

**Environmental Assessment
for the Permanent Colocation of Naval
Special Boat Unit 22 (SBU-22) and Naval
Small Craft Instruction and Technical
Training School (NAVSCIATTS)
Stennis Space Center, Mississippi**

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Table of Contents

Section	Page
1	Introduction 1-1
1.1	Background..... 1-2
1.1.1	Site Location 1-2
1.1.2	Special Boat Unit 22 1-7
1.1.3	Naval Small Craft Instruction and Technical Training School 1-11
1.2	Purpose and Need 1-12
1.3	Description of the Proposed Action..... 1-12
2	Alternatives..... 2-1
2.1	Alternative Locations.....2-2
2.2	Alternative Sites2-5
2.3	No-Action Alternative2-8
3	Affected Environment 3-1
3.1	Topography, Geology, and Soils 3-1
3.1.1	Topography.....3-1
3.1.2	Geology.....3-2
3.1.3	Soils3-2
3.2	Water Resources3-5
3.2.1	Surface Water3-5
3.2.2	Groundwater3-7
3.2.3	Floodplains3-7
3.2.4	Wetlands3-7
3.2.5	Coastal Zone Management3-10
3.3	Terrestrial and Aquatic Resources 3-11
3.3.1	Vegetation.....3-11
3.3.2	Wildlife.....3-15
3.3.3	Threatened and Endangered Species 3-16
3.4	Air Quality3-19
3.5	Noise.....3-20
3.6	Hazardous Materials and Waste Management.....3-21
3.7	Cultural Resources.....3-22
3.8	Infrastructure and Utilities3-24
3.8.1	Transportation.....3-24

Table of Contents (Cont.)

Section	Page
3.8.2	Water 3-26
3.8.3	Sewer 3-29
3.8.4	Storm Water..... 3-30
3.8.5	Solid Waste..... 3-30
3.8.6	Electric..... 3-30
3.8.7	Natural Gas 3-31
3.9	Land Use..... 3-31
3.10	Socioeconomics 3-34
3.10.1	Population and Employment..... 3-34
3.10.2	Housing..... 3-38
4	Environmental Consequences and Mitigative Measures 4-1
4.1	Topography, Geology, and Soils 4-2
4.1.1	Site A 4-2
4.1.2	Site B 4-3
4.1.3	No-Action 4-3
4.2	Water Resources 4-3
4.2.1	Site A 4-3
4.2.2	Site B 4-6
4.2.3	No-Action 4-8
4.3	Terrestrial and Aquatic Resources 4-9
4.3.1	Site A 4-9
4.3.2	Site B 4-11
4.3.3	No-Action 4-12
4.4	Air Quality 4-12
4.4.1	Site A 4-12
4.4.2	Site B 4-13
4.4.3	No Action 4-13
4.5	Noise..... 4-13
4.5.1	Site A 4-13
4.5.2	Site B 4-14
4.5.3	No Action 4-14
4.6	Hazardous Materials and Waste Management..... 4-14
4.6.1	Site A 4-14
4.6.2	Site B 4-15
4.6.3	No-Action 4-15
4.7	Cultural Resources..... 4-15
4.7.1	Site A 4-15
4.7.2	Site B 4-16
4.7.3	No-Action 4-16
4.8	Infrastructure and Utilities 4-16
4.8.1	Site A 4-16
4.8.2	Site B 4-19
4.8.3	No-Action 4-22
4.9	Land Use..... 4-22

Table of Contents (Cont.)

Section	Page
4.9.1 Site A	4-22
4.9.2 Site B	4-23
4.9.3 No-Action	4-24
4.10 Socioeconomics	4-24
4.10.1 Personnel and Employment	4-24
4.10.2 Housing.....	4-25
4.11 Cumulative Impacts	4-25
4.11.1 Relocation of SBU-22.....	4-26
4.11.2 Increased Training Operations.....	4-27
4.12 Unavoidable Adverse Environmental Effects and Considerations that Offset these Effects.....	4-27
4.13 Relationship Between Short-term Uses of the Environment and the Enhancement of Long-term Productivity.....	4-28
4.14 Irreversible and Irretrievable Commitments of Resources	4-28
5 Consistency With Other Federal, State, and Local Plans, Policies, and Regulations.....	5-1
6 References	6-1
7 List of Preparers	7-1
Appendix	
A Agency Correspondence.....	A-1



List of Tables



Table		Page
1-1	NAVSCIATTS – Proposed Course Offerings (2000).....	1-16
2-1	Summary of Operational Criteria for Alternative Locations.....	2-2
3-1	Ranked and Listed Species in the Vicinity of Stennis Space Center	3-17
3-2	Regional Population (1990-1998).....	3-37
3-3	Regional Population Projections (2005)	3-38
3-4	Regional Housing Characteristics (1990).....	3-38
3-5	New Housing Permits (1993-1996).....	3-39
3-6	Home Sales and Average Sales Price in 1998.....	3-39
3-7	Occupancy Rates and Average Rents (Two Bedroom/Two Bath Units) 1997-1998.....	3-39



List of Illustrations



Figure		Page
1-1	Regional Location, Stennis Space Center	1-3
1-2	Site Location	1-5
1-3	Site Map	1-6
1-4	SBU-22 Operational Training Area	1-9
2-1	Site B Location.....	2-7
3-1	Site A – Hydric Soils.....	3-4
3-2	Site A – 100 Year Floodplain.....	3-8
3-3	Site A – Vegetative Cover Types	3-13
3-4	Site A – Utilities.....	3-27
3-5	Site A – Existing Land Use	3-35

This environmental assessment (EA) evaluates the environmental consequences of the Navy's proposed action to collocate Special Boat Unit 22 (SBU-22) and the Naval Small Craft Instruction and Technical Training School (NAVSCIATTS) on an approximately 150-acre (61-hectare [ha]) site within the National Aeronautics and Space Administration (NASA) John C. Stennis Space Center (Stennis Space Center), Mississippi. The proposed action evaluated in this EA involves:

- Construction of permanent training, supply, and maintenance facilities for SBU-22, which is currently operating in temporary modular structures at Stennis Space Center;
- Construction of a permanent training facility, isolation facility, and galley for NAVSCIATTS, which has recently been established in temporary modular structures at Stennis Space Center; and
- Increased personnel and riverine operations associated with the permanent establishment of NAVSCIATTS at Stennis Space Center.

This EA was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); and Chief of Naval Operations Instruction (OPNAVINST) 5090.1B.

The Navy notified various federal, state, and local agencies of its proposed action on June 22, 1999, and published a Notice of Intent in two local newspapers in July 1999. Comments received on the scope of the Navy's proposed action also have been addressed in this EA. Agency correspondence is included in Appendix A.

1.1 Background

1.1.1 Site Location

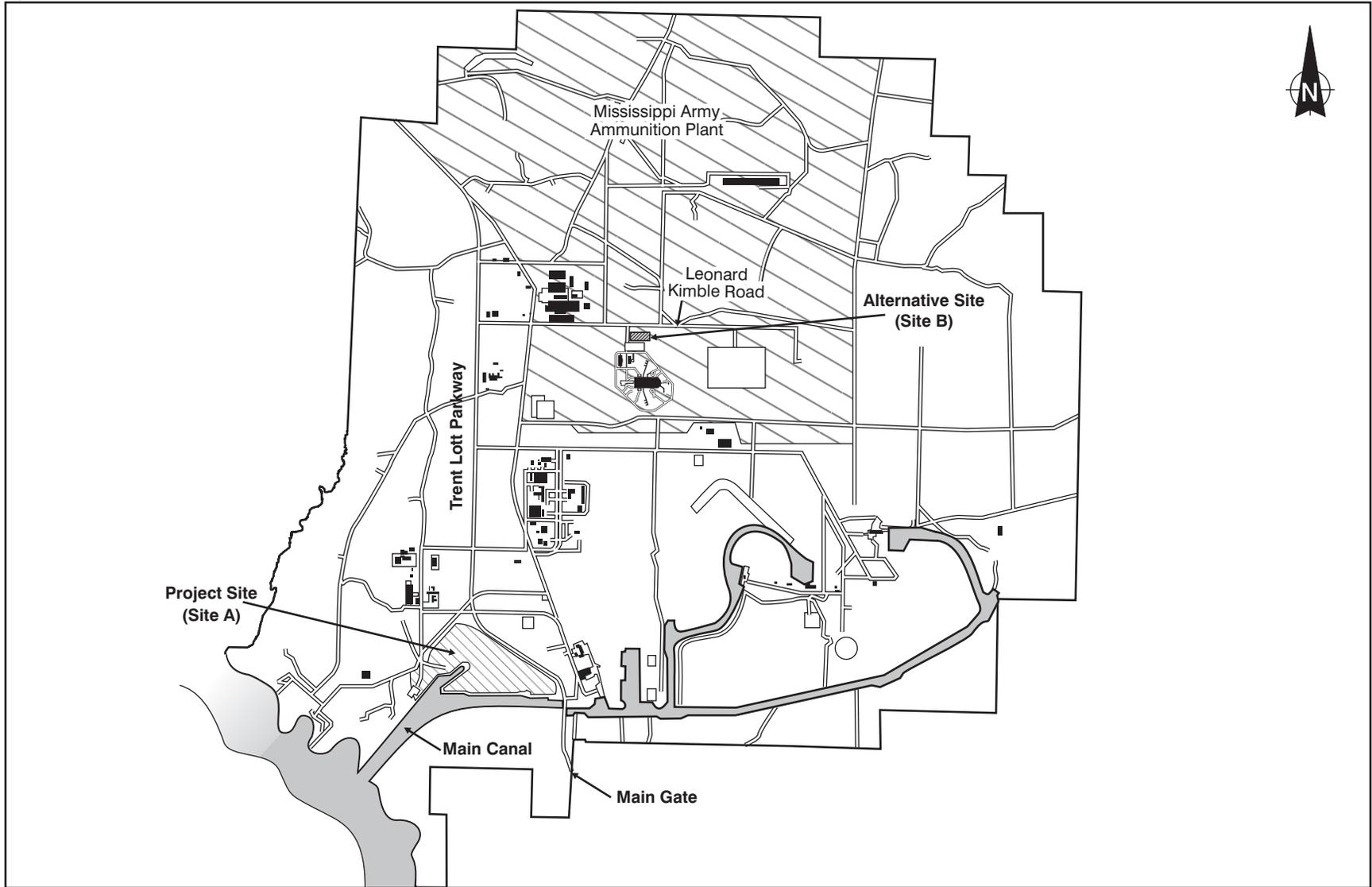
Stennis Space Center is NASA's Center of Excellence in Rocket Propulsion Systems Testing. It is located on 13,800 acres (5585 hectares [ha]) in southwestern Hancock County, Mississippi, approximately 55 miles (88.5 kilometers [km]) northeast of New Orleans, Louisiana, and 50 miles (80 km) west of Gulfport/Biloxi, Mississippi (see Figure 1-1). It was originally established in 1963 as a test site for launch vehicles under the Apollo program. When the federal government purchased the land for the test site, the "fee area," it also established a perpetual restrictive easement extending 5 miles (8 km) outward and around the perimeter of the test site as a safety and acoustic buffer. A total of 125,071 acres (50613.5 ha) are within the restrictive easement, including portions of Hancock and Pearl River counties, Mississippi, and St. Tammany Parish, Louisiana.

The site for Stennis Space Center was selected in part because of its proximity to the Pearl River, which is used to transport large rocket engines, propellants, and other heavy equipment and materials to the facility. NASA constructed a system of canals that linked the Pearl River to the individual test site locations. The Pearl River, dividing the states of Mississippi and Louisiana, flows into the Gulf of Mexico approximately 21 miles (34 km) south of the Center.

The proposed site for construction of facilities to support colocation of SBU-22 and NAVSCIATTS is within a 150-acre (61-ha) site adjacent to the Main Canal at Stennis Space Center (see Figure 1-2). The 150-acre (61-ha) site is triangular in shape, with the Main Canal as the southern boundary (see Figure 1-3). To the east is Trent Lott Parkway, the main roadway leading north from the front gate through the Stennis Space Center. The northwestern and western boundaries are Lower Gainesville and Endeavor roads.

Located within the 150-acre (61-ha) site are several facilities currently used to support SBU-22 training operations, including:

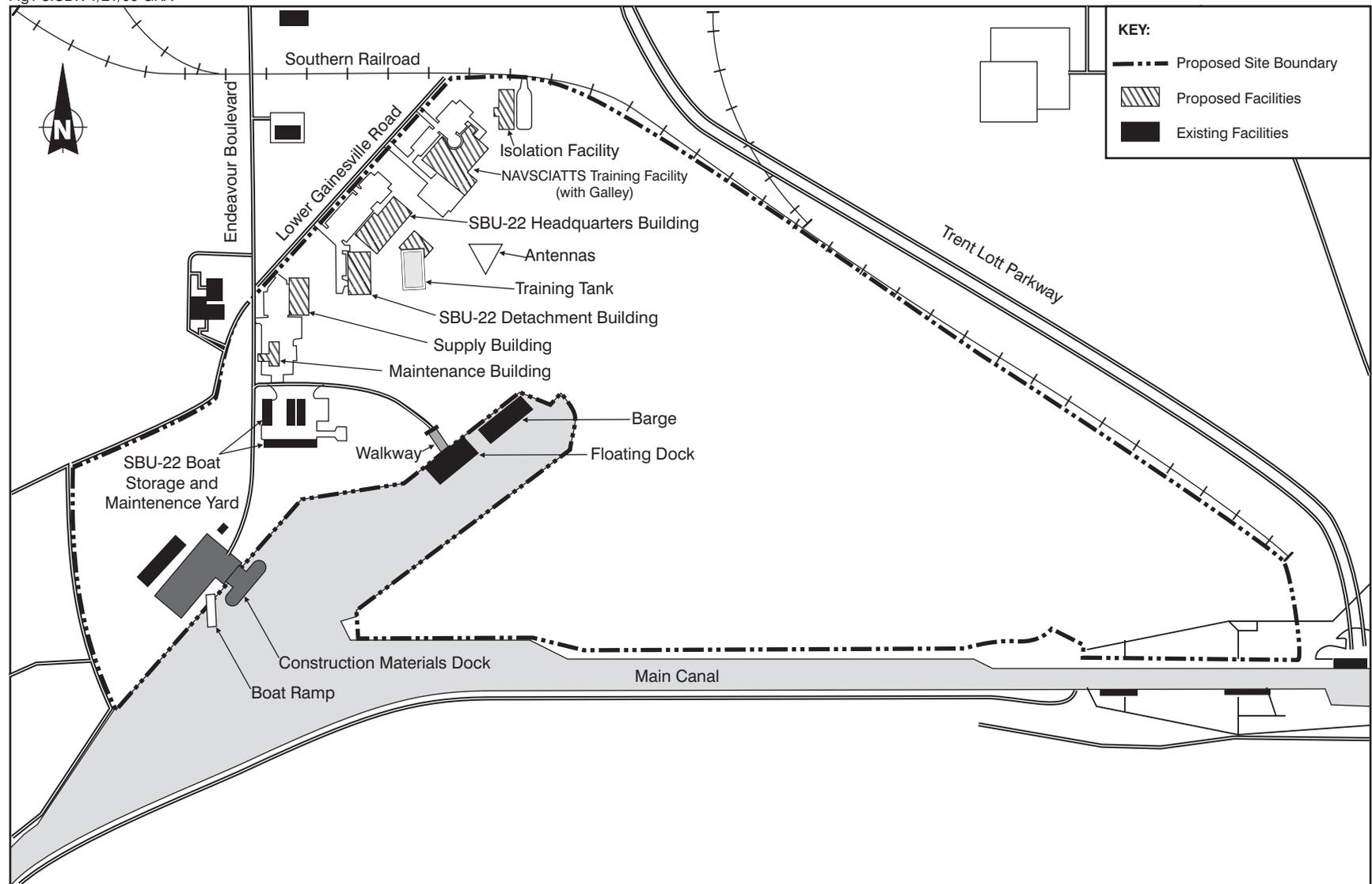
- A floating dock (160 feet [49 meters(m)] long and 6 feet [1.8 meters] wide);



SOURCE: Johnson Controls World Services 1997.



Figure 1-2 SITE LOCATION



SOURCE: Johnson Controls World Services 1997; KBJ Architects 1999

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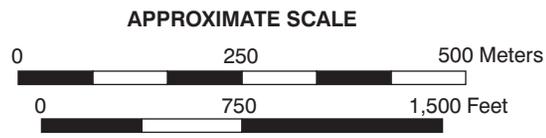


Figure 1-3 SITE MAP

- An elevated wooden walkway from the parking area to the dock;
- A small boat storage yard with a maintenance building (50 feet by 130 feet [15 m by 39.6 m]) and a boat storage shed (50 feet by 250 feet [15 m by 76.2 m]); and
- A small boat ramp and pavement area for the launching and recovery of boats.

1.1.2 Special Boat Unit 22

SBU-22 is part of the Naval Special Warfare Command and is stationed at Stennis Space Center. Its mission is to man, train, and equip combatant craft detachments to conduct special operations in a riverine environment. SBU-22 also assists in the development, testing, and evaluation of riverine combatant craft and specialized weapons and equipment.

SBU-22 has 170 personnel, including 11 officers and 159 enlisted personnel. Eighty-nine enlisted personnel who operate and maintain assigned craft are designated as Special Warfare Combatant Crewmembers (SWCC). The remaining personnel are assigned to the command group or supporting departments. SWCC personnel are assigned to one of eight two-boat detachments, four that can be deployed at any time and four that are either in training or on leave following a training/deployment cycle.

SBU-22's general operational area is the Pearl River and its tributaries within the restricted easement area of Stennis Space Center (see Figure 1-4). Occasionally, SBU-22 conducts operations south of the restricted area, in and around Lake Borgne, and along the Gulf of Mexico coast. SBU-22 detachments typically operate both day and night in two-boat detachments during the work week and periodically on week-ends. Craft training operations occasionally include three detachments, but are typically one to two detachments. Special Operational Forces, such as the Navy SEALs, conduct training exercises with SBU-22 over 1- to 2-week periods in teams of 8 to 16 personnel.

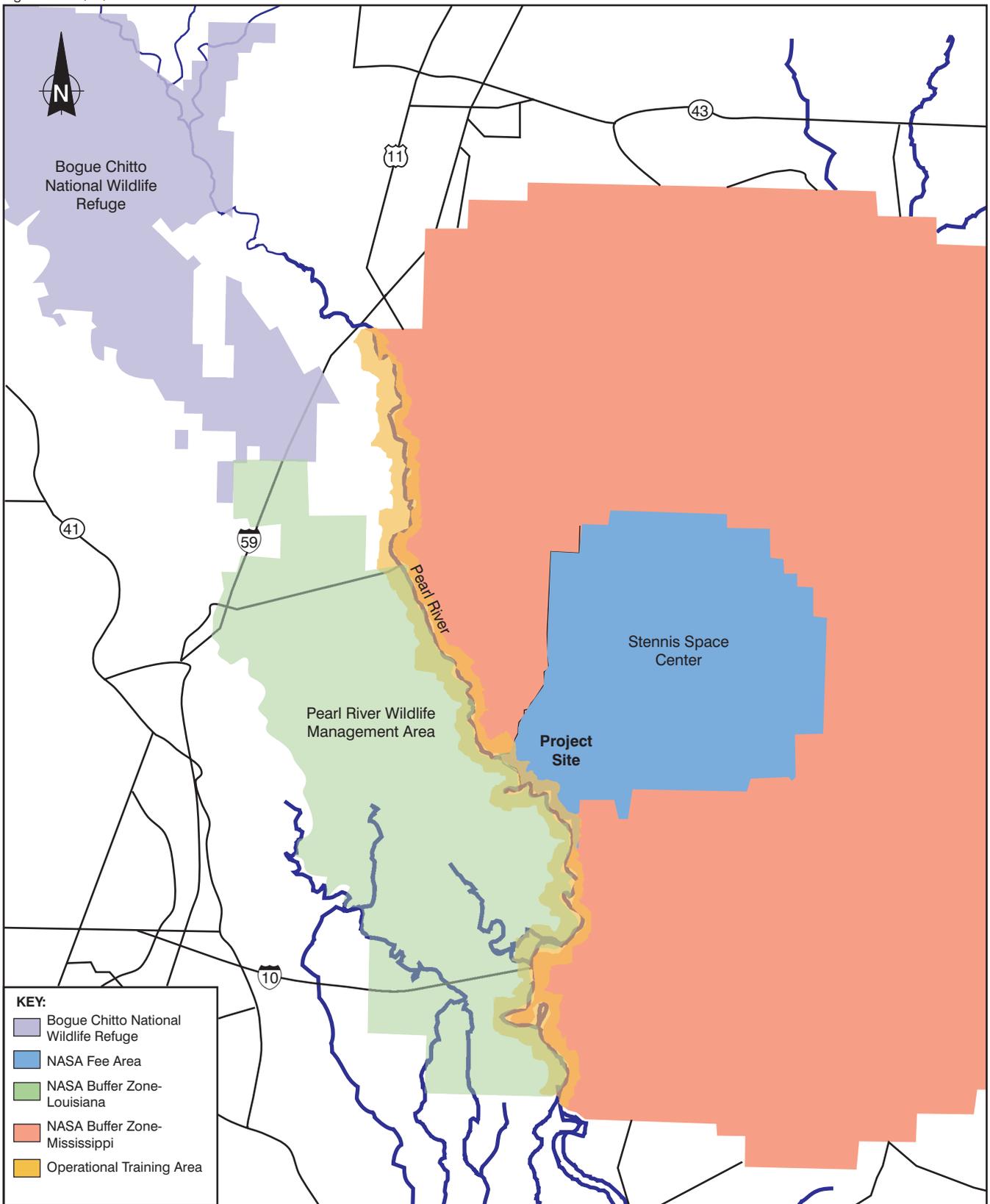
Typical training operations include riverine patrol and interdiction, insertion and extraction of Special Operational Forces (e.g., Navy SEALs) in riverine environments, surveillance of enemy rivers and waterways, and training of foreign military units in riverine patrol tactics. Training scenarios for riverine patrol and interdiction are designed to develop skills in boat handling during high-speed operations and during boarding, search, and seizure of suspect vessels. Surveillance operations develops skills in

concealing watercraft and monitoring traffic in enemy rivers and waterways. Personnel learn tactics to escape detection, and defense maneuvers to use if detected or ambushed. When training with other Special Operational Forces, SBU-22 personnel perform an insertion and extraction mission. Their mission is to deliver and retrieve Special Operational Forces, such as Navy SEALs, at a designated point. SBU-22 trains for both hot (under fire) and cold (no detection) scenarios. SBU-22 does not conduct any live-fire target practice within Stennis Space Center or along the Pearl River. Guns mounted on watercraft are loaded with blank rounds. Operational scenarios are practiced during the day and at night when the detachments have reached a necessary level of proficiency.

SBU-22 conducts various safety practices to minimize interference with other users of the Pearl River, which is open to the public. SBU-22 policy is to survey the river before beginning an operation, and to reduce speed to idle, thereby reducing boat wake and noise, when encountering other boaters. SBU-22 will also elect to conduct operations at another location on the river or tributary to avoid interference with recreational boaters. Training involving blank firing of weapons is conducted north of the Interstate 10 bridge because most of the recreational boaters use the portions of the river south of the bridge. The amount of recreational boat traffic on the Pearl River has not been significant enough to cause conflicts between SBU-22 and other users. SBU-22 has received no official complaint from any individual recreational user, or local, state or federal agency representative.

The primary operational watercraft are Patrol Boats Light (PBLs), Patrol Boats Riverine (PBRs), Mini Armor Troop Carriers (MATCs), and Coastal Assault Craft (CAC). SBU-22 currently operates and maintains 16 PBLs, two PBRs, 10 MATCs, and six CACs. The PBL is a small, lightweight outboard-motor-powered boat, measuring 26 feet (8 m) in length. The PBR and MATCs are both high-speed boats powered by twin engine-driven waterjets. The PBR measures 31 feet (9.8 m) in length, and the MATC measures 36 feet (11 m) in length. The CAC is a single-diesel-engine waterjet craft measuring 26 feet (8 m) in length. All watercraft have mounted armaments.

SBU-22 docking facilities and the boat yard are located near the Main Canal (see Figure 1-3). Administrative and supply facilities are located off Leonard Kimble Road at the Mississippi Army Ammunition Plant (MSAAP) compound within Stennis Space Center, approximately 4 miles (6.4 km) from the docking facilities (see Figure 1-2).



SOURCE: Johnson Controls World Services 1997.



Figure 1-4 SBU-22 OPERATIONAL TRAINING AREA

SBU-22 relocated to Stennis Space Center in 1998 from Naval Support Activity (NSA), New Orleans, Louisiana. Facilities at NSA New Orleans were overcrowded, substandard, and required a long commute to the command's operational training area in the Pearl River and associated tributaries.

Prior to its relocation, the Navy considered several alternatives to establish permanent facilities for SBU-22. Establishment of permanent facilities at Stennis Space Center was determined to best meet the Navy's operational and environmental criteria. The preferred site for construction at the time was within property leased by NASA to the MSAAP. An EA and Finding of No Significant Impact were completed in September 1998. However, construction of permanent facilities was not completed due to the proposed action to colocate permanent facilities with NAVSCIATTS. SBU-22 currently occupies temporary facilities at Stennis Space Center within the MSAAP compound.

1.1.3 Naval Small Craft Instruction and Technical Training School

NAVSCIATTS is part of the Naval Special Warfare Command. Its mission is to foster an increased level of professionalism and readiness in the Naval and Coast Guard forces of allied and friendly nations through Mobile Training Teams and formal courses of instruction in the operation, maintenance, and logistic support of small craft. The schedule and course offerings will be based on the needs and requests submitted by the participant nations each year.

NAVSCIATTS began as a U.S. Coast Guard Mobile Training Team, assigned to the Panama Canal, in 1961. It was transferred to the Navy in 1969 and remained stationed at Naval Station (NS) Rodman, Panama, until 1999 to enhance military relationships between the United States and Latin American and Caribbean Island nations. In January 1999, the command was disestablished because of the impending closure of NS Rodman, which occurred when the Panama Canal reverted to the Republic of Panama under the terms of the Panama Canal Treaty of 1977. NAVSCIATTS was reestablished under the Naval Special Warfare Command in October 1999 and temporarily stationed at Stennis Space Center.

1.2 Purpose and Need

The purpose of the proposed action is to integrate the assets and capabilities of SBU-22 and NAVSCIATTS for classroom and field training in riverine environments. It is driven by the need to establish permanent facilities for SBU-22 and NAVSCIATTS.

SBU-22 currently occupies temporary modular structures within the MSAAP compound at Stennis Space Center, approximately 4 miles (6.4 km) from its docking facilities, and boat storage and maintenance yard. To improve the operational efficiency and effectiveness of its personnel, SBU-22 needs to construct permanent facilities. SBU-22 conducts training operations on the Pearl River and its tributaries, and consolidation of administrative, maintenance, supply, and personnel support functions adjacent to its operational training area would best meet its needs.

NAVSCIATTS also currently occupies temporary modular structures within the MSAAP compound at Stennis Space Center, having been recently disestablished at its previous location at NS Rodman, Panama, and reestablished under the Naval Special Warfare Command.

Through colocation, the Naval Special Warfare Command will be able to standardize operational, training, and maintenance practices for special operations in a riverine environment. In addition, NAVSCIATTS instructors will be able to support SBU-22 operational missions, and SBU-22 operators will be able to provide instruction in NAVSCIATTS training courses. SBU-22 and NAVSCIATTS both operate in a riverine environment and use similar watercraft—high-speed boats designed for riverine patrol and interdiction. The commands differ in that SBU-22 has an operational mission and NAVSCIATTS has a training and instructional mission. Both missions are essential to the Naval Special Warfare Command and will be strengthened through shared resources, facilities, and technical capabilities.

