NASA
Office of Inspector General

NASA's Launch Infrastructure

June 22, 2026

IG-26-010

Office of Inspector General

To report fraud, waste, abuse, or mismanagement, contact the NASA OIG Hotline or call at 800-424-9183 or 800-535-8134 (TDD). You can also write to NASA Inspector General, P.O. Box 23089, L'Enfant Plaza Station, Washington, DC 20026. The identity of each writer and caller can be kept confidential, upon request, to the extent permitted by law.

To suggest ideas or request future audits, contact the NASA OIG Office of Audits.

NOTICE:

Pursuant to PL 117-263, section 5274, non-governmental organizations and business entities identified in this report have the opportunity to submit a written response for the purpose of clarifying or providing additional context to any specific reference. Comments must be submitted to HQ-Section5274Submissions@nasa.gov within 30 days of the report issuance date and we request that comments not exceed 2 pages. The comments will be appended by link to this report and posted on our public website. We request that submissions be Section 508 compliant and free from any proprietary or otherwise sensitive information.

Results in Brief

NASA's Launch Infrastructure

June 22, 2026 IG-26-010 (A-25-02-00-MSD)

Why We Performed This Audit

NASA relies on large and highly complex facilities and infrastructure to launch missions from its primary launch complexes at Kennedy Space Center (Kennedy) in Florida and Wallops Flight Facility (Wallops) in Virginia. NASA infrastructure, such as launch pads, utility systems, and transportation networks, is used by commercial industry, the Department of Defense, and the Agency to transport, process, and launch various sized rockets, both crewed and uncrewed, to multiple regions of space ranging from the immediate vicinity of Earth to distant parts of the solar system.

NASA faces challenges as its launch facilities and support infrastructure have aged and do not often have the capacity to meet increasing mission demands. Kennedy's main launch facilities and support infrastructure were built in the 1960s for the Apollo Program, which were later modified to support the Space Shuttle Program that ended in 2011. Today, these facilities are becoming increasingly dated and lack the capacity to meet the demands of the burgeoning commercial space industry. Wallops faces similar challenges as the Facility dates back to the 1940s, and in the coming years NASA intends to increase the number of launches from Wallops by more than 150 percent. NASA is actively working to address these issues by investing in upgrades and expansions, including developing new launch pads, upgrading utility and transportation networks, and creating dedicated areas for commercial operations. However, progress has been slow as the Agency struggles with declining construction and maintentance budgets and statutory funding barriers that prevent commercial partners from contributing equitably to projects.

In this audit, we assessed the state of NASA's launch infrastructure and its ability to meet mission needs. To complete this work, we analyzed past and projected launches supported by Kennedy and Wallops; reports and data on the condition of launch infrastructure; and budgets, agreements, and financial data related to how the Agency pays for and maintains launch infrastructure. We also conducted site visits at Kennedy and Wallops to view launch infrastructure and hold discussions with NASA officials and government and commercial partners.

What We Found

NASA's launch infrastructure is dated and lacks the capacity to meet the growing demands of the Agency and government and commercial partners. The number of launches supported by Kennedy and Wallops has increased dramatically since 2020 and is projected to grow even further by 2030 due to a surge in commercial launches. The growing number of projected launches from Kennedy and Wallops could eventually outpace each site's capacity to support the launches. Based on current launch projections, Kennedy and Wallops are expected to operate near capacity in the 2028 to 2029 time frame. At Kennedy, demand for super heavy-lift launch vehicles for NASA and Department of Defense missions is driving the need for additional launch pads that can accommodate these vehicles, but locations for new launch pads are limited and will require extensive time and resources to develop. Wallops is pursuing upgrades to enhance operational efficiency, which could increase launch capacity, while conducting a study to assess the impact of increasing the number of annual launches at the Facility.

At Kennedy, common use launch infrastructure that the Center and government and commercial partners use to provide electrical power, gas supply and distribution, and transportation to launch pads is in poor condition and lacks the capacity to support growing needs. Critical electrical power distribution infrastructure is being used beyond its design life and needs to be upgraded. A failure of any portion of the electrical power distribution system could severely impact launches and lead to delays that could last for extended periods of time. In addition, existing infrastructure for the provision of nitrogen and helium gases to the launch pads is insufficient to simultaneously support multiple users leading to major scheduling challenges and potential delays. Lastly, Kennedy's roadway and bridge infrastructure was largely constructed in the 1960s and was not designed to accommodate the volume, frequency, and weight of modern heavy transport operations. Roadways and bridges are in marginal to poor condition and are expected to receive further strain as launch rates increase and generate approximately 19,000 additional truck trips annually to transport flight hardware, propellants, and related materials. Wallops does not face the same challenges with its common use launch infrastructure due to recent upgrades.

NASA has struggled to maintain and upgrade the Agency's launch infrastructure due to declining construction and maintenance budgets, as well as statutory funding barriers and cost recovery practices that prevent commercial partners from contributing equitably to infrastructure projects. Over the last 5 years, the budgets NASA uses to fund construction projects and perform maintenance on launch-related infrastructure have decreased between 11 and 47 percent, when adjusting for inflation, delaying maintenance and upgrades to infrastructure. In addition, while approximately 70 percent of launches supported by NASA since 2020 have been commercial missions, significant statutory funding barriers prevent the Agency from receiving money directly from commercial partners for use of the Agency's launch infrastructure. NASA initiated efforts a decade ago to establish an Infrastructure Investment Fund that would allow the Agency to accept contributions from public and private entities for long-term, large-scale shared infrastructure projects. However, legislation authorizing such a fund has yet to pass. While Kennedy received $250 million for infrastructure improvements through the H.R.1 reconciliation bill, officials estimate the Center would need at least $1 billion to completely upgrade its launch infrastructure.

Lastly, NASA's cost recovery practices have limited the amount of funds collected from commercial partners for their use of the Agency's launch infrastructure. In some instances, the Agency's choice of agreements has limited the amount of funds that could have been collected for rent. In other instances, rates charged for indirect costs are often not sufficient to maintain or upgrade launch infrastructure. While NASA policy permits Other Approved Indirect Rates to be charged to commercial partners, Kennedy does not utilize this rate for common use launch infrastructure. In contrast, Wallops utilizes this rate for operational support and maintenance of facilities.

WHAT WE RECOMMENDED

To improve the condition and capacity of NASA's launch infrastructure to support current and future needs, we recommended the Kennedy Space Center Director (1) conduct a study to understand the effects of heavy vehicle traffic associated with sustained increases in launch-related transport activity on Kennedy roadways and establish a mitigation plan to address the impacts; (2) prioritize funding from the H.R.1 reconciliation bill to address common use launch infrastructure issues at Kennedy, including electrical power distribution, gas supply and distribution, and transportation infrastructure; and (3) assess the ability to charge an Other Approved Indirect Rate on reimbursable agreements for launch services that is dedicated to maintenance and upgrades of common use launch infrastructure.

We provided a draft of this report to NASA management who concurred with our recommendations and described planned actions to address them. We consider management's comments responsive; therefore, the recommendations are resolved and will be closed upon completion and verification of the proposed corrective actions.

For more information on the NASA Office of Inspector General and to view this and other reports visit https://oig.nasa.gov/.

TABLE OF CONTENTS

Acronyms

ARC	Atlantic Research Corporation
CCSFS	Cape Canaveral Space Force Station
CoF	Construction of Facilities
CSLA	Commercial Space Launch Act
DoD	Department of Defense
EUL	Enhanced Use Lease
GHe	gaseous helium
GN2	gaseous nitrogen
ISS	International Space Station
LC	Launch Complex
LED	Launch Equivalent Day
MRL	Missouri Research Laboratories
OIG	Office of Inspector General

INTRODUCTION

NASA relies on large and highly complex facilities and infrastructure to launch missions from its primary launch complexes at Kennedy Space Center (Kennedy) in Florida and Wallops Flight Facility (Wallops) in Virginia. NASA infrastructure, such as launch pads, utility systems, and transportation networks, is used by commercial industry, the Department of Defense (DoD), and the Agency to transport, process, and launch various sized rockets, both crewed and uncrewed, to multiple regions of space ranging from the immediate vicinity of Earth to distant parts of the solar system.[1]

NASA faces challenges as its launch facilities and support infrastructure have aged and do not often have the capacity to meet increasing mission demands. Kennedy's main launch facilities and support infrastructure were built in the 1960s for the Apollo Program, which were later modified to support the Space Shuttle Program that ended in 2011. Today, these facilities are becoming increasingly dated and lack the capacity to meet the demands of the burgeoning commercial space industry. Wallops faces similar challenges as the Facility dates back to the 1940s, and in the coming years, NASA intends to increase the number of launches from Wallops by more than 150 percent. NASA is actively working to address these issues by investing in upgrades and expansions, including developing new launch pads, upgrading utility and transportation networks, and creating dedicated areas for commercial operations. However, progress has been slow as the Agency struggles with declining construction and maintenance budgets and statutory funding barriers that prevent commercial partners from contributing equitably to projects.

In this audit, we assessed the state of NASA's launch infrastructure and its ability to meet mission needs. Details of the audit's scope and methodology are outlined in Appendix A.

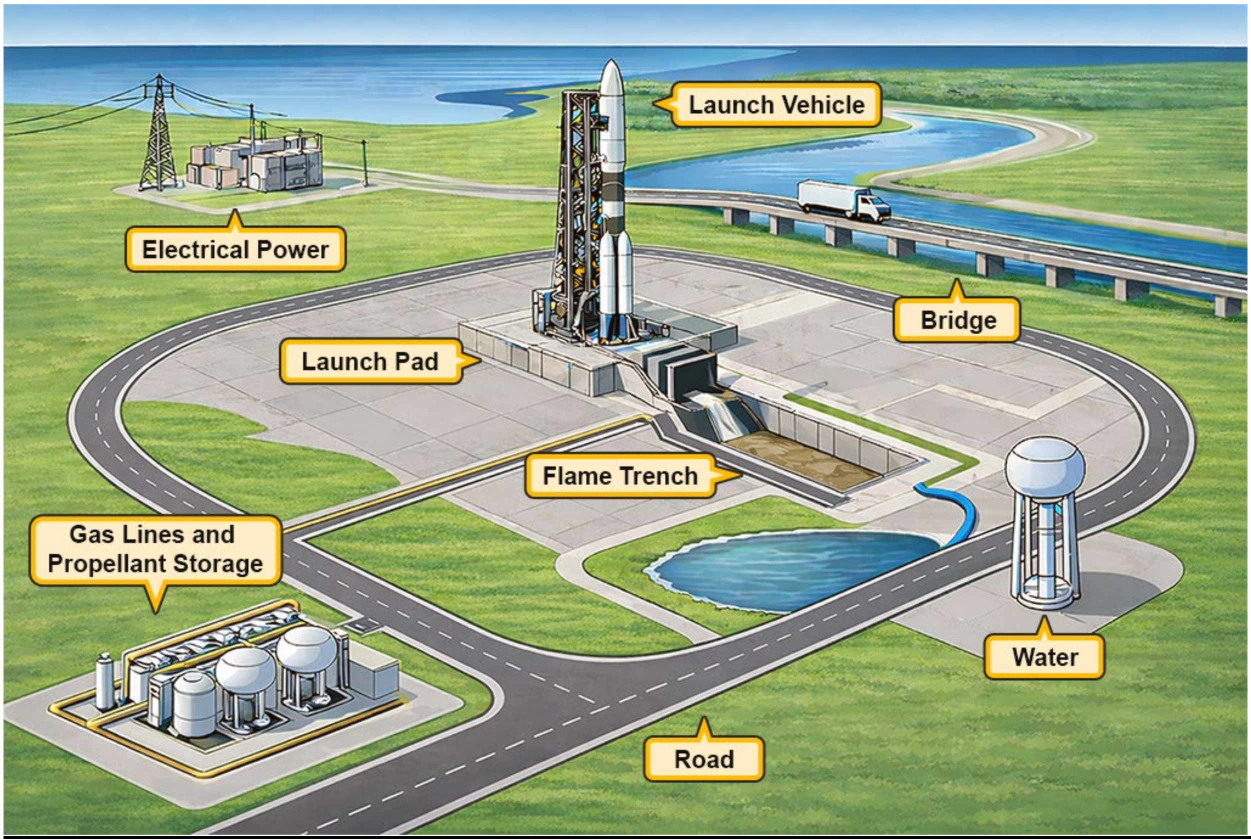
Background

NASA missions can be crewed or uncrewed with launch activities conducted at various locations. Although the Agency supports launches from multiple domestic and international facilities, NASA owns and operates two launch sites—Kennedy and Wallops. Historically, Kennedy has served as NASA's principal launch site for crewed missions, beginning with Apollo 8 in 1968, and continues to support both crewed and uncrewed launches. By contrast, Wallops exclusively supports uncrewed missions.

Regardless of whether a mission is crewed or uncrewed and the launch location, all launch vehicles rely on a common baseline of ground infrastructure including a launch pad and attached flame trench, which diverts the rocket's exhaust, pressure, and intense heat during launch to help contain and protect the vehicle and surrounding pad structure. Launch vehicles also require support infrastructure that provides the necessary utilities, commodities, and transportation to the launch sites (see Figure 1).

[1] Uncrewed missions include robotic spacecraft, satellites, and rovers designed to advance scientific discovery, Earth observation, and communications capabilities.

Figure 1: Launch Pad and Support Infrastructure



Source: NASA Office of Inspector General (OIG) depiction of launch pad and support infrastructure.

Utilities, such as electrical power and water, are crucial to launch operations. Electrical power is required to support vehicle processing, propellant loading, communications, monitoring systems, and countdown operations, and must remain reliable during routine operations and launch-critical periods. Water systems are utilized to support sound suppression and flame deflection through high-volume water deluge systems that protect launch vehicles, ground structures, and payloads from extreme acoustic and thermal loads at liftoff. Commodities, such as nitrogen and helium gases, support routine launch operations, including purging fuel lines, pressurizing systems, and maintaining safe conditions during vehicle processing, countdown, and launch.[2] Transportation infrastructure, such as roads and bridges, are utilized to transport launch vehicles, propellants, and oversized ground support equipment between processing facilities, integration areas, and launch pads. In particular, bridges are required to carry heavy and oversized loads across waterways, which are often present at launch sites and used for transporting launch vehicles by boat and serving as a place where potential debris from rockets can fall to protect populated areas.

[2] Purging is a safety process employed during launch operations that removes hazardous residual propellants from systems to reduce the possibility of fire, explosions, or corrosion.

