1.0 PURPOSE AND NEED FOR THE ACTION

This Draft Environmental Impact Statement (DEIS) has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. §§ 4321-4370d) and according to the Procedures of Implementation of NEPA for National Aeronautics and Space Administration (NASA) (Title 14, Code of Federal Regulations (CFR), part 1216 subparts 1216.1 and 1216.3). Chapter 1 describes the purpose and need for the proposed International Space Research Park (ISRP). Chapter 2 of this DEIS describes the alternatives considered for the proposed development of the International Space Research Park (ISRP) on the John F. Kennedy Space Center (KSC), Florida (Figure 1-1). Chapter 3 describes the affected environment of the proposed action. Chapter 4 analyzes the potential environmental consequences of the proposed action and alternatives resulting from the development and operation of the ISRP.

1.1 BACKGROUND

NASA entered into an agreement with the State of Florida, through the Florida Space Authority (FSA), to conduct a joint study of the proposed development of up to 160 hectares (ha) (400 acres (ac)) of land on KSC as a research park. NASA initially allowed the FSA to develop one 16-ha (40-ac) tract of property for the Space Experiments Research and Processing Laboratory (SERPL) (NASA 2002a). The State of Florida and NASA now propose to develop another 140 ha (345 ac) of property in phases during the next 20 to 25 years.

Florida's Governor and Legislature created the FSA as a state government space agency in 1989. The mission of the FSA is to retain, expand and diversify the State's space-related industry. KSC, which is located in Brevard County on the east coast of Florida, is a major locus within NASA for the Space Shuttle and International Space Station (ISS) activities and is adjacent to Cape Canaveral Air Force Station (CCAFS) from which many NASA missions are launched. .NASA's goal in developing the ISRP at KSC is to provide an ideally located site to enable commercial, research and development (R&D), and academic organizations from both the public and private sectors to develop new, state-of-the-art facilities. As a center for R&D, the ISRP would bring together a dynamic mix of industry, academia, and government researchers to focus their combined strengths in areas of R&D critical to the long-term success of the KSC mission. These facilities would support and promote the expanded use of space and the development and application of new technologies useful in space activities.

This DEIS will analyze three alternatives to the proposed action. Two of the three alternative actions evaluate environmental impacts of the development and operation of the ISRP at two possible development locations on KSC (Figure 1-2). The third alternative will analyze and describe the potential environmental consequences that may result if the proposed action is rejected (or not recommended) and present management of the land continues.

1.2 LEAD AGENCY AND COOPERATING AGENCIES

NASA and the State of Florida (as a co-lead for the project) through the FSA (which provided funding for this DEIS) are cooperating to analyze and review the proposed development of the ISRP on KSC. In compliance with NEPA, NASA has requested and established cooperating agency status with the FSA. NASA invited the United States Army Corps of Engineers (USACE) and the Department of the Interior U.S. Fish and Wildlife Service (USFWS) to participate as formal cooperating agencies under NEPA, but both agencies declined. Appendix A1 presents the contributors and list of agencies and individuals that provided consultation to this DEIS.

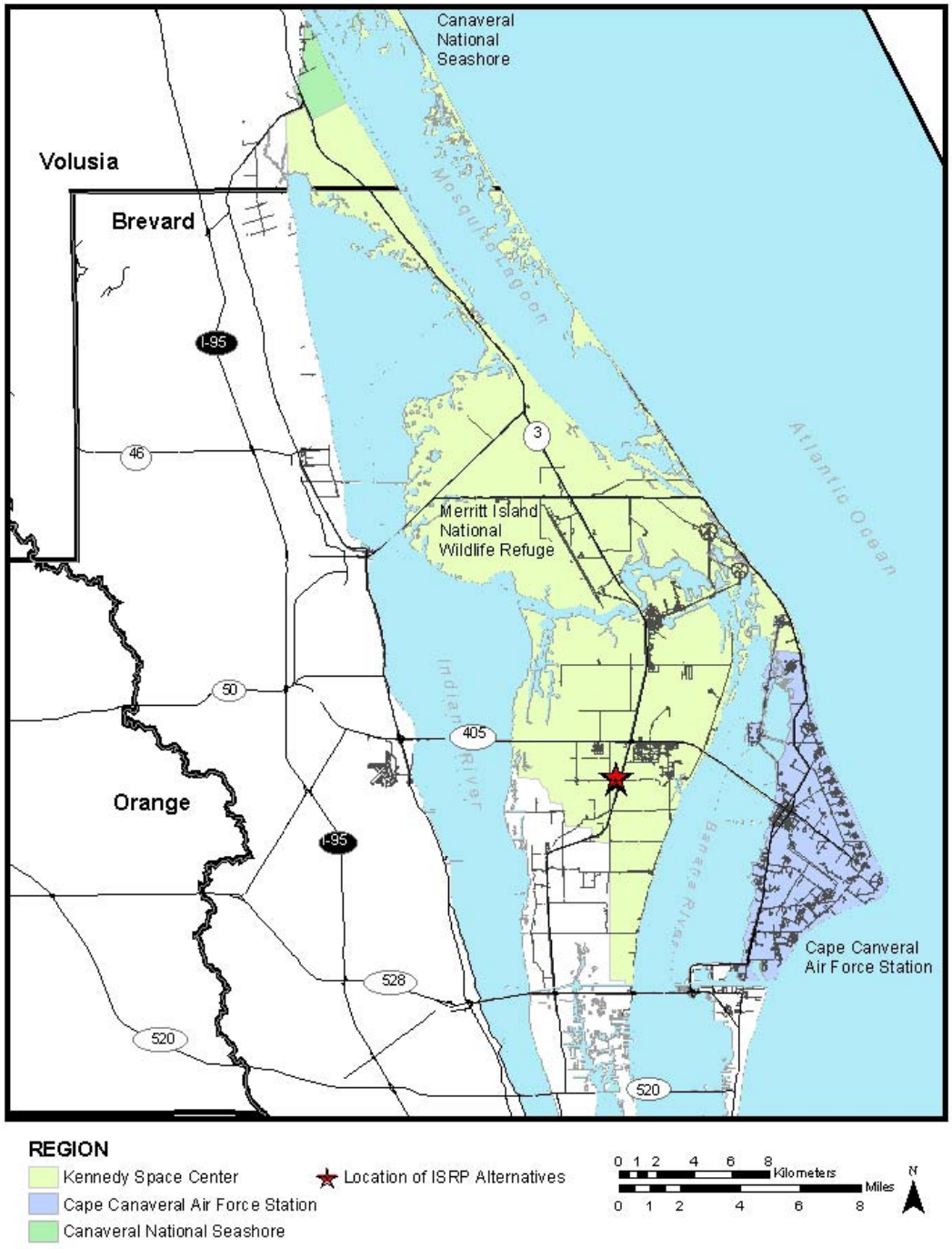

Figure 1-1. Regional Area of Interest on John F. Kennedy Space Center, Florida.