1.3 Description of the Proposed Action

The Navy proposes to colocate SBU-22 and NAVSCIATTS within an approximately 150-acre (61 ha) site at the Stennis Space Center, Mississippi. Colocation would include:

- Construction of permanent training, supply, and maintenance facilities for SBU-22, which is currently operating in temporary modular structures at Stennis Space Center;
- Construction of a permanent training facility, isolation facility, and galley for NAVSCIATTS, which has recently been established in temporary modular structures at Stennis Space Center; and
- Increased personnel and riverine operations associated with the permanent establishment of NAVSCIATTS at Stennis Space Center.

Facilities to support SBU-22 are included within the following military construction (MILCON) projects:

- MILCON P-100
 - Headquarters Building: 40,761 square feet (3786.7 square meters [m²]); and
 - Maintenance Building: 16,305 square feet (1514.7 m²).

Each facility will consist of two floors and will have associated utilities; site improvements; fire protection; and heating, ventilation, and air conditioning systems. In addition, P-100 includes construction of a training tank (i.e., swimming pool) and a 688-square-foot (63.9 m²) pool equipment building.

- MILCON P-110
 - Detachment Building: 26,644 square feet (2475.2 m²).; and
 - Supply Building: 10,244 square feet (951.7 m²).

The Detachment Building will be two stories, and the Supply Building will be one story. These facilities will also include utilities; site improvements; fire protection; and heating, ventilation, and air conditioning systems.

Permanent establishment of NAVSCIATTS at Stennis Space Center will include a total of 41 military personnel: six officers and 35 enlisted personnel. The Navy estimates that during the first year of classes, NAVSCIATTS will train approximately 140 students. Approximately 10 classes would be scheduled the first year, each with a maximum class size of 14 students. By 2002, NAVSCIATTS would train a total of 350 students over the course of the year. An estimated 25 classes would be taught through the year, with a maximum of five to six classes taught concurrently.

The proposed training syllabus for the first year would include 10 classes, each of which would last eight weeks. Six basic-level courses would provide training in operations and maintenance (see Table 1-1). Advanced classes, also eight weeks long, would be scheduled immediately following the prerequisite basic course and build upon the skills taught in the basic courses (see Table 1-1). Between three and six courses would be taught concurrently through the year.

SBU-22 has provided NAVSCIATTS with two of its PBRs and six of its PBLs. NAVSCIATTS personnel would conduct only periodic operations on the river when classes are not in session. An estimated maximum of three boats would operate on the river during non-classroom sessions the first year, and an estimated maximum of six boats would operate on the river during non-classroom sessions by the year 2002. Operations would be conducted primarily during the day but would occasionally be conducted at night.

For purposes of analysis, the proposed increase in riverine operations is presented in boat miles per year. Permanent establishment of NAVSCIATTS at Stennis Space Center would increase the number of boat miles on the Mississippi side of the Pearl River and tributaries in the state of Mississippi by an estimated 40%. The proposed action is still under review by the state of Louisiana; none of the proposed operations would be conducted within Louisiana waters until outstanding issues are resolved. Separate NEPA documentation will be prepared to address operations within Louisiana waters.

SBU-22's current riverine operations total approximately 36,000 boat miles per year, assuming that each of six two-boat detachments will operate at an average speed of 15 mph for 400 hours over the course of the year (i.e., approximately 25 days of operations per boat for approximately 8 hours per day).

NAVSCIATTS would generally operate at a lower speed, i.e., 5 mph, and would operate for fewer hours. During the first year, an estimated maximum of three boats would operate on the Mississippi side of the river and tributaries during six 8-week-long sessions. Assuming an average of four hours per day, one day per week, the estimated number of boat miles the first year would be 2,800. The number of boat miles would increase to a maximum of 14,400 by the year 2002.

Riverine operations would be conducted in the same general geographical area as SBU-22, i.e., primarily within the restrictive easement area of the Stennis Space Center,

although occasionally south to the Gulf of Mexico. However, as stated above, none of the proposed operations would be conducted within Louisiana waters until outstanding issues are resolved.

Facilities to support NAVSCIATTS are included within MILCON Project P-130:

- MILCON P-130
 - Training Facility: 40,000 square feet (3,716 m²);
 - Isolation Facility: 15,000 square feet (1,393.5 m²); and
 - Galley: 5,000 square feet (464.5 m²).

The training facility will have classrooms and hands-on technical training shops for propulsion system maintenance/overhaul, battery maintenance/overhaul, electronic maintenance, and hull maintenance. The isolation facility is planned for 80 students and will consist of one- and two-person modules with sleeping area, living area, closets, and bathroom.

Facilities to support SBU-22 and NAVSCIATTS will require an approximately 20-acre (8-ha) site (see Figure 1-3). These facilities will be constructed within an approximately 150-acre (61-ha) project site, most of which will remain undeveloped and reserved for potential future expansion.

Housing for U.S. military personnel and other personnel support services (i.e., medical services) will be provided as available by Naval Construction Battalion Center (NCBC) Gulfport, Mississippi, located approximately 50 miles (80.5 km) east of Stennis Space Center. NCBC Gulfport supports the operations of the Atlantic Fleet Seabees, including four active Naval Mobile Construction Battalions, the 20th Naval Construction Regiment, a Naval Construction Training Center, and several tenant activities. NCBC Gulfport maintains housing and other personnel support services for both permanent and transient personnel. Due to a current military housing shortage at NCBC Gulfport, most of the military personnel will seek housing in local communities.

Table 1-1 NAVSCIATTS – Proposed Course Offerings (2000)

Course	Description	Duration	Schedule
Basic Level			
Patrol Craft Operator	Operate small craft in coastal and riverine waters.	8 weeks	January-February; March-April; July-August
Patrol Craft Propulsion System Maintenance	Perform routine and preventive maintenance on small craft diesel engines.	8 weeks	July-August
Patrol Craft Hull Maintenance	Perform non-structural repairs and preventive maintenance to steel, fiberglass, and inflatable hull small raft at the apprentice level.	8 weeks	January-February; March-April; July-August
Patrol Craft Weapons Maintenance	Perform routine and preventive maintenance on patrol craft weapons systems.	8 weeks	March-April; May-June; September-October
Work Center Instructor	Conduct formal training in a class- room environment (i.e., instruction methods and techniques, effective communication).	8 weeks	May-June; July-August; September-October
Outboard Motor Maintenance and Overhaul	Operate, maintain, and overhaul outboard motors.	8 weeks	January-February; March-April; July-August
Advanced Level			
Patrol Craft Propulsion System Overhaul	Perform overhaul on small craft diesel engines.	8 weeks	September-October
Patrol Craft Commander	Perform duties of a Patrol Craft Commander in coastal waters (e.g., leadership, boat crew organization, basic navigation, etc.).	8 weeks	March-April; May-June; September-October
Riverine Operations Planning	Safely plan and execute patrol craft missions in a riverine environment.	8 weeks	July-August
Rule of Law and Disciplined Military Operations	Basics of the rules of law and application to planning and conducting military operations.	8 weeks	March-April; September-October

The Navy considered five alternatives for permanent relocation of NAVSCIATTS from NS Rodman, Panama. These alternatives were considered primarily because of their proximity to coastal and riverine environments that are similar to the operational environments of the Latin American, Caribbean, and Southeast Asian forces trained by NAVSCIATTS. These alternatives included: Naval Construction Battalion Center (NCBC) Gulfport, Mississippi; NS Pascagoula, Mississippi; Naval Weapons Station (NWS) Charleston, South Carolina; Marine Corps Base, Camp Lejeune, North Carolina; and Stennis Space Center.

The Navy determined that the preferred alternative was to collocate NAVSCIATTS with SBU-22 at Stennis Space Center with personnel support services provided by NCBC Gulfport. Two site alternatives for collocation of permanent facilities for SBU-22 and NAVSCIATTS were considered: a site within the MSAAP compound at Stennis Space Center, and a site adjacent to the Main Canal. In addition, the Navy considered the no-action alternative in compliance with NEPA.

Based on an analysis of these alternatives, collocation of permanent facilities at the site adjacent to the Main Canal was selected as the proposed action for further analysis in this EA. The site alternative at the MSAAP and the no-action alternative also are further assessed in this EA.

The alternatives to the proposed action and the criteria used to evaluate these alternatives are briefly described below.

2.1 Alternative Locations

The following criteria were used to evaluate each of the alternative locations for NAVSCIATTS and to select a preferred alternative:

- Access to a realistic riverine and coastal training environment that is secluded and has a low surrounding population density;
- Availability of land and/or facilities to locate a training facility, isolation facility, and galley in proximity to the training area;
- Availability of adequate and affordable housing, schools, and services to support the overall morale and quality of life of personnel;
- Cost-effective use of public land and facilities at a U.S. Department of Defense or other federal installation;
- Availability of land and facilities to support potential growth in training operations in the future; and
- Opportunity to integrate the assets and capabilities of Naval Special Operational Forces in a riverine environment.

Each of the five alternative locations is evaluated below. Table 2-1 presents a summary of the operational criteria for each of the alternative locations considered.

Table 2-1 Summary of Operational Criteria for Alternative Locations

Location	Training Environment	Capacity	Personnel Support	Cost-Effective	Growth Potential	Integration of Special Operations Training
NCBC Gulfport	Yes	No	Yes	Yes	No	No
NS Pascagoula	No	No	Yes	Yes	No	No
NWS Charleston	No	Yes	Yes	Yes	Yes	No
MCB Camp Lejeune	Yes	Yes	Yes	Yes	No	No
Stennis Space Center	Yes	Yes	Yes	Yes	Yes	Yes

Naval Construction Battalion Center (NCBC) Gulfport, Mississippi

NCBC Gulfport comprises 1,100 acres (445 ha) and is located in Gulfport, Harrison County, Mississippi, approximately 1.5 miles (2.4 km) north of the Gulf of Mexico. NCBC Gulfport supports operations of the Atlantic Fleet Seabees, including four active Naval Mobile Construction Battalions, the 20th Naval Construction Regiment, a Naval Construction Training Center, and several tenant activities.

The closest suitable training environment is the Pearl River, which is located approximately 50 miles (80 km) west of NCBC Gulfport. Available land and facilities would not be in proximity to the training environment, and NCBC Gulfport would not have the capacity to support any potential growth in training operations by NAVSCIATTS in the future. NCBC Gulfport would not allow for the assets and capabilities of Naval Special Operational Forces to be fully integrated. NAVSCIATTS would use some of SBU-22's physical facilities at the operational training area, but the operational synergy associated with colocation would not be achieved. Although the availability of military housing at NCBC Gulfport is limited, the local community, in conjunction with NCBC Gulfport, would provide adequate and affordable housing, schools, and services to support the overall morale and quality of life of personnel.

Naval Station (NS) Pascagoula, Mississippi

NS Pascagoula comprises 187 acres (75.7 ha) of Singing River Island, located in Pascagoula Bay, Jackson County, Mississippi. The Pascagoula River divides the cities of Pascagoula and Gautier and flows into Pascagoula Bay. NS Pascagoula is homeport to several ships, including the *USS Yorktown* and *USS Stephen W. Groves*, and hosts the Office of Supervisor of Shipbuilding (SUPSHIP Pascagoula).

The coast of the Gulf of Mexico would provide a suitable coastal training environment, but large portions of the Pascagoula River are developed and would not be suitable as a riverine training area. NS Pascagoula and the local community would provide adequate and affordable housing, schools, and services to support the overall morale and quality of life of personnel. Although NS Pascagoula maintains waterfront facilities, it does not have sufficient land or facilities to locate a training facility, isolation facility, and galley in proximity to the training area or to support potential growth in training operations in the future. In addition, permanent relocation to NS Pascagoula would not allow for the assets and capabilities of Naval Special Operational Forces in riverine warfare to be integrated.

Naval Weapons Station (NWS) Charleston, South Carolina

NWS Charleston comprises 17,500 acres (7,082 ha) in Berkeley and Charleston counties, South Carolina, approximately 12 miles (19.3 km) north of the City of

Charleston. It is adjacent to the Cooper River, which flows into Charleston Bay at the Atlantic Ocean. NWS Charleston provides support for assigned weapons and weapon systems, including guided missiles, conventional ammunition, torpedoes, and other underwater weapons.

NWS Charleston would have available land and/or facilities to locate a training facility, isolation facility, and galley, and to support potential growth in training operations in the future. NWS Charleston and the local community would also provide adequate and affordable housing, schools, and services to support the overall morale and quality of life of personnel. The Cooper River and associated tributaries offer access to both a coastal and riverine training environment. Portions of the Cooper River and its tributaries are surrounded by marshland and/or are contained within the boundaries of NWS Charleston or the Explosive Safety Quantity Distance arcs associated with operations at the base. However, other sections are adjacent to historic home sites and other residential and commercial properties, limiting the area of suitable training environment. In addition, permanent relocation to NWS Charleston would not allow for the assets and capabilities of Naval Special Operational Forces in riverine warfare to be integrated.

Marine Corps Base (MCB), Camp Lejeune, North Carolina

MCB Camp Lejeune comprises 153,439 acres (62,121 ha) in Onslow County, North Carolina. Located along the Atlantic coast, it is the home of the Marine Corps Expeditionary Forces in Readiness. The Special Operations Training Group, Second Marine Expeditionary Force, and the Small Craft Company of the 2nd Marine Division currently conduct riverine training courses or exercises on the New River and the 14-mile MCB Camp Lejeune coastline. The U.S. Marine Corps is currently proposing to establish a Riverine Center of Excellence at Camp Lejeune, which would consolidate and increase riverine training programs and readiness operations.

MCB Camp Lejeune offers a realistic riverine and coastal training environment and has the land and/or facilities to locate a training facility. Camp Lejeune, however, would neither support potential growth in training operations nor allow the Navy the opportunity to integrate the assets and capabilities of Naval Special Operational Forces in a riverine environment. MCB Camp Lejeune is a Marine Corps facility, and its training and operational missions differ from those of the Navy. Although Camp Lejeune could

support a Naval mission, Marine Corps training and operational schedules would have precedence over Naval training and operational schedules. Camp Lejeune would have adequate and affordable housing, schools, and services to support the overall morale and quality of life of personnel.

Stennis Space Center

Relocation to Stennis Space Center best meets the operational criteria established by the Navy.

Stennis Space Center is a 13,800-acre (5585 ha) federal facility located in Hancock County, Mississippi. It is NASA's Center of Excellence in Rocket Propulsion Systems Testing, with large areas of undeveloped space. Stennis Space Center is located adjacent to the Pearl River, which would provide a suitable coastal and riverine training environment. SBU-22 currently maintains waterfront facilities at the Center, including docking facilities and a boat maintenance and storage yard.

Although military housing is not available at Stennis Space Center, the local community, in conjunction with Stennis Space Center, would provide sufficient adequate and affordable housing, schools, and services to support the overall morale and quality of life of personnel. Use of military housing and other personal support services at NCBC Gulfport would supplement these resources in the local community and provide low-cost alternatives for military personnel, as available. NASA maintains sufficient land and facilities to locate a training facility, isolation facility, and galley in proximity to the training area and to support potential growth in training operations. In addition, Stennis Space Center would allow the assets and capabilities of Special Operational Forces in riverine warfare to be integrated.

2.2 Alternative Sites

The Navy considered two sites at Stennis Space Center: a site adjacent to the Main Canal (Site A) and a site within the MSAAP compound at Stennis Space Center (Site B).

The following criteria were used to evaluate each of the alternative locations and to select the proposed action. The location of the site should:

- Support the operational efficiency of SBU-22 and NAVSCIATTS;
- Avoid significant wetland impacts;
- Avoid the 100-year floodplain;
- Avoid impacts to significant cultural resources; and
- Avoid impacts to threatened and endangered species.

Both alternative sites are evaluated below and discussed in more detail in Section 4.

Site A

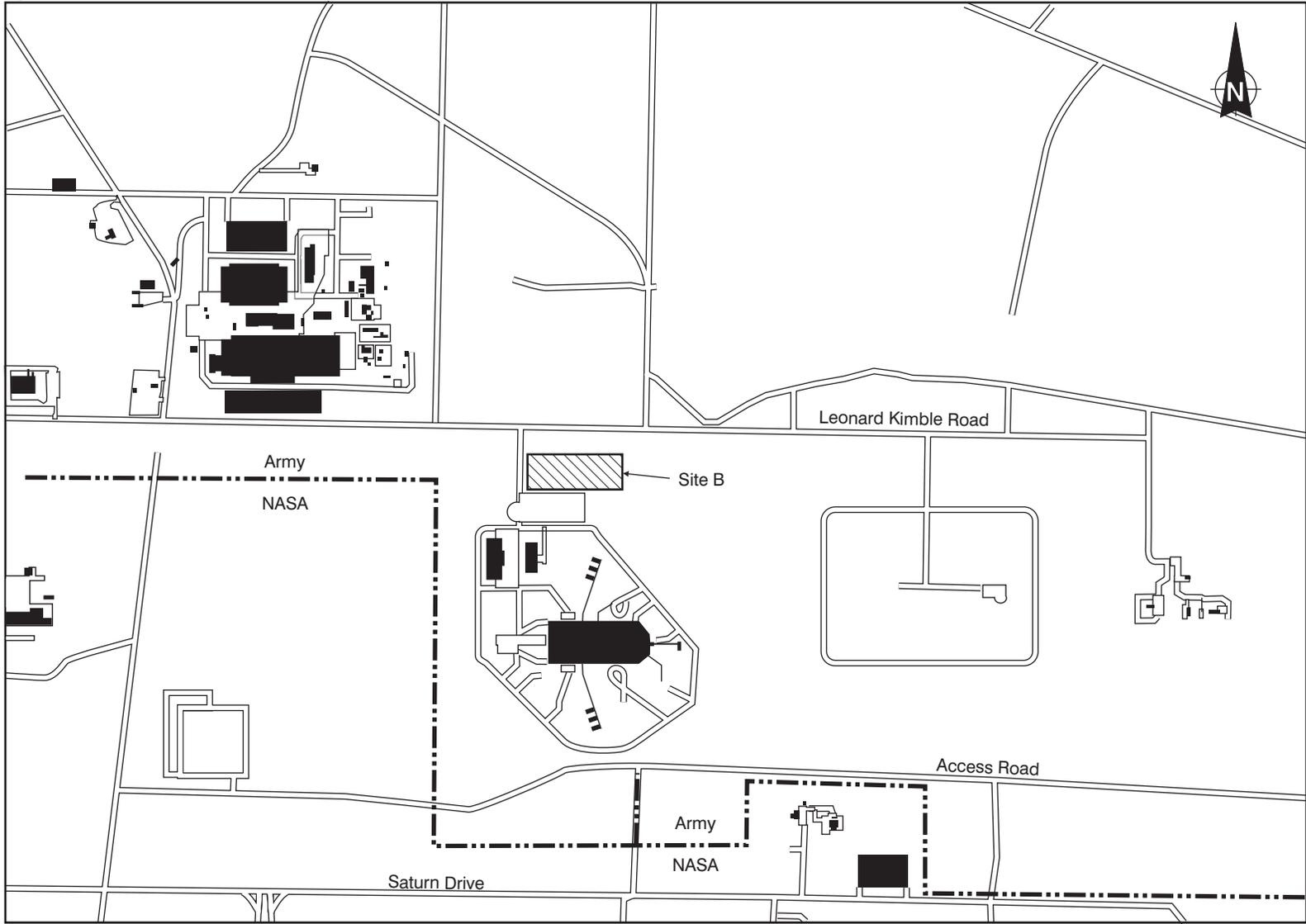
Site A is the site of the Navy's proposed action. Site A is a 150-acre (61-ha) site adjacent to the Main Canal at Stennis Space Center (see Figure 1-3). The site is triangular in shape, and the Main Canal is the southern boundary. To the east is Trent Lott Parkway, the main roadway leading north from the front gate through the Stennis Space Center. The northwestern and western boundaries are Lower Gainesville and Endeavor roads. Site A contains SBU-22's existing docking facilities and boat storage and maintenance yard.

Site A would best meet the operational efficiency criteria by consolidating administrative, maintenance, supply, and personnel support functions near the operational training area. Construction and operation of facilities at Site A would avoid all but a small portion of the 100-year floodplain and have no significant impact on wetlands, cultural resources, or threatened and endangered species.

Site B

Site B is an approximately 6-acre (2.4 ha) site located within the MSAAP compound at Stennis Space Center (see Figure 2-1). The site is south of Leonard Kimble Road and adjacent to the main industrial complex. SBU-22 currently occupies temporary facilities near the project site, which requires a commute of 4 miles (6.4 km) to the water-front facilities and the operational training area.

Site B does not best meet the operational efficiency criteria. Administrative, supply, and personnel support functions would be separate from the maintenance and



SOURCE: Johnson Controls World Services 1997.



Figure 2-1 SITE B LOCATION

operational areas of the command, which would create inefficiencies in operations and training.

Consolidation of all SBU-22 functions would support the unity of the Command, and would allow for the Command headquarters personnel to monitor and assist in boat launch and recovery operations, ensuring the safety of SBU-22 personnel. However, construction and operation of facilities at Site B would avoid the 100-year floodplain and have no significant impact on wetlands, cultural resources, or threatened and endangered species. Although Site B is not the most operationally efficient site, it is considered a reasonable alternative and is assessed further in this EA.

2.3 No-Action Alternative

Under the no-action alternative, SBU-22 would continue to operate from temporary modular structures within the MSAAP compound. SBU-22 trucks and personnel vehicles would continue to be used to transport personnel from administrative offices and supply warehouses to the docking facilities and boat yard.

Under the no-action alternative, NAVSCIATTS would continue to operate from temporary modular structures within the MSAAP compound and would be limited to in-classroom training only.

3.1 Topography, Geology, and Soils

3.1.1 Topography

The general topography of the Stennis Space Center is characterized by a series of gently rolling hills and low, flat areas. The major topographic features are north-south trending elevated ridges.

Site A

The topography of the proposed 150-acre (61-ha) waterfront site is nearly level to gently sloping. Elevations at the proposed site range from 5 to 25 feet (1.5 to 7.5 m) above mean sea level (MSL). The southern portion of the site is generally low and flat adjacent to the Main Canal. The terrain slopes moderately to the north-northwest and to the southeast. Steep slopes rise from the drainageways through the interior of the site to a generally level, higher elevation in the northern portion of the site.

Site B

Topography at the MSAAP site is level to gently sloping. The area is approximately 30 feet (9.1 m) above MSL and is nearly level, with the exception of drainage ditches adjacent to the north and east sides of the site. Spoil excavated from the eastern drainage ditch has been placed between the site and the ditch, impeding drainage on the eastern third of the site.

3.1.2 Geology

Site A

The waterfront site is underlain by a thick sequence of sedimentary deposits consisting of five stratigraphic units. The deepest (i.e., oldest) formation is the Catahoula, consisting of sandstone, sand, and gravel beds interlayered with clays. The Hattiesburg formation is nearly indistinguishable from the underlying Catahoula formation and the overlying Pascagoula formation. The Citronelle formation consists of coarse-grained sand, silt, gravel, and colored clays. The Pamlico Sand formation is the youngest, covering the waterfront area except where it has eroded. The formation consists of gray and tan sand and weathered chert pebbles (Johnson Controls World Services 1999; Morse 1944).

Site B

The MSAAP site is underlain by approximately 3,000 feet (914.4 m) of unconsolidated alluvial sediments consisting of five stratigraphic units. The deepest formation is the Catahoula, followed by the Hattiesburg and Pascagoula formations; the geological and stratigraphical characteristics of these formations are described above. The Graham Ferry formation consists of interbedded sands and clays. The Citronelle formation is the youngest, covering the surface of the site, and consists of coarse-grained sand, silt, gravel, and colored clays (Mason Technologies, Inc. 1998).

3.1.3 Soils

Site A

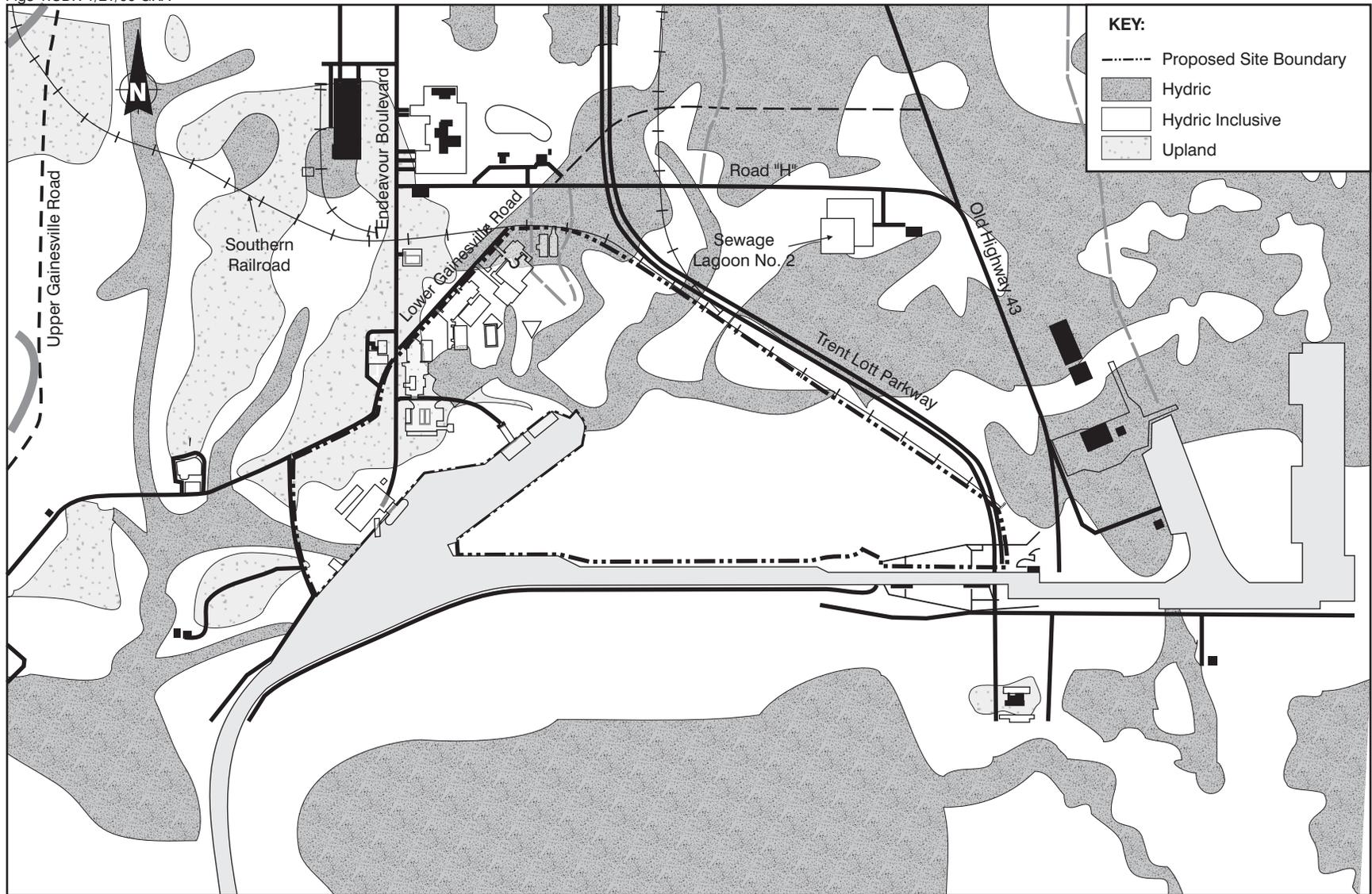
Two soil associations — the Arkabutla-Rosebloom association and the Atmore-Beauregard-Escambia association — underlie the waterfront site. The Arkabutla-Rosebloom association, underlying approximately 70% of the site, consists of nearly level, somewhat poorly drained and poorly drained silty soils on a broad floodplain. Slopes range from 0 to 2%, and the natural condition of the association is woodland. The Atmore-Beauregard-Escambia association, underlying approximately 30% of the site, consists of nearly level to gently sloping, moderately well drained to poorly drained silty

and loamy soils. Slopes range from 0 to 5%, and the natural condition of the association is primarily woodland (United States Department of Agriculture [USDA] 1981).

