Draft Environmental Assessment

George C. Marshall Space Flight Center

Michoud Assembly Facility

"NASA Michoud Assembly Facility Tenant Complex"

National Aeronautics and Space Administration

March 2022

ENVIRONMENTAL ASSESSMENT

NASA Michoud Assembly Facility Tenant Complex

National Aeronautics and Space Administration
Michoud Assembly Facility
13800 Old Gentilly Road,
New Orleans, Louisiana 70129

Technical questions or comments can be directed to:

AS60/Mr. Keith Savoy NASA MAF OPERATIONS MANAGER
NASA Michoud Assembly Facility
Phone: (504) 257-3439
e-mail: Keith.G.Savoy@nasa.gov

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Acronyms and Abbreviations

AST – aboveground storage tank

bgs– below ground surface

BMP – best management practice(s)

CEQ – Council on Environmental Quality

CFR – Code of Federal Regulations

dB – decibel

dBA – noise power calculated in dB where 0 dBA = 3.16 picowatts

EA – Environmental Assessment

ET – External Tank

EO – Executive Order

FAA – Federal Aviation Administration

FEMA– Federal Emergency Management Agency

FIRMs – Flood Insurance Rate Maps

ft – foot or feet

ft^2 – square foot or feet

GIWW – Gulf Intracoastal Waterway

IWTF – Industrial Wastewater Treatment Facility

LA – Louisiana

LAC – Louisiana Administrative Code

LDEQ – Louisiana Department of Environmental Quality

LPDES – Louisiana Pollutant Discharge Elimination System

MAF – Michoud Assembly Facility

MSFC – George C. Marshall Space Flight Center

MSL– mean sea level

NASA – National Aeronautics and Space Administration

NFC – U.S. Department of Agriculture; National Finance Center

NEPA – National Environmental Policy Act

NFPA – National Fire Protection Agency

NHPA- National Historic Preservation Act

OSHA – Occupational Safety and Health Administration

Acronyms and Abbreviations

RCRA – Resource Conservation and Recovery Act

RFI – RCRA Facility-Wide Investigation

SLS – Space Launch System

U.S.C. – United States Code

USCG – United States Coast Guard

USDA – United States Department of Agriculture

USEPA – United States Environmental Protection Agency

USFWS – United States Fish and Wildlife Service

SECTION 1

Purpose Of and Need for the Proposed Action

1.1 Introduction

The National Aeronautics and Space Administration (NASA) Michoud Assembly Facility (MAF) is an 832-acre campus in eastern New Orleans, Louisiana (LA). It is managed as a component facility of NASA's Marshall Space Flight Center (MSFC) located in Huntsville, Alabama (AL). The primary mission of the MAF is the manufacturing and assembly of space flight hardware to support NASA's space transportation programs. The main programs that are currently underway include the design and construction of the Space Launch System (SLS) Core Stage and Orion Space Capsule. SLS will be NASA's only launch vehicle and will be the largest launch vehicle in the United States. MAF also leases manufacturing, warehouse and office space to a number of government and private organizations.

Shortly after Hurricane Katrina hit New Orleans and flooded the United States Coast Guard (USCG) facility located on the Industrial Canal/Inner Harbor Navigation Canal, the USCG constructed a temporary facility at the MAF to continue the mission of the Integrated Support Command (ISC) – New Orleans. This temporary facility was constructed of modular building on approximately 65 acres of cleared but unused space at the MAF. After completion of the new permanent USCG ISC – New Orleans facility at MAF, the temporary facility was dismantled leaving only basic utility infrastructure behind.

NASA is considering constructing the MAF Tenant Complex on these 65 acres for new industrial and commercial buildings.

This lease would establish an additional revenue source which would support the maintenance, capital revitalization, and improvement of MAF, as well as establish a new marketing strategy for underutilized non-excess MAF real property.

Pursuant to 14 CFR 1216.305, a responsible official will prepare an Environmental Assessment (EA) when a Proposed Action cannot be categorically excluded, and the Proposed Action is not expected to result in impacts that necessitate analysis required through the Environmental Impact Statement (EIS) process. The regulation also states further that typical NASA actions that require an EA include "construction or modifications of facilities which are not minor." Given the size and scope of this Proposed Action, the EA process is the appropriate action with which to examine potential environmental effects of the Proposed Action.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA), as amended (Title 42 of the United States Code [U.S.C.] 4321–4347), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] 1500–1508), NASA's regulations for implementing NEPA (14 CFR Subpart 1216.3) and the NASA NEPA Management Requirements (NASA Procedural Requirement [NPR] 8580.1A).

1.2 Michoud Assembly Facility Background

Originally, the MAF property was part of a 1763 French Royal Land Grant to Gilbert Antoine de St. Maxent, a soldier in the French Army and a successful New Orleans merchant. Originally 34,500 acres, 1,000 acres of the property was purchased in 1827 by Antoine Michoud, the son of Napoleon's Administrator of Domains, when he emigrated from France. Michoud operated a sugar plantation and refinery on the estate which his

heirs continued to operate into the 20th Century. Two smokestacks from the original plantation remain at the entrance to the site. In 1940, the U.S. Maritime Commission purchased the site to build a shipyard for the production of Liberty ships by Higgins Industries. In 1942 the partially built shipyard was taken over by the government for the production of large cargo-type plywood airplanes. The original facility construction included administration, engineering, manufacturing, and hangar buildings as well as several small shop buildings and an airstrip. In November of 1945, the plant was closed until the outbreak of the Korean War. During the early 1950s under the U.S. Army Ordinance Corps, Chrysler Corporation manufactured tank engines in the MAF.

The plant was again closed in 1953 and remained idle until the site ownership was transferred to NASA in 1961 as a facility for design and assembly of large space rocket stages. The gulf location was selected to provide water transportation of the rocket stages to NASA's John C. Stennis Space Center in Hancock County, Mississippi, for launch certification testing, and then on to the Kennedy Space Center, Florida, for assembly and launch. Initially, the Saturn booster rockets were built to support the Apollo program. In 1973 the facility was re-tooled to construct the External Fuel Tank (ET) for the Space Shuttle program. Construction of ETs continued until 2010 with the retirement of the Space Shuttle Program. The main NASA program currently underway at MAF is the production of the SLS Core Stage vehicle. Other smaller scale manufacturing projects associated with other NASA programs are also in progress.