These ground and support infrastructure form the core of launch site operations and enable safe and reliable access to space. Additionally, launch vehicles require mission and vehicle specific ground support systems. Infrastructure used to transport, integrate, and service launch vehicles vary by rocket design and must be tailored to the capabilities, layout, and operational constraints of each launch site.

Kennedy Space Center

Located on Merritt Island, Florida, just north of Cape Canaveral, Kennedy occupies 140,000 acres and is home to infrastructure that enables the processing and launch of government and commercial vehicles. The launch infrastructure at Kennedy is most famously known for its capability to support crewed missions, specifically Apollo, Space Shuttle, Commercial Crew, and Artemis missions. Kennedy has also supported the launch of numerous uncrewed missions ranging from the Voyager spacecraft that launched in the 1970s to the 2025 launch of the Interstellar Mapping and Acceleration Probe.[3] Much of the infrastructure was originally built in the 1960s for the Saturn V launch vehicles that launched American astronauts on their historic journeys to the Moon and back during the Apollo Program. Later, major modifications and upgrades were made to accommodate the Space Shuttles that launched from Kennedy from 1981 to 2011. Since then, Kennedy has rebranded itself as "Earth's Premier Spaceport," a multi-user spaceport used by NASA and government and commercial partners, such as Space Exploration Technologies Corporation (SpaceX), to provide the investment and launch vehicles necessary for both NASA and commercial industry.

Kennedy's most critical launch infrastructure is located at Launch Complex (LC) 39. This complex includes three launch pads—A, B, and C (LC 39A, LC 39B, and LC 39C). LC 39A and LC 39B were constructed in the mid-1960s with identical features and were designed to support the concept of mobile launch operations on a "clean pad," meaning no structure, towers, or other support equipment are located on top of the pad.[4] LC 39A was utilized for 12 of the 13 Apollo launches with Apollo 10 being the only launch to occur on LC 39B. During the Space Shuttle era, 82 missions launched from LC 39A while 53 departed from LC 39B. LC 39C, as well as LC 48, also located at Kennedy, have had no launches to date. Figure 2 displays LC 39, including launch pads A, B, and C; LC 48; and launch pads supported by Kennedy at the adjacent Cape Canaveral Space Force Station (CCSFS).[5]

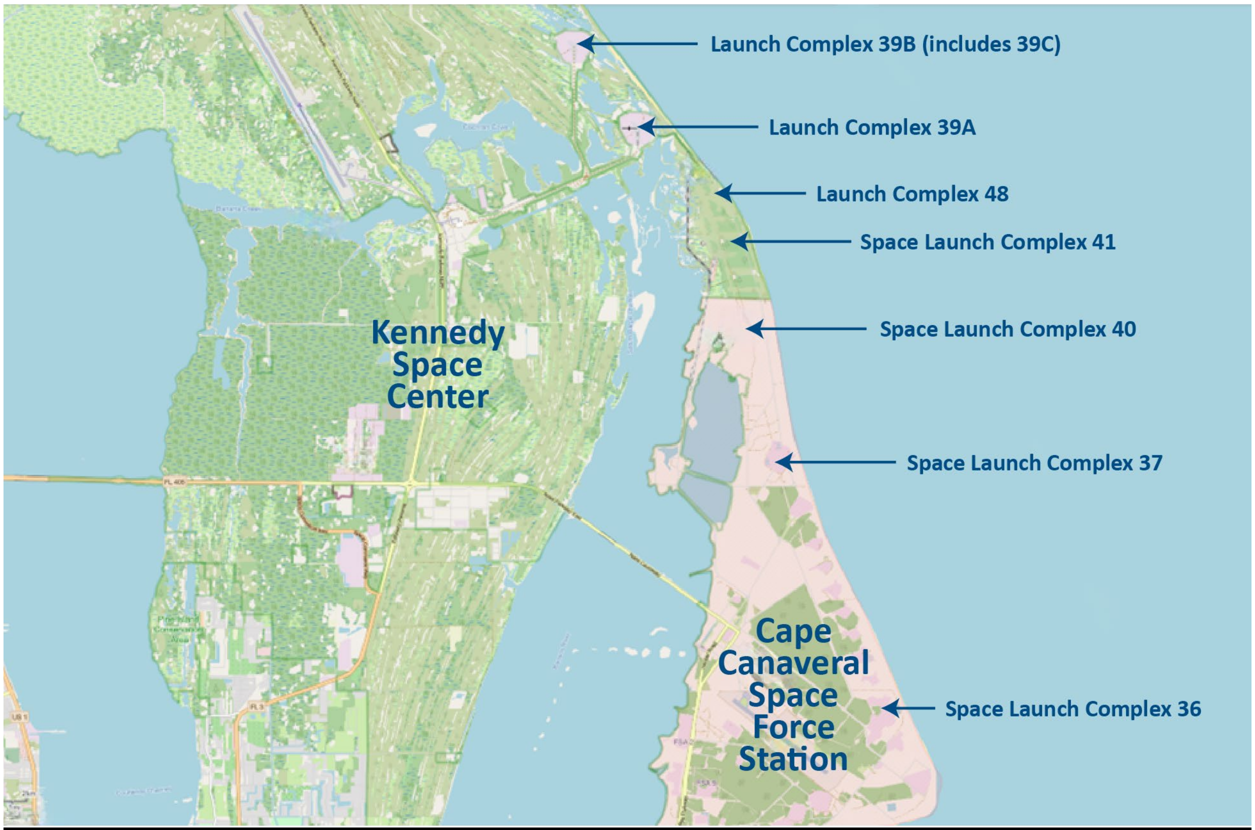
---

3 The Voyager 1 and Voyager 2 spacecraft were launched to study Jupiter and Saturn. The Interstellar Mapping and Acceleration Probe will travel through space helping researchers better understand the boundary of the heliosphere, a huge bubble created by the Sun surrounding and protecting our solar system.

4 With mobile launch operations, final launch vehicle construction occurs inside an assembly building on top of a moveable platform that is used for assembly, transport, and launch. The platform, with the launch vehicle on top, is then moved to the pad and serves as the support structure for the launch.

5 CCSFS is the primary launch site of the U.S Space Force's Eastern Range, a 15-million-square-mile area of the Atlantic coast that spans from Cape Canaveral eastward into the ocean. CCSFS is operated by the Space Force's Space Launch Delta 45, the unit responsible for overseeing launch operations and supporting launches for NASA, DoD, and commercial industry.

Figure 2: Kennedy Space Center and Cape Canaveral Space Force Station



Source: NASA OIG presentation using Agency data.

In 2014, NASA signed a property agreement with SpaceX for the use and operation of LC 39A where the company launches its Falcon 9 and Falcon Heavy launch vehicles and Dragon spacecraft.[6] Under the 20-year agreement, SpaceX operates and maintains the complex at its own expense and has invested considerably in the infrastructure upgrades necessary to fly at a high rate. Since the agreement began, SpaceX has constructed the Horizontal Integration Facility for launch vehicle assembly and maintenance, and in 2022, it began to build a launch pad within the perimeter of LC 39A to launch and land its Starship launch vehicle.[7] A launch tower, a deflector system to divert exhaust fumes away from the rocket, and on-site facilities to generate and store propellant are also planned or currently under construction.

[6] Falcon 9 is a reusable, two-stage launch vehicle for the transport of crew and payloads to low Earth orbit and other parts of space. Falcon Heavy is composed of three reusable Falcon 9 engine cores enabling it to be one of the world's most powerful operational launch vehicles capable of lifting nearly 64 metric tons to orbit. The Dragon spacecraft can carry cargo and crew to and from Earth's orbit and was the first private spacecraft to fly humans to the International Space Station.

[7] Starship is a fully reusable, two-stage super heavy-lift launch vehicle under development by SpaceX to support NASA's Human Landing System Program, which will transport astronauts to the lunar surface during the Artemis missions.

LC 39B is configured for NASA's Space Launch System super heavy-lift launch vehicle used for the Artemis campaign. After the launch of Artemis II in April 2026, Kennedy began preparing the pad for the Artemis III launch in 2027. Significant upgrades and enhancements have been completed at LC 39B, including installation of fiber cable lines and new liquid hydrogen tanks, removal and replacement of fire suppression piping around the entire launch pad complex, and updates to the flame trench. NASA also installed an emergency egress system that allows astronauts and other pad personnel to escape in an emergency, and the environmental control system that provides air supply, thermal control, and pressurization to launch vehicles during propellant loading. A lightning protection system including towers have also been installed around the pad's perimeter to steer lightning away from the launch vehicles.

NASA's Artemis II Space Launch System Launch Vehicle and the Orion Spacecraft Seen on Top of a Mobile Launcher at Kennedy's Launch Complex 39B

Source: NASA.

LC 39C was completed in 2015 to support commercial launches of satellites on small class launch vehicles that produce thrust under 200,000 pounds. However, the complex has not been used due to its proximity to LC 39B. In 2020, Kennedy also completed construction of LC 48, a 10-acre complex that includes a launch pad, paved surfaces, an area to stage fuel tanks and other commodities, and a catch basin for sound suppression water. Kennedy intended to lease the complex to commercial partners to support launches of satellites on small class launch vehicles that generate 500,000 pounds of thrust or less. While there have been no launches to date, in January 2026, Kennedy issued an announcement for proposals for the lease of LC 48, signaling potential future customers and use of the launch complex. See Appendix B for more details on Kennedy's launch pads.

Adjacent to Kennedy, CCSFS has multiple launch complexes that support launches of commercial, DoD, and NASA missions. Blue Origin leases Space Launch Complex 36 to launch its New Glenn launch vehicle and Blue Moon Human Landing System intended to transport astronauts to the lunar surface during NASA's Artemis campaign.[8] SpaceX plans to use Space Launch Complex 37 as an additional launch site for its Starship launch vehicle and leases Space Launch Complex 40 to launch its Falcon 9 launch vehicle. United Launch Alliance uses Space Launch Complex 41 to launch its Atlas V and Vulcan Centaur launch vehicles.[9]

Kennedy supports launches both at the Center and CCSFS through use of other NASA-owned and-operated facilities and infrastructure. These specialized facilities and infrastructure, frequently referred to as "common use," are utilized by commercial industry, DoD, and NASA to provide the necessary utilities, commodities, and transportation that enable rockets to launch. NASA facilities and infrastructure, such as Kennedy's Converter Compressor Facility that converts liquid helium into high-pressure gas, and NASA roadways and bridges, such as the Banana River Bridge, support every

---

8 New Glenn is a partially reusable two-stage heavy-lift launch vehicle capable of deploying payloads to low Earth and geostationary transfer orbits.

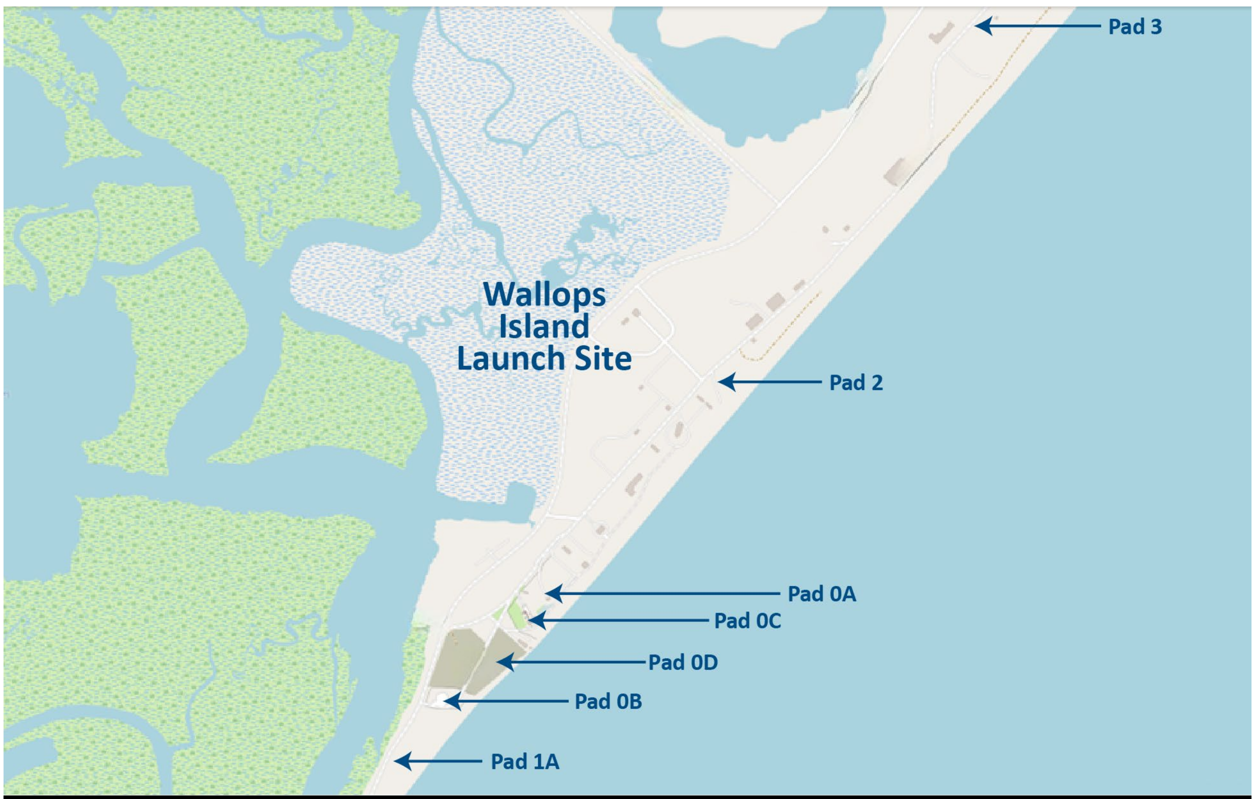
9 Atlas V is a two-stage expendable launch vehicle capable of delivering payloads to low Earth and geostationary transfer orbits. Vulcan Centaur is a two-stage heavy-lift launch vehicle.

launch from Kennedy and CCSFS. For instance, while Blue Origin's New Glenn and SpaceX's Starship launch vehicles are located at Space Launch Complexes 36 and 37 at CCSFS, the gas pipelines and roads extending to those launch sites are owned and managed by Kennedy.

