach	15280	169	169	163	57	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	Climb Out	11005	109	109	105	49	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	Takeoff	8868	75	75	73	22	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	Idle	2433	567	567	547	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	TOTAL	37587	920	920	888	136	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172	GSE	38	13	13	13	163	28	8	7
Beech King Air 200	PT6A-41	Beech King Air	Approach	285	186	186	198	38	4	-1	-1
Beech King Air 200	PT6A-41	Beech King Air	Climb Out	12	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air	Takeoff	8	3	3	3	12	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air	Idle	319	281	281	299	5	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air	TOTAL	624	473	473	503	70	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air	GSE	2943	112	101	105	128	10	4	4
Cessna 441 Conquest2	TPE331-8	Cessna 441	Approach	13	1	1	1	29	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	Takeoff	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	Idle	20	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	TOTAL	36	2	2	2	48	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441	GSE	8	2	2	3	34	4	2	2
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	142	16	16	16	12	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	7	0	0	0	14	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	6	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	235	90	90	96	3	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	391	106	106	112	47	5	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	1582	66	59	61	61	3	1	1
Gulfstream II	SPEY MK511-8	Gulfstream II	Approach	10	1	1	1	27	4	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Climb Out	2	0	0	0	49	3	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Takeoff	0	0	0	0	77	3	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Idle	78	9	9	10	9	2	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	TOTAL	90	10	10	11	162	12	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	Gulfstream II	GSE	970	39	35	36	32	2	1	1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	91	17	17	18	24	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	4	0	0	0	24	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	3	0	0	0	34	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	109	37	37	39	5	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	207	55	55	58	88	5	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	1580	65	59	61	56	3	1	1
CL600	CF34-3B	Canadair Challenger CL600	Approach	3	0	0	0	11	2	0	0
CL600	CF34-3B	Canadair Challenger CL600	Climb Out	0	0	0	0	9	1	0	0
CL600	CF34-3B	Canadair Challenger CL600	Takeoff	0	0	0	0	14	1	1	1
CL600	CF34-3B	Canadair Challenger CL600	Idle	45	4	4	5	4	1	0	0
CL600	CF34-3B	Canadair Challenger CL600	TOTAL	49	5	5	5	38	5	1	1
CL600	CF34-3B	Canadair Challenger CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger CL600	GSE	580	25	22	23	46	4	2	2
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5394	57	57	55	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4461	50	50	49	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3057	26	26	25	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2780	146	146	141	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	15694	280	280	270	8	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	5	2	1	2	19	3	1	1
Bell 206	250B17B	Bell Helicopter	Approach	50	5	5	6	2	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	18	1	1	1	12	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	8	0	0	0	7	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	56	12	12	12	1	0	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	132	18	18	19	22	3	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	17	5	5	5	67	9	4	4

St. Mary's Airport
2001 Existing Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	11969	0	0	741	514	26	11	7
		11969	0	0	741	514	26	11	7

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	5429	0	0	336	233	12	5	3

8b. EMDS Output Tables – 2006 No Build

St. Mary's Airport
2006 No Build Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58.9913	2.1186	2.1186	2.1275	1.1828	0.1003	0.0066	0.0066
GSE/APU	12.9808	0.5412	0.4883	0.5082	0.7926	0.0915	0.0231	0.0231
Roadways	4.0521	0.0000	0.0000	0.2469	0.1929	0.0011	0.0044	0.0022
Total	76.0242	2.6599	2.6070	2.8825	2.1682	0.1929	0.0342	0.0320

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	117983	4237	4237	4255	2366	201	13	13
GSE/APU	25962	1082	977	1016	1585	183	46	46
Roadways	8104	0	0	494	386	2	9	4
Total	152048	5320	5214	5765	4336	386	68	64

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	53516	1922	1922	1930	1073	91	6	6
GSE/APU	11776	491	443	461	719	83	21	21
Roadways	3676	0	0	224	175	1	4	2
Total	68968	2413	2365	2615	1967	175	31	29

St. Mary's Airport
2006 No Build Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	291	190	190	202	39	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	325	287	287	305	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	637	483	483	514	72	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	2997	113	102	106	114	10	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	181	20	20	21	15	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	300	115	115	122	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	498	135	135	143	60	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2018	84	75	78	74	4	1	1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14387	159	159	153	54	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10362	102	102	99	46	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8350	71	71	68	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2291	534	534	515	7	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	35390	867	867	836	128	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	30	11	10	11	121	26	4	4
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	13	1	1	1	29	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	36	2	2	2	49	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	2	2	2	26	4	1	1
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	34	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	43	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	138	14	14	14	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	148	15	15	16	114	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1748	73	66	69	116	13	4	4
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	30	2	2	2	81	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	5	1	1	1	149	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	235	10	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	235	27	27	29	27	7	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	272	31	31	33	491	38	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	2939	117	105	109	93	5	1	1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	117	22	22	24	31	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	44	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	139	47	47	50	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	264	70	70	75	112	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2017	83	75	78	69	3	1	1
Bell 206	250B17B	Bell Helicopter	Approach	89	10	10	10	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	32	1	1	1	21	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	101	21	21	22	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	236	33	33	35	39	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	18	7	7	7	91	15	5	5
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5512	59	59	57	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4559	51	51	50	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3124	27	27	26	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2841	149	149	144	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16035	286	286	276	8	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	4	1	1	1	15	3	1	1

St. Mary's Airport
2006 No Build Vehichle Emissions

Pounds/Year

Name	Type	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	8104	0	0	494	386	2	9	4
	Total	8104	0	0	494	386	2	9	4

Kilograms/Year

Name	Type	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	3676	0	0	224	175	1	4	2

8c. EDMS Output Tables – 2006 Site 1

St. Mary's Airport
2006 Site 1 Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58.9913	2.1186	2.1186	2.1275	1.1828	0.1003	0.0066	0.0066
GSE/APU	12.9808	0.5412	0.4883	0.5082	0.7926	0.0915	0.0231	0.0231
Roadways	10.5205	0.0000	0.0000	0.6415	0.5004	0.0044	0.0110	0.0055
Total	82.4926	2.6599	2.6070	3.2772	2.4758	0.1962	0.0408	0.0353

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	117983	4237	4237	4255	2366	201	13	13
GSE/APU	25962	1082	977	1016	1585	183	46	46
Roadways	21041	0	0	1283	1001	9	22	11
Total	164985	5320	5214	6554	4952	392	82	71

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	53516	1922	1922	1930	1073	91	6	6
GSE/APU	11776	491	443	461	719	83	21	21
Roadways	9544	0	0	582	454	4	10	5
Total	74836	2413	2365	2973	2246	178	37	32

St. Mary's Airport
2006 Site 1 Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	291	190	190	202	39	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	325	287	287	305	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	637	483	483	514	72	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	2997	113	102	106	114	10	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	181	20	20	21	15	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	300	115	115	122	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	498	135	135	143	60	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2018	84	75	78	74	4	1	1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14387	159	159	153	54	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10362	102	102	99	46	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8350	71	71	68	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2291	534	534	515	7	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	35390	867	867	836	128	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	30	11	10	11	121	26	4	4
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	13	1	1	1	29	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	36	2	2	2	49	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	2	2	2	26	4	1	1
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	34	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	43	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	138	14	14	14	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	148	15	15	16	114	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1748	73	66	69	116	13	4	4
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	30	2	2	2	81	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	5	1	1	1	149	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	235	10	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	235	27	27	29	27	7	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	272	31	31	33	491	38	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	2939	117	105	109	93	5	1	1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	117	22	22	24	31	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	44	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	139	47	47	50	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	264	70	70	75	112	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2017	83	75	78	69	3	1	1
Bell 206	250B17B	Bell Helicopter	Approach	89	10	10	10	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	32	1	1	1	21	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	101	21	21	22	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	236	33	33	35	39	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	18	7	7	7	91	15	5	5
Navajo	TIO-540-J2B2	Beech Paron 58	Approach	5512	59	59	57	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Paron 58	Climb Out	4559	51	51	50	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Paron 58	Takeoff	3124	27	27	26	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Paron 58	Idle	2841	149	149	144	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Paron 58	TOTAL	16035	286	286	276	8	1	-1	-1
Navajo	TIO-540-J2B2	Beech Paron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Paron 58	GSE	4	1	1	1	15	3	1	1

St. Mary's Airport
2006 Site 1 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	21041	0	0	1283	1001	9	22	11
	Total	21041	0	0	1283	1001	9	22	11

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	9544	0	0	582	454	4	10	5

8d. EDMS Output Tables – 2006 Site 3

St. Mary's Airport
2006 Site 3 Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58.9913	2.1186	2.1186	2.1275	1.1828	0.1003	0.0066	0.0066
GSE/APU	12.9808	0.5412	0.4883	0.5082	0.7926	0.0915	0.0231	0.0231
Roadways	6.5907	0.0000	0.0000	0.4012	0.3131	0.0022	0.0066	0.0033
Total	78.5628	2.6599	2.6070	3.0369	2.2884	0.1940	0.0364	0.0331

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	117983	4237	4237	4255	2366	201	13	13
GSE/APU	25962	1082	977	1016	1585	183	46	46
Roadways	13181	0	0	802	626	4	13	7
Total	157126	5320	5214	6074	4577	388	73	66

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	53516	1922	1922	1930	1073	91	6	6
GSE/APU	11776	491	443	461	719	83	21	21
Roadways	5979	0	0	364	284	2	6	3
Total	71271	2413	2365	2755	2076	176	33	30

St. Mary's Airport
2006 Site 3 Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	291	190	190	202	39	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	325	287	287	305	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	637	483	483	514	72	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	2997	113	102	106	114	10	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	181	20	20	21	15	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	300	115	115	122	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	498	135	135	143	60	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2018	84	75	78	74	4	1	1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14387	159	159	153	54	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10362	102	102	99	46	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8350	71	71	68	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2291	534	534	515	7	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	35390	867	867	836	128	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	30	11	10	11	121	26	4	4
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	13	1	1	1	29	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	36	2	2	2	49	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	2	2	2	26	4	1	1
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	34	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	43	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	138	14	14	14	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	148	15	15	16	114	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1748	73	66	69	116	13	4	4
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	30	2	2	2	81	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	5	1	1	1	149	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	235	10	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	235	27	27	29	27	7	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	272	31	31	33	491	38	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	2939	117	105	109	93	5	1	1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	117	22	22	24	31	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	44	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	139	47	47	50	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	264	70	70	75	112	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2017	83	75	78	69	3	1	1
Bell 206	250B17B	Bell Helicopter	Approach	89	10	10	10	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	32	1	1	1	21	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	101	21	21	22	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	236	33	33	35	39	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	18	7	7	7	91	15	5	5
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5512	59	59	57	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4559	51	51	50	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3124	27	27	26	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2841	149	149	144	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16035	286	286	276	8	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	4	1	1	1	15	3	1	1

St. Mary's Airport
2006 Site 3 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	13181	0	0	802	626	4	13	7
	Total	13181	0	0	802	626	4	13	7

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	5979	0	0	364	284	2	6	3

8e. EDMS Output Tables – 2006 Site 9

St. Mary's Airport
2006 Site 9 Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58.9913	2.1186	2.1186	2.1275	1.1828	0.1003	0.0066	0.0066
GSE/APU	12.9808	0.5412	0.4883	0.5082	0.7926	0.0915	0.0231	0.0231
Roadways	7.6611	0.0000	0.0000	0.4674	0.3638	0.0033	0.0077	0.0044
Total	79.6332	2.6599	2.6070	3.1030	2.3391	0.1951	0.0375	0.0342

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	117983	4237	4237	4255	2366	201	13	13
GSE/APU	25962	1082	977	1016	1585	183	46	46
Roadways	15322	0	0	935	728	7	15	9
Total	159266	5320	5214	6206	4678	390	75	68

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	53516	1922	1922	1930	1073	91	6	6
GSE/APU	11776	491	443	461	719	83	21	21
Roadways	6950	0	0	424	330	3	7	4
Total	72242	2413	2365	2815	2122	177	34	31

St. Mary's Airport
2006 Site 9 Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	291	190	190	202	39	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	325	287	287	305	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	637	483	483	514	72	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	2997	113	102	106	114	10	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	181	20	20	21	15	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	300	115	115	122	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	498	135	135	143	60	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2018	84	75	78	74	4	1	1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14387	159	159	153	54	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10362	102	102	99	46	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8350	71	71	68	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2291	534	534	515	7	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	35390	867	867	836	128	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	30	11	10	11	121	26	4	4
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	13	1	1	1	29	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	36	2	2	2	49	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	2	2	2	26	4	1	1
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	34	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	43	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	138	14	14	14	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	148	15	15	16	114	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1748	73	66	69	116	13	4	4
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	30	2	2	2	81	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	5	1	1	1	149	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	235	10	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	235	27	27	29	27	7	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	272	31	31	33	491	38	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	2939	117	105	109	93	5	1	1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	117	22	22	24	31	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	44	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	139	47	47	50	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	264	70	70	75	112	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2017	83	75	78	69	3	1	1
Bell 206	250B17B	Bell Helicopter	Approach	89	10	10	10	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	32	1	1	1	21	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	101	21	21	22	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	236	33	33	35	39	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	18	7	7	7	91	15	5	5
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5512	59	59	57	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4559	51	51	50	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3124	27	27	26	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2841	149	149	144	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16035	286	286	276	8	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	4	1	1	1	15	3	1	1

St. Mary's Airport
2006 Site 9 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Road1	Roadway	15322	0	0	935	728	7	15	9
	Total	15322	0	0	935	728	7	15	9

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Road1	Roadway	6950	0	0	424	330	3	7	4

8f. EDMS Output Tables – 2011 No Build

St. Mary's Airport
2011 No Build Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	60.6415	2.1771	2.1771	2.1859	1.2214	0.1014	0.0066	0.0066
GSE/APU	13.3247	0.5423	0.4916	0.5082	0.6085	0.0882	0.0496	0.0474
Roadways	3.2529	0.0000	0.0000	0.1874	0.1532	0.0011	0.0044	0.0022
Total	77.2191	2.7194	2.6687	2.8814	1.9831	0.1907	0.0606	0.0562

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	121283	4354	4354	4372	2443	203	13	13
GSE/APU	26649	1085	983	1016	1217	176	99	95
Roadways	6506	0	0	375	306	2	9	4
Total	154438	5439	5337	5763	3966	381	121	112

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	55013	1975	1975	1983	1108	92	6	6
GSE/APU	12088	492	446	461	552	80	45	43
Roadways	2951	0	0	170	139	1	4	2
Total	70052	2467	2421	2614	1799	173	55	51

St. Mary's Airport
2011 No Build Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	299	195	195	207	40	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	334	295	295	313	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	654	497	497	528	74	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3079	115	104	107	99	10	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	186	20	20	22	16	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	308	118	118	125	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	511	138	138	147	62	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2068	85	77	80	70	4	2	2
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14788	163	163	158	55	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10650	105	105	102	48	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8583	73	73	70	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2355	549	549	530	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	36375	891	891	859	132	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	17	7	7	8	53	23	17	16
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	14	1	1	1	30	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	37	2	2	2	51	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	17	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	35	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	44	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	142	14	14	15	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	152	15	15	16	118	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1802	73	66	68	91	13	6	6
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	31	2	2	2	83	12	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	6	1	1	1	154	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	242	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	243	28	28	30	28	8	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	280	32	32	34	507	39	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	3031	120	108	112	88	5	3	3
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	120	23	23	24	32	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	45	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	142	49	49	52	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	271	72	72	77	115	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2067	85	77	79	66	3	2	2
Bell 206	250B17B	Bell Helicopter	Approach	91	10	10	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	33	1	1	2	22	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	103	21	21	23	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	242	33	33	36	40	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	17	5	5	5	61	15	7	6
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5669	60	60	58	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4688	53	53	51	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3213	28	28	27	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2922	154	154	148	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16491	295	295	284	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	2	1	1	1	7	3	2	2

St. Mary's Airport
2011 No Build Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	6506	0	0	375	306	2	9	4
	Total	6506	0	0	375	306	2	9	4

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	2951	0	0	170	139	1	4	2

8g. EDMS Output Tables – 2011 Site 1

St. Mary's Airport
2011 Site 1 Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	60.6415	2.1771	2.1771	2.1859	1.2214	0.1014	0.0066	0.0066
GSE/APU	13.3247	0.5423	0.4916	0.5082	0.6085	0.0882	0.0496	0.0474
Roadways	8.4459	0.0000	0.0000	0.4872	0.3968	0.0033	0.0110	0.0055
Total	82.4121	2.7194	2.6687	3.1813	2.2267	0.1929	0.0672	0.0595

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	121283	4354	4354	4372	2443	203	13	13
GSE/APU	26649	1085	983	1016	1217	176	99	95
Roadways	16892	0	0	974	794	7	22	11
Total	164824	5439	5337	6363	4453	386	134	119

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	55013	1975	1975	1983	1108	92	6	6
GSE/APU	12088	492	446	461	552	80	45	43
Roadways	7662	0	0	442	360	3	10	5
Total	74763	2467	2421	2886	2020	175	61	54

St. Mary's Airport
2011 Site 1 Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	299	195	195	207	40	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	334	295	295	313	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	654	497	497	528	74	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3079	115	104	107	99	10	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	186	20	20	22	16	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	308	118	118	125	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	511	138	138	147	62	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2068	85	77	80	70	4	2	2
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14788	163	163	158	55	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10650	105	105	102	48	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8583	73	73	70	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2355	549	549	530	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	36375	891	891	859	132	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	17	7	7	8	53	23	17	16
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	14	1	1	1	30	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	37	2	2	2	51	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	17	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	35	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	44	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	142	14	14	15	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	152	15	15	16	118	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1802	73	66	68	91	13	6	6
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	31	2	2	2	83	12	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	6	1	1	1	154	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	242	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	243	28	28	30	28	8	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	280	32	32	34	507	39	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	3031	120	108	112	88	5	3	3
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	120	23	23	24	32	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	45	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	142	49	49	52	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	271	72	72	77	115	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2067	85	77	79	66	3	2	2
Bell 206	250B17B	Bell Helicopter	Approach	91	10	10	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	33	1	1	2	22	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	103	21	21	23	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	242	33	33	36	40	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	17	5	5	5	61	15	7	6
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5669	60	60	58	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4688	53	53	51	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3213	28	28	27	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2922	154	154	148	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16491	295	295	284	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	2	1	1	1	7	3	2	2

St. Mary's Airport
2011 Site 1 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	16892	0	0	974	794	7	22	11
	Total	16892	0	0	974	794	7	22	11

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	7662	0	0	442	360	3	10	5

8h. EDMS Output Tables – 2011 Site 3

St. Mary's Airport
2011 Site 3 Emissions Inventory

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	60.6415	2.1771	2.1771	2.1859	1.2214	0.1014	0.0066	0.0066
GSE/APU	13.3247	0.5423	0.4916	0.5082	0.6085	0.0882	0.0496	0.0474
Roadways	5.2911	0.0000	0.0000	0.3053	0.2480	0.0022	0.0077	0.0033
Total	79.2573	2.7194	2.6687	2.9994	2.0779	0.1918	0.0639	0.0573

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	121283	4354	4354	4372	2443	203	13	13
GSE/APU	26649	1085	983	1016	1217	176	99	95
Roadways	10582	0	0	611	496	4	15	7
Total	158515	5439	5337	5999	4156	384	128	115

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	55013	1975	1975	1983	1108	92	6	6
GSE/APU	12088	492	446	461	552	80	45	43
Roadways	4800	0	0	277	225	2	7	3
Total	71901	2467	2421	2721	1885	174	58	52

St. Mary's Airport
2011 Site 3 Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	299	195	195	207	40	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	334	295	295	313	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	654	497	497	528	74	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3079	115	104	107	99	10	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	186	20	20	22	16	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	308	118	118	125	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	511	138	138	147	62	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2068	85	77	80	70	4	2	2
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14788	163	163	158	55	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10650	105	105	102	48	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8583	73	73	70	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2355	549	549	530	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	36375	891	891	859	132	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	17	7	7	8	53	23	17	16
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	14	1	1	1	30	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	37	2	2	2	51	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	17	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	35	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	44	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	142	14	14	15	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	152	15	15	16	118	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1802	73	66	68	91	13	6	6
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	31	2	2	2	83	12	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	6	1	1	1	154	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	242	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	243	28	28	30	28	8	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	280	32	32	34	507	39	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	3031	120	108	112	88	5	3	3
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	120	23	23	24	32	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	45	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	142	49	49	52	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	271	72	72	77	115	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2067	85	77	79	66	3	2	2
Bell 206	250B17B	Bell Helicopter	Approach	91	10	10	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	33	1	1	2	22	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	103	21	21	23	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	242	33	33	36	40	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	17	5	5	5	61	15	7	6
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5669	60	60	58	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4688	53	53	51	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3213	28	28	27	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2922	154	154	148	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16491	295	295	284	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	2	1	1	1	7	3	2	2

St. Mary's Airport
2011 Site 3 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	10582	0	0	611	496	4	15	7
	Total	10582	0	0	611	496	4	15	7

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	4800	0	0	277	225	2	7	3

8i. EDMS Output Tables – 2011 Site 9

St. Mary's Airport
2011 Site 9 Emissions Inventory

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	60.6415	2.1771	2.1771	2.1859	1.2214	0.1014	0.0066	0.0066
GSE/APU	13.3247	0.5423	0.4916	0.5082	0.6085	0.0882	0.0496	0.0474
Roadways	6.1509	0.0000	0.0000	0.3549	0.2888	0.0022	0.0088	0.0033
Total	80.1171	2.7194	2.6687	3.0490	2.1186	0.1918	0.0650	0.0573

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	121283	4354	4354	4372	2443	203	13	13
GSE/APU	26649	1085	983	1016	1217	176	99	95
Roadways	12302	0	0	710	578	4	18	7
Total	160234	5439	5337	6098	4237	384	130	115

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	55013	1975	1975	1983	1108	92	6	6
GSE/APU	12088	492	446	461	552	80	45	43
Roadways	5580	0	0	322	262	2	8	3
Total	72681	2467	2421	2766	1922	174	59	52

St. Mary's Airport
2011 Site 9 Aircraft Emissions

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	299	195	195	207	40	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	13	4	4	4	15	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	8	3	3	3	13	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	334	295	295	313	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	654	497	497	528	74	8	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3079	115	104	107	99	10	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	186	20	20	22	16	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	9	0	0	0	18	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	8	0	0	0	23	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	308	118	118	125	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	511	138	138	147	62	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2068	85	77	80	70	4	2	2
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	14788	163	163	158	55	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	10650	105	105	102	48	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	8583	73	73	70	21	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2355	549	549	530	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	36375	891	891	859	132	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	17	7	7	8	53	23	17	16
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	14	1	1	1	30	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	7	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	21	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	37	2	2	2	51	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	17	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	10	1	1	1	35	5	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	27	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	44	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	142	14	14	15	11	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	152	15	15	16	118	15	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1802	73	66	68	91	13	6	6
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	31	2	2	2	83	12	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	6	1	1	1	154	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	242	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	243	28	28	30	28	8	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	280	32	32	34	507	39	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	3031	120	108	112	88	5	3	3
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	120	23	23	24	32	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	31	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	45	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	142	49	49	52	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	271	72	72	77	115	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2067	85	77	79	66	3	2	2
Bell 206	250B17B	Bell Helicopter	Approach	91	10	10	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	33	1	1	2	22	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	15	1	1	1	13	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	103	21	21	23	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	242	33	33	36	40	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	17	5	5	5	61	15	7	6
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5669	60	60	58	6	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4688	53	53	51	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3213	28	28	27	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	2922	154	154	148	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	16491	295	295	284	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	2	1	1	1	7	3	2	2

St. Mary's Airport
2011 Site 9 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	12302	0	0	710	578	4	18	7
	Total	12302	0	0	710	578	4	18	7

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	5580	0	0	322	262	2	8	3

8j. EDMS Output Tables – 2021 No Build

St. Mary's Airport
2021 No Build Emissions Inventory[1]

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	64.0729	2.3005	2.3005	2.3115	1.2842	0.1058	0.0066	0.0066
GSE/APU	14.0313	0.5655	0.5104	0.5302	0.5181	0.0893	0.0761	0.0717
Roadways	2.5033	0.0000	0.0000	0.0915	0.0849	0.0011	0.0044	0.0022
Total	80.6076	2.8660	2.8109	2.9333	1.8872	0.1962	0.0871	0.0805

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	128146	4601	4601	4623	2568	212	13	13
GSE/APU	28063	1131	1021	1060	1036	179	152	143
Roadways	5007	0	0	183	170	2	9	4
Total	161215	5732	5622	5867	3774	392	174	161

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58126	2087	2087	2097	1165	96	6	6
GSE/APU	12729	513	463	481	470	81	69	65
Roadways	2271	0	0	83	77	1	4	2
Total	73126	2600	2550	2661	1712	178	79	73

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport
2021 No Build Aircraft Emissions[1]

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	316	206	206	219	42	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	14	4	4	5	16	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	9	3	3	3	14	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	354	312	312	332	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	693	526	526	559	78	9	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3258	121	109	113	95	11	6	5
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	196	21	21	23	17	3	2	2
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	10	0	0	0	19	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	9	0	0	0	25	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	325	124	124	132	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	540	146	146	155	65	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2183	90	81	84	69	4	3	3
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	15621	173	173	167	58	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	11251	111	111	107	50	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	9066	77	77	74	23	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2488	580	580	560	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	38426	941	941	908	139	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	5	5	5	5	8	20	30	29
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	15	1	1	1	32	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	23	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	39	2	2	3	54	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	14	5	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	11	1	1	1	37	6	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	29	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	46	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	150	15	15	16	12	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	160	16	16	17	124	16	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1893	75	68	71	82	14	8	7
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	32	2	2	2	87	12	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	6	1	1	1	161	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	255	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	255	30	30	32	29	8	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	295	34	34	36	533	41	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	3186	126	113	118	87	5	4	4
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	126	24	24	26	33	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	33	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	47	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	150	51	51	55	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	286	76	76	81	121	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2182	90	81	84	66	3	3	3
Bell 206	250B17B	Bell Helicopter	Approach	96	11	11	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	34	2	2	2	23	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	16	1	1	1	14	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	109	23	23	24	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	256	35	35	38	42	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	16	4	4	4	48	16	9	8
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5992	64	64	61	7	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4955	56	56	54	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3396	29	29	28	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	3088	162	162	157	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	17431	311	311	300	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	1	1	1	1	1	3	4	4

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport
2021 No Build Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	5007	0	0	183	170	2	9	4
	Total	5007	0	0	183	170	2	9	4

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	2271	0	0	83	77	1	4	2

8k. EDMS Output Tables - 2021 Site 1

St. Mary's Airport
2021 Site 1 Emissions Inventory[1]

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	64.0729	2.3005	2.3005	2.3115	1.2842	0.1058	0.0066	0.0066
GSE/APU	14.0313	0.5655	0.5104	0.5302	0.5181	0.0893	0.0761	0.0717
Roadways	6.4981	0.0000	0.0000	0.2381	0.2216	0.0044	0.0121	0.0055
Total	84.6024	2.8660	2.8109	3.0799	2.0238	0.1995	0.0948	0.0838

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	128146	4601	4601	4623	2568	212	13	13
GSE/APU	28063	1131	1021	1060	1036	179	152	143
Roadways	12996	0	0	476	443	9	24	11
Total	169205	5732	5622	6160	4048	399	190	168

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58126	2087	2087	2097	1165	96	6	6
GSE/APU	12729	513	463	481	470	81	69	65
Roadways	5895	0	0	216	201	4	11	5
Total	76750	2600	2550	2794	1836	181	86	76

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport
2021 Site 1 Aircraft Emissions[1]

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	316	206	206	219	42	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	14	4	4	5	16	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	9	3	3	3	14	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	354	312	312	332	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	693	526	526	559	78	9	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3258	121	109	113	95	11	6	5
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	196	21	21	23	17	3	2	2
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	10	0	0	0	19	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	9	0	0	0	25	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	325	124	124	132	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	540	146	146	155	65	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2183	90	81	84	69	4	3	3
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	15621	173	173	167	58	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	11251	111	111	107	50	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	9066	77	77	74	23	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2488	580	580	560	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	38426	941	941	908	139	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	5	5	5	5	8	20	30	29
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	15	1	1	1	32	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	23	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	39	2	2	3	54	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	14	5	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	11	1	1	1	37	6	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	29	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	46	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	150	15	15	16	12	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	160	16	16	17	124	16	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1893	75	68	71	82	14	8	7
Gulfstream II	SPEY MK511-8	GulfStream II	Approach	32	2	2	2	87	12	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Climb Out	6	1	1	1	161	9	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Takeoff	1	1	1	1	255	11	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	Idle	255	30	30	32	29	8	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	TOTAL	295	34	34	36	533	41	-1	-1
Gulfstream II	SPEY MK511-8	GulfStream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	GulfStream II	GSE	3186	126	113	118	87	5	4	4
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	126	24	24	26	33	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	33	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	47	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	150	51	51	55	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	286	76	76	81	121	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2182	90	81	84	66	3	3	3
Bell 206	250B17B	Bell Helicopter	Approach	96	11	11	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	34	2	2	2	23	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	16	1	1	1	14	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	109	23	23	24	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	256	35	35	38	42	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	16	4	4	4	48	16	9	8
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5992	64	64	61	7	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4955	56	56	54	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3396	29	29	28	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	3088	162	162	157	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	17431	311	311	300	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	1	1	1	1	1	3	4	4

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport
2021 Site 1 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	12996	0	0	476	443	9	24	11
	Total	12996	0	0	476	443	9	24	11

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	5895	0	0	216	201	4	11	5

8I. EDMS Output Tables – 2021 Site 3

St. Mary's Airport
2021 Site 3 Emissions Inventory[1]

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	64.0729	2.3005	2.3005	2.3115	1.2842	0.1058	0.0066	0.0066
GSE/APU	14.0313	0.5655	0.5104	0.5302	0.5181	0.0893	0.0761	0.0717
Roadways	4.0708	0.0000	0.0000	0.1488	0.1389	0.0022	0.0077	0.0033
Total	82.1751	2.8660	2.8109	2.9906	1.9412	0.1973	0.0904	0.0816

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	128146	4601	4601	4623	2568	212	13	13
GSE/APU	28063	1131	1021	1060	1036	179	152	143
Roadways	8142	0	0	298	278	4	15	7
Total	164350	5732	5622	5981	3882	395	181	163

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58126	2087	2087	2097	1165	96	6	6
GSE/APU	12729	513	463	481	470	81	69	65
Roadways	3693	0	0	135	126	2	7	3
Total	74548	2600	2550	2713	1761	179	82	74

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport											
2021 Site 3 Aircraft Emissions[1]											
Kilograms/Year											
AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	15621	173	173	167	58	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	11251	111	111	107	50	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	9066	77	77	74	23	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2488	580	580	560	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	38426	941	941	908	139	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	5	5	5	5	8	20	30	29
Beech King Air 200	PT6A-41	Beech Air King 200	Approach	316	206	206	219	42	5	-1	-1
Beech King Air 200	PT6A-41	Beech Air King 200	Climb Out	14	4	4	5	16	1	-1	-1
Beech King Air 200	PT6A-41	Beech Air King 200	Takeoff	9	3	3	3	14	1	-1	-1
Beech King Air 200	PT6A-41	Beech Air King 200	Idle	354	312	312	332	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech Air King 200	TOTAL	693	526	526	559	78	9	-1	-1
Beech King Air 200	PT6A-41	Beech Air King 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech Air King 200	GSE	3258	121	109	113	95	11	6	5
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Approach	15	1	1	1	32	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Climb Out	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	Idle	23	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	TOTAL	39	2	2	3	54	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441 Conquest 2	GSE	5	1	1	1	14	5	2	2
Gulfstream II	SPEY MK511-8	Gulfstream II	Approach	32	2	2	2	87	12	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Climb Out	6	1	1	1	161	9	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Takeoff	1	1	1	1	255	11	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Idle	255	30	30	32	29	8	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	TOTAL	295	34	34	36	533	41	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	Gulfstream II	GSE	3186	126	113	118	87	5	4	4
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	126	24	24	26	33	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	33	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	47	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	150	51	51	55	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	286	76	76	81	121	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2182	90	81	84	66	3	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	196	21	21	23	17	3	2	2
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	10	0	0	0	19	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	9	0	0	0	25	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	325	124	124	132	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	540	146	146	155	65	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2183	90	81	84	69	4	3	3
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	11	1	1	1	37	6	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	29	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	46	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	150	15	15	16	12	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	160	16	16	17	124	16	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1893	75	68	71	82	14	8	7
Bell 206	250B17B	Bell Helicopter	Approach	96	11	11	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	34	2	2	2	23	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	16	1	1	1	14	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	109	23	23	24	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	256	35	35	38	42	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	16	4	4	4	48	16	9	8
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5992	64	64	61	7	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4955	56	56	54	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3396	29	29	28	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	3088	162	162	157	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	17431	311	311	300	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	1	1	1	1	1	3	4	4