In addition to the NASA programs, the MAF also has various other tenants within the facility. Tenants include the United States Department of Agriculture (USDA), National Finance Center (NFC), the United States Coast Guard (USCG) Integrated Support Command, New Orleans, BK Aerospace, Boeing, Lockheed Martin, Textron Systems, LM Wind Power and other commercial manufacturing tenants. These commercial and government contract tenants comprise a large portion of the current employees and business occupants at the MAF.

Maintenance and general operation activities of the MAF are performed by a NASA contractor under the Synergy Achieving Consolidated Operations and Maintenance (SACOM) Contract. Site security is provided by a private security firm that reports directly to NASA.

1.3 Purpose and Need

The purpose of this proposed action is to construct a new tenant complex to provide economic development for the area and to utilize existing space and infrastructure to provide revenue to NASA to help off-set the cost of maintaining and operating the MAF. The existing proposed development space, with provided utility infrastructure, is an asset at the facility which is not currently being utilized. The ideal tenant for the facility would be an aerospace service company which would further enhance and expand current facility capabilities; however, the area would not be limited to companies that would provide direct support to existing operations at the MAF.

1.4 Scope of EA

This EA analyzes the potential environmental impacts of constructing new industrial and commercial buildings as described in Section 2.1 of this document. A detail design of the proposed construction is not yet available nor is the exact occupant/industry which would reside at the new building(s). Therefore, this EA assesses potential future development conditions and associated potential environmental impacts largely based on preliminary planning/design strategy that have been prepared to date by NASA, and other available initial information. The actual development conditions and associated potential environmental impacts may differ from those analyzed by this EA. If the final design of the facility deviates significantly from the preliminary planning/design guidelines, then a separate NEPA analysis and documentation would be required to provide a comprehensive and accurate assessment of the potential environmental impacts of the Proposed Action. It is not anticipated that changes in the final design will result in changes that contradict the findings in this assessment.

The potential impacts of the Proposed Action are evaluated against those of the No-Action Alternative, under which the subject property would not be re developed and would remain idle.

1.5 Public and Agency Consultation

In accordance with CEQ and NASA regulations for implementing NEPA, NASA has solicited comments on the Draft EA from interested and affected parties. A Notice of Availability (NOA) for the Draft EA was published in the New Orleans newspaper of record, The Times Picayune on April 17th, 2021. The NOA provides the Website address where the Draft EA was available electronically. Hard copies of the Draft EA were available upon request. A copy of the NOA public notice is provided in Appendix B. No comments received during the public notice.

SECTION 2

Description of the Proposed Action and Alternatives

2.1 Description of the Proposed Action

The Proposed Action involves the constructing of new light industrial and commercial buildings. Facilities would be constructed to suit the individual user at the property. Users would likely come from the aerospace and defense related arenas. As such, the type of work and related intensities currently conducted at MAF would likely be extended to the area. It is likely that current and future NASA contractors or subcontractors would utilize the newly constructed buildings. Ultimately, market demand would determine what is built and when it is built.

It is important to note that this is not a significant change to the location's previous use. The parcel is situated within the fenced boundary lines of the MAF that has traditionally been used to support aerospace and defense related industrial and office activities. It is located within the heart of MAF's fenced boundary, approximately equidistant from both the water and major roadways, well away from local neighborhoods, schools, places of worship, and playgrounds.

First Building Specifications
Each tenant would have their own, unique construction requirements. A notional punch list based on discussions with potential tenants and on market demand suggests the following:

- Building Size: 200,000 square feet;
- Configuration: rectangular in shape;
- Roof: flat membrane;
- Walls: tilt concrete;
- Loading: likely four truck-level loading docks with two drive through doors;
- Building Height: 25' to ceiling for manufacturing; 32' feet for warehousing sections;
- Sprinklers: wet;
- Floors: 6 inch;
- Aprons: 53" foot concrete;
- Cranes: none;
- Office: minimal finish; approximately 5% of total building;
- Bathrooms: 2;
- Parking: depending on tenant requirement.
- LEED Standards: attempt to qualify to minimum LEED standards depending on sub-tenant requirements.

Site Development
The 60-acre site will be built out based upon market demand and timing requirements. A modern industrial and commercial campus is envisioned served by existing utility systems that are connected within the greater MAF infrastructure systems. At full build-out, the site could accommodate multiple buildings of approximately 200,000 square feet each; parking; sidewalks; and driveways.

The following uses are a representation of the type of activity that could occur within the newly constructed buildings at the site:

- Parts Assembly

- Plastics
- Ceramics
- Metals Fabrication & Assembly
- Machining
- Electronics
- Instrumentation
- Guidance Systems
- Measuring and Controlling Devises
- Carbon and Graphite Manufacture and Use
- Acceleration systems and indicators
- Communication Equipment Manufacturing
- Satellite Telecommunications
- Commercial Air, Rail, and Water Transportation Systems
- Vehicle Assembly

