

John C. Stennis Space Center

2021

# SUSTAINABILITY REPORT and FUTURE PLAN







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## SECTION 1 EXECUTIVE SUMMARY

The Federal Government is committed to following sustainable principles that integrate environmental, societal, and economic solutions for present needs without compromising the ability of future generations to meet their needs. The National Aeronautics and Space Administration (NASA) sets and tracks its environmental goals through the Sustainability Report and Implementation Plan (SRIP), which recognizes the importance of aligning environmental practices in a manner that preserves, enhances, and strengthens NASA's ability to perform its mission indefinitely.

The John C. Stennis Space Center (SSC) is following suit with SSC's Sustainability Plan (SP), which promotes, maintains, and pioneers sustainable practices in all aspects of its mission. SSC's interdisciplinary, collaborative approach relies on the participation of all employees to develop and implement sustainability endeavors connected with the following goals:

- Reduce greenhouse gas (GHG) emissions.
- Design, build, and maintain sustainable buildings, facilities, and infrastructure.
- Leverage clean and renewable energy.
- Increase water conservation.
- Improve fleet and vehicle efficiency and management.
- Purchase sustainable products and services.
- Minimize waste and prevent pollution.
- Implement performance contracts for Federal buildings.
- Manage electronic equipment and data centers responsibly.
- Pursue climate change resilience.

The SSC SP details the strategies and actions that address the following objectives:

- Reduce costs.
- Increase energy and water efficiencies.
- Promote smart buying practices.
- Increase reuse and recycling while decreasing waste.
- Benefit the community.
- Meet or exceed NASA SRIP sustainability goals.



*The North Reception Area is one of two gateways to SSC.*



## SECTION 2 INTRODUCTION

### 2.0 Overview

SSC recognizes the importance of sustainability in preserving, enhancing, and strengthening NASA’s ability to perform its mission indefinitely. The SSC SP reflects the Center’s commitment to innovation, leadership in sustainability, and support to NASA’s SRIP. SSC’s sustainability vision exemplifies the importance the Center places on sustainability:

*“John C. Stennis Space Center will promote, maintain, and pioneer sustainable practices in all aspects of our mission, striving to be an agency leader in everything we do.”*

The SP lays the foundation for realizing this vision by incorporating sustainable practices into key Center activities. The SP outlines strategies and actions that guide SSC in helping the Agency achieve the NASA SRIP goals.

### 2.1 TEAM STRUCTURE

The SSC Sustainability Working Group (SWG) meets monthly to establish Center goals and develop strategies to reach those goals. The roles and responsibilities of the SWG are outlined in Appendix 1.

### 2.2 SUCCESS CRITERIA











Throughout the year, the Center tracks its efforts in helping the Agency achieve each long-term SRIP goal by measuring SSC progress toward targets derived from those goals. The SSC Annual Report includes a goal scorecard that gives a snapshot of SSC’s sustainability performance for that year.



***Leadership in Energy and Environmental Design (LEED) principles were followed in the design and construction of SSC’s LEED Gold Building.***



## SSC Sustainability Goals

	<p><b>GHG Emissions Reduction</b> Reduce Scope 1&amp;2 GHG Emissions by 37.6% from FY 2008.</p>
	<p><b>Sustainable Buildings</b> Acquire 26% of gross square footage (GSF) in Buildings to be Sustainable in FY21. Reduce energy intensity by 0.5 percent in FY 2021 from FY 2020.</p>
	<p><b>Clean and Renewable Energy</b> At least 7.5% of the Center’s total electricity usage will come from renewable energy in FY21.</p>
	<p><b>Water Use Efficiency and Management</b> Reduce potable water consumption intensity by 0.5% in FY21 from FY20.</p>
	<p><b>Fleet Management</b> Reduce 10% of Petroleum Consumption in FY21 from FY19. Increase by 0% for Alternative Fuel Usage in FY21 from FY19.</p>
	<p><b>Sustainable Acquisition</b> Complete 18% of contract actions and 20% of obligations (in dollars) as sustainable. Train acquisition personnel and monitor the contracting process.</p>
	<p><b>Pollution Prevention and Waste Management</b> Divert 50% non-hazardous waste and send less than 50% to treatment and disposal facilities in FY21.</p>
	<p><b>Energy Performance Contracting</b> Implement performance contracts for Federal buildings. Completed a \$2.2 million Utility Energy Service Contract (UESC) project in FY21.</p>
	<p><b>Electronics Stewardship</b> Meet energy efficiency requirements for 100% of newly purchased or leased equipment. Dispose of 100% of electronic equipment using environmentally sound methods of reuse, donation, recycling, transfer, sale, or demanufacturing.</p>
	<p><b>Climate Change Resilience</b> Evaluate climate change risks and vulnerabilities as they relate to habitat change. Collaborate with regional partners to support environmental adaptation strategies using NASA’s scientific data and SSC’s expertise.</p>