Wallops Flight Facility

Established in 1945, Wallops is the Agency's primary location for conducting research using suborbital launch vehicles that reach outer space but do not complete an orbit around Earth. Wallops is composed of 6,580 acres within three distinct land areas: the Main Base, the Mainland, and the Wallops Island Launch Site. The Wallops Island Launch Site is approximately 6 miles long and about 0.5 miles at its widest point and is accessible via a NASA-built causeway and bridge. The Wallops Island Launch Site has seven active launch pads—Pad 0A, Pad 0B, Pad 0C, Pad 0D, Pad 1A, Pad 2, and Pad 3—three blockhouses for launch control, vehicle assembly buildings, and processing facilities. Figure 3 displays the Wallops Island Launch Site.

Figure 3: Wallops Island Launch Site



Source: NASA OIG presentation using Agency data.

Wallops is NASA's only owned and operated launch range and is a national asset supporting government and commercial partners.[10] The vehicles launched at Wallops vary in size and power from small meteorological rockets to orbital class vehicles that can travel to the International Space Station (ISS)

[10] The Wallops Flight Facility Range maintains the facilities, systems, and personnel needed to support missions, including precision tracking, telemetry, and command and control systems. The Range also manages an aeronautical research airport, controls restricted airspace, and leverages DoD-controlled warning areas over the Atlantic Ocean.

and the Moon. Wallops' on-site partners include the U.S. Navy, National Oceanic and Atmospheric Administration, Federal Aviation Administration, and Virginia Spaceport Authority. The Virginia Spaceport Authority owns and operates the Mid-Atlantic Regional Spaceport and Mid-Atlantic Regional Unmanned Aerial Systems airfield at Wallops. The Mid-Atlantic Regional Spaceport partners with Wallops to provide infrastructure and range support services for payload processing, vehicle and spacecraft integration, launch range instrumentation and control, emergency facilities, and other launch and mission-related activities. Similar to Kennedy, NASA owns and maintains common use launch infrastructure at Wallops used by government and commercial industry, such as electrical power distribution systems and roads.

Pad 0A is a medium class launch complex consisting of a launch pad and supporting systems, which has launched cargo deliveries to the ISS via Northrop Grumman's Antares launch vehicle.[11] In 2023, the Virginia Space Authority obtained $20 million in funding from the state to modify Pad 0A to support the Antares 330 and ECLIPSE launch vehicles.[12] Modifications have since been made to Pad 0A's launch mount, flame trench, ramp structure, water deluge, and lightning protection systems to support these vehicles. In 2026, Firefly Aerospace plans to launch its Alpha launch vehicle that will be used for commercial small satellite launches.[13] Similarly, Pad 0D is a medium class launch complex built in 2025 that is intended to be a launch site for Rocket Lab's reusable Neutron launch vehicle.[14]

A Black Brant IX Sounding Rocket Launched from Wallops Flight Facility's Pad 2 50K Launcher

Source: NASA.

Pad 0B and Pad 0C are small class launch complexes composed of pads and moveable service structures. Pad 0B was built in 1999 primarily for Northrop Grumman's Minotaur launch vehicles and has been utilized for the Minotaur I to Minotaur V launch vehicles for 20 years.[15] Pad 0C was constructed by the Virginia Spaceport Authority in 2019 and has been the launch site for Rocket Lab's Electron launch vehicle.[16] It is located within the perimeter of Pad 0A and leverages systems from Pad 0A to minimize costs. Both Pads 0B and 0C are facilities that can be reconfigured to host nearly any existing small class launch vehicle. Pad 1A is the site for launching hypersonic rockets primarily in support of DoD

[11] The Antares launch vehicle incorporates both solid and liquid stages and can launch payloads of up to 10,500 kilograms to low Earth orbit.

[12] Antares 330 will feature a new first stage, and like earlier versions of Antares, will be used for resupply missions to the ISS. ECLIPSE is a medium-lift launch vehicle, designed for reusability, that will have the ability to lift payloads of more than 16,000 kilograms to low Earth orbit in support of ISS resupply missions, commercial spacecraft, national security missions, and scientific payloads for domestic and international markets. Both rockets are being codeveloped by Firefly Aerospace and Northrop Grumman.

[13] Alpha is a two-staged launch vehicle that is equipped to launch payloads of more than 1,000 kilograms to low Earth orbit for commercial, civil, and national security missions.

[14] Neutron is a reusable two-staged launch vehicle designed for satellite constellation deployment, deep space missions, and human space flight.

[15] Minotaur launch vehicles are repurposed from retired U.S. ballistic missiles that can launch payloads into a variety of orbits and are used for deploying satellites for commercial, government, and military purposes.

[16] Electron is a two-stage launch vehicle designed to place small satellites weighing up to 300 kilograms into multiple low Earth orbits.

missions.[17] Pad 2 is the site for the 50K Launcher, used for launching sounding rockets in support of NASA and DoD missions.[18] Pad 2 also houses the Atlantic Research Corporation (ARC) and Missouri Research Laboratories (MRL) launchers. Pad 3 is the site for the MK7 launcher used for launching hypersonic rockets in support of U.S. Navy missions. See Appendix B for more details on Wallops' launch pads.

Management of NASA's Launch Facilities and Infrastructure

NASA's Office of Strategic Infrastructure oversees the Agency's launch facilities and infrastructure and is responsible for Agency-level infrastructure governance. The office has oversight of the master planning process used by NASA centers to plan upgrades to and sustainment and disposition of facilities and infrastructure, including launch-related infrastructure. The office's Facilities and Real Estate Division is responsible for all facility-related activities, including managing the Agency's Construction of Facilities (CoF) program. NASA's CoF program funds the design, construction, repair, and demolition of Agency facilities and infrastructure, including launch-related infrastructure projects. In fiscal year 2025, the CoF budget was $249 million.

At Kennedy, responsibility for launch infrastructure is distributed among multiple organizations. Spaceport Integration and Services provides strategic direction for the use of Kennedy land, facilities, and technical capabilities; provides customer advocates; oversees the implementation of tenant agreements; and develops, forecasts, and disseminates operational information for Kennedy's multi-user spaceport. The Exploration Ground Systems Program develops and operates the systems and facilities required to process and launch NASA's Artemis missions.

At Wallops, Goddard Space Flight Center's Suborbital and Special Orbital Projects Directorate manages range operations.[19] The Wallops Facilities Management Operations Directorate provides facilities management support. The Wallops Resource Management Office, within the Office of the Director, oversees financial management and related administrative functions.

Transition to Commercialization

Over the last 20 years, NASA's launch complexes at Kennedy and Wallops have increasingly transitioned to commercial partners such as Blue Origin, Firefly Aerospace, Northrop Grumman, Rocket Lab, and SpaceX. One of the goals of the National Aeronautics and Space Act is to ensure that U.S. government space technology and infrastructure is made available for commercial use.[20] NASA has broad authority to enter into a wide range of agreements to create more opportunities for enabling commercial space activities. In addition to the Space Act, pivotal laws such as the Commercial Space Launch Act (CSLA) of 1984 and U.S. Commercial Space Launch Competitiveness Act of 2015 were passed to "facilitate and encourage" the commercial industry's use of NASA assets.[21] NASA has, in turn, entered into Space Act Agreements, CSLA agreements, and Enhanced Use Leases (EUL) to partner with space industry, allowing

---

[17] Hypersonic rockets travel at speeds in excess of Mach 5, which is five times the speed of sound.

[18] Sounding rockets carry experiments to altitudes between 50 and 1,500 kilometers. Science missions, such as studies of the Earth's near space environment, solar physics, planetary investigations, and astrophysics, are flown using sounding rockets.

[19] In May 2026, the NASA Administrator announced organizational changes at the Agency, including transitioning management of Wallops from Goddard Space Flight Center to Kennedy. Implementation is ongoing.

[20] The National Aeronautics and Space Act of 1958, 51 U.S.C § 20102 (2024).

[21] Commercial Space Launch Act, Pub. L. No. 98-575 (1984), and U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90 (2015).

commercial entities to use NASA services and property that would otherwise be underutilized.[22] These commercialization efforts have led to significant increases in the utilization of NASA's launch infrastructure at Kennedy and Wallops.

The transition began in earnest in 2006 when NASA used Space Act Agreements to partner with private industry, such as SpaceX and Northrop Grumman, to develop commercial spacecraft and launch vehicles for cargo delivery to the ISS. By the early 2010s, NASA was using commercial resupply services to supply the ISS and later adopted commercial crew services to fill the void left by the retirement of the Space Shuttle in 2011. Since that time, NASA's commercial partners have launched more than 60 missions utilizing Kennedy and Wallops launch complexes to transport supplies and crew to the ISS. Going forward, NASA's commercialization efforts will continue to expand with Kennedy's LC 39A being the launch site for SpaceX's Starship and Wallops hosting commercial launches for companies such as Firefly Aerospace and Rocket Lab.

Kennedy and Wallops have entered into property agreements with commercial partners for use of their NASA-owned launch sites. Kennedy entered into a CSLA agreement with SpaceX for LC 39A in 2014, while Wallops entered into an EUL with the Virginia Spaceport Authority to operate Pads 0A and 0B in 2025. In each instance, the commercial partner is obligated to maintain and operate the launch pad at their own expense, but the complexes can be used to launch both government and commercial missions. For example, LC 39A supports commercial missions such as SpaceX's Starlink satellites, which provide high-speed internet to customers across the globe, as well as NASA missions such as commercial crew. In addition to launch infrastructure, Kennedy and Wallops provide launch support services via Space Act Agreements to the commercial space industry. Launch support services include, but are not limited to, ordering, storage, and delivery of gases; flight hardware transport; roadblock security support; and occupational and environmental health services.

[22] Space Act Agreements are a legally enforceable promise between NASA and a second party, requiring a commitment of Agency resources, including personnel, funding, services, equipment, expertise, information, or facilities. Space Act Agreements can be reimbursable, nonreimbursable, funded, or international. CSLA provides authority for the acquisition by the private sector and state governments of (1) launch or reentry property of the United States that is excess or otherwise not needed for public use and (2) launch services and reentry services, including utilities, of the United States that is otherwise not needed for public use. EUL is an authority granted by Congress that permits NASA to accept cash and in-kind consideration from federal and non-federal entities for real property leases at fair market value.

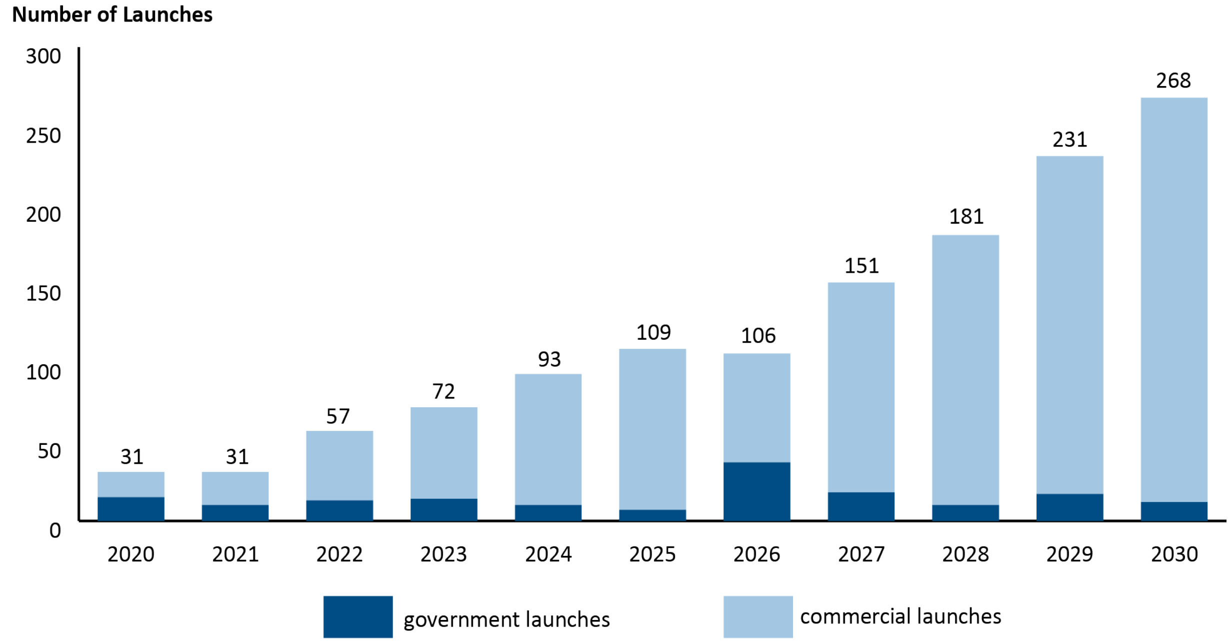
NASA's Launch Infrastructure Is Aged and Lacks Capacity to Support Growing Needs

NASA's launch infrastructure is dated and lacks the capacity to meet the growing demands of the Agency and government and commercial partners. The number of launches supported by Kennedy and Wallops has increased dramatically since 2020 and is projected to grow even further by 2030. Common use infrastructure that provides the necessary utilities, commodities, and transportation for launches has degraded and often does not have the capacity to support additional users and larger rockets. NASA has struggled to address these issues due to declining construction and maintenance budgets, statutory funding barriers, and cost recovery practices that have impeded the Agency from allowing commercial partners to fund portions of necessary and routine repair and replacement projects. Without timely fixes to NASA's launch infrastructure challenges, ambitious national goals to return humans to the Moon before the end of the decade and accelerate missions to Mars could be at risk.

Increasing Number of Launches Projected to Exceed Launch Pad Availability

NASA supported launches from Kennedy and Wallops are growing dramatically due to a surge in commercial launches, increasing the risk that there will not be enough launch pad capacity to support rising demand. As shown in Figure 4, NASA supported launches from Kennedy and CCSFS grew from 31 in 2020 to 109 in 2025, a 252 percent increase. NASA is projecting that launches supported by Kennedy will increase even further to 268 a year by 2030.

Figure 4: Number of Launches Supported by Kennedy (as of March 2026)



Source: NASA OIG presentation of Agency data.

Note: Government launches consist of NASA and DoD. Launch data is based on the number of Federal Communications Commission filings for large constellations of satellites. Launch projections are estimations and actual launch numbers will vary.

SpaceX has the most launches originating from Kennedy and CCSFS with the Falcon 9 launch vehicle making up 101 out of 109 total launches in 2025. Most of SpaceX's missions were in support of launching the company's Starlink satellite constellation. Launches from Kennedy and CCSFS are expected to further increase with the introduction of SpaceX's Starship launch vehicle in 2026. The company intends to launch Starship up to 44 times annually from LC 39A and maintain an 8-day launch cadence once the launch vehicle is fully operational.[23] It also plans to launch Starship an additional 76 times per year from CCSFS. To support Starship's launch cadence, SpaceX is expanding launch operations to Space Launch Complex 37 at CCSFS and has shifted all Falcon 9 launches to Space Launch Complex 40.

