NASA Infrastructure Challenges and Priorities:

Opportunities in the FY23 President's Budget Request

The Challenge

NASA's infrastructure provides the foundational capabilities for the Nation's space programs, to include Artemis missions, vital scientific research, and partnerships with commercial companies, interagency partners, and international agencies. NASA's unique testing and engineering capabilities are enabled by highly technical facilities, laboratories, and equipment. Most of NASA's assets are relics of the Apollo-era and are in a state of degradation that puts missions and human lives at risk.

5,500+
Total Assets

~56,000+
People Housed

83%
Beyond Designed Life

The Opportunity

The President's FY23 Budget Request provides NASA the investments to sustain and modernize mission-critical facilities and assets. Supporting the request ensures NASA can invest in the most essential infrastructure required for the success of Artemis and other scientific and aerospace missions.

Asset sustainment and modernization is provided through the Construction of Facilities (CoF) program in the Construction and Environmental Compliance and Restoration (CECR) budget.

$348.1M
CoF Request

6
Major Projects

20
Minor Projects

Major Projects

Wallops Flight Facility (VA)
Wallops Island Causeway Bridge

Single point of access for the Wallops launch site. Without this project, resupply missions to ISS and commercial launch activities would be canceled or rerouted to other facilities at an increased cost to programs and risk to mission.

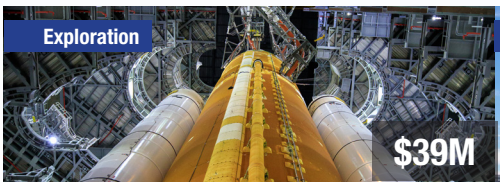
**costs are susceptible to increase as project planning is reviewed by independent party*

Johnson Space Center (TX)
Aircraft Logistics & Operations Facility

Facilities are degraded to the point that mission goals are at risk, due to concerns over reliability, usability, and the high cost to maintain current facilities. This project replaces 14 buildings, modernizes operations, and is expected to pay for itself in 18.5 years.

Kennedy Space Center (FL)
O&C South Wing Electrical Distribution

Current electrical systems are challenged to support the planned Artemis launch cadence, including SLS, Orion, Gateway, and the lunar lander. The antiquated electrical distribution is insufficient to support modern payload processing, logistics, and control room operations.

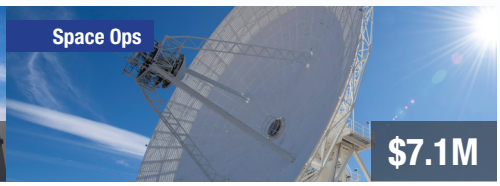


Kennedy Space Center (FL)
Launch Infrastructure for SLS

This project modifies shuttle-era facilities to accommodate the SLS and is an absolute requirement to execute the Artemis missions. These changes adapt critical systems for nitrogen, temperature and humidity control, air supply, fabrication, and emergency evacuation to meet SLS requirements and ensure mission success.

Kennedy Space Center (FL)
LCC & VAB HVAC Replacement

Degraded HVAC systems in KSC's Launch Control Center (LCC) and Vehicle Assembly Building (VAB) put missions at risk. The systems ensure workable conditions for personnel and environmental control for vital systems like monitoring, fire control, and computing, which support critical operations, like launch countdowns, controls, and ground communications.



Jet Propulsion Laboratory (CA)
Deep Space Network Antennae

The project upgrades the global network of antenna facilities that provide deep space radio and optical communications for exploration missions. Facilities in Madrid, Spain and Goldstone, California require construction of essential systems, like flood controls, HVAC, and fire detection, to be fully operational. Artemis and all other deep space missions require these capabilities.

Minor Projects

Mission Infrastructure

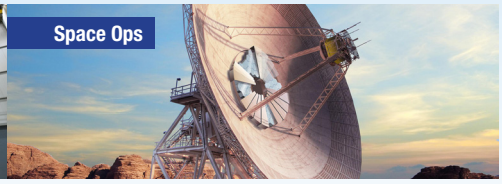
The FY23 President's Budget Request provides for mission-critical investments in three, key facilities. The Booster Fabrication Facility and Michoud Assembly Facility are essential to construct the rocket systems necessary for all Artemis missions. The Goldstone Deep Space Communication Complex provides indispensable radio and optics capabilities that enable deep space travel. All three facilities need essential upgrades to support the goal of Artemis to explore further into space than ever before.

Kennedy Space Center (FL)
Booster Fabrication Facility

$3.6M	Renovated Interior
$4.7M	Upgraded HVAC
$3.0M	Refurbished Cranes

Marshall Space Flight Center (LA)
Michoud Assembly Facility

$2.0M	Upgraded Cranes
$2.8M	Fire Suppression System
$2.2M	Better Steam System



Jet Propulsion Laboratory (CA)
Goldstone Communication Complex

$4.7M	Facility Modifications
$3.5M	Data & Signal Processing
$6.0M	Fire Detection System

Horizontal Infrastructure

NASA missions depend on a 60+ year old foundation of infrastructure that requires repairs and replacements to ensure safety, reliability, sustainability, and readiness. By definition, horizontal infrastructure sustains all mission activities at a center. These investments also focus on themes that are a critical priority to NASA's mission success.

Safety & Risk to Human Life

NASA's degraded electrical systems and buildings pose imminent danger to the workforce. Arc flashes and crumbling facilities are routine problems in occupied and mission-critical buildings.

$3.0M	SSC	Mitigate sitewide low voltage arc flash threat
$7.8M	AFRC	Repair Center-Wide Building Envelopes

Roadways & Access to Facilities

NASA's facilities are intentionally placed in remote areas to ensure a safe distance from the public and other assets. Longer roads and bridges are required to ensure access and are often singular points of access for key sites.

$7.5M	GSFC	Repair Greenbelt Parkway Bridge

Utilities Cannot Sustain Launch & Mission Cadence

NASA's mission tempo to reach Artemis milestones and expand scientific discoveries is not possible with the current, antiquated electrical, water, and other utility systems. Modernization and repairs are necessary to ensure facilities have adequate power and water needed to sustain mission activities.

$2.9M	JPL	Replace the switchgear in Buildings 170 & 158
$3.5M	JPL	Replace the switchgear in Building 230
$3.5M	ARC	Replace Ames Power Management System
$7.3M	GRC	Repair High Voltage Electrical Transformers
$8.0M	GRC	Renew Antiquated High Power Cables
$1.7M	LARC	Repair Utility Tunnels 1 & 2 (Phase 1)
$9.8M	LARC	Repair the Central Steam Plant
$8.0M	MSFC	Replace the water systems in Building 4708

A transformer fire at GRC, caused by degraded electrical equipment, must be repaired to sustain mission work

The FY23 President's Budget Request sustains the critical infrastructure needed for Artemis missions and America's space and aeronautics programs.