## SECTION 3 SUSTAINABILITY GOALS AT SSC

### 3.1 GHG EMISSION REDUCTION



#### Goal Description

NASA has set FY 2025 GHG emission reduction goals of 47 percent for scopes 1 and 2 emissions and 32 percent for scope 3 emissions relative to an FY 2008 baseline. The efforts of scopes 1 and 2 include investing directly in more efficient equipment and renewable energy, performance contracting, replacing or renewing inefficient legacy buildings, and transportation fuel management. The goal of SSC for FY 2021 is to reduce scopes 1 and 2 GHG emissions by 37.6 percent from FY 2008. GHG emissions are tracked at NASA Headquarters (HQ) level.

#### 3.1.1 SSC Strategies and Actions

SSC is committed to meeting or exceeding scopes 1, 2, and 3 GHG emissions reduction targets established in the NASA SRIP by proactively addressing areas of infrastructure, energy consumption, renewable energy production, and transportation logistics. These objectives will be achieved by:

##### Scopes 1 and 2 GHG Emissions

- Continuing to identify SSC General Services Administration (GSA) fleet vehicles that are no longer necessary and can be added to a pool to be of greater use or available for lease. Fewer GSA vehicles in use will reduce the number of gallons of petroleum used and therefore decrease GHG production.
- Replacing light-duty vehicles with low GHG emitting vehicles. **SSC currently has 277 GSA vehicles, 20-25 of which are hybrids.**
- Promoting and implementing energy conservation measures.
- Increasing understanding and use of renewable energy through events such as **Energy Awareness Day** and **Earth Day.**

##### Scope 3 GHG Emissions

- Eliminating redundant deliveries by optimizing order and delivery processes at SSC.
- Reducing employee commuting by pursuing IT solutions to expand telework programs.
- **Encouraging employees to participate in vanpools and carpools such as the “Commute with Enterprise.”**

## 3.2 SUSTAINABLE BUILDINGS



### Goal Description

NASA will operate and maintain its buildings in a manner that reduces energy, water, and material consumption, thereby achieving a reduction in operations and maintenance (O&M) costs. SSC's goal is to increase gross square footage of sustainable buildings to 26.0 percent in FY 2021.

### 3.2.1 SSC Strategies and Actions

SSC will strive to meet or exceed the Agency's Sustainable Building goals by meeting the High Performance and Sustainable Buildings Guiding Principles for cost savings and increased efficiencies; operating and maintaining its buildings in a manner that reduces energy, water and material consumption; improving data center efficiency; reducing or consolidating unnecessary infrastructure; and implementing construction standards for sustainable building design across the Center. These goals will be achieved by:

- Promoting and implementing energy conservation projects.
- Increasing employee awareness of unnecessary energy consumption to reduce costs.
- Ensuring subject matter experts support the Center's SWG to promote energy and water conservation.
- Auditing the energy impacts of facility operations and systems throughout the Center.
- Developing a multi-phased plan for the construction and renovation of facilities to eliminate or reduce the environmental impacts of buildings, improve building performance, reduce long-term O&M costs, and increase worker productivity.
- Improving existing buildings to meet efficiency requirements. Currently, SSC has three (3) sustainable buildings (8000, 3418, and 1111). **Buildings 3225 and 3226 are in the process of getting LEED certified.**
- **Identifying and implementing buildings that are 5,000-plus square feet to be energy, waste, or water net zero by FY 2025.**
- **Installing ultraviolet lights inside SSC Heating, Ventilation and Air Conditioning (HVAC) systems to increase indoor air quality.**