In addition to SpaceX, Blue Origin is also growing its launch activity at Kennedy and CCSFS. Blue Origin occupies Space Launch Complex 36 at CCSFS, which can support 30 to 35 launches a year. Though the company is currently approved for 12 launches a year, Blue Origin officials expect launches of the New Glenn launch vehicle to exceed 50 per year by 2030 and more than 120 per year by 2035.[24] Other commercial partners increasing their launch activity from Kennedy and CCSFS include United Launch Alliance, Relativity Space, and Astra Space.

[23] An 8-day launch cadence is necessary as SpaceX will need to launch at least 15 Starships to deliver propellant to low Earth orbit where it will be stored in a fuel depot before being distributed to the Starship Human Landing System that will transport astronauts to the lunar surface.

[24] In May 2026, a test of the New Glenn launch vehicle triggered an anomaly that resulted in an explosion that destroyed the rocket and caused extensive damage to Space Launch Complex 36. Because Space Launch Complex 36 is New Glenn's only operational launch pad, the launch program is temporarily grounded while Blue Origin rebuilds the pad.

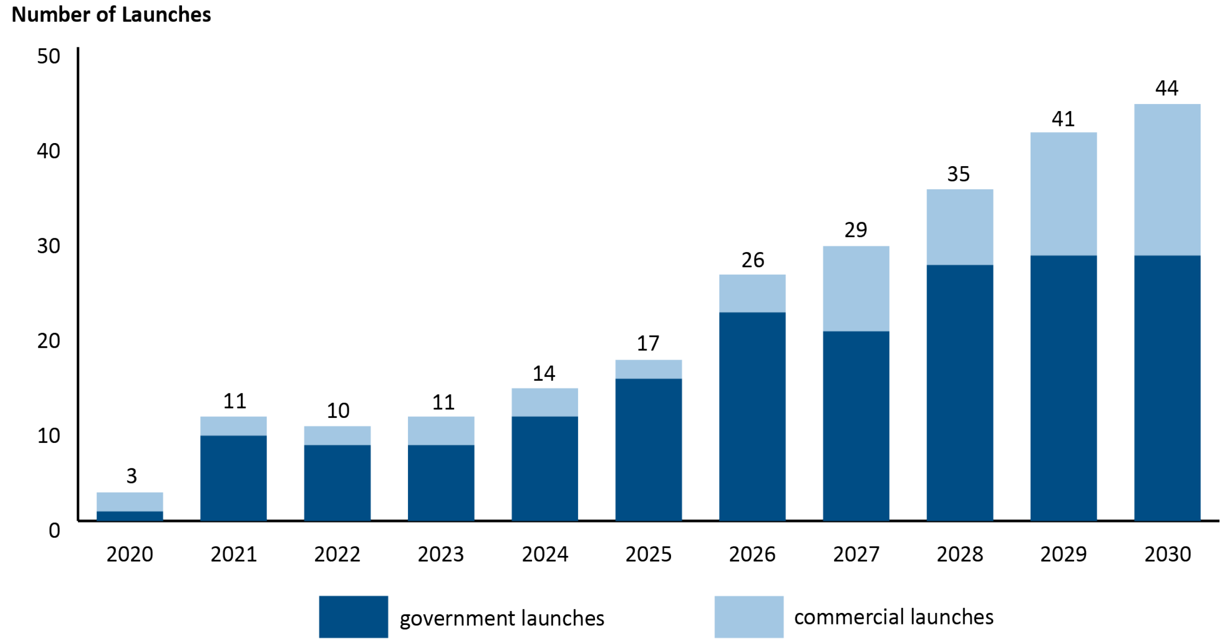
The growing number of projected launches from Kennedy and CCSFS could eventually outpace the Center's capacity to support the launches. According to Kennedy officials, launch projections do not include Launch Equivalent Days (LED), which reveal the hidden operational demands on Kennedy's spaceport systems and services necessary to support a growing launch cadence. For example, in 2024, Kennedy and CCSFS supported 93 launches, 14 major testing milestones such as wet dress rehearsals and static firings, and 45 scrubs (postponement of a launch), resulting in a total of 152 LEDs.[25] Each event, whether a launch, rehearsal, or scrub, demands significant operational support. For instance, gas and propellant services are needed not only for launches but also for wet dress rehearsals, static firings, and scrubs. From an operational standpoint, Kennedy's spaceport systems begin to experience significant strain as the combined total of the number of LEDs and launches approaches the number of available days in a year, indicating a sustained, fast-paced environment with limited flexibility for recovery or contingencies. Based on current launch projections, Kennedy is expected to operate near this high-stress launch environment in the late 2028 to early 2029 time frame.

Given the demand for super heavy-lift launch vehicles for NASA and DoD missions, development of additional launch pads that can accommodate these vehicles may be required to keep pace with government and commercial mission and operational timelines. For example, Blue Origin officials anticipate that Space Launch Complex 36 alone will not provide the capacity and resiliency required to support their long-term launch plans. Yet, there are limited locations remaining at CCSFS to accommodate heavy- to super heavy-lift launch vehicles. To address Blue Origin's need for additional launch pads, they approached Kennedy officials about exploring launch pad options on NASA property. However, space for additional launch pads at Kennedy is also limited and may require extensive time and resources to develop a launch pad that can support super heavy-lift launch vehicles. While Kennedy officials identified a potential location north of LC 39A and LC 39B for a new super heavy-lift launch pad, the area is a protected wetland and would have to undergo lengthy and extensive federal and local review and approval processes.

NASA supported launches from Wallops are also increasing due to an uptick in commercial launches in support of DoD missions. As shown in Figure 5, launches from Wallops grew from 3 in 2020 to 17 in 2025, a 467 percent increase. NASA is projecting launches from Wallops to increase even further to 44 a year by 2030.

[25] A wet dress rehearsal simulates launch day conditions where a full launch countdown is conducted with the vehicle fueled. Static fire tests verify engine control and performance. During a static fire test, the launch vehicle engines are ignited for a short duration and then shut down.

Figure 5: Number of Launches Supported by Wallops (as of March 2026)



Source: NASA OIG presentation of Agency data.

Note: Government launches consist of NASA and DoD. Launch projections are estimations and actual launch numbers will vary.

Similar to Kennedy, the growing number of projected launches from Wallops could eventually outpace the Facility's capacity to support the launches. According to Wallops officials, the Facility could support up to 32 launches and 128 LEDs annually, reaching launch capacity by 2028. However, Wallops officials stated that they are actively pursuing several upgrades to reduce turnaround time between launches and enhance operational efficiency, which could increase launch capacity. Further, the Wallops Island Southern Expansion Environmental Assessment, tentatively scheduled for final publication in December 2026, will study the impacts of increasing the number of annual launches at Wallops. In addition to the environmental assessment and further coordination with NASA, Federal Aviation Administration authorization, including several licenses and permits, will be required to increase the number of launches from a NASA-owned facility such as Wallops.

Common Use Launch Infrastructure Is Degraded and Lacks the Capacity to Support an Increasing Number of Missions and Larger Rockets

Common use launch infrastructure that NASA and government and commercial partners use to provide electrical power, gas supply and distribution, and transportation to launch pads is in poor condition and lacks the capacity to support growing needs. This is primarily an issue at Kennedy as infrastructure has aged, launches have increased, and launch vehicles have grown in size. Kennedy's common use launch infrastructure was built in the 1960s during the Apollo era and designed to support one mission at a time with months between launches. Today, Kennedy's common use launch infrastructure supports all government and commercial launches from Kennedy and CCSFS, straining aged systems that do not have the capacity to support an increasing number of launches. Spurred by recent upgrades, Wallops' common use launch infrastructure is better positioned to support the launch site's current and future needs.

Electrical Power at Kennedy

Kennedy's electrical power distribution infrastructure, which provides power to LC 39, is aged and in degraded condition. Figure 6 displays LC 39's electrical power distribution system, which begins at the C-5 Substation where electrical power comes in via high-voltage transmission lines from the local utility company. High power transformers at the C-5 Substation decrease the voltage and deliver electrical power to facilities via various medium voltage feeders (i.e., cables or lines). Beginning at the C-5 Substation, the feeders travel underground through duct banks, which are pipelike structures that house the electrical feeders and are linked together by electrical splices. The core section of the distribution system travels parallel with the crawlerway to Switching Station 900, which then sends electrical power through the feeders to LC 39A and LC 39B.[26]

Figure 6: Kennedy Launch Complex 39 Electrical Power Distribution System

Source: NASA OIG presentation using Agency data.

[26] The crawlerway is a 4.2-mile road made of river rock used to transport launch vehicles, such as the Space Launch System, between the assembly building and launch pad atop crawler-transporters.

Critical electrical power distribution infrastructure, such as the duct banks and transformers, is being used beyond its design life and needs to be upgraded. The duct banks were installed in the 1960s utilizing Orangeburg pipe, a material composed of ground up wood fibers and coal tar that has a useful life of 50 years, but has not been used for piping work since the 1970s. Due to the age and type of material, portions of the duct banks have collapsed, which makes adding or replacing a feeder through the piping impossible and would force workarounds that could take weeks or months to complete. According to Kennedy officials, a feeder failure along the path with collapsed duct banks would leave NASA or SpaceX without redundant power, which is an operationally unacceptable condition. The C-5 Substation transformers, which are critical to powering the electrical power distribution system, are also in poor condition. Two of the three transformers were installed in 1995 and are at the end of their 30-year design life. Corrosion is apparent on the equipment and expected to worsen due to the harsh surrounding environment, including heat and humidity. Kennedy officials stated that failure of the transformers could severely impact launches with any disruption lasting for at least a month. Figure 7 displays examples of the collapsed duct banks and corroding transformers.

Figure 7: Examples of Collapsed Duct Banks and Corroding Transformers at Kennedy

Source: NASA.

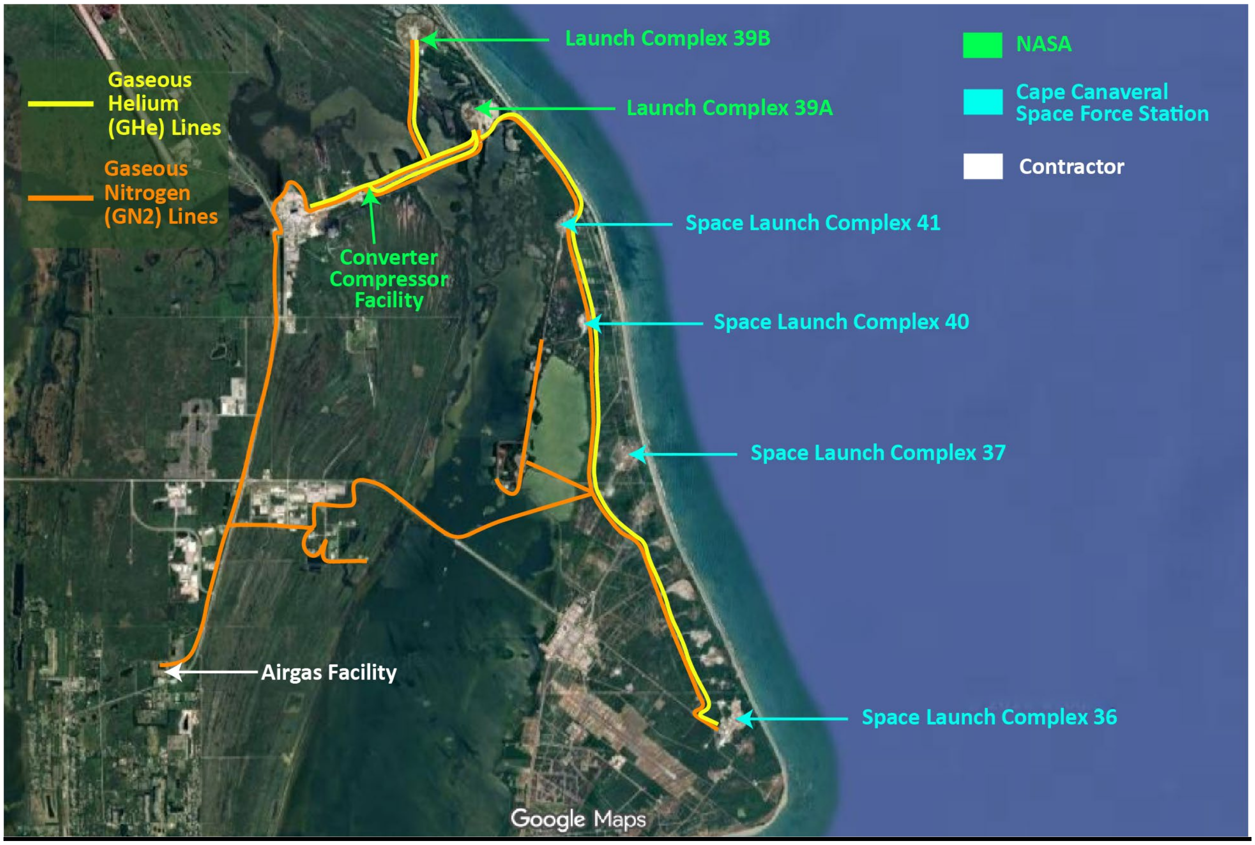
Due to the dire condition of the electrical power distribution system, Kennedy is planning construction projects to replace the LC 39 duct banks and C-5 Substation transformers for a combined cost of $136 million. However, these projects are not expected to start until the end of fiscal year 2026 and will take years to complete. In the interim, the current infrastructure will remain in use to support launches such as Artemis, the Human Landing System, and the growing commercial space industry, leaving launch operations and schedules vulnerable for delays.

In addition to the poor condition of the electrical power distribution system, power demand from commercial launch operations, such as SpaceX's Starship, is expected to soon exceed LC 39's electrical power capacity. The C-5 Substation currently has a capacity of 30 megawatts of power with 9 megawatts available to be shared jointly between LC 39A and LC 39B. The percentage allocated to each launch pad varies according to operational needs. For example, LC 39B required 2.3 megawatts for the launch of the Space Launch System during the first Artemis mission. Given variables such as SpaceX's desired propellant loading time, a single Starship launch could exceed the power available at LC 39A, leaving the current supply insufficient. SpaceX is planning to initially work around the limited power supply by using Tesla Megapacks, which are large-scale rechargeable lithium-ion battery storage products that can store up to 3.9 megawatts of electricity. However, SpaceX's future concept of operations expects the long-term electrical power need for LC 39A to increase substantially due to enhancements at the launch pad, including on-site propellant generation that will require significant power demand. The existing feeder capacity and the new feeders that will be installed as part of the project to replace the LC 39 duct banks will not be able to support SpaceX's planned extensive development of this area. Therefore, upgraded electrical power distribution infrastructure from the local utility company will be necessary to increase capacity. Kennedy officials stated that planning for the upgrade project has begun with discussions occurring between the local utility company, Kennedy, and DoD and commercial partners.