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St/ Mary's Airport
2021 Site 3 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	8142	0	0	298	278	4	15	7
	Total	8142	0	0	298	278	4	15	7

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	3693	0	0	135	126	2	7	3

8m. EDMS Output Tables – 2021 Site 9

St. Mary's Airport
2021 Site 9 Emissions Inventory[1]

Tons/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	64.0729	2.3005	2.3005	2.3115	1.2842	0.1058	0.0066	0.0066
GSE/APU	14.0313	0.5655	0.5104	0.5302	0.5181	0.0893	0.0761	0.0717
Roadways	4.7322	0.0000	0.0000	0.1731	0.1609	0.0033	0.0088	0.0044
Total	82.8365	2.8660	2.8109	3.0148	1.9632	0.1984	0.0915	0.0827

Pounds/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	128146	4601	4601	4623	2568	212	13	13
GSE/APU	28063	1131	1021	1060	1036	179	152	143
Roadways	9464	0	0	346	322	7	18	9
Total	165673	5732	5622	6030	3926	397	183	165

Kilograms/Year

Name	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Aircraft	58126	2087	2087	2097	1165	96	6	6
GSE/APU	12729	513	463	481	470	81	69	65
Roadways	4293	0	0	157	146	3	8	4
Total	75148	2600	2550	2735	1781	180	83	75

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport
2021 Site 9 Aircraft Emissions[1]

Kilograms/Year

AIR_NAME	ENG_NAME	INST_NAME	MODE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Approach	15621	173	173	167	58	2	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Climb Out	11251	111	111	107	50	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Takeoff	9066	77	77	74	23	1	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	Idle	2488	580	580	560	8	0	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	TOTAL	38426	941	941	908	139	4	-1	-1
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	APU	0	0	0	0	0	0	0	0
Cessna 172 Skyhawk	TSIO-360C	Cessna 172 Skyhawk	GSE	5	5	5	5	8	20	30	29
Beech King Air 200	PT6A-41	Beech King Air 200	Approach	316	206	206	219	42	5	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Climb Out	14	4	4	5	16	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Takeoff	9	3	3	3	14	1	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	Idle	354	312	312	332	6	2	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	TOTAL	693	526	526	559	78	9	-1	-1
Beech King Air 200	PT6A-41	Beech King Air 200	APU	0	0	0	0	0	0	0	0
Beech King Air 200	PT6A-41	Beech King Air 200	GSE	3258	121	109	113	95	11	6	5
Cessna 441 Conquest2	TPE331-8	Cessna 441	Approach	15	1	1	1	32	3	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	Climb Out	1	0	0	0	8	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	Takeoff	1	0	0	0	9	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	Idle	23	2	2	2	5	1	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	TOTAL	39	2	2	3	54	6	-1	-1
Cessna 441 Conquest2	TPE331-8	Cessna 441	APU	0	0	0	0	0	0	0	0
Cessna 441 Conquest2	TPE331-8	Cessna 441	GSE	5	1	1	1	14	5	2	2
Gulfstream II	SPEY MK511-8	Gulfstream II	Approach	32	2	2	2	87	12	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Climb Out	6	1	1	1	161	9	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Takeoff	1	1	1	1	255	11	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	Idle	255	30	30	32	29	8	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	TOTAL	295	34	34	36	533	41	-1	-1
Gulfstream II	SPEY MK511-8	Gulfstream II	APU	0	0	0	0	0	0	0	0
Gulfstream II	SPEY MK511-8	Gulfstream II	GSE	3186	126	113	118	87	5	4	4
Learjet 35/36	TFE 731-2-2B	Learjet 35	Approach	126	24	24	26	33	3	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Climb Out	5	0	0	0	33	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Takeoff	4	0	0	0	47	2	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	Idle	150	51	51	55	7	1	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	TOTAL	286	76	76	81	121	7	-1	-1
Learjet 35/36	TFE 731-2-2B	Learjet 35	APU	0	0	0	0	0	0	0	0
Learjet 35/36	TFE 731-2-2B	Learjet 35	GSE	2182	90	81	84	66	3	3	3
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Approach	196	21	21	23	17	3	2	2
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Climb Out	10	0	0	0	19	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Takeoff	9	0	0	0	25	2	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	Idle	325	124	124	132	4	1	1	1
500 Citation	JT15D-1A & 1B	Cessna Citation 500	TOTAL	540	146	146	155	65	7	4	4
500 Citation	JT15D-1A & 1B	Cessna Citation 500	APU	0	0	0	0	0	0	0	0
500 Citation	JT15D-1A & 1B	Cessna Citation 500	GSE	2183	90	81	84	69	4	3	3
CL600	CF34-3B	Canadair Challenger Jet CL600	Approach	11	1	1	1	37	6	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Climb Out	0	0	0	0	29	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	Takeoff	0	0	0	0	46	4	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	Idle	150	15	15	16	12	3	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	TOTAL	160	16	16	17	124	16	2	2
CL600	CF34-3B	Canadair Challenger Jet CL600	APU	0	0	0	0	0	0	0	0
CL600	CF34-3B	Canadair Challenger Jet CL600	GSE	1893	75	68	71	82	14	8	7
Bell 206	250B17B	Bell Helicopter	Approach	96	11	11	11	4	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Climb Out	34	2	2	2	23	2	-1	-1
Bell 206	250B17B	Bell Helicopter	Takeoff	16	1	1	1	14	1	-1	-1
Bell 206	250B17B	Bell Helicopter	Idle	109	23	23	24	1	1	-1	-1
Bell 206	250B17B	Bell Helicopter	TOTAL	256	35	35	38	42	5	-1	-1
Bell 206	250B17B	Bell Helicopter	APU	0	0	0	0	0	0	0	0
Bell 206	250B17B	Bell Helicopter	GSE	16	4	4	4	48	16	9	8
Navajo	TIO-540-J2B2	Beech Baron 58	Approach	5992	64	64	61	7	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Climb Out	4955	56	56	54	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Takeoff	3396	29	29	28	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	Idle	3088	162	162	157	1	0	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	TOTAL	17431	311	311	300	9	1	-1	-1
Navajo	TIO-540-J2B2	Beech Baron 58	APU	0	0	0	0	0	0	0	0
Navajo	TIO-540-J2B2	Beech Baron 58	GSE	1	1	1	1	1	3	4	4

[1]GSE Assignments for Study Year 2021 were calculated using GSE emission factors for year 2020 due to EDMS limitations.

St. Mary's Airport
2021 Site 9 Vehicle Emissions

Pounds/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	9464	0	0	346	322	7	18	9
	Total	9464	0	0	346	322	7	18	9

Kilograms/Year

NAME	TYPE	CO	THC	NMHC	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Roadway	Roadway	4293	0	0	157	146	3	8	4

CULTURAL RESOURCE SCREENING FOR THE ST. MARYS AIRPORT ENVIRONMENTAL ASSESSMENT CAMDEN COUNTY, GEORGIA

Conducted for
RS&H

SEARCH Project No. 06024

By

SOUTHEASTERN ARCHAEOLOGICAL RESEARCH, INC.

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April 2006

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TABLE OF CONTENTS

List of Figures iii
List of Tables iii
Introduction 4
Environment 4
Prehistoric Overview 8
Historic Overview 11
Cultural Resources Screening 12
Conclusions 19
References Cited 20

LIST OF FIGURES

Figure 1. Project Location Map 5
Figure 2. Specific Soils Map 7
Figure 3. Site 1 Project Area 13
Figure 4. Site 3 Project Area 15
Figure 5. Site 9 Project Area 17

LIST OF TABLES

Table 1. Specific Soils within the Project Area 6
Table 2. Historic and Potentially Historic Structures within the Site 1 APE 14
Table 3. Historic and Potentially Historic Structures within the Site 3 APE 16
Table 4. Archaeological Sites within the Site 9 APE 16
Table 5. Historic and Potentially Historic Structures within the Site 9 APE 18

INTRODUCTION

This report presents the results of a cultural resource screening for three site alternatives (Site 1, Site 3, and Site 9) associated with the proposed relocation of the St. Marys Airport in Camden County, Georgia (Figure 1). RS&H has been contracted to prepare an Environmental Assessment (EA) for this relocation project. As part of the EA, this screening study was designed to provide information on historical and archaeological properties within the defined areas of potential effects and to determine how those properties might effect the selection of an individual site alternative. The no-build alternative also is discussed.

This investigation was conducted to comply the cultural resources provisions of the National Environmental Policy Act of 1969 (PL 91-190, as amended); Section 106 of the National Historic Preservation Act of 1966 (PL 89-190, as amended) and it's implementing regulation 36 CFR Part 800 (Protection of Historic Properties); and the Archaeological and Historic Preservation Act of 1974 (PL 86-523). The study was conducted with consideration to the Federal Aviation Authority's (FAA) Order 5050.4A (Airport Environmental Handbook), revised October 8, 1995. The qualifications of the Principal Investigator meet and exceed the standards established within the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (36 CFR Part 61).

The area of potential effects (APE) for this project is defined as the area that potentially would be affected by the construction of the airport as well as considering the possible effects that noise, air quality, vibration, and potential change in land use might have on historic properties. For all three sites, the cultural resource screening will extend one-mile from the airport boundaries (see Figure 1). The APE is analogous to the "area of the proposed action's potential environmental impact" discussed in FAA Order 5050.4A, Paragraph 47(e)(8)(b).

ENVIRONMENT

The three site alternatives are located in central and south Camden County, Georgia within the Barrier Island Sequence of the Coastal Plains Province. The Barrier Island Sequence includes the coastal barrier islands along the Atlantic coast and approximately 40 to 50 miles of the adjacent, interior mainland. The well drained inland areas typically support an environment dominated by long-leaf pine, loblolly pine, and various species of oak. Conversely, pond pine, slash pine, saw palmetto, gallberry, and wiregrass are found throughout the poorly drained flatwoods. Hardwood communities composed of oak, sweet gum, red bay, magnolia, and pignut hickory occupy areas adjacent to freshwater streams and floodplains (Georgia Museum of Natural History 2006).

There are two important river systems within the general project area. The Satilla River, located approximately two miles north of Site 1, is a typical black water river surrounded by extensive cypress and black gum swamps. The river supports very little development and is subjected to only minor agricultural runoff. The Satilla has an average flow of 85 m^3 and drains approximately 9,143 km^2 (University of Georgia Department of Marine Sciences [UGAMARSCI] 2002). The St. Marys River, located just south of Site 9, forms the border

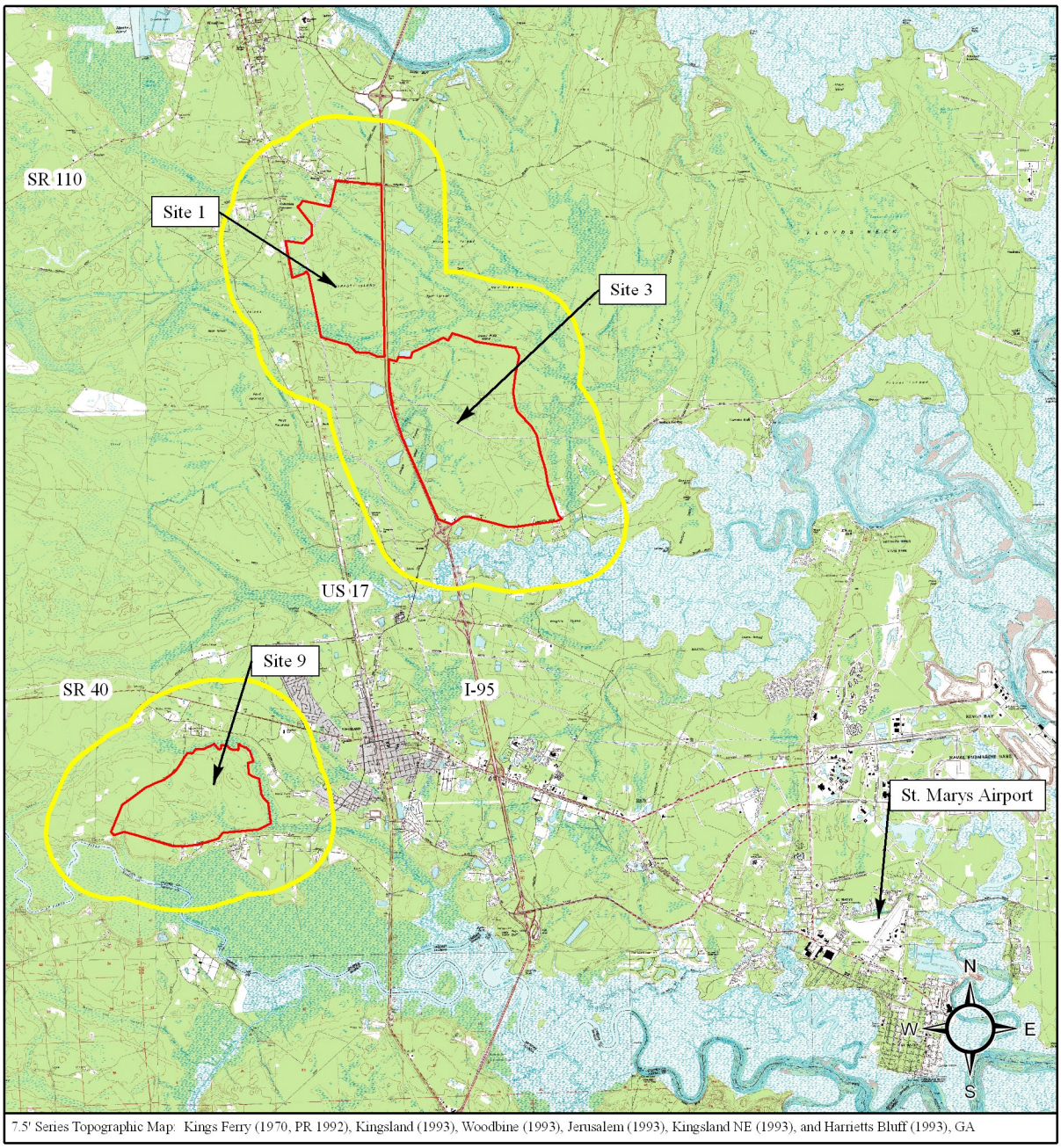

Figure 1. Project Location Map

between Georgia and Florida. Also considered a black water river, the river has a drainage area of 3,600 km^2, part of which is associated with the Okefenokee Swamp. The average flow of the river is relatively slow at 20 m^3 (UGAMARSCI 2002). The Crooked River, which is much smaller than the St. Marys and Satilla rivers, is located just south of Site 3 and is contained completely within the Satilla River drainage.

Soils within the Coastal Plain Province are sand and sandy clay of marine origin and generally acidic in nature. These soils generally have low fertility caused by excessive leaching (Georgia Museum of Natural History 2006). Specific soil types for the project area are listed in Table 1 and shown in Figure 2.

Table 1. Specific Soils within the Project Area.

Soil Type	Drainage Characteristics	Associated Environment
Albany fine sand	Level to gently sloping; somewhat poorly drained	Found in low-lying uplands
Bladen loam	Level to gently sloping; poorly drained	Found on fluvial or marine terraces
Bohicket-Capers association	Level to gently sloping; very poorly drained	Found on broad tidal flats
Brookman clay loam	Level to gently sloping; very poorly drained	Found on broad, shallow depressions of the flatwoods
Cainhoy fine sand	Level to sloping; excessively drained	Found on uplands
Kingsland mucky peat	Very poorly drained organic soil	Found on flood plains of streams that are flooded daily by tides
Mandarin fine sand	Level to gently sloping; somewhat poorly drained	Found on ridges and knolls
Meggett fine sandy loam	Level to gently sloping; poorly drained	Found on flood plains and low terraces
Olustee sand	Level to gently sloping; poorly drained	Found on broad low-lying areas
Pelham loamy sand	Level to gently sloping; poorly drained	Found along drainageways
Pottsburg sand	Level to gently sloping; somewhat poorly drained	Found on low-lying uplands
Rains fine sandy loam	Level to gently sloping; poorly drained	Found on broad flats and in slight depressions
Rutlege fine sand	Level to gently sloping; very poorly drained	Found on upland flats
Sapelo fine sand	Level to gently sloping; somewhat poorly drained	Found on nearly level flatwoods

Paleoenvironment

Georgia was much cooler and drier than today from 18,000 to 12,000 years before present (yr B.P.), and then became warmer and wetter rather rapidly during the next three millennia. By no later than 9000 yr B.P., the warmer climates of the Holocene began to prevail. Melting of the continental ice sheets led to a major global rise in sea level (summarized for long time scales by Rohling et al. 1998) that started from a low stand of –120 meters at 18,000 yr B.P. The rise was slow while glacial conditions prevailed at high latitudes but became very rapid

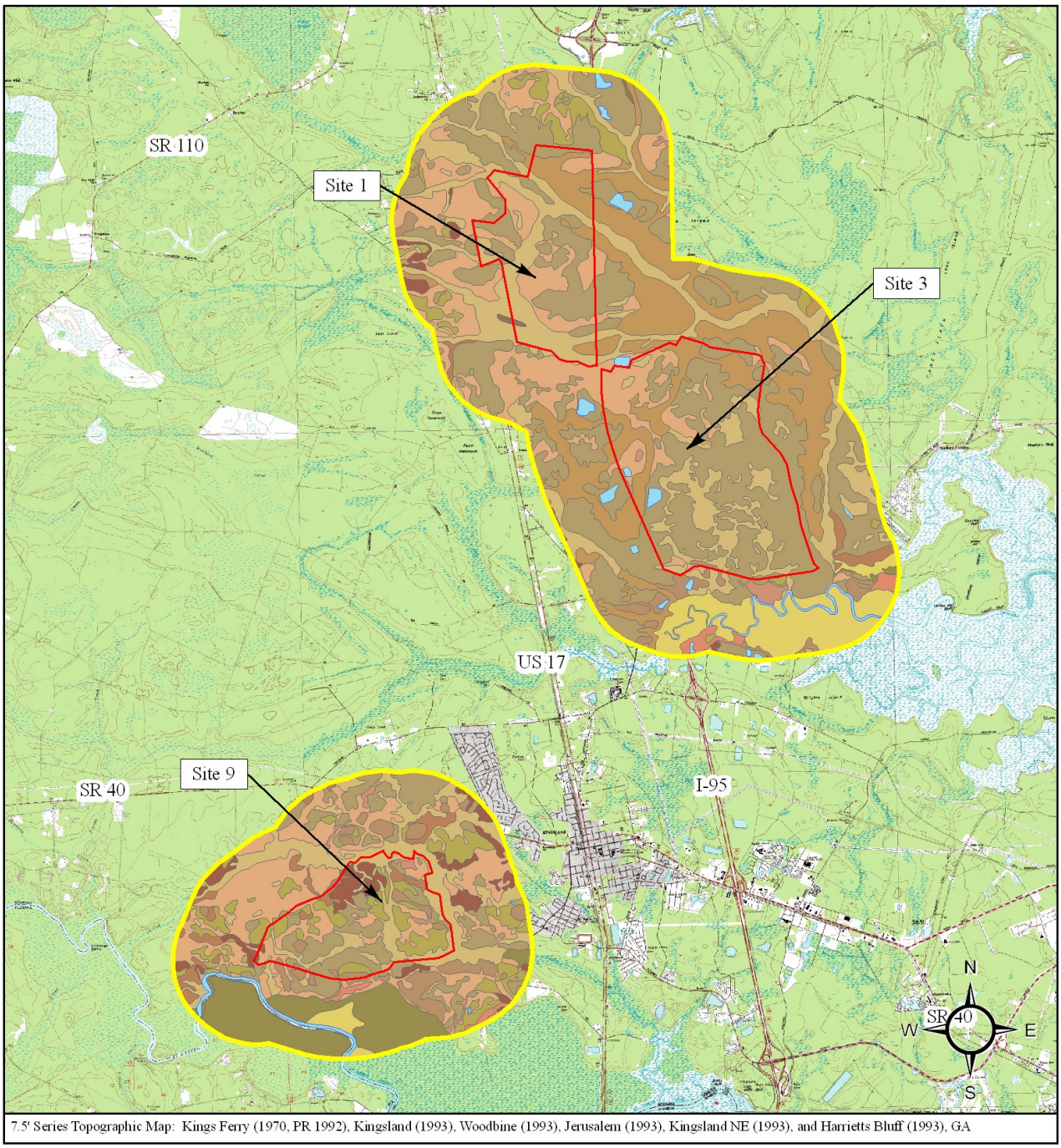

Figure 2. Specific Soils Map

in the latest Pleistocene and earliest Holocene. By 6000 to 5000 yr B.P., sea level had risen to only 3-5 meters lower than at present. As a generalization, the climate, water levels, and plant communities of southern Georgia and northern Florida attained essentially modern conditions by 4000 B.P. during the Late Archaic period and have been fairly stable through all phases of habitation by ceramic-using cultures (Watts 1971).

PREHISTORIC OVERVIEW

Paleoindian Period (9500 - 8000 B.C.)

The most widely accepted model for the peopling of the New World argues that Asian populations entered North America during one or more migrations over the Beringia land bridge that formerly linked Siberia and Alaska. These migrations occurred by at least 12,000 years ago and data are mounting in support of migrations that date to before that time. Regardless of the precise timing of the first occupations of the New World, it does not appear that humans inhabited Georgia prior to about 9500 B.C. (Anderson et al. 1990; White 2002).

Although most of the evidence for Paleoindian occupation of Georgia comes from surface finds, excavations in neighboring states have allowed the definition of three Paleoindian subperiods, based on projectile point typologies (Anderson et al. 1990). The early Paleoindian subperiod (9,500-9,000 B.C.) is marked by the presence of fluted projectile points including Clovis. The Middle Paleoindian subperiod (9,000-8,500 B.C.) is recognized by the presence of Cumberland, Simpson, Suwannee, Quad, and Beaver Lake projectile points. The final subperiod, the Late Paleoindian (8,500-8,000 B.C.), saw the production of both fluted and unfluted forms of Dalton projectile points. Dalton points appear to be transitional between the lanceolate forms of the very early points and the notched shapes of the Early Archaic period (Ledbetter et al. 1996).

Georgia Paleoindian projectile points are often made from Coastal Plain chert, but quartzes and metavolcanics from the Piedmont also were used (Ledbetter et al. 1996). The Paleoindian point distributions generated by Anderson et al. (1990) show a high frequency of finds in counties near the Fall Line and in the interior Coastal Plain. According to the Georgia Natural, Archaeological and Historic Resources GIS (NAHRGIS) database, there are no Paleoindian sites currently listed in Camden County.

Archaic Period (8000 - 1000 B.C.)

The Early Archaic (8,000-6,000 B.C.) was a time when local groups adapted to a more stable Holocene environment. In the Southeast, it is viewed as a time when small bands ranged widely. Diagnostic artifacts of the period include a variety of corner-notched and stemmed projectile points, including Taylor, Bolen, Palmer, and Kirk, as well as unifacial knives and endscrapers. Few large-scale excavations of Early Archaic sites have been attempted in Georgia, and most of these have conducted at sites within the Savannah River valley (Ledbetter et al. 1996).

Over much of the Piedmont Southeast, the Middle Archaic (6,000-3,500 B.C.) is well represented by a high frequency of Morrow Mountain projectile points made of quartz, with less frequent finds of Stanley and Guilford points. Polished stone axes and perforated steatite slabs also are common (White 2002:28-29). Below the Fall Line however, Middle Archaic manifestations are more difficult to recognize. As a result, little is known of settlement during this period, although Snow (1977:7) notes a preference for settlements located on or near chert outcrops. The Middle Archaic can be correlated with the onset of the Altithermal, a time when the climate was warmer and drier than at present. Until recently, most researchers had assumed that Middle Archaic populations resided within the inland river valleys of south coastal Georgia where freshwater shell middens are found, making only occasional forays to the Atlantic coast to procure resources. However, recent studies have convincingly demonstrated that Middle Archaic groups occupied sections of the Atlantic seaboard throughout the year (Bond 1992; Piatek 1994; Russo 1988, 1992). Evidence in the form of shell middens has shown that permanent coastal groups were exploiting the bounteous estuarine resources of the Atlantic coast. Coquina clam, oyster, and Quahog clam are the primary component of the coastal middens.

The trend toward increased sedentism and more circumscribed territories continued into the Late Archaic period (3500-1000 B.C.), as environmental and climatic conditions approached those of today. Late Archaic sites are found throughout the state and in all environments (White 2002:31). Life along the coast and major rivers was similar to that of the previous Middle Archaic period, with the economy centered on the exploitation of aquatic resources (Russo 1996; White 2002:32). A major technological innovation of the Late Archaic was the development of fired-clay pottery around 2000 B.C. This early ceramic ware was tempered with vegetal fibers, either thin strands of palmetto or Spanish moss (Sassaman 1993).

Fiber tempered pottery along the Georgia coast is typically known as St. Simons or Sapelo. During a span of approximately 1500 years, plain, incised, and punctated types were produced; decorated variants, however, underwent periods of stylistic popularity. With regard to vessel form, early pots were hand molded and tended to be thick-walled, whereas some of the later vessels were thinner and formed by coiling (Sassaman 1993, 1996). In a review of recent work conducted at the Kings Bay Naval Facility, Hamby and Raymer (1996) noted that the fiber tempered pottery recovered from Late Archaic sites within this area suggest representation of the Orange series, typically found in Florida, as opposed to the St. Simons series of coastal Georgia.

Coastal Late Archaic site types include artifact scatters, shell middens, and shell rings, representing base camps, ceremonial centers, collecting and hunting stations, and/or fishing and processing stations (Russo 1992:111). These coastal inhabitants, based on faunal and flora evidence suggesting permanent occupation, are viewed as discrete cultural groups rather than seasonal visitors (Sassaman 1991).

Woodland Period (1000/500 B.C. - A.D. 1000)

By approximately 1000 B.C., fiber-tempered pottery was replaced by pottery tempered with sand and grit, known as Refuge ware along the coast (White 2002:43-47). Similar decorative

modes (e.g., incising and punctations) suggest a link between Refuge and St. Simons wares. As few controlled excavations have been conducted at Refuge sites, little is known about the period. Refuge wares were supplanted by Deptford beginning around 500 B.C.

The Deptford culture reflects a continuation of the coastal way of life that was well established by the Late Archaic (Milanich 1971; White 2002:46-47), and interior sites are often thought to be the result of small groups of coastal dwellers who ventured inland to hunt and collect local resources (White 2002:46). However, Snow (1977:15-20) questions whether these inland sites represent seasonal forays. For one thing, marine shell tools are rarely found at Deptford sites, suggesting limited contact with the coast. For another, Deptford Simple Stamped appears to be the dominant ceramic type while on the coast Deptford Check Stamped is the more common decorative motif. Finally, there are a few sites with strong Deptford components, including Bridges Field (9WI16) and the Telfair Mound (9TF2), which suggest more than just seasonal transhumance.

Swift Creek is the next archaeological period that manifests itself in Georgia. At interior sites, Swift Creek components are recognized by a variety of complicated stamped designs on pottery. Three subdivisions – Early, Middle, and Late – have been recognized (Caldwell 1958). Early Swift Creek is identified by straight or slightly outslanted rims, notched or scalloped lips, rounded bases with tetrapodal supports, and paddle-stamped decorations that cover the entire vessel. Middle Swift Creek pottery has small folds along the vessel rim and flat bases. Late Swift Creek pottery has folded rims, rounded bases, and zoned complicated-stamping around the vessel waist. Within the greater St. Marys region, the recognition of a Swift Creek cultural group, based on ceramic frequencies, versus the presence of Swift Creek pottery is much more problematic (Russo 1992). Earlier interpretations suggested that these ceramics may have been trade items (Goggin 1952). Most of the ceramics recovered from these sites were sand-tempered plain, while diagnostic Swift Creek ceramics were the minority. Site types include artifact scatters, sheet middens, and ring middens reminiscent of the shell rings seen during the Late Archaic period.

Coexisting with but lasting longer than the Swift Creek Phase, the Wilmington Phase (A.D. 500–1000) is marked by the appearance of cord-marked, grog-tempered ceramics (Hamby and Raymer 1996). It is during this period that maize agriculture enters Georgia. Typically associated with the St. Simons area, the Wilmington ceramic series was in association with Swift Creek ceramics at sites throughout Kings Bay (Ward et al. 1986).

Mississippian Period (A.D. 1000 - 1450)

The Mississippian Period in Camden County is marked by a certain level of ambiguity as the greater St. Marys region appears to be a transition zone between the St. Johns group of Florida and the Savannah/Wilmington group of Georgia. Within this transition zone, ceramic series associated with both groups are typically found at the same sites. Savannah series ceramics are grit tempered and possess a variety of surface treatments, including complicated stamping, cord marking, check stamping, and burnishing. Conversely, St. Johns series ceramics are sponge spicule tempered and are typically plain or check stamped. This has led to the treatment of the assemblages from these sites as a single, Savannah/St. Johns cultural

entity (Russo 1992). Espenshade (1985), however, has argued that the St. Johns pottery represents tradewares or seasonal forays into the area.

Mississippian site types in Camden County include seasonal camps, large villages, and burial mounds (Hamby and Raymer 1996). Subsistence is characterized as small-scale horticulture augmented by estuarine resources and seasonally available resources such as nuts and berries (Ward et al. 1986).

Protohistoric Period

French and Spanish accounts offer glimpses into the lives of the indigenous populations of coastal southeastern Georgia. The natives who inhabited this area at the time of French contact (1562) were one of several Saltwater Timucua groups who collectively inhabited the Atlantic seaboard from central Florida north to the Altamaha River, Georgia (Deagan 1978; Goggin 1952; Hann 1996; Milanich 1995, 1996; Swanton 1922). Three Timucuan tribes existed in the St. Marys region: the Tacatacuru, the Yui, and the Yufera. These groups practiced agriculture, while also maintaining a subsistence base that continued to rely on hunting, gathering, and collecting wild resources (Hamby and Raymer 1996).

HISTORIC OVERVIEW

European settlement in the area that would become Camden County began way before Georgia statehood. French explorer Jean Ribault landed in the vicinity in 1562 and Spanish missions were established on St. Catherine's Island by 1566. By the 1660s, European competition for land rights in the New World were slowly escalating as King Charles II "claimed" southern Georgia for England with several strategic land grants as the Spanish mission system in Georgia was on the decline (Hamby and Raymer 1996; New Georgia Encyclopedia [NGE] 2006).

Georgia became an official English colony in 1732. The city of Savannah was established one year later. By 1758, Georgia possessed seven parishes. The southern two, St. Thomas and St. Marys parishes, were combined in 1777 to form Camden County. Less than a year later, Georgia ratified the U.S. Constitution and became the fourth state admitted to the Union.

Camden County was named after Charles Pratt, Earl of Camden, who was a staunch supporter of the American colonies prior to the Revolutionary War (NGE 2006). Established in 1787, the town of St. Patrick served as the first county seat. Five years later, St. Marys replaced St. Patrick as county seat. In 1800, the county seat again changed hands to the city of Jefferson, established in the vicinity of St. Patrick, which practically disappeared after initially losing the county seat. By 1802, a courthouse and jail had been established in Jefferson, which was thriving on the development of the plantation economy. After the Civil War and destruction of the plantation system, Jefferson began to decline and the county seat was once again moved to the city of St. Marys. The county seat remained in St. Marys until 1923 when it was moved to Woodbine, the current Camden County seat (NGE 2006).

During the Antebellum Era, the Camden County economy rested heavily on the backs of plantation system and the cotton and rice industry that sustained the region. After the Civil War, the post-plantation economy of the late nineteenth century was strengthened by the naval stores industries of timber and turpentine. This would subsequently evolve into the pulp wood and paper manufacturing industry so common today. Camden County was Georgia's second leading pulp wood producer in the late 1980s, with nearly three-quarters of its land in commercial forests (NGE 2006). Camden County is one of the fastest growing counties in the state of Georgia. Supporting a population of a little more than 13,000 in 1980, Camden County now has a population in excess of 40,000.

CULTURAL RESOURCES SCREENING

Overall Site Probability

Environmentally based predictive models work by correlating the location of known archaeological sites with the ecological landscapes with which they are associated. They then predict that unknown sites should be present in areas with the same or similar sets of characteristics. The result is the development of high, moderate, and low probability areas based on corresponding site location criteria. Environmental variables of high probability areas are similar or equal to environmental variables associated with known archaeological site locations, while low probability areas are more dissimilar than associated characteristics of extant archaeological locations.

