

GAO@100 Highlights

Highlights of [GAO-21-417](#), a report to congressional committees

Why GAO Did This Study

NSF supports the design, construction, and operations of science and engineering research infrastructure such as telescopes and research vessels. These projects include major facilities that cost over \$100 million to construct or acquire, and mid-scale research infrastructure projects. Over the past 5 fiscal years, NSF has received over \$1 billion in appropriations for these projects. Prior GAO reports reviewed NSF's oversight of the projects, its cost estimating and schedule policies, and the project management expertise of its oversight workforce.

Senate Report 115-275, Senate Report 114-239, and House Report 114-605 included provisions for GAO to review and report annually on projects funded from NSF's Major Research Equipment and Facilities Construction account. This report, the fourth, examines (1) the cost and schedule performance of NSF's ongoing major facilities and mid-scale research infrastructure projects and (2) the extent to which NSF has implemented prior GAO recommendations related to its management of major facilities. GAO reviewed NSF and award recipient documents for the projects. GAO examined policies and procedures to identify efforts to implement recommendations and interviewed NSF officials for clarifying information.

What GAO Recommends

NSF agreed with and has taken steps to address three remaining recommendations from GAO's prior work to improve the project management skills of its staff and award recipients and to align schedule guidance to GAO's best practices.

View [GAO-21-417](#). For more information, contact Candice Wright at (202) 512-6888 or WrightC@gao.gov.

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NATIONAL SCIENCE FOUNDATION

COVID-19 Affected Ongoing Construction of Major Facilities Projects

What GAO Found

Since GAO's April 2020 report on the status of the National Science Foundation's (NSF) major facilities projects, the Large Hadron Collider High Luminosity Upgrade program began construction, and it along with the four other major facilities projects in construction (see figure), have weathered schedule delays associated with the COVID-19 pandemic. To partially account for increased costs associated with the pandemic, such as the cost of paying project staff while work is paused, NSF has authorized \$38.9 million in total project cost increases to the award recipients constructing three of the five projects:

- \$18.9 million for the Daniel K. Inouye Solar Telescope,
- \$10.0 million for the Vera C. Rubin Observatory, and
- \$10.0 million for Regional Class Research Vessels.

Because the pandemic is ongoing and its full effects are not yet known, NSF expects to make further adjustments to the cost and schedule of all five major projects in construction. Design work on an additional major facility project continued without significant interruption from the pandemic. Further, NSF made awards to begin the agency's first three mid-scale research infrastructure projects.

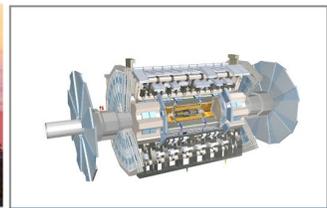
National Science Foundation Major Facilities Projects in Construction



Daniel K. Inouye Solar Telescope



Vera C. Rubin Observatory



High Luminosity Upgrade Program



Regional Class Research Vessels



Antarctic Infrastructure Modernization for Science

Sources: Claire Rafferty/Association of Universities for Research in Astronomy, Inc./National Solar Observatory (top left); W O'Mullane/LSSST Project/NSF/AURA (top center); 2008 CERN (top right); Artist Rendering by Glosten (bottom left); Leidos (bottom right). | GAO-21-417

NSF has fully implemented GAO's prior recommendation on information sharing among award recipients and has drafted guidance or taken other steps towards addressing GAO's three remaining recommendations. To enhance information sharing among award recipients, NSF added a section to its terms and conditions in its major facilities agreements that encourages awardees to share information among awardees and participate in a knowledge management program.