Figure 2.1 – Facility Location

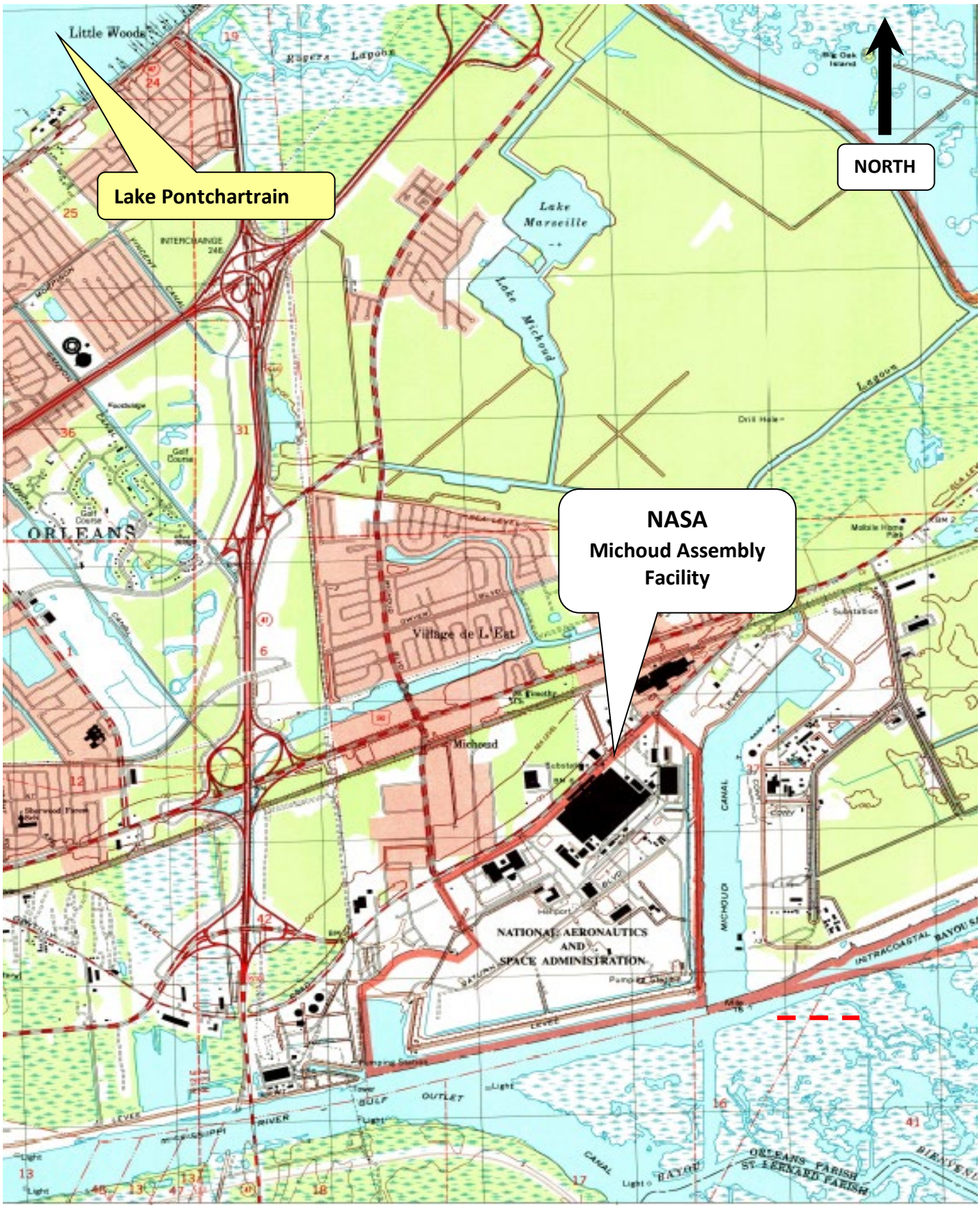

Figure 2.2 – Project Location within MAF

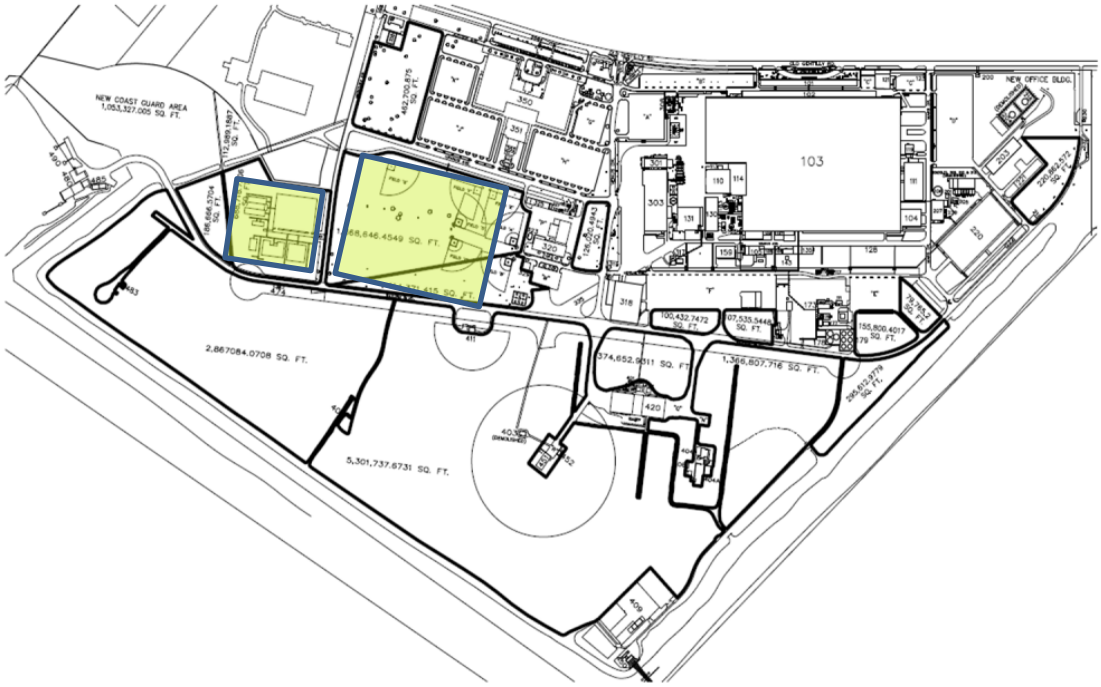

Figure 2.3 – Facility Conceptual Renderings

2.2 Alternatives to the Proposed Action

One of the NEPA requirements of an EA is that the potential environmental impacts of a Proposed Action, as well as reasonable alternatives to a Proposed Action and a No Action alternative are considered. A reasonable alternative is one that addresses the basic purpose and need for the Proposed Action, is practicable from a technical and economic standpoint, and one that meets reasonable screening criteria that

are suitable to a particular action. Screening criteria generally include requirements related to influence on existing operations, technical feasibility, environmental, health and safety impacts, budget, and time related concerns. If an alternative is ultimately determined not to be reasonable and does not fit into the overall scope of the proposed action, it can then be eliminated from detailed analysis in an EA.

2.2.1 Alternatives considered but eliminated

The leasing of other parcels of property at the MAF and development for the subject uses were given consideration by NASA as potential alternatives to the Proposed Action. The location selected was the only area of suitable size that does not have any distinct planned usage and has existing electrical, water and sewage infrastructure in place to serve expected usages. The area is at a sufficient distance from existing NASA activities so as not to interfere with current operations while remaining close enough where the proximity is advantageous to provide support to existing and future NASA operations. Other areas of suitable size within the facility would require significant infrastructure investment.

2.3 No-Action Alternative

Under the No-Action Alternative the facility would not be constructed anywhere at the MAF. The No-Action Alternative is analyzed in Chapter 3 as a baseline against which the Proposed Action can be compared

SECTION 3

Affected Environment and Environmental Consequences

The following section of the EA addresses the existing environmental conditions that would be potentially affected by the Proposed Action. In compliance with NEPA, CEQ guidelines, and 32 CFR Part 651, et seq., the description of the affected environment focuses on those resources and conditions potentially subject to impacts.