The vast majority of the soils within the boundaries of the proposed site alternatives and their associated APEs are somewhat poorly drained to very poorly drained, which in some areas is used as a primary evaluation tool for determining the relative potential for the recovery of previously unrecorded archaeological sites. Typically, poorly drained soils are considered to have a low probability of containing unrecorded archaeological sites. However, well drained to excessively well drained soils only account for 1.8 percent of the total acreage in a two county (Camden and Glynn counties) region (Rigdon and Green 1977). As a result, other variables such as distance to freshwater, distance to previously recorded archaeological sites, and current land conditions and previous land use may provide greater insight into archaeological site recovery potential. These variables are discussed below within the context of each proposed site alternative.

Site 1

Site 1 measures approximately 1,871 acres and is located between I-95 and US 17, approximately three miles south of the city of Woodbine (Figure 3). According to the Georgia NAHRGIS database, there are no previously recorded archaeological sites within the proposed site boundary and its associated APE. The landscape within the site boundary is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, moderate probability areas have been outlined near the northern and southern wetlands in areas near freshwater and that appear to have not been disturbed by silvicultural activities. The remainder of Site 1 is considered to have a low probability of containing archaeological sites.

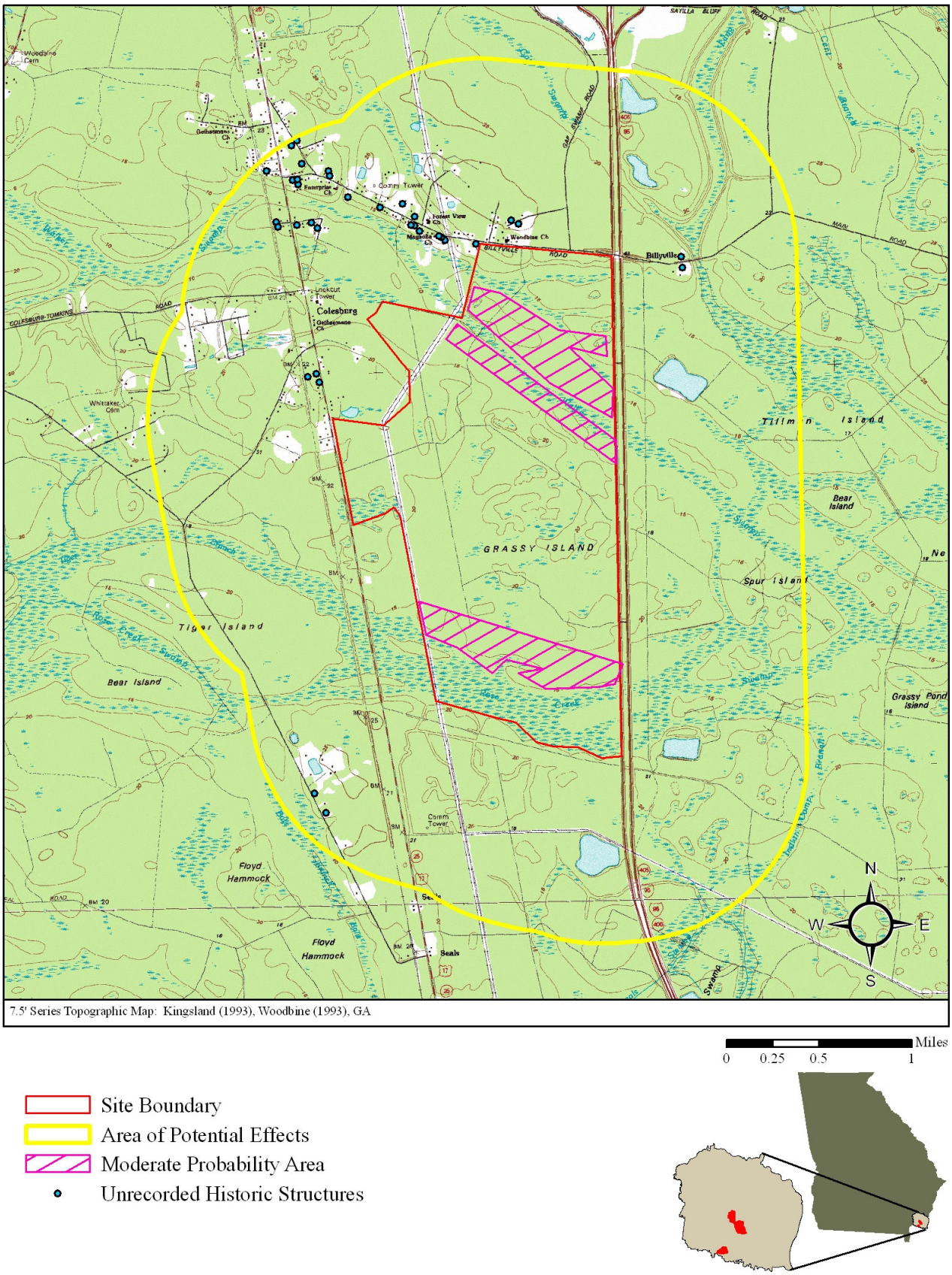

Figure 3. Site 1 Project Area

According to the Georgia NAHRGIS database, there are no previously recorded historic structures with the proposed site boundary and its associated APE. A review of the Camden County GIS website (www.camdencountymaps.com), which contains parcel and construction information, resulted in the identification of 34 previously unrecorded historic and potentially historic structures, none of which were located within the Site 1 boundary. Construction dates ranged from 1900 to 1960. The 1900 construction date is typically used when the date of construction is not known. As a result, pictures, provided by the GIS website, were used to determine the historic nature of individual structures. Not all structures listed with the 1900 construction were determined to be historic. Historic and potentially historic structures and locations are listed below. Based on a cursory evaluation, none of the structures appears eligible for listing in the National Register of Historic Places (NRHP).

Table 2. Historic and Potentially Historic Structures with the Site 1 APE.

Location	Date	Location	Date
Old Jefferson HWY	1953	47 Billyville Road	1951
Old Jefferson HWY	1930	Billyville Road	1960
Billyville Road	1900	382 Billyville Road	1960
Billyville Road	1900	Billyville Road	1955
221 Floyd Lane	1960	249 Billyville Road	1960
258 Gap Swamp Road	1900	390 Billyville Cutoff	1944
1116 Billyville Road	1948	Billyville Cutoff	1950
761 Billyville Road	1960	4788 Old Dixie HWY	1950
681 Billyville Road	1957	Old Granger Circle	1955
958 Billyville Road	1900	76 Trader Lane	1960
894 Billyville Road	1950	4579 HWY 17 N	1955
884 Billyville Road	1955	HWY 17 N	1900
0 Billyville Road	1900	120 Baker Avenue	1955
Billyville Road	1900	210 Baker Avenue	1957
355 Billyville Road	1930	HWY 17 N	1958
Billyville Road	1959	HWY 17 N	1900
29 Billyville Road	1960	12077 HWY 17 N	1955

Site 3

Site 3 is approximately 3,812 acres and is located along the east side of I-95 north of Harriett's Bluff Road (Figure 4). According to the NAHRGIS database, there are no previously recorded archaeological sites within the proposed site boundary and its associated APE. The landscape within the site boundary is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, moderate probability areas have been outlined along the southern portion of the project area near the Crooked River and a small group of wetlands located on the western side of the project

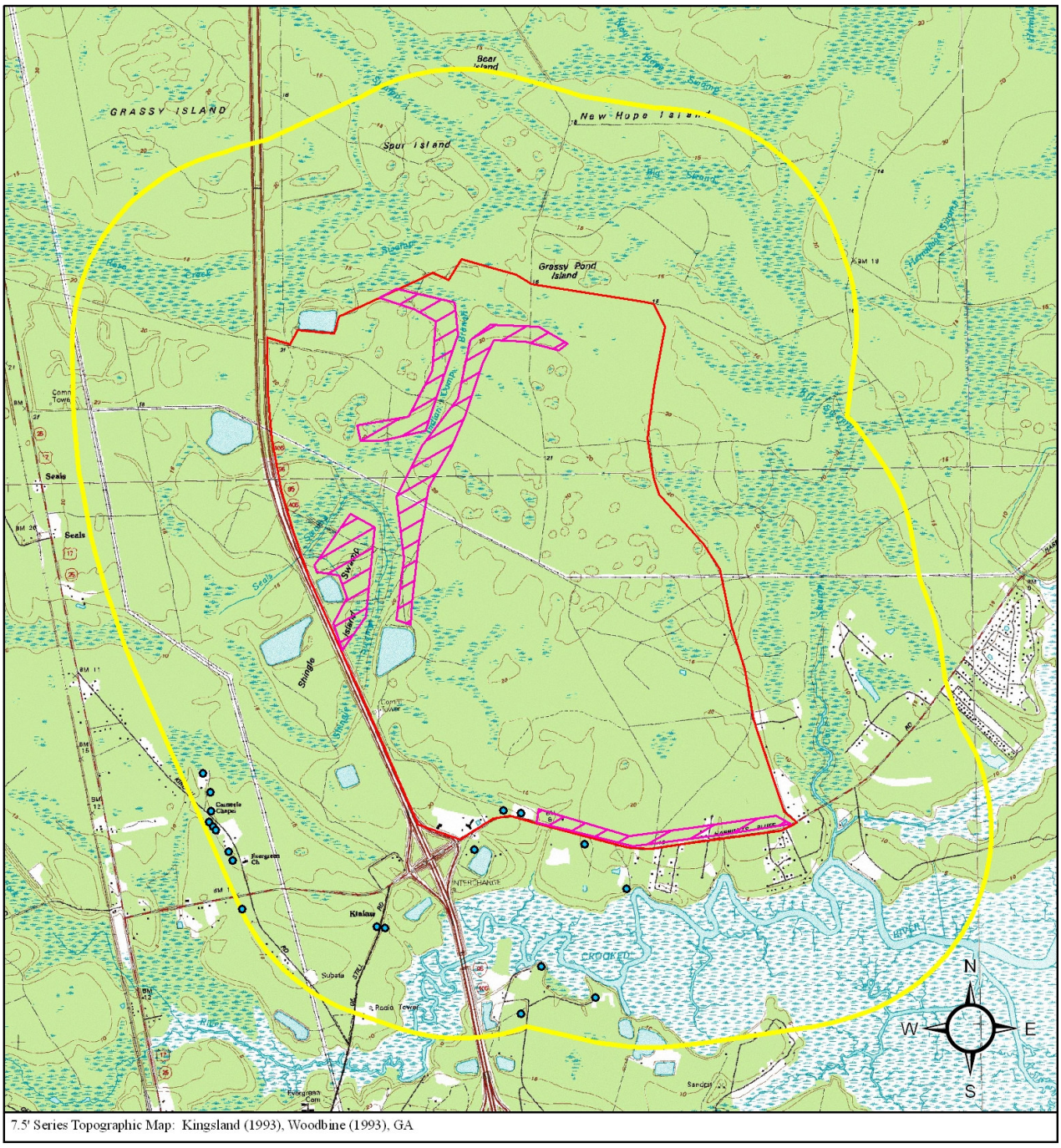

Figure 4. Site 3 Project Area

boundary. These areas are near freshwater and appear to have minimal disturbance from silvicultural activities. The remainder of Site 3 is considered to have a low probability of containing archaeological sites.

According to the Georgia NAHRGIS database, there are no previously recorded historic structures with the proposed Site 3 boundary and its associated APE. A review of the Camden County GIS website resulted in the identification of 19 previously unrecorded historic and potentially historic structures, two of which are located near the southern boundary of Site 3. Construction dates range from 1900 to 1960. The 1900 construction date is typically used when the date of construction is not known. As a result, pictures, provided by the GIS website, were used to determine the historic nature of individual structures. Not all structures listed with the 1900 construction were determined to be historic. Historic and potentially historic structures and locations are listed below. Based on a cursory evaluation, none of the structures appears to be eligible for listing in the NRHP.

Table 3. Historic and Potentially Historic Structures within the Site 3 APE.

Location	Date	Location	Date
Kinlaw Road	1926	William Morris Road	1900
5253 Old Still Road	1945	120 Brazell Lane	1948
Old Still Road	1938	Brazell Lane	1949
1208 Kinlaw Road	1941	904 Brazell Lane	1950
Kinlaw Road	1900	11 Holzendorf Lane	1900
1026 Kinlaw Road	1900	2518 Harrietts Bluff Road	1900
1150 Kinlaw Road	1944	2652 Harrietts Bluff Road	1958
Kinlaw Road	1960	1132 Harrietts Bluff Road	1900
Kinlaw Road	1900	2133 Harrietts Bluff Road	1900
William Morris Road	1900		

Site 9

Site 9 measures approximately 1,568 acres and is located between Vacuna Road and Clarks Bluff Road (Figure 5). According to the NAHRGIS database, there are five previously recorded archaeological sites within the APE. The sites are listed and described below.

Table 4. Archaeological Sites within the Site 9 APE.

Site ID	Site Name	Site Type	Cultural Association	NRHP Eligibility
9CM58	Swampwolf Site	Artifact scatter	Deptford	Ineligible
9CM252	N/A	Artifact scatter	Deptford, San Pedro	Ineligible
9CM253	N/A	Artifact scatter	Prehistoric, Historic	Ineligible
9CM254	N/A	Artifact scatter	Early Woodland, Historic	Ineligible
9CM255	N/A	Artifact scatter	Historic	Ineligible

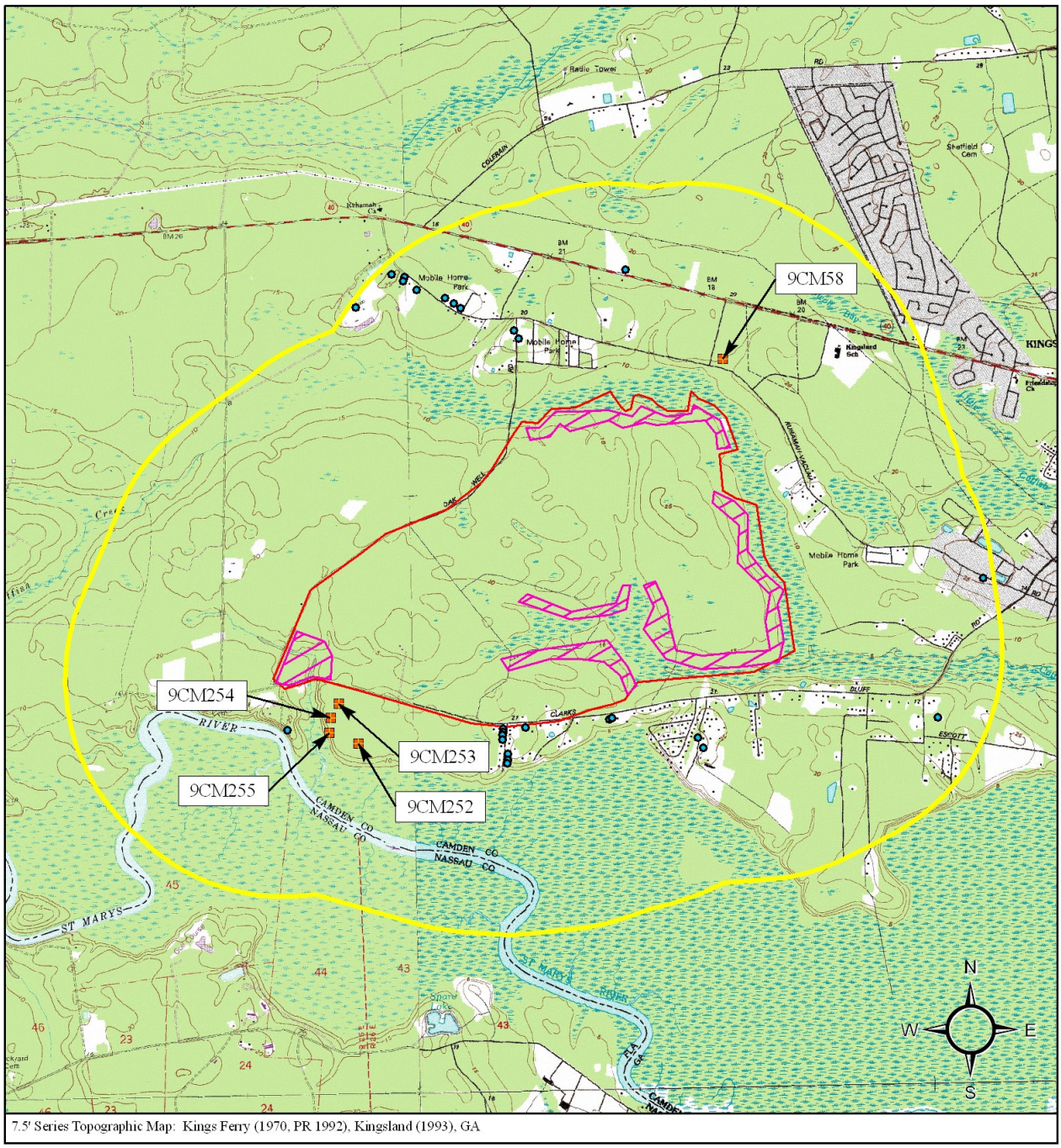

Figure 5. Site 9 Project Area

The landscape within the site boundary, like that of Site 1 and Site 3, is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, moderate probability areas have been outlined along the wetlands surround the northern, eastern, and southern site boundary and the small creek in the southwestern corner, as these areas are potential sources of freshwater. Silviculture disturbance in some of these areas appears to minimal; however, it does exist. The remainder of Site 9 is considered to have a low probability of containing archaeological sites.

According to the Georgia NAHRGIS database, there are no previously recorded historic structures with the proposed site boundary and its associated APE. A review of the Camden County GIS website resulted in the identification of 26 previously unrecorded historic and potentially historic structures, none of which were located within the Site 9 boundary. Construction dates ranged from 1900 to 1960. The 1900 construction date is typically used when the date of construction is not known. As a result, pictures, provided by the GIS website, were used to determine the historic nature of individual structures. Not all structures listed with the 1900 construction were determined to be historic. Historic and potentially historic structures and locations are listed below. Based on a cursory evaluation, none of the structures appears to be eligible for listing on the NRHP.

Table 5. Historic and Potentially Historic Structures with the Site 9 APE.

Location	Date	Location	Date
4230 Vacuna Road	1900	247 Peeples Road	1950
13509 HWY 40 W	1950	186 Peeples Road	1950
66 Oakwell Road	1912	Clarks Bluff Road	1940
4485 Vacuna Road	1900	Clarks Bluff Road	1940
192 Merck Trail	1945	42 Merck Trail	1950
1594 Vacuna Road	1900	3855 Clarks Bluff Road	1900
4120 Vacuna Road	1957	42 Cooner Avenue	1900
459 Lewis Road	1900	1017 Cooner Avenue	1940
4429 Vacuna Road	1900	Cooner Avenue	1900
30 Lynch Lane	1900	1066 Cooner Avenue	1900
1685 Vacuna Road	1951	161 Cooner Avenue	1900
649 Vacuna Road	1950	181 Cooner Avenue	1950
43 Escott Road	1940	3729 Clarks Bluff Road	1940

No-Build Alternative

The existing St. Marys Airport is located approximately two miles north of the central business district of the City of St. Marys. The City of St. Marys is nine miles east of Interstate 95 and is home to the Kings Bay Naval Base. The Airport is approximately two miles south of the Kings Bay Naval Base, adjacent to Georgia Highway 40 and Point Peter Road. The St. Marys Airport was initially constructed and operated by the Federal

Government for use as a Naval flight training facility during World War II. Today, the Airport occupies 286 acres of land. The airport was built over 50 years ago and maintains some historic fabric. If any construction is planned in the future, or if the airport will be abandoned, reused or sold, a cultural resource survey or screening may be required.

No construction is planned at the existing St. Marys Airport. Therefore, the no build alternative will not affect historic or archaeological resources.

CONCLUSIONS

This report presents the results of a cultural resource screening for three site alternatives associated with the proposed relocation of the St. Marys Airport in Camden County, Georgia. The no build alternative also was discussed. The purpose of this screening study is to provide information on historical and archaeological properties within the defined areas of potential effects and to determine how those properties might effect the selection of an individual site alternative.

Site 1 and its associated APE contain no previously recorded archaeological sites and 34 unrecorded historic/potentially historic structures. The moderate probability areas as outlined in Figure 3 constitute approximately 336 acres, or 18 percent of the total site boundary acreage. Site 3 and its associated APE contain no previously recorded archaeological sites and 19 unrecorded historic/potentially historic structures. The moderate probability areas as outlined in Figure 4 constitute approximately 304 acres, or 8 percent of the total site boundary acreage. Finally, Site 9 and its associated APE contain five previously recorded archaeological sites and 26 unrecorded historic/potentially historic structures. The moderate probability areas as outlined in Figure 5 constitute approximately 189 acres, or 12 percent of the total site boundary acreage. The no build alternative has no affect on historic or archaeological properties.

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APPENDIX A
UNANTICIPATED DISCOVERIES PLAN

UNANTICIPATED DISCOVERIES OF ARCHAEOLOGICAL AND HISTORIC SITES INCLUDING HUMAN REMAINS IN GEORGIA

Although a project area may receive a complete cultural resource assessment survey, it is impossible to ensure that all cultural resources will be discovered. Even at sites that have been previously identified and assessed, there is a potential for the discovery of previously unidentified archaeological components, features, or human remains that may require investigation and assessment. Therefore, a procedure had been developed for the treatment of any unexpected discoveries that may occur during site development.

If UNEXPECTED CULTURAL RESOURCES are discovered the following steps should be taken within two days (Saturdays, Sundays and Legal Holidays excluded) (Official Code of Georgia Annotated (OCGA) 12-3-52).

1) Initially, all work in the immediate area of the discovery should cease and reasonable efforts should be made to avoid or minimize impacts to the cultural resources.
2) A qualified Professional Archaeologist should be contacted immediately and should evaluate the nature of the discovery.
3) The Archaeologist will contact the Deputy State Historic Preservation Officer (SHPO) and the Office of the State Archaeologist at the Georgia Department of Natural Resources (DNR).
4) As much information as possible concerning the cultural resource, such as resource type, location, and size, as well as any information on its significance, should be provided to the SHPO.
5) Consultation with the SHPO should occur in order to obtain technical advice and guidance for the evaluation of the discovered cultural resource.
6) If necessary, a mitigation plan should be prepared for the discovered cultural resource. This plan should be sent to the SHPO for review and comment. The SHPO should be expected to respond with preliminary comments within two working days, with final comments to follow as quickly as possible.
7) If a formal data recovery mitigation plan is required, development activities in the near vicinity of the cultural resource should be avoided to ensure that no adverse impact to the resource occurs until the mitigation plan can be executed.

If HUMAN REMAINS are encountered during site development, the stipulations of OCGA 31-21-6 should be followed. All work in the near vicinity of the human remains should cease and reasonable efforts should be made to avoid and protect the remains from additional impact. In cases of inclement weather, the human remains should be protected with tarpaulins. A qualified Professional Archaeologist should be retained to investigate the reported discovery, inventory the remains and any associated artifacts, and assist in coordinating with state and local officials.

1) Any person who accidentally or inadvertently discovers or exposes human remains shall immediately notify the local law enforcement agency with jurisdiction in the area where the human remains are located.
2) Any law enforcement agency notified of the discovery or disturbance of interred human remains shall immediately report such notification to the coroner or medical examiner of the county where the human remains are located, who shall determine whether investigation of the death is required under OCGA 45-16-24. If investigation of the death is not required, the coroner or medical examiner shall immediately notify the local governing authority of the county or municipality in which the remains are found and the Georgia Department of Natural Resources. If the remains are believed to be those of one or more aboriginal or prehistoric ancestors of or American Indians, then the DNR shall notify the Georgia Council on American Indian Concerns. All land disturbing activities likely to disturb the human remains shall cease until:

   The county coroner or medical examiner, after determining that investigation of the death is required, has completed forensic examination of the site;

   A permit is issued for land use change and disturbance to OCGA 36-72-4; a permit is issued or a contract is let pursuant to subsection (d) of OCGA 12-3-52; or written permission is obtained from the landowner for the conduct of an archaeological excavation; or

   If such a permit is not sought, the DNR arranges with the landowner for the protection of the remains.

The points of contact for Georgia are:

Dr. Ray Luce, Deputy State Historic Preservation Officer
Dr. David Crass, State Archaeologist
Georgia Department of Natural Resources
Historic Preservation Division
34 Peachtree Street, NW
Atlanta, GA 30303-2316
PH: 404-656-2840

RS&H

Architectural, Engineering, Planning, and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd South
Jacksonville, Florida 32256
Voice 904 256 2500
Fax 904 256 2501

FL Cert. Nos. AAC001886 EB0005620 LCC0002!0

February 1, 2006

Ms. Barbara Jackson, Coordinator
Georgia State Clearinghouse
270 Washington St. SW, 8th Floor
Atlanta, GA 30335

Dear Ms. Jackson:

RE: Replacement St. Marys Airport
City of St. Marys/Camden County, Georgia
Request for Information

Due to airspace constraints associated with the location of the Kings Bay Naval Base and the inability of the St. Marys Airport to fulfill its role in the state and National aviation system plan, the City of St. Marys has initiated a project to relocate/replace the Airport. In a report issued in 2005 the feasibility of relocating the Airport was evaluated and several sites selected for further environmental analysis. A copy of the report (i.e., Airport Feasibility and Site Selection Report) can be obtained from the City of St. Marys website, at www.ci.st-marys.ga.us.

Relocation of the Airport would include the acquisition of approximately 500 acres of property, site clearing, grading and construction of various site improvements to include a primary runway, taxiways, and related airport facilities. Prior to the final approval of a proposed site, the Federal Aviation Administration (FAA) requires preparation of an Environmental Assessment (EA), pursuant to FAA Order 5050.4A, *Airport Environmental Handbook*, with input from various local, state and federal agencies. During the EA process, three specific site locations are being evaluated as "build" alternatives (i.e., Sites 1, 3 and 9), with the "no-build" alternative maintaining the Airport at it's existing site (4J6), see Attachment A. Reynolds, Smith and Hills, Inc, has been selected by the City of St. Marys to prepare the EA.

The purpose of this letter is to seek initial input from various agencies that may have information concerning potential environmental impacts associated with the selection of

the "build" and/or "no-build" alternatives. If your office and/or other state agencies have any environmental information relating to the impact categories listed in Attachment B, please provide this information to the undersigned within 30 days at the address indicated above, for consideration and possible inclusion in the EA. I have also included with this letter an additional ten (10) copies for distribution to other state agencies.

Thank you in advance for your assistance with the preparation of this EA, and please feel free to contact me at 904.256.2108, or bill.sandifer@rsandh.com, if you have any questions or comments.

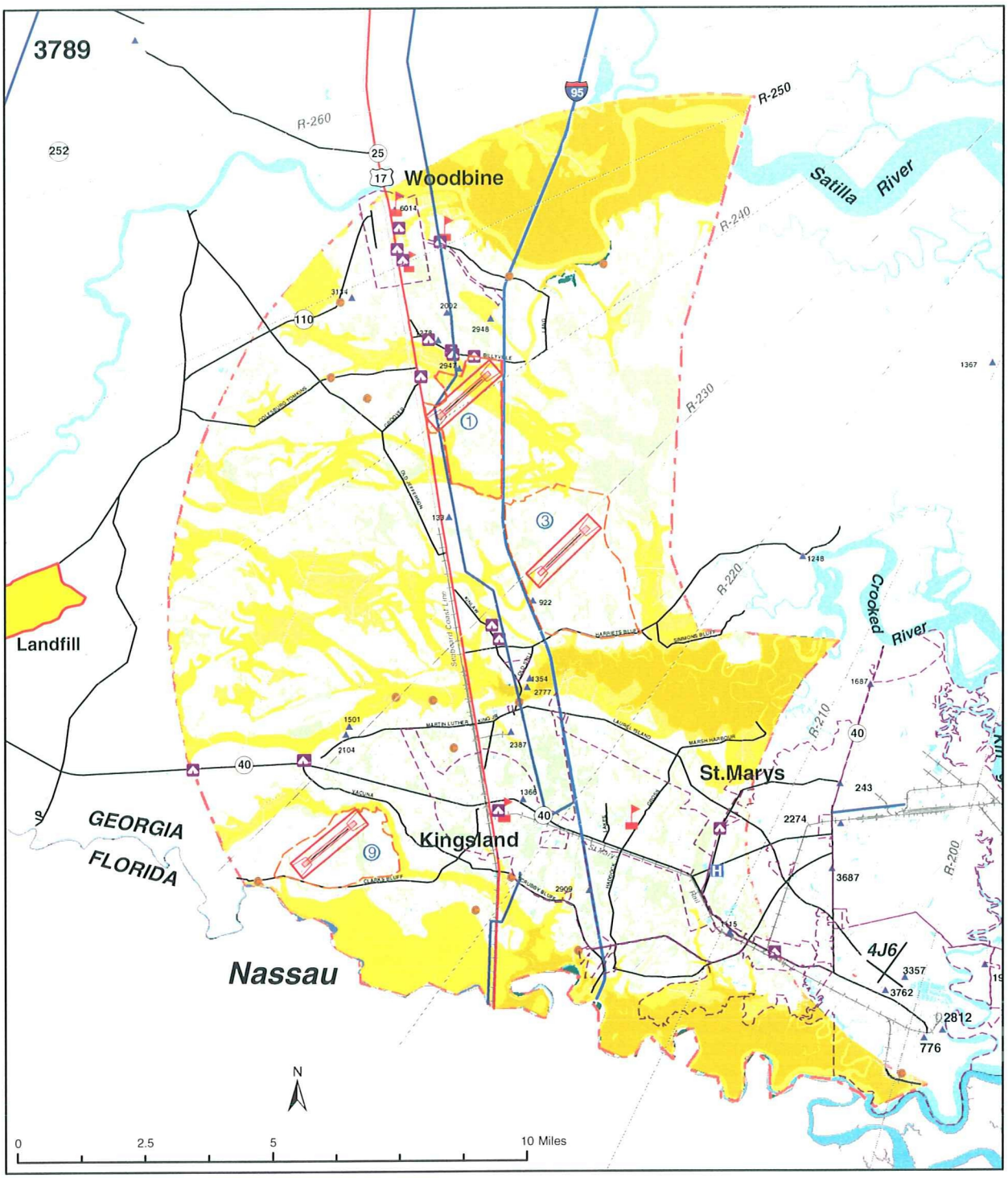
Very truly yours,

REYNOLDS, SMITH AND HILLS, INC.

William C. Sandifer, A.A.E
Vice President

cc: City of St. Marys
File

ATTACHMENT A



- Camden County Municipalities
- Prospective Airport Development Site
- Interstate Highway
- U.S. Route
- State Routes & Primary Roadways
- County & Secondary Roadways
- R-250 Radial From Brunswick VOR
- Active Railroad Tracks
- High-Tension Utility Line
- Inactive Railroad Tracks
- Revised Study Area
- Prospective Airport Property Boundary
- Prospective Runway & Safety Areas
- Esturine Wetlands
- Palustrine Wetlands
- Lustrine Wetlands
- Riverine Wetlands
- 100-Year Floodplain
- Hospitals
- Churches
- Cemetaries
- Schools
- FAA Obstructions

ATTACHMENT B

City of St. Marys
Replacement St. Marys Airport
Environmental Assessment

The environmental impact categories to be evaluated in the EA are described in Federal Aviation Administration (FAA) Order 5050.4A, and include the following:

1. Noise
2. Compatible Land Use
3. Social Impacts
4. Induced Socio-economic Impacts
5. Air Quality
6. Water Quality
7. Department of Transportation Section 4(f) Lands
8. Historic, Architectural, Archeological and Cultural Resources
9. Biotic Communities (Flora and Fauna)
10. Threatened and Endangered Species (Flora and Fauna)
11. Wetlands
12. Floodplains
13. Coastal Zone Management
14. Coastal Barriers
15. Wild and Scenic Rivers
16. Farmland
17. Energy Supply and Natural Resources
18. Light Emissions
19. Solid Waste Impact
20. Construction Impacts
21. Environmental Justice
22. Design, Art and Architectural Application

Georgia Department of Natural Resources

2 Martin Luther King, Jr., Drive, SE, Floyd Towers East, Atlanta, Georgia 30334

Reply To:
Floodplain Management
Suite 440
7 Martin Luther King Jr. Drive
Atlanta, Georgia 30334
(404) 656-6382

Noel Holcomb, Commissioner
Carol A. Couch, PhD, Director
Environmental Protection Division

February 20, 2006

Reynolds, Smith, and Hills, Inc
ATTN: William C. Sandifer, A.A.E.
10748 Deerwood Park Boulevard South
Jacksonville, FL 32256-0597

Re: Preliminary Floodplain Determination Review for a replacement St. Marys Airport, located as shown by Attachment "A", sites #1, #3, and #9, Camden County, Georgia – each about 500 acres

Dear Mr. Sandifer:

Examination of the Flood Insurance Rate Map (FIRM) for Camden County, Georgia (panel #240 C, #245 C and #360 C, #350 C and #365 C, all effective September 30,1988), indicates that sites #1 and #3 referenced above encroach on federally designated Special Flood Hazard Areas (SFHAs), which are also known as the areas of the 1-percent annual flood event or the 100-year floodplains. Site #9 appears to avoid any SFHA encroachment. When more detailed site-specific information is received, additional comments may be made.