*Buildings 3225 and 3226 are on their way to earning LEED certification.*



## Building Upgrades and Commissioning

Facility Comprehensive Evaluations (FCEs) are performed on 25 percent of SSC’s goal subject facilities per year, thus covering 100 percent of such facilities every four (4) years. FCEs focus on characterizing current facility infrastructure and system performance, identifying energy and water conservation measures (ECMs and WCMs) for consideration, and generating cost and schedule estimates for those conservation measures. Retro-Commissioning also offers an opportunity to improve the efficiency of an existing building’s equipment and systems. These building upgrades can include HVAC controls, testing, adjusting, balancing, heat exchanger equipment, and heating and cooling systems. Below are the sustainability projects implemented for FY21.

### **Building Sustainability Progress**

IAQ	Upgrading site-wide filters from MERV 8 to MERV 13.
1103	Reduced unnecessary cooling of unoccupied rooms. Set Domestic Water Heater temperature back to site standard or lower. Replacing an obsolete air- and water-cooled chiller and associated equipment with a new high-efficiency air-cooled chiller and pump on an energy saving variable primary system.
1104	Identified existing boilers to be replaced with high-efficiency condensing boiler to reduce natural gas consumption. Identified solar-assisted water heater to be repaired. Replaced lights in chiller area.
3101	Installed a new highly reflective cool roof to improve insulation and reduce workload for HVAC system. Existing building commissioning recommended replacement of chiller #1, which would save energy and save O&M cost. Repaired Digital Energy Monitor (DEM). Plan to recommission building every five (5) years. VAV 4 and 12 cooling and heating Min-Max updated.
3225/3226	In the process of obtaining LEED Certified. Implemented energy conservation measures recommended in the existing building commissioning document. (For example, modified duct work for improved air flow and indoor air quality.)
4400	Installed a variable frequency drive on a large motor and completed piping modifications under a UESC.
4995	Executed energy conservation measures recommended in the existing building commissioning document.
8000	Exterior lighting retrofitted to Light-emitting Diode (LED).
Test Complex	Implemented LED lighting upgrades.

*Existing building commissioning has been completed for 1103, 1104, 3101 3225, 3226, and 4995.*

