

GAO Highlights

Highlights of [GAO-22-105533](#), a testimony before the Subcommittee on Space and Aeronautics, Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

NASA is developing multiple highly complex and interdependent programs to achieve the lunar landing mission, known as Artemis III, as well as longer-term goals to create a sustained lunar presence. In the fiscal year 2022 president's budget request, NASA requested at least \$32 billion over the next 5 years to support these efforts.

To land astronauts on the Moon, NASA will need to develop a lunar lander and new space suits. It will also need to execute uncrewed and crewed test flights, planned for spring 2022 and 2024, respectively, of the Orion Multi-Purpose Crew Vehicle and the Space Launch System. NASA has delayed the first test flight multiple times, which places pressure on the schedule for subsequent missions. In prior reports, GAO highlighted progress NASA has made toward these missions, as well challenges the agency faces in managing and integrating these systems and missions. This statement updates NASA's progress and challenges in working towards the first three Artemis missions.

This statement is primarily based on GAO's previously issued work on NASA's lunar programs, as well as its ongoing annual assessment of NASA major projects. GAO updated some areas by following up with NASA through other ongoing work.

What GAO Recommends

Since 2019, GAO has made 10 recommendations related to improving NASA's management of its Artemis efforts and related programs. NASA generally agreed with these recommendations and plans to take steps to implement them.

View [GAO-22-105533](#). For more information, contact W. William Russell at (202) 512-4841 or Russellw@gao.gov.

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NASA LUNAR PROGRAMS

Moon Landing Plans Are Advancing but Challenges Remain

What GAO Found

The National Aeronautics and Space Administration (NASA) effort to return U.S. astronauts to the Moon and then travel to Mars—known as Artemis—has made progress. Since GAO's [May 2021](#) report, NASA conducted integration and test events for the Artemis I mission (an uncrewed test flight) and manufactured some hardware for the Artemis II mission (a test flight that will carry crew). NASA also made progress on completing planning activities for the Artemis III moon landing mission, such as reviewing integration efforts across lunar programs.

Artist's Rendition of Artemis Lunar Landing Mission



Source: National Aeronautics and Space Administration. | [GAO-22-105533](#)

NASA now plans to conduct the Artemis III moon landing mission no earlier than 2025, a year later than originally planned. While this delay will allow more time for NASA to acquire a lunar lander and new space suit (shown above), Artemis III schedule and costs remain challenging for several reasons, including:

Delays to the lunar lander contract. NASA officials stated they estimated a 7-month delay in working on the lander, subsequent to a bid protest and federal court complaint regarding the award of the lander's contract. The schedule to develop the landing system is ambitious; the program plans to develop and launch the system months faster than other spaceflight programs and needs to mature critical technologies.

Change to spacesuit acquisition strategy. In July 2021, NASA approved a change from developing its new spacesuits in-house to using a contractor, which may affect planned development time frames. Under this strategy, NASA officials stated they will not have the contract awardee's proposed schedule until after the contract is awarded. Officials told GAO the award is planned for spring 2022.

Increasing costs. Key Artemis III programs have experienced cost growth. For example, costs for the Space Launch System and ground systems grew by more than \$1 billion in 2020.