Gas Supply and Distribution at Kennedy

As a multi-user spaceport supporting not just NASA launches, but other government and commercial launch campaigns as well, Kennedy is limited by the capabilities of its existing infrastructure to support the provision of gaseous nitrogen (GN2) and gaseous helium (GHe) to the launch pads. GN2 and GHe are used for purging residual propellants from launch vehicle systems during launch operations to reduce the possibility of a fire or explosion. It also reduces potential corrosion along ground support equipment used to load propellants into launch vehicles. Kennedy currently contracts 1.2 million cubic feet of GN2 a year from an Airgas facility located south of the Center. There are over 40 miles of underground GN2 pipes that support LCs 39A and 39B, as well as Space Launch Complexes 36, 37, 40, and 41 at CCSFS. GHe is generated at Kennedy's Converter Compressor Facility and delivered to the launch pads via approximately 13 miles of pipeline (see Figure 8).

Figure 8: Kennedy Launch Complex 39 Gas Supply and Distribution System



Source: NASA OIG presentation using Agency data and Google Maps, "Satellite view of Kennedy Space Center and Cape Canaveral Space Force Station." Accessed January 29, 2026. https://www.google.com/maps/@28.5467199,-80.6836771,27716m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI2MDEyOC4wIKXMDSoASAFQAw%3D%3D.

Kennedy's common use infrastructure for the provision of GN2 currently cannot support high-flow operations from multiple users. Limitations with the system's pumps, vaporizers, and storage tanks limit flow rates and restrict the number of launch vehicles that can be supported concurrently. For example, Kennedy will be unable to provide GN2 for future Space Launch System launches for Artemis from LC 39B while simultaneously supporting Blue Origin's New Glenn launch vehicle launching from Space Launch Complex 36 at CCSFS. Likewise, the GN2 system cannot simultaneously support launches at CCSFS of Blue Origin's New Glenn launch vehicle at Space Launch Complex 36 and United Launch Alliance's Vulcan Centaur launch vehicle at Space Launch Complex 41. Blue Origin officials stated this issue created a major scheduling challenge during preparation for the New Glenn-1 mission that launched in January 2025, and further expressed concern that during future Space Launch System launches there could be 1- to 2-month blackout periods from the pipeline. Kennedy has proposed the construction of a new GN2 system to supplement the current capability during outages, maintenance, and multi-user high flow events. The project would install a liquid nitrogen storage tank, pumps, vaporizers, and a control system to operate the GN2 system. However, the project is estimated to cost up to $25 million and is currently unfunded.

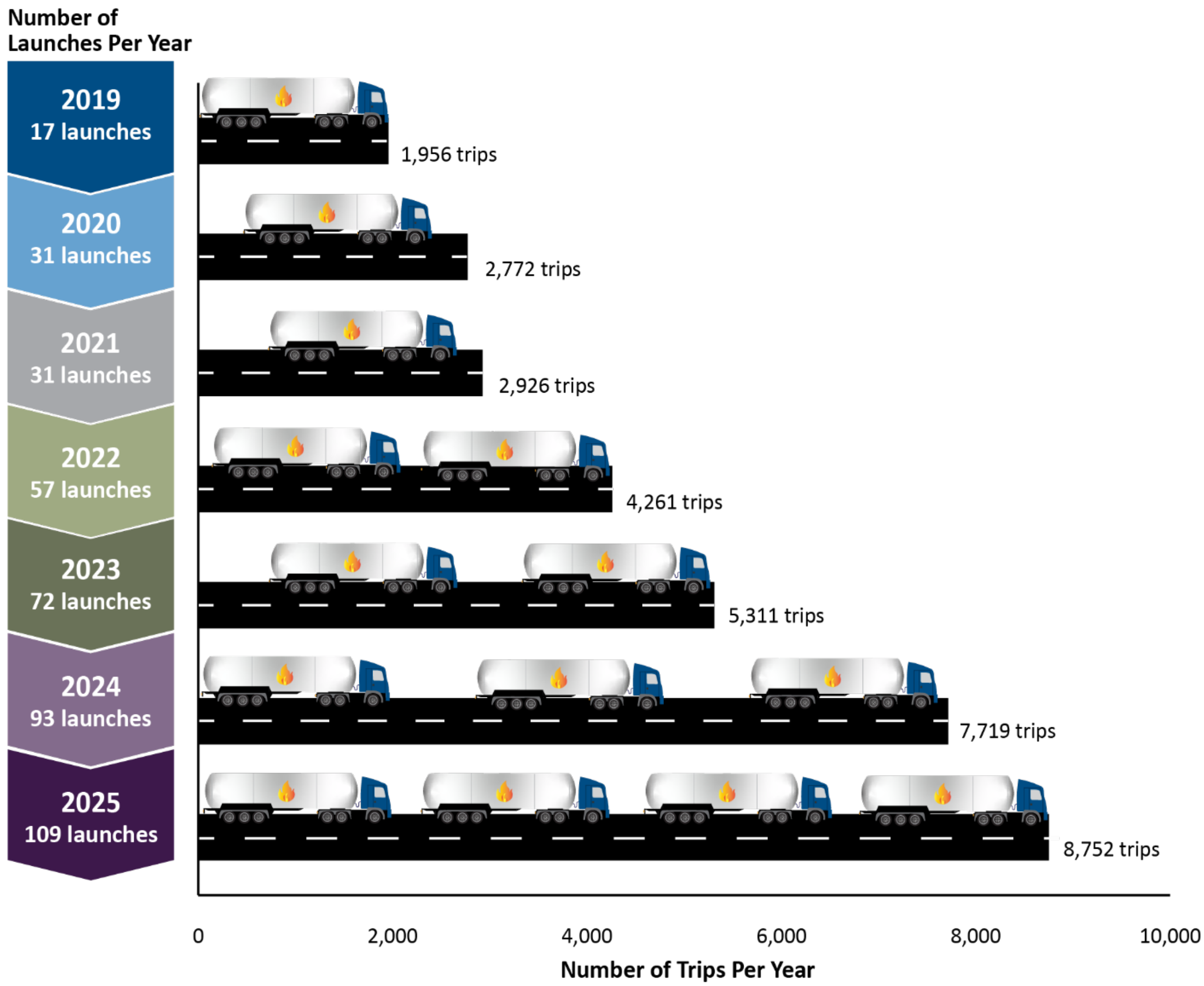
Similar to the GN2 infrastructure, Kennedy and commercial partner officials have stated the volume of GHe produced at the Converter Compressor Facility is insufficient to simultaneously support multiple users. To support Artemis launches, in January 2026, Kennedy completed an $11.1 million Construction of Facilities (CoF) project that installed six new GHe pumps in the Converter Compressor Facility. The additional pumps provide redundancy in the GHe system and triple the amount of GHe flowing into the pipelines that support launch pads across Kennedy and CCSFS. Once GHe is in the pipeline, however, the entire pipeline is pressurized to a uniform pressure. Therefore, Kennedy is unable to support multiple simultaneous launch vehicles that have different GHe pressure requirements. This issue is more challenging in launch scenarios involving Blue Origin as the GHe pressure requirement for New Glenn is lower than the pressure provided by Kennedy's GHe pipeline as well as what is typically needed by other companies and NASA. According to a Kennedy official, the Agency would ideally provide GHe at a uniform pressure to all launch pads. If lower pressure is needed, commercial partners would be responsible for operating control valves within their launch pads that would regulate GHe to the required pressure. However, the equipment needed to regulate GHe to individual pressure requirements is not currently installed, and it is yet to be determined whether NASA or commercial partners would be required to fund the upgrade.

Transportation Infrastructure at Kennedy

Kennedy's roadway and bridge infrastructure was largely constructed in the 1960s and was not designed to accommodate the volume, frequency, and weight of modern heavy transport operations. Kennedy consists of 231 miles of paved roads and six automotive bridges that serve both Kennedy and CCSFS. As launch activity has increased—particularly in support of a growing number of commercial partner missions—the condition of this infrastructure has deteriorated at a rate exceeding original design expectations.

Kennedy officials describe the roadways as being in marginal to poor condition with many of the roads having potholes and other defects that, if not repaved, may endanger the underlying road base. However, the extent of the degradation is not fully known because a Kennedy pavement condition study has not been conducted since 2011. Kennedy officials stated that such studies are needed to provide a comprehensive understanding of roadway conditions at the Center and a data driven basis for prioritizing maintenance and repair activities. Roadway degradation at Kennedy is largely driven by sustained use from heavy trucks, including construction-related deliveries, propellant deliveries, and over-the-road tanker traffic. These vehicles must transit through Kennedy to access LC 39A and LC 39B, as well as launch pads at CCSFS, making the Center's roadways a critical chokepoint for launch logistics. As shown in Figure 9, over-the-road transports at Kennedy have increased exponentially as the number of launches have increased at LC 39A and CCSFS with transports rising from 1,956 trips in 2019 to 8,752 trips in 2025, a 347 percent increase.

Figure 9: Over-the-Road Transports at Kennedy

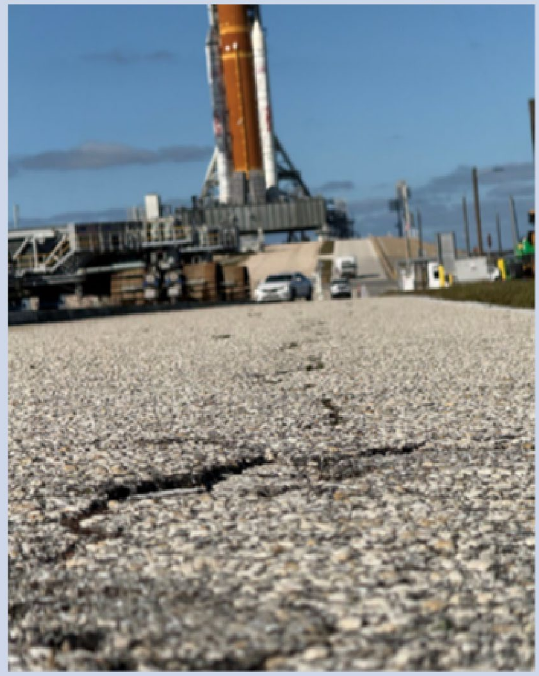


Source: NASA OIG presentation of Agency data.

The strain on Kennedy roadways will be further compounded by SpaceX's continued development and operational use of LC 39A, which is expected to generate approximately 19,000 additional truck trips annually to transport flight hardware, propellant, and related materials for the company's Starship launch vehicle. The cumulative effect of these activities will place continued stress on roadways that were not engineered for prolonged exposure to such loads.

Kennedy officials indicated that prior projects involving sustained heavy traffic have demonstrated how quickly roadway conditions can deteriorate under these conditions. To demonstrate, they cited prior experience during a 2018 shoreline restoration project, which required a sustained influx of heavy construction vehicles. The project involved approximately 35,000 truck trips to transport materials and equipment along a predetermined route. According to Kennedy officials, that volume of traffic accelerated deterioration along frequently used routes, resulting in visible roadway damage. As a result, NASA incorporated roadway repairs attributable to truck traffic into the overall scope and cost of the shoreline restoration project. However, NASA has not established a comparable mitigation plan to address roadway impacts associated with sustained increases in launch-related transport activity.

Road Damage Leading Up to Kennedy Space Center's Launch Complex 39B Due to a Shoreline Restoration Project



Source: NASA.

Kennedy's roadways were also not designed to support the conveyance of larger launch vehicles such as SpaceX's Starship. For example, the Saturn Causeway, which is approximately 4 miles long and serves as the primary access route to LCs 39A and 39B, needed to be widened for the side-by-side transport systems used for Starship. Typical design standards for many of the primary roads on the Center include 12-foot-wide lanes separated by 10- to 20-foot medians. To support Starship, the Saturn Causeway needed to be widened by approximately 8 feet, increasing its width from 26 to 34 feet. Given the high priority of this project, the Agency approved an easement agreement with SpaceX in 2024 permitting the company to assume full responsibility for funding the project and completion.[27] SpaceX completed the Saturn Causeway road widening project in 2025. While this project improved capacity along a critical corridor, it represents a localized solution and does not address all of Kennedy's potential future conveyance issues.

Bridges at Kennedy face similar challenges. All bridges serving Kennedy, except for the newly constructed Indian River Bridge, are close to the end of their design life and require increasing resources to support operations and maintenance activities. In addition, many of the bridges were not designed to support the size, weight, and frequency of current and projected heavy transport operations. For example, NASA owns and maintains the Banana River Bridge, which is the main conduit of traffic between Kennedy and CCSFS. The bridge was constructed in the 1960s and has exceeded its design life. NASA plans to repair the bridge over the next several years to restore its load bearing capacity; however, the project has not been approved or fully funded. A number of minor repairs to the bridge, each costing approximately $1 million, have been performed. While these repairs are intended to address structural concerns in the near term, they will not resolve the bridge's underlying design limitations.

[27] An easement is a legal right that allows its holder to use another person's or entity's property without possessing it.

Kennedy officials stated that the bridge's steep grade and limited width make it unsuitable for current and future NASA and commercial partner requirements, including the transport of larger launch vehicles such as Blue Origin's New Glenn. As a result, Kennedy officials indicated that full replacement of the bridge will ultimately be necessary to meet operational requirements. Until such replacement occurs, oversized transports, such as New Glenn, will need to be routed along a 20-mile detour, risking mission impacts, including potential launch delays. Although NASA owns and maintains the bridge, Kennedy officials noted that the need for capacity improvements is driven largely by the transportation requirements of commercial partners supporting expanded launch activity at Kennedy. NASA and the U.S. Space Force have identified the replacement of the bridge as a high priority project because it serves as a major transportation corridor between key launch operation areas, but no funding for the project has been approved. The Space Force, in collaboration with NASA, is actively working to identify viable workarounds should the bridge replacement not be completed by required need dates. Kennedy estimates that roadway and bridge repairs could cost over $200 million over the next 10 years.