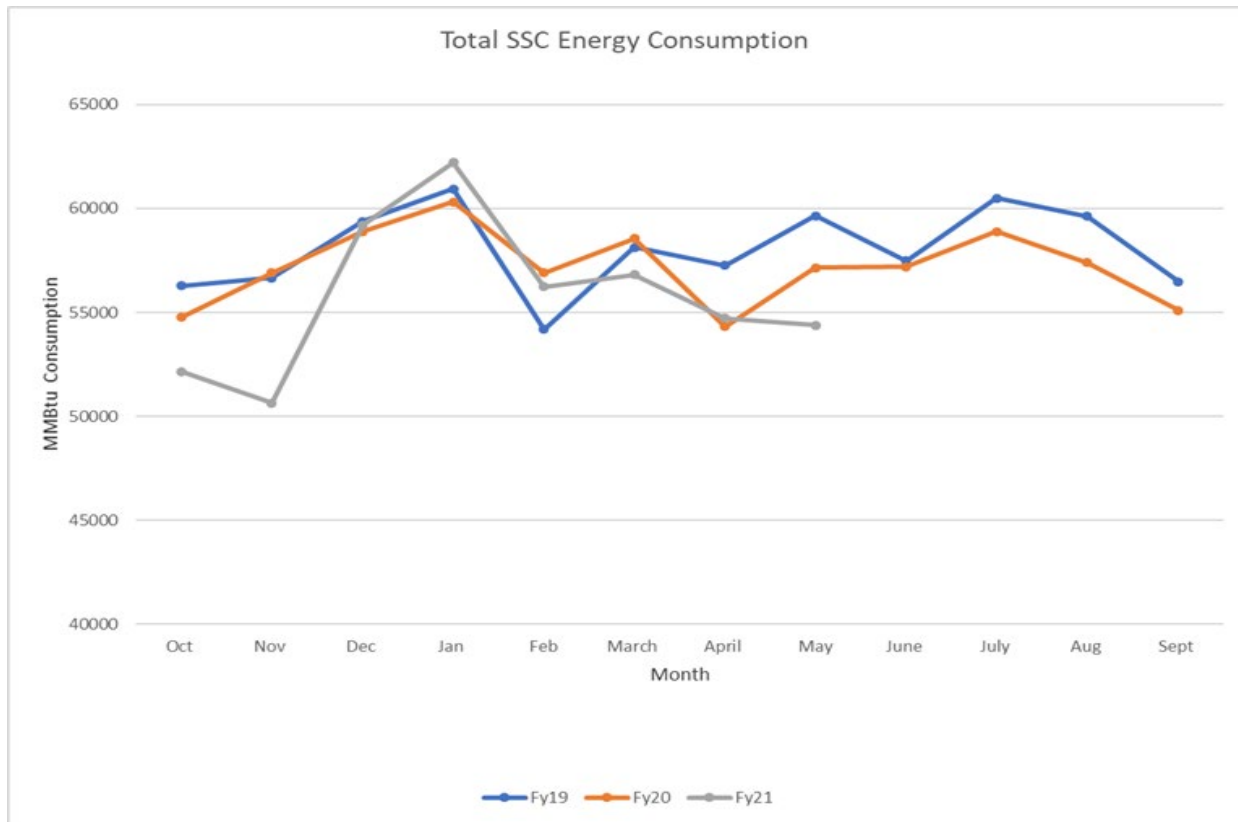




New construction projects are designed to incorporate sustainability principles such as maximizing internal natural lighting, selecting carpet that minimizes volatile organic compound emissions, selecting low-flow restroom fixtures, and landscaping with native species. The SSC Electrical Standard now requires all new construction to install DEMs, DWMs, and high-efficiency LED lighting. Many SSC facilities already use motion sensors to control lighting, automated temperature set points for worker comfort, and occupancy sensors (e.g. carbon dioxide sampling) to detect how often a facility’s internal air needs to be changed/refreshed.

Employees are encouraged to turn off computer monitors when not in use, unplug mobile devices when fully charged, and completely shut down their computers during off-shift hours. All windows at SSC are required to be properly caulked, and most facilities have windows that remain closed or are sealed shut. Doors without weather stripping are reported for maintenance. Small appliances and personal computers are procured with energy efficiency in mind. HVAC systems that have reached the end of their serviceable life are being replaced with much more efficient, software-driven systems and subsystems.

### Energy Consumption



This graph shows the total energy consumption at SSC for FY 19, 20, and 21. Each year shows a general trend of less energy use. Even though many employees have continued to telework due to COVID-19, the energy use did not decrease drastically because most buildings need to remain operational. Additionally, some of the employees who have returned to SSC have been distributed throughout more buildings to ensure social distancing guidelines are being met.

## 3.3 RENEWABLE ENERGY



### Goal Description

SSC aims to maximize the use of clean energy in the forms of renewable electric energy and alternative energy. The goal for FY 2021 is to achieve 7.5 percent of renewable electricity use rate.

### 3.3.1 SSC Strategies and Actions

The Center will strive to meet or exceed the Agency's energy goals by expanding SSC's clean and renewable energy position. Through the years, SSC has made limited use of solar hot water heating systems and has recently begun looking for cost-effective heat recovery options through combined heat and power (CHP) systems. Currently, SSC achieves renewable energy through photovoltaic (PV) lighting at Buildings 3418 and 4120. The Agency's renewable energy goals will be achieved by:

- Increasing SSC's renewable energy generation through solar farms.
- Pursuing Agency funding opportunities to expand SSC's solar energy footprint.
- Investigating cost effective geothermal and CHP applications.
- Increasing employee awareness of the uses of renewable and clean energy.
- Maintaining an ongoing synergistic atmosphere within the SSC SWG, including discussions with utility partners.



*A solar water heater outside B-1104 is used to lower energy costs associated with domestic heating.*



*Photovoltaic and LED light poles in parking lots. Pictured here are B-4124 and B-8000 parking lots.*



## 3.4 WATER USE EFFICIENCY AND MANAGEMENT



### Goal Description

NASA has set the goal of a 0.5 percent reduction of water intensity in FY 2021 from FY 2020.