Predominant soil types on site are Atmore silt loam; Sulfaquepts sand; and Harleston, Saucier, and Poach fine sandy loam. Atmore silt loam and Sulfaquepts sand are considered hydric soils; Harleston, Saucier, and Poach fine sandy loams contain hydric inclusions (USDA 1981). A generalized map of the hydric and hydric-inclusive soils on site is presented on Figure 3-1. Atmore silt loam soils are poorly drained and are found on broad, wet, upland flats with slopes ranging from 0 to 2%. The flat to gently rolling slopes are not conducive to erosion. Runoff is slow across these soils, and their natural condition is woodland. Sulfaquepts sand is found in areas of fill along the waterfront and wetland areas. These soils have variable texture and are strongly acidic, with slopes ranging from 0 to 5%. The erosion hazard of these soils is slight. Harleston fine sandy loam soils are moderately well drained and are found on stream terraces and low upland ridges. Runoff is slow in these soils, and slopes range from 0 to 2%. The erosion hazard of these soils is slight. Saucier fine sandy loam soils are also moderately well drained and formed in a thin mantle of sandy material underlain by clay. These soils are found on upland ridges and side-slope areas and exhibit a slight to moderate erosion potential. Slopes range from 2 to 8%. Poach fine sandy loam soils are well drained and found on upland ridges. Runoff is slow to medium, and erosion potential is slight. Slopes range from 2 to 5% (USDA 1981). The facilities proposed for SBU-22 and NAVSCIATTS would be constructed partially on hydric soils and partially on soils with hydric inclusions (see Figure 3-1).

Site B

The Atmore-Smithton-Escambia association and the Atmore-Beauregard-Escambia association have also been identified in the MSAAP site. They underlie approximately 60% and 40%, respectively, of the total area. The Atmore-Smithton-Escambia association consists of nearly level to gently sloping, poorly drained and somewhat poorly drained silt and loam soils on drainageways; broad, wet upland flats; and low upland ridges. Slopes range from 0 to 5%, and the natural condition of the association is woodland. The characteristics of the Atmore-Beauregard-Escambia Association are described above under Site A (USDA 1981).



SOURCE: USDA 1981.

APPROXIMATE SCALE



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Figure 3-1 SITE A – HYDRIC SOILS

3.2 Water Resources

3.2.1 Surface Water

Stennis Space Center is located by the East Pearl River. Approximately 8 miles (13 km) of canals within the fee area service the Stennis Space Center and connect to the East Pearl River through a lock system. The Pearl River drainage basin covers an area of 6,630 square miles (17,171 km) and is located within seven counties/parishes in Mississippi and Louisiana. West of Piscayune, Mississippi, the river divides into two main channels—the West Pearl River and the East Pearl River (or Pearl River). The East Pearl River forms the boundary between Louisiana and Mississippi. The East Pearl River drains to Lake Borgne and eventually to the Mississippi Sound and the Gulf of Mexico.

According to data collected at the Bogue Chitto gauge station, the discharge rate of the East Pearl River has ranged from 1,580 cubic feet per second (cfs; 44.7 cubic meters [m³] per second) to the record discharge of 230,000 cfs (651.3 m³ per second) on April 9, 1983, which was also a record gauge height of 21.05 feet (6.4 m). The average discharge is 9,470 cfs (268.2 m³ per second) (United States Geological Survey [USGS] 1999).

The State of Mississippi classifies the Pearl River as suitable for recreation. It is also listed on the Nationwide Rivers Inventory, a register of river segments compiled by the National Park Service, that potentially qualify as national wild, scenic or recreational river areas under the national Wild and Scenic Rivers Act.

The Wild and Scenic Rivers Act of 1968 established the National Wild and Scenic Rivers System comprised of river segments which possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values.

They are classified as wild, scenic or recreational as follows:

- Wild river areas – those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted;
- Scenic river areas – those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads;
- Recreational river areas – those rivers or sections of rivers that are readily accessible by road or railroad, that may have some develop-

ment along their shorelines, and that may have undergone some impoundment or diversion in the past.

The Act requires that the rivers be preserved as free-flowing rivers, and that a designated segment be managed for the protection and enhancement of the values which caused it to be included in the National Wild and Scenic Rivers System. The Act further prescribes the methods by which additional components may be added to the system, allowing for the establishment of the Nationwide Rivers Inventory.

A 152-mile (243-km) segment of the Pearl River, from a point one mile (1.6 km) south of Columbia, Mississippi to the Gulf of Mexico, is listed on the Nationwide Rivers Inventory because of its scenic, recreational and fish and wildlife values. It possesses a number of endangered, threatened and rare species and is an excellent example of a large Gulf Coastal Plain river with extensive swamplands (United States National Park Service [NPS] 1999). Federal agencies are required to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory, and to consult with the National Park Service prior to taking actions that could effectively foreclose wild, scenic or recreational status for rivers on the inventory.

Site A

The southern boundary of the waterfront site is the Main Canal and East Pearl River. A portion of the Main Canal/Pearl River was dredged in the 1960s to create a turning basin for barges entering the NASA canal system.

Three main drainages divide the site into four upland areas. Excess surface water flows along natural drainage patterns, generally to the south-southwest, toward the Main Canal.

Site B

The project site is bounded on the north and east by drainage ditches. The nearest surface water is an unnamed intermittent tributary located approximately 400 feet (112 m) from the site, north of Leonard Kimble Road.

3.2.2 Groundwater

The Catahoula, Hattiesburg, Pascagoula, Graham Ferry, and Citronelle aquifers underlie Stennis Space Center. These aquifers are confined artesian systems with the base of freshwater located approximately 3,000 feet (914.4 m) below MSL. Groundwater flow is generally south-southwest, and the quality of the freshwater obtained from these aquifers is considered good. Water supply is also considered plentiful (Johnson Controls World Services 1997).

3.2.3 Floodplains

Site A

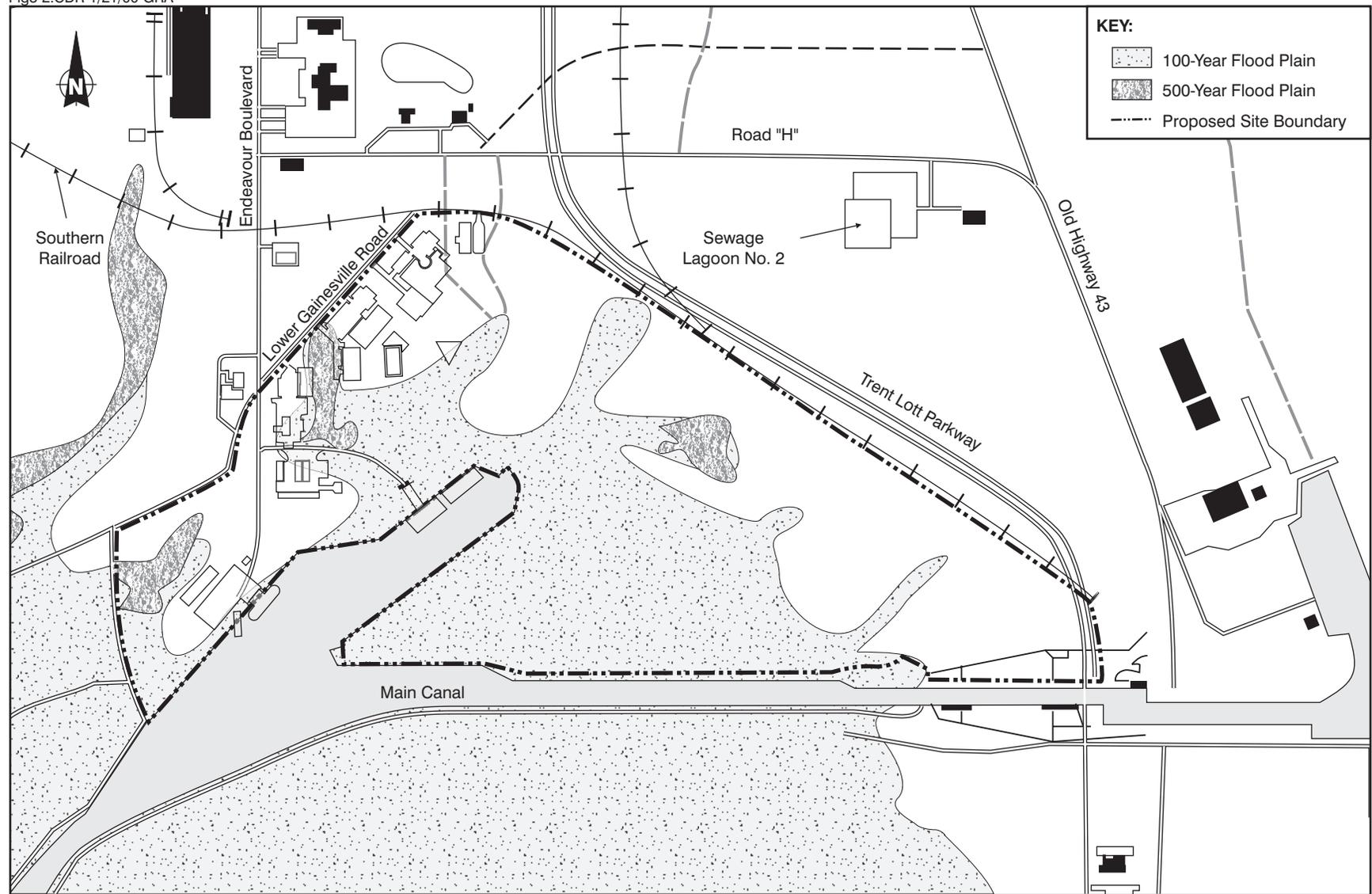
As shown on Figure 3-2, approximately two-thirds of the 150-acre (61-ha) site is located within the 100-year floodplain of the East Pearl River (Federal Emergency Management Agency [FEMA] 1987). Most of the proposed facilities will be located outside the 100-year floodplain, although a portion of the proposed maintenance and supply buildings would be constructed within the 100-year floodplain.

Site B

The entire site lies above the 100-year floodplain level (FEMA 1987).

3.2.4 Wetlands

Wetlands are described as areas that are inundated or saturated enough, by surface or ground water, to support hydrophytic vegetation. In order to be considered wetland, an area must possess three characteristics: wetland hydrology, hydrophytic vegetation, and hydric soils (United States Army Corps of Engineers [USACE] 1987).



SOURCE: Johnson Controls World Services 1997.

APPROXIMATE SCALE



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Figure 3-2 SITE A – 100-YEAR FLOODPLAIN

Site A

Wetlands on the 150-acre waterfront site include strand swamps along the drainage channels and pine savanna within the floodplain of the adjacent Main Canal/Pearl River.

A large pine savanna, mapped directly adjacent to the Main Canal, is only a few feet higher than the water level, likely resulting in significant periods of flooding. It is characterized by a relatively open canopy, allowing for the proliferation of herbaceous and shrub species.

In addition to this pine savanna, there are several strand swamps associated with the drainage channels incised through the uplands. Elevation differences are as great as 10 to 15 feet (3 to 4.6 m) between the top of the slope and the drainage channel. These strand swamps are typically dominated by Florida anise (*Illicium floridanum*) and hardwood trees, including sweetbay (*Magnolia virginiana*), red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), and water oak (*Quercus nigra*).

The facilities proposed for SBU-22 and NAVSCIATTS would be constructed on the upland areas, avoiding both the drainage swales and the wetland area associated with the Main Canal/Pearl River floodplain.

The USACE has issued a general permit to NASA — General Permit 53 — for wetland impacts and mitigation at the Stennis Space Center. General permits cover activities which the USACE has identified as being substantially similar in nature and causing only minimal individual and cumulative environmental impacts. In accordance with the USACE, NASA has developed a Wetlands Special Area Management Plan under General Permit 53 that provides for wetland mitigation to compensate for filling up to 50 acres of jurisdictional wetlands, which may occur during construction activities in the fee area. Two mitigation areas are included in the Wetlands Special Area management plan: the Pearlinton Wetland Mitigation Area, a 115-acre (47-ha) pine savanna ecosystem and pitcher plant bog; and the 15-acre (6.1-ha) Hardwood Enhancement Wetland Mitigation Area.

The USACE conducted a survey of the proposed project site on January 20, 2000 and determined that no wetland areas are present within the proposed area for new construction (Mosley 2000).

Site B

A 0.86-acre (0.35-ha) wetland site was identified in the eastern third of the site. It appears to have been created by man-made drainage patterns on the site. Spoil excavated from the drainage ditch on the eastern boundary of the site was placed between the ditch and the remainder of the site, impeding drainage. In addition, the eastern third of the site is somewhat lower than the surrounding project site. Field surveys performed in 1997 confirmed the jurisdictional boundaries of this wetland in accordance with the 1987 USACE Wetlands Delineation Manual. Within the wetland portion of the site, dominant tree species include slash pine (*Pinus elliottii*) and loblolly (*Pinus taeda*). Dominant shrub species include gallberry (*Ilex glabra*), yaupon (*Ilex vomitoria*), and scattered sweet galberry (*Ilex coriacea*). The herbaceous layer is dominated by bushy bluestem (*Andropogon glomeratus*), Carolina yellow-eyed grass (*Xyris caroliniana*), and various *xyris* spp. (Solutions, Inc., 1997). In addition, during a site reconnaissance performed on May 19, 1998, yellow trumpets (*Sarracenia alata*) were observed and identified on the project site within the wetland area (Burris 1998; E & E 1998).

3.2.5 Coastal Zone Management

In accordance with Section 307 of the Coastal Zone Management Act, federal actions must be consistent to the maximum extent practicable with the approved state coastal management program.

The state of Mississippi's coastal management program was approved under the provisions of the Coastal Zone Management Act in 1980. The coastal area is defined as Hancock, Harrison, and Jackson counties.

The Mississippi Department of Wildlife Conservation, Bureau of Marine Resources, is the lead agency for coordinating review of actions in the coastal area by participating state agencies, and, in accordance with the Mississippi Coastal Wetlands Protection Law, it is directly responsible for reviewing and commenting on actions potentially affecting wetlands.

The state of Louisiana also has an approved coastal resources program, which was established by legislation in 1978 and is implemented through the Louisiana Department of Natural Resources. The coastal area is an irregularly defined estuarine zone along

coastal Louisiana. The Pearl River north to a point between the towns of Alton and St. Joe is within the coastal area.

The Stennis Space Center is located entirely within Mississippi's designated coastal zone. The Mississippi Department of Wildlife Conservation, Bureau of Marine Resources, is the lead agency for reviewing all proposed construction activities at sites located within the coastal zone above mean high tide. USACE is the lead agency for reviewing all proposed construction activities at sites located below mean high tide under the Section 401 (Water Quality Certification) permit program. The Bureau of Marine Resources assumes a consistency determination is made if USACE issues a Water Quality Certification permit.

Consistency is generally determined by avoidance of actions that adversely impact coastal resources, including discharges of inorganic nutrients; alterations of streams, wetlands, tidal passes and other biologically valuable areas or protective coastal features; and alterations of the natural temperature.

3.3 Terrestrial and Aquatic Resources

3.3.1 Vegetation

Site A

Numerous vegetation community types have been identified within the waterfront site. However, three major communities predominate in conjunction with the wetlands areas discussed above. The major communities that have been identified within and surrounding the waterfront site are:

- Upland pine flatwood;
- Mixed pine/hardwood forest, and
- Grassland.

Figure 3-3 presents a generalized ecosystem map for the project area. As shown on the figure, the portions of the site that are situated outside the 100-year floodplain are characterized as pine stands, dominated primarily by slash pine. Typical shrub species within these stands include American holly (*Ilex opaca*), wax-myrtle (*Myrica cerifera*),

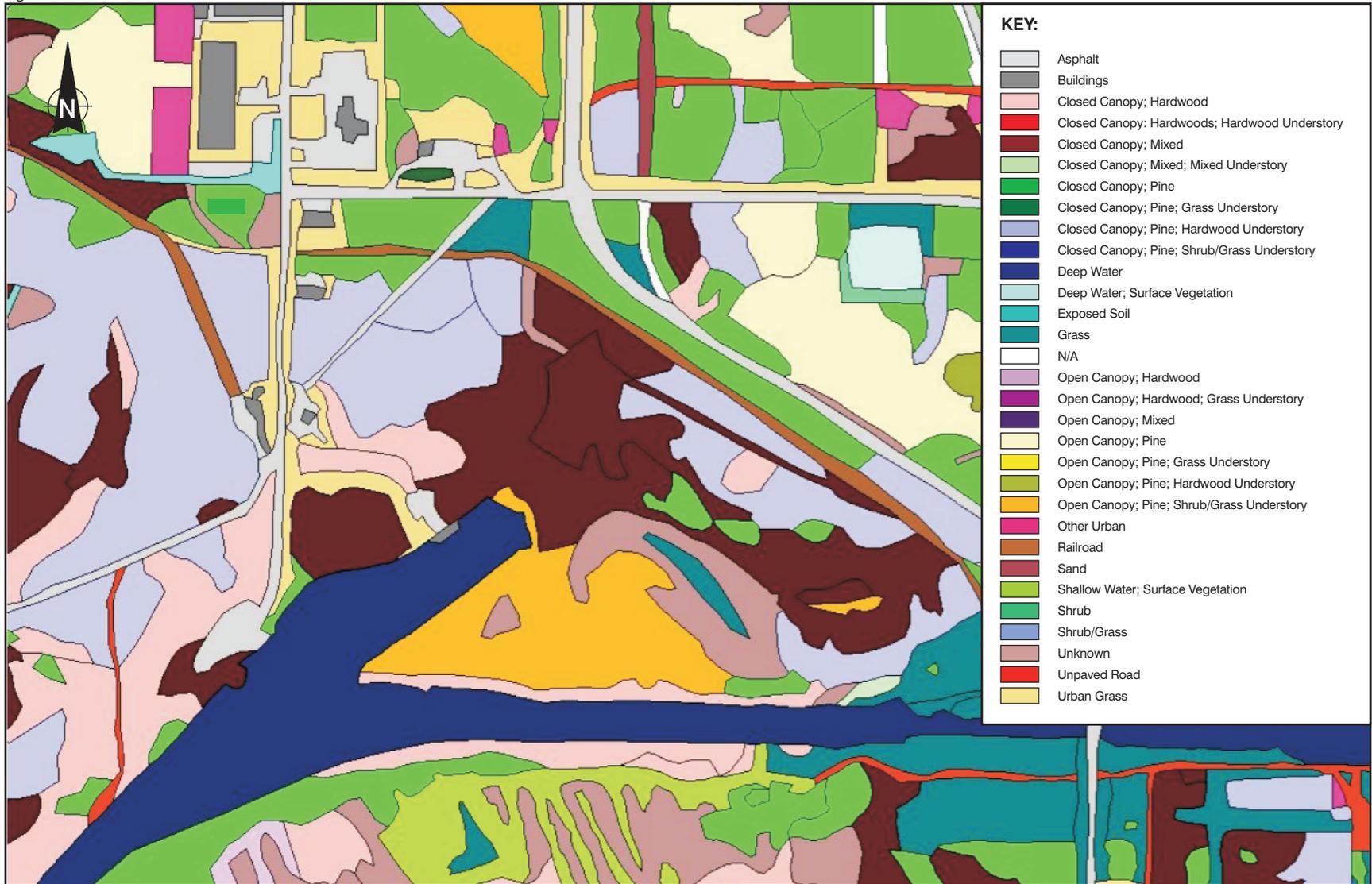
huckleberry (*Gaylussacia dumosa*), and yaupon. The areas proposed for construction of SBU-22 and NAVSCIATTS facilities are located primarily in areas identified as upland pine.

Through the central portion of the site there is a band of mixed pine/hardwood vegetation. This ecosystem generally corresponds to the sloping topography on site between the low, broad floodplain associated with the Main Canal/ Pearl River and the broad, flat uplands that are located on the northern portion of the project area. Rather than being predominantly slash pine, these areas typically also have loblolly pine, red maple, black gum sweetgum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*), and blackjack oak (*Quercus marilandica*) interspersed throughout the overstory. Wetland conditions are more likely to be found in the drainage areas that transect this community.

Because of the current usage of portions of the site for ongoing and pre-existing activities, several areas within the project area have been disturbed, resulting in a cover type predominantly of grassy species. These are divided between urban maintained areas and areas that are better characterized as reverting fields.

Site B

Four major vegetation communities have been identified within and surrounding the MSAAP. These community types include the dominant pine savanna and flatwoods; bottomland hardwood forest; pitcher plant bogs and swamps; grassland; and marshes (USACE 1997). The proposed project site consists of 6.4 acres (2.6 ha) of commercial forested land consisting of pine savanna and flatwoods. Of the total 6.4 acres (2.6 ha), approximately 0.86 acre (0.35 ha; 13%) has been delineated as jurisdictional wetland in accordance with the 1987 USACE Wetlands Delineation Manual (Solutions, Inc. 1997). According to the MSAAP Natural Resource Management Plan (USACE 1997), commercial forested land is defined as, “those areas containing economically productive wood products on a sustained yield basis.” Commercial trees in these areas are managed and harvested on a regular basis by the USACE in accordance with the MSAAP Natural Resource Management Plan.



SOURCE: National Aeronautics and Space Administration 1999.



Figure 3-3 SITE A – VEGETATIVE COVER TYPES

Pine savanna and flatwoods are characterized by a well-developed shrub understory interspersed with open areas that support a dense cover of grasses, herbaceous species, and saplings. Field surveys performed in 1997 indicated the dominant tree species within the upland portion of the site (i.e., 5.54 acres; 2.24 ha) include slash pine. The shrub layer is dominated by yaupon, American holly, gallberry, and southern magnolia. Typical vine species include saw greenbrier (*Smilax bona-nox*). In the upland area, the presence of pine, *Ilex* spp., and pine needles prohibits a developed understory (Solutions, Inc. 1997).

3.3.2 Wildlife

The Pearl River drainage basin provides habitat for a variety of species. The predominant community types include forested wetlands, marshes, sloughs, and bogs. According to the United States Environmental Protection Agency (EPA) Index of Watershed Indicators, the basin has been rated as a 3 on a scale of 6. This rating indicates less serious water quality problems, with low vulnerability to stressors such as pollutant loading.

The abundance of fish and game species in the Pearl River drainage basin allows for a regular hunting and fishing season. A portion of the basin is contained within the Pearl River Wildlife Management Area and Bogue Chitto National Wildlife Refuge (see Figure 1-4). The Pearl River Wildlife Management Area encompasses 35,000 acres (14,168 ha) of river swamp habitat along the western shore of the Pearl River, and supports numerous wildlife species. North of the Pearl River Wildlife Management Area is the approximately 40,000-acre (16,288 ha) Bogue Chitto National Wildlife Refuge, a bottomland hardwood forest consisting of sloughs and bayous. Wildlife species found in the Pearl River Wildlife Management Area and the Bogue Chitto National Wildlife Refuge include white-tailed deer, wild turkey, feral hogs, raccoon, small game, and migratory waterfowl. The waters of the Pearl River support various fish and wildlife species, including bass, gar, sturgeon, turtles, and avian piscivorous species.

Previous surveys conducted for Stennis Space Center identified a variety of mammalian, bird, fish, amphibian, and reptile species. Typical wildlife that inhabit a closed-canopy, pine and mixed hardwood community include raccoons, squirrel, armadillo, and tree frogs. Surveys conducted in 1994 and 1995 found 22 amphibian, 33 ter-

restrial and aquatic reptile, 25 mammal, and 63 bird species within the fee area (Johnson Controls World Services 1999).

3.3.3 Threatened and Endangered Species

The United States Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the Louisiana Department of Wildlife and Fisheries, and the Mississippi Department of Wildlife, Fisheries and Parks were contacted for information regarding the presence/absence of listed species of concern, as well as ecologically significant natural communities located in the vicinity of Stennis Space Center. Table 3-1 provides a ranked list of threatened and endangered species identified by the USFWS, NMFS, Louisiana Department of Wildlife and Fisheries, and the Mississippi Department of Wildlife, Fisheries and Parks in the vicinity of Stennis Space Center, and within the Pearl River. Three bird and animal species are listed as endangered: the Florida panther, red-cockaded woodpecker, and American peregrine falcon. Four bird and animal species are listed as threatened: the eastern indigo snake, gopher tortoise, bald eagle and Louisiana black bear. The Louisiana quillwort has been identified as an endangered plant species.

A comprehensive survey for the presence of the gopher tortoise, eastern indigo snake, red-cockaded woodpecker, American peregrine falcon, and Louisiana black bear was performed throughout the 13,800-acre (5585-ha) Stennis Space Center in the summer of 1998. No indicators of the occurrence of the eastern indigo snake, red-cockaded woodpecker, American peregrine falcon, or the Louisiana black bear were noted during the survey (Keiser et al 1998). A potential abandoned gopher tortoise burrow was located; however, there were no positive sightings of this species throughout the project area. Occasional transient use of the Stennis Space Center by the American peregrine falcon and Louisiana black bear may occur.

The endangered Florida panther and Louisiana quillwort have not been identified during various ecological surveys conducted at the Stennis Space Center (Johnson Controls World Services 1999). A bald eagle was sighted at Stennis Space Center in

Table 3-1 Ranked and Listed Species in the Vicinity of Stennis Space Center

Scientific Name	Common Name	Status			Range	
		Federal	State	SSC	Hancock County	Pearl River
Terrestrial Animal Species						
<i>Felis concolor coryi</i>	Florida panther	LE	LE		X	
<i>Graptemys oculifera</i>	Ringed sawback/map turtle	LT	LE/LT			X
<i>Drymarchon corais couperi</i>	Eastern indigo snake	LT	LE		X	
<i>Gopherus polyphemus</i>	Gopher tortoise	LT, C2	LE/S2		X	
<i>Ursus americanus luteolus</i>	Louisiana black bear	LT	LE/S1	X	X	
<i>Bufo valliceps</i>	Gulf Coast toad		S3		X	
Aquatic Animal Species						
<i>Acipenser oxyrhynchus desotoi</i>	Gulf sturgeon	LT	LE, S1		X	X
<i>Notropis chalybaeus</i>	Iron color shiner		S2		X	X
<i>N. welaka</i>	Bluenose shiner		S3		X	X
<i>Polyodon spathula</i>	Paddlefish	C2	S4		X	X
<i>Ictiobus niger</i>	Black buffalo		S4		X	X
<i>Ammocrypta aspella</i>	Crystal darter	3C	S2		X	X
Bird Species						
<i>Aimophila aestivalis</i>	Bachman's sparrow	C2	S3		X	
<i>Picoides borealis</i>	Red-cockaded woodpecker	LE	LE		X	
<i>Falco peregrinus</i>	American peregrine falcon	LE	LE	X	X	
<i>Haliaeetus leucocephalus</i>	Bald eagle	LT	LE		X	
<i>Eudocimus albus</i>	White ibis		S3			
Plant Species						
<i>Cleistes divaricata</i>	Spreading pogonia		S3		X	
<i>Coreopsis nudata</i>	Georgia tickseed		S1, S2		X	
<i>Epidendrum conopseum</i>	Greenfly orchid		S2		X	
<i>Ilex amelanchier</i>	Sarvis or Juneberry holly	3C	S3		X	X
<i>Ilex myrtifolia</i>	Dahoon holly		S3, S4		X	
<i>Isoetes louisianensis</i>	Louisiana quillwort	LE	S1		X	
<i>Lachnocaulon digynum</i>	Pineland bogbutton	C2	S2		X	
<i>Lilaeopsis carolinensis</i>	Carolina lilaeopsis	3C	S2, S3		X	
<i>Panicum nudicaule</i>	Naked-stemmed panic grass	C2	S2		X	
<i>Pinguicula planifolia</i>	Chapman's butterwort	C2	S2		X	

Table 3-1 Ranked and Listed Species in the Vicinity of Stennis Space Center

Scientific Name	Common Name	Status			Range	
		Federal	State	SSC	Hancock County	Pearl River
<i>Rhynchospora curtissii</i>	Curtis beakrush		S1			
<i>Rhynchospora stenophylla</i>	Chapman beakrush		S1		X	
<i>Eulophia ecristata</i>	Smooth-lipped eulophia		S1, S2		X	
<i>Utricularia pupurea</i>	Eastern purple bladderwort		S2		X	
<i>Pycnanthemum setosum</i>	Awnead mountain mint		S1			

Key:

Federal:

- LE - Endangered
- LT - Threatened
- C2 - Candidate category
- 3C - Species that are now considered to be more abundant and/or widespread than previously thought, and/or not subject to any identifiable threat.

State:

- LE - Endangered
- LT - Threatened
- S1 - Critically imperiled because of extreme rarity (5 or fewer occurrences).
- S2 - Imperiled because of rarity (6 to 20 occurrences).
- S3 - Rare and uncommon.
- S4 - Apparently secure (more than 101 occurrences).

Source: Lunceford 1999; Jenkins 1999; Mann 1999.

Note: State classifications S1, S2, S3 and S4 allow for species tracking. Legal protective status is assigned only to LE and LT classifications.

proximity to the Pearl River during a 1994 survey. This species may nest along the Pearl River in cypress snags, particularly near areas of open water.

The Pearl River supports the threatened ringed sawback/map turtle and Gulf sturgeon. The preferred habitat of the map turtle includes rivers of good water quality with a moderate current, an open canopy, and many nesting and basking logs. This species will nest on islands composed of clean, fine-grained sand, having limited vegetative cover and an elevation of 1-3 meters above the level of the river. The Gulf sturgeon is an anadromous fish species that inhabits major rivers that enter into the Gulf of Mexico during the late winter and early spring spawning season. Young members of this species return to the Gulf after approximately four years in the river system. The Gulf sturgeon is a bottom feeder and primarily feeds on insects, crustaceans, mollusks, annelids, and small fish.

Protected species of sea turtles can be found in the Gulf of Mexico and the southern portions of the Pearl River. The portion of the Pearl River where most of the riverine operations occur, however, is a freshwater environment and not known to contain sea turtles (Hogarth 2000).

3.4 Air Quality

The National Ambient Air Quality Standards (NAAQS) established by the EPA identify federal maximum ambient air concentrations of criteria pollutants necessary to protect human health and welfare. The Mississippi Department of Environmental Quality (MSDEQ), Office of Pollution Control, has adopted the NAAQS as the state air quality standards. The ambient air quality of southern Mississippi is considered attainment for all air quality standards.

The State of Mississippi has also adopted the National Emission Standards for Hazardous Air Pollutants (NESHAPS), and regulates specific categories of stationary sources that have the potential to emit hazardous air pollutants.

Stennis Space Center operates under a Title V Operating Permit issued by MSDEQ, which covers all air pollution sources on NASA property. Emission sources include fuel burning, fuel dispensing, freon recovery, abrasive blast operations, degreasing, rocket testing, and test facility flare stacks. According to the May 1995 compliance assessment for Stennis Space Center's Title V permit application, Stennis Space Center is

in compliance with all requirements for air emissions (Johnson Controls World Services 1999).

Mason Technologies, Inc., the operating contractor for MSAAP, operates under a separate Title V permit. Emissions sources at the MSAAP include water-heating units in existing facilities.

SBU-22 does not currently maintain any facilities or conduct operations at Stennis Space Center that are classified as point sources of emissions. The watercraft operated by SBU-22 are powered by gasoline- and diesel-burning engines. PBLs use outboard motors, and the PBRs, MATCs, and CACs use inboard motors. Emissions include volatile organic compounds, carbon monoxides, nitrogen oxides, particulate matter, and sulfur oxides.

3.5 Noise

Ambient noise levels at Stennis Space Center are generally low. Continuous sources of noise include diesel generators, pumps, boilers, and automobile traffic. With the exception of automotive traffic, these sources of noise are contained within structures. The primary sources of noise generated by SBU-22 and NAVSCIATTS are riverine operations. The PBLs have two 150-horsepower (hp) outboard engines; the PBRs have two 180-hp inboard engines; the MATCs have two inboard engines ranging between 270 and 445-hp; and the CACs have one inboard 580-hp engine. The maximum speed of these watercraft when fully loaded is approximately 30 knots. Powerboats of the size operated by SBU-22 and NAVSCIATTS would generate a sound level between 70 and 75 decibels (dB; measured at a distance of 25 meters from the boat) at speeds ranging from 15 to 25 knots (Lanpheer 1998).

SBU-22 policy is to survey the river before beginning an operation, and to reduce speed, thereby reducing boat wake and noise, when encountering other boaters on the river.

NASA holds a restrictive easement, or buffer zone, which prohibits the construction of any habitable structures on privately owned land within 5 miles (8 km) of the Stennis Space Center boundary. The purpose of the restrictive easement is to restrict the development of noise-sensitive land uses in areas subject to sound overpressures during rocket engine tests, military maneuvers, and range activities, which occur

frequently at Stennis Space Center. The restrictive easement ensures that conflicts or inconsistencies between adjacent land uses and operations at Stennis Space Center do not occur.

3.6 Hazardous Materials and Waste Management

Each of the agencies and contractors located at the Stennis Space Center are individually responsible for hazardous waste management. NASA is the only large quantity generator (LQG) at Stennis Space Center. The waste generated from various operations are regulated by the MSDEQ, and are managed in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA). NASA also has a waste minimization program, including hazardous waste product substitution, segregation, material handling improvement, production scheduling alterations, and increased recycling activities.

SBU-22 is a conditionally-exempt, small-quantity generator (SQG) for the generation of less than 200 pounds/month (100 kilograms/month) of hazardous waste. Waste disposal is managed by an independent contractor. Waste generated by SBU-22 is petroleum-based waste resulting from boat and vehicle maintenance activities. The types of waste generated includes antifreeze, tar-based grease, epoxy sealer, aerosol fogging oil, oil/water/grease mixture, waste oil, and oily rags. In addition, past disposal records indicate the disposal of lithium and magnesium batteries and a container of calcium hypochloride.

SBU-22's current operations on the East Pearl River do not involve live fire exercises. Blank rounds are used as a substitute for live rounds, and spent brass shells are recovered to the extent practicable. Depending on the location of the target, shells either fall into the hull of the boat or into the water. Shells are collected from the boat and recycled through the Defense Reutilization and Marketing Office (DRMO).

SBU-22 does not engage in any live-fire activities on land at Stennis Space Center. Weapons and ordnance are stored in contained facilities at MSAAP.

Annual fuel consumption for the SBU-22 boat and vehicle fleet is approximately 50,000 gallons (227,305 liters [l]) of gasoline and 30,000 gallons (136,383 l) of diesel. The PBRs, MATCs, and CACs use diesel fuel and the PBLs use gasoline. SBU-22 does not operate any fuel tanks. Watercraft are loaded onto trailers and hauled to the fuel farm

at Stennis Space Center for refueling. Occasionally, watercraft will be refueled in the water by a fuel tanker truck. The fuel tanker trucks are parked at the boat storage and maintenance yard within a containment area.

SBU-22 maintains an Oil and Hazardous Spill Contingency Plan for all facilities at SBU-22. It classifies releases and appropriate reporting procedures. NASA and MSAAP also maintain spill contingency plans and have designated emergency coordinators.

NASA has conducted Preliminary Assessments for forty sites suspected of potential environmental contamination from past hazardous waste disposal activities. Twenty-six of these sites required either no further investigation or a minor removal action. Fourteen sites required additional investigation, including nine Site Inspections or Expanded Site Investigations and five Remedial Investigation/Feasibility Studies. None of the sites have been listed by EPA as a National Priorities List site (Johnson Controls World Services 1999).

Neither the waterfront site nor the MSAAP site are known or suspected to have areas of environmental contamination (Magee 1999).

3.7 Cultural Resources

Section 110 (a)(2) of the National Historic Preservation Act (NHPA; 16 U.S.C. 470, as amended) requires federal agencies to inventory, protect, and maintain historic properties under their jurisdiction. Section 110(d) of this act requires the agencies to integrate the mandated measures for historic preservation into their plans and programs.

Under Section 106 of NHPA, federal agencies are obligated to take into account the effect of their undertakings on cultural resources and to provide the Advisory Council on Historic Preservation an opportunity to comment on these undertakings.

In response to these statutes, NASA has conducted several cultural resource investigations (USACE 1981, 1988a, 1988b, 1989a, 1989b; Smith 1984; Jones et al. 1996; Giardino et al. 1998). These investigations identified several significant historic properties, including the Rocket Propulsion Test Complex and the historic towns of Gainesville and Logtown. These sites were determined to be eligible for listing on the National Register of Historic Places (NRHP).

In 1995, NASA prepared a Historic Preservation Plan (HPP) that identified significant cultural resources, summarized the compliance status of historic properties, formulated policies for resource protection/maintenance, and contained an unanticipated discovery plan. This plan was accepted by the Mississippi Department of Archives and History (MDAH) (USACE 1995). The HPP states that “with the exception of fee holdings in the town site of Logtown, NASA has completed its Section 106 responsibilities for fee-owned lands in the acoustic buffer zone” (USACE 1995). The HPP further states that “...no further historic properties investigations are recommended for lands owned in fee by NASA at Stennis Space Center” (USACE 1995).

The historical logging activities that predated Stennis Space Center, especially the logging boom of 1880 to 1900, likely caused extensive disturbance of ground surfaces. During the 19th century, the area currently occupied by Stennis Space Center was known for its rich stands of wood and lucrative timber and turpentine industries. In 1832, the Pearl River Lumber Company began operation in the historic town of Gainesville, approximately 0.75 mile (1.21 km) southwest of the waterfront site. It became one of the largest suppliers of lumber in the antebellum South. After the Civil War, the Poitevent and Farve Lumber Company became one of the largest of its kind in the United States (Jones et al. 1996). Disturbance of ground surfaces resulted from rutting and miring of log wagons, erosion, clearcutting, and reforestation. Early reforestation involved excavation of individual holes for each sapling. Later use of bulldozers, loaders, and Franklin loggers during harvesting also contributed to dislocation of surficial deposits. Modern tree planting techniques involve the use of the bulldozer- or tractor-driven plows that open 2-foot-deep (0.61 m) furrows; over time, this method is particularly disruptive because the direction of furrows is typically changed between harvests. Clearcutting, reforestation, and associated disruptive processes may have had a very adverse effect on upland archaeological sites, and on the floodplain sites that lie within 3 feet (0.9 m) of the surface (Smith 1984).

Site A

Cultural resource investigations conducted by USACE in 1988 did not identify cultural resources at the waterfront site. No archaeological site or significant architectural resource is known to exist at this location (USACE 1995; Walker 1999). A significant

surface alteration occurred in the southern portion of the waterfront area in the 1960s during construction of an artificial harbor and the Main Canal. This construction involved large-scale excavations and/or dredging and a redeposition of the excavated sediment matrix. Approximately 35% of the waterfront area (the southern portion) is classified as Sulfaquepts—fill resulting from diking, sediment deposition, grading, and excavating (USDA 1981). These operations occurred in a former natural floodplain and likely had a highly destructive effect on any archaeological sites that were present.

Site B

An archaeological site (22HA627) was discovered at Site B in 1998. The archaeological site (state identification number 22HA627) yielded a few ceramic fragments indicating a 19th-century occupation with a possible Choctaw Indian cultural affiliation. However, because of the lack of subsurface artifact concentrations, middens, and/or other archaeological features, the MDAH determined that this site was not eligible for listing on the NRHP (Walker 1998).

3.8 Infrastructure and Utilities

3.8.1 Transportation

The Stennis Space Center is located near the Gulf Coast of Mississippi, approximately 55 miles (88.5 km) northeast of New Orleans, which has a large seaport and an international airport. The cities of Gulfport, Biloxi, and Mobile are located to the east. Transfer and distribution of cargo to any destination is available via the major railroads servicing the southeastern United States.

Roads

Interstates 10 and 59, U.S. Highway 90, and Mississippi Highway 607 serve the area around Stennis Space Center. Interstate 10 is the primary connector linking Biloxi, Gulfport, Bay St. Louis, and other coastal cities with New Orleans. It is located approximately 3 miles (5 km) south of Stennis Space Center. Interstate 59 merges with Interstate 10 near Slidell, Louisiana and extends northeast to Hattiesburg, Mississippi, and into Alabama. It passes about 5 miles (8 km) from the northwest corner of the Center. Mississippi State Highway 43 passes northeast of the buffer zone and connects the cities of

Kiln and Picayune. Mississippi Highway 607 provides direct access to the Center from I-10 and I-59. The highway is closed to the general public within the fee area, and checkpoints are located at both entrances to Stennis Space Center. Highway 607 connects with U.S. 90 approximately 9 miles (15 km) southeast.

Site A

Access is provided to the waterfront site via the Trent Lott Parkway and Lower Gainesville Road. Trent Lott Parkway is a four-lane divided highway beginning at the front gate (south) entrance to the Stennis Space Center and continuing north through the fee area. The Parkway is a major arterial that connects to most larger facilities within the fee area via smaller access roads. Lower Gainesville Road is an unimproved road that connects with Trent Lott Parkway at the northern end of the site and provides access to the existing docking facilities and boat yard.

Site B

Access to the MSAAP site is provided via Leonard Kimble Road, which connects to Endeavour Boulevard.

Waterways

The East Pearl River links the Stennis Space Center to the national waterway transportation system. Approximately 21 miles (34 km) south of the Main Canal, the East Pearl River flows into the Gulf Intracoastal Waterway. The Gulf Intracoastal Waterway connects with the Mississippi River system approximately 65 miles (105 km) west of the mouth of the Pearl River.

Approximately 8 miles (13 km) of canals within the fee area service the Stennis Space Center and connect to the East Pearl River through a lock system. Main and secondary canals provide water access to storage areas and rocket testing areas “A” and “B,” and are used to transport heavy cargo and propellants.

The existing SBU-22 docking facilities are located within a 1,000-foot by 400-foot (300-m by 120-m) turning basin that branches off of the Main Canal.

3.8.2 Water

There are two water systems in use at the Stennis Space Center, a High-Pressure Industrial Water system (HPIW) and a potable water system.

The HPIW system provides grey water to the rocket testing facilities to cool the test stand flame deflectors during ignition. It also provides water for fire protection of the propellant barges at the testing facilities. Water is taken via a 42-inch-diameter (107-cm-diameter) line from the Main Canal to fill a 66-million-gallon (250-million-liter) reservoir. The water is distributed via diesel-powered pumps with a maximum flow rate in excess of 100,000 gpm (3785 hectoliters per minute [hlpm]) (Johnson Controls World Services 1999).

The potable water system at Stennis Space Center is supplied by three 1,600-foot-deep (488-m-deep) artesian wells and consists of wells, pumps, chlorinators, three elevated storage tanks, automated controls, and a distribution system. The system maintains a pressure of 65 to 70 pounds per square inch (psi). The average available daily supply of potable water, based on the natural flow rate of the wells, is 3.6 million gallons (13.6 million liters). Potable water use for Stennis Space Center averages 520,794 gallons per day (1.968 million liters per day) (Johnson Controls World Services 1997).

Site A

Potable water is supplied to the site via a 12-inch (30-cm) main line along Endeavour Boulevard, which reduces to an 8-inch (20-cm) line terminating at the existing boat yard (see Figure 3-4).

Site B

The MSAAP water system consists of two potable water wells, one water tower, a distribution system for both industrial and potable water use, two industrial water cooling towers, one industrial wastewater treatment facility, and one sanitary wastewater treatment facility. Each well operates at 65 psi pressure with a maximum capacity of 1,500 gpm (68.2 hlpm per well) (Mason Technologies, Inc. 1998). The current workforce and operations at MSAAP require only 60 gpm (2.7 hlpm), or 2% of capacity (McNeely 1998). The capacity of the water tower is 250,000 gallons (11,365 hl; Mason

Figure 3-4 Site A – Utilities (color: page 1 of 2)

Figure 3-4 Site A – Utilities (color: page 2 of 2)

Technologies, Inc. 1998). This volume of water is maintained in the tower to meet emergency needs (McNeely 1998).

3.8.3 Sewer

Sewage treatment systems at Stennis Space Center consist of 4 permitted treatment facilities and 43 lift stations. The treatment system utilizes two active sewage lagoons, four ultraviolet filters, and an Energy Management Control System. The system is designed to adequately collect, treat, and dispose of sewage from on-site buildings to produce an effluent that meets federal, state, and local requirements for a secondary sewage treatment facility. The domestic sewage waste is pumped to the sewage lagoons, where organic contaminants are oxidized and non-contaminants are allowed to settle before being discharged. The system was designed for an average flow of 30 gallons (113 liters) per capita per 8-hour shift and a maximum flow of 2.5 times the average flow (Johnson Controls World Services 1997).

Site A

The existing facilities near the waterfront site are connected to sewage lagoon No. 2 via a 4-inch (10-cm) line running along Endeavour Boulevard and H-Road (see Figure 3-4). Sewage lagoon No. 2 is located north of the site, on the north side of Trent Lott Parkway. The closest lift station to the site is located at the intersection of Endeavour Boulevard and H-Road (Johnson Controls World Services 1997).

Site B

Domestic wastes are treated at the MSAAP Sanitary Wastewater Treatment Plant. A maximum treatment capacity of 150,000 gallons per day (gpd) (6,819 hectoliters per day [hlpd]) is provided by three aeration systems with capacities of 80,000 gpd (3,636 hlpd), 50,000 gpd (2,273 hlpd), and 20,000 gpd (909 hlpd). The current workforce at MSAAP requires operation of the 50,000-gpd (2,273-hlpd) aeration system to treat approximately 30,000 gpd (1,364 hlpd) of sewage (20% of capacity) (McNeely 1998).

3.8.4 Storm Water

The current on-site storm water system consists of a network of open ditches for ground re-absorption as well as discharge to surface water bodies.

3.8.5 Solid Waste

Solid waste, including household-type wastes and nonhazardous industrial waste, are disposed of on site in a state-permitted solid waste landfill. There are currently two active cells at the landfill, which opened in 1996. Both cells are constructed with a composite liner system, leachate collection and treatment system, and a storm water pond.

In 1995, the average quantity of solid waste accepted for disposal in the landfill was approximately 747 cubic yards (571 cubic meters) per month (Johnson Controls World Services 1997). The current permit was issued in 1987 and remains in effect until the new landfill cells reach capacity.

NASA has implemented an on-site recycling program. The site currently recycles freon, mercury, cardboard, used tires, batteries, paper, used oil, and scrap metal. Additionally, Hancock County has provided recycling containers for items such as newspaper, plastics, glass, and cardboard.

3.8.6 Electric

Two 115-kV overhead transmission lines owned and operated by the Mississippi Power Company supply electricity to Stennis Space Center. Backup power is available through Louisiana Power and Light Company. If either of the power sources from the Mississippi Power Company is lost, the main substation at Stennis Space Center will automatically connect to the Louisiana Power and Light Company's distribution grid. The internal distribution system, which supplies energy to all on-site facilities, consists of both overhead and underground lines operating at 13.8 kV (Johnson Controls World Services 1997).

A self-contained backup power system is available on site. It consists of a generating plant capable of supplying up to 7,500 kW at 60 Hz. It is used as a standby during rocket engine tests, in emergency situations, or at the request of the Mississippi Power Company to reduce the company's total load to the facility (Johnson Controls World Services 1997).

3.8.7 Natural Gas

Natural gas is supplied to the facility by the Koch Pipeline Company. Gas enters the internal gas system from the north through a main supply valve. It is distributed through an approximately 11-mile-long (17.7 km) system to various sites within the Stennis Space Center. The natural gas is primarily used as an igniter for the test stand flare stacks.

Site A

The closest gas distribution line to the waterfront site is a 3-inch line, which terminates at the intersection of Endeavour Boulevard and H-Road, approximately 1,500 feet (460 m) from the site.

Site B

The MSAAP uses natural gas for the generation of process and building heat steam. The existing system is capable of producing 35,000 pounds (15,876 kg) of steam per day. Current operations require an average of 14,000 pounds (6350.4 kg) per day (47% of capacity) (McNeely 1998).

3.9 Land Use

Stennis Space Center

Stennis Space Center comprises approximately 13,800 acres (5585 ha) of government-owned land located east of the Pearl River in the western sector of Hancock County, Mississippi. All associated rights to land within this area are owned by government agencies. This area contains test facilities, laboratories, and office and support facilities for operations by NASA and other federal agencies. The largest single land use stems from the MSAAP, which leases the northern third of the fee area from NASA. The remaining area is an equal distribution of NASA's propulsion testing facilities, administration and office facilities for various agencies, and open space (Johnson Controls World Services 1997).

A 5-mile-wide (8 km) area of restrictive easements surrounds the fee area. The purpose of the easements is to provide an acoustical and safety protection zone for NASA operations. The maintenance or construction of dwellings or other human habitation or occupancy is prohibited within the area covered by restrictive easements.

NASA acquired 125,071 acres (50613.5 ha) in restrictive easement, primarily in Hancock County, but extending northwest into Pearl River County, Mississippi, and west into St. Tammany Parish, Louisiana.

Approximately 95% of the area is privately-owned or owned by entities other than NASA. Private landowners continue to use the land in a manner compatible with the provisions of the easement, including silviculture, farming, animal husbandry, and mining. Two areas within the restrictive easement area are classified for special land use. McLeod Park is a 426-acre (172 hectares) recreational facility along the banks of the Jourdan River. The park is operated by Hancock County and is open year-round for public camping and day use. In addition, the Stennis International Airport, a county-run airfield, is located partially within the area covered by restrictive easement. The government has retained fee simple ownership of some parcels, which are available for lease for uses compatible with the easement restrictions.

The Pearl River, which extends through the restrictive easement area, is open to the public. NASA owns restrictive rights to the Main Canal and man-made basin, but not to the use of the Pearl River itself.

In St. Tammany Parish, Louisiana, land within the restrictive easement is primarily within the Pearl River Wildlife Management Area, which comprises 35,000 acres (14,168 ha) of the Pearl River watershed in southeast Louisiana. It is bordered by the Bogue Chitto National Wildlife Refuge to the north, the Pearl River to the east and west, and Little Lake, Louisiana, to the south. The refuge shares its eastern boundary with the Mississippi state line along the East Pearl River.

The predominant use of the refuge is by fisherman in the spring and summer, and hunters in the fall and winter. An average of approximately 2,500 visitors come to the refuge monthly. The use pattern varies with the season, with the most intensive use during the summer months.

The Bogue Chitto National Wildlife Refuge, which is under the jurisdiction of USFWS, contains approximately 40,000 acres (16,288 ha) in Washington and St. Tam-

many parishes, Louisiana, and Pearl River County, Mississippi. The refuge shares its southern border with the edge of the restrictive easement area near I-58 and is approximately 15 river miles (23 km) from the junction of the Main Canal and the East Pearl River. The refuge is accessed primarily by boat along the Pearl River. Day fisherman, hunters, and wildlife watchers are the primary visitors to the refuge. There are a few designated camping areas within the refuge, which are frequented by hunters during the October to March hunting season. In 1998, approximately 30,000 individuals visited the National Wildlife Refuge, approximately two-thirds of which were boaters (Tabberer 1999).

Site A

The waterfront site comprises 150 acres (61 hectares) in the southern portion of the fee area. The site is bounded to the west and northwest by Lower Gainesville and Endeavour roads, to the east by Trent Lott Parkway, and to the south by a man-made canal servicing the NASA propulsion testing facility with direct access to the Pearl River. A man-made basin connected to the Main Canal provides docking facilities.

On-site land uses consist of a floating dock, a boat storage and maintenance yard, and a boat ramp along the man-made basin. A temporary steel barge is moored at the dock and serves as offices for SBU-22. Only a few buildings currently exist on the upland areas of the site. The majority of the site is undisturbed, densely vegetated, and lies within the 100-year floodplain.

NASA's Master Plan designates land use at the site as open space and maintenance/supply/security, but does not specify allowable uses for the open space land use designation (see Figure 3-5). The maintenance/supply/security uses are clustered along the shoreline of the man-made basin. A small area of engineering/administration land use is located to the northwest.

Most of the surrounding land uses are arranged in low density clusters (see Figure 3-5). Abutting the site to the north and west along Endeavour Boulevard are NASA maintenance and engineering facilities. These facilities are setback in pine uplands and are not visible from the proposed site. The area adjacent to the eastern side of Trent Lott Parkway is designated open space. This area contains primarily pine uplands and is in a natural state. To the south, the site is bordered by the Main Canal.

Site B

The MSAAP occupies 4,227 acres (1,755 ha) of land, under lease from NASA. Land uses at MSAAP are classified as unimproved, semi-improved, improved, and commercial forested land. The 4,337 acres (1,755 ha) include:

- 51 acres (20.6 ha; 1%) of unimproved grounds, which include non-irrigated, maintained lawns;
- 268 acres (108 ha; 6%) of semi-improved grounds, which include ammunition storage areas, road shoulders, railroad beds, and wildlife field plots;
- 390 acres (161 ha; 9%) of improved grounds, which include railroads, paved areas, buildings, non-commercial forested land, ranges, maneuver areas, safety and security zones, prescribed burn areas, open storage areas, and gravel and crushed rock pads; and
- 3,628 acres (1,468 ha; 84%) of commercial forested land (USACE 1997).

Land use at the project site consists of 6.4 acres (2.6 ha) of commercial forested land. The land uses surrounding the project site include improved land and commercial forested land. The improved land includes an industrial complex and associated support infrastructure (i.e., roads, railroads, etc). Leonard Kimble Road is located directly north of the site. An existing parking lot is located south of the proposed project site. Access Road and Building No. 9355 are located to the west and southwest of the project site, respectively. Building Nos. 9322 and 9313 are also located in the immediate project vicinity, southwest and south of the proposed project location. Slash pine forest is located east of the project site and north of Leonard Kimble Road.

3.10 Socioeconomics

3.10.1 Population and Employment

The population in counties surrounding the Stennis Space Center, including Hancock and Pearl River counties, Mississippi, and St. Tammany Parish, Louisiana, was estimated to be 264,189 persons in 1998. The population of each county/parish is shown on Table 3-2. Most of the SBU-22 personnel and the Stennis Space Center workforce commute from Gulf coast communities in these counties and from Harrison County,



SOURCE: Johnson Controls World Services 1997.

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APPROXIMATE SCALE

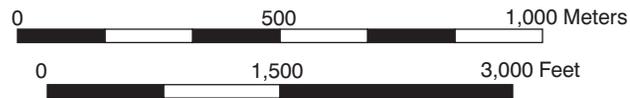


Figure 3-5 SITE A – EXISTING LAND USE

Mississippi, east of Hancock County. These Gulf coast communities include Gulfport, Orange Grove, Bay St. Louis, Long Beach, Picayune, and Slidell.

Table 3-2 Regional Population (1990-1998)

County/Parish	1990 Census	1998 Estimate	% Change
Mississippi			
Hancock	31,760	40,327	27
Harrison	165,364	177,981	7.6
Pearl River	38,714	46,862	21
Louisiana			
St. Tammany	144,508	177,000 ^a	22

^a 1996 population estimate.

Source: U.S. Bureau of the Census 1999; University of New Orleans 1999; Mississippi Department of Economic and Community Development 1999.

Both Hancock County and Pearl River County, Mississippi, had a higher-than-average growth in population between 1990 and 1998. The average percent growth for the State of Mississippi was 6.9%, compared to 27% and 21% for Hancock County and Pearl River County, respectively. St. Tammany Parish, Louisiana, also has experienced a growth in population. Between 1990 and 1996, its population grew by approximately 22% to an estimated total of 177,000 (see Table 3-2). The population growth is attributed largely to growth in the casino gambling industry, which has created service, retail, and construction jobs in the area. Some of the population growth is also attributed to out-migration from New Orleans, which has lost population over this time period (University of New Orleans 1999).

The population of the region is projected to increase through the year 2005 (see Table 3-3). Hancock County is expected to have the highest percent growth in population.

As of April 1999, Stennis Space Center had 3,911 employees, including NASA personnel, NASA contractors, and all tenant agencies and organizations. Of this total, 1,316 are military personnel (i.e., Department of Navy, Department of Army, DoD contractors), and 2,280 are civilian and other contractor personnel (Johnson Controls World Services 1999).

SBU-22 has 170 personnel, including 11 officers and 159 enlisted personnel. The unit has increased the number of personnel by over 100 since 1997, as it has transitioned from a reserve unit to an active command (Loth 1999).

Table 3-3 Regional Population Projections (2005)

County/Parish	1998 Estimate	2005 Projection	% Change
Mississippi			
Hancock	40,327	49,995	24 %
Harrison	177,981	196,175	10 %
Pearl River	46,862	55,939	19 %
Louisiana			
St. Tammany	177,000 ^a	NA	NA

^a 1996 population estimate.

Key:

NA = Not available.

Source: University of New Orleans 1999; Mississippi Department of Economic and Community Development 1999.

3.10.2 Housing

According to the 1990 census of housing, the total number of housing units in Hancock, Harrison, and Pearl River counties, Mississippi, and St. Tammany Parish, Louisiana, is 158,160 (see Table 3-4). The average vacancy rate is 17%, ranging from a 29% vacancy rate in Hancock County to a 12% vacancy rate in Harrison County.

Table 3-4 Regional Housing Characteristics (1990)

County/Parish	Total Housing Units	Single-Family Units	Multi-Family Units	Vacancy Rate %	Percent Owned	Percent Rented
Mississippi						
Hancock	16,561	14,805	1,756	29	79	21
Harrison	67,813	51,111	16,702	12	61	39
Pearl River	15,793	14,457	1,336	13	79	21
Louisiana						
St. Tammany	57,993	51,006	6,987	13	76	24
Total	158,160	131,379	26,781	17	—	—

Source: U.S. Bureau of the Census 1999

The Gulf coast communities have experienced a modest growth in new housing (see Table 3-5) and an active resale market (University of New Orleans 1999). The number of home sales and average sales price in 1998 is shown in Table 3-6 for representative Gulf coast communities.

Rental apartments in the Gulf coast communities have shown high occupancy rates through the mid- to late 1990s. Occupancy rates and average rents between 1995 and 1998 are shown on Table 3-7.

Table 3-5 New Housing Permits (1993-1996)

County/Parish	Single-Family	Multi-Family
Mississippi		
Hancock	686	18
Harrison	3,792	1,572
Louisiana		
St. Tammany	7,341	600

Source: University of New Orleans 1999.

Table 3-6 Home Sales and Average Sales Price in 1998

Locality	Unit Sales	Average Price
Mississippi		
Bay St. Louis	74	\$96,865
Gulfport	798	\$98,823
Hancock County	125	\$74,524
Long Beach	186	\$97,821
Pass Christian	112	\$132,419
Waveland	99	\$79,121
Louisiana		
East St. Tammany Parish/Slidell	1,243	\$114,871
West St. Tammany Parish	1,547	\$170,206

Source: University of New Orleans 1999.

Table 3-7 Occupancy Rates and Average Rents (Two Bedroom/Two Bath Units) 1997-1998

Locality	1997		1998	
	Occupancy Rate	Average Rent	Occupancy Rate	Average Rent
Mississippi				
Bay St. Louis	98%	\$500	98%	\$475
South Gulfport	91%	\$517	96%	\$535
North Gulfport	98%	\$553	99%	\$583
Ocean Springs	96%	\$648	98%	\$659
Louisiana				
East St. Tammany Parish/Slidell	90%	\$534	96%	\$565
West St. Tammany Parish	NA	\$518	NA	\$530

Key:

NA = Not available.

Source: University of New Orleans 1999.

NCBC Gulfport provides military housing for permanent party officers and enlisted, as well as transients or part-time students spending less than 20 weeks on base. NCBC is located in a designated Critical Housing Area due to the high cost and availability of housing in the local community.

The requirement for bachelor housing is primarily for enlisted personnel. NCBC Gulfport currently has a total of 1,600 bachelor enlisted quarters. However, by the year 2004, the number of bachelor enlisted quarters will decrease to 1,400. The loss of 200 units is the net effect of ongoing renovation and new construction program.

A renovation program is being conducted in compliance with the new Tri-Service Berthing Requirement to enlarge the living area of each of the bachelor enlisted quarters. As the size of the living area is increased, the total number of units is decreased. Although NCBC is also constructing new quarters, the new construction will not completely compensate for the total units lost (Sienicki 1999).

NCBC Gulfport has 240 family housing units in four communities. There are 208 units for enlisted personnel in two neighborhoods (Ladd Circle and Pinewood), seven units for officers in one neighborhood (Sylvester Drive), and 25 mobile homes in Camille Court, which are owned by both officers and enlisted personnel. The units are approximately 95% utilized, and families wait 18 to 24 months to receive housing, depending on the number of bedrooms required (Wilson 1999).

NCBC projects a deficit of 157 family housing units; 1,058 bachelor enlisted quarters; 142 bachelor officer quarters; and 490 transient units by the year 2004 (Sienicki 1999; Wilson 1999).

4

Environmental Consequences and Mitigative Measures

This section discusses the potential environmental impacts of the proposed action, including construction of new facilities at Site A, and the alternative for construction of new facilities at Site B. In addition, the environmental impacts of the no-action alternative are addressed. To assess the potential environmental impacts, the following assumptions were used:

- The total area of Site A is 150 acres (61 ha); however, the new construction would occupy approximately 20 acres (8 ha).
- The total area of Site B is 6.4 acres (2.6 ha).
- The total number of SBU-22 personnel present on site is 170. In the foreseeable future, the number of SBU-22 personnel will be 170.
- The total number of NAVSCIATTS personnel to be permanently established at Stennis Space Center is 41. In the foreseeable future, the number of NAVSCIATTS personnel will be 41.
- The annual number of students trained by NAVSCIATTS personnel will be 140 the first year, increasing to 350 students by 2002.
- The maximum class size for NAVSCIATTS will be 14 persons; a maximum of six classes will be conducted concurrently. Therefore, the maximum number of students training at Stennis Space Center at any given period of time will be 84 students.
- NAVSCIATTS students will be housed at NCBC Gulfport until construction of the isolation facility is complete. After completion, NAVSCIATTS students will be housed on site.

- NAVSCIATTS is assumed to conduct only periodic operations on the river when classes are not in session. During certain class sessions, there will be a maximum number of three boats operating on the river during the first year, increasing to six by the year 2002.
- NAVSCIATTS would operate approximately 2,800 boat miles the first year, increasing to 14,400 by the year 2002.
- Riverine operations by NAVSCIATTS and students would be conducted primarily during the day, but would occasionally be conducted at night.
- Riverine operations by NAVSCIATTS and students would be conducted only on the Mississippi side of the river and tributaries in the state of Mississippi. There will be no new riverine operations in the state of Louisiana.

4.1 Topography, Geology, and Soils

4.1.1 Site A

Topography

Construction and operation of facilities to support SBU-22 and NAVSCIATTS would result in a slight change in topography. In order to construct the proposed facilities, the nearly level site would require minimal grading or fill to create a level surface for building foundations. This change in topography would not differ significantly from, or adversely impact, the surrounding topography.

Geology

The proposed action does not include any deep, subsurface disturbance to the geology underlying the site soils. Therefore, the proposed action would not have any impacts on existing geology.

Soils

Construction of the proposed facilities would result in a temporary disturbance to soils. To minimize the impact of this disturbance, the appropriate devices such as silt fences and hay bale filters will be installed around the project perimeter during construction to limit the potential for wind and storm water erosion resulting in off-site sedimentation. Prior to construction, the Navy will apply for and obtain a National

Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction from the MSDEQ, Office of Pollution Control, since the proposed activity will impact greater than 5 acres (2.02 ha). The conditions issued with this permit will further ensure that impacts associated with sedimentation from exposed soils due to storm water runoff during construction are minimized. Where buildings and parking lots/roads are located, soil will be permanently covered by structures. In all other areas, the project soils will be covered with maintained walkways or lawn.

4.1.2 Site B

The impacts to topography, geology, and soils at Site B are similar to those described for Site A. Construction and operation of facilities to support SBU-22 and NAVSCIATTS would not significantly impact the topography, geology, or soils at Site B.

4.1.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant impacts on topography, geology, or soils would occur under the no-action alternative, as no new construction would occur.

4.2 Water Resources

4.2.1 Site A

Surface Water

The proposed action will have minor long-term and short-term effects to the surface water primarily associated with storm water run-off from the proposed site of construction. Standard erosion control methods along with sediment control devices will be used during construction activities. Installation of silt fences around the project will minimize impacts to on-site drainages. Prior to construction, the Navy will apply for and obtain a NPDES Storm Water Permit for Construction from the MSDEQ, Office of Pollution Control, since the proposed activity will impact greater than 5 acres (2.02 ha). The conditions issued with this permit will further ensure that impacts associated with sedi-

mentation from exposed soils due to storm water runoff during construction are minimized.

Subsequent to construction, runoff from all impervious surfaces will increase the storm water flow. Information regarding the increase in storm water flow due to the proposed action will be submitted to the MSDEQ, Office of Pollution Control to determine whether existing NPDES permits will need to be revised.

With the addition of an isolation facility and an increase in on-site personnel, sewage output will increase. This increase will add to the amount of wastewater treatment and effluent discharged through the Stennis Space Center sewage treatment system into the Main Canal. Although the increase is not expected to be significant, NASA will be notified and may need to modify its existing NPDES permit.

In addition, the Navy will apply for and obtain a NPDES permit for discharges of training tank (i.e., swimming pool) water into the Main Canal/Pearl River. These discharges will not significantly impact the water quality of the Pearl River. Training tank water may contain a minimal amount of chlorine used to control the bacteria in the water, but will not adversely impact the water quality of the Pearl River.

The Navy will comply with all permit requirements, including effluent limitations, monitoring requirements, and other conditions to ensure water quality impacts are insignificant.

There will be an increase of approximately 2,800 boat miles associated with NAVSCIATTS operations the first year, increasing to 14,400 by the year 2002. Increased boat activities on the Pearl River will result in a slight increase in turbidity, increased wake-induced bank erosion, and increased potential for fluid spills and discharges. However, the increase in boat miles is not expected to significantly increase the potential for these impacts to occur, nor will it result in any degradation of existing water quality, adjacent marsh communities or downstream estuarine water bodies. NAVSCIATTS will comply with existing SBU-22 and NASA Oil and Hazardous Spill Contingency Plans to minimize the potential for any releases or spills, and for spill response if any discharges occur.

A 152-mile (243-km) segment of the Pearl River, from a point 1 mile (1.6 km) south of Columbia, Mississippi, to the Gulf of Mexico, and including the section proposed for use by NAVSCIATTS, is listed on the Nationwide Rivers Inventory because of

its scenic, recreational, and fish and wildlife values. The proposed action will not affect the scenic, recreational, and fish and wildlife values that have contributed to the inclusion of the Pearl River on the Nationwide Rivers Inventory. Proposed new facilities would be constructed along the Main Canal, where the shoreline has been historically developed for NASA and, later, SBU-22 boat docking facilities and turning basin.

Recreational users will continue to have access to the Pearl River. A maximum of six additional watercraft would be conducting operations over the 10-mile segment of the Pearl River and tributaries within the restrictive easement area of Stennis Space Center, which would not significantly impact recreational users of the Pearl River. NAVSCIATTS would follow SBU-22 policy of patrolling the river to identify locations of recreational users, and will avoid those areas when scheduling riverine training operations that may interfere with recreational uses of the Pearl River.

The proposed action would not significantly impact the fish and wildlife values of the Pearl River. The projected 2,800 to 14,400 boat-mile increase in riverine operations and slight increase in stormwater, wastewater, and training tank discharges would have minimal impact on the water quality or habitat suitability of the Pearl River. The Navy has consulted with the National Park Service to confirm that the impacts on the natural resources of the Pearl River will be minimal (Cooley 1999).

Groundwater

The proposed action will increase the number of personnel and facilities in the area, thereby, increasing the use of potable water. However, Stennis Space Center has not experienced any decline in pump capacity at the wells, and the quantity of groundwater supplies is assumed to be plentiful (Johnson Controls World Services 1999). Therefore, the proposed action will not significantly impact groundwater resources.

Floodplain

Portions of the proposed construction would occur within the 100-year floodplain. However, as discussed, the Navy will manage stormwater run-off, storage of oil and hazardous material, and refueling operations to minimize any impact on the resources of the floodplain.

Wetlands

The proposed action will not impact wetland areas. Wetlands are located within the 100-year floodplain and along the drainages to the Main Canal. The facilities proposed for SBU-22 and NAVSCIATTS would be constructed on the upland areas, avoiding both the drainage channels and the wetland area associated with the floodplain. Based on a wetland determination conducted by USACE on January 20, 2000, no wetlands are located within the proposed site of construction (Hogarth 2000).

Coastal Zone Management

The Mississippi Department of Wildlife Conservation, Bureau of Marine Resources, has reviewed the proposed action, and concurs with the Navy's determination that the proposed action is consistent to the maximum extent practicable with the policies and goals of Mississippi's coastal management program (Woods 1999).

The proposed action is still under review by the Louisiana Department of Natural Resources, Coastal Management Division. There will be no new riverine operations in the state of Louisiana until outstanding issues are resolved.

4.2.2 Site B

Surface Water

Since no perennial or intermittent streams are located on the proposed site, construction activities would not impact on-site surface water. Appropriate erosion control devices (e.g., a silt fence) would be installed around the project perimeter during construction. During construction, these devices would limit the potential for erosion and off-site sedimentation from storm water runoff into adjacent drainage ditches. The Navy would apply for and obtain a NPDES Storm Water Permit for Construction from the MSDEQ, Office of Pollution Control, since the proposed activity would impact greater than 5 acres (2.02 ha). The conditions issued with this permit would further ensure that impacts associated with storm water runoff during construction would be minimized. Therefore, no adverse impacts to surface water would occur during construction of the proposed action.

Subsequent to construction, runoff from all areas not covered with permanent structures would minimally increase storm water runoff at MSAAP. Storm water runoff would be transported via the existing drainage ditch system to Outfall No. 001. The proposed action would also result in an increased volume of treated sanitary wastewater discharges. Mason Technologies, Inc., the operating contractor for the MSAAP, will submit information regarding the increase in storm water flow and treated sanitary wastewater discharges due to the proposed action to the MSDEQ, Office of Pollution Control, to determine whether the existing NPDES permit will need to be revised. In addition, the Navy will obtain a NPDES permit for discharges of training tank (swimming pool) water into Mike's River. These discharges will not significantly impact the water quality of Mike's River. The Navy will comply with all permit requirements, including effluent limitations, monitoring requirements, and other conditions in accordance with the Mississippi Water Pollution Control Law (Section 49-17-1 et seq., Mississippi Code of 1972, and Section 402(b) of the Federal Water Pollution Control Act). Therefore, no adverse impacts on surface water quality would occur during the long-term operation of the proposed facility.

Impacts on surface water quality from riverine operations are assumed to be the same whether new facilities are constructed at Site A or Site B.

Groundwater

The proposed action will increase the number of personnel and facilities in the area, thereby increasing the use of potable water. However, the MSAAP has not experienced any decline in pump capacity at the wells, and the quantity of groundwater supply is assumed to be plentiful (Johnson Controls World Services 1999).

Floodplain

No documented 100-year floodplains are located at Site B (FEMA 1987). Therefore, the proposed action would not impact floodplain resources.

Wetlands

One wetland is located on the eastern third of the proposed project site and is associated with man-made drainage ditches. During construction of the proposed facilities,

this wetland would be cleared of existing vegetation and filled to create a level, dry surface for construction purposes. During the long-term operation of the proposed facility, the footprint of the new construction lot would permanently cover the existing wetland. Therefore, this action would result in the permanent conversion of 0.86 acre (0.35 ha) of forested wetland to improved land. Mason Technologies, Inc., has been authorized by USACE, Vicksburg District, under General Permit 28 (Authorization No. 1158), to use 3,030 cubic yards (2,318 cubic meters) of various materials (concrete, asphalt, aggregate, and select fill) to fill the wetland (McNair 1998). This activity has also been authorized by the MSDEQ, Office of Pollution Control, under Section 401 of the Clean Water Act.

Coastal Zone Management

The Mississippi Department of Wildlife Conservation, Bureau of Marine Resources, has reviewed the proposed construction and operation of facilities to support SBU-22 at Site B in accordance with Section 307 of the Coastal Zone Management Act. The Bureau of Marine Resources has certified that construction and operation of these facilities is consistent with Mississippi's coastal resources management program and the Mississippi Coastal Wetlands Protection Law (Woods 1998). The consistency determination was issued in conjunction with the USACE General Permit 28 to fill a 0.86-acre (0.35-ha) wetland.

Consistency of the proposed increase in riverine operations are the same whether new facilities are constructed at Site A or Site B.

4.2.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant impacts on surface water, groundwater, floodplain resources, wetlands, or coastal zone resources would occur under the no-action alternative, as no new construction or increase in riverine operations would occur.

4.3 Terrestrial and Aquatic Resources

4.3.1 Site A

Vegetation

The proposed action at Site A will result in the long-term conversion of approximately 20 acres (8 ha) of forested land to improved land and unimproved land. Loss of the pine forest is not considered a significant impact as large areas of pine forest are located throughout the Stennis Space Center fee area and restrictive easement area.

Wildlife

Construction activities would have minor short-term and long-term impacts on wildlife habitat, resulting in minimal localized impact on local wildlife populations. During construction, the clearing and grading of the proposed project area may result in mortality to less mobile forms of wildlife, such as rodents, which are unable to escape the construction area. In addition, the general disturbance of the proposed project area associated with construction activities would likely cause the temporary displacement of most wildlife from the construction area and adjacent areas. Following construction, wildlife would return to the construction area and resume normal activities consistent with the availability of post-construction habitats.

The principal impact of clearing the approximately 20-acre (8-ha) site would be to shift species favoring forested habitats to using either edge habitat or more open areas. High diversity of species along edges is considered a positive contribution to most species community populations or distribution. In addition, it would be expected that species utilizing forested habitat would move from the construction site to adjacent woody areas. Based on the large tracts of undeveloped habitat within the Stennis Space Center fee area and restrictive easement area, the impacts to wildlife will not be significant.

Species within the Pearl River Wildlife Management Area may be disturbed by the increase in noise and activity associated with NAVSCIATTS riverine training operations. However, wildlife have likely acclimated to the riverine operations that have been conducted on the Pearl River by SBU-22 for over 10 years.

The projected increase in riverine operations and slight increase in stormwater, wastewater, and training tank discharges would have minimal impact on the water quality

or habitat suitability of the Pearl River. Therefore, fish and other species in and around the Pearl River would not be significantly impacted by the proposed action.

Because the fish and wildlife value of the Pearl River will not be impacted, the proposed action will not affect the classification of the Pearl River on the Nationwide Rivers Inventory, nor change its designation as wild, scenic or recreational under the Wild and Scenic Rivers Act.

Threatened and Endangered Species

The proposed action will not impact any threatened or endangered species. A comprehensive survey for the presence of the gopher tortoise, eastern indigo snake, red-cockaded woodpecker, American peregrine falcon, and Louisiana black bear was performed throughout the 13,800-acre (5585-ha) Stennis Space Center in the summer of 1998. No indicators of the occurrence of the eastern indigo snake, red-cockaded woodpecker, American peregrine falcon, or the Louisiana black bear were noted during the survey (Keiser et al. 1998). A potential abandoned gopher tortoise burrow was located; however, there were no positive sightings of this species throughout the project area. The endangered Florida panther and Louisiana quillwort have not been identified as occurring during various ecological surveys conducted at the Stennis Space Center (Johnson Controls World Services 1999).

Occasional transient use of the project site by the American peregrine falcon and Louisiana black bear is unlikely due to its limited size, and the surrounding developed land uses frequented by human activity. In addition, more suitable habitat is located in close proximity to the project site (i.e., Pearl River Wildlife Management Area, restrictive easement area around Stennis Space Center).

A bald eagle was sighted at Stennis Space Center in proximity to the Pearl River during a 1994 survey. This species may nest along the Pearl River in cypress snags, particularly near areas of open water, although is unlikely to be impacted by the proposed new construction or increase in riverine training operations.

The projected increase in riverine operations of 2,800 to 14,400 boat miles, and slight increase in stormwater, wastewater, and training tank discharges would have minimal impact on the water quality or habitat suitability of the Pearl River for the federally threatened ringed sawback/map turtle and Gulf sturgeon (Lunceford 1999; Hogarth

2000). No alteration or disturbance of the Pearl River substrate is proposed which would affect the Gulf sturgeon. No trenching, digging or other disturbance is proposed in potential map turtle nesting areas.

If evidence of any threatened or endangered species is found during or after the construction of new facilities, the USFWS and appropriate state agencies will be contacted and consulted.

Protected species of sea turtles found in the Gulf of Mexico and the southern sections of the Pearl River would not likely be adversely affected by NAVSCIATT's occasional boat trips southward to the Gulf area (Hogarth 2000). The area is already heavily traveled, and the projected increase in boat traffic would be negligible. The section of the Pearl River where most of the riverine operations occur is a freshwater environment and is not known to contain sea turtles.

4.3.2 Site B

Vegetation

During construction, all marketable timber would be cleared from the project site by the USACE, Vicksburg District, according to the MSAAP Natural Resources Management Plan, and all remaining vegetation would be cleared and disposed of off site at a USACE-approved location. All areas not covered by the proposed new construction would be maintained as lawn. Therefore, the proposed action would result in the long-term conversion of 6.4 acres (2.6 ha) of commercial forested land to unimproved and improved land, representing a 0.18% decrease in the total amount of commercial forested land currently present within the MSAAP compound.

Wildlife

The impacts to wildlife at Site B are similar to those described for Site A. Construction and operation of facilities to support SBU-22 and NAVSCIATTS would not significantly impact wildlife likely to inhabit Site B.

Threatened and Endangered Species

Biological field surveys performed for Stennis Space Center during 1998 verified that the presence of any threatened or endangered species at Site B is unlikely. Based on this information, no further consultation on threatened or endangered species is required (Lunceford 1998).

4.3.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant impacts on vegetation, wildlife, or threatened and endangered species would occur under the no-action alternative, as no new construction or increase in riverine operations would occur.

4.4 Air Quality

4.4.1 Site A

The construction of new facilities would generate emissions and dust that would have short-term, localized impacts on air quality. These impacts would be minimized by use of construction equipment equipped with emissions controls and dust suppression methods. The change in air quality associated with construction would be localized and temporary in nature, lasting for the duration of construction.

The long-term operation of the facilities would require the use of natural gas-fired boilers for water heaters for the buildings and training tank and a diesel-powered emergency generator. The Title V Operating Permit for Stennis Space Center would need to be modified to include these sources. However, no significant impacts on ambient air quality or maintenance of designated air quality emission standards are anticipated. No hazardous air emissions are anticipated.

The projected increase in boat emissions associated with 2,800 to 14,400 boat miles would not be expected to result in a significant impact on air quality. The entire State of Mississippi is classified as attainment for all criteria pollutants. Therefore, the air quality impacts of the proposed action are exempt from the General Conformity Rule under the Clean Air Act.

4.4.2 Site B

The impacts on air quality resulting from construction and operation of facilities at Site B are similar to those described for Site A. Construction and operation of facilities to support SBU-22 and NAVSCIATTS at Site B and increased riverine operations by NAVSCIATTS would not generate significant levels of air emissions or impact ambient air quality. For facilities to support SBU-22, Mason Technologies, Inc., has obtained a permit to construct and operate natural-gas-fired boilers to heat the buildings and training tank, and a diesel-powered emergency generator (Parrish 1998). An additional construction and operation permit will be required for facilities to support NAVSCIATTS. Compliance with the permit emission limitations will ensure that no significant impacts on air quality will occur.

4.4.3 No Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant impacts on air quality would occur under the no-action alternative, as no new construction or increase in riverine operations would occur.

4.5 Noise

4.5.1 Site A

No significant adverse short or long-term noise impact would result from implementation of the proposed action. During construction of the proposed project buildings, an increase in noise levels associated with the presence of construction activities and equipment would occur. However, the increase in noise levels would be localized and temporary, lasting for the duration of construction. After completion of the construction of the facilities, the intended daily uses of the facilities and the associated traffic noise at the site would not contribute significantly to ambient noise levels or be inconsistent with the surrounding land uses.

The increase in boat operations on the Pearl River associated with NAVSCIATTS training classes will have a minimal impact on ambient noise levels. Current ambient noise levels on the Pearl River include noise generated by the use of watercraft by SBU-22 for riverine operations. SBU-22 operates two to six boats almost continuously. The

addition of a maximum of three to six boats during times when certain classes are offered will not significantly impact the existing ambient noise level. On most occasions, fewer additional boats will be operated on the Pearl River, and will be operated over a ten-mile segment (i.e., the portion of the Pearl River within the restricted easement area of the Stennis Space Center). In addition, NAVSCIATTS will operate primarily during the day when noise sensitivities are lower, and only occasionally during the night.

The restricted easement area surrounding Stennis Space Center prohibits use of the land for habitable structures. Therefore, no residential land uses would be impacted by an increase in the riverine operations. Visitors to the Pearl River Wildlife Management Area and users of the Pearl River for passive recreation (e.g., fishing) may be slightly impacted by the increase in boat traffic. However, the impact is not considered significant given the current use of the Pearl River by SBU-22.

4.5.2 Site B

The impact on the noise environment at Site B is similar to that described for Site A. Construction and operation of facilities to support SBU-22 and NAVSCIATTS would not significantly impact ambient noise levels at Site B. Impacts on the noise environment from riverine operations are assumed to be the same whether new facilities are constructed at Site A or Site B.

4.5.3 No Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant change to the noise environment would occur under the no-action alternative, as no new construction or increase in riverine operations would occur.

4.6 Hazardous Materials and Waste Management

4.6.1 Site A

The routine activities performed by NAVSCIATTS will not use or generate significant amounts and types of hazardous materials or waste. Certain courses taught by NAVSCIATTS, including propulsion systems maintenance, hull maintenance, weapons maintenance, and outboard motor maintenance and overhaul, will generate hazardous

wastes similar to those generated by SBU-22, including waste oil, degreasers, and batteries. SBU-22 will continue to manage on-site hazardous waste and disposal through a regulated RCRA transporter. The increase in hazardous material usage or hazardous waste generation by NAVSCIATTS is not expected to change the conditionally exempt, small-quantity generator status of SBU-22.

Increased riverine operations would result in a slight increase in the potential for spills. The greatest potential for spills would occur during the fueling of watercraft while on the water. However, most refueling operations are conducted by transporting the watercraft to the Stennis Space Center fuel farm by trailer. Increased riverine operations by NAVSCIATTS would not impact any of the response procedures currently defined in SBU-22's Oil and Hazardous Spill Contingency Plan.

4.6.2 Site B

The impact on hazardous materials and waste management at Site B is similar to that described for Site A.

4.6.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant change to hazardous materials and waste management would occur under the no-action alternative, as only limited in-classroom training would occur.

4.7 Cultural Resources

4.7.1 Site A

The waterfront site does not contain currently known significant cultural resources. The proposed facilities to support SBU-22 and NAVSCIATTS will not affect NRHP-eligible or NRHP-listed resources. In response to the Native American Graves Protection and Repatriation Act, NASA has developed a policy of protecting archaeological resources if such resources are discovered inadvertently during construction activities. This policy requires that all contractors who perform ground-disturbing activity cease this activity and notify the NASA Contracting Officer if archaeological materials are encountered.

Upon the discovery of any type of archaeological remains at Site A, the NASA Environmental Officer will be notified, who will review the existing documentation. The Environmental Officer will determine whether the discovered resource has been recorded and whether any necessary state, federal, and Native American coordination has been completed. If objects covered by the Native American Graves Protection and Repatriation Act are discovered, the Environmental Officer will make an inspection of the area and the discovered items and will carry out all necessary consultation required by this and other Federal laws. All construction activity at the location of the discovery will be on hold until this consultation process and the agreed upon actions are completed (USACE 1995).

4.7.2 Site B

Site B does not contain any known NRHP-eligible or NRHP-listed resources. Therefore, construction and operation of facilities at Site B will not impact any significant cultural resources. However, similar to Site A, the Navy will cease all construction activity and notify the NASA Environmental Officer if any archaeological materials are encountered during construction of SBU-22 and NAVSCIATTS facilities.

4.7.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. Cultural resources would not be impacted under the no-action alternative, as no new construction, renovation or ground-disturbing activity would occur.

4.8 Infrastructure and Utilities

4.8.1 Site A

Transportation

The proposed action would increase the number of personnel and vehicles arriving at, utilizing, and departing from the existing gates and roads on and near Stennis Space Center and Site A. Access to the proposed project area would be via the existing roads at Stennis Space Center. It is anticipated that Lower Gainesville Road will be improved to

serve as the primary access corridor. The current road capacity can easily accommodate both construction and operations personnel associated with SBU-22 and NAVSCIATTS.

Assuming an average of 2.5 trips per person, the projected increase of 41 NAVSCIATTS personnel and a maximum of 84 students in training at any given time would increase the number of vehicle trips entering/existing the existing gates at Stennis Space Center by approximately 312. The projected increase in vehicle trips would not have a significant impact on local or on-site traffic flows.

The projected increase in riverine operations by NAVSCIATTS personnel and students is not expected to significantly impact use of the Pearl River for transportation or recreational boating.

Water

Potable water use at Stennis Space Center averages 520,794 gallons per day (1,968,600 liters per day) (Johnson Controls World Services 1997), which represents a 15% utilization of the rated capacity of the potable water system. As discussed in Section 3.8, the average available daily supply of potable water based on the natural flow rate of the wells is 3.6 million gallons (13.6 million liters). The proposed action would increase the demand for potable water by approximately 21,277 gpd (80,427 lpd), an increase in demand that can be accommodated by the current facilities. Water usage is estimated to be 120% of wastewater generation. Additional potable water use will be to supply the training tank. The existing water mains at the site have sufficient size and capacity to accommodate the proposed facilities. Therefore, no significant adverse impacts to the potable water system would occur.

Sewer

The proposed action would result in an estimated increase in sanitary waste generation of 17,731 gpd. The sewage generation analysis is based on the square footage of land use for each facility. For the purpose of this analysis, the following assumptions were made:

- MILCON P-100: 57,066 sq ft (5,187 sq m) x 10 gpd (37.8 lpd)/100 sq ft (9.1sq m) = 5,707 gpd (21,571 lpd);

- MILCON P-110: 36,888 sq ft (3,353.5 sq m) x 5 gpd (19 l pd)/1,000 sq ft (91 sq m) = 184 gpd (697 lpd);
- MILCON P-130: Training Facility/Isolation Facility/Galley
 - Training Facility: 84 students x 10gpd (37.8 lpd)/student = 840 gpd (3,175 lpd);
 - Isolation Facility: 40 rooms x 100 gpd (378 lpd)/room = 4,000 gpd (15,120 lpd);
 - Galley: 200 seats x 35 gpd (132.3 lpd)/seat = 7,000 gpd (26,460 lpd);

Total estimated sewage generation: 17,731 gpd (67,023 lpd).

Sewage hookup between the proposed new facilities and the sanitary wastewater treatment plant would be connected from the existing sewer line mains. It is anticipated that the estimated amount of sewage generated by the proposed action can be accommodated by the existing sewage treatment system.

Storm Water

Construction of new facilities to accommodate SBU-22 and NAVSCIATTS is not expected to significantly increase the flow of storm water from Site A. Prior to construction, an engineering study will be completed to determine the volume of storm water flow from the facilities and parking area and the need to improve the on-site drainage systems. Information regarding the increase in storm water flow due to the proposed action will be submitted to the MSDEQ, Office of Pollution Control, to determine whether existing NPDES permits will need to be revised. Any additional improvements to the on-site drainage system will be incorporated into the construction plans for Site A.

Solid Waste

The proposed action would increase generation of nonhazardous waste during construction and long-term operation of the facilities. During construction, construction waste and debris would be removed from the project site on a frequent basis. During operation, the generation of solid waste would not be expected to increase significantly over the existing rates. All nonhazardous waste generated at the new facilities would be

disposed of at the approved landfill within Stennis Space Center. Therefore, no significant adverse impacts on solid waste management would occur due to the proposed action.

Electrical

The proposed action would increase electrical requirements at Site A. Prior to construction, an engineering study will be completed to determine the electrical demand and the lines needed to service the site. Any additional improvements or electrical lines to the site will be incorporated into the construction plans for Site A. Demand for electrical supply will be typical for the designated building uses, including facility lighting, and equipment and utility usage.

Natural Gas

The proposed action will not significantly increase the demand for natural gas. Natural gas service may be required to heat the facilities, including the training tank. Prior to construction, an engineering study will be completed to determine the natural gas demand and the lines needed to service the site. Any additional improvements or natural gas lines to the site will be incorporated into the construction plans for Site A.

4.8.2 Site B

Transportation

Construction and operation of facilities at Site B would increase the number of personnel and vehicles arriving at, utilizing, and departing from the existing gates and roads on and near Stennis Space Center and the MSAAP. SBU-22 and NAVSCIATTS would need to access roads throughout the day to transport personnel for training operations at the existing waterfront facilities (docking facilities and boat yard).

Access to Site B would be via the existing roads at Stennis Space Center and the MSAAP. The current road capacity can easily accommodate both construction personnel and operations personnel associated with SBU-22 and NAVSCIATTS.

Water

Construction and operation of facilities at Site B would result in an increase in the use of drinking water. The projected increase in potable water use will not adversely impact the water supply. The wells that supply the area around Site B are currently pumping at only 2% of capacity (McNeely 1998). In addition, SBU-22 is currently serviced by the existing water supply at its temporary facilities within the MSAAP compound, and this service will be disconnected.

The increased consumption of water would provide beneficial additional flow through the existing water system, which is currently purged monthly to avoid stagnation problems (Mason Technologies, Inc. 1998). Water supply to these facilities could easily be connected from the existing water mains.

Sewer

Construction and operation of facilities at Site B would result in an increase in sanitary waste generation. The projected increase in sewage will not adversely impact the capacity of the treatment plant. The current workforce population at the MSAAP only requires operation of the 50,000-gpd (2,273-hlpd) aeration system to treat 30,000 gpd (1,364 hlpd) of sewage (20% capacity; McNeely 1998). In addition, SBU-22 is currently serviced by the existing sewerage system at its temporary facilities within the MSAAP compound, and this service will be disconnected. The increased volume of sanitary wastewater would increase efficiency by operating the system closer to optimum levels and decreasing the overall treatment cost per gallon. Sewage hookup between the proposed new facilities and the sanitary wastewater treatment plant would be connected from the existing sewer line mains. Therefore, the proposed action would not adversely impact the sanitary wastewater treatment system capacity and would actually increase the operating efficiency of the sanitary system.

Storm Water

Construction of new facilities to accommodate SBU-22 and NAVSCIATTS is not expected to significantly increase the flow of storm water from Site B. Prior to construction, an engineering study will be completed to determine the volume of storm water flow from the facilities and parking area and the need to improve the on-site drainage systems.

Information regarding the increase in storm water flow due to the proposed action will be submitted to the MSDEQ, Office of Pollution Control, to determine whether existing NPDES permits will need to be revised. Any additional improvements to the storm water drainage will be incorporated into the construction plans for Site B.

Solid Waste

Construction and operation of facilities at Site B would increase generation of nonhazardous waste.

During construction, construction waste and debris would be removed from the project site on a frequent basis. During operation, the generation of solid waste would not be expected to increase significantly over the existing rates. All nonhazardous waste generated at the new facilities would be disposed of at the approved landfill within Stennis Space Center. Therefore, no significant adverse impacts on solid waste management would occur due to the proposed action.

Electrical

Construction and operation of facilities at Site B would increase electrical needs and use. However, these increases would be considerably less than the capability of the current distribution system. For example, the current workforce and operations at the MSAAP demand only 23% of electric generation capability (McNeely 1998). Electric hookup to the new facilities would be easily provided from the existing infrastructure. Therefore, the construction and operation of facilities at Site B would not significantly impact the electrical generation capacity or function.

Natural Gas

MSAAP currently uses natural gas for the generation of process and building heat steam. The existing system is capable of producing 35,000 pounds of steam per day. It is anticipated that the new facilities at Site B would require a modest amount of natural gas, primarily to heat the training tank. Since the existing system is capable of producing 35,000 pounds of steam per day, and current operations require an average of 14,000 pounds per day (47% of capacity [McNeely 1998]), it is anticipated that no adverse impacts due to the proposed action would occur to the gas distribution system.

4.8.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant change to the use of infrastructure and utilities would occur under the no-action alternative.

4.9 Land Use

4.9.1 Site A

Construction and operation of facilities to support SBU-22 and NAVSCIATTS at the waterfront site would not create any land use conflicts with existing land uses on site or adjacent to the waterfront site.

Development of the site for SBU-22 and NAVSCIATTS would require the long-term conversion of 20 acres from open space to administrative, maintenance/supply, education, and residential land uses. Remaining portions of the 150-acre site would be maintained as open space or for future growth in riverine training operations.

Development of temporary residential housing (i.e., the isolation facility) does not conflict with NASA's restriction on habitable structures in the buffer zone. NASA's restriction on structures that may be used for human occupancy or habitation applies only to property located within the restricted easement area surrounding Stennis Space Center. The purpose of this restriction is to enable NASA to test large propulsion articles and systems without constraints, including those that may arise from claims of damage to private properties surrounding the test site. The restriction does not apply to federal agencies located within the fee area/operational site of Stennis Space Center that may have a requirement for habitable structures in order to fulfill their respective missions.

Development of facilities to support SBU-22 and NAVSCIATTS at Site A would not conflict with NASA's Master Plan. Most of the proposed new development would be located in the vast open space on the western side of the Stennis Space Center. The assumptions that guide the land use projections for the next 5 to 15 years include:

- Present programs will continue;
- Stennis Space Center will remain NASA's primary facility for the static testing of all liquid propellant rocket engines;

- Governmental agencies in addition to NASA will utilize Stennis Space Center on a tenant basis;
- Limited manufacturing and industrial capabilities will be developed at Stennis Space Center.

Only those agencies whose missions do not interfere or conflict with NASA activities and can be controlled to accommodate testing requirements are located at Stennis Space Center. Furthermore, there are no privately owned properties within the Stennis Space Center operational area from which potential claims or constraints to testing might arise.

Given the existing and projected land uses at Stennis Space Center, no land use conflicts resulting from development of the proposed action at Site A are anticipated.

The increased riverine operations are not expected to create conflicts with other uses of the Pearl River. SBU-22 has operated on the Pearl River for over 10 years in conjunction with various other uses, including barge traffic and recreational boaters. The proposed action will not affect the recreational values that have contributed to the identification of the Pearl River on the Nationwide Rivers Inventory. Recreational users will continue to have access to the Pearl River. A maximum of six additional watercraft would be conducting operations over the 10-mile segment of the Pearl River and tributaries within the restrictive easement area of Stennis Space Center, which would not significantly impact recreational users of the Pearl River. NAVSCIATTS would follow SBU-22 policy of patrolling the river to identify locations of recreational users, and will avoid those areas when scheduling riverine training operations that may interfere with recreational uses of the Pearl River.

4.9.2 Site B

Construction and operation of facilities at Site B within the MSAAP would result in the long-term conversion of 6.4 acres (2.6 ha) of commercial forested land to unimproved and improved land uses. The impact of this change in land use is minimal, representing a 0.18% decrease in the total 3,628 acres (1,468 ha) of forested land currently maintained on MSAAP. In addition, this change in land use is consistent with and will not conflict with adjacent and surrounding land uses in the vicinity of the project area.

4.9.3 No-Action

Under the no-action alternative, SBU-22 and NAVSCIATTS would continue to operate from temporary facilities at the MSAAP. No significant change to the surrounding land use would occur under the no-action alternative.

SBU-22 would continue to be housed in temporary structures, which contributes to low morale and poor unit integrity. Time better used in operational training is required to transport personnel from administrative offices and supply warehouses to the docking facilities and boat yard. Furthermore, the operational capabilities of SBU-22 would continue to be negatively impacted by the restricted facilities. NAVSCIATS would continue to be housed in temporary structures, and would be unable to fulfill their instructional mission, due to all training being limited to in-classroom settings only.

4.10 Socioeconomics

4.10.1 Personnel and Employment

Permanent establishment of NAVSCIATTS at Stennis Space Center will increase the on-site population at Stennis Space Center by 41 persons and will increase the residential population in local communities by a maximum of 41 families, including NAVSCIATTS personnel and dependents. However, the majority of NAVSCIATTS personnel are likely to be bachelor enlisted and/or may be recruited from the local area.

The projected increase in on-site population represents only 1% of the current workforce population at Stennis Space Center. This increase is not considered significant and would have no direct or indirect impacts on services provided to the population at Stennis Space Center (e.g., roadways, utilities) as discussed in Section 4.5. In addition, the projected increase would have no direct or indirect impacts on personnel services (e.g. medical, dental, and recreational services) provided to the regional military population at NCBC Gulfport (Sienicki 1999).

The projected increase in the residential population in local communities around Stennis Space Center would be an insignificant impact. Currently, SBU-22 personnel and other military and civilian personnel working at Stennis Space Center live in various communities along the Gulf coast of Mississippi and Louisiana. Families of NAVSCIATTS personnel are also likely to relocate to various communities, thereby

minimizing the impact on any one community. The number of families likely to relocate to any community in Hancock, Harrison, and Pearl River counties or St. Tammany Parish is unlikely to significantly impact services provided to residents of that community (e.g., police and fire services, schools, roadways, utilities). Relocation of some families to military housing provided at NCBC Gulfport will also minimize the demand for certain community services provided at the base (e.g., police and fire services, roadways, utilities).

4.10.2 Housing

Permanent establishment of NAVSCIATTS at Stennis Space Center will increase the demand for military housing and off-base housing. Assuming all eligible NAVSCIATTS personnel prefer military housing, the demand for housing is estimated to be 35 bachelor enlisted quarters and six family housing units.

In addition, foreign nationals attending the NAVSCIATTS classes would require housing at NCBC Gulfport until the isolation facility is completed at Stennis Space Center. Until the facility is completed, a maximum of 14 transient units would be required during each of the class sessions. Assuming a maximum of six classes operating concurrently, the total demand would be for 84 transient units.

The demand for housing will impact housing availability at NCBC Gulfport, which has a projected deficit for all housing unit types. Depending on unit availability at the time of the housing request, personnel will likely require off-base housing. Overall, if the number of housing units in the surrounding communities is sufficient to absorb the demand by NAVSCIATTS personnel, personnel will likely have higher housing costs and possibly longer commutes to Stennis Space Center than if military housing were available at NCBC Gulfport. The increase in demand for on-base housing will likely increase the demand for additional military housing to be constructed.

4.11 Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) defines cumulative impact as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what other

agency (federal or non-federal) or person undertakes such other actions. Past, present, and future actions that potentially would contribute to a cumulative impact were identified during consultations with representatives of SBU-22, NAVSCIATTS, MSAAP, and NASA, as well as other local, state, and federal agencies that were contacted by correspondence.

4.11.1 Relocation of SBU-22

In 1998, SBU-22 relocated from Naval Support Activity (NSA) New Orleans, Louisiana, to temporary facilities within the MSAAP compound at Stennis Space Center. Permanent establishment of NAVSCIATTS will have a cumulative impact on the environment in consideration of the recent past relocation of SBU-22 from NSA New Orleans to Stennis Space Center.

Areas cumulatively impacted would include population and housing. SBU-22 has increased the on-site and regional populations by 170 personnel. Relocation of NAVSCIATTS would have the cumulative impact of increasing the on-site and regional population by 211.

The cumulative increase in population would not significantly impact on-site or regional populations. The on-site population would increase by 5%, which would not significantly impact services provided to the on-site population by Stennis Space Center. The cumulative increase in population would increase the estimated regional population (1998) by less than 1% and have a negligible impact on any one community. Even with the increase in population associated with SBU-22 and NAVSCIATTS, the on-site population at Stennis Space Center does not approach its historical levels of 6,000 that occurred through the 1960s.

There is sufficient availability of housing in the area to support the cumulative demand for off-base housing. However, the demand for on-base housing is likely to be impacted. If all enlisted personnel are assumed to require bachelor enlisted quarters, and 50% of all officers are assumed to require family housing and 50% bachelor officers quarters, the cumulative demand for on-base housing would be 195 bachelor enlisted quarters, eight bachelor officers quarters, and eight family housing units.

4.11.2 Increased Training Operations

The Naval Special Warfare Command is considering that colocated SBU-22 and NAVSCIATTS facilities at Stennis Space Center and riverine operations on the Pearl River could be expanded in the future, and the site at Stennis Space Center would become a Naval Special Warfare Coastal and Riverine Training Center. The potential for development of increased training operations was a criterion used to determine the feasibility of the proposed action (see Section 2). However, the plan for this Training Center is still being formulated. The projected number of personnel and the basic facility requirements to establish the Training Center are undeveloped. If the Navy makes such a proposal in the future, the appropriate NEPA analysis would be conducted at that time. The new construction and increased riverine operations under the proposed action constitute an independent, complete and useable mission utility.

4.12 Unavoidable Adverse Environmental Effects and Considerations that Offset these Effects

Unavoidable adverse environmental effects from construction of facilities to support SBU-22 and NAVSCIATTS include a minor change in topography, soil erosion, loss of vegetation, loss of wetlands, disturbance to wildlife, air emissions, and noise emissions. Construction-related effects will be short term and limited to the duration of the construction period. These effects would occur at either Site A or Site B; they would not occur under the no-action alternative.

Following construction, operation of facilities will result in the permanent conversion of land use from open space to developed use and include increased minor discharges to surface water, minor air emissions, and hazardous waste generation. These effects would occur at either Site A or Site B; they would not occur under the no-action alternative.

Unavoidable adverse environmental effects from the increased number of riverine operations associated with the relocation of NAVSCIATTS to Stennis Space Center include a minor increase in the potential for fuel spills to surface water, wake-induced erosion, a minor increase in noise emissions, and a minor increase in air emissions.

These adverse environmental effects would be offset by the proposed mitigative measures that will reduce the minor adverse effects. These measures include

implementation of appropriate erosion control devices and dust suppression measures, as necessary, during construction; revegetation of the project site as soon as construction is completed; and implementation of all stipulations specified in permits that the Navy has acquired or will acquire prior to construction.

Colocation of SBU-22 and NAVSCIATTS to Stennis Space Center would enhance training and readiness and allow the Navy to integrate the assets and capabilities of SBU-22 and NAVSCIATTS for classroom and field training in coastal and riverine environments. It will cost-effectively fulfill the need to establish permanent facilities for SBU-22 and NAVSCIATTS.

4.13 Relationship Between Short-term Uses of the Environment and the Enhancement of Long-term Productivity

Short-term uses of the environment associated with the proposed action would result in minor environmental effects on the physical environment during the construction phase of the proposed action. Construction would result in minor changes in land use at Stennis Space Center and would involve minor short-term increases in fugitive dust emissions, disturbance to wildlife, susceptibility to soil erosion, and construction-related noise. None of the short-term uses would significantly impact the long-term productivity of the natural resources of the area. These short-term uses of the environment would occur at either Site A or Site B; they would not occur under the no-action alternative.

The colocation would enhance long-term productivity of the DoD by significantly improving the working and training conditions for SBU-22 and NAVSCIATTS and the living conditions for Navy personnel and their dependents. The proposed action would also enhance performance by uniting interdependent programs, thereby reducing duplicate overhead expenses to the Navy.

4.14 Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable commitments of resources would be expended to relocate programs and associated personnel positions and to construct, operate, and maintain the facilities necessary to support SBU-22 and NAVSCIATTS. Committed resources include approximately 20 acres (8 ha) at Site A and 6.4 acres (2.6 ha) at Site B; capital; construction labor; fossil fuel and electrical energy; and manufactured materials

for buildings, utilities, and infrastructure at either site. Short-term commitments of construction labor, capital, and energy would be required for construction of the facilities and utilities to the proposed site. Long-term commitments of capital, energy, and manufactured materials would be required for the use and maintenance of the facilities and provision of utilities to the facilities. In addition, because the proposed facilities are permanent, the commitment of land is long term. This land could be converted to alternative uses after use of the property by SBU-22 and NAVSCIATTS has been completed; however, this would not occur in the foreseeable future.

5 Consistency With Other Federal, State, and Local Plans, Policies, and Regulations

The proposed action is guided by the following laws, executive orders, and their appropriate federal and state implementing regulations:

- National Environmental Policy Act of 1969 (42 USC 4321-4347);
- Clean Water Act (Federal Water Pollution Control Act), as amended (33 USC 1251 et seq.);
- Fish and Wildlife Coordination Act (16 USC 661-667[e]);
- Endangered Species Act of 1973 (16 USC 1531 et seq.);
- Clean Air Act of 1970, as amended (42 USC 7401 et seq.);
- National Historic Preservation Act (16 USC 470[f]);
- Coastal Zone Management Act of 1972 (16 USC 1451 et seq.);
- Marine Mammal Protection Act of 1972 (16 USC 1361 et seq.);
- Sikes Act (16 USC 670 et seq.);
- Wild and Scenic Rivers Act (16 USC 1271-1287);
- Executive Order 11990, Protection of Wetlands, dated May 24, 1977;
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994;
- Executive Order 11988, Floodplain Management, dated May 24, 1977; and

- Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks.

A summary of how the proposed action complies or conflicts with these laws, executive orders, and implementing regulations is summarized below. No local plans, policies, or regulations are applicable to the proposed action.

National Environmental Policy Act of 1969 (42 USC 4321-4347)

This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) as implemented by the Council on Environmental Quality regulations (40 CFR 1500-1508). The Navy has considered all potentially significant effects associated with the proposed action and determined that the proposed action would have no significant effect on the environment. Upon completion of the EA, the Navy proposes to prepare a Finding of No Significant Impact (FONSI).

Clean Water Act, as amended (33 USC 1251 et seq.)

The Clean Water Act, as amended, regulates discharges to the waters of the United States. The project would comply with applicable provisions of the Clean Water Act. No alterations to water bodies would occur as part of this project. Increased discharges to the Pearl River, including storm water runoff, sanitary wastewater, and training tank water, would be permitted by the MSDEQ and monitored in accordance with the NPDES permit. This permit will be issued in compliance with the Mississippi Water Pollution Control Law, and the Navy will comply with the regulations and standards adopted and promulgated thereunder.

Fish and Wildlife Coordination Act (16 USC 661-667[e])

Section 10 of the Fish and Wildlife Coordination Act directs federal agencies to consult with USFWS, National Marine Fisheries Service, and state agencies before authorizing alterations to water bodies. The purpose of this Act is to ensure that wildlife conservation receives equal consideration and is coordinated with other features of water resources programs. No alteration to water bodies would occur as part of this project.

Endangered Species Act of 1973 (16 USC 1531 et seq.)

The Endangered Species Act requires that any action authorized by a federal agency will not jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. The proposed action will not impact any species federally listed as threatened or endangered. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service were contacted regarding the presence of threatened and endangered species in the project area. Recent biological field surveys at Stennis Space Center did not identify any federally protected species, including the eastern indigo snake, red-cockaded woodpecker, American peregrine falcon, Louisiana black bear, Florida panther, or Louisiana quillwort. A potential abandoned gopher tortoise burrow was located; however, there were no positive sightings of this species anywhere in the project area. Proposed riverine operations would have minimal impact on the existence of the ringed sawback/map turtle or Gulf Sturgeon (both federally listed as threatened) or their potential Pearl River habitats. Proposed use of coastal areas around the Gulf of Mexico is not expected to impact species of sea turtles protected by the Endangered Species Act.

Clean Air Act of 1970, as amended (42 USC 7401 et seq.)

The Clean Air Act, as amended, provides for protection and enhancement of the nation's air resources. The proposed project is located in an attainment area and would not impact the ambient air quality. All air emissions sources will be permitted and monitored in accordance with Title V of the Clean Air Act and the Mississippi Air and Water Pollution Control Law.

National Historic Preservation Act (16 USC 470 [f])

The National Historic Preservation Act ensures preservation of the nation's historic and cultural resources. In accordance with Section 106 of the National Historic Preservation Act, the Navy has determined the proposed action would not affect NRHP-eligible or NRHP-listed resources. The Mississippi Department of Archives and History, as the State Historic Preservation Officer, has concurred with this assessment. In the unlikely event that construction activities uncover archeological resources, all work in

the vicinity would be halted and the Department of Archives and History and USACE would be contacted immediately.

Coastal Zone Management Act of 1972 (16 USC 1451 et seq.)

The Coastal Zone Management Act, as amended, provides for preservation, protection, development, and, where feasible, restoration or enhancement of the nation's coastal zone. As required by Section 307(c) of the Act, the proposed action must be consistent, to the greatest extent practicable, with the approved state program.

The proposed action is consistent with the Mississippi coastal management program. The proposed action will not result in any modification to the shoreline or significant impacts on the wetlands, water quality, or terrestrial and aquatic species of and adjacent to the Pearl River. The proposed action is currently under review by the Louisiana Department of Natural Resources. There will be no new riverine operations in the state of Louisiana until outstanding issues are resolved.

Marine Mammal Protection Act of 1972 (16 USC 1361 et seq.)

The Marine Mammal Protection Act establishes federal responsibility to conserve marine mammals. If incidental taking of a marine mammal may occur, such taking must be authorized by the National Marine Fisheries Service. No incidental takings of marine mammals are expected to occur under the proposed action.

Sikes Act (16 USC 670 et seq.)

The Sikes Act authorizes the Secretary of Defense to develop cooperative plans for conservation and rehabilitation programs on military reservations and to establish outdoor recreation facilities. It also authorizes the Secretaries of Agriculture and the Interior to develop cooperative plans for conservation and rehabilitation programs on public lands under the jurisdiction of the Secretaries of Agriculture, Interior, or Energy, or the Administrator of the National Aeronautics and Space Administration (NASA). NASA is in the process of updating a Timber Management Plan prepared in 1989 under the Sikes Act. The Navy will coordinate with NASA in the implementation of a program that will protect, conserve, and enhance wildlife, fish, and game resources to the maximum extent practicable.

Wild and Scenic Rivers Act (16 USC 1271-1287)

The Wild and Scenic Rivers Act established the National Wild and Scenic Rivers System, and requires that river segments listed on the system be preserved as free-flowing rivers and managed for the protection and enhancement of the values that caused it to be listed. The Act also provides for a Nationwide Rivers Inventory of rivers that potentially qualify as national wild, scenic, or recreational river areas. The Navy has consulted with the National Park Service and has determined that the proposed action would not adversely impact any wild, scenic, or recreational values of the Pearl River, nor would it preclude its potential inclusion in the National Wild and Scenic Rivers System.

Executive Order 11990, Protection of Wetlands, dated May 24, 1977

Executive Order 11990, Protection of Wetlands, directs agencies to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands on federal property. No wetlands will be impacted by the proposed action. The proposed construction site is located on upland areas.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994

In accordance with Executive Order 12898, the Navy is required to identify and address, as appropriate, the potential for disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations.

The Navy has not directly or indirectly used criteria, methods, or practices that discriminate on the basis of race, color, or national origin. The alternative locations for the colocation of SBU-22 and NAVSCIATTS were developed based on reasonable and practical assumptions as to the appropriate location that would best suit the joint operations of SBU-22 and NAVSCIATTS with respect to the need to have easy access to the Pearl River. The alternatives address potential site locations and corresponding uses of the property with respect to the needs of SBU-22 and NAVSCIATTS; alternatives do not identify potential users, discriminating on the basis of race, color, or national origin. All reference material used to describe the existing environment and to evaluate potential

environmental impacts are commonly available reference sources and do not discriminate on the basis of race, color, or national origin.

The Navy has analyzed the economic and social impacts of the proposed action, and no significant economic or social impact is anticipated to minority or low-income communities or any separate identifiable community within the surrounding towns and cities. No human health impacts are anticipated. Therefore, no mitigation measures are necessary to address significant or adverse environmental impacts on minority and low-income communities.

Executive Order 11988, Floodplain Management, dated May 24, 1977

In accordance with Executive Order 11988, Floodplain Management, the Navy has considered the affect of the proposed new construction on the functions of the floodplain. Portions of the proposed maintenance and supply buildings would extend into the 100-year floodplain of the Pearl River. Impacts will not significantly affect the functions of the floodplain. All standard erosion control and storm water control measures will be implemented.

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks

Federal Agencies are required to ensure that their policies, programs, and activities address disproportionate environmental risk and safety risk to children. The proposed action would not result in a disproportionate environmental risk or safety risk to children.

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- Woods, E.G., July 30, 1998, Executive Director, Mississippi Department of Marine Resources, Biloxi, Mississippi, written correspondence to Peggy Holliday, Mason Technologies, Inc., c/o Solutions, Inc., Vicksburg, Mississippi.

The Navy liaison associated with the preparation of this EA document is:

Mr. Laurens M. Pitts, P.E.
 Director, Environmental Planning Division
 Department of the Navy
 Southern Division
 Naval Facilities Engineering Command
 2155 Eagle Drive
 P.O. Box 190010
 North Charleston, South Carolina 29406

The contractor responsible for preparing this EA document is:

Ecology and Environment, Inc.
 368 Pleasant View Drive
 Lancaster, New York 14086

The following Ecology and Environment, Inc., individuals contributed to the preparation of this EA:

Name	Role	Years' Experience	EA Project Responsibility
Jone Guerin	Project Manager	14	<ul style="list-style-type: none"> Project management Various technical resource sections
Gerard Gallagher, III	Project Director	18	<ul style="list-style-type: none"> Project coordinator Quality assurance (QA)
Jan Brandt	Environmental Planner	6	<ul style="list-style-type: none"> Infrastructure and utilities; land use
Michael Donnelly	Wetland Biologist	13	<ul style="list-style-type: none"> Water resources/terrestrial resources
Gregory Netti	Biologist/Ecologist	3	<ul style="list-style-type: none"> Terrestrial resources
Leonid Shmookler	Archaeologist	27	<ul style="list-style-type: none"> Cultural resources
Carol Yamarino	Environmental Planner	15	<ul style="list-style-type: none"> Hazardous materials and waste management
John Sander	Editor	15	<ul style="list-style-type: none"> Document editor
Kyle Wheaton	Graphic Artist	4	<ul style="list-style-type: none"> Graphics coordinator
Joe Ghosen	GIS Analyst	5	<ul style="list-style-type: none"> GIS figures

A

Agency Correspondence



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

James I. Palmer, Jr., Executive Director

April 8, 1998

Certified Mail No. Z 152 559 407

Mr. Richard Auger
Mason Technologies, Inc.
Bldg. #9100
Stennis Space Center, MS 39529-7099

Dear Mr. Auger:

Re: Facility No. 1000-00018
Stennis Space Center, MS

Enclosed please find Construction Permit No. 1000-00018 for the construction of the air emissions equipment and air pollution control equipment.

Also enclosed is Operating Permit No. 1000-00018, which has been modified to include the new air emissions equipment. Operation of the air emissions equipment at the facility shall be in accordance with the terms, conditions, and limitations of the permit. This permit expires on August 1, 2001. A new permit application must be submitted one hundred and eighty (180) days prior to this date in order to renew this permit.

Any significant modification to this process or facility which will alter the rate or composition of air pollutant emissions will cause this permit to become invalid. Should you wish to make such a modification, it will be necessary to submit a new application for a construction permit.

Prior to startup of the new air emissions equipment at this facility, it will be necessary to submit certification that construction was completed in accordance with the approved plans and specifications. Upon receipt of the certification of construction, the applicable Emission Points in the referenced Operating Permit will become effective.

Any appeal of this permit action must be made within the 30 day period provided for in Section 49-17-29(4)(b) Mississippi Code of 1972.

If you have any questions or if we can be of any service, please let me know.

Very truly yours,

Tim Parrish
Environmental Permits Division

TP:dht

WG

98-05-003



DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4165 CLAY STREET
VICKSBURG, MISSISSIPPI 39180-3438
<http://www.mvck.usace.army.mil/>

REPLY TO
ATTENTION OF:

April 23, 1998

Operations Division
Regulatory

SUBJECT: Authorization No. 1158 Under General Permit 28

Mr. Wayne Gouget
Mason Technologies Incorporated
Building 9110
MiSAAP Industrial Complex
Stennis Space Center, Mississippi 39529-7099

Dear Mr. Gouget:

DATE	CONTROL NO.	LTR	W/ENG	ACTION DATE
5-4-98	98-05-003			
	PRESIDENT			
	CONTROLLER	✓	✓	✓
	FACILITY ENG.	✓	✓	
	SAFETY/ENV.			
	PROPERTY			
	REUTILIZATION	✓	✓	✓
	OTHER <i>W/infected</i>	✓	✓	✓
	FILE	✓	✓	

You are hereby authorized under the provisions of General Permit number 28 to discharge dredged and/or fill material into waters of the United States associated with the construction of an administrative and training building for the Navy's Special Boat Unit 22 located in section 37, T7S-R16W, Hancock County, Mississippi. Please note, the time limit for completing the work authorized by this General Permit expires 3 years from the date of this letter.

The site location and the construction details are shown on the enclosed map and drawings (enclosure 1). A copy of the General Permit is enclosed for your information (enclosure 2). It is your responsibility to read and become familiar with the Special and General Conditions of the General Permit in order for you to ensure that the activity authorized herein complies with these conditions.

Thank you for advising us of your plans. If you change your plans for the proposed work or if the proposed work does not comply with the conditions of the General Permit, please contact

Ms. Kenitra Stewart-Myles, telephone (601) 631-5424 or fax (601) 631-5459. In any future correspondence concerning this project, please refer to the identification No. 970002020.

Sincerely,

Richard Baker
for Michael F. McNair, R.F.
Chief, Permit Section
Regulatory Branch

Enclosures

Copy Furnished:

Dr. John W. Burris
Solutions, Incorporated
Post Office Box 820127
icksburg, Mississippi 39182-0127



United States Department of the Interior

FISH AND WILDLIFE SERVICE

2524 South Frontage Road, Suite B
Vicksburg, Mississippi 39180-5269

IN REPLY REFER TO:

June 8, 1998

Ms Brenda Powell
Project Manager
Ecology and Environment, Inc.
1950 Commonwealth Lane
Tallahassee, Florida 32303

Dear Ms Powell:

The U.S. Fish and Wildlife Service (Service) received your letter dated May 28, 1998, requesting comments on applicable environmental laws and regulations pertaining to the Southern Division of the Naval Facilities Engineering Command's proposal to relocate and construct facilities to support Special Boat Units at the John C. Stennis Space Center near Bay St. Louis, Mississippi. The following comments are provided in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), and the Endangered Species Act (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.).

According to your letter, the proposed work would impact approximately 0.86 acre of wetlands on the 6.4 acre construction site. However, work was authorized by the United States Corps of Engineers (Vicksburg District) under Authorization No. 1158 under General Permit 28 (Identification No. 970002020). Based on the above information, impacts to wetlands would be minimal.

We received information from Mr. Ron Magee, the environmental officer at Stennis Space Center, that surveys for threatened and endangered plants and animals were recently carried out over the entire Stennis Complex. No federally listed species were found during the extensive surveys. Based on this information, further consultation on threatened or endangered species would not be required.

We also understand that your company is preparing a draft Environmental Assessment (EA) to investigate and evaluate the environmental consequences of the proposed work. We will review the draft EA when it becomes available and will offer additional comments at that time.

If you have any questions, please contact Daniel Gregg, telephone: (601) 629-6612.

Sincerely,

Kathy W. Lunceford
Mississippi Environmental Coordinator



Established 1902

Mississippi Department of Archives and History

Historic Preservation Division • Post Office Box 571 • Jackson, Mississippi 39205-0571
Telephone 601-359-6940 • Fax 601-359-6955

July 13, 1998

Ms. Brenda A. Powell
Ecology and Environment
1950 Commonwealth Lane
Tallahassee, Florida 32303

Dear Ms. Powell:

RE: Proposed construction of facilities to support Special Boat Units 22 and 26, Mississippi Army Ammunition Plant, at the Stennis Space Center, Sec. 33, T7S, R16W, Hancock County (98-135)

We have reviewed the July 9, 1998, cultural resources survey report of Archaeology Mississippi for the above referenced undertaking. We concur that newly recorded site 22-Ha-627 is ineligible for listing in the National Register of Historic Places. We, therefore, have no further reservations with this undertaking.

There remains a very remote possibility that unrecorded cultural resources may be encountered during construction. If this occurs, we would appreciate your contacting this office immediately in order that we may offer appropriate comments under 36 CFR 800.11 within forty-eight hours. Your continued cooperation is appreciated.

Sincerely,

Elbert R. Hilliard
State Historic Preservation Officer

Roger G. Walker

By: Roger G. Walker
Review and Compliance Officer

cc: Clearinghouse for Federal Programs
Mr. Wayne Gouguet, Mason Technologies, Inc.

Board of Trustees: William F. Winter, president / Van R. Burnham, Jr. / Arch Dalrymple III / Lynn Crosby Gammill
Gilbert R. Mason, Sr. / Martis D. Ramage, Jr. / Everette Truly / Rosemary Taylor Williams / Sherwood W. Wise
Department Director: Elbert R. Hilliard



**MISSISSIPPI
DEPARTMENT OF MARINE RESOURCES**

July 30, 1998

Mason Technologies, Inc.
C/o Solutions, Inc
Attn: Peggy Holliday
Post Office Box 820127
Vicksburg, MS 39182

RE: DMR-C 98498-P; Filling

Dear Ms Holliday:

The Department of Marine Resources in cooperation with other state agencies is responsible under the Mississippi Coastal Program (MCP) for managing the coastal resources of Mississippi. Proposed activities in the coastal area are reviewed to insure that the activities are in compliance with the MCP.

The applicant proposes to fill approximately 0.86 acre of isolated wetlands for construction of an administrative and training building for the U. S. Navy's Special Boat Unit 22. The proposed activity will consist of filling an area approximately 150' by 290' with concrete, asphalt, aggregate and other select fill. The proposed project is located within the John C. Stennis Space Center, Hancock County, Mississippi. No mitigation will be necessary for the above referenced activities at this location.

The above activity has been reviewed based upon provisions of the Mississippi Coastal Program and Section 307 of the Coastal Zone Management Act of 1972 (as amended). The activity has been determined to be consistent with the Mississippi Coastal Program.

Ms Peggy Holliday
DMR-C 98498-P
Page 2 of 2

If you have any questions regarding this letter, please contact Tara Moore of this office at 374-5000.

Sincerely,

A handwritten signature in black ink, appearing to read "E.G. Woods". The signature is stylized and includes a horizontal line extending to the right.

E. G. Woods,
Executive Director

EGW/tlm

Enclosures

cc: Elizabeth Guynes, COE- Vicksburg
Shawn Clark, DEQ
Ms. Cathy Mallette, A-95

National Aeronautics and
Space Administration
John C. Stennis Space Center
Stennis Space Center, MS 39529-6000



Reply to Attn of:

RAOO

August 6, 1998

Mr. Carl Sellers
Naval Facilities Engineering Command
Post Office Box 190010
North Charleston, SC 29419-9010

Dear Mr. Sellers:

Per your conversation with Ms. Jenette Gordon on July 31, 1998, requesting voluntary payment into the SSC Wetlands Bank for the impact of 0.89 acres of property on the Mississippi Army Ammunition Plant for the U. S. Navy Special Boat Unit 22 project.

Normally, the cost for the utilization of the SSC Wetlands Bank is \$5,061.00 per acre of impact. Therefore, your voluntary fee associated with this project is \$4,504.29. Your funds will be used to increase the SSC Mitigation Area for future projects.

Currently, the cost per acre of impact is cost effective when bench marked to outside sources by looking at the costs associated with the use of the Nature Conservancy Mitigation Bank in Jackson County, Mississippi, which is \$14,500 per acre of impact minimum.

As an Environmental Officer, it is refreshing to find another government agency that is cognizant of environmental issues.

If you have any questions, please contact me at (228) 688-7384.

Sincerely,

A handwritten signature in black ink that reads "Ronald G. Magee".

Ronald G. Magee
Environmental Officer



United States Department of the Interior

FISH AND WILDLIFE SERVICE

2524 South Frontage Road, Suite B
Vicksburg, Mississippi 39180-5269

IN REPLY REFER TO:

June 25, 1999

Mr. L. M. Pitts
Department of the Navy
Post Office Box 190010
North Charleston, South Carolina 29419-9010

Dear Mr. Pitts:

The U.S. Fish and Wildlife Service (Service) has received your letter dated June 22, 1999, regarding construction of military training facilities within the Fee Area of the National Aeronautics and Space Administration (NASA) Stennis Space Center, Hancock County, Mississippi. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), and the Endangered Species Act (16 U.S.C. 1531 et seq.).

Your agency proposes to construct training, maintenance, and residential facilities to support the Naval Small Craft Instructional and Technical Training School and Special Boat Unit 22. All construction would occur within the confines of the Stennis Space Center. A 150-acre site adjacent to the Main Canal has been selected for construction.

Five federally listed animals and one plant have historically been found in proximity of the Stennis Space Center:

Gopher tortoise (*Gopherus polyphemus*)
Eastern indigo snake (*Drymarchon corais couperi*)
Red-cockaded woodpecker (RCW) (*Picoides borealis*)
American peregrine falcon (*Falco peregrinus*)
Louisiana black bear (*Ursus americanus luteolus*)
Louisiana quillwort (*Isoetes louisianensis*)

Surveys for these species were conducted between 1988 and 1997, by and for NASA personnel. The 1994 survey found one gopher tortoise burrow. However, follow up surveys found no tortoise activity. No RCW's or cavity nesting trees were found. Also, no evidence of peregrine falcons, black bears, or quillwort was found.

Although none of the above species were found, potential habitats for the gopher tortoise, eastern indigo snake, black bear, and quillwort exist on the space center. Therefore, we recommend you contact Mr. Ron Magee at NASA regarding any recent surveys that have been conducted for

these species. If evidence of any species has been found, please contact this office immediately.

Also, a large portion of the space center contains wetlands. Therefore, a Department of the Army (DA) permit for placement of fill or dredged material in a wetland may be necessary. Please contact the Vicksburg District Corps of Engineers regarding the need for any DA permits, telephone: (601) 631-5289. The Service will provide additional comments regarding potential impacts to wetlands if a public notice is issued.

Thank you for your interest in the protection of endangered species. If you have any questions, please contact our office, telephone: (601) 629-6617.

Sincerely,

A handwritten signature in black ink, reading "Kathy W. Lunceford". The signature is written in a cursive style with a large, prominent "K" and "L".

Kathy W. Lunceford

Mississippi Environmental Coordinator



**MISSISSIPPI
DEPARTMENT OF WILDLIFE, FISHERIES AND PARKS**

**SAM POLLES, Ph.D.
Executive Director**

July 1, 1999

L.M. Pitts, Director, Environmental Planning Division
Department of Navy
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, S.C. 29419-9010

RE: Environmental Assessment for the Construction and Operation of Facilities to Support the Naval Special Coastal Warfare and Riverine Training Center, National Aeronautics and Space Administration (NASA) John C. Stennis Space Center, Bay Saint Louis, Mississippi

Dear Mr./Ms. Pitts :

In response to your request for information dated June 22, 1999, I have searched our database for occurrences of state or federally listed or proposed endangered, threatened, rare or otherwise significant animals and plants on the site referenced above. Please find enclosed our computer generated reports listing special concern species as they appear on the designated quad maps for this site. Please note that we have no recent records of panther sightings.

The Mississippi Natural Heritage Program has compiled a database that is the most complete, single source of information about Mississippi's rare, threatened, endangered or otherwise significant animals, plants, plant communities and natural features. The quantity and quality of data collected by the MNHP are dependent upon the research and observations of many individuals and organizations. In many cases, this information is not the result of comprehensive or site-specific field surveys; most natural areas in Mississippi have not been thoroughly surveyed, and new occurrences of plant and animal species are often discovered. Heritage reports summarize existing information known to the MNHP at the time of the request and cannot always be considered a definitive statement regarding the presence, absence or condition of biological elements at a particular site. Please feel free to contact us if we can provide any additional information.

Sincerely,

A handwritten signature in cursive script that reads "Tom Mann".

Tom Mann, Zoologist
Mississippi Natural Heritage Program

QUADNAME	SNAM	GRANK	SRANK	SPROT	USESA
ABPBX91050*040*MS DEAD TIGER CREEK	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
ABPBX91050*048*MS DEAD TIGER CREEK	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
PHORCOG010*021*MS DEAD TIGER CREEK	CLEISTES DIVARICATA	G4	S3		
PHORCOG010*030*MS DEAD TIGER CREEK	CLEISTES DIVARICATA	G4	S3		
PHORCOG010*031*MS DEAD TIGER CREEK	CLEISTES DIVARICATA	G4	S3		
PDASTZLOW0*003*MS DEAD TIGER CREEK	COREOPSIS NUDATA	G37	S1S2		
PDASTZLOW0*002*MS DEAD TIGER CREEK	COREOPSIS NUDATA	G37	S1S2		
ARADB11011*001*MS DEAD TIGER CREEK	DRYMARCHON CORAIS COUPERI	G4T3	S1	LE	LT
PHORC10050*009*MS DEAD TIGER CREEK	EPIDENDRUM CONOPSEUM	G4	S2		
PHORC27010*008*MS DEAD TIGER CREEK	EULOPHIA ECRISTATA	G2G3	S1S2		
AMAJH01021*007*MS DEAD TIGER CREEK	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*016*MS DEAD TIGER CREEK	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*006*MS DEAD TIGER CREEK	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*009*MS DEAD TIGER CREEK	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*017*MS DEAD TIGER CREEK	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
ARAAF01030*004*MS DEAD TIGER CREEK	GOPHERUS POLYPHENUS	G5T1	SH	LE	LE
CCAG000000*011*MS DEAD TIGER CREEK	GRADY POND	G3	S2	LE	LTNL
PDAQU01020*015*MS DEAD TIGER CREEK	ILEX AMELANCHIER	G4	S3		
PDAQU01020*009*MS DEAD TIGER CREEK	ILEX AMELANCHIER	G4	S3		
PDAQU01020*017*MS DEAD TIGER CREEK	ILEX AMELANCHIER	G4	S3		
PDAQU010P0*031*MS DEAD TIGER CREEK	ILEX MYRTIFOLIA	G57	S3S4		
PDAQU010P0*028*MS DEAD TIGER CREEK	ILEX MYRTIFOLIA	G57	S3S4		
PDAQU010P0*030*MS DEAD TIGER CREEK	ILEX MYRTIFOLIA	G57	S3S4		
PDAQU010P0*011*MS DEAD TIGER CREEK	ILEX MYRTIFOLIA	G57	S3S4		
PNER102030*016*MS DEAD TIGER CREEK	LACHNOCAULON DIGYNUM	G3	S2		
PNER102030*002*MS DEAD TIGER CREEK	LACHNOCAULON DIGYNUM	G3	S2		
PDAP119010*004*MS DEAD TIGER CREEK	LILAEOPSIS CAROLINENSIS	G3	S2S3		
AFCJB28310*009*MS DEAD TIGER CREEK	NOTROPIS CHALYBAEUS	G5	S2		
AFCJB28A20*008*MS DEAD TIGER CREEK	NOTROPIS WELAKA	G4	S3		
AFCJB28A20*007*MS DEAD TIGER CREEK	NOTROPIS WELAKA	G4	S3		
PHPOA4K2U0*007*MS DEAD TIGER CREEK	PANICUM NUDICAULE	G37	S2		
PDLNT01060*017*MS DEAD TIGER CREEK	PINGUICULA PRIMULIFLORA	G4	S3		
PHCYPON0K0*001*MS DEAD TIGER CREEK	RHYNCHOSPORA CURTISSII	G4	S1		
PHCYPON280*001*MS DEAD TIGER CREEK	RHYNCHOSPORA STENOPHYLLA	G4	S17		
ABPBX91050*040*MS KILN	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
ABPBX91050*052*MS LOGTOWN	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
ABPBX91050*041*MS LOGTOWN	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
ABPBX91050*045*MS LOGTOWN	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
ABPBX91050*062*MS LOGTOWN	AIMOPHILA AESTIVALIS	G3	S37B, SZN		
AAAB01170*004*MS LOGTOWN	BUFO VALLICEPS	G5	S3		
PHORCOG010*010*MS LOGTOWN	CLEISTES DIVARICATA	G4	S3		
AMAJH01021*013*MS LOGTOWN	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*011*MS LOGTOWN	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*012*MS LOGTOWN	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*010*MS LOGTOWN	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
AMAJH01021*004*MS LOGTOWN	FELIS CONCOLOR CORYI	G5T1	SH	LE	LE
ABNKC10010*024*MS LOGTOWN	HALIAEETUS LEUCOCEPHALUS	G4	S1B, S2N	LE	LTNL

QUADCODE: 3008946

QUADNAME: NICHOLSON

Marg Num	Ten Ten	Sname Pr Lastobs	ECode	Quad Map	Marg Num	DIRECTIONS
* 1		FELIS CONCOLOR CORYI M 1975-07-01	AMAJH01021*008*MS	NICHOLSON	1	
* 2		EUDOCIMUS ALBUS G 1955-07-16	ABNGE01010*009*MS	NICHOLSON	2	
* 3		BUFO VALLICEPS M 1955-07-30	AAABB01170*008*MS	NICHOLSON	3	
* 4		FELIS CONCOLOR CORYI M 1968-02-01	AMAJH01021*018*MS	NICHOLSON	4	
* 6 6,1		HERBERTIA LAHUE SSP CAERULEA M 1974-04-05	PMIRI08011*005*MS	NICHOLSON	6	ALONG HWY 59, CA. 1-3 MILES NORTH OF LA/MS STATE LINE.
* 7		UTRICULARIA PURPUREA G 1975-09-21	PDLNT020G0*001*MS	NICHOLSON	7	
* 8		PYCNANTHEMUM SETOSUM G 1956-06-26	PDLAM1N0E0*001*MS	NICHOLSON	8	
* 11 5,10		ACIPENSER OXYRINCHUS DESOTOI M 1985-07-10	AFCAA01041*013*MS	NICHOLSON	11	PEARL RIVER AT MOUTH OF SMALL CREEK FROM MISSISSIPPI SIDE, ABOUT 2 MI ABOVE MIKE'S RIVER.

'*' indicates that this dot represents the centrum for this occurrence.

QUADCODE: 3008936

QUADNAME: HAASWOOD

Marg Num	Ten Ten	Sname Pr Lastobs E0code	Quad Map	Marg Num	DIRECTIONS
* 1		POLYODON SPATHULA M 1947-10-02 AFCAB01010*001*MS	HAASWOOD	1	
* 2		FELIS CONCOLOR CORYI M 1974-08-01 AMAJH01021*005*MS	HAASWOOD	2	
* 3		FELIS CONCOLOR CORYI M 1976-02-01 AMAJH01021*015*MS	HAASWOOD	3	
* 4		FELIS CONCOLOR CORYI M 1976-05-01 AMAJH01021*014*MS	HAASWOOD	4	
* 5		AMMOCRYPTA ASPRELLA M 1980-05-04 AFCQC01010*027*MS	HAASWOOD	5	
* 7	9,6	ILEX AMELANCHIER M 1983-11-01 PDAQU01020*014*MS	HAASWOOD	7	NATURAL LEVEE OF PEARL RIVER ON EAST BANK BETWEEN CARY'S DIT CH AND I-10.
* 8	10,3	ACIPENSER OXYRINCHUS DESOTOI M 1985-06-06 AFCAA01041*011*MS	HAASWOOD	8	OXBOW ON PEARL RIVER ABOUT 0.25 MILES BELOW NSTL CHANNEL; CA. 1.3 AIR KM BELOW MSU RESEARCH CENTER.
* 9	9,2	ICTIOBUS NIGER M 1985-06-18 AFCJC07030*012*MS	HAASWOOD	9	PEARL RIVER AT MSU RESEARCH STATION.
* 9	9,2	ACIPENSER OXYRINCHUS DESOTOI M 1985-06-25 AFCAA01041*012*MS	HAASWOOD	9	EAST PEARL RIVER AT MSU RESEARCH STATION.
* 010	9,6	HALIAEETUS LEUCOCEPHALUS S 1991-07-11 ABNKC10010*009*MS	HAASWOOD	010	APPROX. .4 MILES (STRAIGHTLINE) NE OF I-10 BRIDGE SPANNING THE PEARL RIVER.

'*' indicates that this dot represents the centrum for this occurrence.

QUADCODE: 3008935

QUADNAME: LOGTOWN

Marg Num	Ten Ten	Sname Pr Lastobs ECode	Quad Map	Marg Num	DIRECTIONS
*		AIMOPHILA AESTIVALIS U 1987-04-24 ABPBX91050*062*MS	LOGTOWN		Approximate mid-point of Old Pearlington Road
*	1	FELIS CONCOLOR CORYI M 1975-08-01 AMAJH01021*013*MS	LOGTOWN	1	
*	1	FELIS CONCOLOR CORYI M 1975-11-01 AMAJH01021*012*MS	LOGTOWN	1	
*	1	FELIS CONCOLOR CORYI M 1979-09-13 AMAJH01021*004*MS	LOGTOWN	1	
*	2	FELIS CONCOLOR CORYI M 1975-02-01 AMAJH01021*010*MS	LOGTOWN	2	
*	3	FELIS CONCOLOR CORYI M 1975-03-01 AMAJH01021*011*MS	LOGTOWN	3	
*	4	BUFO VALLICEPS G 1971-02-13 AAABB01170*004*MS	LOGTOWN	4	
*	5	CLEISTES DIVARICATA G 1940-05-17 PMORCOG010*010*MS	LOGTOWN	5	CUT-OVER PINELANDS NEAR LOGTOWN.
*	6	HALIAEETUS LEUCOCEPHALUS G 1977-12-05 ABNKC10010*024*MS	LOGTOWN	6	
*	9	AIMOPHILA AESTIVALIS M 1987-06-11 ABPBX91050*041*MS	LOGTOWN	9	Take dirt road from shoulder of MS 607, just S of MS Welcome Center, go one mile west.
*	10	AIMOPHILA AESTIVALIS M 1987-05-23 ABPBX91050*052*MS	LOGTOWN	10	S OF MS 607, S OF I-10 CA 2 MILES W OF INTERSECTION MS 607 AND US 90
*	11	AIMOPHILA AESTIVALIS M 1987-04-21 ABPBX91050*045*MS	LOGTOWN	11	On major north-south paved road in NASA buffer zone south of I-10 near Logtown; about 1/4 mile N of road that leads to Point Cemetery.

/** indicates that this dot represents the centrum for this occurrence.

QUADCODE: 3008945

QUADNAME: DEAD TIGER CREEK

Marg Num	Ten Ten	Sname Pr Lastobs E0code	Quad Map	Marg Num	DIRECTIONS
*	3,5	RHYNCHOSPORA CURTISSII M 1981-05-23 PMCYPONOK0*001*MS	DEAD TIGER CREE		3.5 MILES NE OF SANTA ROSA, MS, JUST N OF DEAD TIGER CREEK, IN CLEARCUT ADJACENT TO HARDWOOD HAMMOCK.
*	2	FELIS CONCOLOR CORYI M 1975-04-02 AMAJH01021*006*MS	DEAD TIGER CREE	2	
*	2	GOPHERUS POLYPHEMUS M 1975-08 ARAAF01030*004*MS	DEAD TIGER CREE	2	ON ROADSIDE AT JUNCTION OF HWY 43/11 AND FLATTOP ROAD, NSTL, BAY ST LOUIS.
*	3	DRYMARCHON CORAIS COUPERI M 1975-07-15 ARADB11011*001*MS	DEAD TIGER CREE	3	AT JUNCTION OF FLATTOP AND KELLAR ROADS, NASA TEST SITE FACILITY, BAY ST. LOUIS.
*	4	FELIS CONCOLOR CORYI M 1975-07-16 AMAJH01021*007*MS	DEAD TIGER CREE	4	
*	5	FELIS CONCOLOR CORYI G 1975-07-01 AMAJH01021*009*MS	DEAD TIGER CREE	5	
*	6	FELIS CONCOLOR CORYI M 1975-09-01 AMAJH01021*016*MS	DEAD TIGER CREE	6	
*	6 1,10	LILAEOPSIS CAROLINENSIS M 1976-04-11 PDAPI19010*004*MS	DEAD TIGER CREE	6	130 MI S OF PICAYUNE; NASA NSTL FACILITY; DITCH IN FRONT OF B UILINGS 1200 & 1100.
*	7	FELIS CONCOLOR CORYI M 1976-09-01 AMAJH01021*017*MS	DEAD TIGER CREE	7	
*	8	NOTROPIS WELAKA M 1972-03-25 AFCJB28A20*007*MS	DEAD TIGER CREE	8	
*	9	NOTROPIS WELAKA G 1972-01-24 AFCJB28A20*008*MS	DEAD TIGER CREE	9	
*	10 9,1	LACHNOCAULON DIGYNUM M 1972-08-28 PMER102030*002*MS	DEAD TIGER CREE	10	NEAR CRANE POND BRANCH, BIENVILLE COMMUNITY, 5.3 KM ENE OF B IENVILLE CHURCH, 14 KM ESE OF PICAYUNE.
*	11	ILEX MYRTIFOLIA M 1981-05-23 PDAQU010P0*011*MS	DEAD TIGER CREE	11	
*	11 3,4	COREOPSIS NUADATA M 1981-04-26 PDAST2LOM0*002*MS	DEAD TIGER CREE	11	CA. 3.5 MILES NE SANTA ROSA, CA. 0.5 MILES NORTH OF DEAD TIG ER CREEK, SW/4 SEC 10.

** indicates that this dot represents the centrum for this occurrence.

QUADCODE: 3008945

QUADNAME: DEAD TIGER CREEK

Marg Num	Ten Ten	Sname Pr Lastobs ECode	Quad Map	Marg Num	DIRECTIONS
* 12	3,5	ILEX AMELANCHIER M 1981-10-24 PDAQU01020*009*MS	DEAD TIGER CREE	12	CA. 3.5 MILES NE OF SANTA ROSA, W OF CROSSING OF PAVED ROAD OVER DEAD TIGER CREEK.
* 12	3,5	EPIDENDRUM CONOPSEUM M 1981-10-24 PMORC10050*009*MS	DEAD TIGER CREE	12	CA. 3.5 MILES NE SANTA ROSA, W OF CROSSING OF PAVED ROAD OVE R DEAD TIGER CREEK.
* 13		PINGUICULA PRIMULIFLORA G 1969-04-03 PDLNT01060*017*MS	DEAD TIGER CREE	13	
* 14		NOTROPIS CHALYBAEUS M 1952-05-31 AFCJB28310*009*MS	DEAD TIGER CREE	14	
* 15		CLEISTES DIVARICATA M 1973-05-27 PMORCOG010*021*MS	DEAD TIGER CREE	15	NASA TEST FACILITY; NEAR OLD BOMBING RANGE; 2 MILES S OF JOINING OF CATAHOULA AND DEAD TIGER CREEKS; 16 MILES SSE OF PICAYUNE.
* 16	6,5	ILEX AMELANCHIER M 1982-09-18 PDAQU01020*015*MS	DEAD TIGER CREE	16	RED BLUFF, CATAHOULA CREEK, CA. 6 MI NE OF SANTA ROSA, NE/4 SEC 13.
* 17		GRADY POND S 1985-01-17 CCAG000000*011*MS	DEAD TIGER CREE	17	
* 17		ILEX MYRTIFOLIA S 1985-01-14 PDAQU010P0*028*MS	DEAD TIGER CREE	17	
* 18	2,4	EULOPHIA ECRISTATA M 1982-01 PMORC27010*008*MS	DEAD TIGER CREE	18	CA. 4 MILES NE OF SANTA ROSA & 0.5 MILES NW OF CROSSING OF P AVED ROAD OVER DEAD TIGER CREEK.
* 19	2,5	COREOPSIS NUDATA S 1986-06-04 PDAST2LOM0*003*MS	DEAD TIGER CREE	19	DEAD TIGER CREEK ROAD, CA 100 YDS N OF BRIDGE OVER DEAD TIGE R CREEK, IN DITCH.
* 20	7,3	ILEX MYRTIFOLIA S 1988-05-12 PDAQU010P0*030*MS	DEAD TIGER CREE	20	6 MI NE OF MISS TEST FACILITY (NASA)
* 21	7,3	CLEISTES DIVARICATA S 1988-05-12 PMORCOG010*030*MS	DEAD TIGER CREE	21	6 MI NE OF MISSISSIPPI TEST FACILITY (NASA)
* 22	9,2	CLEISTES DIVARICATA M 1988-05-12 PMORCOG010*031*MS	DEAD TIGER CREE	22	7 MI NE OF MISSISSIPPI TEST FACILITY (NASA)
* 23	8,5	ILEX MYRTIFOLIA M 1988-05-12 PDAQU010P0*031*MS	DEAD TIGER CREE	23	5 MI NE OF MISSISSIPPI TEST FACILITY (NASA)
* 23	8,5	ILEX AMELANCHIER M 1988-05-12 PDAQU01020*017*MS	DEAD TIGER CREE	23	5 MI NE OF MISSISSIPPI TEST FACILITY (NASA)



M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

July 6, 1999

Mr. L.M. Pitts, Director of Environmental Planning Division
Department of the Navy
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
2155 Eagle Drive
North Charleston, S.C. 29419-9010

RE: **C990269**, Coastal Zone Consistency
Environmental Assessment to construct and operate Naval Special Coastal Warfare and
Riverine Training Center, NASA John C. Stennis Space Center, Bay St. Louis, Mississippi

Dear Mr. Pitts:

Thank you for the opportunity to comment on the correspondence from the Naval Facilities Engineering Command, Southern Division, dated June 22, 1999. Although the environmental consequences of the construction and operation of facilities will largely be confined to the John C. Stennis Space Center in Bay St. Louis, Mississippi, certain environmental issues of concern to the State of Louisiana are worthy of comment.

The relocation of the Special Boat Unit (SBU) 22 and the Naval Small Craft Instructional and Technical Training School (NAVSCIATTS) to the NASA John C. Stennis Space Center would result in an increase in training operations on the Pearl River, as mentioned in your letter. An increase in boat traffic along navigation channels may result in increased wake-induced bankline erosion, fluid spills and discharges, and water pollution degradation of marshes, canals, and valuable estuarine water bodies. Other concerns include possible environmental contamination associated with hazardous chemicals and wastes, possible habitat damage due to movement of heavy equipment, cumulative impacts of personnel and equipment during training in wetlands, and effects of these actions and other military exercises on the wildlife near the training grounds.

With our policy of "no net loss of wetlands", CMD must evaluate these impacts on the respective habitats, thus determining if the proposed activity may have adverse affects on wetland

A-25

habitat.

Upon completion of the Environmental Assessment (EA), please provide this office with a Consistency Determination for review for consistency with the approved Louisiana Coastal Resources Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The Louisiana Department of Natural Resources appreciates the opportunity to comment on this project. If you have any questions please contact Chris Seifert of the Consistency Section at (225) 342-7943 or 1-800-267-4019.

Sincerely,

A handwritten signature in black ink that reads "Terry W. Howey". The signature is written in a cursive style with a long, sweeping underline.

Terry W. Howey,
Administrator

cc: Fred Dunham, LDWF
Tim Killeen, CMD/FI
Brian Fortson, St. Tammany Parish



KATHLEEN BABINEAUX BLANCO
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

PHILLIP J. JONES
SECRETARY

GERRI HOB DY
ASSISTANT SECRETARY

July 21, 1999

Mr. L. M. Pitts
Department of the Navy
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010

Re: Environmental Assessment for the Construction and Operation
of Facilities to Support the Naval Special Coastal Warfare and
Riverine Training Center, National Aeronautics and Space
Administration John C. Stennis Space Center, Bay St. Louis,
Mississippi

Dear Mr. Pitts:

Reference is made to your letter dated June 22, 1999, which was received on June 28, 1999, concerning the above. As this project is located in Mississippi, we do not feel it is appropriate for this office to comment. However, should any work be proposed in Louisiana in the future, we would be pleased to comment on that aspect of the project. For this office to complete our review, please submit a letter detailing the nature of any proposed work in the State and a map (preferably a 7.5' U.S.G.S. quad) showing the precise location of the project area. Upon receipt of this request, we will begin our review and offer our comments. Finally, for future reference, note that as per 36 CFR Part 800.1(c)(ii), that the comment period for this office extends for 30 days from the receipt of any correspondence.

If we may be of further assistance, please contact Mr. Mike Mahady in the Division of Archaeology at (225) 342-8170.

Sincerely,


Gerri Hobdy
State Historic Preservation Officer

GH:MM:s



MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

James I. Palmer, Jr., Executive Director

July 26, 1999

Mr. L.M. Pitts
Department of the Navy
Southern Division
Naval Facilities Engineering Command
P. O. Box 190010
2155 Eagle Drive
North Charleston, South Carolina 29419-9010

Re: Naval Special Coastal Warfare and
Riverine Training Center
John C. Stennis Space Center
Bay St. Louis, Mississippi

Dear Mr. Pitts:

This letter is in response to your request for comments on the above referenced project. The applicant proposes to permanently relocate Special Boat Unit (SBU) 22 and the Naval Small Craft Instructional and Technical Training School (NAVSCIATTS) to the National Aeronautics and Space Administration (NASA) John C. Stennis Space Center, Bay St. Louis, Mississippi. This project would comprise the Naval Special Coastal Warfare and Riverine Training Center. This project would be located on an approximate 150-acre site within Stennis Space Center, adjacent to the Main Canal.

According to the information provided, the Water Quality Management Branch (WQMB) of the Office of Pollution Control (OPC) has determined that this project may impact wetland areas along the Main Canal. Therefore, the Vicksburg Corps of Engineers, Regulatory Branch, Mr. Ken Mosley (601/631-5289) should be contacted to determine if the project would require an individual Section 404 permit. If this permit is required, OPC will review the application to consider issuance of a water quality certification. OPC recommends that the project be sequentially planned to avoid, then minimize and finally to mitigate for all unavoidable wetlands impacts.

In addition, this project may require other permits (e.g. air, NPDES, etc.). For additional information concerning this matter, Mr. Jerry Cain should be contacted at 601-961-5073.

OFFICE OF POLLUTION CONTROL

P.O. Box 10385 Jackson, MS 39289.0385 Phone 601.961.5171 Fax 601.354.6612

Thank you for the opportunity to comment on this project. If we can be of further assistance, please contact Ms. Florance Burnett of my staff at 601/961-5614.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert H. Seyfarth". The signature is fluid and cursive, with the first name "Robert" and last name "Seyfarth" clearly legible.

Robert H. Seyfarth, P.E., Chief
Water Quality Management Branch

RHS:FB

State of Louisiana



James H. Jenkins, Jr.
Secretary

Department of Wildlife & Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(225) 765-2800
July 28, 1999

M.J. "Mike" Foster, Jr.
Governor

Mr. L.M. Pitts
Director, Environmental Planning Division
Naval Facilities Engineering Command
P.O. Box 190010
2155 Eagle Dr.
North Charleston, S.C. 29414-9010

RE: Environmental Assessment for the Construction
And Operation of Facilities to Support the Naval
Special Coastal Warfare and Riverine Training
Center

Dear Mr. Pitts:

Personnel of our technical staff have reviewed the information provided for the above referenced project.

Some of the concerns that we have associated with this project are possible wetland losses and/or degradation of these wetlands by increased human activity. Also associated with these wetland losses are the possible adverse impacts on the terrestrial and aquatic communities that depend on these wetlands for their existence. One of our main concerns is the possible adverse impacts to several threatened species that are found in the Pearl River area. These species are: Graptemys oculifera (Ringed-map turtle), Acipenser oxyrhynchus (Gulf Sturgeon), and Haliaeetus leucocephalus (Bald eagle) and possibly other threatened or endangered species.

We appreciate the opportunity to review and comment on this project during the early planning stages.

Sincerely,



James H. Jenkins, Jr.
Secretary

JHJjr:JD:cgd

An Equal Opportunity Employer



Mississippi Department of Archives and History

Historic Preservation Division • Post Office Box 571 • Jackson, Mississippi 39205-0571
Phone 601 / 359-6940 • Fax 601 / 359-6955

July 30, 1999

Mr. Leonid I. Shmookler, Senior Archaeologist
Ecology and Environment
Buffalo Corporate Center
368 Pleasant View Drive
Lancaster, New York 14086

Dear Mr. Shmookler:

RE: The Navy's proposed 150-acre waterfront area and a 6-acre upland area within the fee-owned lands at the Stennis Space Center, Hancock County

We have reviewed your July 26, 1999, cultural resources assessment request for the above referenced project proposal in accordance with our responsibilities outlined in "Procedures for the Protection of Historic and Cultural Properties," 36 CFR 800, Part 4. We concur that, based on the 1995 Historic Preservation Plan for the Stennis Space Center, no properties listed in or eligible for listing in the National Register of Historic Places are in the area of potential effect. We, therefore, have no reservations with the proposal.

Should there be additional work in connection with the project, or should there be any changes in the scope of work, please let us know in order that we may provide you with appropriate comments for compliance with the above procedures. There remains a very remote possibility that unrecorded cultural resources may be encountered during construction. Should this occur, we would appreciate your contacting us immediately so that we may take appropriate steps under 36 CFR 800, part 13, regarding our response within forty-eight hours. If we can be of further assistance, please do not hesitate to contact this office.

Sincerely,

Roger G. Walker

Roger G. Walker
Review and Compliance Officer

cc: Clearinghouse for Federal Programs



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS

4188 CLAY STREET

VICKSBURG, MISSISSIPPI 39180-5455

<http://www.mvk.usace.army.mil/>

August 9, 1999

Operations Division
Regulatory

SUBJECT: Department of the Army Regulatory Requirements,
Proposed SBU 22 and NAVSCIATTS

Mr. L. M. Pitts, Director
Environmental Planning Division
Department of the Navy, Southern Division
Naval Facilities Engineering Command
Post Office Box 190010
Charleston, South Carolina 29419-9010

Dear Mr. Pitts:

This is in response to your letter concerning possible regulatory requirements for plans to construct facilities for the Small Boat Unit 22 and Naval Small Craft Instructional and Technical Training School on the Stennis Space Center in section 8, T8S-R17W, Hancock County, Mississippi.

Based upon the information provided, we have determined there are jurisdictional areas on the property subject to regulation pursuant to Section 404 of the Clean Water Act. In addition, the Main Canal is navigable and subject to regulation under Section 10 of the Rivers and Harbors Act of 1899. We were provided a map of hydric soils on the proposed project site by your contractor Ecology and Environment, Incorporated (enclosure). This map may be used as a preliminary indication of the extent of wetlands on the site. Any work involving the discharge of dredged or fill material (land clearing, ditching, filling, leveeing, road building, etc.) into wetlands or other waters of the United States will require a Department of the Army Section 404 permit prior to beginning work. Any work (installation of structures such as docks, piers, dolphins, bulkheads, etc.; dredging, etc.) in the Main Canal will require a Department of the Army Section 10 permit.

For your information, activities at Stennis Space Center which require Department of the Army authorization are generally eligible for our General Permit No. 53, which was developed in coordination with NASA as part of a Special Area Management Plan. We suggest that you contact Mr. Ron Magee, NASA's Environmental Officer at Stennis Space Center, for coordination of your general permit application. To expedite the evaluation process, please refer to No. 990009290 when submitting the application.

Also, please find enclosed our Customer Service Survey Form 5065. We would greatly appreciate you taking a few minutes to complete the form and return it to us in the envelope provided.

Thank you for the opportunity to review this project. If you have any questions, please contact Dr. Jim Wiseman of this office, telephone (601) 631-5292, fax (601) 631-5459 or e-mail address: Jim.Wiseman@mvk02.usace.army.mil.

Sincerely,

Elizabeth S. Guynes
Chief, Regulatory Branch

Enclosure

Copy Furnished:

Ms. April Reynolds
Ecology and Environment, Incorporated
1950 Commonwealth Lane
Tallahassee, Florida 32303

United States Department Of The Interior

NATIONAL PARK SERVICE

Southeast Field Area
Atlanta Federal Center
1924 Building
100 Alabama Street, SW
Atlanta, Georgia 30303

December 6, 1999

Joan Guerin
Ecology and Environment, Inc.
368 Pleasant View Drive
Lancaster, New York 14086

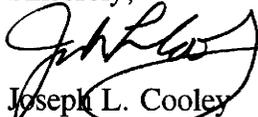
Re: Environmental Assessment (EA) for the Construction of Permanent Facilities to Support Naval Special Boat Unit 22 and Naval Small Craft Instruction and Technical Training School, Stennis Space Center, Mississippi

Dear Ms Guerin

Section 5 (d) of the National Wild and Scenic Rivers Act (Public Law 90-542) requires that, "In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas". A Presidential directive and subsequent instructions issued by the Council on Environmental Quality, and codified in agency manuals, require that each federal agency, as part of its normal planning and environmental review processes, take care to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory.

We have reviewed the EA you recently sent on the above referenced project in regards to potential impacts on the Pearl River, which is listed on the Nationwide Rivers Inventory (NRI). Based upon the EA it appears that any negative disturbances to the natural resources of the river will be minimal. Consideration should also be given to the recreational resources of the river and potential conflicts between recreational uses and the increase of the described uses of the proposed project. It is not clear what impact, if any, the increased use of the river for training would have on the recreational resources or how potential conflicts could be minimized. We recommend that issue be addressed.

Sincerely,



Joseph L. Cooley
Landscape Architect



MISSISSIPPI
DEPARTMENT OF MARINE RESOURCES

December 16, 1999

Laurens M. Pitts, P.E.
Director, Environmental Planning Division
Department of the Navy
Southern Division
Naval Facilities Engineering Command
P. O. Box 190010
North Charleston, SC 29419-9010

Subject: Environmental Assessment
U. S. Navy - SSC, Hancock County, MS
DMR-C 00208-W

Dear Mr. Pitts:

The State of Mississippi has completed its review of the subject Environmental Assessment for the Construction of Permanent Facilities to Support Naval Special Boat Unit 22 at Stennis Space Center, under the Coastal Zone Management Act of 1972 (as amended). The Department of Marine Resources, as the lead coastal program agency for the State of Mississippi pursuant to 16 U.S.C. section 1456(c) and Mississippi Code section 57-15-5, finds the activities described in the Environmental Assessment have been determined to be consistent to the maximum extent practicable with the policies and goals of the Mississippi Coastal Program. The State's concurrence with your consistency certification does not lessen the need to obtain required permits from the appropriate state and federal agencies if such are required by the proposed project.

If you have any questions about this correspondence, please do not hesitate to contact Mike Walker of the Department's Coastal Ecology Office.

Sincerely,

A handwritten signature in black ink, appearing to read "E. G. Woods", with a horizontal line extending to the right. Below the signature, the word "FOR" is written in small, capital letters.

E. G. Woods
Executive Director

EGW/SMO/mfw

cc: Cathy Mallette, Clearinghouse Officer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; FAX 570-5517

JAN 18 2000

F/SER3:BH

Mr. Gregory T. Netti
Ecology and Environment, Inc.
Buffalo Corporate Center
388 Pleasant View Drive
Lancaster, NY 14088

Dear Mr. Netti:

This letter is in reference to your January 7, 2000 letter regarding the Navy's proposed construction of permanent facilities at the Stennis Space Center (SSC), Mississippi, to support the co-location of the Navy Special Boat Unit 22 (SBU-22) and the Naval Small Craft Instruction and Technical Training School (NAVSCIATTS). The SSC is located on 13,800 acres in southwest Hancock County, Mississippi. The proposed construction includes, training and supply facilities, barracks, and a galley within a 20-acre site adjacent to Main Canal which connects to the East Pearl River. SBU-22 currently trains (i.e. riverine patrol and interdiction, enemy surveillance and Special Operations insertions and extractions) on the East Pearl River from temporary facilities. Increased riverine operations are expected due to the permanent establishment of NAVSCIATTS. NAVSCIATTS proposes to train foreign national students in operation, maintenance, and support of riverine water craft. Training by both organizations would occur on the Pearl River approximately 10 miles upstream from the Gulf of Mexico, although occasional training exercises will extend southward to the Gulf.

The Gulf sturgeon, protected by the Endangered Species Act (ESA), is known to inhabit the East Pearl River. Your letter states that consultation completed with the US Fish and Wildlife Service indicates that the proposed action will not adversely affect Gulf sturgeon. The National Marine Fisheries Service (NMFS) agrees with this conclusion because NMFS does not believe the increased boat traffic will affect the Gulf sturgeon due to it being a bottom feeder and its tendency to stay in the deep sections of the river. NMFS also believes that the proposed construction activities are not likely to affect Gulf sturgeon as long as erosion control is used during construction.

Species of sea turtles protected by the ESA can be found in the Gulf of Mexico and the southern sections of the Pearl River. The section of the Pearl River where the bulk of the increased boat traffic will take place is a fresh water environment and not known to contain sea turtles. Occasionally, training will extend southward to the Gulf, however, this is expected to be rare and will only cause a negligible increase in boat traffic in this already highly traveled area. Therefore, NMFS believes that the proposed action and its resultant increase in boat traffic is not likely to adversely affect sea turtles protected by the ESA.

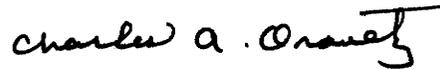


This concludes your consultation responsibilities under section 7 of the ESA for the proposed action for species under NMFS purview. Consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

Incidental takes of marine mammals are not authorized. If the Navy believes such takes may occur, an incidental take authorization under Marine Mammal Protection Act (MMPA) Section 101 (a)(5) is necessary. If the Navy believes a marine mammal take may occur as a result of this activity, please contact Ken Hollingshead of our Headquarters Protected Resources staff at (301) 713-2055 regarding application procedures for an incidental small take authorization under Section 101(a)(5) of the MMPA.

If you have any questions, please contact Bob Hoffman, Fishery Biologist.

Sincerely yours,



for William T. Hogarth, Ph.D.
Regional Administrator

cc: F/PR3
F/SER4
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DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS

4185 CLAY STREET

VICKSBURG, MISSISSIPPI 39180-3485

<http://www.mvick.usace.army.mil/>

REPLY TO
ATTENTION OF:

February 3, 2000

Operations Division
Regulatory

SUBJECT: Determination of the Army Permit Requirements, Proposed
SBU 22 and NAVSCIATTS

Mr. L. M. Pitts
Naval Facilities Engineering Command,
Southern Division
Post Office Box 190010
Charleston, South Carolina 29419-9010

Dear Mr. Pitts:

I refer to your letter concerning proposed facilities for the Small Boat Unit 22 and Naval Small Craft Instructional and Technical Training School to be located at Stennis Space Center, in section 8, T8S-R17W, Hancock County, Mississippi.

Based upon the information provided and a field inspection, we have determined that a Department of the Army Section 10/404 permit will not be required for the proposed work, since the location is not considered a jurisdictional wetland or other waters of the United States.

For your information, there are wetlands and other waters of the United States on other parts of the project site. These jurisdictional areas generally occur within the area designated as the 100-year floodplain on the plans you submitted. Should your project plans change or should additional facilities be needed, you should contact this office prior to beginning work for a determination of possible permit requirements.

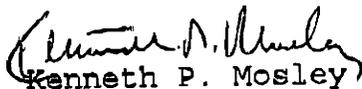
This determination of permit requirements is applicable for a period not to exceed 5 years from the date of this letter unless superseded by law or regulation. If the proposed work is not completed by this time, you should contact this office for a reevaluation of permit requirements and reference the number 990009290 when submitting the information.

This determination of Department of the Army regulatory requirements does not convey any property rights, either in real estate or material or any exclusive privileges, and does not authorize any injury to property or invasion of rights or local laws or regulations, or obviate the requirement to obtain State or local assent required by law for the activity discussed herein.

Please find the Customer Service Survey Form 5056. We would greatly appreciate you taking a few minutes to complete the form and return it in the envelope provided.

Thank you for advising us of your plans. If we may be of any further assistance in this matter, please contact Dr. Jim Wiseman, telephone (601) 631-5292, telefax (601) 631-5459 or e-mail address: regulatory@mvk02.usace.army.mil.

Sincerely,



Kenneth P. Mosley
Chief, Enforcement Section
Regulatory Branch