Pursuant to Executive Order 11988 (Floodplain Management), direct or indirect federal support of floodplain development should be avoided unless there are no practicable alternatives. If there are no practicable alternatives and development in the floodplain is to be undertaken, the federal agency should document the reasons supporting this finding through the notification procedures outlined in the Executive Order.

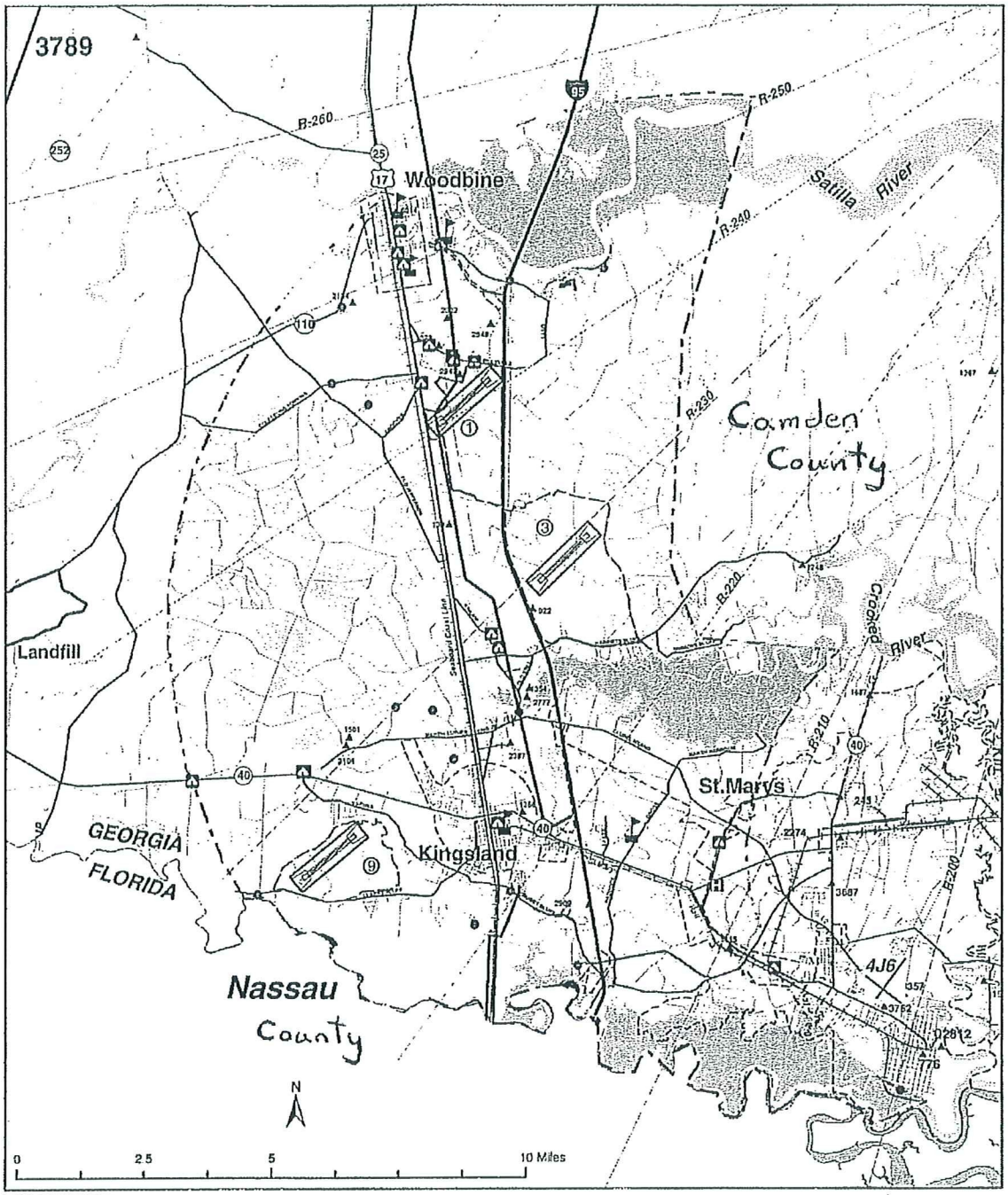
Please note State law requires that an erosion and sedimentation permit must be obtained from either the State of Georgia or the local issuing authority prior to any land-disturbing construction.

If there are any questions regarding this determination, please contact me at (404) 656-6382.

Sincerely,

Alan J. Giles
Information Geologist
Floodplain Management Office

ATTACHMENT A



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United States Department of the Interior

Fish and Wildlife Service

105 West Park Drive, Suite D
Athens, Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

RECEIVED
FEB 27 2006
RS&H
AVIATION

FEB 24 2006

William C. Sandifer, A.A.E.
Vice President
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256-0597

Re: FWS # 06-I-0190

Dear Mr. Sandifer:

Thank you for your letter received February 02, 2006, requesting comments relating to potential environmental impacts on threatened and endangered species in the vicinity of your proposed three airport development site alternatives (Sites 1, 3 and 9) in Camden County, Georgia. The purpose of your letter is to seek initial input from various agencies that may have information concerning potential environmental impacts associated with the selection of the "build" and/or "no-build alternatives. These comments are provided in accordance with provisions of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661 *et seq.*), and the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 *et seq.*) to further the conservation of fish and wildlife resources and their habitat, including federally listed threatened and endangered species.

Relocation of the airport would include the acquisition of approximately 500 acres of property, site clearing, grading, and construction of various site improvements to include a primary runway, taxiways, and related airport facilities. Prior to the final approval of a proposed site, the Federal Aviation Administration (FAA) requires preparation of an Environmental Assessment (EA), pursuant to FAA Order 5050.4A, *Airport Environmental Handbook*, with input from various local, state, and federal agencies. During the EA process, three specific site locations are being evaluated as "build" alternatives, with the "no-build" alternative of leaving the airport at the current site (4J6).

The sites being evaluated are:

Site 1 - This site is located approximately three miles south of the City limits of Woodbine, and seven miles north of the City of Kingsland. The boundaries of the site include Billyville Road to the north, US Highway 17 to the west and Interstate 95 to the east.

Site 3 – This site is located approximately one-quarter mile east of Interstate 95, one-quarter mile north of Harriet's Bluff Road, and four miles north of the City of Kingsland.

Site 9 – This site is located three and one-half miles west of US Highway 17, one mile south of State Road 40, between Clarks Bluff and Vacuna Road.

Because of the Federal trust resources potentially at risk, the U. S. Fish and Wildlife Service (Service) considers the impact of your project on all uplands, and wetlands within the project area and Wildlife Hazard Management Plan area (before and after a hazardous event). A complete list of state and federally threatened or endangered protected species are located at our Georgia Ecological Service website (www.fws.gov/athens/) to aid in your threatened and endangered species surveys. For more site-specific information, please contact the Georgia Natural Heritage Program (770-918-6411 or 706-557-3032) or visit their website (www.georgiawildlife.com).

Federally listed species potentially in the area of your project and Wildlife Hazard Management Plan area are: bald eagle (*Haliaeetus leucocephalus*), eastern indigo snake (*Drymarchon corais couperi*), red-cockaded woodpecker (*Picoides borealis*), and wood stork (*Mycteria Americana*). Listed species data do not take into consideration Florida nests.

Bald Eagle (*Haliaeetus leucocephalus*):

> **Site 1:** According to our most recent data, the two closest bald eagle nests are approximately six miles from this project site and seven bald eagle nests are within fifteen miles.
>
> **Site 3:** Our most recent data shows one bald eagle nest within five miles from this project site and seven bald eagle nests within thirteen miles.
>
> **Site 9:** Our most recent data shows two bald eagle nests within eleven miles from this project site and seven bald eagle nests within nineteen miles.

Eastern Indigo Snake (*Drymarchon corais couperi*):

Sites 1, 3 and 9: Due to the Eastern indigo snake's seasonal long range movements, we recommend all persons working on-site be given indigo snake awareness training prior to the initiation of the project. At a minimum, the program should emphasize the federally protected status of the snake, the implications of such designation, a discussion of the concept, and definition of "take" as defined under the ESA, and the legal ramifications of "take". Identification and beneficial aspects of indigos natural history should also be covered.

The project leader should have this Eastern indigo snake brochure on-site (enclosed). This brochure contains much of the information required for training project employees and distinguishing features of the indigo snake relative to similar species are also included. Report all suspected indigo snake sightings, including dead or injured, immediately to our Coastal Sub Office in Brunswick, Georgia at (912)265-9336.

Flatwoods Salamander (*Ambystoma cingulatum*):

Site 1, 3 and 9: Adult and subadult salamanders are fossorial; found in open mesic pine/wiregrass flatwoods dominated by longleaf of slash pine and maintained by frequent fire. During their breeding period, which coincides with heavy rains from October – December they move to isolated, shallow, small, depressions (forested with emergent vegetation) that dry completely on a cyclic basis.

Red-Cockaded Woodpecker (*Picoides borealis*):

Sites 1, 3 and 9: If the Site 1 project will be removing pine stems greater than or equal to thirty years of age from pine or pine-hardwood (fifty percent or more pine) communities (potential foraging habitat of the red-cockaded woodpecker), then suitable nesting habitat (pine stems greater than or equal to sixty years of age) should be surveyed for any colonies of red-cockaded woodpeckers within one-half mile of the project's impact.

Wood Stork (*Mycteria Americana*):

Site 1: According to our most recent data, there are three active wood stork colonies within fifteen miles and seven active colonies within forty miles. There are also eleven historic colonies within forty miles and one historic colony location within nine miles. There are a total of eighteen current or historic rookeries in Georgia within foraging range (usually within forty miles of the colony site).

Site 3: According to our most recent data, there are two active wood stork colonies within eleven miles and seven active colonies within forty three miles. There are also eleven historic colonies within forty five miles and one historic colony location within five miles. There is a total of eighteen current or historic rookeries in Georgia within foraging range (usually within forty miles of the colony site).

Site 9: According to our most recent data, there are six active colonies within thirty five miles and one active wood stork colony within eleven miles. There are also nine historic colonies within thirty eight miles and one historic colony location within nine miles. There is a total of fifteen current or historic rookeries in Georgia within foraging range (usually within forty miles of the colony site).

The following information is requested by the Service to aid in our review of your proposed project regarding endangered and threatened species:

1. A brief project description of all three sites including a project layout showing all primary and secondary runway, taxiways, and related airport facility locations in relation to easily identifiable geographic features. A National Wetlands Inventory map or a USGS topographic quadrangle map is preferred.

2. Concise current habitat descriptions of all three sites indicating whether the project area is composed of forests, agricultural fields, pasture, wetlands, marsh, , etc. If forested, indicate community type such as pine-hardwood forest, and approximate

ages of trees. Include acreage of habitat types that will require new clearing of vegetation or habitat alteration such as filling.

3. Description of the habitats within all three sites that are likely to be used by any of the listed species which are found on our county list.

4. Where habitat types to be altered coincide with the habitat requirements of a listed species, an on-site inspection of the area must be conducted to determine if listed species are present or occur seasonally. Based on some of the habitat we observed during our visit to Site 1 on April, 21, 2005, we recommend surveying for the flatwoods salamander at that location, even though they do not appear on our most recent protected species list for this area. Sites 3 and 9 should be evaluated for flatwoods salamander habitat. Surveys should be done by qualified personnel and be conducted during the appropriate time of day and/or year (Flatwoods salamanders – mid-February through March 31) to ensure confidence in survey results. Results of your surveys should be forwarded to our Coastal Georgia Sub Office.

5. Project impacts and various construction techniques must be considered for possible impacts to protected species at all sites. Along with the survey results, include your analysis of the effects of the action on listed species within the project area and your Wildlife Hazard Management Plan area (before and after a hazardous event).

The U. S. Department of Transportation, FAA Advisory Circular No: 150/5200-33A, Hazardous Wildlife Attractants On or Near Airports provides guidance concerning the placement of new airport movement in the vicinity of hazardous wildlife attractants. According to this circular Section 1-2 , "Land use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions." Of the three sites being evaluated, two are within two miles of the proposed Brodfield Mitigation Bank. Based on this information, the Service recommends that proposed airport sites 1 & 3 be reevaluated if the proposed Brodfield Mitigation Bank is developed.

We appreciate the opportunity to comment during the conceptual stage of your project. If you have any additional questions, please write or call our Coastal Georgia Sub Office staff ecologist, Ted Martin, at (912) 265-9336 extension 22.

Sincerely,

Stan L. Colwell

Sandra S. Tucker
Field Supervisor for

Enclosure

cc: USFWS, Athens, Georgia

HAROLD E. LINNENKOHL
COMMISSIONER
(404) 656-5206

DAVID E. STUDSTILL, JR., P.E.
CHIEF ENGINEER
(404) 656-5277

Department of Transportation

State of Georgia
#2 Capitol Square, S.W.
Atlanta, Georgia 30334-1002

RECEIVED
MAR 15 2006
RS&H
AVIATION

LARRY E. DENT
DEPUTY COMMISSIONER
(404) 656-5212

EARL L. MAHFUZ
TREASURER
(404) 656-5224

March 1, 2006

Mr. William C. Sandifer, A.A.E.
Vice President
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256-0597

Subject: Executive Order 12372 – Solicitation for Preliminary Comments Regarding EA for the City of St. Mary's/Camden County, Georgia – Relocate/Replace St. Mary's Airport

Dear Mr. Sandifer:

The Office of Planning has identified several projects that are located in the areas of the proposed subject construction project. The projects include the widening and improvements along the I-95 corridor in Camden County. Project locations can be viewed at our website at:

http://gdot-web1.dot.state.ga.us/trex/viewer.htm

Coordination between the project developers and the Department's District 5 Engineer should take place prior to construction since the developments are located adjacent to the proposed GDOT projects. For more information, please call Glenn Durrence, District 5 Engineer, at (912) 427-5700. If this office can be of further assistance, please do not hesitate to contact Michelle Caldwell at (404) 657-6911.

Sincerely,

Matthew Fowler

Joseph P. Palladi, P.E.
for State Transportation Planning Administrator

JPP:MAC

cc: Glenn W. Durrence, P.E., District Engineer, District 5

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 889
SAVANNAH, GEORGIA 31402-0889

REPLY TO
ATTENTION OF:

FEB 2 1 2006

Regulatory Branch
200500390

Reynolds, Smith and Hill, Inc
Attention: William C. Sandifer
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256

Dear Mr. Sandifer:

I refer to your letter dated February 1, 2006, concerning the proposed relocation of the St. Marys Airport, which may impact jurisdictional wetlands in Camden County, Georgia. I also refer to our Pre-application meeting of April 5, 2005, attended by representatives from National Marine Fisheries, Federal Aviation Association, US Fish and Wildlife, Corps on Engineers, and Reynolds, Smith and Hill, Inc. This project has been assigned number 200500390. Please refer to this number in any future correspondence.

Please be advised that if your proposed work will be occurring in wetlands or waters of the United States, you will require authorization from the US Army Corps of Engineers. The US Army Corps of Engineers has been charged by Congress, under Section 404 of the Clean Water Act (33 U.S.C. 1344), with the responsibility to regulate all fill activities performed in the waters of the United States. The placement of fill material in wetlands without prior approval constitutes a violation of Section 404.

Three possible locations for the proposed airport were discussed during the above mentioned meeting. You were informed that once a final location was chosen you would have apply for a Department of the Army permit for any proposed impacts to Waters of the US.

If you decide you would like another pre-application meeting with the above mentioned agencies please contact me and I will discuss with you the scheduling of the meeting. I have attached a schedule of the meeting dates for the Regulatory Branch. Please note your project will have to be reviewed in the southern section due to the location of the project.

Should you have any questions regarding this matter, please call me at (912) 652-5893.

Sincerely,

Terry C Kobs
Regulatory Specialist, Southern Section

US ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT REGULATORY BRANCH 2006 INTER-AGENCY MEETINGS				
DATE	**LOCATION**	**MEETING**	**Project Manager**	**Phone Number**
10 Jan	Atlanta	Pre-Application	Alan Miller	678-422-2729
11 Jan		MBRT		
12 Jan		Quarterly		
7 Feb	Savannah	Pre-Application	Richard Morgan	912-652-5139
8 Feb		MBRT		
7 Mar	Atlanta	Pre-Application	Gary Craig	678-422-2728
8 Mar		MBRT		
4 Apr	Savannah	Pre-Application	Richard Morgan	912-652-5139
5 Apr		MBRT		
6 Apr		Quarterly		
9 May	Atlanta	Pre-Application	Mary Dills	678-422-2727
10 May		MBRT		
6 Jun	Savannah	Pre-application	Richard Morgan	912-652-5139
7 Jun		MBRT		
11 Jul	Atlanta	Pre-Application	Jason Steele	678-422-2730
12 Jul		MBRT		
13 Jul		Quarterly		
8 Aug	Savannah	Pre-Application	Richard Morgan	912-652-5139
9 Aug		MBRT		
12 Sep	Atlanta	Pre-Application	Alan Miller	678-422-2729
13 Sep		MBRT		
3 Oct	Savannah	Pre-Application	Richard Morgan	912-652-5139
4 Oct		MBRT		
5 Oct		Quarterly		
7 Nov	Atlanta	Pre-Application	Gary Craig	678-422-2728
8 Nov		MBRT		
5 Dec	Savannah	Pre-Application	Richard Morgan	912-652-5139
6 Dec		MBRT		

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31402-0889

Regulatory Branch
200500390

Reynolds, Smith and Hill, Inc
Attention: William C. Sandifer
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256

Dear Mr. Sandifer:

I refer to your letter and accompanying draft Environmental Assessment (EA) dated June 2, 2006, concerning the proposed relocation of the St. Marys Airport. I also refer to our letter dated February 21, 2006, concerning the need for authorization from the US Army Corps of Engineers for any impacts occurring in wetlands or other waters of the United States. This project has been assigned number 200500390. Please refer to this number in any future correspondence.

As stated in our above mentioned letter, if the proposed work will be occurring in wetlands or waters of the United States, authorization will be required from the US Army Corps of Engineers. The US Army Corps of Engineers has been charged by Congress, under Section 404 of the Clean Water Act (33 U.S.C. 1344), with the responsibility to regulate all fill activities performed in the waters of the United States.

Once a completed application has been received we will begin our review process. The first step in our review of your permit application is to determine the basic purpose of the project. A project's basic purpose acts to guide the scope of review pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act as outlined in Title 40 of the Code of Federal Regulations (40 CFR), published in the Federal Register on December 24, 1980.

The 404(b)(1) guidelines are sequential and require that you: avoid unnecessary environmental impacts by preparing an analysis of available off and on-site alternatives that would potentially result in less adverse impacts than your proposed project; to the maximum extent practicable, minimize the unavoidable adverse impacts of your preferred alternative; and finally, provide a compensatory mitigation plan to replace the wetland functions lost as a result of unavoidable adverse impacts associated with your project. The USACE can only issue a permit for the least environmentally damaging practicable alternative that meets the project's basic purpose. If it is otherwise a practicable alternative, an area not presently owned by you which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed project may be considered. Therefore, your basic project purpose will be a critical element in our evaluation for compliance with the 404(b)(1) Guidelines.

Based on a review of the draft EA the basic project purpose would be to relocate the St. Marys Airport and the basic need is to provide an airport facility that is unconstrained from airspace restrictions surrounding Kings Bay Naval Base. The draft EA discusses three sites which would meet the basic need and purpose of the proposed project.

Site 1 is indicated as the preferred alternative even though it would result in the most wetland impacts of the three alternatives. It appears that this site is preferred largely based on the fact that the land would be donated and part/all of the land owners of site 3 and 9 do not want to sell their land. The unwillingness of the local governments to resort to eminent domain in order to obtain the property was also discussed. However, inadequate information is contained in the draft EA necessary to document that site 1 would be the least environmentally damaging practicable alternative that meets the project's basic purpose.

Once a completed application is received by this office a public notice will be issued requesting comments from the public and state and federal agencies. All comments received and any additional information provided by you will be reviewed before a final discussion is made.

If you have any questions concerning the information above, please call Terry Kobs at (912) 652-5893.

Sincerely,

Richard W. Morgan
Team Leader
Southern Section

Copies Furnished:

US Department of Transportation
Federal Aviation Administration
Attention: Scott Seritt , Manager, Atlanta ADO
1701 Columbia Avenue
Campus Building, Suite 2-260
College Park, Georgia 30337

Copies Furnished Continued:

William Shanahan, Jr.
City Manager, City of St. Marys
418 Osborne St.
St. Marys, Georgia 31558

U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Atlanta Airports District Office

1701 Columbia Avenue
Campus Building, Suite 2-260
College Park, Georgia 30337

August 9, 2006

Mr. William P. Shanahan, Jr.
City Manager
City of St. Marys
418 Osborne Street
St. Marys, GA 31558

Dear Mr. Shanahan:

This is in response to the submittal of the Environmental Assessment (EA) for the St. Marys Replacement Airport. We have reviewed the EA and offer the following comments:

1. While the FAA accepts the submittal of the EA for the proposed 6,000-foot runway, the FAA has justified a total runway length of 5000 feet for the new airport. It should be noted that this environmental processing for a total runway length of 6000 feet indicates only that the actions would, if implemented, be consistent with the environmental requirements. FAA acceptance does not represent a commitment to provide federal financial assistance to implement any development, nor does it mean that we find funding of the proposed airport development justified.

2. The title page should include: "St. Marys, Georgia".

3. Specific justification for the G-V as the critical aircraft must be included. Letters from owners who use the airport would be very helpful in the determination.

4. Page 17-What is the earth embankment? Isn't an ILS planned for the airport? Include all development items on the list.

5. Page 18-Section 2.2-Unconditional approval of the proposed "Airport Layout Plan", and "possible" future AIP funding (not "approval of").

6. Page 18-Figure 1.5 is the existing airport, not the new one.

7. Page 21-Section 3.1-The existing airport does meet the minimum FAA standards for safety and efficiency.

8. Page 21-Section 3.1-Why would the existing airport close should the No-build alternative be chosen?

9. Page 23-Section 3.2-Include comparative cost estimates for the alternatives. The costs will be a factor in the final decision on the preferred alternative. Even though "a portion" Site 1 is being donated, the costs of moving the transmission lines and other obstructions and wetland mitigation should be included for comparison.

10. Page 23-It appears that Site 1 will require re-zoning to remove the potential for residential development near the airport.

11. Figure 3.2 and Figure 3.3-Why is so much additional property being shown for these two sites above what will be needed for the airport? The FAA will not fund acquisition of property beyond that needed for the airport development as in Figure 1.6. Only that property necessary for development of the airport should be included in the cost estimates.

12. Why were sites chosen for alternative evaluation if it was known that the property owners were not willing to sell and the City would not use eminent domain?

13. Page 43-There is another reference to Site 1 being a "Planned Development district" which will allow residential areas near the airport.

14. Figure 4.8 shows the RPZ going through the Interstate. The RPZ is to protect persons and property on the ground. If possible, the runway should be designed to eliminate the roadway from the RPZ.

15. Figure 4.11 is missing.

16. Page 72-Show the residences to be acquired on figures 5.8, 5.9, 5.10, and 5.11.

17. Figure 5.10-Why is there so much difference in the length of the noise contours for the existing site and for the proposed site?

18. Figure 5.15-Can Site 3 be shifted north to avoid residential areas?

19. Page 99-The FAA Advisory Circulars are advisory, but as attached to Grant Agreements, they become Airport Standards.

20. Page 100-Go into more detail about the wildlife survey, that qualified people conducted it, when it was done, etc. Why wasn't a survey done for the salamander? The requested information by US Fish and Wildlife Service should be addressed in the document, including the proposed Broadfield Mitigation Bank.

21. Due to the numbers of potential hazardous wildlife in the area of the proposed site, a Wildlife Hazard Assessment will likely be made a condition of the Federal Finding.

22. Page 104-Section 5.11.1-The document should contain at least conceptual mitigation for the 59 acres of floodplain impacts so that FEMA and the State agencies may comment on the proposal. Refer to the letter from Georgia Department of Natural Resources.

23. Page 107-Section 5.13-Was there a survey done for cultural resources in the probability areas? There should be more explanation as to why none of the old homes in Tables 5-5, 5-6, and 5-8 are considered eligible.

24. Page 128-Section 5.19.1-Approximately two hundred twenty-eight acres of wetlands will be taken in Site 1. Has this delineation been confirmed by the USACOE? Who made the determination on the value of the wetlands? Coordination with the USACOE should be accomplished to determine the actual impacts of this taking. Mitigation will likely not be approved at or near the proposed site (or within the FAA separation criteria).

25. The cumulative impacts of the I-95 widening and improvement project should be discussed per the letter from the State of Georgia Department of Transportation.

Once these comments have been addressed, you may begin the coordination with the appropriate agencies, including the state clearinghouse. Add all of the responses to the appendix. Add the certification that an opportunity for a hearing was provided to the public (including the advertisement). If a hearing is held, the transcript should be included.

Upon completion of the final steps, send two copies for the final EA to this office. Should you have any questions, please, give me a call.

Sincerely,

Bonnie Baskin
Environmental Program Manager

Mayor, Council, Bobby Howe, Matt Tinsley and Bill Sadleir

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: William Shanahan, Jr.
City of St. Marys
418 Osborne Street
St. Marys, GA 31558

FROM: Georgia State Clearinghouse

DATE: 9/13/2006

SUBJECT: Executive Order 12372 Review

APPLICANT: City of St. Marys, GA

PROJECT: Draft EA: Replacement St. Marys Airport (Camden County, GA)

CFDA #:

STATE ID: GA060913003

FEDERAL ID:

Correspondence related to the above project was received by the Georgia State Clearinghouse on 9/13/2006. The review has been initiated and every effort is being made to ensure prompt action. The proposal will be reviewed for its consistency with goals, policies, plans, objectives, programs, environmental impact, criteria for Developments of Regional Impact (DRI) or inconsistencies with federal executive orders, acts and/or rules and regulations, and if applicable, with budgetary restraints.

The initial review process should be completed by 10/12/2006 (*approximately*). If the Clearinghouse has not contacted you by that date, please call (404) 656-3855, and we will check into the delay. We appreciate your cooperation on this matter.

In future correspondence regarding this project, please include the State Application Identifier number shown above. If you have any questions regarding this project, please contact us at the above number.

Form SC-1
April 2003

Georgia Department of Natural Resources

Noel Holcomb, Commissioner

Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer
34 Peachtree Street NW, Suite 1600, Atlanta, Georgia 30303-2316
Telephone (404) 656-2840 Fax (404) 657-1040 http://www.gashpo.org

September 28, 2006

Georgia State Clearinghouse
Attn: Barbara Jackson
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

RE: Replace St. Marys Airport
Camden County, Georgia
Federal Agency: FAA
GA-060913-003

Dear Ms. Jackson:

The Historic Preservation Division (HPD) received your letter regarding the above referenced project. Our comments are offered to assist federal agencies and their applicants in complying with the provisions of Section 106 of the National Historic Preservation Act.

However, insufficient information was provided. Once the airport site is selected, the applicant will need to conduct a survey for archaeological and historic resources within the Area of Potential Effect (APE). Since the Draft EA did not adequately evaluate cultural resources, HPD's **Environmental Review Form** is enclosed. A PDF version is also available on our website. While we do not mandate the use of this form, it can guide the applicant in providing the information we need to complete our review.

Please note that the responsibility for preparing documentation, including the identification of historic resources and the assessment of effects, rests with the federal agency or its designated applicant. In addition to the archaeological survey of areas of ground disturbance, we will also need a survey of every building or structure over 50 years of age that may be affected by the proposed new airport. As requested on the review form, each building should be individually photographed and evaluated for National Register eligibility. All photos should be numbered and keyed to maps or site plans. Please also be aware that the APE could include any adjacent or nearby historic buildings that may be indirectly affected by lights or noise.

Please refer to the project number referenced above in any future correspondence regarding this matter. If we may be of further assistance, please contact me at (404) 651-6624, or Denise Messick, Environmental Review Historian at (404) 651-6777.

Sincerely,

Elizabeth Shirk

Elizabeth Shirk
Environmental Review Coordinator

ES:dpm
cc: Patricia Barefoot, Coastal Georgia RDC
Reynolds, Smith and Hills, 10748 Deerwood Park Boulevard South, Jacksonville, FL 32256

RECEIVED
OCT 0 2 2006
GEORGIA
STATE CLEARINGHOUSE

HPD USE ONLY
Project # Assigned
_____

Georgia Historic Preservation Division
Environmental Review Form

Georgia Department of Natural Resources

At a minimum, the Historic Preservation Division (HPD), Georgia State Historic Preservation Office (SHPO), may require the following information in order to review projects in accordance with applicable federal or state laws (Section 106 of the National Historic Preservation Act or the Georgia Environmental Policy Act, etc). Please note that responsibility for preparing documentation, including the identification of historic resources and the assessment of potential effects resulting from an undertaking, rests with the federal or state agency or its designated applicant. If insufficient information is provided, we may request additional materials. The role of the SHPO is to review, comment, and consult with federal/state agencies, applicants, and consultants.

I. General Information

A. **Project Name**: _____

Project Address: _____

City: _____ County: _____

Project Number: _____ PI Number (if applicable): _____

U. S. Congressional District - see http://www.census.gov/geo/www/cd108th/GA/plc_c8_13.pdf : _____

B. **Federal Agency**: _____

State Agency (if applicable): _____

C. **Agency's Involvement:**

- ☐ Funding
- ☐ License/Permit
- ☐ Direct/Is performing the action
- ☐ Unknown
- ☐ Other, please explain: _____

D. **Project Type:**

- ☐ Road/Highway Construction or Improvements
- ☐ Demolition
- ☐ Rehabilitation
- ☐ Addition to Existing Building/Structure
- ☐ New Construction
- ☐ Relicensing
- ☐ Utilities/Infrastructure
- ☐ Unknown
- ☐ Other: _____

E. **Level of Review:**

- ☐ Section 106 of the National Historic Preservation Act (Federal)
- ☐ Section 110 of the National Historic Preservation Act
- ☐ Georgia Environmental Policy Act (GEPA)
- ☐ State Agency Historic Property Stewardship Program (State Stewardship)
- ☐ Technical Assistance
- ☐ Unknown

F. **Project Description and Plans** (Please include details as to what will be constructed, what will be altered and how and what will be demolished. Attach additional pages if necessary):

_____
_____
_____
_____

HPD USE ONLY
Project # Assigned
_____

G. **Contact Information**:
☐ Applicant ☐ Agency ☐ Consultant

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Email: _____

H. Attach a **map** indicating the precise location of the project, preferably a clear color copy of a USGS topographic quadrangle map (7.5 minute). For projects in urban areas, please also include a city map that shows more detail. For additional help and information you may want to refer to the following websites: www.topozone.com, http://terraserver.microsoft.com, http://topomaps.usgs.gov[1].

I. Has this identical project or a related project been previously submitted for review? YES ____ NO ____
If yes, please enclose a copy of the State Historic Preservation Officer's comments.

II. Information Defining the Area of Potential Effect (A.P.E.)

A. The A.P.E. varies with project types, and can be direct or indirect (**physical or visual**). The Area of Potential Effect (A.P.E.) is defined as "the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist." Factors considered when determining the A.P.E. include topography, vegetation, existing development, orientation of an existing resource to the project, physical siting of a resource, and existing and planned future development. For example:

1. Rehabilitation, demolition of an historic building or structure, or new construction: the A.P.E. might include the building itself and the adjacent setting.
2. Streetscapes: the A.P.E. might include the viewshed from the street.
3. Pedestrian/bicycle facilities: the A.P.E. might extend the length of the corridor and for some distance on both sides of the corridor.
4. Underground utilities: the A.P.E. would usually be limited to the area of ground disturbance.

Based on this information, **describe the Area of Potential Effect** for your project: _____
_____

B. **Attach a map or site plan**, which indicates the boundaries of the A.P.E. (this may be the same map used above to show project location).