#### 3.4.1 SSC Strategies and Actions

The Center will strive to meet or exceed the Agency's water use efficiency and management goals while maintaining water quality standards. The Center will also act in accordance with stormwater management guidance provided by the Agency. These objectives will be achieved by:

- Gathering information and educating employees on water usage at SSC.
- Reducing the demand on the water system by focusing on the primary water users and developing specific projects to reduce their water utilization at the point of consumption.
- Reducing flushing through water distribution system alterations. **Installed a series of five (5) automatic flushing systems on SSC's potable water distribution system. This installation by SSC's Certified Water Operators reduces the amount of water flushed at the hydrants, while keeping the chlorine residual higher at the dead-end lines and far reaching parts of SSC's potable water distribution system.**
- Maintaining the ongoing synergistic atmosphere within the SSC Water Working Group, including discussions with utility partners.
- Continuing to upgrade potable water systems. **Phases 2 and 3 of Potable Water Contract are in progress. Phase 2 includes replacing old, outdated artisan wells with new pumped wells. The declining nature of the wells indicates that this replacement is required to ensure a reliable and efficient supply for the potable water system, reducing undetected leaks. Phase 3 supports an installation of new Smart Meters at some buildings.**
- Reducing overall potable water consumption. **As of Quarter 2 FY 2021, SSC recorded a 69.4% reduction in water consumption intensity from its baseline in 2007. The SSC Electrical Standard requires all new construction to install DWMs, providing ease of access for monitoring and maintenance.**

## 3.5 FLEET MANAGEMENT



### Goal Description

SSC aims to improve fleet and vehicle efficiency and management. This includes determining the optimum fleet inventory by eliminating unnecessary or non-essential vehicles.

### 3.5.1 SSC Strategies and Actions

The Center will strive to meet or exceed the Agency's fleet management goal by tracking fleetwide average GHG emissions and replacing existing vehicles that are nearing the end of their service life with more fuel-efficient vehicles. SSC will achieve these objectives by:

- Replacing existing vehicles nearing the end of their service life with more fuel-efficient vehicles.  
Procuring more hybrid and electric vehicles. **SSC currently has charging stations at the Test Complex to power golf carts. Currently, SSC has approximately 277 GSA vehicles, 20-25 of which are hybrids, and plans to acquire more hybrid vehicles in the future. These hybrids feature a city fuel efficiency of 43 miles per gallon.**
- Promoting ridesharing to meetings. Whether government-owned vehicles are taken for travel or a day meeting, carpooling is encouraged. **SSC currently has four (4) van pools available for employees to ride-share. In total, 38 passenger vans are available on site for employee ride sharing use.**
- Increasing the use of telecommunications and software for conducting online meetings.
- While the effects of COVID-19 have impacted the ability to ride-share and carpool, GHG emissions have been greatly decreased due to the limited amount of personnel on site. Additionally, fuel savings have resulted from the minimal travel to and from work of teleworking personnel.



*Hybrids offer fuel efficient travel and carpooling around site.*





## 3.6 SUSTAINABLE ACQUISITION



### Goal Description

NASA ensures that environmental performance and sustainability factors are considered to the maximum extent practicable for applicable procurements in the planning, award, and execution phases of acquisition. The goal for FY 2021 is to have 18% of contract actions and 20% of obligations qualify as sustainable.

### 3.6.1 SSC Strategies and Actions

The Center will strive to meet the outlined Agency acquisition goals by assessing current systems to identify potential process improvements that will ensure bio-preferred/bio-based products and services are procured. This will be achieved by:

- Increasing sustainable purchasing awareness and providing practical resources for environmentally preferred products and services.
  - **NASA Direct: The Procurement Office follows the requestor's certification on Section 3 (Environmental/Sustainable Acquisition) of NF 1707 (Special Approvals and Affirmations of Requisitions.) An Environmental Management representative reviews each NF1707 prior to it reaching the Procurement Office.**
  - **S3 (Facilities Contractor): S3 Buyers are trained to recognize and understand green/sustainable acquisition purchases. However, it is the requestor's responsibility to request and/or identify an item that can be purchased as green on the purchase requisitions. If the requestor determines that purchasing an item as green is not cost effective or incompatible, the requestor is responsible for contacting the S3 Environmental Department for a formal waiver, which is then completed, attached to the purchase requisition, and, if approved, flowed down to the buyer.**
- Monitoring acquisitions in order to measure environmentally preferred procurement progress.
- Implementing the SSC asset management software to capture green purchases as soon as a requestor makes a purchase (in the Work Order, Purchase Request, and Purchase Order) and control formal waivers.
- Modifying SSC acquisition process to help requestors identify sustainable goods and services.
- Reviewing contracts to ensure they contain applicable sustainable acquisition clauses.
- Reviewing and updating purchasing processes, policies, and programs where needed to ensure federally mandated sustainable products and services are included in all relevant acquisitions.