3.1 Air Quality

Current air emission activities at the MAF are covered under four separate State Air Operating Permits. These include Minor Source Permits authorizing emissions from an air stripper associated with a groundwater remediation system, utility point sources including steam and hot water boilers, diesel fired emergency power generation units, and to operate emission sources with the main production area processes including welding, assembling, cleaning, and coating of large aerospace vehicles. None of these Air Permits would be affected by the Proposed Action.

The No-Action Alternative will have no impact on this resource, at this time.

3.1.1 Proposed Action – Air Quality Impacts

Construction activities under the Proposed Action would result in short-term, minor impacts to air quality. Fugitive dust (particulate matter) and construction vehicle exhaust emissions would be generated during construction and would vary daily, depending on the level and type of work conducted. Fugitive dust would be generated by construction vehicle and equipment travel on dirt surfaces and by wind action on stockpiled materials. The primary risks from blowing dust particles relate to human health and human nuisance values. Fugitive dust from stockpiled materials would consist primarily of nontoxic particulate matter; however, fugitive dust can contribute to respiratory health problems and create an inhospitable working environment. Deposition on surfaces can be a nuisance to those living or working downwind. Fugitive dust would be controlled at the site using Best Management Practices (BMPs) such as the periodic watering of stockpiled material and cleaning road surfaces if dirt and mud are tracked out of the construction area by vehicle movement. Construction Contractors would be responsible for following all applicable Occupational Safety and Health Administration (OSHA) regulations and guidelines pertaining to prevention of airborne releases of associated dust and to worker protection from associated dust.

The emissions of pollutants to the atmosphere resulting from the proposed action could vary depending on the actual tenant to occupy the area, however, all anticipated tenants are anticipated to be considered minor sources, also called Area Sources, of air pollutants. All new or modified operations would require evaluation under state air permitting regulations and approvals. During this review, all proposed emission would be evaluated to ensure compliance with federal and state air pollution laws, as well as the potential for a formal prevention of significant deterioration analysis, and if required, air dispersion modeling to ensure that ambient air concentration are within regulatory levels.

For these reasons, the Proposed Action is expected to have a minor impact on air quality.

3.2 Noise

Noise is described as the "unwanted sound that interferes with normal human activities." Under the Proposed Action, the principal noise sources would be from heavy equipment operation and structural material handling and removal during the construction operations.

Based on data presented in the USEPA publication, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances (USEPA, 1971), outdoor construction noise levels have been documented to vary from 78 dBA to 89 dBA at approximately 50 ft from typical construction sites under ambient conditions found in suburban settings. Noise levels at 50 feet from a construction source were documented to decreases by approximately 3 dBA over a hard, unobstructed surfaces and by approximately 4.5 dBA over softer vegetated surfaces.

The MAF is located within the New Orleans Regional Business Park, an area within the city designated for industrial activities. Most of the adjoining parcels of land surrounding the MAF to the east, north and west are either industrially/commercially developed properties, vacant and undeveloped tracts and wooded areas. Property to the south of the MAF includes the Gulf Intracoastal Water Way (GIWW) and uninhabited marsh. The closest residential area to the MAF is located in excess of 4,800 ft to the North.

The No-Action Alternative will not have any impact on this resource. The expected impact that would be caused by the proposed action is described below.

3.2.1 Proposed Action – Noise Impacts

Construction activities under the Proposed Action would temporarily increase ambient noise levels in and around the subject property. The increased noise levels would be intermittent and limited to normal working hours and the overall construction period. Construction workers would use hearing protection and would follow OSHA standards and procedures.

As discussed in Section 3.2, typical construction work generates noise levels in the range of 78 to 89 dBA approximately 50 ft (15.2 meters) from the construction area (USEPA, 1971). Noise levels at 50 feet (15.2 meters) from a source are estimated to decrease by approximately 3 dBA over a hard, unobstructed surface (such as asphalt), and by approximately 4.5 dBA over a soft surface (such as vegetation). Based on these estimates of noise dissipation, noise generated during construction activities under the Proposed Action would not be audible in the nearest residential area, which is located approximately 1 mile (1.6 kilometers) North of the subject property. Negligible noise levels are expected to be generated from the operation proposed action on the subject property.

For these reasons, the Proposed Action is expected to have a minor noise impact during construction activities only; the impact is preliminarily expected to not be significant. Actual operation of the proposed action is not expected to increase noise volumes outside of the subject property.

3.3 Topography

The MAF property has been developed within reclaimed marshland and has been subsequently filled and graded to create sufficient surface slopes for drainage. Very little elevation change occurs within most of the MAF property. The elevation inside the MAF ranges from 0 ft mean sea level (msl) to 5 ft msl. Elevations of 14 ft to 15 ft msl are noted at the top of the flood protection levee of the GIWW.

The No-Action Alternative will not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below.

3.3.1 Proposed Action – Topography Impacts

The area on which construction is proposed was filled prior to 1964. The filling and grading activities have been sufficient to maintain adequate slope for drainage of the area. The proposed action would not include any significant modification to the grading and no structures would be installed at a height greater than existing adjacent structures. Accordingly, no significant changes to the topography are expected as a result of the building demolition at this time.

For these reasons, the Proposed Action is preliminarily expected to have no impact on topography.

3.4 Soils

The MAF property consists of mostly reclaimed marshland, and is mapped by USDA National Resource Conservation Service, Web Soil Survey as consisting mostly of aquent soils; that are fluvial deposited sediments along river banks and tidal mudflats and/or wet soils that have been artificially placed by dredging activities. Previous construction and excavation activities within the MAF have reportedly identified the shallow subsurface soils as being predominantly dredged fill material with mixtures of topsoil and river sand.

The No-Action Alternative will not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below.

3.4.1 Proposed Action – Soils Impact

Surface soils on the property would be disturbed during site clearing/grading, building construction, and other site development activities. The Proposed Action would result in a net increase in pavement surface area within the property. Minimal additional fill is expected to be required. The private developer would be required to implement appropriate BMPs and erosion/sedimentation controls during the construction period to minimize potential indirect impacts to surrounding soils

For these reasons, the Proposed Action is preliminarily expected to have a Minor impact on soils; the impact is expected to not be significant.

3.5 Geology and Hydrogeology

The July 2017 Semiannual Groundwater Monitoring Report for the MAF, prepared by K.S. Ware & Associates, LLC, documents that the previous subsurface investigations have identified the shallow subsurface geology as alternating layers of silty clay and clayey and sandy silts and organic peats between ground surface and approximately 20 feet below ground surface (bsg). The surficial groundwater zone at the MAF is between one to four feet bgs, with the first laterally contiguous groundwater aquifer located between approximately 20ft to 50 ft bgs. The July 2017 Semiannual groundwater report describes the shallow aquifer at the MAF as mostly fine grained sand, but is heterogeneous with upper and lower sand units separated by zones of lower hydraulic conductivity.