C. **Provide high-resolution color photographs**, which illustrate the project area and the entire A.P.E. as defined above. Photography should document not only the project area, but also any adjacent properties that are within the A.P.E. If the A.P.E. includes buildings or structures, please include a clear front view of each. All photography should be keyed to a site map (please see attached example). Photographs should be individually numbered, and corresponding numbers should be placed on the map or site plan, showing location and direction of view.

[1] Please note, this is not a complete list of websites with topographic map information. These websites are not controlled by HPD and HPD bears no responsibility for their content.

HPD USE ONLY
Project # Assigned
_____

III. Site Information

A. To your knowledge, has a cultural resources assessment or a historic resources survey been conducted in the project area? YES_____ NO _____ DO NOT KNOW _____
If yes, provide the title of the report, author, date and principal investigator: _____
_____

B. Attach any available information concerning known or suspected archaeological resources in the area of potential effect. (Note: Research at the Georgia Archaeological Site File in Athens may only be undertaken by a qualified archaeologist or site file staff. For questions, please call 706-542-8737.) **Please note that as part of the review process, HPD may request an archaeological survey.**

C. In the past has this property been used for:

1.	Farming	YES ____	NO ____
2.	Pasture	YES ____	NO ____
3.	Mining	YES ____	NO ____
4.	Timbering	YES ____	NO ____
5.	Road construction	YES ____	NO ____
6.	Housing	YES ____	NO ____
7.	Landfill	YES ____	NO ____
8.	Commercial	YES ____	NO ____
9.	Industrial	YES ____	NO ____
10.	Other (explain):		

D. Describe what is on the property today (i.e. buildings, parking lot, house, barn, outbuildings, woods, grass, garden, etc.) :_____

E. Does the project include any land disturbing activities? (haul roads, cut or fill areas, excavations, landscaping activities, ditching, utility burial, grading, etc.) YES ____ NO ____ If yes, please describe the nature of the work and the approximate three dimensional extent of work: _____
_____

F. If not provided in response to previous sections, please include a project specific map and/or preliminary site plan that fully describe the project boundaries and areas of land disturbing work. Note in detail all changes and additions proposed to be made to the existing site.

IV. Building and Structure Information

A. Is the project located within or adjacent to a National Register listed or eligible historic district?
YES ____ NO ____ DO NOT KNOW ____ If yes, please provide the name of the district:
_____

B. Within the project A. P. E., are there any other buildings or structures that are 50 years old or older?
YES ____ NO ____ If yes, provide numbered photographs of each that have been keyed to a site map.

C. Are any of the buildings or structures identified above listed or eligible for listing in the National Register of Historic Places?
YES ____ NO ____ DO NOT KNOW____ If yes, please identify the properties (by name or photo #):
_____

D. Does the project involve the rehabilitation, relocation, demolition or addition to any building or structure that is 50 years old or older?
YES ____ NO ____ If yes, please provide the information requested in E below.

HPD USE ONLY
Project # Assigned
_____

E. Complete a Georgia Historic Resources form (attached) for EACH building or structure that is 50 years of age or older. Only the circled fields are required, but please fill out any additional fields if known.

1. It is not necessary to provide the roll and frame number for photographs (as indicated on #26 of form). It is necessary to key each photo to a site map. Photographs should be legible-size high-quality color digital pictures or 35 mm prints; Polaroid's are unacceptable. Photos should show clear views of each main elevation (front), and views of the setting.
2. Please refer to the survey manual (available from HPD) if additional help is needed in completing the Georgia Historic Resources form.

(Note: Background research for previously identified properties within an A.P.E. may be undertaken at the Historic Preservation Division, including the National Register of Historic Places files, county architectural surveys, and identified sites files. To make a research appointment, please call 404-651-5911. Some information may also be available on the web.)

V. Additional Information for Effects Determination

An effect occurs when an action alters the characteristics of a property that may qualify it for the National Register or alters the features of a property's location, setting or use that contribute to its significance. How is the project going to affect any of the properties identified in the previous section?

A. Will the project take away or change anything within the apparent or existing boundary of any of these historic properties?
YES ____ NO ____ If yes, please explain: _____

B. Will the project change the view from or the view of any of these properties?
YES ____ NO ____ If yes, please explain: _____

C. Will the project introduce any audible or atmospheric elements to the setting of any of these historic properties?
YES ____ NO ____ If yes, please explain: _____

D. Will the project result in the transfer, lease or sale of any of these historic properties?
YES ____ NO ____ If yes, please explain: _____

Please note: *HPD's ability to complete a timely project review largely depends on the quality of the material submitted. For complex projects, some applicants may find it advantageous to hire a historic preservation professional with expertise in history, architectural history and/or archaeology.*

Project submissions will not be accepted via facsimile or e-mail. *There is a 30-day review and comment period. For questions regarding this form or the review process, please contact HPD's Environmental Review Specialist at 404-651-6546.*

When completed, please send this form along with the supporting material to:

Dr. W. Ray Luce, Division Director,
Deputy State Historic Preservation Officer
Historic Preservation Division
34 Peachtree Street, NW
Suite 1600
Atlanta, Georgia 30303-2316

Noel Holcomb, Commissioner

Georgia Department of Natural Resources

Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer
34 Peachtree Street NW, Suite 1600, Atlanta, Georgia 30303-2316
Telephone (404) 656-2840 Fax (404) 657-1040 http://www.gashpo.org

October 20, 2006

Mr. Bill Sandifer
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256

RE: Replace St. Marys Airport
Camden County, Georgia
Federal Agency: FAA
GA-060913-003

Dear Mr. Sandifer:

The Historic Preservation Division (HPD) has received the draft Environmental Assessment document for the above referenced project. Our comments are offered to assist federal agencies and their applicants in complying with the provisions of Section 106 of the National Historic Preservation Act. **Plelase note that this replaces our September 28, 2006 letter.**

Based on our review of the documentation submitted, we are unable to complete our Section 106 review. Once the airport site is selected, the applicant will need to conduct a survey for archaeological and historic resources within the Area of Potential Effect (APE).

Please note that the responsibility for preparing documentation, including the identification of historic resources and the assessment of effects, rests with the federal agency or its designated applicant. In addition to the archaeological survey of areas of ground disturbance, we will also need a survey of every building or structure over 50 years of age that may be affected by the proposed new airport. As requested on the review form, each building should be individually photographed and evaluated for National Register eligibility. All photos should be numbered and keyed to maps or site plans. Please also be aware that the APE could include any adjacent or nearby historic buildings that may be indirectly affected by lights or noise.

Please refer to the project number referenced above in any future correspondence regarding this matter. If we may be of further assistance, please contact me at (404) 651-6624, or Denise Messick, Environmental Review Historian at (404) 651-6777.

Sincerely,

Elizabeth Shirk

Elizabeth Shirk
Environmental Review Coordinator

cc: Patricia Barefoot, Coastal Georgia RDC

OFFICE OF PLANNING AND BUDGET

Sonny Perdue
Governor

Shelley C. Nickel
Director

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: William Shanahan, Jr.
City of St. Marys
418 Osborne Street
St. Marys, GA 31558

FROM: Barbara Jackson BJ
Georgia State Clearinghouse

DATE: 10/5/2006

SUBJECT: Executive Order 12372 Review

PROJECT: Draft EA: Replacement St. Marys Airport (Camden County, GA)

STATE ID: GA060913003

The applicant is advised to note additional comments from Coastal Georgia RDC.

The applicant is advised to note request(s) and attached Form from DNR's Historic Preservation Division before they can complete review of this project.

/bj
Enc.: Coastal Georgia RDC, Sep. 29, 2006
DNR/EPD, Oct. 5, 2006
DOT, Sep. 22, 2006
HPD, Oct. 2, 2006

Form NCC
January 2004

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: Kathryn Murph
Coastal Georgia RDC

SUBJECT: Executive Order 12372 Review

APPLICANT: City of St. Marys

PROJECT: Draft EA: Replacement of St. Marys Airport (Camden Co., GA)

STATE ID: GA060913003

DATE: September 27, 2006

X This notice is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

As noted in the 2004 Coastal Georgia Regional Plan, airport facilities are generally of coastal management concern when their construction or expansion may have significant impacts on coastal resources including natural habitats, such as valuable wetlands, and land use potential. The construction and operation of major airport facilities, if not properly managed, can result in water quality degradation caused by storm water runoff from paved parking and landing areas or by sedimentation and erosion. Please note, this project meets the threshold for review as a Development of Regional Impact.

This notice is not consistent with:

□ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. Additional pages may be used for outlining the inconsistencies).

□ The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by this agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies).

□ This notice does not impact upon the activities of the organization.

RECEIVED
SEP 29 2006
GEORGIA
STATE CLEARINGHOUSE

Form SC-3
January 2005

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: DR. CAROL COUCH
DNR/EPD/DIRECTOR'S OFFICE

SUBJECT: Executive Order 12372 Review

APPLICANT: City of St. Marys, GA

PROJECT: Draft EA: Replacement St. Marys Airport (Camden County, GA)

STATE ID: GA060913003

DATE:

☑ This notice is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

Jeri Hamby
10/2/06

This notice is not consistent with:

☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. Additional pages may be used for outlining the inconsistencies).

☐ The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by your agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies).

☐ This notice does not impact upon the activities of the organization.

RECEIVED
OCT 0 5 2006
GEORGIA
STATE CLEARINGHOUSE

Form SC-3
January 2005

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MR. HAL WILSON
DOT OFFICE OF INTERMODAL PROGRAMS

SUBJECT: Executive Order 12372 Review

APPLICANT: City of St. Marys, GA

PROJECT: Draft EA: Replacement St. Marys Airport (Camden County, GA)

STATE ID: GA060913003

DATE: 21 SEPTEMBER 2006

☒ This notice is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

This notice is not consistent with:

☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. Additional pages may be used for outlining the inconsistencies).

☐ The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by your agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies).

☐ This notice does not impact upon the activities of the organization.

RECEIVED
SEP 22 2006
GEORGIA
STATE CLEARINGHOUSE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 20, 2006

Mr. William P. Shanahan, Jr.
City Manager
City of St. Marys
418 Osborn Street
St. Marys, GA 31558

SUBJ: EPA Review of Draft EA for "Replacement St. Marys Airport"; (August 2006); St. Marys, Camden County, GA

Dear Mr. Shanahan:

Consistent with Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject Draft Environmental Assessment (DEA) for the proposed relocation of the St. Marys Airport (St. Marys). The City of St. Marys, as the Airport Sponsor (Sponsor), has prepared this DEA subject to final review by the Federal Aviation Administration (FAA) before a Final EA (FEA) is prospectively approved as an FAA document. The Sponsor proposes to relocate the existing General Aviation (GA) airport from its close proximity to the Kings Bay Naval Base due to air space conflicts with the Naval Base. The prohibited air space restricts normal operation of the airport and also limits airport expansion.

The St. Marys Airport is classified as a Level II airport (Business Airport of Local Impact) by the Georgia Aviation System Plan (GASP). As a GA airport, St Marys supports single and twin engine aircraft as well as helicopters. The airport has two runways: Runway 4/22 is 5,000 feet in length (primary runway) and Runway 13/31 is 4,000 feet long (crosswind runway). Although the airport has no control tower, it does have a Fixed Base Operator (FBO), a terminal building and some hangars. A flight school and sky diving classes also operate out of St. Marys. The DEA indicates (pg. 74) that the replacement airport fleet mix is expected to include 70% single-engine piston aircraft, 7.5% light twin-engine aircraft, 7.5% turbo-prop aircraft, and 8% corporate jet aircraft as well as helicopters (952 operations projected for 2021).

The nearest alternate airport to St. Marys is Jacksonville International Airport, although driving time is slightly longer than the 30-minute maximum recommended by GASP. The nearest comparable (Level II) alternate airport is McKinnon St. Simons; however, it too is located a driving distance about twice as far as GASP recommends.

In general, both airport relocations/replacements and airport expansions have environmental impacts. Relocations are essentially new airports on greenfield sites that potentially disturb habitats, relocate residents and businesses, expose remaining

residences to elevated noise levels, and induce development that would not occur but for the airport or that is secondary to the airport. Airport expansions can likewise cause family relocations and additional noise exposures to residents – sometimes significant noise exposures. The main environmental advantage of airport relocations is that initial land use surrounding the airport is typically rural, and therefore could be locally controlled after construction through county zoning to stay compatible with airports (e.g., no residences constructed within the 65 DNL contours). The main environmental disadvantage of relocated airports is that greenfield areas are disturbed (potentially affecting protected wetlands and endangered species, contiguous forests or prime farmland) and secondary development is induced (which has its own set of additional impacts). We note that a greenfield site (Site 1) was selected by the Sponsor in the DEA as its preferred alternative for airport relocation.

In addition to the following summary comments, we have enclosed our *Detailed Comments* for consideration in the development of FAA's Final EA (FEA).

▸ **Site Selection** – We appreciate that the site selection process to potentially relocate the airport was conducted through a St. Marys Feasibility and Site Selection Study (pg. 20). This process screened nine initial sites for airport relocation, and resulted in the selection of three final sites for additional analysis (Sites 1, 3 & 9). Of these final sites, Site 1 was selected in the DEA as the Sponsor's preferred alternative.

Despite this site selection study process, the footnote on page 31 states that "Site 1 is the only alternative available and capable of being developed." We understand that this is apparently due to the fact that of the final three sites, Sites 3 and 9 were not for sale and Site 1 land is to be donated by the property owner (it is unclear why Sites 3 and 9 were evaluated in the DEA if they were not for sale, unless this was not known until after analysis; the FEA should further discuss this). If the alternatives analysis was ultimately limited to Site 1 coupled with the fact that only Site 1 property would be donated, Site 1 impacts should be fully mitigated if selected by the Sponsor and FAA in the FEA.

Given that only one of the three final sites was apparently practicable, we recommend that the six other sites that were eliminated in the preliminary evaluation be reconsidered. While the screening criteria applied to the nine original sites appear to be sound, the FEA should provide a better discussion on the site selection process. Specifically, the rationale (including environmental aspects) for rejecting each alternate site should be disclosed. This discussion should also be tabularized, comparing selection criteria against the nine alternate sites. In addition to NEPA, this alternatives analysis would likely also be important for wetlands Section 404 (Clean Water Act) permitting which requires a rigorous alternatives evaluation.

Overall, the site selection process is EPA's primary concern with this DEA. This is not only based on consistency with NEPA, but also because selected Site 1 has the greatest wetland impacts.

▸ **Waters of the U.S.** – The selection of a greenfield site would impact wetlands and other habitat regardless of which of the final three sites (1, 3 or 9) were selected. However, we note that the preferred Site 1 would have the greatest total wetland impacts, both direct (73 ac) and indirect (155 ac), compared to Site 3 (70 & 78 ac) and Site 9 (49 & 66 ac). Additionally, it would significantly impact more high quality wetlands, both directly (40 ac) and indirectly (133 ac) compared to Site 3 (28 & 28 ac) and Site 9 (3 & 8 ac).

Because of predicted wetland impacts, wetlands should be further assessed to minimize and avoid additional wetland acreage. If unsuccessful, the selection of Site 1 should be re-considered for the FEA or the mitigation must be fully acceptable to the U.S. Army Corps of Engineers (COE), EPA, U.S. Fish and Wildlife Service (FWS) and the State of Georgia.

▸ **Air Quality** – Our air quality comments are provided in the enclosed *Detailed Comments*. They are primarily procedural including clarification as to why data from the air quality monitor in adjacent Glynn County was not used. Additionally, the airport effects on nearby Okefenokee Class I area in Charlton County should be addressed and the potential for impacts from air toxics exposures associated with the project should be considered.

▸ **Noise** – For Sites 1 and 3, the DEA indicates that noise contours would not extend beyond the airport property for both the 2009 and 2021 design years. For Site 9, we note that noise contours would extend off-airport and that some 12 residences would be exposed within the 65 DNL. Similarly, noise contours at the existing St. Marys Airport site extend beyond airport property for both 2009 and 2021. Therefore, from a strict noise impact perspective, Sites 1 and 3 appear to be favorable over Site 9 and the existing airport site.

▸ **Induced Impacts** – The DEA provides (pg. 127) a good general forecast for induced development possibilities if the airport is relocated. In general, it was indicated that some induced development can be expected, but of a minor nature commensurate with the size of the GA airport. We are encouraged that the DEA states (pg. 23) that "...development of an airport in the location of Site 1 will not significantly conflict with surrounding land use, but due to the permitted uses within the Planned Development District, may require partial re-zoning to eliminate the possibility of future incompatible residential development." We encourage such re-zoning to preclude residential development within the 65 DNL contours (or to areas where such contours may expand in the future).

The induced impacts section (or the cumulative impacts section) of the FEA should also discuss any foreseeable on-airport expansion. We note that Site 1 is a large 1,800-acre area, of which only 525 acres would be needed for the proposed airport. Further, we note (pg. 25) that future expansion appears to be planned since it is stated that "[t]he land area necessary for this replacement airport will provide sufficient infrastructure and space for a GASP Level II facility and future long-term expansion." The FEA should reasonably predict such onsite expansion (e.g., Sponsor's plans or goals), particularly if it involves

growth to a Level III or larger GASP airport classification. The re-development of the existing airport property should also be discussed as a NEPA connected action or as an induced or secondary impact.

▸ **Summary** – This replacement airport project appears typical in terms of its impacts. That is, the greenfield site preferred in the DEA by the Sponsor (Site 1) would have substantive habitat impacts (wetlands in this case) but few noise exposure impacts because of its rural nature. It is noteworthy, however, that Site 1 would have substantively greater wetland impacts – particularly direct and indirect impacts on high quality wetlands – than Sites 3 and 9. Some induced off-airport development impacts and future on-airport expansions can also be expected, which would further affect wetlands and other habitats in the surrounding area of the relocated airport.

Overall, the site selection process is EPA's primary concern with this DEA. This is not only from a NEPA standpoint but also because selected Site 1 has the greatest wetland impacts. Because the site selection process found Site 1 to be the only practical alternative that was "available and capable of being developed" (Sites 3 and 9 were apparently not for sale), coupled with the fact that only the land for Site 1 would be donated, the site selection process may ultimately have been somewhat limited. The nine original alternate sites should therefore be re-considered with rationales for site eliminations disclosed. Also, depending on the level of significant impacts predicted for this proposed action, FAA should re-evaluate the level of NEPA documentation that is appropriate.

EPA appreciates the opportunity to provide these early comments on the DEA. Should you have questions on our comments, please call Chris Hoberg at 404/562-9619 or hoberg.chris@epa.gov of my staff.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosure – *Additional Comments*
cc:
Jackie Sweatt-Essick – Environmental Program Manager; FAA: Atlanta, GA
Terry Kobs – Regulatory Specialist, Southern Section; COE: Savannah, GA

DETAILED COMMENTS

* Purpose & Need – As previously indicated, St. Marys is classified by GASP as a Level II airport. The DEA indicates (pg. 11) that "a replacement airport should likewise conform, at a minimum, to the performance recommendations of a Level II facility." The FEA should discuss the Sponsor's near-term and long-term plans for the airport. For example, will the replacement airport be a Level II, or will it be a larger airport with a different classification, capacity, fleet mix, etc.? The size and capacity of the airport would affect its on-airport impacts (footprint) as well as off-airport impacts such as noise and induced secondary development.

If an aspect of the project purpose and need is that the existing airport has minimal land available for expansion, it is unclear if the proposed Site 1 would necessarily be an improvement in this regard. Given the relocated airport's proposed orientation on Site 1, it is unclear where the runway could expand. While the overall acreage of Site 1 is much larger than the proposed footprint of the relocation airport, we note that a 6,000-ft runway with approaches positioned in the proposed NE/SW orientation would already overlap I-95 to the east and US 17. This would seem to make a future at-grade runway extension infeasible. Although there would be greater room for runway expansion if a N-S orientation was selected, this would seem to conflict with the optimal orientation for the prevailing winds (given that no crosswind runway is proposed) and conceivably could result in I-95 or US 17 being mistaken for a runway (since they would have a similar N-S orientation). The safety aspect of having two roadways (one a major interstate: I-95) close to the ends of the runway should also be considered and discussed with FAA. It is also conceivable that these roadways could be widened, bringing them even closer to the ends of the runway.

* Site Selection – Page 25 indicates that the land for Site 1 would be donated by the property owner and that such donation makes "...development of the replacement airport in this location financially feasible." It is unclear, however, why Site1 development costs are greater than alternate Site 3 or Site 9 costs by over $4M.

* Air Quality

+ *Emission Sources* – Section 5.1.3.1 indicates that emissions from non-aircraft sources are negligible for air quality since these emissions are small in comparison. Air quality is determined from the aggregation of emissions from all applicable sources. The air quality impacts from the airport relocation project should include emissions from all airport sources.

+ *Glynn County Monitor* – Air quality monitors from Jacksonville, Florida were used to indicate air quality near the coastal area of the St. Marys airport. It is unclear why data from the ozone monitor in Glynn County Georgia were not used since Glynn County is adjacent to Camden County. The rationale for selecting the Jacksonville monitor over the Glynn County monitor should be discussed in the FEA.

+ *Design Values* – It appears as though the design values for ozone and particulate matter are not presented in Table 5.2. Maximum concentrations are presented in this table and do not directly compare with the EPA National Ambient Air Quality Standard (NAAQS) for these pollutants.

+ *Exceedances* – The superscript for the *Standard Value* column in Table 5.1 means that the short-term standards are not to be exceeded more than once a year. This is not entirely correct for all of the pollutants. For instance, there are no exceedances for ozone and fine particulates (PM2.5). We recommend that the superscript be moved inside the table and applied only to the relevant pollutants.

+ *Roadway Relocations* – Even though the sites being considered for relocation are rural, it seems unlikely that no roads or streets will be impacted by such a relocation. This should be verified in the FEA.

+ *Class I Area* – The Okefenokee Class I in Charlton County is close to this project area. Air quality impacts in this area should be addressed in the FEA.

+ *Air Toxics* – Section 5.1.1 states that respiratory effects and general toxic effects are a special concern regarding air pollutants. However, the DEA only addresses the potential impact of "criteria pollutants." A far broader class of air pollutants called Hazardous Air Pollutants (HAPs) are also associated with airports and, depending on the circumstances, can produce both acute and chronic health impacts, including cancer. HAPs are emitted by the same sources as the criteria pollutants, including aircraft, ground support equipment, on-road motor vehicles traveling to and from the airport, maintenance facilities, fuel storage and handling facilities, building heating, and construction equipment. The DEA does not address the potential for impacts from air toxics associated with the project. We suggest that air toxics exposures are an important topic which should be addressed in the FEA.

* Noise – We appreciate that noise contours were described for alternative Sites 1, 3 and 9 for relocation, as well as for the existing St. Marys Airport. Both the 2009 existing year and the 2021 future (out) year were analyzed.

For Sites 1 and 3, the DEA indicates that noise contours would not extend beyond the airport property for both the 2009 and 2021 design years. Therefore, no residences could have a significant increase in noise (+1.5 dBA DNL or greater) within the 65 DNL for these sites. Page 75 states that "Sites 1 and 3 have one affected parcel owner, respectively." We assume this means that one residence is located within the area proposed for airport property at each site, and therefore would need to be relocated if selected. This should be clarified in the FEA and indicated if appropriate acquisition and relocation procedures would be followed consistent with FAA policy. The demographics of these two residents (or families) should also be disclosed.

For Site 9, we note that noise contours would extend off-airport and that some 12 residences would be exposed within the 65 DNL. It is unclear, however, if these

residences would be exposed to a significant incremental noise increase (+1.5 dBA DNL or greater). Assuming a rural area, noise exposure to residents could be significant since 65 DNL would likely be higher than ambient noise levels. The FEA should discuss this. As recommended above for Sites 1 and 3, any residences on would-be airport property should be discussed in terms of acquisitions, relocations and demographics.

In regard to the existing St. Marys Airport site, we note that noise contours do extend beyond airport property for both 2009 and 2021. However, it is unclear (pg. 75) why the noise contours for 2021 (with more predicted operations) would have less off-airport acreage within the noise contours than the contours for 2009. The FEA should discuss this in terms of fleet mix and number of operations.

We note that one of the screening criteria of the site selection process was to be "[s]upportive of the current and future military mission in Camden County" (pg. 20). Therefore, additional discussion on airport noise from helicopters should also be documented in the FEA, since we assume these are military operations and, if so, they would likely not be mitigated for noise. For the design years, the FEA should provide the number of annual operations (we note that 952 operations are predicted for 2021: pg. 74), operational times of day (daytime vs. nighttime), noise levels during operation, and other relevant noise information to better document the noise impact of helicopters at the airport. Any measures to minimize helicopter noise should also be discussed (e.g., possible operational measures that would not disrupt the mission).

* Waters of the U.S. – We appreciate that the airport layout plans were oriented on the three sites to avoid wetland impacts. However, Sites 1, 3 and 9 all still have wetland impacts if developed as proposed, with the preferred Site 1 having the greatest impacts. In addition to wetlands, other waters of the U.S. and the State (lakes, streams and other waterbodies) should also be minimized/avoided (or further minimized/avoided) and discussed in the FEA.

+ *Wetland Acreage* – Based on the DEA (pg.133), we note that Site 1 would impact 40 acres of high quality, 19 acres of medium quality and 14 acres of low quality wetlands, totaling 73 acres of direct impacts. In addition, considerable wetlands would be disturbed but not filled: 133 acres of high quality, 15 acres of medium quality and 7 acres of low quality wetlands, totaling 155 acres of secondarily impacted wetlands.

By comparison, Sites 3 and Site 9 would impact less acres and of lower quality. Site 3 (pg. 135) would impact 28 acres of high quality, 41 acres of medium quality and 1 acre of low quality wetlands, totaling 70 acres. In addition, it would secondarily impact 28 acres of high quality, 25 acres of medium quality and 25 acres of low quality wetlands, totaling 78 acres. Data for Site 9 (pg. 137) are: 3 acres of high quality, 4 acres of medium quality and 42 acres of low quality wetlands, totaling 49 acres of direct impacts. Site 9 data for secondary impacts are: 8 acres of high quality, 23 acres of medium quality, and 35 acres of low quality for a total of 66 acres.

+ *Wetland Quality* – We recommend that wetland impacts (direct and indirect) to Sites 1, 3 and 9 be tabularized in the FEA. We also recommend that the wetlands be qualitatively defined relative to the "high", "medium" and "low" quality metrics used in the DEA. Based on the information provided, it appears from a strict wetlands impact perspective, that Sites 9 and 3 would have less-to-noticeably-less impact than Site 1 in terms of total direct and indirect impacts, as well as noticeably less direct and secondary impact on high quality wetlands.

+ *Watershed Quality* – It is noteworthy that Site 1 is located in the Satilla River watershed, which as been designated by the Georgia Environmental Protection Division (EPD) and EPA as a "high priority" watershed. Site 3 may also be in the watershed as well (or on the divide for the Cumberland-St. Simons watershed). Site 9 is in the St. Marys River watershed, which is not high priority. These factors should be considered during final site selection.

+ *Jurisdictional Wetlands* – The preliminary wetland delineations of the sites, based on aerial photography, may not accurately reflect the true extent of jurisdictional waters of the U.S. The Savannah District COE has made a number of isolated wetland jurisdictional determinations in this area and each site may have some potentially isolated wetlands. We note that Site 1 may have the most isolated wetlands, though this can only be verified by a detailed onsite evaluation. Also, wetlands located between I-95 and US 17 may be hydrologically impaired due to the presence of the roads.

+ *Wetland Mitigation* – We appreciate the listing of several local wetland mitigation banks (MB). However, these sites are not all feasible for project mitigation banking. The Marshlands MB may have few wetland credits available and it is our understanding that the Satilla River MB had it credit sales suspended. However, if the Broadfield MB gets approved, this would be an excellent mitigation option since it is only a few miles away. However, due to incremental credit releases, this bank may not meet the project needs. There are also two other banks in Ware County – Musket Bay MB and Hog Creek MB – that could be used. The Wilkinson-Oconee MB does not appear to be an acceptable option since it is outside of the priority watershed. We note that the provided cost estimate for the Site 1 wetland mitigation appears to be within the general expected range.

* Aircraft-Wildlife Conflicts – The selected site should avoid waters of the U.S. and waters of the State to minimize/avoid aircraft collisions with birds. If the airport is relocated in a rural area, it should also be fenced to keep deer, raccoons and other wildlife outside the airport property and off the runways. The airport should also not be located in a bird flyway, migratory path, area of seasonal attraction, etc. The proposed relocation provides an excellent opportunity to be selective during the site selection process to avoid/minimize wildlife attractants and therefore aircraft-wildlife conflicts. The FEA should indicate how the alternatives compared in this regard.

In regard to proposed location of wetland mitigation sites relative to the airport, we are pleased to note (pg. 137) that "mitigation areas will comply with FAA Advisory Circular 150/5200-33 *Hazardous Wildlife Attractants On or Near Airports*.

* Environmental Justice (EJ) – As indicated above, the demographics of any relocations currently living on would-be airport property should be disclosed in the DEA for the final three sites considered.

We appreciate that demographic data were provided in the DEA for Sites 1, 3 & 9 as well as the existing airport site. For a perspective, these percentages should be compared to neighboring U.S. Census block groups, counties and the State of Georgia.

* Cumulative Impacts – A cumulative impacts section was not found in the DEA Table of Contents or text, but should be included in the FEA. However, an induced or secondary/indirect impacts section was provided (Section 5.16). Such induced impacts are a subset of cumulative impacts (i.e., those cumulative impacts that are induced by the airport). However, the FEA should also generally discuss other cumulative impacts, i.e., existing, proposed or reasonably foreseeable developments in the area. These nearby facilities should be listed and their impacts reasonably (qualitatively and/or quantitatively) provided. Emphasis should be on those facilities that impact (air, noise, etc.) the same resources as the airport (airshed, watershed, etc.).

If the airport is relocated, the redevelopment of the existing airport property should be discussed in the FEA as part of the cumulative impacts section. Will it be demolished and what land-use will replace it (open field, farmland, mixed use, commercial, residential, etc.)? Are there hazardous materials onsite that will need special attention for disposal? If so, we suggest coordination with EPA and the State.

FAA may wish to combine induced and cumulative impacts in one section. We suggest, however, that "cumulative impacts" be include in the section title to facilitate identification by the reviewer (e.g., *Secondary/Induced and Cumulative Im*pacts). Also, the term "secondary" impact is generally being replaced by "indirect" impact.

* Other Comments

+ *Figure 1.5* – The FEA would be improved if the runways on Figure 1.5 would be more clearly labeled.

+ *Crosswind Runway* – Unlike the existing airport, Figures 3.2 and 3.3 (also pg. 25) suggest that no crosswind runway is proposed for the relocated airport. We note that page 25 suggests this is possible with a proper runway orientation (95% all-weather wind coverage). The FEA should discuss this, including consistency with FAA regulations. If a crosswind runway is planned in the foreseeable future, impacts should already be reasonably disclosed in the induced or cumulative impacts section of the FEA.

copy Bill Sandlyn
Bobby
Mayor
council
file

United States Department of the Interior

Fish and Wildlife Service

105 West Park Drive, Suite D
Athens, Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

DEC 1 1 2006

Mr. William P. Shanahan, Jr.
City Manager
City of St. Marys
418 Osborne Street
St. Marys, GA 31558

Re: FWS #07-TA-0065

Dear Mr. Shanahan:

Thank you for your letter received September 13, 2006, requesting comments relating to potential environmental impacts to natural resources in the vicinity of three proposed airport development site alternatives (Sites 1, 3, and 9) in Camden County, Georgia. Relocation of the airport would include the acquisition of approximately 525 acres of property, site preparation, and the construction of various support buildings and structures including a primary runway, taxiway, lighting systems, fueling depots, and other related facilities. The provided Draft Environmental Assessment (Draft EA) addresses four alternatives: the three sites, as well as a "no-build" alternative.

These comments are provided in accordance with provisions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA), the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*) (FWCA), and the Migratory Bird Treaty Act (16. U.S.C. 703 *et seq.*) (MBTA) to further the conservation of fish and wildlife resources and their habitat, including federally listed threatened and endangered species.

We commend the recommendation to conduct further surveys for the flatwoods salamander (*Ambystoma cingulatum*). We spoke with a herpetologist with several years experience studying with this species. He related that the salamander could be or historically could have been present in Camden County. The lack of presence records and the silvicultural practices do not prove their absence (flatwoods salamanders have been observed in areas of active silviculture). He stated the conditions present at potential breeding sites during previous site visits was representative of conditions around the state for the same time period. He recommended surveys

occur 2 or 3 times in late February to mid-March and employ the use of dip nets and traps. These surveys should occur after periods of adequate rainfall to fill the potential breeding sites. The Georgia Department of Transportation, in conjunction with the US Fish and Wildlife Service, Georgia Department of Natural Resources, and others has developed a draft survey protocol that could be utilized. We recommend surveys occur for at least 2 years, subsequently if rainfall permits.