Common Use Launch Infrastructure at Wallops

Wallops does not face the same challenges with its common use launch infrastructure as Kennedy. Wallops officials stated that recent upgrades to the electrical power distribution system and construction of a new bridge connecting the Wallops Island Launch Site to the Mainland are anticipated to support current launch rates and future development on the island. For instance, in 2018, Wallops completed $8 million in upgrades to the electrical power distribution system on Wallops Island. Then, in 2025, construction began on a new causeway bridge. The bridge will be flatter and wider than its predecessor, featuring two 12-foot-wide lanes that will be able to accommodate large, heavy launch vehicles such as the Antares 330. Construction of the bridge is expected to be completed by 2028. Wallops officials stated that infrastructure for the provision of commodities, such as GN2 and GHe, is sufficient to support the current launch cadence. However, as launch activity at Wallops increases, the Facility may have to explore building above-ground pipelines to provide a continuous flow of gas to the orbital launch pads. Wallops officials also anticipate that increased launch activity will lead to frequent and necessary road repairs.

Declining Budgets, Statutory Funding Barriers, and Cost Recovery Practices Impede NASA from Maintaining and Upgrading Aging Launch Infrastructure

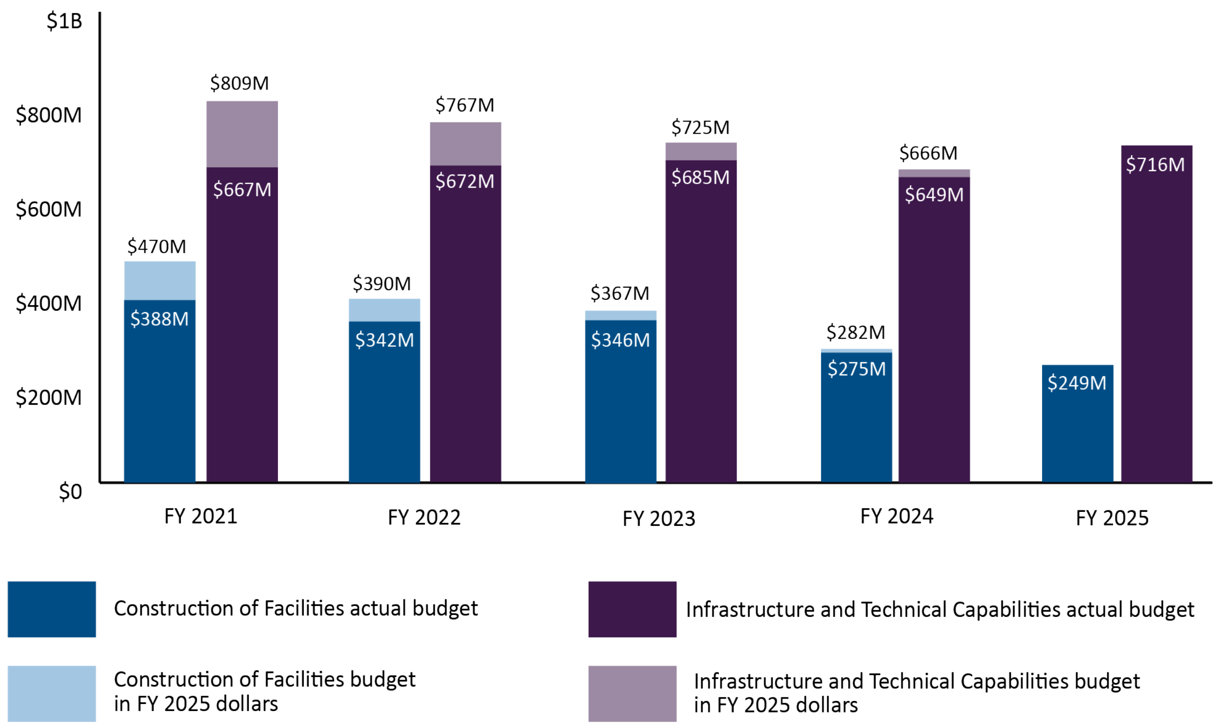
NASA has struggled to maintain and upgrade the Agency's launch infrastructure due to declining construction and maintenance budgets, as well as statutory funding barriers and cost recovery practices that prevent commercial partners from contributing equitably to infrastructure projects.

Declining Budgets

The decline in the construction and maintenance portions of NASA's budget has constrained the Agency's ability to maintain and upgrade its launch infrastructure, which creates challenges as launch activity at Kennedy and Wallops continues to grow. From fiscal years 2021 to 2025, NASA's budgets for programs that maintain and upgrade the Agency's infrastructure, including launch infrastructure, have decreased when accounting for inflation. As displayed in Figure 10, the Agency's CoF budget, which funds activities related to the design, construction, and demolition of infrastructure, declined from

$470 million to $249 million, when adjusting for inflation, a more than 47 percent decrease. During the same period, the Infrastructure and Technical Capabilities budget, which funds sustainment, operations, and maintenance for institutional assets, declined from $809 million to $716 million, when adjusting for inflation, a more than 11 percent decrease.

Figure 10: Decline in NASA's Construction and Maintenance Budgets



Source: NASA OIG presentation of Agency data.

Note: Fiscal year (FY). Dollar amounts presented are rounded.

According to officials from NASA's Office of Strategic Infrastructure, declining CoF funding levels make it difficult to support all requirements for improving the condition of the Agency's real property inventory, including launch infrastructure. While NASA's goal is to renew—replace, repair, or upgrade—its infrastructure every 66 years, the current renewal rate, based on the available budget, is over 260 years, meaning aged infrastructure stays in place for longer periods of time. Consequently, upgrades to Agency infrastructure, such as Kennedy's launch infrastructure, have been delayed despite issues being known about for decades. For example, the degraded condition of portions of Kennedy's electrical power distribution system was first discovered in the early 2000s, but the Agency could not commit CoF funds until fiscal year 2026 to begin to make improvements. In addition, the Converter Compressor Facility, utilized to provide GN2 and GHe to the launch pads, had funding approved for the first of a three-phase project in 2018. Phase 1 was completed in 2025, but Phases 2 and 3 have yet to receive funding.

Additionally, declining Infrastructure and Technical Capabilities budgets make it difficult for NASA to perform all the necessary maintenance on its facilities and infrastructure, including those utilized for launches. NASA's deferred maintenance gap has grown to almost $4.7 billion, with Kennedy making up nearly $1 billion of the total.[28] Common use launch infrastructure, such as electrical power duct banks and gas pipelines, are assets whose maintenance is funded out of the Infrastructure and Technical Capabilities budget in most cases. However, according to an Office of Strategic Infrastructure official, the budget for fiscal year 2026 is funded at around $135 million less than the estimated cost for basic sustainment of the Agency's infrastructure, not including major repairs, which increases the deficit to $400 million. Continuously deferring maintenance on launch facilities and support infrastructure leads to costly emergency repairs, reduced equipment efficiency, accelerated asset degradation, and significant safety hazards.

During our audit, the degraded condition and age of NASA's launch infrastructure garnered attention from Congress. The H.R.1 reconciliation bill, which became law in July 2025, provides $250 million for construction, revitalization, recapitalization, and other infrastructure projects and improvements at Kennedy.[29] The initial investment of $250 million provides a sizeable downpayment for Kennedy to invest in necessary upgrades of its aging launch infrastructure. For example, NASA officials estimate the Agency will spend at least $125 million of the funds on upgrading the electrical power distribution system. Although the investment is a positive step for the Agency, additional funds will be required as NASA officials have estimated that Kennedy will need at least $1 billion to completely upgrade its launch infrastructure.

Statutory Funding Barriers

Significant statutory funding barriers prevent NASA from receiving money directly from commercial partners for use of the Agency's launch infrastructure. Although approximately 70 percent of launches supported by NASA since 2020 have been commercial missions, which have increasingly driven demand for and wear on NASA-owned launch facilities and support infrastructure, the Agency is not authorized to receive capital infrastructure investments from commercial partners. Any commercial investment that improves NASA-owned infrastructure is considered an augmentation of NASA's appropriations and would violate the Antideficiency Act.[30] The Act also restricts NASA from funding infrastructure projects that primarily benefit commercial partners, even when NASA programs and missions—like the Commercial Crew Program and Artemis campaign—derive indirect benefits from those investments.

By contrast, the U.S. Space Force has authority to accept funds, services, and equipment from commercial partners to support infrastructure improvements at its launch facilities.[31] Because NASA does not have comparable authority, infrastructure upgrades needed to support commercial launch operations at NASA facilities must generally be funded through NASA appropriations. This creates a

---

[28] Deferred maintenance refers to all the maintenance the Agency should have done to facilities that was deferred to a later time, typically due to budget constraints.

[29] H.R 1, Pub. L. No. 119-21 139 (2025).

[30] The Antideficiency Act (31 U.S.C. § 1341) is a law that prohibits federal agencies from obligating funds in advance of or more than an appropriation, accepting voluntary services, or from augmenting appropriations with funds from outside sources without specific statutory authority.

[31] The National Defense Authorization Act for Fiscal Year 2013 authorizes DoD to enter into agreements to accept contributions of funds, services, and equipment from commercial companies to support investment in DoD infrastructure.

structural funding gap that limits NASA's ability to modernize and sustain launch-related infrastructure in an environment where commercial missions represent most launches.

For nearly a decade, Kennedy has sought legislation that permits commercial partners to contribute to an Infrastructure Investment Fund. In 2022, Kennedy began to work with the Office of Management and Budget to refine and finalize draft legislative language. In July 2025, the Space Ready Act was introduced in the Senate.[32] If enacted, the Act will establish a 10-year pilot program authorizing Kennedy to accept financial contributions from public and private entities for long-term, large-scale shared infrastructure projects. These funds could be used to support user-driven requirements, including maintenance, repairs, upgrades, and expansions of NASA-owned launch infrastructure. This authority aims to provide a more sustainable funding model, reduce deferred maintenance, and help ensure Kennedy remains capable of supporting NASA and government and commercial missions.

Wallops was included in early versions of the draft legislation, but the Facility was ultimately excluded. Wallops officials contend that as NASA's only other owned and operated launch site, experiencing a comparable trajectory of commercial growth, the Facility faces the same structural funding challenges the Infrastructure Investment Fund is designed to address. The officials stressed that exclusion of Wallops from the legislation creates an inequitable funding structure in which commercial partners launching from Wallops benefit from NASA-owned infrastructure with no mechanism to contribute to the Facility's sustainment or improvement.

Cost Recovery Practices

NASA's cost recovery practices have also limited the amount of funds collected from commercial partners for their use of the Agency's launch infrastructure. In some instances, the Agency's choice of agreements has limited the amount of funds that could have been collected for rent. In other instances, rates charged for indirect costs are often not sufficient to maintain or upgrade launch infrastructure.

NASA's use of Commercial Space Launch Act (CSLA) agreements instead of Enhanced Use Leases (EUL) has limited the amount of funds the Agency could have collected for launch facilities such as Kennedy's LC 39A. After the end of the Space Shuttle Program in 2011, NASA did not have a recognized public need for LC 39A and subsequently entered into a CSLA agreement with SpaceX to operate the complex. The 2014 agreement was signed for a period of 20 years and was intended to encourage, facilitate, and promote commercial space launches. The agreement has largely accomplished those goals with SpaceX successfully launching 24 commercial crew and cargo missions from LC 39A since its enactment. However, CSLA agreements benefit the commercial partner by only charging them direct costs for launch and reentry services, and the Agency does not collect fair market value proceeds for the partner's use of the land and existing launch pad infrastructure.[33]

While SpaceX is responsible for the cost of operations and maintenance activities within the LC 39A perimeter and has invested substantially in infrastructure, NASA would have benefited from utilizing an EUL to collect fair market value for use of the land and infrastructure. Under its EUL authority, NASA may retain lease revenues and apply proceeds toward maintenance, capital revitalization, and improvements of the Agency's real property assets. In this instance, a portion of the EUL proceeds could

[32] Space Ready Act, S.2622, 119th Congress (2025).

[33] Fair market value should be used to establish market-based pricing of real property agreements. Market-based pricing is the price for a good, resource, or service that is based on competition in open markets.

have been used to update aged common use launch infrastructure that currently supports every launch taking place at Kennedy and CCSFS.

In 2023 NASA shifted its policy to limit the scope of CSLA agreements as well as the amount of time the agreement is in place. According to NASA policy, once the mission priority of the CSLA agreement is achieved, a different authority, such as a Space Act Agreement or an EUL for property, should be utilized.[34] Kennedy is in the process of appraising LC 39A land and a landing zone north of the pad perimeter to determine its fair market value for a future EUL. Wallops has made a similar change in its use of agreements by moving to an EUL with the Virginia Spaceport Authority for Pads 0A and 0B. Wallops previously did not collect the fair market value for use of the land at these launch complexes, but shifting to an EUL allows Wallops to use the proceeds to invest back into its launch infrastructure.

The indirect cost rates NASA charges commercial partners for reimbursable launch services have also been insufficient to maintain or upgrade launch infrastructure. NASA officials stated that costs recovered from reimbursable agreements with its partners often do not provide enough funds to maintain or upgrade launch infrastructure even though the majority of NASA supported launches are commercial. To recover costs, NASA utilizes reimbursable Space Act Agreements when it performs launch services for commercial partners.[35] Per NASA policy, reimbursable Space Act Agreements are charged to partners at full cost, meaning both direct and indirect costs are collected.[36] Direct costs include items that can be directly traced to an output such as labor, utilities, commodities, security, and first response. Indirect costs are expenses that cannot be directly traced to a single activity and could include administrative services and operating and maintenance costs for buildings and equipment.

NASA charges indirect costs by multiplying the Agency Agreement Indirect Rate by the total direct costs. The Agency Agreement Indirect Rate is a predetermined percentage set annually by the NASA Chief Financial Officer. In fiscal year 2025, the rate was 13.9 percent, dropping from 15 percent a decade earlier. Officials from the Office of the Chief Financial Officer explained that the reduced rate was caused by a decline in the Agency's Safety, Security, and Missions Services budget as a percentage of the overall NASA budget since both of these budget amounts factor into the calculation of the Agency Agreement Indirect Rate.[37] Therefore, as the Safety, Security, and Missions Services budget declines as a percentage of NASA's overall budget, the Agency Agreement Indirect Rate drops, resulting in the Agency charging commercial partners less and recovering less costs through reimbursable agreements. This is particularly challenging as commercial launch rates have risen dramatically at Kennedy and Wallops, leading to the increased use of their infrastructure and other administrative services. According to Kennedy officials, the amount of indirect costs recovered from reimbursable agreements for launch services does not provide the Center enough funds to use on maintenance and repairs of common use launch infrastructure.