## 3.7 POLLUTION PREVENTION AND WASTE REDUCTION



### Goal Description

SSC aims to advance waste prevention and pollution prevention (P2). The Center's goals are to annually divert at least 50 percent of non-hazardous Construction and Demolition (C&D) debris; divert at least 50 percent of non-hazardous solid waste, including food and compostable material; and pursue opportunities for net-zero waste or additional diversion. The vast majority of SSC's P2 efforts are achieved through composting and the recycling of materials at an offsite facility.

### 3.7.1 SSC Strategies and Actions

The Center will continue to strive to meet the Agency's P2 and Waste Management goals. SSC will achieve this by:

- Exploring creative diversion methods to dispose of excess property.
- Identifying waste streams and evaluating reduction opportunities in accordance with SSC's Hazardous Materials, Hazardous Waste, and Solid Waste Plan.
- Exploring waste-to-energy systems for possible SSC applications.
- Exploring compostable and organic material recovery approaches. Activities include composting of wood waste and vegetative debris, which is used as mulch throughout SSC.
- Adopting best practices for solid waste diversion. Waste diversion and pollution prevention efforts have increased the life expectancy of the SSC onsite landfill by nine (9) years (as of 2/15/18).
- Continuing outreach and educational efforts at SSC, emphasizing personal responsibility for waste diversion. Federal goals relating to waste diversion and the responsibility of employees at SSC in meeting those goals are communicated through environmental awareness events such as Earth Day, Orbiter/Lagniappe publications, broadcasts on television monitors in public areas and elevator postings, and other avenues.
- **Installed more than 20 water bottle filling stations on site to prevent plastic water bottle waste.**
- **Procured aerosol can crusher, which minimizes hazardous waste and increases scrap metal recycling. This device depressurizes aerosol cans, allowing them to be safely recycled and avoid the landfill.**



*Recycling is the first step to providing a green and sustainable environment for all the wildlife at SSC.*

## 3.8 ENERGY PERFORMANCE CONTRACTS



### Goal Description

SSC looks to implement performance contracts for its buildings and set annual targets regarding performance contract implementation.

### 3.8.1 SSC Strategies and Actions

SSC completed its first UESC with Mississippi Power Company on the High Pressure Industrial Water (HPIW) system. This SSC UESC has a projected payback of six (6) years. The scope of work included:

- The replacement of the HPIW system jockey pump with a high-efficiency pump and motor system.
- This project was unique because it was more of a process type of project than a standard facility type of project.
- The project also included the replacement of leaking valves and the bypass of leaking pipes underground.
- This was a Rocket Propulsion Test (RPT) funded project.

SSC is implementing a \$2.2 million UESC in FY21 that is HQ-funded and has an estimated payback of 10 years. The scope of work includes:

- Site-wide utility upgrades to LED lighting.
- New chiller installation at E Complex Test Operations Building.
- New chiller installation at Propulsion Test Office Building.
- Site-wide energy management control upgrades to the HVAC systems.



*B4400 UESC Implementation: Installation of a high-efficiency pump and motor assembly.*

## 3.9 ELECTRONICS STEWARDSHIP



### Goal Description

SSC promotes electronics stewardship and ensures procurement preference for environmentally sustainable electronic products. SSC aims to establish and implement policies to enable power management, duplex printing, and other energy-efficient or environmentally sustainable features on all eligible agency electronic products. The center also employs environmentally sound practices with respect to the Agency's disposition of all agency excess or surplus electronic products.

### 3.9.1 SSC Strategies and Actions

SSC will continue to meet Agency goals in electronic stewardship. The two main approaches are procurement of ENERGY STAR® equipment and through an Electronic Equipment Diversion Plan.