This groundwater flow zone is reportedly connected to the GIWW and is tidally influenced. Low permeability clays separate the shallow aquifer from the lower aquifers. Several other deeper aquifers exist between approximately 100 ft bgs and 1,200 ft bgs.

The No-Action Alternative will not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below.

3.5.1 Proposed Action – Geology and Hydrogeology Impacts

While the final facility design in not complete, it is anticipated that pile supported foundations would be required for the Proposed Action. These piles would be driven into the shallow groundwater aquifer. The Shallow Aquifer is a hydrogeologic unit found between 20 and 50 feet, below ground surface (bgs). It is composed of sandy silt and silty sand inter-bedded with layers of fine sand. There are no active drinking water wells on the MAF or within 1 mile of the property, due to unsuitable shallow groundwater quality. Minimal amount of groundwater may be pumped from shallow excavations associated with construction activities.

For these reasons, the Proposed Action is preliminarily expected to have a minor impact on geology and hydrogeology; the impact is expected to not be significant.

3.6 Land Use

All affected property for this project has been previously developed. The most recent usage for the area of land was for temporary operation of the USCG ISC-New Orleans activities. The USCG has moved to an adjacent area within the MAF and removed all structures except basic infrastructure (electrical, water, sewage, etc.). The affected land is currently covered by shell/gravel parking lot and grass fields.

The No-Action Alternative would not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below

3.6.1 Proposed Action – Land Use Impacts

Under the Proposed Action, the land-use classification of the property would not be changed. The Proposed Action would return the area to land uses consistent with previous uses and with other uses within the MAF.

For these reasons, the Proposed Action is preliminarily expected to have a minor impact on land use; the impact is expected to not be significant

3.7 Surface Water

The MAF property has been developed within reclaimed marshland and has been subsequently filled

and graded to create sufficient surface slopes for drainage. There is no natural surface drainage system within the MAF with the exception of a small area at the barge dock which is outside of the flood control levee system. The forced drainage system within the MAF includes a series of catch basins, drainage ditches, and underground pipes that convey storm water into the on-site Borrow Canal. The Borrow Canal runs parallel to the flood protection levees that practically surround the facility. Rainwater accumulation in the Borrow Canal is pumped over the hurricane protection levee as needed under the Louisiana Pollutant Discharge Elimination System (LPDES) Permit for Outfall 001 and/or Outfall 004 pumping stations.

The No-Action Alternative will not have any impact on this resource.

3.7.1 Proposed Action – Surface Water Impacts

There are no surface water bodies within the subject property; therefore, construction activities under the Proposed Action would have no direct impact on surface waters. The construction contractor would be required to implement appropriate BMPs and erosion/sedimentation controls during the construction period to minimize potential indirect impacts to surface waters outside the property.

The construction of impervious ground cover, such as building and concrete pads, would slightly increase the volume of storm water run-off. The additional volume of storm water run-off resultant from the increased paved areas is anticipated to be negligible. All storm water at the site is monitored prior to discharge to neighboring surface waters, in accordance with the facility LPDES discharge permit to ensure no negative impact to surface waters. Inspections and immediate clean-up of any fuel spills would reduce the potential for release of petroleum hydrocarbon contamination to the environment during rain events.

For these reasons, the Proposed Action is preliminarily expected to have a negligible impact on surface waters; the impact is expected to not be significant.

3.8 Vegetation

The MAF property has been developed within reclaimed marshland and has been subsequently filled and graded. The project area is mowed grasses and weeds.

The No-Action Alternative would have no impact on the vegetation currently located adjacent to, and near, the project.

3.8.1 Proposed Action – Vegetation Impacts

The expansion under the proposed action would have minimal impact to vegetation. The expansion would include the installation of concrete or asphalt pads and possibly the expansion of compacted shell/stone surfaces. Ornamental gardens may be installed adjacent to proposed buildings. The area currently consists of a large shell parking lot and turf grass. No natural vegetation would be disturbed

For these reasons, the Proposed Action is expected to have a minor impact on vegetation; the impact is expected to not be significant

3.9 Wildlife

The MAF property has been developed within reclaimed marshland and has been subsequently filled and graded. The project area is compacted gravel roads and parking lots, concrete, mowed grasses, and weeds. The grounds would be typically used mostly by common birds such as cardinals, blue jays, mocking birds, sparrows, cattle egrets and other avian species. Other resident and transient wildlife could include the American alligator, snakes, turtles, armadillos, coyotes and small rodents. However, due to high human presence, lawn maintenance activities, automobile traffic, as well as active pest control practices, a permanent presence of such wildlife is unlikely.

The No-Action Alternative would not impact the birds and other wildlife that utilize the grounds of the MAF.

3.9.1 Proposed Action – Wildlife Impacts

The Proposed Action would likely cause a minimal, but temporary impact on a very small amount of wildlife during the time construction activities are being conducted. The impact would lessen with the increase of distance from the work area due to the corresponding decrease of human activity and noise. Affected wildlife would be expected to vacate or avoid the general area in favor of more peaceful settings. As such, the Proposed Action is would have a negligible impact on wildlife.

3.10 Threatened and Endangered Species

The MAF property has been developed within reclaimed marshland and has been subsequently filled and graded. The project area is compacted gravel roads and parking lots, concrete, mowed grasses, and weeds.. As such, there is no suitable habitat for threatened and endangered species, nor have any endangered species been observed in this area.

No threatened and endangered species would be affected by the No-Build Alternative.

3.10.1 Proposed Action – Threatened and Endangered Species Impact

As the area does not have any threatened and endangered species or any appropriate habitat, the Proposed Action would have no impact on threatened or endangered species.

3.11 Cultural Resources

Cultural resources are prehistoric and historic sites, structures, districts, artifacts, or any other physical source of human activity considered to be culturally important. Cultural resources include historic resources (historic buildings and structures) and archaeological resources (prehistoric, historic, and traditional). Federal agencies are required to protect and preserve cultural resources in cooperation with state and local governments under NEPA and the National Historic Preservation Act of 1966, as

amended (16 U.S.C. 470, Public Law 95-515).

The MAF Integrated Cultural and Historical Resources Management Plan (ICHRMP) provides guidance on the management of cultural resources at MAF in compliance with state and federal regulations. The MAF ICRMP establishes procedures for the identification, evaluation, preservation, and mitigation of cultural resources that are consistent with the mission of MAF and the sound principles of cultural resource stewardship.