---

[34] NASA Procedural Requirements 9090.1C, *Partnership Agreements – Financial Requirements and Administration (Updated with Change 2)* (February 23, 2023).

[35] Reimbursable Space Act Agreements primarily benefit the commercial partner, and NASA's costs associated with the activity are reimbursed by the partner in accordance with Agency financial policy. NASA undertakes reimbursable agreements when it has goods, services, facilities, or equipment not reasonably available from the U.S. commercial sector, that can be made available to others on a noninterference basis, consistent with the Agency's mission objectives.

[36] NASA Procedural Requirements 9090.1C.

[37] The Safety, Security, and Mission Services congressional appropriation funds mission services and capabilities and the Technical Authorities.

In addition to the Agency Agreement Indirect Rate, NASA policy allows Other Approved Indirect Rates to be charged to commercial partners.[38] Wallops utilizes this policy for its reimbursable agreements and charges an additional indirect rate of 9.5 percent of direct costs to its partners, which has been utilized for operational support and maintenance of facilities. At Kennedy, programs like Exploration Ground Systems also charge an additional indirect rate for use of programmatic-owned infrastructure. However, maintenance and operations for common use infrastructure, such as the electrical power distribution system, pipelines, and roads, are not programmatically funded meaning there is no additional rate to cover those costs.

[38] NASA Procedural Requirements 9090.1C.

CONCLUSION

NASA's launch infrastructure is vital to providing the Agency, other government agencies, and commercial partners access to space for their most complex and expensive missions, such as the Artemis campaign and DoD missions. Nevertheless, NASA's launch infrastructure is dated and often does not provide the capacity to meet the growing demands of the Agency and its partners. NASA has sought to revitalize its launch infrastructure by investing in upgrades and expansions, but progress has been slow as the Agency struggles with declining construction and maintenance budgets and statutory funding barriers that prevent commercial partners from contributing equitably to launch infrastructure projects. As the Agency looks to the future with crewed missions to the Moon and Mars, maintaining a robust and reliable launch infrastructure is essential to meeting mission needs.

Key to revitalizing NASA's launch infrastructure will be large investments in additional launch sites and upgrades to common use support infrastructure that provides the necessary utilities, commodities, and transportation to the sites. The July 2025 H.R.1 reconciliation bill provided $250 million for infrastructure improvements at Kennedy and will serve as a vital down payment to replace a portion of the Center's Apollo era launch infrastructure. However, NASA has estimated that projects to upgrade and improve infrastructure at the Center could cost at least $1 billion. In our judgement, it is imperative that NASA strategically prioritize funding to address Kennedy's most pressing common use infrastructure issues, including those related to electrical power distribution, gas supply and distribution, and transportation.

Going forward, it is also vital for NASA to have a means to collect funds from commercial partners for their increasing use of the Agency's launch infrastructure. Since 2020, commercial launches represented approximately 70 percent of all launches supported by Kennedy and Wallops. Yet, statutory funding barriers prevent the Agency from receiving money directly from these partners for infrastructure and the Agency's cost recovery practices have limited the amounts collected from them. NASA initiated efforts a decade ago to establish an Infrastructure Investment Fund that would allow the Agency to accept contributions from non-federal sources for long-term, large-scale shared infrastructure projects. However, legislation authorizing such a fund has yet to pass. In our judgement, without an Infrastructure Investment Fund and analyses of whether additional indirect rates should be charged to commercial partners for launch services, it will be difficult for NASA to fund the infrastructure upgrades required to meet the launch needs of the Agency and the nation.

RECOMMENDATIONS, MANAGEMENT'S RESPONSE, AND OUR EVALUATION

To improve the condition and capacity of NASA's launch infrastructure to support current and future needs, we recommended the Kennedy Space Center Director:

1. Conduct a study to understand the effects of heavy vehicle traffic associated with sustained increases in launch-related transport activity on Kennedy roadways and establish a mitigation plan to address the impacts.
2. Prioritize funding from the H.R.1 reconciliation bill to address common use launch infrastructure issues at Kennedy, including electrical power distribution, gas supply and distribution, and transportation infrastructure.
3. Assess the ability to charge an Other Approved Indirect Rate on reimbursable agreements for launch services that is dedicated to maintenance and upgrades of common use launch infrastructure.

We provided a draft of this report to NASA management who concurred with our recommendations and described planned actions to address them. We consider management's comments responsive; therefore, the recommendations are resolved and will be closed upon completion and verification of the proposed corrective actions.

Management's comments are reproduced in Appendix C. Technical comments provided by management and revisions to address them have been incorporated as appropriate.

If you have questions about this report or wish to comment on the quality or usefulness of this report, contact Laurence Hawkins, Financial Oversight and Audit Quality Director, at 202-358-1543 or laurence.b.hawkins@nasa.gov.

Digitally signed by
Robert Steinau
Date: 2026.06.22
06:02:15 -04'00'

Robert H. Steinau
NASA OIG Senior Official

APPENDIX A: SCOPE AND METHODOLOGY

While we performed this audit from January 2025 through April 2026, it was temporarily suspended during the government shutdown that occurred from October 1 to November 12, 2025. The audit was performed in accordance with generally accepted government auditing standards, which require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In this audit, we assessed the state of NASA's launch infrastructure and its ability to meet mission needs. To complete our work, we analyzed projected growth in NASA supported launches from the Agency's primary launch complexes at Kennedy and Wallops. We reviewed launch manifests and studies and met with Agency mission managers and commercial partners to determine the makeup of recent launches and gauge future activity.

To assess the state of NASA's launch facilities and support infrastructure, we reviewed real property data and condition assessment reports for launch pads, utility systems, and transportation networks. We also conducted site visits at Kennedy and Wallops to observe launch infrastructure and hold discussions with their personnel and commercial partners on the condition and capacity of infrastructure and the challenges to meeting mission needs.

To assess NASA's progress toward upgrading launch infrastructure, we reviewed Agency budgets, financial data, and strategic planning documents related to construction and maintenance of launch facilities and support infrastructure. We also reviewed agreements NASA has with commercial partners at Kennedy and Wallops and held discussions with Kennedy and Wallops officials, commercial partners, and the U.S. Space Force to discuss the agreements and cost recovery practices.

Assessment of Data Reliability

We used limited computer-processed data for this audit. We reviewed and analyzed NASA budget, financial, and real property data for launch infrastructure. We concluded that the data was sufficiently reliable for the purposes of this audit. The findings and conclusions of this report do not rely on computer-generated data.

Review of Internal Controls

We assessed internal controls and compliance with laws and regulations to determine whether NASA is effectively managing the Agency's launch infrastructure. Control weaknesses are identified and discussed in this report. Our recommendations, if implemented, will improve those identified weaknesses.

Prior Coverage

During the last 5 years, the NASA Office of Inspector General and Government Accountability Office issued six reports of significant relevance to the subject of this report. Reports can be accessed at https://oig.nasa.gov/audits/ and https://www.gao.gov, respectively.

NASA Office of Inspector General

2025 Report on NASA's Top Management and Performance Challenges (2025 Report, January 2026)

NASA's Rocket Propulsion Test Program (IG-24-018, September 24, 2024)

NASA's Construction of Facilities (IG-21-027, September 8, 2021)

Government Accountability Office

National Security Space Launch: Increased Commercial Use of Ranges Underscores Need for Improved Cost Recovery (GAO-25-107228, June 30, 2025)

NASA Artemis Missions: Exploration Ground Systems Program Could Strengthen Schedule Decisions (GAO-25-106943, October 17, 2024)

Federal Real Property: Agencies Should Provide More Information About Increases in Deferred Maintenance and Repair (GAO-24-105485, November 16, 2023)

Appendix B: Quick Facts on NASA-Owned Launch Pads

Kennedy and Wallops are NASA's primary launch complexes that support Agency, DoD, and commercial missions. Kennedy is home to LC 39A and LC 39B while Wallops has Pads 0A, 0B, 0C, 0D, 1A, 2, and 3. Provided in this appendix is an overview of each launch pad including its location and operator; the year the pad was constructed; and the current replacement value, which is the estimated amount it would cost to replace the launch pad in current dollars. Additionally, the appendix provides information about each rocket launched at the pads along with the dates the rocket was used; the rocket's manufacturer, height, weight, and destination; the vehicle's use; and whether the vehicle was or will be crewed, uncrewed, or both.

Launch Complex 39A

Location: Kennedy Space Center

Operator: SpaceX

Year Constructed: 1965

Current Replacement Value: $712.9 million

Rockets Used at Launch Complex 39A

	Saturn V	Space Shuttle	Falcon 9	Falcon Heavy	Starship
					
Date Range in Use	1967-1973	1981-2011	2017-present	2018-present	2023-present (from SpaceX Starbase); first launch planned from Kennedy 2026
Manufacturer	Boeing, North American Aviation, Douglas Aircraft Company	Rockwell International, Martin Marietta	SpaceX	SpaceX	SpaceX
Height	363 feet	184 feet	229.6 feet	229.6 feet	403 feet
Weight	6.2 million pounds	4.5 million pounds	1.2 million pounds	3.1 million pounds	11 million pounds
Destination	lunar orbit	low Earth orbit	low Earth orbit, lunar orbit, Mars	low Earth orbit, lunar orbit, Mars	low Earth orbit, lunar orbit, Mars
Vehicle Use	Apollo, Skylab	ISS, Russian Mir space station, payload/crew transport, satellite deployment	commercial resupply services, commercial spacecraft and satellite deployment, national security missions, payload/crew transport	commercial resupply services, commercial spacecraft and satellite deployment, national security missions, payload transport	commercial resupply services, commercial spacecraft and satellite deployment, payload/crew transport, Human Landing System
Crewed or Uncrewed	both	both	both	uncrewed	both

Launch Complex 39B

Location: Kennedy Space Center

Operator: NASA Exploration Ground Systems

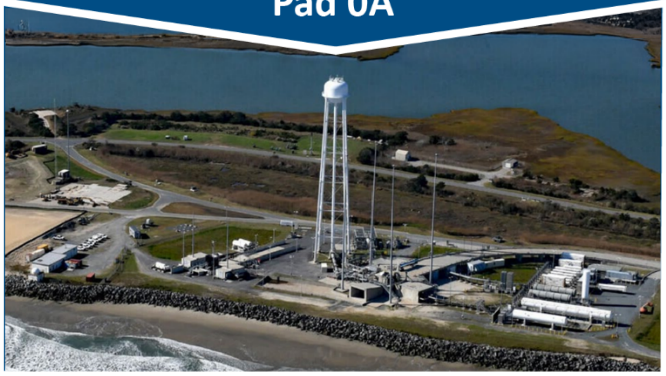
Year Constructed: 1966

Current Replacement Value: $588.1 million

Rockets Used at Launch Complex 39B

	Saturn V 	Saturn IB 	Space Shuttle 	Ares I-X 	Space Launch System 
Date Range in Use	1967-1973	1973-1975	1981-2011	2009	2022-present
Manufacturer	Boeing, North American Aviation, Douglas Aircraft Company	Chrysler Corporation, Douglas Aircraft Company	Rockwell International, Martin Marietta	ATK Space Systems	Boeing, L3 Harris, Northrop Grumman
Height	363 feet	224 feet	184 feet	327 feet	322 feet
Weight	6.2 million pounds	1.3 million pounds	4.5 million pounds	1.8 million pounds	5.7 million pounds
Destination	lunar orbit	low Earth orbit	low Earth orbit	low Earth orbit	lunar orbit
Vehicle Use	Apollo, Skylab	Skylab	ISS, Russian Mir space station, payload/crew transport, satellite deployment	Constellation	Artemis
Crewed or Uncrewed	both	both	both	both	both

Pad 0A



Location: Wallops Flight Facility

Operator: Virginia Spaceport Authority, Northrop Grumman, Firefly Aerospace

Year Constructed: 2011

Current Replacement Value: $131.4 million

Rockets Used at Pad 0A

	Antares 110	Antares 230	Antares 330	Eclipse	Alpha
					
Date Range in Use	2013-2014	2016-2023	first launch scheduled 2026	first launch scheduled 2026	2021-present (from Vandenberg Space Force Base); first scheduled launch from Wallops 2026
Manufacturer	Northrop Grumman	Northrop Grumman	Northrop Grumman	Northrop Grumman, Firefly Aerospace	Firefly Aerospace
Height	139 feet	139 feet	154 feet	192 feet	96.7 feet
Weight	572,000 pounds	572,000 pounds	656,978 pounds	unpublished	119,314 pounds
Destination	low Earth orbit	low Earth orbit	low Earth orbit	low Earth orbit, geostationary transfer orbit	low Earth orbit, sun synchronous orbit
Vehicle Use	commercial resupply services	commercial resupply services	commercial resupply services	commercial resupply services, commercial spacecraft deployment, national security missions, scientific payloads	small satellite deployment for commercial, civil, and national security missions
Crewed or Uncrewed	uncrewed	uncrewed	uncrewed	uncrewed	uncrewed

Pad 0B

Location: Wallops Flight Facility

Operator: Virginia Spaceport Authority, Northrop Grumman

Year Constructed: 1999

Current Replacement Value: $9.5 million

Rockets Used at Pad 0B

	Minotaur I	Minotaur IV	Minotaur V
			
Date Range in Use	2000-present	2010-present	2016-present
Manufacturer	Northrop Grumman	Northrop Grumman	Northrop Grumman
Height	63 feet	78 feet	80 feet
Weight	80,000 pounds	193,000 pounds	197,034 pounds
Destination	low Earth orbit	low Earth orbit	geosynchronous transfer orbit, medium transfer orbit
Vehicle Use	small satellite deployment for U.S. Air Force	small satellite deployment for U.S. Air Force	small spacecraft deployment
Crewed or Uncrewed	uncrewed	uncrewed	uncrewed

Pad 0C

Location: Wallops Flight Facility

Operator: Virginia Spaceport Authority, Rocket Lab

Year Constructed: 2019

Current Replacement Value: $13.5 million

Rockets Used at Pad 0C

	Electron 	HASTE 
Date Range in Use	2017-present	2023-present
Manufacturer	Rocket Lab	Rocket Lab
Height	59 feet	59 feet
Weight	28,660 pounds	28,660 pounds
Destination	low Earth orbit	suborbital
Vehicle Use	small satellite deployment for government, commercial, and academic scientific study	hypersonic demonstrations
Crewed or Uncrewed	uncrewed	uncrewed