The SSC Sustainable Acquisitions Plan promotes and enforces the requirement to purchase ENERGY STAR® products. This is achieved through outreach programs and internal training.

The Electronic Equipment Diversion Plan provides a policy process and infrastructure that diverts all electronic equipment from disposal in a landfill. This is achieved by:



*B-2 Test Stand at the SSC Test Complex.*

- **Designating a property custodian for each building at SSC who is responsible for bringing all electronic equipment that is ready for redistribution, reuse, or recycling to the redistribution center. Each device that enters the redistribution center is tagged for redistribution, reuse, or recycling.**
- **Ensuring that no electronics are permitted in the SSC landfill.**
- **Managing all decommissioned laptops and computers by ensuring they are wiped clean, shredded, and recycled. This applies to both NASA-owned and Contractor-owned computers.**

All old electronics are transported to the Michoud Assembly Facility, where they are recycled through the UNICOR recycling program.



## 3.10 CLIMATE CHANGE RESILIENCE



### Goal Description

SSC strives to evaluate climate change risks and vulnerabilities as they relate to habitat change. These changes will be directly correlated to future land use capabilities for Centers and risk to infrastructure will be assessed. NASA will continue to develop and apply a robust local adaptation workshop process at its installations by partnering to help other agencies and local communities benefit from the adaptation expertise it continues to develop.

#### 3.10.1 SSC Strategies and Actions

The SSC Records Retention Center was designed after Hurricane Katrina and constructed to provide an environment for safely storing SSC records at a central location that could withstand hurricane force winds without a high level of risk to the material and personnel. The functional building also provides protection of the material from fire, water, and manmade threats. Furthermore, the Emergency Operations Center was built after Hurricane Katrina. It was designed to withstand extreme winds and with a 100-year flood plan in mind.

The test area can use the HPIW generators to switch over and provide power to critical facilities if needed. Additional generated power can then be provided back to the grid.

SSC has an Integrated Natural Resource Management Plan to monitor and protect the abundant natural resources in its area. Those natural resources include plant life, wildlife, wetlands, soils, and timber. All projects at SSC are coordinated through NASA Environmental Management to ensure impacts to natural resources can be thoroughly assessed, eliminated, or minimized.



*A-2 Test Stand in the SSC Test Complex.*

### 3.11 SHORT-TERM SUSTAINABILITY PLAN

Over the next 5 to 10 years, the SWG will continue to develop goals, strategies, and actions that will support the SSC SP, NASA's Sustainability goals, and other Federal mandates. This includes but is not limited to:

- The new Engineering Operations facility will be a net-zero compatible, high performance, sustainable building.
- Further use of UESCs.
- Further development of Energy Service Performance Contracts (ESPCs).
- The Navigation Locks located at the South Entrance are currently experiencing leaking, which is causing the canal pumps to run often to regulate the water level. With the help of the Army Corp of Engineers, a plan to remedy this situation has been put into action. Through the implementation of this plan, SSC can save approximately 20,000 kW of energy.
- Optimization of Admin Area Central Utility Building.



*SSC strives to meet and exceed all goals set forth by NASA to become a more sustainable and energy efficient center.*

## 3.12 LONG-TERM SUSTAINABILITY PLAN

Working toward the future, 10 years and beyond, the SWG will continue to promote, maintain, and pioneer sustainable practices in all activities at SSC. Key to the success of this vision is an interdisciplinary, collaborative approach that fosters the commitment of civil servant and contractor personnel from across the Center.

Long-Term Sustainability Plan goals include but are not limited to:

- Building a Central Campus that consolidates several buildings and services into an efficient and walkable campus.



*SSC occupies 14,000 acres and houses more than 40 federal and state agencies, academic institutions, private organizations, and technology companies.*





## SECTION 4 CONCLUSION

The SSC Sustainability Plan lays the foundation for realizing SSC's vision to promote, maintain, and pioneer sustainable practices in all its activities by incorporating goals, strategies, and actions that support this vision, NASA's SSPP goals, and other Federal mandates. In summary, the SP charts a course that will help SSC:

- Reduce GHG emissions.
- Design, build, and maintain sustainable buildings, facilities, and infrastructure.
- Use increasing amounts of clean and renewable energy.
- Improve the Center's water conservation position.
- Improve fleet and vehicle efficiency and management.
- Purchase sustainable products and services.
- Minimize waste and prevent pollution.
- Implement performance contracts for Federal buildings.
- Manage electronic equipment and data centers responsibly.
- Pursue climate change resiliency.