We appreciate the implementation of our recommendations regarding the Eastern indigo snake (*Drymarchon corais couperi*) but have an additional recommendation. Prior to initiating construction activities each morning, observers should search each area where equipment would be used for the presence of indigo snakes. If one is present, construction should not begin until the snake has traveled to a safe zone on its own accord. It cannot be relocated, pursued, or harassed (see definition of 'take' in the ESA).

The Draft EA states that impacts to wood stork (*Mycteria americana*) foraging habitat could be mitigated by providing alternative foraging sites within the same general area. Providing alternative foraging sites would attract wood storks to the area. This could increase the likelihood of bird strikes to any planes using the airport. Please explain how foraging sites could be provided in the general area while not contradicting Federal Aviation Administration (FAA) Advisory Circular (A/C) 150/5200-33A, *Hazardous Wildlife Attractants On or Near Airports*.

Please provide an explanation of the statement on page 104 of the Draft EA that there is no evidence of the existence of migratory birds at any of the sites. The MBTA protects all migratory birds and their body parts and nests. The law pertains to over 1,500 species of birds; it only exempts several introduced, exotic species such as starlings, house sparrows, and feral pigeons, and regulates the take of game species such as pheasant, quail, dove, and turkey. Neotropical/migratory species are almost certain to be present at each of the sites. Some species, such as those utilizing intact forest interiors or specialized, rare habitats, are more imperiled than others.

Approximately 80% of Sites 1 and 9 were searched for the presence of federally protected species and/or their habitats. We recommend that 100% of the finally selected site be surveyed for federally protected species and their habitat according to approved survey methodologies. Please provide us a copy of the methodologies to be used for our review.

We wish to point out that an assemblage of swallow-tailed kite (*Elanoides forficatus*) nests is located approximately 2 miles from the Preferred Alternative (Site 1). This species is listed as "Rare" by the State of Georgia. This assemblage appears to be on the approach line to the proposed airport layout. We are concerned that these nests could be impacted by the construction of the airport at Site 1 and by implementation of the FAA Advisory Circular (A/C) 150/5200-33A, *Hazardous Wildlife Attractants On or Near Airports*. Please explain how impacts to these nests would be avoided or minimized. We wondered if no fly zones or altitude

restrictions could be implemented. If Site 1 is selected, the land containing these nests could be purchased and put under a restrictive covenant to protect it from development.

While we understand the cost savings associated with the donation of the land at Site 1, we recommend that another site be selected for the location of the St. Mary's Airport for several reasons.

1. Construction at this site would lead to greater wetland impacts that at the other sites. More impacts at Site 1 would be to high quality wetlands, with less impact to low quality wetlands, than at the other sites. Also, the selection of Site 1 would lead to a higher level of secondary impacts as described in the Draft EA (the topping and/or removal of trees and other obstructions). See the table below;

	Total Impacts (all in Acres [ac])	Acres Filled	Secondary Impacts	Impacts to High Quality Wetlands	Impacts to Medium Quality Wetlands	Impacts to Low Quality Wetlands
Site 1	228	73	155	173	34	21
Site 3	148	70	78	56	66	26
Site 9	115	49	66	11	27	77

2. Site 1 construction would impact approximately 59 acres within the 100-year floodplain of a river crossing the site. Sites 3 and 9 have no floodplain impacts.

3. The previously mentioned swallow-tailed kite nests.

4. A set of Georgia Power Company utility lines would have to be relocated at an estimated cost of $7 million. This relocation probably would lead to additional impacts to natural resources.

5. Site 1 has the highest estimated construction costs ($26,778,125) compared to Site 3 ($22,482,945) and Site 9 ($21,115,125).

We acknowledge there are several concerns regarding the selection of another site.

1. Sites 3 and 9 were not selected, in part, due to the fact that the City and County did not wish to condemn the land through *eminent domain*. We understand their reluctance to do so, but, given the reasons stated above and that the land would be put to public use, we believe this would be a justifiable application of eminent domain.

2. Ten residences adjoining Site 9 may need to be relocated. The Draft EA stated this

relocation may be avoided by situating the airport further to the northeast. We recommend that this alternative layout be investigated.

3. The development of the airport at Sites 3 and 9 are not compatible with the current zoning. However, the Draft EA states that the areas could be re-zoned or a "special permit" could be issued. Due to the reasons stated above, we recommend that these actions be pursued.

We appreciate the opportunity to comment during the planning stages of your project. If you have any additional questions, please write or call Yates Allen of my staff at (912) 265-9336.

Sincerely,

Sandra S. Tucker
Field Supervisor

cc:
GDNR, WRD, Brunswick, GA (Brad Winn)
USACE, Savannah, GA (Terry Kobs)
USFWS, Athens, GA (Sandy Tucker)

SOUTHEASTERN ARCHAEOLOGICAL RESEARCH, INC.

January 3, 2007

Elizabeth Shirk
Environmental Review Coordinator
Georgia Department of Natural Resources
Historic Preservation Division
34 Peachtree Street NW, Suite 1600
Atlanta, GA 30303-2316

RE: St. Marys Airport, Camden County, Georgia
GA-060913-003

Dear Ms. Shirk,

I am writing in reference to the cultural resource assessment survey of the St. Marys Airport proposed replacement project which is being performed to comply with Section 106 of the National Historic Preservation Act as part of the Environmental Assessment. The purpose of this letter is to clarify the area of potential effect (APE) for cultural resources and discuss the work effort.

In April of 2006, Southeastern Archaeological Research, Inc (SEARCH) completed a cultural resource screening of three proposed locations for the St. Marys Airport. Site 1 has since been recommended as the preferred alternative for the airport. In the screening, SEARCH identified the potential for archaeological and historical resources to be located within the proposed Site 1 project area and for a one mile buffer around the project parcel. In a teleconference on November 17, Bill Sandifer from RS&H and I discussed with Dr. Karen Anderson-Cordova and Denise Messick of the Historic Preservation Division the possibility of considering the APE to be the area of construction within the airport parcel, since the data indicates that there will be no effect to historic properties outside of this area from the proposed undertaking.

Site 1 measures approximately 1,800 acres and is located between I-95 and US 17 approximately three miles south of the city of Woodbine. The construction of the replacement airport at Site 1 will be in the approximate center of this 1,800 site (Figure 1). The airport will be completely surrounded by forested areas and not visible from any adjoining properties identified as potential historic structures (Figure 2). Additionally, the proposed lighting for the airport which includes runway and taxiway lighting, facility lighting, approach lighting and a rotating beacon, will also not be visible to any adjoining properties identified as potential historic structures.

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Orlando, Florida 32804
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315 N.W. 138 Terrace
Jonesville, Florida 32669
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Fax: 352-333-0069

P.O. Box 2818
Riverview, Florida 33568
Phone: 813-677-2280
Fax: 813-671-8416

www.searchinc.com

Due to the orientation of the proposed runway (only a single runway will be constructed at this site) the arrival and departure corridors will not overfly any potential historic properties in the immediate vicinity of the site. All noise impacts associated with the facility will also remain on site as illustrated by the noise contours on the attached graphic (Figure 3). For these reasons, we propose to define the APE for Site 1 of the St. Marys Airport as the 500+/- acre area where construction will occur. Within the construction zone, a Phase 1 cultural resource survey will be performed. Figure 1 illustrates archaeological potential within the construction zone based on soil type drainage, slope, and level of prior disturbance. Shovel tests will be excavated at 100 meter intervals along with a pedestrian survey in areas with a low potential for containing sites. Areas with a high potential for containing sites will be tested at 30 meter intervals accompanied by pedestrian survey. The phase 1 survey will be performed according to the *Georgia Standards and Guidelines for Archaeological Surveys* (Georgia Council of Professional Archaeologists 2001) and the resulting report will conform to the *Archaeological Assessment Reports Guidelines and Components* (State of Georgia Historic Preservation Department 1993, updated 2004).

We would appreciate you concurrence with the proposed APE and work plan for the St. Marys Airport project. Please feel free to contact me should you have any questions.

Sincerely,

Anne V. Stokes, Ph.D.
President

Attachments

xc: Bill Sandifer, RS&H

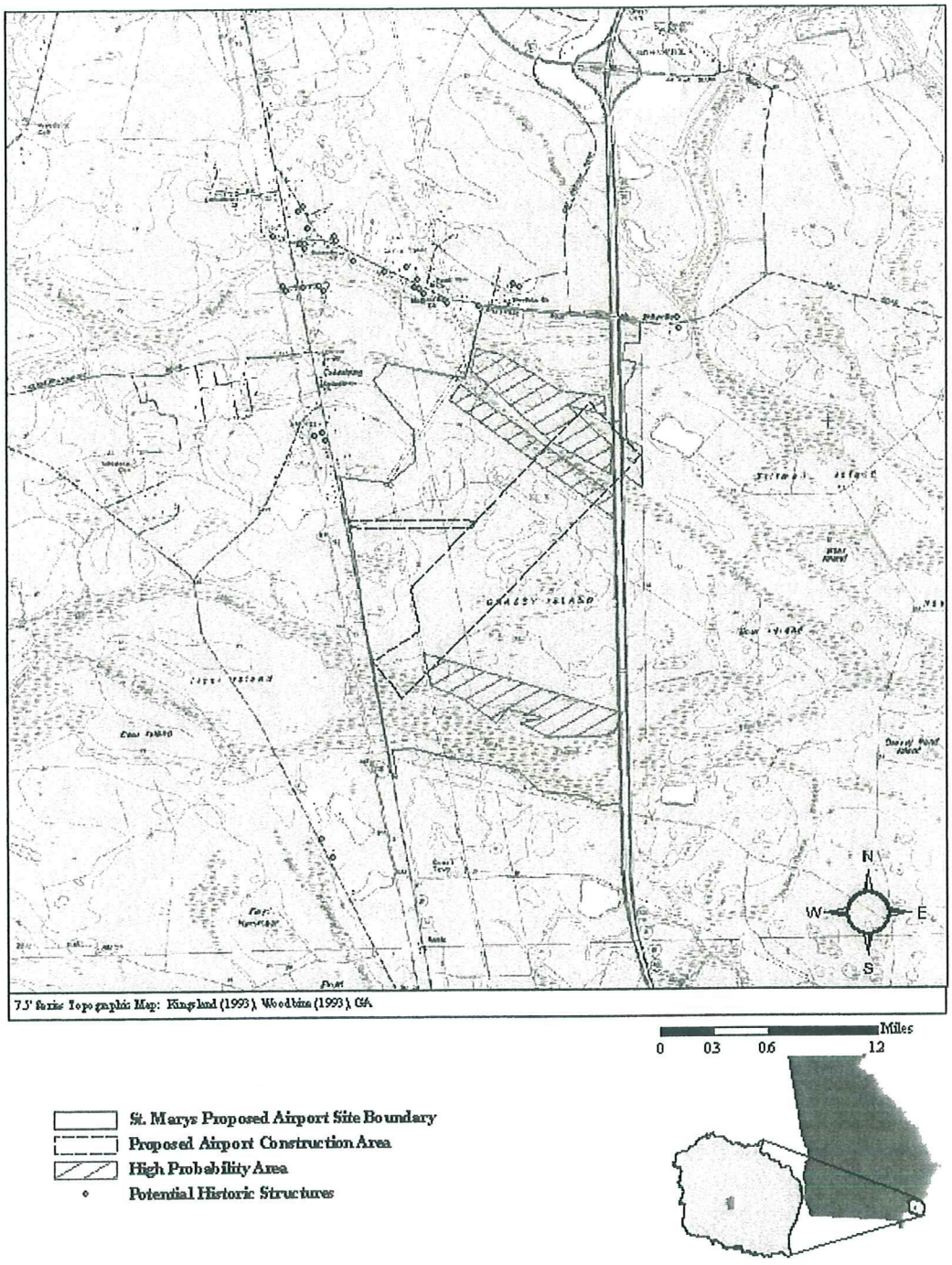

Figure 1. Proposed St. Marys Airport Replacement Site

Figure 2. St. Marys Airport Project Area, Illustrating Forest Buffer and Potential Airplane Flight Tracks

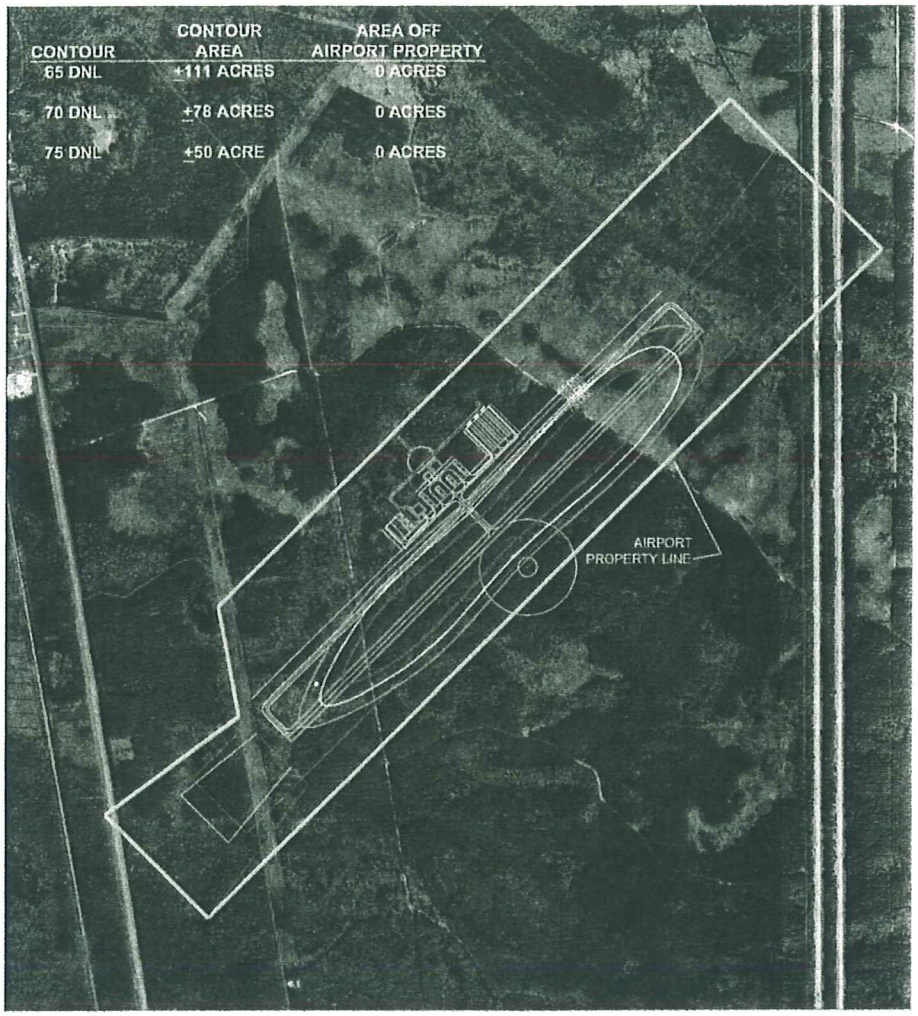

Figure 3. St. Marys Airport Noise Contours

Noel Holcomb, Commissioner

Georgia Department of Natural Resources

Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer
34 Peachtree Street, NW, Suite 1600, Atlanta, Georgia 30303-2316
Telephone (404) 656-2840 Fax (404) 657-1040 http://www.gashpo.org

January 11, 2007

Anne V. Stokes, Ph.D.
President
Southeastern Archaeological Research, Inc.
715 West Harvard Street
Orlando, Florida 32804

RE: **Replace St. Marys Airport**
Camden County, Georgia
GA-060913-003

Dear Dr. Stokes:

The Historic Preservation Division (HPD) has received information submitted regarding the above referenced project. Our comments are offered to assist the Federal Aviation Administration (FAA) in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Based on your letter, we concur that the proposed area of potential effect and archaeological survey should be adequate for identification of resources.

Please refer to project number **GA-060913-003** in future correspondence regarding this undertaking. If we may be of further assistance, please do not hesitate to contact me at (404) 651-6624, or Michelle Volkema, Environmental Review Specialist, at (404) 651-6546.

Sincerely,

Elizabeth Shirk

Elizabeth Shirk
Environmental Review Coordinator

ES:mav

cc: Patricia Barefoot, Coastal Georgia RDC

IN RE:

ORIGINAL

NOTICE OF PUBLIC HEARING 091106

DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED RELOCATION/REPLACEMENT OF THE ST. MARYS AIRPORT

Public Hearing held regarding the proposed relocation/replacement of the St. Marys Airport, held at the St. Marys Elementary School, Osborne Street, St. Marys, Georgia, on Monday, October 16, 2006, commencing at 6:02 P.M., before Janell A. Buchanan, Certified Court Reporter, RPR.

JANELL BUCHANAN, CCR, RPR
1825 Glynn Avenue, #61
Brunswick, Georgia 31520
(912) 264-1552

PRESENT:

WILLIAM C. SANDIFER, A.A.E.
Vice President - Aviation
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256-0597

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I N D E X

Meeting Called to Order by Mr. Sandifer	Page 3
Opening Remarks	Page 3
Speakers:	
Walt Natzic	Page 4
Steve Swanson	Page 6
Deborah Hase	Page 12
Jeff Stanford	Page 14
Gladys Bolyard	Page 17
Greg Bird	Page 18
Frank Saffold	Page 21
Meeting Concluded	Page 23
Certificate of Reporter	Page 24

MR. SANDIFER: Good evening. I'd like to go ahead and get started. If I could have everybody's attention.

Again, good evening, this is the public hearing for the Draft Environmental Assessment for the proposed replacement of the St. Marys Airport. My name is Bill Sandifer. I have been the project manager on behalf of Reynolds, Smith and Hills for the preparation of the Draft Environmental Assessment.

What we have planned for this evening is our public hearing has been noticed to be conducted between 6:00 P.M. and 8:00 P.M., and I'm assuming we will probably have enough comments to fill up that two-hour period of time, and if there is anyone left after 8:00 o'clock we will continue to hear your comments.

Kind of the procedure that we are going to use, we have got "Request to Speak" forms that Russ and Justin have at the back of the room - if you need one, you can either raise your hand and they will bring you one or go back to the back of the room - and they will bring them up to me, and I will kindly call you to the podium, at which point you will be given an opportunity to speak.

Please limit your comments to no longer than five minutes in duration so we can get everybody who wants to make comments on the record. We will not be

responding to questions. This is your opportunity to make comments about the Draft Environmental Assessment or anything else you would like to say about the project.

At this point in time -- one more thing to mention. At the conclusion of the public hearing this evening we will also continue to accept written comments concerning the Environmental Assessment until November the 1st, at which point in time we hope to collect all our comments and be able to address those and produce a final document for federal review and federal action. So tonight is not the only opportunity.

If you still want to make written comments after tonight, please do so to Mr. Shanahan, who is the City Manager in St. Marys, and he will, in turn, transmit them to us.

The first person on the agenda for this evening, Mr. Walt Natzic. And, please, when you come up to the podium, your name and address, please, before you make a comment.

Mr. Natzic?

MR. NATZIC: Good evening. My name is Walt Natzic, my address is 209 Osprey Circle, St. Marys, and I have a number of comments to make with regard to the move of the St. Marys Airport.

It offers some of the best advantages to us and the build site is the one that, in my opinion, is the right decision to make for the following reasons: That by the time the new airport site is built at this location the population growth in Camden County will have matured to a point where it will be centrally centralized and best serve the majority of Camden County citizens, and it will be locally feasible to mitigate the wetlands requirements, and I think there is a lot of concern about the mitigation of that property, and it will be far enough away from Kings Bay Submarine Base to mitigate the DOD security requirements. And those that think that the security requirements are not serious concerns are not in touch with the DOD activities.

With the next base realignment and closure, BRAC Commission, the move will provide evidence of the community's interest to mitigating the Kings Bay security interest. Without that effort, who knows what the BRAC Commission will do. So we have got to show some evidence here that we are taking care of some of those issues that we had talked about during the last BRAC initiative. Moving the airport will improve the tax base to meet badly needed funds for stabilizing the economic influences and city growths which we are starting to see, and there is more to come.

There are other considerations. With the growth of the downtown area, we need to consider the evacuation routes and the highway loading based on the old mill site and the growth of -- or the expansion of Colerain Road with a more direct route out of the paper mill site and the Downtown St. Marys area from -- through the Douglas Drive entry points. And while there are issues with that, we are going to have to tackle those, which are, in my opinion, not as serious as some of the other issues that we are going to have to deal with.

Putting in an effective grid system in the county is one of the things that are consideration for the growth of the county and another consideration is the industrial development center out there and getting those areas occupied and providing active entry and exit points from that particular area. The airport property is centralized across some of those grid networks, so that's something that we have to consider.

Thank you very much.

MR. SANDIFER: Thank you, Mr. Natzic.

Mr. Steve Swanson?

Once again, sir, please state your name and address for the record.

MR. SWANSON: Good evening. My name is Steve Swanson. I'm a resident of St. Marys. I work as a

corporate pilot. I'm a small business owner. I have been a pilot since 1976. And I'm also a member of the St. Marys Airport Authority.

I would like to state that in the opening statement of the Draft Environmental Assessment, the EA, states that the prohibited air space severely restricts current operations, and I don't believe that is true.

As a pilot flying from St. Marys Airport for more than 14 years, I can say the prohibited area has no impact on local operations. The airport now has more operations, more hangars, more base aircraft, and more businesses located in the field than it did pre-9/11.

There is a statement in the EA on Page 18 that the airspace restrictions have resulted in lower daily activity levels and a preference by a general aviation community for staying away. Today, as an example, there were four twin-engine aircraft on the ramp and many other aircraft parked around. These pilots were able to bring their passengers here just fine. And the more complicated airspace today is just a fact of life that pilots are learning to deal with, and it's not just an issue in southeast Georgia.

I submit that pilots staying away has more to do with local business practices at the FBO and the fact that St. Marys has some of the highest fuel prices in the

region.

I would also like to point out several issues, problems, and inaccuracies with the Environmental Assessment. There is a statement in there, The Regulatory Branch of the Department of the Army states in their letter included with the EA that inadequate information is contained in the draft EA necessary to document that Site 1 would provide the least environmentally-damaging practical alternative.

They also state that the first step is to submit an application to them. Once they receive this, they will review it as required by U.S. law. The U.S. Army Corps of Engineers can only issue a permit for the least environmentally-damaging practical alternative.

I would conclude from their statements in the letter that they don't agree with RS&H's and the other community members' findings and that there are still lots of work to be done before we could know if an airport could be relocated in the county.

The proposed preferred site will cost the taxpayers more money than any other site. According to the Draft EA's own estimates for Site 1 will cost more, even considering the zero expense for land acquisition. And I had to ask why this site was chosen and who benefits. It would certainly not be the taxpayer.

None of the proposed sites address instrument approaches in sufficient detail, and the EA only states that development of these approaches would need further study and that the FAA -- by the FAA and that one site -- and that Site 1 might be suitable for a VOR approach based on the Brunswick VOR, which is 17 -- almost 17-and-a-half miles away.

Adding instrument approaches to a new airport is critical to the effectiveness of the airport. All the criteria the FAA uses to develop instrument approaches are published and available to the public. Planning for these approaches should be included in this EA prior to approval to ensure problems don't exist later that would preclude approaches and severely limit any new airport.

Also, VORs are being phased out at the national airspace system and that new GPS approaches can be built for approximately the same cost and should be considered over the VOR approaches.

The proposed airport layout plan does not match the usefulness of the current airport plan and as such shortchanges the residents of St. Marys and users of the existing airport. By not matching the utility of the current airport, the Environmental Assessment is disguising the true extent of the environmental impact due to a much larger area required by a new airport

and will cost us, the taxpayers, more money to address these changes and design plans in the future.

Currently the new airport layout for Site 1 leaves no room for expansion due to the fact that the proposed runway footprint touches I-95 on the east and crosses Highway 75 on the western side. This is Figure 3.2 of the Draft EA dated August of '06. This is in conflict with the EA's stated purpose of allowing space for growth.

Section 5.1.4.1 makes a claim that emission levels do not change for alternate sites over the current levels at the current site because aircraft operation is the same for all four sites. That would be the three proposed new sites and the current site under the no-build option. If the current location is so severely restricted, how could this be true? This may indicate there is a flaw in the environmental consequences reported in the EA.

Table 5-3 of the EA does show an increase in the emission inventory for all build sites over the no-build site option, so with major change in aircraft operations at any new sites there may be drastic changes in emission levels.

The City of St. Marys has indicated the owners of Sites 3 and 9 are not willing to sell and that the City is not willing to pursue eminent domain, even if this would allow the public to have a better lower cost airport. If

the owner of Site 1 did not want to sell, would we give up on the project? What other motive might there be for moving the airport? Maybe landowners wishing to allow the taxpayer to build them a new airport on property adjacent that they wish to develop?

The FAA is forecasting the coming of very light jets starting the end of this year and continuing on. These aircraft use shorter runways and would be perfect fit at the current St. Marys Airport. This fact is overlooked in claiming that the airport needs expansion to survive. This type of use is the future of small airports, not expanding to longer runways so larger jets can fly from St. Marys nonstop to Russia. These very light jets can also operate from both runways of the current airport and would not require any increase in runway length.

The cost estimate for any of the three proposed sites is millions of dollars more than the 16.4 budgeted for in the National Plan of the Integrated Airspace Systems noted in the EA.

Where will the extra money come from? A new local tax option maybe? This brings up the accuracy of the projected cost. In February of '05, RS&H study for a 5,000-foot x 100-foot runway cost $3.8 million. In the new EA, only 18 months later, this cost is up to $5.7 million for just the runway. By the time the airport is

actually built the cost will be much higher.

In summary, the EA shows many serious environmental issues that the city officials and residents need to consider and not just let bureaucrats that don't live in our area mitigate for us.

A development of a new airport will cost tens of millions of dollars for the taxpayer to build and would be inferior to the current airport that we have. The EA also points out that $1.5 million in local income come from the current airport. Should the City give this up and let it go to other area communities? I say we should stop wasting time and taxpayer money in study after study. Many potential business opportunities are being put off or lost completely due to lack of resolution on this issue. Five years have passed and we still are many years from a new airport. By the time the new one is complete, how much will the real cost to the community be?

Thank you.

MR. SANDIFER: Thank you, Mr. Swanson.

Does anybody else have a request for comment?

Would anybody else like to speak?

MS. HASE: Deborah Hase, 202 Barkentine Drive, St. Marys.

While people have brought up some very valid points, nobody ever said this would be an easy thing to

do. We cannot overlook the fact, though, the bottom line is for all government entities involved this airport needs to be relocated, and that includes the government entity of the Navy base.

We need to remember that there is very little comparatively benefit the current use of this airport to the general taxpaying public. Most of the pilots even do not -- are not willing to contribute by paying their personal taxes on the airplane to the city government entity. That's how much value they want to put into it. And my point is, that land - which I know of at least three companies that have expressed interest in buying that land - would benefit the taxpayers much more put to some kind of private use.

The new airport out at the new location by I-95 could prosper and grow and flourish and it would not cause a hindrance to the current Navy facility. Scott Sarrett of the FAA told me himself in this airport in this current location if there is a significant event at that Navy base involving this airport, it will be shut down and then we will have no airport.

Camden County has an opportunity here that we should not let get by. Let's not lose this opportunity.

MR. SANDIFER: Thank you, Ms. Hase.

Jeff?

MR. STANFORD: I'm Jeff Stanford, I reside at 313 Bishop Street, St. Marys, and I operate the FBO at St. Marys Airport.

I entered into a 25-year lease in 2000 prior to any prospect of airport relocation. On 9/11, St. Marys Airport was closed along with every other airport in the country. The next day I was informed by government officials that this airport would remain closed permanently and I should plan accordingly.

With the airport closed for good, I started shutting down and liquidating my business. The governor's office acted quickly and the very next month scheduled a focus group to study the feasibility of moving this airport. That was in November of 2001.

The Navy was reluctantly and conditionally persuaded by well- intentioned petitioners to reopen the airport after it was closed for three months. A flight-restricted area remained over the base, which has continued to adversely affect the St. Marys Airport.

Since then the flight-restricted area over the base, beginning just one mile from the end of the main runway, has been compromised well over a hundred times. Pilots have been issued career-altering violations and the Navy has acknowledged that on at least one occasion a civilian aircraft was almost ordered shot

down.

Airport conflicts and constraints prompted an FAA-funded airport assessment study in 2002. The conclusion of that study by FAA-recommended experts was that the city and county should continue the process of pursuing a new airport.

Encouraged by Representative Jack Kingston, the City Council passed a resolution in April of 2003 to support airport relocation. City, state, and federal officials agreed in May of 2003 to impose a moratorium on further capital improvements at St. Marys Airport. With support from the FAA, Georgia DOT, the Navy, Congressman Kingston, and the Mayor, the City was granted $185,000 for an airport site selection study. After a very thorough study, suitable sites were decided upon. The FAA then funded an environmental assessment study for the selected sites. It has been difficult for me to make long-term plans during this time of uncertainty.

After 9/11, the military changed its acceptance of small aircraft flying near nuclear weapons storage and ballistic missile assembly facilities. The TFR over Kings Bay is now a prohibited area. The airport does not have the easements to allow growth in any other direction.

We recently lost 900 feet from the ends of Runway

31 and 13 due to off-airport trees growing. There is nothing the City can do about that.

I must make business decisions based on what I see happening. I believe that the airport assessment study was appropriate and I believe the conclusions are accurate. I believe that the current political environment, coupled with present projected airport encroachments, that relocation is appropriate. I believe that the site selection study was professionally conducted. I believe that a new airport funded 95 percent by the FAA, two-and-a-half percent by state, and the City's two-and-a-half percent forgiven is a good deal for this county.

I also believe that the sale of the present airport property will lead to a tremendous bonus to the City's tax base. I believe a new airport properly located with adequate and protected easements and professionally managed will serve this county well into the future.

Building and growing an FBO is a long-term process. With airport relocation being discussed, studied, and pursued since the early weeks after 9/11, I felt that further capital investment of this airport would be financially irresponsible. In spite of the difficult current business environment, I have little choice except to continue. I can't grow to a truly

profitable level, but abandoning this business would be personal financial ruin. I agree with the experts that relocating this airport is the right thing to do and I'm looking forward to being included in this process.

Thank you.

MR. SANDIFER: Thank you, Mr. Stanford.

Would anybody else like to speak?

MS. BOLYARD: I would.

MR. SANDIFER: Please come up. And if you would, please, when you're finished fill out a "Request to Speak" card and then it will be in the record.

Name and address for the record, please.

MS. BOLYARD: My name is Gladys Bolyard, I live at 894 Billyville Road, in Woodbine.

I am also one of those people whose life has been kind of on hold for the last several years. We've been waiting. We purchased 22 acres of land and we have also been waiting to find out what kind of an impact this airport is going to be on our investment. So just to let you know, the common people are also on hold just waiting to find the answers.

That's it.

MR. SANDIFER: Thank you.

Anyone else?

MR. SANDIFER: Name and address for the record,

please.

MR. BIRD: My name is Greg Bird, I own Bird Aviation, 107 Salt Grass Trace, St. Marys.

A lot of people have prepared - not a lot of people. A handful of people know the importance of an airport, and it's really important to our elected officials to see just how important St. Marys Airport is at its current location.

St. Marys Airport was put there in 1940 as a training airport for the Navy, and in many years that followed that it was just a small airport that didn't really impact the community a great deal.

But a lot of things have changed recently. Of course, we had the events of 9/11 that did shake us up across the whole United States. St. Marys Airport was in the process of beginning some new hangar constructions before the 9/11 event had taken place. I was to put in some new hangars at that time. Those plans, of course, were terminated at that time until we found out the fate of the St. Marys Airport.

Once the airport was reopened, and many of us were given the sense that we had negotiated properly with the United States Navy, the Navy had reduced its restriction area from five miles and 5,000 feet down to two miles and 2999 feet. At that time we pursued plans

of building the hangars, we continued that operation, and we built those hangars at the time that -- before 9/11 our airport was a small airport that was beginning to grow.

Today we had two major events that happened. One, of course, after 9/11, was the closing of our paper mill, which really put us in St. Marys at a quandry as to what would happen to us. We had a brand-new mayor, brand-new city elected officials that took over in January of 2002, and during her first year in office she was given the information that the paper mill would be closing, quite a traumatic experience for all of us within the community, and certainly her as an elected official.

But the rumors of the airport didn't go away. During that time there were discussions that the airport might be relocated, and we thought that that information had been successfully completed and that we would, of course, you know, remain as a viable airport.

Since that time, since the 9/11, and contrary to the white paper study and to RS&H's Chapter 1 indications that the airport was affected negatively by the prohibited airspace and the restriction, since that time our aircraft based at St. Marys Airport, hangared aircraft went from 12 prior to 9/11 to over 30 aircraft based inside hangars today. All that happened after

9/11.

At the last Airport Authority meeting this past October we were at a problem with aircraft tie-downs. These are where aircraft were placed on the outside that are secured during the evening, and that we are out of space there.

We -- the St. Marys Airport is a growing airport and it can handle the -- well into the future. We have a master plan that was created in December of 2001 that increased our corporate hangar space 600 percent. Now, of course, that's going from one corporate hangar to six corporate hangars. But the impact is significant for us. The t-hangars we had -- prior to 9/11, we had three t-hangars, and in our master plan we have facility site allocation space for over 60 aircraft to be hangared within t-hangars. So we have a lot of room to grow at the St. Marys Airport, and that's not including all of the areas that are capable of sustaining even more aircraft. As we look to the future of general aviation and see that the airline industry is bottlenecking, in many areas that general aviation is now coming back to the forefront where people can see that they can come to St. Marys Airport, get on a flight and be in Atlanta in one-and-a-half hours. They can actually be in a flight -- they can be in Atlanta before they can go through all the clearing-

houses that you have to go through in Jacksonville International.

Accurate information is imperative for anybody making prudent decisions. Our City Council needs to have accurate information. We believe that the St. Marys Airport, which is only a highway that's located on the ground that brings investors into St. Marys, can really not only significantly affect the City of St. Marys, but Kingsland and Woodbine and other areas within our county, and we can certainly handle all the growth that's being projected by what we already have in place, and we do not have to have the expenditure of 20 million to $100 million dollars in a new airport.

Thank you very much.

MR. SANDIFER: Thank you, Mr. Bird.

Anybody else?

(No response.)

MR. SANDIFER: Would anyone else like to speak? We have got an hour-and-a-half.

MR. SAFFOLD: I would like to speak.

MR. SANDIFER: All right, sir. Name and address for the record, please.

MR. SAFFOLD: My name is Frank Saffold. I live in St. Marys on 102 Nancy Drive.

The announcement of tonight's meeting led me to

believe that the meeting would consist of a presentation of a draft of the environmental impact statement. I've heard very little comment so far that has to do with the environment and the impact of whatever move on it.

I would like to see the statement of the environmental impact study and I would appreciate knowing where I could get a copy, and perhaps someone after me would like to comment on the environmental impact considerations here tonight.

Thank you.

MR. SANDIFER: Thank you, sir.

Just kind of an FYI. Russ, at the back of the room -- I believe.

Oh, there is a copy of the environmental assessment right there in hard copy form. If you would like, give your name and address to Russ or Justin and we can provide you with either a hard copy or a CD disk of the report or can direct you to the website that has it electronically.

Would anybody else like to speak?

(No response.)

MR. SANDIFER: If you've got Internet capability, there is a link on the City of St. Marys website. I believe it's still called "Airport Feasibility Study," but on that link the Draft Environmental Assessment is also posted.

Anyone else?

(No response.)

MR. SANDIFER: Well, we have to sit here until 8:00 o'clock. You are all welcome to stay but, if not, thank you very much for coming.

(Since there were no further speakers, we went off the record at 6:32 P.M.)

(The meeting was concluded at 8:00 P.M.)

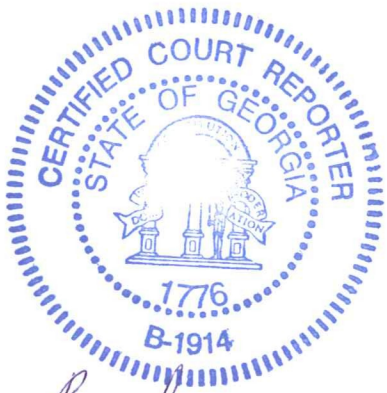
CERTIFICATE

GEORGIA :

GLYNN COUNTY :

I hereby certify that the foregoing public hearing was taken down, as stated in the caption, and the proceedings thereto were reduced to typewriting under my direction; that the foregoing Pages 1 through 23 represent a true and correct transcript of the said hearing, and I further certify that I am not of kin or counsel to the parties in the case; am not in the regular employ of any of said parties; nor am I in any wise interested in the result of said case.

This the 30th day of October 2006.



Janell A. Buchanan, RPR

Certified Court Reporter, B-1914

STAFF – 6:05pm

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: Walt Watzic

ADDRESS: 209 Osprey Circle
St Marys GA 31558

882-2710

COMMENTS: See attachment

Comments to the Environmental Study
WWWci.st-marys.ga.us

Walt Natzic

The St. Marys airport move to the Billyville site #1 is the right decision to make for the following reasons:

1. By the time the new Airport Site is built at this location the population growth will have matured to a point where it will be centralized and best serve the majority of Camden County citizens.

2. It will be locally feasible at site #1 to mitigate the wetlands requirements.

3. It will be far enough away from Kings Bay Submarine Base to mitigate the DOD Security concerns.

4. With the next Base Realignment and Closure (BRAC) initiative, the move will provide evidence of the community's interest in mitigating the Kings Bay security interests.

5. Moving the airport will improve the tax base to meet badly needed funds for stabilizing economic influences and city growth.

OTHER CONSIDERATIONS:

The airport property is needed to extend the Colerain Highway corridor with a more direct route to the old paper mill site and downtown St. Marys from Douglas Drive. Growth and economics in St. Marys requires additional expansion and an effective grid system of roadways to service normal traffic, evacuation routes and emergency military travel.

Growth in the St. Marys Industrial Development Center requires ease of access for more direct truck travel to Route I-95 using the Colerain Road Corridor. The airport property provides a more direct route as stated above

START: 6:09pm
END: 6:18pm

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: STEVE SWANSON

ADDRESS: 134 CAMBRAY CIR
ST. MARYS GA. 31558

COMMENTS: SEE ATTACHED

Steven V Swanson,
St. Marys Resident
Occupation: Corporate Pilot
Small Business Owner
Aircraft Owner
Pilot since 1976
Member St. Marys Airport Authority

The opening statement of the draft Environmental Assessment (EA) states that the Prohibited Airspace *severely* restricts current operation is flat out untrue. As a pilot flying from the St. Marys airport for more than 14 years I can say the prohibited area has no impact on local operation. The airport now has more local operation, more hangers, more base aircraft and more businesses located on the field than it did pre 9/11.

There is a statement in the EA on page 18 that the airspace restrictions have resulted in lower daily activity levels and a preference by the general aviation community of staying away. Today there were 4 twin-engine turbine aircraft on the ramp and many other aircraft parked around the ramp. These pilots were able to bring their passengers here just fine. A more complicated airspace is a fact of life for today's pilots and it is not just an issue in Southeast Georgia. We are learning to deal with it. I submit that pilots staying away has more to do with local business practices at the FBO and the fact that St. Marys has some of the highest fuel prices in the region.

I would like to point out several issues, problems and inaccuracies with the Environmental Assessment.

The Regulatory branch of the Department of the Army states in their letter included with the EA that " *inadequate information is contained in the draft EA necessary to document that site 1 would provide the least environmentally damaging practicable alternative* " They also state that the first step is to submit an application, once this is received, they will begin a review process as required by US law. The USACE can only issue a permit for the " *Least environmentally damaging practicable alternative.* " I would conclude

from these statements that the USACE is not in agreement with RS&H and that there is still lots of work to do before we even know if the airport could be relocated.

The proposed preferred site will cost the Taxpayers more money than ANY OTHER site. According to the Draft EA's own cost estimate for site one will cost more even considering zero expense for land acquisition. Ask yourselves why this site was chosen and who benefits certainly NOT the Taxpayer.

None of the proposed sites address instrument approaches and the EA only state that development of these approaches will need further study by the FAA and that site one might be suitable for a VOR approach based on the Brunswick VOR 17.4 miles away. Adding instrument approaches to any new airport is critical to its effectiveness as an airport. All the criteria that the FAA uses to develop instrument approaches are published and available to the public. Planning for these approaches should be included in this EA prior to approval to ensure problems don't arises later that would preclude approaches and severely limit any new airport. Also VORs are being phased out of the national airspace system. There is a new type of approach based on GPS that can be built for the same cost as other non precision approaches.

The proposed airport layout plan (ALP) does not match the usefulness of the current airport plan and as such short changes the residents of St. Marys and users of the existing airport. By not matching the utility of the current airport the EA is disguising the true extent of the environmental impact due to a much larger area required by the new airport. It will also cost us more money to address any change to design plans in the future.

Current new airport layout for site one leaves no room for expansion due to the fact that the proposed runway footprint touches I-95 and crosses Hwy 17 (see fig 3.2 of draft EA, Aug 2006.) This is in conflict with the EA's stated purpose of allowing space for growth.

Section 5.1.4.1 makes a claim that emission levels do not change for alternate site over the current levels because aircraft operation is the same for all four sites (the three new proposed sites and the current airport.) If the current location is so *severely* restricted how could this be true? This may indicate a flaw in the environmental consequences reported in the EA. Table 5-3 of the EA does show an increase in emissions inventory for all build sites over the No-Build option so with a major change in aircraft operation at any new site there may be drastic changes in emission levels.

The City of St. Marys has indicated the owners of sites three and nine are not willing to sell and that the city is not willing to pursue eminent domain, even if this would allow the public to have a better, lower cost airport. If the owner of site one did not want to sell would we give up on the project? What other motive might there be for moving the airport? Maybe a landowner wishing to allow the Taxpayers to build them a nice new airport on property adjacent to land they are planning to develop.

The FAA is forecasting the coming of Very Light Jets (VLJ) starting the end of this year. These aircraft use shorter runways and would be a perfect fit in St. Marys. This fact is overlooked in claiming that the airport needs to expand to survive. This type of use is the future of small airports, not expanding to longer runways so larger jets can fly from St. Marys non-stop to Russia. These VLJ can also operate from both runways at the current airport and would not require any increases in runway lengths.

The cost estimates for any of the three proposed sites is millions of dollars more than the $16.4 budgeted for in the National Plan of Integrated Airport System. Where will the money come from? A new local option TAX? This brings up the accuracy of the projected cost. In the February 2005 RS&H study a 5000 foot by 100 foot runway cost $3,811,000.00. In the new EA only 18 mos. later it is up to $5,716,500. By the time the airport is actually built the cost will be much higher.

In summary the EA shows many serious environmental issues that the city officials and residents need to consider and not just let bureaucrats that do not live here mitigate as

"No-Impact." The development of a new airport will cost tens of millions of dollars to Taxpayer to build an inferior airport that is further away from most county and all St. Marys residents. The EA also points out that $1.5 Million in local income comes from the current airport, should the city give this up and let it go to another area community? I say we should stop wasting time and Taxpayer money on study after study. Many potential business opportunities are being put off or lost completely due to lack of resolution on this issue. Five years have passed and we are still many years from a new airport, by the time a new one is complete how much will the real cost to this community be.

Other General Comments

I could find no mention in the EA of the towers around site one that may impact air traffic will need further study with regard to the environmental impact of relocating them.

FAA order 5050.4A referenced in the second paragraph is out of date; the current order issued April 2006 is 5050.4B

Safety aspect of having a Fire and Rescue department located on the field not addressed.

The City of St. Marys Airport Authority was not included in the process.

Start: 6:18pm
6:19pm

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: Deborah Hare

ADDRESS: 202 Barkentine Dr
St Marys, Ga

COMMENTS: The bottomline is still the same - relocating this airport is the ~~best~~ move for the general public & all government entities involved. Very little, if any or anyone, will benefit by keeping this airport in it's present location. This current property needs to be sold & put to better use. A new airport by I-95 will flourish & grow.

LAST: if possible

START: 6:20pm
6:24pm

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: Jeff Stanford

ADDRESS: 313 Bishop Street St Marys

COMMENTS:

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: Gladys Bolyard

ADDRESS: 894 Billyville Road
Woodbine, GA. 31569

COMMENTS: Lets get this thing decided, I purchase land to build a home on, at Billyville Road but we have been waiting on a decision before we start.
Gladys Bolyard

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: Greg Bird

ADDRESS: 107 Salt Grass Track
St. Marys, GA 31558

COMMENTS:

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: Frank Safford

ADDRESS: 102 Nancy Drive
St Marys GA 31558

COMMENTS: Expected meeting to be a Summary of Environmental Impact Assessment - to be followed by Comments.
There was no Summary - and comments had little to do with environment.

REQUEST TO SPEAK
PUBLIC HEARING
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 16, 2006

NAME: PATRICIA VIELLENAVE — DID NOT SPEAK

ADDRESS: 184 W. WOODHAVEN DR
KINGSLAND, GA 31548

COMMENTS: I support airport relocation to site I. Less homeowners impacted. We cannot afford to lose our base. Site I will also open up for new business + jobs

COMMENT CARDS
PUBLIC INFORMATION WORKSHOP
DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED ST. MARYS REPLACEMENT AIRPORT
OCTOBER 11, 2006

Site 1 in Woodbine seems to be the best location - Growth to the local area as well as convenience to ~~[illegible]~~ freeway. Make it the ideal focal.

Reynolds, Smith and Hills, Inc

Attn: Russ Owen
10748 Deerwood Park Blvd S

Jacksonville, FL 32256

904-256-2234/russ.owen@rsandh.com

Sharon Vielleneuve
184 W Woodlawn Dr.
Name and Street Address
Kingsland, GA

Confish3@tds.net
City, State, ZIP, Phone #, E-mail

LIST OF PREPARERS

The following individuals participated in the preparation of the Environmental Assessment for the Replacement St. Marys Airport, with a description of each preparer's professional experience:

Mr. William C. Sandifer, A.A.E.

Position: Vice President & Southeast Region Leader, Reynolds, Smith and Hills, Inc.

Education: Juris Doctor, Michigan State University, 2000
Master of Business Administration, University of Michigan, 1993
Bachelor of Science, Aviation Management, Eastern Michigan University, 1987.

Experience: Mr. Sandifer is a Vice President and Project Manager with over 18 years experience in the development of airport master plans, airport layout plans and environmental studies.

Mr. Jeffrey W. Breeden, AICP

Position: Senior Aviation Consultant, Reynolds, Smith and Hills, Inc.

Education: B.A. Architecture
Virginia Polytechnic Institute and State University, 1987

Experience: Mr. Breeden is an Aviation Planning Project Manager responsible for the oversight of airport master plans, layout plans and environmental studies. He has over 13 years of airport planning experience.

Mr. Russ Owen

Position: Aviation Consultant, Reynolds, Smith and Hills, Inc.

Education: Master of Public Administration, Southern Illinois University, 2005
Bachelor of Science in Aviation Management, Southern Illinois University, 2001.

Experience: Mr. Owen has two years of planning and operations experience of airport master plans, airport layout plans, airport feasibility studies, terminal plans, intermodal plans, site selections, environmental assessments, air service/marketing analysis, airport operations, security operations, disadvantaged business enterprise plans, project budgeting and navigational GPS analysis projects.

Mr. Todd Lindner

Position: Aviation Consultant, Reynolds, Smith and Hills, Inc.

Education: Masters of Science in Airport Management and Administration, Middle Tennessee State University, 1998.
Bachelor of Science in Aerospace Professional Pilot, Middle Tennessee State University, 1986.

Experience: Mr. Lindner has over 8 years of experience in the development of airport planning projects. These projects include conducting studies such as Environmental Assessments, Master Plans, Feasibility Studies, Site-Selection Studies and taking part in the airport design process, document preparation and coordination of project funding.

Mr. Justin Ritter

Position: Aviation Consultant, Reynolds, Smith and Hills, Inc.

Education: Master of Business Administration in Aviation, Embry-Riddle Aeronautical University, 2005.
Bachelor of Science in Aeronautical Science, Embry-Riddle Aeronautical University, 2003.

Experience: Mr. Ritter has over 1 year of experience in various airport planning projects that include Environmental Assessments, Master Plans, Airline Network/Market analysis and general document preparation.

Mr. Tim Deuerling

Position: Senior Environmental Scientist, Reynolds, Smith and Hills, Inc.

Education: Bachelor of Science in Biology, Minor in Chemistry, Florida State University, 1974.

Experience: Mr. Deuerling has over 30 years experience in the areas of environmental planning, impact analyses, vegetation mapping and sampling, land use mapping, wetland jurisdictional review, wetland mitigation and permitting, wetland value assessment, plant and animal taxonomy, threatened/endangered species assessment and Phase I environmental audits.

Mr. James D. Patterson

Position: Environmental Scientist, Reynolds, Smith and Hills, Inc.

Education: M.S. Aquatic Ecology, University of Florida
B.S. Environmental Science, Virginia Polytechnic Institute and State University

Experience: Mr. Patterson is responsible for assisting with project Development and Environmental (PD&E) studies in all matters related to environmental considerations. Mr. Patterson has over five years of experience in wetland delineation, habitat/listed species impact analysis, water quality impact assessments and state/federal permitting for client projects.

Mr. Don Andrews

Position: Vice President, South Central Region Leader and National Aviation Planning Leader, Reynolds, Smith and Hills, Inc.

Education: Bachelor of Science in Civil Engineering, Michigan State University, 1978.

Experience: Mr. Andrews is a veteran in the field of aviation planning and design, with extensive experience as an aviation consultant and ten years with the City of Houston's Department of Aviation. Over the course of his career, Mr. Andrews has participated in more than 30 airport master plans as well as numerous environmental studies, terminal planning and development projects, aviation system plans, economic impact studies, airfield and roadway design projects and air cargo projects.

Mr. David A. Ernst

Position: Senior Air Quality Consultant, KM CHNG Environmental, Inc.

Education: B.S., Brown University, 1975 – Urban Systems Engineering,
M.C.R.P., Harvard University, 1979 – Environmental Policy.

Experience: Mr. Ernst is a Senior Consultant with over twenty-five years of experience in the areas of planning and air quality assessments for transportation and industrial facilities.

Mr. Timothy J. Lavelle

Position: Air Quality Consultant, KM CHNG Environmental, Inc.

Education: B.S., Fairfield University 1990 – Biology,
M.E., Texas A&M University, 1999 – Civil Engineering.

Experience: Mr. Lavelle is a Consultant with nearly fifteen years of experience in air quality assessments for airport, rail and transit, other transportation modes, and infrastructure development projects.

Mr. Tomas E. Ennis

Position: Consultant, KM CHNG Environmental Inc.

Education: B.S., United States Naval Academy 1987 – General Engineering, M.S., Texas Tech University, 1995 – Civil Engineering.

Experience: Mr. Ennis is a Consultant with nearly 10 years of experience in environmental engineering pertaining to air quality permitting and assessments.

PHASE 1 CULTURAL RESOURCE SURVEY OF THE ST. MARYS AIRPORT RELOCATION SITE CAMDEN COUNTY, GEORGIA

Conducted for
RS&H

Federal Aviation Administration No. GA-060913-003

SEARCH Project No. 06179_2089

By

SOUTHEASTERN ARCHAEOLOGICAL RESEARCH, INC.

715 West Harvard Street	**315 NW 138th Terrace**	**P.O. Box 2818**	**8324 Woodacre Street**
Orlando, FL 32804	**Jonesville, FL 32669**	**Riverview, FL 33568**	**Alexandria, VA 22308**
407-236-7711	**352-333-0049**	**813-677-2280**	**703-347-9769**

March 2007

PHASE 1 CULTURAL RESOURCE SURVEY OF THE ST. MARYS AIRPORT RELOCATION SITE CAMDEN COUNTY, GEORGIA

Conducted for
RS&H

Federal Aviation Administration No. GA-060913-003

SEARCH Project No. 06179_2089

By

SOUTHEASTERN ARCHAEOLOGICAL RESEARCH, INC.

Anne V. Stokes, Ph.D.
Principal Investigator

715 West Harvard Street	**315 NW 138th Terrace**	**P.O. Box 2818**	**8324 Woodacre Street**
Orlando, FL 32804	**Jonesville, FL 32669**	**Riverview, FL 33568**	**Alexandria, VA 22308**
407-236-7711	**352-333-0049**	**813-677-2280**	**703-347-9769**

March 2007

MANAGEMENT SUMMARY

This report presents the results of the Phase 1 cultural resource survey of the proposed relocation of the St. Marys Airport in Camden County, Georgia conducted in February 2007 by Southeastern Archaeological Research, Inc. (SEARCH). The purpose of this cultural resource assessment survey was to identify any historic structures and archaeological sites located within the area of potential effects (APE) that may be affected by the relocation and construction of the St. Marys Airport and to assess their eligibility for listing in the National Register of Historic Places (NRHP).

The APE for this project is defined as the area that potentially would be affected by the construction of the airport as well as considering the possible effects that noise, air quality, vibration, and potential change in land use might have on historic properties. The APE is analogous to the "area of the proposed action's potential environmental impact" discussed in FAA Order 5050.4A, Paragraph 47(e)(8)(b).

An extensive pedestrian survey was carried out and 232 shovel tests were excavated across the approximately 454.51-acre project area. Two isolated finds (IF 1 and IF 2) were identified. No historic buildings or structures were found within the project area.

TABLE OF CONTENTS

Management Summary ii
List of Figures iv
List of Tables iv
Introduction 1
Environment 1
Prehistoric Overview 5
Historic Overview 8
Previous Investigations & Research Design 9
Survey Methodology 9
Results 11
Conclusions 13
References Cited 14

Appendix A. Unanticipated Discoveries Statement
Appendix B. Shovel Test Map

LIST OF FIGURES

Figure 1. Location and general environment of the proposed St. Marys Airport Relocation APE, Camden County, Georgia. 2
Figure 2. Soil associations within the proposed St. Marys Airport Relocation APE. 4
Figure 3. Cultural resources located within the proposed St. Marys Airport Relocation APE. 12

LIST OF TABLES

Table 1. Specific Soils within the proposed St. Marys Airport Relocation APE 3

INTRODUCTION

This report presents the results of the Phase 1 cultural resource survey of the proposed relocation of the St. Marys Airport in Camden County, Georgia (Figure 1) conducted in February 2007 by Southeastern Archaeological Research, Inc. (SEARCH). The purpose of this cultural resource assessment survey was to identify any historic structures and archaeological sites located within the area of potential effects (APE) that may be affected by the relocation and construction of the St. Marys Airport and to assess their eligibility for listing in the National Register of Historic Places (NRHP). Although a project area may receive a complete cultural resource assessment survey, it is impossible to ensure that all cultural resources will be discovered. In the event that any unanticipated discoveries are encountered during ground disturbance related to the project, please refer to the Unanticipated Discoveries Statement in Appendix A.

This investigation was conducted to comply with the cultural resources provisions of the National Environmental Policy Act of 1969 (PL 91-190, as amended); Section 106 of the National Historic Preservation Act of 1966 (PL 89-190, as amended) and it's implementing regulation 36 CFR Part 800 (Protection of Historic Properties); and the Archaeological and Historic Preservation Act of 1974 (PL 86-523). This study was conducted in accordance with the Georgia Council of Professional Archaeologist, *Georgia Standards and Guidelines for Archaeological Surveys*. The study was conducted with consideration to the Federal Aviation Authority's (FAA) Order 5050.4A (Airport Environmental Handbook), revised October 8, 1995. The qualifications of the Principal Investigator meet and exceed the standards established within the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (36 CFR Part 61).

The APE for this project is defined as the area that potentially would be affected by the construction of the airport as well as considering the possible effects that noise, air quality, vibration, and potential change in land use might have on historic properties. The APE was defined in consultation with the Historic Preservation Division in a letter dated January 11, 2007 (GA-060913-003). The APE is analogous to the "area of the proposed action's potential environmental impact" discussed in FAA Order 5050.4A, Paragraph 47(e)(8)(b).

ENVIRONMENT

The APE of the proposed relocation of St. Marys Airport encompasses approximately 454.51 acres and is located between I-95 and US 17, south of Billyville Road and approximately three miles south of the city of Woodbine. A small section of Interstate Highway 95 (I-95) runs through the northeast corner of the project area, and a section of a utility corridor runs through the northwest end. The APE includes a portion of Rose Creek in its southwest end and Walker Swamp runs through the northeast section.

Located in central Camden County, Georgia, the project area is within the Barrier Island Sequence of the Coastal Plains Province. The Barrier Island Sequence includes the coastal barrier islands along the Atlantic coast and approximately 40 to 50 miles of the adjacent, interior mainland. The well drained inland areas typically support an environment dominated

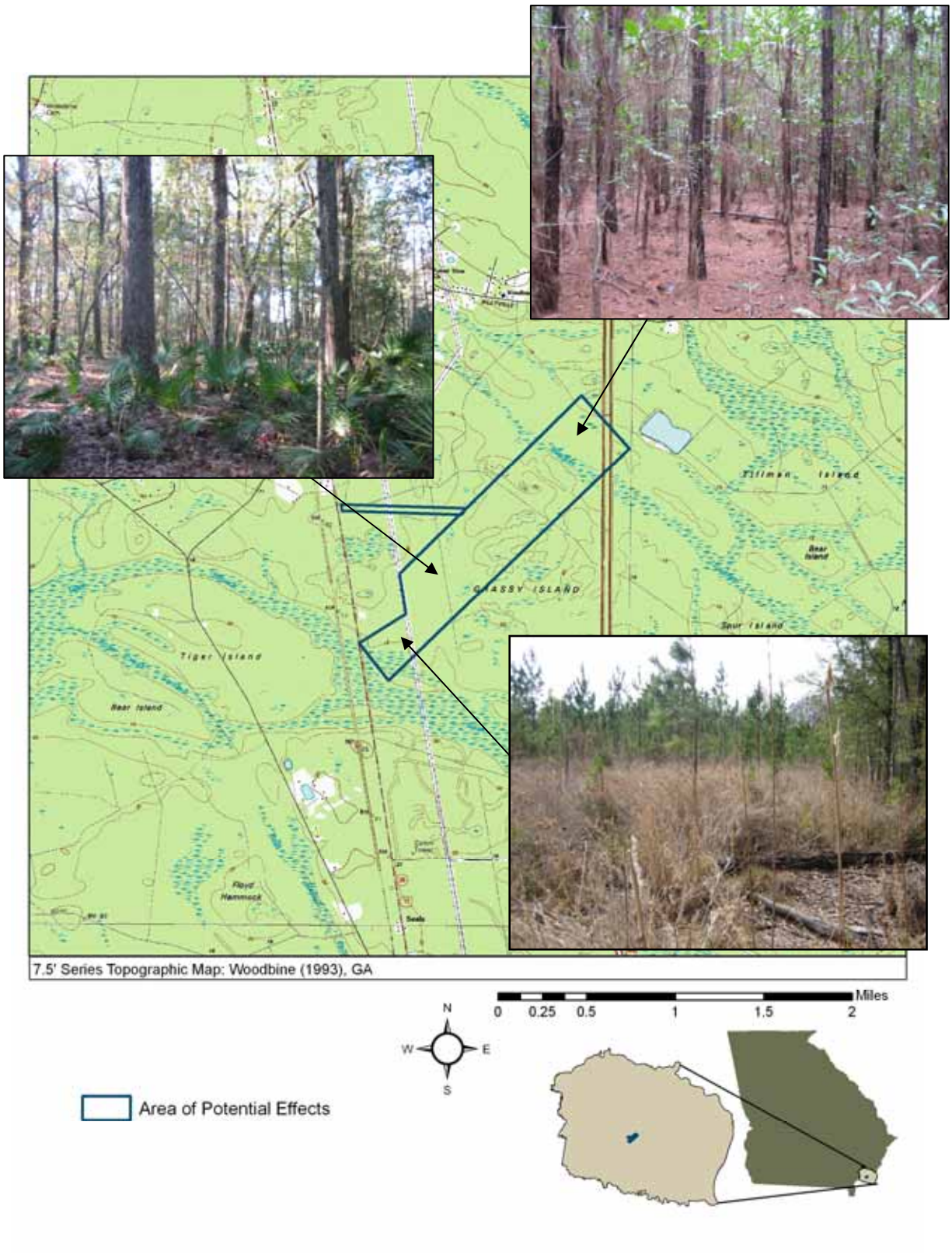


Figure 1. Location and general environment of the proposed St. Marys Airport relocation APE, Camden County, Georgia.

by long-leaf pine, loblolly pine, and various species of oak. In the poorly drained flatwoods, pond pine, slash pine, saw palmetto, gallberry, and wiregrass are found. Hardwood communities composed of oak, sweet gum, red bay, magnolia, and pignut hickory occupy areas adjacent to freshwater streams and floodplains (GMNH 2006). The landscape within the project boundary is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands with an elevation between 10 and 20 feet above mean sea level (amsl).

The Satilla River, located approximately two miles to the north of the proposed constructions area, is a typical black water river surrounded by extensive cypress and black gum swamps. The river supports very little development and is subjected to only minor agricultural runoff. The Satilla has an average flow of 85 m^3 and drains approximately 9,143 km^2 (University of Georgia Department of Marine Sciences [UGAMARSCI] 2002). The Crooked River, which is much smaller than the Satilla River, is located approximately 5 miles south of the APE and is contained completely within the Satilla River drainage.

Soils within the Coastal Plain Province are sand and sandy clay of marine origin and generally acidic in nature. These soils generally have low fertility caused by excessive leaching (Georgia Museum of Natural History 2006). Specific soil types for the project area are listed in Table 1 and shown in Figure 2.

Table 1. Specific soils within the proposed St. Marys Airport Relocation APE.

Soil Type	Drainage Characteristics	Associated Environment
Brookman clay loam	Level to gently sloping; very poorly drained	Found on broad, shallow depressions of the flatwoods
Cainhoy fine sand	Level to sloping; excessively drained	Found on uplands
Mandarin fine sand	Level to gently sloping; somewhat poorly drained	Found on ridges and knolls
Meggett fine sandy loam	Level to gently sloping; poorly drained	Found on flood plains and low terraces
Pelham loamy sand	Level to gently sloping; poorly drained	Found along drainageways
Sapelo fine sand	Level to gently sloping; somewhat poorly drained	Found on nearly level flatwoods

Paleoenvironment

Georgia was much cooler and drier than today from 18,000 to 12,000 years before present (yr B.P.), and then became warmer and wetter rather rapidly during the next three millennia. By no later than 9000 yr B.P., the warmer climates of the Holocene began to prevail. Melting of the continental ice sheets led to a major global rise in sea level (summarized for long time scales by Rohling et al. 1998) that started from a low stand of –120 meters at 18,000 yr B.P. The rise was slow while glacial conditions prevailed at high latitudes but became very rapid in the latest Pleistocene and earliest Holocene. By 6000 to 5000 yr B.P., sea level had risen to only 3-5 meters lower than at present. As a generalization, the climate, water levels, and plant communities of southern Georgia and northern Florida attained essentially modern conditions by 4000 B.P. during the Late Archaic period and have been fairly stable through all phases of habitation by ceramic-using cultures (Watts 1971).