Pad 0D

Location: Wallops Flight Facility

Operator: Virginia Spaceport Authority, Rocket Lab

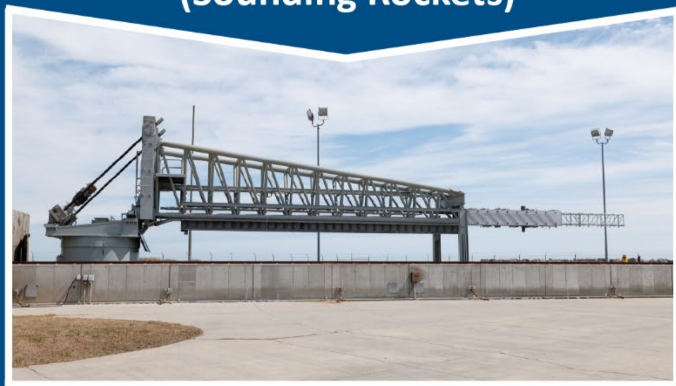
Year Constructed: 2025

Current Replacement Value: $15 million

Rockets Used at Pad 0D

	Neutron
	
Date Range in Use	first launch scheduled 2026
Manufacturer	Rocket Lab
Height	141 feet
Weight	1.1 million pounds
Destination	low Earth orbit, deep space
Vehicle Use	mega-constellation satellite deployment, deep space missions, human space flight
Crewed or Uncrewed	both

Pad 2–50K Launcher (Sounding Rockets)



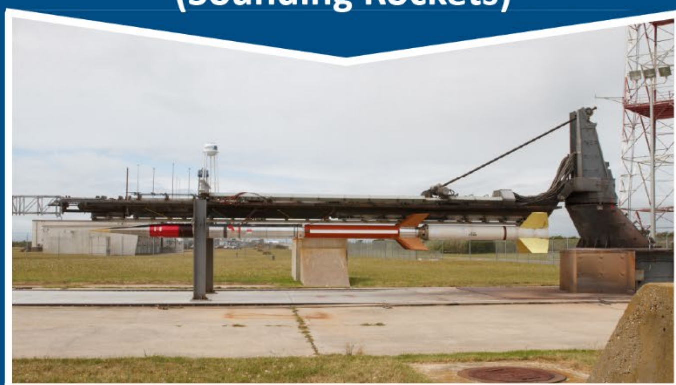
Location: Wallops Flight Facility

Operator: NASA

Year Constructed: 1992

Current Replacement Value: $3.4 million

Pad 2–ARC Launcher (Sounding Rockets)



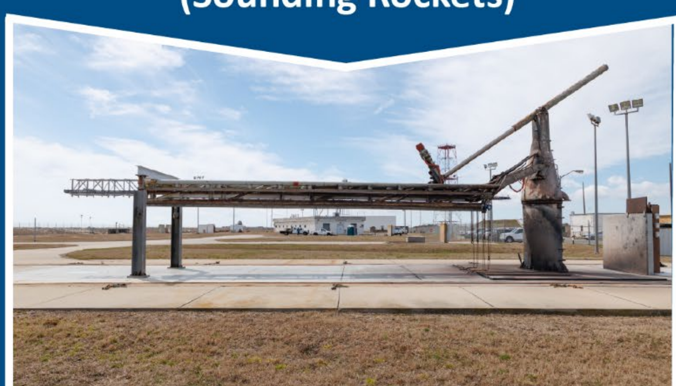
Location: Wallops Flight Facility

Operator: NASA

Year Constructed: 1968

Current Replacement Value: $8.3 million

Pad 2–MRL Launcher (Sounding Rockets)



Location: Wallops Flight Facility

Operator: NASA

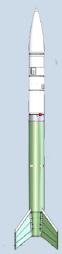
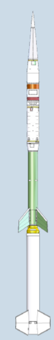
Year Constructed: 1966

Current Replacement Value: $3 million

Pad 2 continued

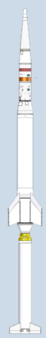
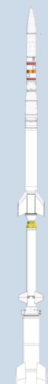
NOTE: The height and weight of a sounding rocket can vary depending on the type of payload

Rockets Used at Pad 2

	Black Brant V	Improved Orion	Black Brant X	Black Brant IX	Terrier Improved Orion
					
Date Range in Use	1971-present	1974-present	1981-present	1982-present	1996-present
Manufacturer	NASA	NASA	NASA	NASA	NASA
Height	17.4 feet	8.8 feet	39.7 feet	32.7 feet	21.7 feet
Weight	2,786.4 pounds	943.8 pounds	6,073.9 pounds	5,114.4 pounds	3,139 pounds
Destination	suborbital	suborbital	suborbital	suborbital	suborbital
Vehicle Use	science missions	science missions	science missions	science missions	science missions
Crewed or Uncrewed	uncrewed	uncrewed	uncrewed	uncrewed	uncrewed

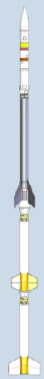
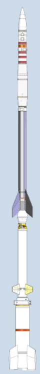
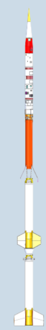
Pad 2 continued

Rockets Used at Pad 2

	Oriole II 	Terrier Improved Malamute 	Oriole III-A 	Oriole III 	Oriole IV 
Date Range in Use	2005-present	2012-present	2022-present	2013-present	2013-present
Manufacturer	NASA	NASA	NASA	NASA	NASA
Height	26.9 feet	24 feet	35 feet	39.7 feet	47.5 feet
Weight	4,916.9 pounds	3,635.4 pounds	5,947.1 pounds	9,490 pounds	10,545.2 pounds
Destination	suborbital	suborbital	suborbital	suborbital	suborbital
Vehicle Use	science missions	science missions	science missions	science missions	science missions
Crewed or Uncrewed	uncrewed	uncrewed	uncrewed	uncrewed	uncrewed

Pad 2 continued

Rockets Used at Pad 2

	Terrier-Terrier-Black Brant 	Black Brant XI-A 	Black Brant XII-A 	Terrier-Terrier-Oriole 	Terrier-Terrier-Improved Malamute 
Date Range in Use	2025-present	2019-present	2014-present	2010-present	first launch planned for 2027
Manufacturer	NASA	NASA	NASA	NASA	NASA
Height	46.9 feet	45.2 feet	52.3 feet	41.4 feet	37.9 feet
Weight	7,604.4 pounds	9,548.3 pounds	10,494.4 pounds	7,578.6 pounds	6,079.3 pounds
Destination	suborbital	suborbital	suborbital	suborbital	suborbital
Vehicle Use	science missions	science missions	science missions	science missions	science missions
Crewed or Uncrewed	uncrewed	uncrewed	uncrewed	uncrewed	uncrewed

Pad 1A (Hypersonic Rockets)

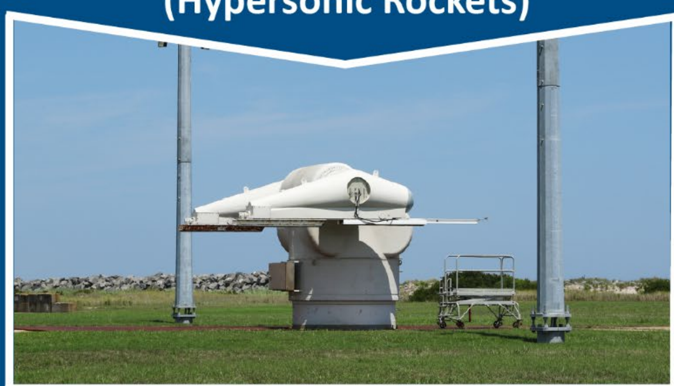
Location: Wallops Flight Facility

Operator: Department of Defense

Year Constructed: 2020

Current Replacement Value:
$3 million (estimated)

Pad 3–MK7 Launcher (Hypersonic Rockets)



Location: Wallops Flight Facility

Operator: Department of Defense (for the U.S. Navy)

Year Constructed: 2019

Current Replacement Value:
$3.7 million

Appendix C: Management's Comments

National Aeronautics and Space Administration

John F. Kennedy Space Center
Kennedy Space Center, FL 32899

Reply to Attn of: Office of the Center Director

TO: Deputy Assistant Inspector General for Audits

FROM: Director, Kennedy Space Center

SUBJECT: Agency Response to OIG Draft Report, "NASA's Launch Infrastructure" (A-25-02-00-MSD)

The National Aeronautics and Space Administration (NASA) appreciates the opportunity to review and comment on the Office of Inspector General (OIG) draft report entitled, "NASA's Launch Infrastructure" (A-25-02-00-MSD), dated April 28, 2026.

In this draft report, the OIG found NASA's launch infrastructure is dated and lacks the capacity to meet the growing demands of the Agency and commercial partners.

The OIG makes three recommendations addressed to the Kennedy Space Center (KSC) Director to improve the condition and capacity of NASA's launch infrastructure to support current and future needs. Specifically, the OIG recommends the following:

Recommendation 1: Conduct a study to understand the effects of heavy vehicle traffic associated with sustained increases in launch-related transport activity on Kennedy roadways and establish a mitigation plan to address the impacts.

> **Management's Response:** NASA concurs with this recommendation.
>
> NASA is in the process of securing resources to initiate a Center-wide transportation impact study, conducted in coordination with the Cape Canaveral Space Force Station (CCSFS), to assess the effects of current and projected heavy transport activity on roadways and bridges and to identify mitigation strategies. Coordination with CCSFS is essential given the integrated nature of operations across both installations and the shared transportation network supporting civil, commercial, and national security missions. This study will characterize impacts, identify actionable mitigations, and inform long-term planning for safe, resilient, and sustainable transportation infrastructure across the spaceport, and will evaluate long-term concepts such as dedicated heavy transport corridors and potential intermodal solutions, including rail and maritime options where feasible.

NASA continuously prioritizes infrastructure investments against constrained budgets, focusing on the highest mission and safety risks. While many KSC roadways rank below mission-critical systems in risk-based prioritization, the Agency has advanced key transportation improvements through strategic partnerships. These include replacement of the NASA Causeway drawbridges with the Florida Department of Transportation (FDOT)-owned high-span State Road 405 bridge, expansion of Space Commerce Way into State Road 321, and ongoing coordination on connectivity improvements between KSC and CCSFS. KSC also prioritized targeted roadway repairs and safety enhancements, including recent improvements to Playalinda Beach Road following hurricane and transport-related degradation. To better characterize vehicle routing, frequency, and congestion trends, NASA has also secured funding to conduct a comprehensive Pavement Condition Assessment and is advancing its Simulation of Urban Mobility (SUMO) model through a Spaceport Digital Twin platform.

Estimated Completion Date: October 31, 2026.

Recommendation 2: Prioritize funding from the House of Representatives (H.R.) 1 reconciliation bill to address common use launch infrastructure issues at Kennedy, including electrical power distribution, gas supply and distribution, and transportation infrastructure.

Management's Response: NASA concurs with this recommendation.

NASA KSC received $254 million through the H.R.1 reconciliation bill to support the construction, repair, and improvement of critical infrastructure and facilities. Following enactment, KSC conducted a comprehensive prioritization, which identified 38 projects addressing the most pressing common-use infrastructure needs. Available funding supports execution of the highest-priority subset of these requirements, enabling investment in 11 critical projects focused primarily on electrical power distribution and gas supply systems. These upgrades materially improve the reliability, resilience, and operational capacity of infrastructure essential to sustaining the increasing cadence of both government and commercial launch operations.

Due to funding limitations, transportation infrastructure improvements were not included in this initial allocation. However, KSC continues to address roadway and bridge needs through supplemental funding sources and partnerships. Notably, in coordination with the FDOT, KSC recently completed the $128 million replacement of the Indian River Bridge, a primary access route supporting high-volume and heavy transport operations into the spaceport. NASA will continue to prioritize future funding opportunities, including potential supplemental appropriations and partnerships, to address remaining common-use infrastructure requirements, including transportation systems, in alignment with mission needs and projected growth.

Estimated Completion Date: Completed.

Recommendation 3: Assess the ability to charge an Other Approved Indirect Rate on reimbursable agreements for launch services that is dedicated to maintenance and upgrades of common use launch infrastructure.

Management's Response: NASA concurs with this recommendation.

NASA has developed and implemented an Other Approved Indirect Rate called Program Agreement Indirect Rate (PAIR) under its reimbursable Space Act authority. PAIR is designed to offset operations and maintenance (O&M) costs of common-use infrastructure that supports launch activities, ensuring appropriate cost recovery for the day-to-day operation and sustainment of shared infrastructure. However, NASA will assess the possibility of creating an Other Approved Indirect Rate, similar to PAIR, for institutional O&M costs.

Estimated Completion Date: October 31, 2026.

We have reviewed the draft report for information that should not be publicly released. As a result of this review, we have not identified any information that should not be publicly released.

Once again, thank you for the opportunity to review and comment on the subject draft report. If you have any questions or require additional information regarding this response, please contact Jessica Conner at jessica.conner@nasa.gov.

Brian Hughes Digitally signed by Brian Hughes
Date: 2026.06.03
10:42:24 -04'00'

Brian Hughes

cc:
Assistant Administrator for Strategic Infrastructure/Ms. Thaller (Acting)

APPENDIX D: REPORT DISTRIBUTION

National Aeronautics and Space Administration

Administrator
Deputy Administrator
Associate Administrator
Chief of Staff
Assistant Administrator for Strategic Infrastructure
Acting Chief Program Management Officer
Director, Kennedy Space Center
Director, Wallops Flight Facility

Non-NASA Organizations and Individuals

Office of Management and Budget
    Deputy Associate Director, Energy, Science, and Water Division

Government Accountability Office
    Director, Contracting and National Security Acquisitions

Blue Origin

SpaceX

United Launch Alliance

Congressional Committees and Subcommittees, Chairman and Ranking Member

Senate Committee on Appropriations
    Subcommittee on Commerce, Justice, Science, and Related Agencies

Senate Committee on Commerce, Science, and Transportation
    Subcommittee on Aviation, Space, and Innovation
    Subcommittee on Science, Manufacturing, and Competitiveness

Senate Committee on Homeland Security and Governmental Affairs

House Committee on Appropriations
    Subcommittee on Commerce, Justice, Science, and Related Agencies

House Committee on Oversight and Government Reform
    Subcommittee on Government Operations

House Committee on Science, Space, and Technology
    Subcommittee on Investigations and Oversight
    Subcommittee on Research and Technology
    Subcommittee on Space and Aeronautics

(Assignment No. A-25-02-00-MSD)