Three Cultural Resource Assessments have been performed at MAF to identify cultural resources eligible for the National Register of Historic Places (NRHP) and historically significant sites. These evaluations and subsequent communication with the Louisiana State Historical Preservation Officer (SHPO) have identified five (6) structures that are eligible for the National Register of Historic Places (NRHP). Native American artifacts have not been identified with the confines of MAF. However, the MAF ICRMP identifies requirements for tribal and public consultation and procedures if such artifacts are uncovered or observed during site operations.

None of the structures identified as eligible for the NRHP at MAF are located within the boundaries of this project.

The No-Action Alternative would not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below

3.11.1 Proposed Action – Cultural Resources

As there is no potential for Cultural or Historical resources in the area of the proposed action the Proposed Action would have no impact on cultural resources.

3.12 Socioeconomics

The area of the proposed project is currently unused land with maintained grass. As such, the area provides no socioeconomic impact either positive or negative. Accessibility to the area is limited due to site security requirements.

The No-Build Alternative would have no impact on socioeconomic resources located in the study area.

3.12.1 Proposed Action – Socioeconomic Impacts

The Proposed Action would involve the temporary hiring of contractor construction personnel. It's likely that a hundred or so temporary construction jobs could be created. A typical light manufacturing or assembly plant or small distribution center could easily host a hundred jobs.

For these reasons, the Proposed Action is preliminarily expected to have a minor positive impact on socioeconomics; the impact is expected to not be significant.

3.13 Public and Occupational Health and Safety

The MAF has access to 24-hour police, fire, emergency health and non-emergency services through the City of New Orleans. The MAF also has trained medical personnel within the facility who can respond to occupational health medical emergencies. The MAF maintains a staff of Safety Professionals and Industrial Hygienists who oversee all NASA programs, tenant operations, and safety programs in compliance with applicable requirements. The MAF operates in general compliance with all applicable federal laws, codes, and regulations and with all applicable laws, ordinances and regulations of the State of Louisiana and Orleans Parish regarding construction activities, health and safety concerns, food services, water supply, sanitation, as well business licenses and permits. Construction contractors, supply vendors, and other related personnel that enter the MAF are responsible for complying with applicable Occupational Safety and Health Administration (OSHA) regulations as well as NASA safety standards and requirements when they are stricter.

The No-Action Alternative will not have any impact on these resources.

3.13.1 Proposed Action – Public Health and Safety Impacts

Under the Proposed Action, there is the potential for worker accidents to occur during construction activities as a result of routine workplace exposure to heavy equipment and debris. To minimize the potential for accidents, workers would be required to wear and use appropriate protective equipment and follow all applicable OSHA standards and procedures. Job Safety Assessments would be required to be prepared, and workers would be required to review and sign these documents before working on the job site. Construction contractors and company management of building tenants would be responsible for ensuring that all their employees (and subcontractors) comply with all applicable OSHA regulations and for conducting their work in a manner that does not pose any risk to themselves or to MAF personnel. Provided that all appropriate worker protection measures are taken and all applicable OSHA regulations and guidelines are followed, the potential for safety and occupational health impacts under the Proposed Action is expected to be low.

As discussed in Section 3.12.1, the Proposed Action would result in a minor increase, if any, in the number of permanent personnel working at MAF. Therefore, the demand for medical, police, and fire-fighting services at MAF would not significantly change under the Proposed Action.

For these reasons, the Proposed Action is preliminarily expected to have a minor impact on public and occupational health and safety; the impact is expected to not be significant.

3.14 Utilities

The MAF receives its electrical power and natural gas from Entergy New Orleans. Potable water and sanitary sewer treatment services are purchased from the Sewerage and Water Board of New Orleans. All industrial wastewater generated onsite is treated at the Industrial Wastewater Treatment Facility (IWTF) operated by the NASA operations and maintenance contractor. These utilities are not currently available at the proposed location and would not be utilized in the Proposed Action

The No-Action Alternative will not have any impact on these utility resources. The anticipated impact on these utility resources from the proposed action is described below.

3.14.1 Proposed Action – Utilities Impact

Under the Proposed Action, the utility demands are thought to be similar to those which were required at interim USCG –ISC facility. The base utility infrastructure is in place to be connected to the proposed facility. The MAF utilizes large amounts of electricity for the operation of industrial activities and is served by two offsite substations by Entergy's 115 kV transmission lines. Two onsite master substations (the East Master, Bldg. 121, with two parallel 20 MVA transformers, provide 40 MVA and the West Master, Bldg. 308, provide 20 MVA) are located near the northeast and northwest corners of Bldg. 103, respectively. The small increase in electrical consumption, relative to existing facility usage, to serve the proposed action would not cause a significant increase in electrical consumption at the facility. Existing infrastructure is sufficiently sized to handle the increase in electrical loads required for the Proposed Action

The Proposed Action would increase energy consumption, potable water consumption, and domestic wastewater generation at MAF; however, the overall increase in utility demand/usage at the Facility would be relatively small compared to requirements of existing facility demand.

For these reasons, the Proposed Action is preliminarily expected to have a minor impact on utilities; the impact is expected to not be significant.

3.15 Solid Waste

Non-hazardous Solid Waste is generated throughout the MAF. Paper, plastic bottles, and aluminum cans are collected in receptacles for recycle to reduce the volume of waste to the local landfill. Scrap metal is also collected for recycle. Concrete and asphalt associated with construction or demolition projects are sent to recycling facilities. A licensed solid waste disposal company (currently River Parish Disposal Inc.) is contracted by the MAF Environmental Services Group (ESG) for transportation and disposal of non-hazardous solid waste that is not eligible for recycle/reclamation. Solid waste is collected in 30 yard dumpsters, large compactors, and 8 yard bins for transport to an off-site solid waste landfill for ultimate disposal. The solid waste is landfilled at the properly licensed River Birch Landfill facility located in Avondale, LA. The Riverbirch Landfill is a permitted Resource Conservation and Recovery Act (RCRA) subtitle D landfill to accept Municipal, Commercial and Industrial Wastes, as well as other waste types.

The No-Action Alternative would not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below.

3.15.1 Proposed Action – Solid Waste Impacts

Development of the subject property under the Proposed Action would generate nonhazardous, construction-related solid waste such as construction debris, rubble, and stripped vegetation. Construction solid waste would be disposed off-site by the construction contractor. Removed soil would be retained on-site for use as fill material. The proposed action is not expected to generate large volumes of solid waste as compared to current operations at the facility. The increase in refuse solid

waste generation at MAF would be relatively minor under the Proposed Action. Recycling of paper, cardboard, plastic bottles and aluminum cans would continue as well.