As we embark on our mission of sustainability, employees at all levels must be responsible and accountable for integrating sustainability into their day-to-day activities. With everyone's commitment and strategic sustainability decision making, SSC will continue to ensure that NASA resources are neither diminished nor wasted, thus preserving our ability to perform our mission – today and into the future.



*Leadership in Energy and Environmental Design (LEED) principles were followed in the design and construction of SSC's LEED Gold Building.*





## APPENDIX 1 SUSTAINABILITY WORKING GROUP HIERARCHY

### ROLES AND RESPONSIBILITIES

#### SSC Sustainability Program Manager:

Advocates for sustainable practices throughout Center management.

#### SSC Sustainable Environment Management System Steering Committee:

Directs the overall strategy and implementation of the Sustainability Plan. The Committee also manages the efforts of the sustainability goal Point of Contact (POC) and goal champions.

## APPENDIX 2 ACRONYMS

<b>BTU/GSF</b>	British Thermal Units per gross square feet	<b>LEED</b>	Leadership in Energy and Environmental Design
<b>C&amp;D</b>	Construction and Demolition	<b>NASA</b>	National Aeronautics and Space Administration
<b>CHP</b>	Combined Heat and Power	<b>NF</b>	NASA Form
<b>DEM</b>	Digital Energy Monitor	<b>O&amp;M</b>	Operations and Maintenance
<b>ECM</b>	Energy Conservation Measures	<b>P2</b>	Pollution Prevention
<b>EO</b>	Executive Order	<b>POC</b>	Point of Contact
<b>ESPC</b>	Energy Service Performance Contract	<b>PUE</b>	Power Usage Effectiveness
<b>EUI</b>	Energy Use Index	<b>PV</b>	Photovoltaic
<b>FCE</b>	Facility Comprehensive Evaluations	<b>RPT</b>	Rocket Propulsion Test
<b>FY</b>	Fiscal Year	<b>SA</b>	Sustainable Acquisition
<b>GSA</b>	General Services Administration	<b>SSC</b>	John C. Stennis Space Center
<b>GHG</b>	Greenhouse Gas	<b>SRIP</b>	Sustainability Report and Implementation Plan
<b>HQ</b>	Headquarters	<b>SP</b>	Sustainability Plan
<b>HPIW</b>	High Pressure Industrial Water	<b>SWG</b>	Sustainability Working Group
<b>HVAC</b>	Heating, Ventilation and Air Conditioning	<b>UESC</b>	Utility Energy Service Contract
<b>LED</b>	Light-emitting Diode	<b>WCM</b>	Water Conservation Measures



## APPENDIX 3 REFERENCE DOCUMENTS

Energy Independence and Security Act 2007  
Energy Policy Act of 2005  
Executive Order 13834, Efficient Federal Operations  
Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis  
High Performance Sustainable Building Guiding Principles  
NASA Strategic Sustainability Plan  
NPD 1000.5B, Policy for NASA Acquisition  
NPD 6000.1D, Transportation Management  
NPD 8500.1C, NASA Environmental Management  
NPD 8820.2D, Design and Construction of Facilities  
NPD 8831.2E, Maintenance and Operations of Institutional and Program Facilities and Related Equipment  
NPR 3600.2A, NASA Telework Program  
NPR 6200.1 D, Transportation Management  
NPR 8530.1B, NASA Sustainable Acquisition  
NPR 8553.1B, NASA Environmental Management System  
NPR 8570.1A, NASA Energy Management Program  
NPR 8580.1A, Implementing the National Environmental Policy Act and Executive Order 12114  
NPR 8590.1A, Environmental Compliance and Restoration Program  
NPR 8810.1A, Center Master Planning  
NPR 8810.2A, Master Planning for Real Property  
NPR 8820.2G, Facility Project Requirements  
SCWI 8500-0003-ENV, SSC Sustainable Acquisitions Plan



***SSC is aligning its environmental practices in a manner that preserves, enhances, and strengthens NASA's ability to perform its mission indefinitely.***