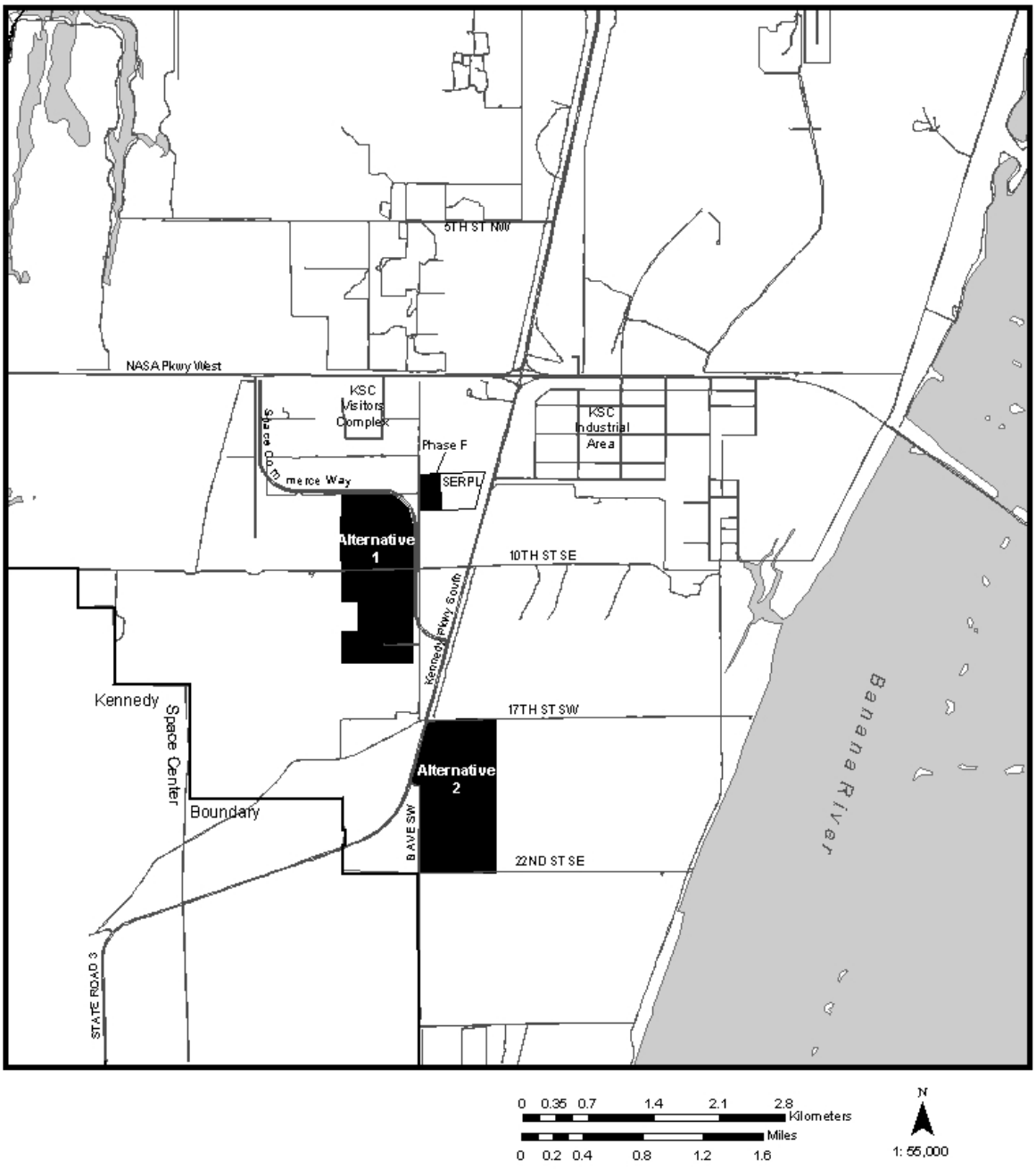

Figure 1-2. Location of Alternatives for the International Space Research Park on John F. Kennedy Space Center, Florida.

1.3 PURPOSE OF THE ACTION

NASA's mission is:

- to understand and protect our home planet,
- to explore the Universe and search for life, and
- to inspire the next generation of explorers.

KSC has a unique role in the pursuit of NASA's mission. KSC serves as NASA's launch and primary landing site for the reusable Space Shuttle, the primary launch site for NASA science missions on expendable launch vehicles, and the gateway to the International Space Station (ISS) for most of its major elements and for continuing missions. In addition, KSC is engaged in the development of spaceport and range technologies.

Some key objectives that KSC expects to achieve through the establishment of the ISRP in close proximity to the unique launch and processing complexes of KSC and CCAFS, are to:

- Support development and utilization of the ISS by NASA, its international partners, and commercial users;
- Foster new educational opportunities and world-class academic research;
- Support KSC's efforts in the development and application of spaceport and range technologies; and
- Enable privately financed and operated capabilities to strengthen both the government and non-governmental use of space.

Although there are no plans for NASA to construct any buildings within the ISRP, future programs may be approved that would result in such construction.

1.4 NEED FOR ACTION

NASA seeks collaborators for funding and project implementation to meet its mission. Many of the previously discussed support activities require close proximity to the launch and payload-processing infrastructure of KSC. However, non-governmental organizations also need greater flexibility regarding access and operations than are currently available at KSC. Therefore, NASA has determined a need to locate the ISRP on KSC in a manner that will provide a more open and flexible operating environment. The proposed action would authorize the State of Florida (through the statutory provisions of the management entities of the ISRP), to manage an area of land within KSC outside the security fence but in contact with the infrastructure available at KSC. Without this option, most, if not all, commercial and educational entities that would be attracted to the ISRP would be unable to construct and operate facilities. The May 2002 Development Study (Futron 2002a) determined that existing commercial properties do not offer the same amenities or benefits associated with the planned ISRP. The closest "Class A" space available was on the east side of Orlando. The nearest comparable R&D or industrial parks to the ISRP are Vector Space Park and Space Commerce Park in Titusville; however neither location would offer the same proximity to KSC operations as the proposed ISRP alternatives.

1.5 PUBLIC SCOPING AND PLANNING ACTIVITIES

1.5.1 Review Process and Standards

Public involvement is one of the key elements of NEPA compliance (40 CFR §1506.6) and is highly encouraged by NASA. On October 3, 2002 NASA issued the Notice of Intent (Public Notice (02-121)) to prepare an EIS and conduct scoping meetings for the proposed ISRP. Three (3) public scoping meetings were conducted: the first two on October 24, 2002, and the third on November 4, 2002. The scoping period closed on December 9, 2002. All responses received from interested parties during the 45-day scoping period were entered into a chronological log by date of receipt (Appendix B1). The primary issues raised by the public concerned traffic, security, economic sustainability, and environmental sensitivity (e.g., species and wetlands).

This DEIS is subject to a minimum 45-day public review period beginning on the date of publication of the Notice of Availability (NOA) of this DEIS in the Federal Register (FR). In accordance with Council on Environmental Quality (CEQ) regulations (40 CFR § 1503.1), NASA has provided a copy of this DEIS to Federal, State, and local agencies; and interested organizations and individuals that have jurisdiction over the action, have specialized expertise, would be affected, expressed interest, or provided substantive comments and concerns. A copy of this mailing list is provided in Appendix B1. NASA will sponsor public meetings to receive direct feedback on this DEIS. In addition, NASA will advertise the availability of this document in local media, maintain a copy in the Brevard County Central Public Library, and post a digital copy on the KSC and FSA web sites where comments will be received.

NASA policy requires use of the metric system. Most of the numbers in this document were originally computed using the English system of measurement, and have been converted into the metric system and rounded to the nearest significant digit. Throughout the text of this DEIS, the original English measurement follows the metric number in parentheses. For example, the size of a particular building would be listed as 9,000 square meters (m^2) (100,000 square feet (ft^2)).

NASA has applied a standardized spatial data format for all data layers generated for this DEIS. The data structure incorporates strict national data standards and is in compliance with Federal Geographic Data Committee (FGDC) geospatial data standards. All data files are in State Plane North American Datum (NAD) 1983. The map units are in meters (m) or kilometers (km).

1.5.2 Permitting of Proposed Action

In accordance with CEQ regulations (40 CFR § 1500.4(k), § 1500.5(g), § 1502.25, and § 1506.4), and NASA policy , NASA uses the NEPA process to document compliance with other environmental compliance and consultation requirements (e.g., other Federal statutes, regulations, and Executive Orders (EO)) and as the focus for integrated and balanced environmental planning for all of its proposed programs, projects, and activities. Some of the most important requirements are listed below.

Consultations with the following agencies have been conducted or will be completed to ensure that development of the ISRP is conducted in full compliance with applicable Federal, State, and local law.

1.5.2.1 Historic Preservation

Florida Division of Historic Resources Bureau of Historic Preservation
Regulatory Authority - Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. §§ 470-470t)

Section 106 of the NHPA requires Federal agencies to take into consideration the effects of their undertakings on historic properties and solicit comments on their actions from an independent reviewing agency, the State Historic Preservation Officer (SHPO) or the Advisory Council on Historic Preservation (ACHP). The § 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of SHPO consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. Title 36, CFR part 800 defines the procedures that Federal agencies must fulfill to meet these statutory responsibilities. The Federal agency is required to complete the § 106 process "prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license." The results of the § 106 evaluation are presented in Section 4.8.2.

1.5.2.2 Flora and Fauna

U.S. Fish and Wildlife Service
Regulatory Authority - §7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1536) and Migratory Bird Treaty Act of 1972 (16 U.S.C. §§ 703-711)

The Endangered Species Act of (ESA) regulates actions that potentially jeopardize plant and animal species listed as endangered or threatened and provides a means to conserve the ecosystems upon which they depend. Under the ESA, an "endangered species" is a species that is currently in danger of extinction throughout all or a significant portion of its range. A "threatened species" is likely to become endangered within the foreseeable future. ESA promotes conservation of ecosystems through the designation of "critical habitat". Critical habitat is a specific geographic area(s) that is essential for the conservation or recovery of listed species. Critical habitat designations affect only Federal agency actions or federally funded or permitted activities.

The ESA is co-administered by the Department of the Interior USFWS and the Department of Commerce National Ocean and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS).

Section 7 of the ESA directs all Federal agencies to use their existing authorities to aid in the conservation of threatened and endangered species and to ensure that their actions do not jeopardize the continued existence of listed species or adversely modify critical habitats. Section 7 applies to management of Federal lands as well as other Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal permits, licenses, or other actions.

Federal agencies are required under the ESA to initiate consultation with the USFWS to determine if the proposed federal action has the potential to affect listed species or critical habitat area. This determination is conducted through an "informal" or "formal" consultation process. An informal consultation is completed when the action agency and USFWS agree that the project *does not affect* any listed species or designated critical habitat. The informal consultation is concluded when the USFWS responds in writing, which may include confirmation of findings or a request for formal consultation. Formal consultation is required when the action agency and USFWS determine that a project *may adversely affect* listed species or designated critical habitat. The formal consultation time period is 90 days, with an additional 45 days allocated for the USFWS to prepare a "biological opinion" (BO). The BO documents whether or not the proposed action would be likely to jeopardize the species or adversely modify its critical

habitat and identifies any *reasonable and prudent alternatives* that would allow the project to proceed. Informal consultation can be followed by formal consultation. Federal agencies may confer with USFWS or NMFS at any time for candidate species, that is, species that are or may be proposed for listing. Presently there are no candidate species on KSC. If new species are listed during the proposed 50-year project, consultation with USFWS would be reopened.
Identification of potential adverse effects to listed species resulting from implementation of the ISRP was assessed in consultation with the USFWS North Florida Field Office. The results of this analysis are provided in a Biological Assessment (BA), submitted to the USFWS for concurrence on May 23, 2003], and in Section 4.6 Biological Resources. Copies of the BA and BO (June 11, 2003) prepared by USFWS are provided in Appendix C1.

Florida Fish and Wildlife Conservation Commission
Regulatory Authority - Chapter 68, Florida Administrative Code (FAC) – Wildlife Code of the State of Florida

The Protected Species Section of the Florida Fish and Wildlife Conservation Commission (FFWCC) is principally responsible for review and issuance of scientific collection, migratory bird nest removal and relocation permits which involve Florida's protected wildlife. Issuance of these permits is intended to guide, authorize and facilitate land management, scientific and educational activities under conditions that also provide necessary safeguards and conservation benefits to protected species which otherwise could be negatively affected by those activities. The permit review process usually involves coordination between Commission offices, consultants, other state agencies, Federal agencies and regional and local regulatory authorities.

FAC Rule 68A-27.005, prohibits the take, harm or harassment of a species listed as endangered, threatened, or of special concern by the State of Florida.

A BA of the alternative sites has been developed for the ISRP and has the potential to impact gopher tortoises and their burrows. Prior to implementation of the proposed ISRP, any appropriate permits will be procured from the FFWCC.

1.5.2.3 Wetlands, Stormwater, and Floodplains

Regulatory Authority - EO 11988, Floodplain Management, EO 11990, Protection of Wetlands, and Title 14, CFR subpart 1216.2, Floodplain and Wetlands Management

Executive Order 11988, Floodplain Management, and NASA regulation (Title 14,CFR subpart 1216.2, Floodplain and Wetland Management) direct NASA to determine whether the proposed action will occur in or may adversely affect a floodplain and to avoid floodplains unless the Agency determines that there is no practical alternative to undertaking the action in a floodplain. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988. This “8-step” process is detailed in the FEMA document “Further Advice on EO 11988 Floodplain Management.”

The determination of whether a proposed action occurs within a floodplain typically involves consultation with appropriate Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of the project area to nearby floodplains. The two proposed alternative locations of the ISRP are not located in either the 100-year or 500-year floodplain. Furthermore, the proposed action should not stimulate development in nearby floodplains.

In addition, Executive Order 11990, “Protection of Wetlands,” and NASA regulation (Title 14, CFR subpart 1216.2) direct NASA to determine whether a proposed action will adversely affect a protected wetland and, if so, to consider alternatives to the proposed action that would avoid adverse impacts and incompatible development in the wetland. If NASA finds that no practicable alternative to locating or conducting the activity in the wetland is available, then before taking action NASA must incorporate all possible measures to limit harm to the wetland. NASA has made a preliminary determination that no practical alternatives exist and has designed the proposed action to minimize impacts to wetlands. NOTE: NASA has to make the EO 11988 and 11990 determinations.

U.S. Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA)
Regulatory Authority - *§* 404 of the Clean Water Act (CWA), as amended (33 U.S.C. § 1344)

Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.

The basic premise of the program is that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. A permit review process controls regulated activities.

Wetland systems regulated under § 404 occur on both alternative ISRP development sites. The proposed development plan has considered the importance of these systems by avoiding and minimizing wetland impacts to the fullest extent practicable. A mitigation plan to compensate for remaining, unavoidable impacts is provided in Chapter 4. This plan would be finalized in consultation with the USACE Merritt Island Regulatory office if either Alternative 1 or Alternative 2 is selected.

St. Johns River Water Management District (SJRWMD) - Environmental Resource Permit (ERP)
Regulatory Authority - Part IV of Chapter 373, F.S. and Chapter 62-40, FAC
Florida Department of Environmental Protection (FDEP) - National Pollutant Discharge Elimination System (NPDES) Stormwater Permitting Program
Regulatory Authority - §§ 401-402 of the Clean Water Act (CWA), as amended (33 U.S.C. § 1342); § 307 of the Coastal Zone Management Act (CZMA) of 1972, as amended (16 U.S.C. § 1456); Chapter 62-25 FAC.

The State of Florida has a comprehensive program known as the Environmental Resource Permit (ERP) program that is administered jointly by the FDEP and 5 water management districts in accordance with an operating agreement that identifies the respective division of responsibilities. The ERP program regulates most alterations to land (upland, wetland, and other surface water) throughout the State. It is an independent State permit program that operates in addition to the Federal dredge and fill permit program. The regulatory program also includes implementation of a Statewide NPDES program but is separate from the stormwater permit program administered under Chapter 62-25 of the F.A.C.

The ERP program regulates virtually all alterations to the landscape, including all tidal and freshwater wetlands and other surface waters (including isolated wetlands) and uplands. The

ERP addresses dredging and filling in wetlands and other surface waters as well as stormwater runoff quality (i.e., stormwater treatment) and quantity (i.e., stormwater attenuation and flooding of other properties) including that resulting from alterations of uplands. Issuance of the ERP also constitutes a water quality certification under § 401 of the CWA (33 U.S.C. § 1341) or waiver under § 402 of the CWA (33 U.S.C. § 1342). In addition, issuance of an ERP in coastal counties constitutes a finding of consistency with the Florida Coastal Zone Management Program under § 307 of the CZMA.

The stormwater permit program administered under Chapter 62-25 of the FAC regulates construction and land alterations (typically in uplands) that collect, convey, channel, hold, inhibit or divert the movement of stormwater and that discharge into surface water waters. This program only addresses the *quality* of water discharged from stormwater systems, not the *quantity* of water (i.e., it does not address flooding issues as does the ERP program in the rest of the State).

When a corresponding § 404 Federal dredge and fill permit is required, it is issued independently from the State permit by the USACE after issuance or waiver of the State water quality certification and applicable § 307 coastal zone consistency concurrence with the Coastal Zone Management Program for Florida.

The State of Florida does not have a goal of no net loss or gain of wetland acreage. However, Florida's regulatory rules are written in a manner to achieve a programmatic goal and a project permitting goal of no net loss in wetland or other surface water functions (not including activities that are exempt from regulation or that are authorized through a Noticed General permit). An ERP permit standard is that activities must not adversely impact the value of functions provided to fish and wildlife and listed species by wetlands and other surface waters.

In addition to the State regulatory stormwater programs, Florida has statewide authorization to implement the Federal NPDES permit program for stormwater. Areas of regulation include municipal separate storm sewer systems, certain industrial activities, and construction activities. The municipal program has jurisdiction over large and medium municipalities. The industrial program covers selected industries and is identified by Standard Industrial Code. New construction would require a stormwater permit if the clearing, grading, or excavation work disturbs 0.4 ha or more (1.0 or more ac) of land and discharges to either a surface water of the State or to a Municipal Separate Storm Sewer System (MS4). The NPDES stormwater permit needed is called the *Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land*.

Development of the proposed ISRP would require compliance with the State of Florida ERP and NPDES permit programs. Consultations with the SJRWMD and FDEP have been initiated in this pre-planning stage to ensure that the proposed development plan conforms with applicable regulatory criteria to minimize impacts to water resources.

1.5.2.4 Air Quality

Florida Department of Environmental Protection (FDEP) – Air Permitting
Regulatory Authority - Clean Air Act (CAA) of 1990, as amended (42 U.S.C. § 7401 *et seq*.) and Chapter 403, F.S.