For these reasons, the Proposed Action is expected to have a minor impact on solid waste; the impact is expected to not be significant.

3.16 Traffic Flow

The MAF is located on Old Gentilly Road, a four lane, two direction spur off of Hwy 90. Primary methods of travel to the MAF are by Interstates 10 and 510, as well as Chef Menteur (U.S. Highway 90) and Old Gentilly Road. All roads were designed for industrial traffic. There are no significant traffic flow issues currently in the area.

The No-Action Alternative will not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below

3.16.1 Proposed Action – Traffic Impacts

The Proposed Action would involve a temporary increase in traffic due to construction crews working at the facility. The MAF is served principally by U.S. Interstates 10 and 510, as well as U.S. Highway 90 and Old Gentilly Road. These roads are designed to handle large vehicles associated with industrial activities. The roads have sufficient capacity to handle increased traffic associated with Proposed Action. Construction projects substantially larger in scope have recently been completed at the MAF with no significant disruption to local traffic.

For these reasons, the Proposed Action construction period is expected to have a minor impact on traffic flow; the impact is expected to not be significant

3.17 Storage and Handling

Tenants within the MAF use a variety of hazardous materials in manufacturing and production activities. These substances include fuels, solvents, coatings, adhesive and metal working and cleaning solutions.

The No-Action Alternative would not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below

3.17.1 Proposed Action – Storage and Handling Impacts

Construction activities have the potential to use hazardous materials and generate wastes typical of construction projects. Materials, and associated waste, include paints, solvents, lubricants, adhesives and fuels. The MAF Environmental Services Group (ESG) would collect and dispose of all hazardous wastes associated with the construction activities when the project is conducted per direction of NASA. Tenants are responsible for management of hazardous waste generated by their operations or subcontractors. The hazardous wastes associated with NASA Programs and facility operations are routinely handled and disposed of by the MAF ESG. The facility has trained personnel and infrastructure to handle these waste streams.

The proposed action could have minimal storage of fuels, solvents and lubricants. These tanks would be designed in accordance with all National Fire Protection Agency (NFPA) regulations and industry standards for hazardous materials storage. These tanks, and the appropriate spill control measures, would be included in the facility Spill Prevention Countermeasure and Control (SPCC) Plan. These tanks would be included on the Tier II report which the facility is required to submit each year.

For these reasons, the Proposed Action is preliminarily expected to have a minor impact on hazardous materials and wastes; the impact is expected to not be significant.

3.17.2 Proposed Action - Hazardous Waste Management

No operations occur in the area that generate, store or otherwise utilize hazardous materials.

The No-Action Alternative will not have any impact on this resource

The Proposed Action construction period will use minimal amounts of hazardous materials such as fuels, paints and lubricants. All excess hazardous materials will be removed after the construction is complete and either used elsewhere or disposed of in accordance with local, state and federal requirements. Minimal amounts of hazardous materials may be used for maintenance of the facility. Any waste materials will be properly disposed of. No significant amount of hazardous waste, if any, is anticipated to be generated during the operation or decommissioning of this facility.

3.17.3 Proposed Action - Contaminated Areas

The MAF has areas with contaminated soils and groundwater within the facility boundaries. This contamination occurred as a result of past industrial activities. NASA has completed an RCRA Facility-Wide Investigation (RFI) to determine all areas of contamination at the facility. NASA has cleaned and closed many areas of contamination and has other areas currently under corrective action. NASA operates a pump and treat groundwater control system to prevent the spread of contamination to additional areas on-site and prevent migration of contaminants off-site.

The area covered by this assessment has no history of industrial activity and has not been identified as an area with contaminated soils or groundwater.

The No-Action Alternative would not have any impact on this resource. The expected impact on this resource that would be caused by the proposed action is described below.

3.18 Environmental Justice and Protection of Children

Presidential Executive Order (EO)12898 (*Federal Register* Vol. 59, No. 32, February 6, 1994) requires that federal agencies must include environmental justice as "…part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States."

Protection of children was initially issued in EO 13045, Protection of Children from Environmental Health Risks and Safety Risk (*Federal Register* Vol. 62, No. 78, April 23, 1997) and two subsequent amendments, EO13229 (*Federal Register* Vol. 66, No. 197, October 11, 2001) and EO 13045 (*Federal Register* Vol. 68, No. 78, April 23, 2003). This EO requires that federal agencies make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children, and ensure that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

No one lives within the grounds of the MAF. Even though the majority of the population in the area is comprised of minorities, the location of Village de l'Est, the primary residential area north of Chef Menteur HWY, is a distance of at least 4,800 ft from Building 350.

No low-income, minority populations or schools or other gathering places for children were identified as being located adjacent to, or near the MAF. Therefore, the No-Build Alternative would not adversely affect these populations.

3.18.1 Proposed Action – Environmental Justice and Protection of Children Impacts

The Proposed Action is expected to have only minor impacts on the resources most relevant for assessing impacts on human populations, which are air quality, noise, groundwater quality, surface water quality, and hazardous materials/wastes. The minor impacts that the Proposed Action is expected to have on these resources is not expected to adversely affect human populations. Therefore, the Proposed Action is not expected to have disproportionately high or adverse human health or environmental effects on minority or low-income populations. During construction, the subject property would be secured against unauthorized entry; therefore, the Proposed Action is not expected to result in environmental health or safety risks to children.

For these reasons, the Proposed Action is expected to have no impact on environmental justice or protection of children

3.19 Floodplains

EO 11988, Floodplain Management, requires Federal agencies to take action to minimize occupancy and modification of the floodplain, including the 100-year floodplain. Floodplains are lowland areas located adjacent to water bodies and provide critical protection for surrounding communities because of their ability to dissipate energy and water from flooding. Fill to floodplain results in the decrease of the effectiveness of a floodplain to mitigate flooding. Floodplains are discussed in terms of the 100-year and 500-year floodplain zones, corresponding to the 1% chance or 0.2% chance, respectively, of a flood occurring in any given year. Flood Insurance Rate Maps (FIRMs) are produced by the Federal Emergency Management Agency (FEMA) and are used to evaluate the location of the 100-year floodplain.

3.19.1 Proposed Action – Floodplains

Approximately five acres of the 100-year floodplain, according to Revised FEMA Flood Zone Maps of 2016, are located within the area to be leased for the Proposed Action. These areas are primarily drainage ditches and a low area near the Bldg. 450 flood pump station. It is not anticipated that any structures would be built in these areas. The design and construction of this project will avoid impacts

to the floodplain. Therefore, the Proposed Action would not impact the floodplain.