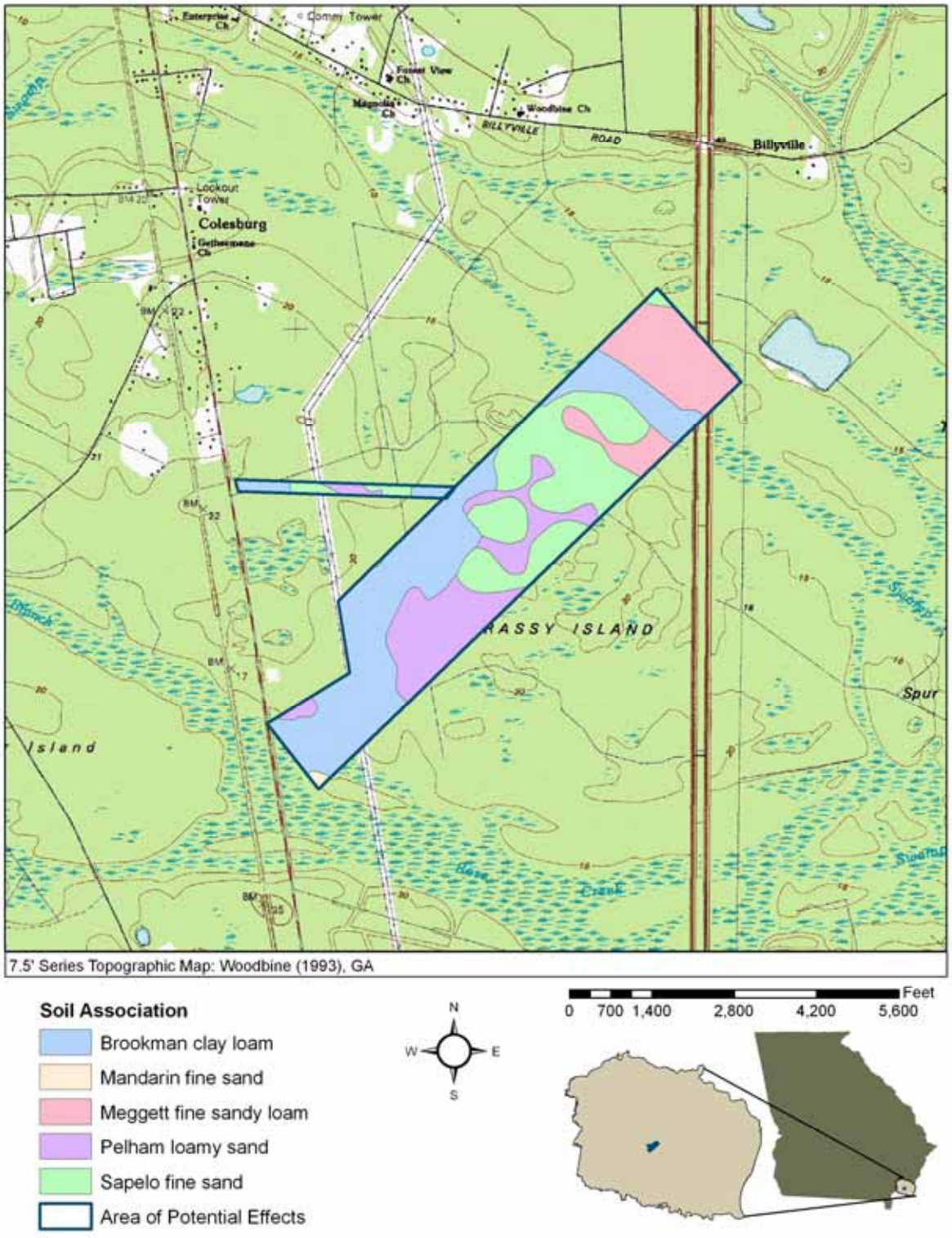


Figure 2. Soil associations within the proposed St. Marys Airport Relocation APE.

PREHISTORIC OVERVIEW

Paleoindian Period (9500 - 8000 B.C.)

The most widely accepted model for the peopling of the New World argues that Asian populations entered North America during one or more migrations over the Beringia land bridge that formerly linked Siberia and Alaska. These migrations occurred by at least 12,000 years ago and data are mounting in support of migrations that date to before that time. Regardless of the precise timing of the first occupations of the New World, it does not appear that humans inhabited Georgia prior to about 9500 B.C. (Anderson et al. 1990; White 2002).

Although most of the evidence for Paleoindian occupation of Georgia comes from surface finds, excavations in neighboring states have allowed the definition of three Paleoindian subperiods, based on projectile point typologies (Anderson et al. 1990). The early Paleoindian subperiod (9,500-9,000 B.C.) is marked by the presence of fluted projectile points including Clovis. The Middle Paleoindian subperiod (9,000-8,500 B.C.) is recognized by the presence of Cumberland, Simpson, Suwannee, Quad, and Beaver Lake projectile points. The final subperiod, the Late Paleoindian (8,500-8,000 B.C.), saw the production of both fluted and unfluted forms of Dalton projectile points. Dalton points appear to be transitional between the lanceolate forms of the very early points and the notched shapes of the Early Archaic period (Ledbetter et al. 1996).

Georgia Paleoindian projectile points are often made from Coastal Plain chert, but quartzes and metavolcanics from the Piedmont also were used (Ledbetter et al. 1996). The Paleoindian point distributions generated by Anderson et al. (1990) show a high frequency of finds in counties near the Fall Line and in the interior Coastal Plain. According to the Georgia Natural, Archaeological and Historic Resources GIS (NAHRGIS) database, there are no Paleoindian sites currently listed in Camden County.

Archaic Period (8000 - 1000 B.C.)

The Early Archaic (8,000-6,000 B.C.) was a time when local groups adapted to a more stable Holocene environment. In the Southeast, it is viewed as a time when small bands ranged widely. Diagnostic artifacts of the period include a variety of corner-notched and stemmed projectile points, including Taylor, Bolen, Palmer, and Kirk, as well as unifacial knives and endscrapers. Few large-scale excavations of Early Archaic sites have been attempted in Georgia, and most of these have conducted at sites within the Savannah River valley (Ledbetter et al. 1996).

Over much of the Piedmont Southeast, the Middle Archaic (6,000-3,500 B.C.) is well represented by a high frequency of Morrow Mountain projectile points made of quartz, with less frequent finds of Stanley and Guilford points. Polished stone axes and perforated steatite slabs also are common (White 2002:28-29). Below the Fall Line however, Middle Archaic manifestations are more difficult to recognize. As a result, little is known of settlement during this period, although Snow (1977:7) notes a preference for settlements located on or

near chert outcrops. The Middle Archaic can be correlated with the onset of the Altithermal, a time when the climate was warmer and drier than at present. Until recently, most researchers had assumed that Middle Archaic populations resided within the inland river valleys of south coastal Georgia where freshwater shell middens are found, making only occasional forays to the Atlantic coast to procure resources. However, recent studies have convincingly demonstrated that Middle Archaic groups occupied sections of the Atlantic seaboard throughout the year (Bond 1992; Piatek 1994; Russo 1988, 1992). Evidence in the form of shell middens has shown that permanent coastal groups were exploiting the bounteous estuarine resources of the Atlantic coast. Coquina clam, oyster, and Quahog clam are the primary component of the coastal middens.

The trend toward increased sedentism and more circumscribed territories continued into the Late Archaic period (3500-1000 B.C.), as environmental and climatic conditions approached those of today. Late Archaic sites are found throughout the state and in all environments (White 2002:31). Life along the coast and major rivers was similar to that of the previous Middle Archaic period, with the economy centered on the exploitation of aquatic resources (Russo 1996; White 2002:32). A major technological innovation of the Late Archaic was the development of fired-clay pottery around 2000 B.C. This early ceramic ware was tempered with vegetal fibers, either thin strands of palmetto or Spanish moss (Sassaman 1993).

Fiber tempered pottery along the Georgia coast is typically known as St. Simons or Sapelo. During a span of approximately 1500 years, plain, incised, and punctated types were produced; decorated variants, however, underwent periods of stylistic popularity. With regard to vessel form, early pots were hand molded and tended to be thick-walled, whereas some of the later vessels were thinner and formed by coiling (Sassaman 1993, 1996). In a review of recent work conducted at the Kings Bay Naval Facility, Hamby and Raymer (1996) noted that the fiber tempered pottery recovered from Late Archaic sites within this area suggest representation of the Orange series, typically found in Florida, as opposed to the St. Simons series of coastal Georgia.

Coastal Late Archaic site types include artifact scatters, shell middens, and shell rings, representing base camps, ceremonial centers, collecting and hunting stations, and/or fishing and processing stations (Russo 1992:111). These coastal inhabitants, based on faunal and flora evidence suggesting permanent occupation, are viewed as discrete cultural groups rather than seasonal visitors (Sassaman 1991).

Woodland Period (1000/500 B.C. - A.D. 1000)

By approximately 1000 B.C., fiber-tempered pottery was replaced by pottery tempered with sand and grit, known as Refuge ware along the coast (White 2002:43-47). Similar decorative modes (e.g., incising and punctations) suggest a link between Refuge and St. Simons wares. As few controlled excavations have been conducted at Refuge sites, little is known about the period. Refuge wares were supplanted by Deptford beginning around 500 B.C.

The Deptford culture reflects a continuation of the coastal way of life that was well established by the Late Archaic (Milanich 1971; White 2002:46-47), and interior sites are

often thought to be the result of small groups of coastal dwellers who ventured inland to hunt and collect local resources (White 2002:46). However, Snow (1977:15-20) questions whether these inland sites represent seasonal forays. For one thing, marine shell tools are rarely found at Deptford sites, suggesting limited contact with the coast. For another, Deptford Simple Stamped appears to be the dominant ceramic type while on the coast Deptford Check Stamped is the more common decorative motif. Finally, there are a few sites with strong Deptford components, including Bridges Field (9WI16) and the Telfair Mound (9TF2), which suggest more than just seasonal transhumance.

Swift Creek is the next archaeological period that manifests itself in Georgia. At interior sites, Swift Creek components are recognized by a variety of complicated stamped designs on pottery. Three subdivisions – Early, Middle, and Late – have been recognized (Caldwell 1958). Early Swift Creek is identified by straight or slightly outslanted rims, notched or scalloped lips, rounded bases with tetrapodal supports, and paddle-stamped decorations that cover the entire vessel. Middle Swift Creek pottery has small folds along the vessel rim and flat bases. Late Swift Creek pottery has folded rims, rounded bases, and zoned complicated-stamping around the vessel waist. Within the greater St. Marys region, the recognition of a Swift Creek cultural group, based on ceramic frequencies, versus the presence of Swift Creek pottery is much more problematic (Russo 1992). Earlier interpretations suggested that these ceramics may have been trade items (Goggin 1952). Most of the ceramics recovered from these sites were sand-tempered plain, while diagnostic Swift Creek ceramics were the minority. Site types include artifact scatters, sheet middens, and ring middens reminiscent of the shell rings seen during the Late Archaic period.

Coexisting with but lasting longer than the Swift Creek Phase, the Wilmington Phase (A.D. 500–1000) is marked by the appearance of cord-marked, grog-tempered ceramics (Hamby and Raymer 1996). It is during this period that maize agriculture enters Georgia. Typically associated with the St. Simons area, the Wilmington ceramic series was in association with Swift Creek ceramics at sites throughout Kings Bay (Ward et al. 1986).

Mississippian Period (A.D. 1000 - 1450)

The Mississippian Period in Camden County is marked by a certain level of ambiguity as the greater St. Marys region appears to be a transition zone between the St. Johns group of Florida and the Savannah/Wilmington group of Georgia. Within this transition zone, ceramic series associated with both groups are typically found at the same sites. Savannah series ceramics are grit tempered and possess a variety of surface treatments, including complicated stamping, cord marking, check stamping, and burnishing. Conversely, St. Johns series ceramics are sponge spicule tempered and are typically plain or check stamped. This has led to the treatment of the assemblages from these sites as a single, Savannah/St. Johns cultural entity (Russo 1992). Espenshade (1985), however, has argued that the St. Johns pottery represents tradewares or seasonal forays into the area.

Mississippian site types in Camden County include seasonal camps, large villages, and burial mounds (Hamby and Raymer 1996). Subsistence is characterized as small-scale horticulture

augmented by estuarine resources and seasonally available resources such as nuts and berries (Ward et al. 1986).

Protohistoric Period

French and Spanish accounts offer glimpses into the lives of the indigenous populations of coastal southeastern Georgia. The natives who inhabited this area at the time of French contact (1562) were one of several Saltwater Timucua groups who collectively inhabited the Atlantic seaboard from central Florida north to the Altamaha River, Georgia (Deagan 1978; Goggin 1952; Hann 1996; Milanich 1995, 1996; Swanton 1922). Three Timucuan tribes existed in the St. Marys region: the Tacatacuru, the Yui, and the Yufera. These groups practiced agriculture, while also maintaining a subsistence base that continued to rely on hunting, gathering, and collecting wild resources (Hamby and Raymer 1996).

HISTORIC OVERVIEW

European settlement in the area that would become Camden County began long before Georgia statehood. French explorer Jean Ribault landed in the vicinity in 1562 and Spanish missions were established on St. Catherine's Island by 1566. By the 1660s, European competition for land rights in the New World were slowly escalating as King Charles II "claimed" southern Georgia for England with several strategic land grants as the Spanish mission system in Georgia was on the decline (Hamby and Raymer 1996; New Georgia Encyclopedia [NGE] 2006).

Georgia became an official English colony in 1732. The city of Savannah was established one year later. By 1758, Georgia possessed seven parishes. The southern two, St. Thomas and St. Marys parishes, were combined in 1777 to form Camden County. Less than a year later, Georgia ratified the U.S. Constitution and became the fourth state admitted to the Union.

Camden County was named after Charles Pratt, Earl of Camden, who was a staunch supporter of the American colonies prior to the Revolutionary War (NGE 2006). Established in 1787, the town of St. Patrick served as the first county seat. Five years later, St. Marys replaced St. Patrick as county seat. In 1800, the county seat again changed hands to the city of Jefferson, established in the vicinity of St. Patrick, which practically disappeared after initially losing the county seat. By 1802, a courthouse and jail had been established in Jefferson, which was thriving on the development of the plantation economy. After the Civil War and destruction of the plantation system, Jefferson began to decline and the county seat was once again moved to the city of St. Marys. The county seat remained in St. Marys until 1923 when it was moved to Woodbine, the current Camden County seat (NGE 2006).

During the Antebellum Era, the Camden County economy rested heavily on the backs of plantation system and the cotton and rice industry that sustained the region. After the Civil War, the post-plantation economy of the late nineteenth century was strengthened by the naval stores industries of timber and turpentine. This would subsequently evolve into the pulp wood and paper manufacturing industry so common today. Camden County was

Georgia's second leading pulp wood producer in the late 1980s, with nearly three-quarters of its land in commercial forests (NGE 2006). Camden County is one of the fastest growing counties in the state of Georgia. Supporting a population of a little more than 13,000 in 1980, Camden County now has a population in excess of 40,000.

PREVIOUS INVESTIGATIONS & RESEARCH DESIGN

Environmentally based predictive models work by correlating the location of known archaeological sites with the ecological landscapes with which they are associated. They then predict that unknown sites should be present in areas with the same or similar sets of characteristics. The result is the development of high, moderate, and low probability areas based on corresponding site location criteria. Environmental variables of high probability areas are similar or equal to environmental variables associated with known archaeological site locations, while low probability areas are more dissimilar than associated characteristics of extant archaeological locations.

According to the Georgia NAHRGIS database, there are no previously recorded archaeological sites or historic structures within the APE for the St. Marys Airport proposed relocation. Additionally, the vast majority of the soils within the boundaries of the APE are somewhat poorly drained to very poorly drained, which in some areas is used as a primary evaluation tool for determining the relative potential for the recovery of previously unrecorded archaeological sites. Typically, poorly drained soils are considered to have a low probability of containing unrecorded archaeological sites. However, well drained to excessively well drained soils only account for 1.8 percent of the total acreage in a two county (Camden and Glynn counties) region (Rigdon and Green 1977). Lacking comparative site or soil data, other variables such as distance to freshwater, distance to previously recorded archaeological sites, current land conditions, and previous land use may provide greater insight into archaeological site recovery potential.

The landscape within the site boundary is currently a mixture of planted pine and mixed hardwoods adjacent to local wetlands. Because of these conditions, high probability areas have been outlined near the northern and southern wetlands in areas near freshwater and that appear to have not been disturbed by silvicultural activities. The remainder of the project area is considered to have a low probability of containing archaeological sites.

SURVEY METHODOLOGY

Archaeological Survey Methods

The archaeological survey of the proposed relocation site of the St. Marys Airport included a pedestrian survey and systematic subsurface testing. The pedestrian survey was conducted throughout the project area at a minimum of 100 meters between pedestrian transects except within wetlands and in areas of extensive tree fall. All shovel tests measured 20 inches (50 cm) in diameter and were excavated to a minimum depth of 39 inches (100 cm) below surface, conditions permitting. Excavated soil was screened through 6.4 mm (1/4 inch) mesh hardware cloth. The location of each shovel test was marked on aerial photographs of the project area. Shovel tests were placed at 25-meter intervals in the high probability areas and

50- and 100-meter intervals in the low probability areas. GPS coordinates were taken of each shovel test with WAAS-enabled hand-held units. The cultural content, stratigraphy, and environmental setting of each shovel test were recorded in field notebooks.

Architectural Survey Methods

The historic structure survey for the project used standard procedures for the location, investigation, and recording of historic structures. In addition to a search of the Georgia Archaeological Site File for any previously recorded historic structures within the project area, older USGS quadrangle maps were reviewed for structures that were constructed prior to 1959. Construction dates were generally determined based on the Camden County GIS website (www.camdencountymaps.com). A thorough field check of the project area was undertaken.

Laboratory Methods and Curation

Artifacts were brought to the SEARCH's laboratory facility in Jonesville, Florida, where they were washed, sorted, analyzed, and classified according to a coding system loosely based on South's method of artifact classification (South 1977). This information was recorded in a Microsoft Access database under the supervision of the Lab Supervisor. All of the artifacts were given code numbers which allow for systematic, comparable data entry. Following analysis, artifacts were rebagged based on artifact type and classification, and were arranged by discrete proveniences. The artifacts were packaged in acid free, 4 mil polyurethane bags with acid free paper label inserts following federally accepted standards. A digitized inventory was included with the artifacts.

Prehistoric Artifacts

Prehistoric lithic artifacts were analyzed by material, method of manufacture, and function. Categories included debitage, lithic tools, cores, bifaces, and biface fragments. Lithic tools and debris were analyzed according to method of manufacture and coded appropriately. Each artifact was examined both macroscopically and microscopically for possible use wear. Microscopic analysis was conducted at low magnification under white light. Raw material provenience was conducted under magnification and used published descriptions of chert samples from known quarry clusters in Florida. Data concerning stone tool types and associated debitage were totaled for the sample, added to the database, and the results used to interpret possible site use.

Historic Artifacts

Historic artifacts were analyzed by use, material type, and function. South's (1977) classification for ceramics has been shown to work effectively on archaeological sites. Classifications are based on differences in paste texture and hardness as well as glaze color and method of decoration. Changes in these criteria can be used to date ceramic artifacts and help determine the age of the site. Changes in the pottery industry were spawned by a need to provide better, stronger, and/or fancier wares to a larger market. The driving force of this

change was the desire to produce a European form of porcelain that could be produced quickly and inexpensively and therefore distributed to a mass market. New decorative techniques included the advent of transfer print which allowed popular patterns to be essentially printed or stamped directly onto unfired ceramic bodies using oiled paper stencils and engraved copper plate templates.

George Miller's (1980) studies have revealed that certain surface treatments such as slip/glaze color, hand painting, transfer printing, polychrome colors, monochrome colors, and embossed designs are the best indicators of ceramic types, periods of manufacture, and economic scaling. Such elements are incorporated in the coding and analysis procedure at SEARCH's lab. Ceramic analysis also included the morphological identification of sherds by rim, base, or body. Archaeologists noted vessel form whenever possible and if the sherd was from a hollowware or flatware vessel. Notes were made of any vessel that could be mended or cross mended between proveniences. Maker's marks on ceramics were recorded and researched using the internet and printed reference books in an attempt to identify manufacturer, location and date of manufacture. The following sources were consulted: Barber (2001), Godden (1996), Kowalsky & Kowalsky (1999), and the Florida Museum of Natural History's Digital Type Collection, located at http://www.flmnh.ufl.edu/ histarch/gallery_types/ (2006).

RESULTS

The project area consists of wetlands, planted pine forest, and oak forest. Rows of planted pine, primarily slash, dominate the center and northern portions of the project area. Oak forests border the wetlands located in the southern most and northern most portions of the project area. They are densely wooded predominately with oak, but also contain some pine and palm trees and an under story of saw palmetto and briars. Wetland vegetation consists of cabbage palm, oak, and cypress trees. There were several dried up swamp beds surrounded with saw palmetto, ferns, and wetland grasses.

An extensive pedestrian survey was carried out and 232 shovel tests were excavated across the approximately 454.51-acre project area, and two isolated finds (IF 1 and IF 2) were recorded (Figure 3). No historic buildings or structures were found within the project area.

Archaeology

An extensive pedestrian survey was conducted and 232 shovel tests were excavated along linear transects across the property at 25- and 50-and 100-meter intervals. Positive shovel tests and sites were bounded at 10-, 15-, and 25-meter intervals. Cultural material was identified within three tests. The location of all tests is provided on a shovel test map in Appendix B. As a result of this survey, two isolated finds (IF 1 and IF 2) were recorded.

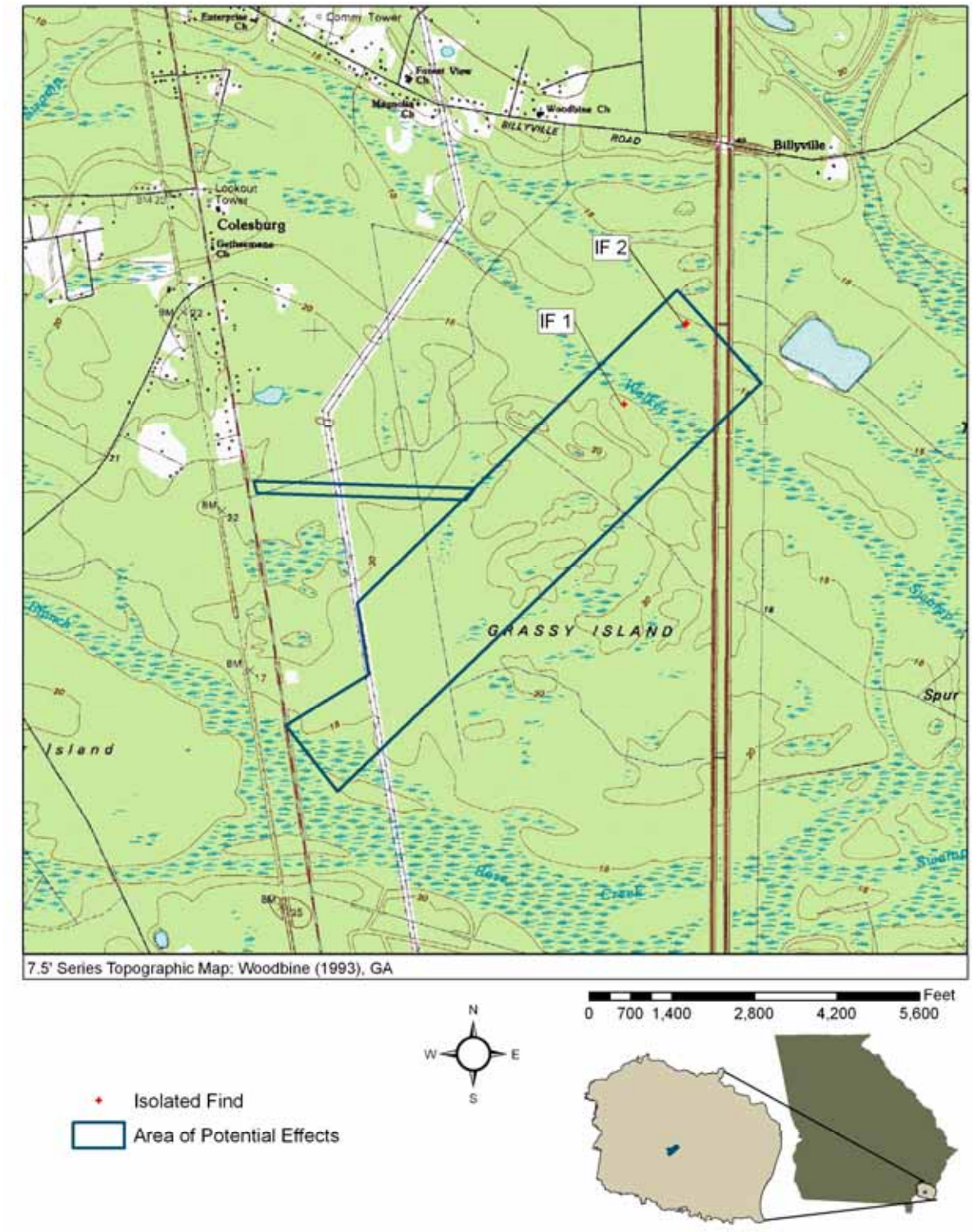


Figure 3. Cultural resources within the proposed St. Mary Airport relocation APE.

Isolated Finds (IF)

Two isolated finds (IFs) were identified within the APE for the proposed St. Marys Airport relocation site and are described below. The artifacts of each IF are unexceptional and isolated, and are therefore not considered sites and are not eligible for listing in the NRHP.

Isolated Find 1 (IF 1)

IF 1 consists of three sherds of Stoneware with Bristol Slip, which has a manufacture date range of 1850 through 1930. These three pieces weigh a combined 141.2 grams and crossmend. Accordingly, this artifact is considered an isolated find rather than a site.

Isolated Find 2 (IF 2)

IF 2 consists of two lithic flakes recovered from two shovels placed 10 meters apart. These complete thinning flakes were heat treated and weigh a combined 3.8 grams. Because these two small lithic flakes were recovered from two shovel tests in close proximity, these artifacts are considered an isolated find rather than a site.

CONCLUSIONS

This report presents the results of a Phase 1 cultural resource assessment survey for the site of the proposed relocation of the St. Marys Airport in Camden County, Georgia. The purpose of this survey was to identify any historic structures and archaeological sites located within the area of potential effects (APE) that may be affected by the relocation and construction of the St. Marys Airport and to assess their eligibility for listing in the National Register of Historic Places (NRHP).

During the survey, 232 shovel tests were placed throughout the 454.51-acre APE and an extensive pedestrian survey was conducted. No above ground features were located and three of the 232 shovel tests produced artifacts, which are considered isolated finds (IF 1 and IF 2). Isolated Finds are by definition not considered significant and are not eligible for listing on the NRHP. No historic structures are present within the APE. The Principal Investigator recommends that no further cultural resource assessments of the proposed relocation site of the St. Marys Airport be required.

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APPENDIX A
Unanticipated Discoveries Statement

UNANTICIPATED DISCOVERIES OF ARCHAEOLOGICAL AND HISTORIC SITES INCLUDING HUMAN REMAINS IN GEORGIA

Although a project area may receive a complete cultural resource assessment survey, it is impossible to ensure that all cultural resources will be discovered. Even at sites that have been previously identified and assessed, there is a potential for the discovery of previously unidentified archaeological components, features, or human remains that may require investigation and assessment. Therefore, a procedure had been developed for the treatment of any unexpected discoveries that may occur during site development.

If UNEXPECTED CULTURAL RESOURCES are discovered the following steps should be taken within two days (Saturdays, Sundays and Legal Holidays excluded) (Official Code of Georgia Annotated (OCGA) 12-3-52).

1) Initially, all work in the immediate area of the discovery should cease and reasonable efforts should be made to avoid or minimize impacts to the cultural resources.
2) A qualified Professional Archaeologist should be contacted immediately and should evaluate the nature of the discovery.
3) The Archaeologist will contact the Deputy State Historic Preservation Officer (SHPO) and the Office of the State Archaeologist at the Georgia Department of Natural Resources (DNR).
4) As much information as possible concerning the cultural resource, such as resource type, location, and size, as well as any information on its significance, should be provided to the SHPO.
5) Consultation with the SHPO should occur in order to obtain technical advice and guidance for the evaluation of the discovered cultural resource.
6) If necessary, a mitigation plan should be prepared for the discovered cultural resource. This plan should be sent to the SHPO for review and comment. The SHPO should be expected to respond with preliminary comments within two working days, with final comments to follow as quickly as possible.
7) If a formal data recovery mitigation plan is required, development activities in the near vicinity of the cultural resource should be avoided to ensure that no adverse impact to the resource occurs until the mitigation plan can be executed.

If HUMAN REMAINS are encountered during site development, the stipulations of OCGA 31-21-6 should be followed. All work in the near vicinity of the human remains should cease and reasonable efforts should be made to avoid and protect the remains from additional impact. In cases of inclement weather, the human remains should be protected with tarpaulins. A qualified Professional Archaeologist should be retained to investigate the reported discovery, inventory the remains and any associated artifacts, and assist in coordinating with state and local officials.

1) Any person who accidentally or inadvertently discovers or exposes human remains shall immediately notify the local law enforcement agency with jurisdiction in the area where the human remains are located.
2) Any law enforcement agency notified of the discovery or disturbance of interred human remains shall immediately report such notification to the coroner or medical examiner of the county where the human remains are located, who shall determine whether investigation of the death is required under OCGA 45-16-24. If investigation of the death is not required, the coroner or medical examiner shall immediately notify the local governing authority of the county or municipality in which the remains are found and the Georgia Department of Natural Resources. If the remains are believed to be those of one or more aboriginal or prehistoric ancestors of or American Indians, then the DNR shall notify the Georgia Council on American Indian Concerns. All land disturbing activities likely to disturb the human remains shall cease until:

   The county coroner or medical examiner, after determining that investigation of the death is required, has completed forensic examination of the site;

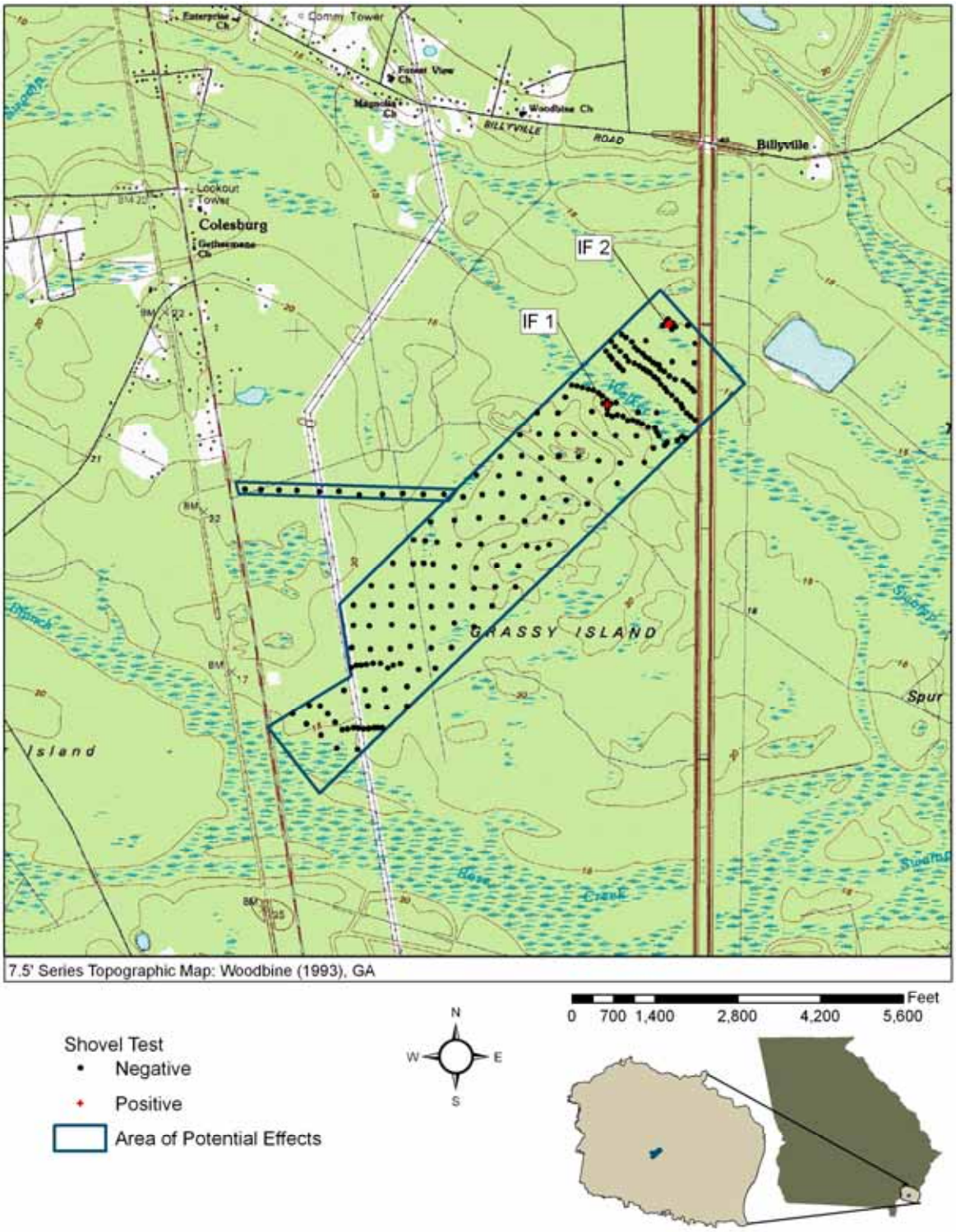
   A permit is issued for land use change and disturbance to OCGA 36-72-4; a permit is issued or a contract is let pursuant to subsection (d) of OCGA 12-3-52; or written permission is obtained from the landowner for the conduct of an archaeological excavation; or

   If such a permit is not sought, the DNR arranges with the landowner for the protection of the remains.

The points of contact for Georgia are:

Dr. Ray Luce, Deputy State Historic Preservation Officer
Dr. David Crass, State Archaeologist
Georgia Department of Natural Resources
Historic Preservation Division
34 Peachtree Street, NW
Atlanta, GA 30303-2316
PH: 404-656-2840

APPENDIX B
Shovel Test Map



Shovel Test Map