Title V of the CAA establishes the Federal Operating Permit program. This Federal operating permit replaces all of the previous state air pollution operating permits. In addition, this program

establishes a reporting program and fee program based upon emission levels. This program is delegated to the State of Florida and is administrated by the FDEP.

The CAA requires the U.S. Environmental Protection Agency (EPA) to address air pollution from new major stationary sources and major modifications to major stationary sources in both attainment and non-attainment areas. EPA has addressed this requirement through the Prevention of Significant Deterioration (PSD) regulations in attainment areas and New Source Review (NSR) regulations in non-attainment areas and Title V operating permitting programs. A stationary source generally includes all pollutant-emitting activities, which are located on contiguous or adjacent properties, and are under common control. Implementation of these programs within Florida is through the State Implementation Plan (SIP) process. The CAA requires EPA to develop and implement a Federal Operating Permit program or Title V Permit Program for all major stationary air pollution sources. The CAA also authorizes the collection of annual fees based upon emission levels to pay for the cost of the program. This permitting process is different than the PSD and NSR permitting programs in that those programs require a one-time-only permit generally considered as a construction permit. The 1990 amendments have greatly expanded the requirements of the CAA, specifically in non-attainment areas, and for hazardous air pollutants and ozone depleting substances.

State Permits (Chapters 62-4, 62-210, 62-212, 62-213, FAC) are required for all operations that have the potential to emit air pollutants to the atmosphere. This includes State construction, PSD and NSR permits and Title V operating permits. Section 62-4.040(1)(b), FAC, allows FDEP the discretion to exempt certain operations from the need for a permit on a case-by-case basis. Additionally, Section 62-210.300(3), FAC, lists operations for which FDEP does not require air pollution permits.

1.5.2.5 Risk Management Plan

Florida State Emergency Response Commission – Risk Management Plan
Regulatory Authority - Clean Air Act (CAA) of 1990, as amended (42 U.S.C. § 7412) and Florida's Accidental Release Prevention and Risk Management Planning Act, Chapter 252, Part IV, F.S.

The CAA, § 112(r), places a general duty on the owners and operators of stationary sources producing, processing, handling, or storing any extremely hazardous substance, or any substance listed pursuant to § 112(r) to develop a Risk Management Plan (RMP), which does the following:

- identify hazards that may result from accidental releases;
- design and maintain a safe facility; and
- minimize the consequences of releases.

The OSHA Process Safety Management (PSM) program has been developed throughout to minimize the potential for fires, explosions, and accidental releases of highly hazardous, toxic, flammable, reactive, or explosive chemicals. The program achieves this goal by taking a comprehensive approach, which involves integrating technologies, procedures, and management practices. All processes that include hazardous chemicals, regardless of the quantity or applicability to the RMP List Rule, are subject to the general duty clause of the RMP rule. EPA delegates authority to the State of Florida Department of Community Affairs to administer the RMP regulations.

RMP refers to 40 CFR § 68, “Chemical Accident Prevention Provisions”. This section states that companies that manufacture, process, store, or handle regulated substances in amounts greater than threshold quantities are required to comply with these regulations by June 21, 1999. All decisions relating to this activity are based on the EPA List of Regulated Flammable Substances and the List of Regulated Toxic Substances and their corresponding threshold quantities. In addition, facilities must be aware of the General Duty Clause of the CAA, which addresses all hazardous substances, regardless of the threshold amount.

1.5.2.5. Hazardous Substances Disclosures

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, § 120(h) requires that Federal agencies make certain disclosures prior to entering into any contract for the sale or other transfer of real property owned by the Federal government and on which any hazardous substance was stored for one year or more, known to have been released, or disposed of. U.S. Environmental Protection Agency regulations (40 CFR § 373), also known as the Federal Real Property Transfer Regulation, implementing this provision do not specifically reference out-leases. However, the Civilian Federal Agency Task Force's Guide on Evaluating Environmental Liability for Property Transfers (August 1998) recommends making these disclosures prior to out-leasing Federally owned property. NASA has conducted a records search and initiated environmental surveys. NASA will make the recommended disclosures, if applicable, in the Final Environmental Impact Statement and lease or other real property transfer agreement with the State of Florida. Based on preliminary results, NASA anticipates issuing negative findings regarding polychlorinated biphenols (PCB), lead, asbestos, radon, radioactive materials, pesticides, herbicides, and other hazardous substances.