3.20 Resources Considered but Eliminated from Further Analysis

NASA uses a systematic and interdisciplinary approach to ensure that all pertinent resources are analyzed and potential effects are identified. Using this approach, the Proposed Action was determined to have no potential to adversely affect several of the resources that are required to be addressed. These resources were therefore eliminated from further analysis and discussion in this EA. Table 3-1 identifies the resources that were considered but eliminated.

TABLE 3-1
Resources Considered But Eliminated From Further Analysis

Resource	Rationale
Wetlands	The proposed area is classified as Fastlands by the Louisiana Department of Natural Resources. Accordingly, the Proposed Action would have no impact on this resource.
Housing, Schools, and Recreation	There are no housing, schools, or recreational areas in close proximity to the proposed area or the MAF. The closest residential development is located more than 4,800 ft north of MAF, with the Einstein Charter School approximately 1.3 miles north of the facility. Given these distances, the activities associated with the Proposed Action is not expected to impact housing or schools. Based on these factors, the Proposed Action would have no impact on housing, schools, or recreation.
Rail and Water Transportation	The proposed area does not involve the use of rail or water transportation. There are no railroads or waterways within the subject property. For these reasons, the Proposed Action would have no impact on rail or water transportation.
Aviation	The proposed area would not involve any mode of air transportation and would not affect airspace, require coordination with airfield operations, or require notice to the FAA prior to construction. Therefore, the Proposed Action would have no impact on aviation.

3.21 Cumulative Impacts

A “cumulative impact” is defined in CEQ NEPA regulations (40 CFR Part 1508.7) as “*the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions*”. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The Proposed Action would occur entirely within the boundaries of MAF and would have little potential to interact with any private sector actions in the surrounding area. The majority of the foreseeable development projects at MAF would involve construction/demolition for facilities, utilities, and other infrastructure in existing developed areas and, therefore, would have environmental impacts largely limited to temporary increases in noise, air emissions, and traffic. The planned development projects that have the potential to be implemented during the same time that the Proposed Action is implemented would not occur in the immediate vicinity of the subject property; therefore, there is little potential for adverse cumulative impacts on noise or air emissions to occur if the Proposed Action coincides with one or more of the planned projects. There is the potential for heavy traffic to occur if two or more construction/demolition projects are implemented at the same time; however, the cumulative impact would be temporary and could be minimized by making most or all MAF access gates and routes available during the work period. Because the sites where the planned projects would occur are already mostly developed, adverse cumulative impacts to soils, vegetation, or habitat would not occur. The combined effect of the Proposed Action and foreseeable development projects at MAF, regardless of their timing, would have positive cumulative impacts on the local economy resulting from short-term, temporary increases in employment and expenditures.

For these reasons, the Proposed Action is preliminarily expected to have minor cumulative impacts; the impacts are preliminarily expected to not be significant. Added jobs in the local economy would be a positive impact.

Under the No-Action Alternative, the subject property would not be leased or developed. Therefore, the No-Action Alternative would have no cumulative impacts

3.22 Summary of Environmental Consequences

The potential environmental consequences of the Proposed Action and No-Action Alternative are summarized in Table 3-1. The potential environmental consequences presented in Table 3-1 for the Proposed Action are preliminary and based on the information that is currently available for the proposed action. If, during the final facility design, significant changes are developed that contemplate courses of action that vary from those described in this EA, a separate NEPA analysis and documentation may be required to provide a comprehensive and accurate assessment of the potential environmental impacts of the Proposed Action. Significant changes to the current design and future operation are not anticipated.

TABLE 3-2

Summary of Potential Environmental Affects from Proposed Action

Resource	Proposed Action Impact
Air Quality	MINOR IMPACT
Noise	MINOR IMPACT
Topography	NO IMPACT
Soils	MINOR IMPACT

Geology and Hydrogeology	MINOR IMPACT
Land Use	MINOR IMPACT
Surface Water	NEGLIGIBLE IMPACT
Vegetation	MINOR IMPACT
Wildlife	NEGLIGIBLE IMPACT
Threatened and Endangered Species	NO IMPACT
Cultural Resources	NO IMPACT
Socioeconomics	MINOR POSITIVE IMPACT
Public and Occupational Health and Safety	MINOR IMPACT
Utilities	MINOR IMPACT
Solid Waste	MINOR IMPACT
Traffic Flow	MINOR IMPACT
Hazardous Materials and Wastes	MINOR IMPACT
Environmental Justice and Protection of Children	NO IMPACT
Floodplains	NO IMPACT
Cumulative Impacts	MINOR IMPACT

No Impact: The action would not cause a detectable change.

Negligible: The impact would be at the lowest level of detection; the impact would not be significant.

Minor: The impact would be slight but detectable; the impact would not be significant.

Moderate: The impact would be readily apparent; the impact would not be significant.

Major: The impact would be adverse; the impact has the potential to be significant. The significance of adverse and positive impacts is subject to interpretation and should be determined based on the final proposal. In cases of adverse impacts, the impact may be reduced to less than significant by mitigation, design features, and/or other measures that may be taken.

3.23 Conclusions

Based on the findings of this EA, the leasing and development of the subject property under the Proposed Action is expected to not have a significant impact on the quality of the human or natural environment. No mitigation measures are expected to be necessary for the Proposed Action. This EA supports a **Finding of No Significant Impact** (FONSI) for the Proposed Action. Accordingly, preparation of an Environmental Impact Statement is not required.

Section 4 Mitigation and Monitoring

This environmental assessment resulted in a Finding of No Significant Impact and no mitigation measures are required. Existing programs under the NPDES storm water management programs and the Spill Prevention Countermeasure Control Plans provide adequate monitoring of operations to ensure no operations have a significant impact to the environment.

SECTION 5

List of Preparers

Name	Organization	Primary Responsibility
Keith Savoy	NASA	NASA MAF Environmental Officer
Eric Stack	SYNCOM Space Services	Environmental Manager
Kyle Corvers	SYNCOM Space Services	Environmental Scientist

SECTION 6

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APPENDIX A

MSFC Center Director Authorization of Proposed Action

APPENDIX B

Public Involvement and Regulatory Agency Correspondence

The draft Environmental Assessment was public noticed on April 17th, 2019. No correspondence was received from the public or from regulatory agencies pertaining to this Environmental Assessment

A copy of the public notice is provided: