

Audit of NSF's Divestment of Major Facilities

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National Science Foundation
Office of Inspector General

Past Audit Work



- Construction
- Operations
- Divestment

NSF OIG Management Challenges

- Overseeing Major Multi-User Research Facilities:
 - ✓ Inherently Risky
 - ✓ COVID-19 Schedule/Cost Delays

“NSF’s major facilities program has continued to evolve and improve each year, cementing its place as a model program.”

Management Challenges for the
National Science Foundation
in Fiscal Year 2022





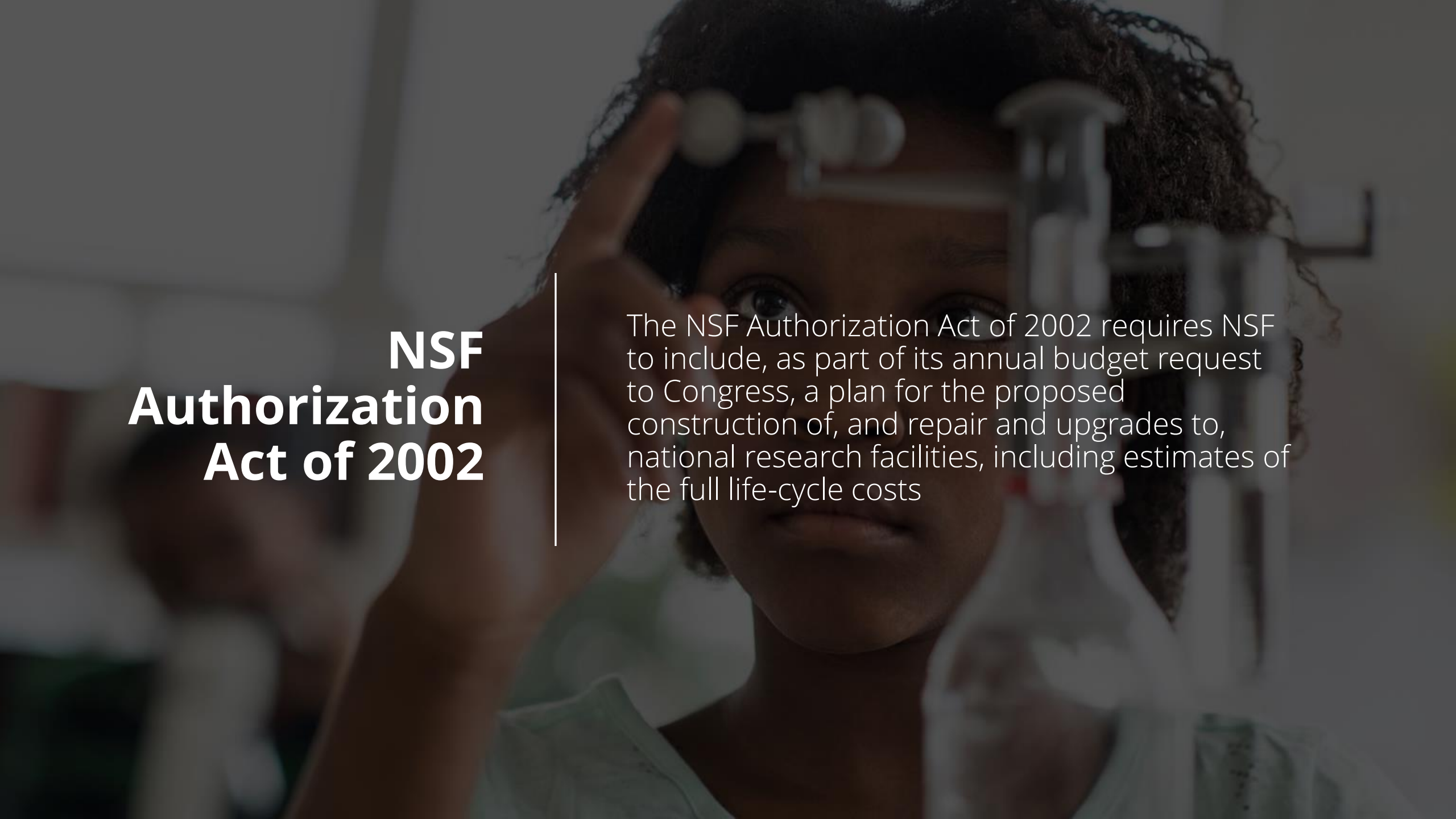
Divestment Audit

Objective: To determine the adequacy of NSF's processes for planning and managing major facility divestments.

American Innovation and Competitiveness Act

The Director of the Foundation shall:

- Require that any pre-award analysis of a major multi-user research facility project includes the development and consideration of the full life-cycle cost.
- Ensure that policies for estimating and managing costs and schedules are consistent with the best practices described in the Government Accountability Office Cost Estimating and Assessment Guide, the Government Accountability Office Schedule Assessment Guide...
- Establish policies and procedures for the planning, management, and oversight of a major multi-user research facility project at each phase of the life-cycle of the major multiuser research facility project.



NSF Authorization Act of 2002

The NSF Authorization Act of 2002 requires NSF to include, as part of its annual budget request to Congress, a plan for the proposed construction of, and repair and upgrades to, national research facilities, including estimates of the full life-cycle costs



How we picked our sample

We sampled major facilities/components from the following categories:

1. facilities that entered the design phase after the AICA's enactment;
2. facilities that were currently in the construction, operations, or divestment phases; and
3. facilities that NSF divested from 2006–2021.

Divested Facilities/Components, 2006–2021*

Facility/Component Name	FY Divested
Academic Research Fleet's <i>Research Vessel (RV) Alpha Helix</i>	2008**
Academic Research Fleet's <i>RV Cape Hatteras</i>	2013
Academic Research Fleet's <i>RV Wecoma</i>	2013
Academic Research Fleet's <i>RV Point Sur</i>	2014
National Center for Atmospheric Research's Columbia Scientific Balloon Facility	2016
Academic Research Fleet's <i>RV Clifford A. Barnes</i>	2018
Cornell High Energy Synchrotron Source	2019
National Solar Observatory's Synoptic Long-term Investigations of the Sun Vacuum Tower	2019
Academic Research Fleet's <i>RV Marcus G. Langseth</i>	2020
National Superconducting Cyclotron Laboratory	2021
Seismological Facility for the Advancement of Geoscience's Alaska Transportable Array	2022***
Geodetic Facility for the Advancement of Geoscience's Network of the Americas	2022****

*This list may not include all divested major facilities or components as NSF's definition of divestment is evolving.

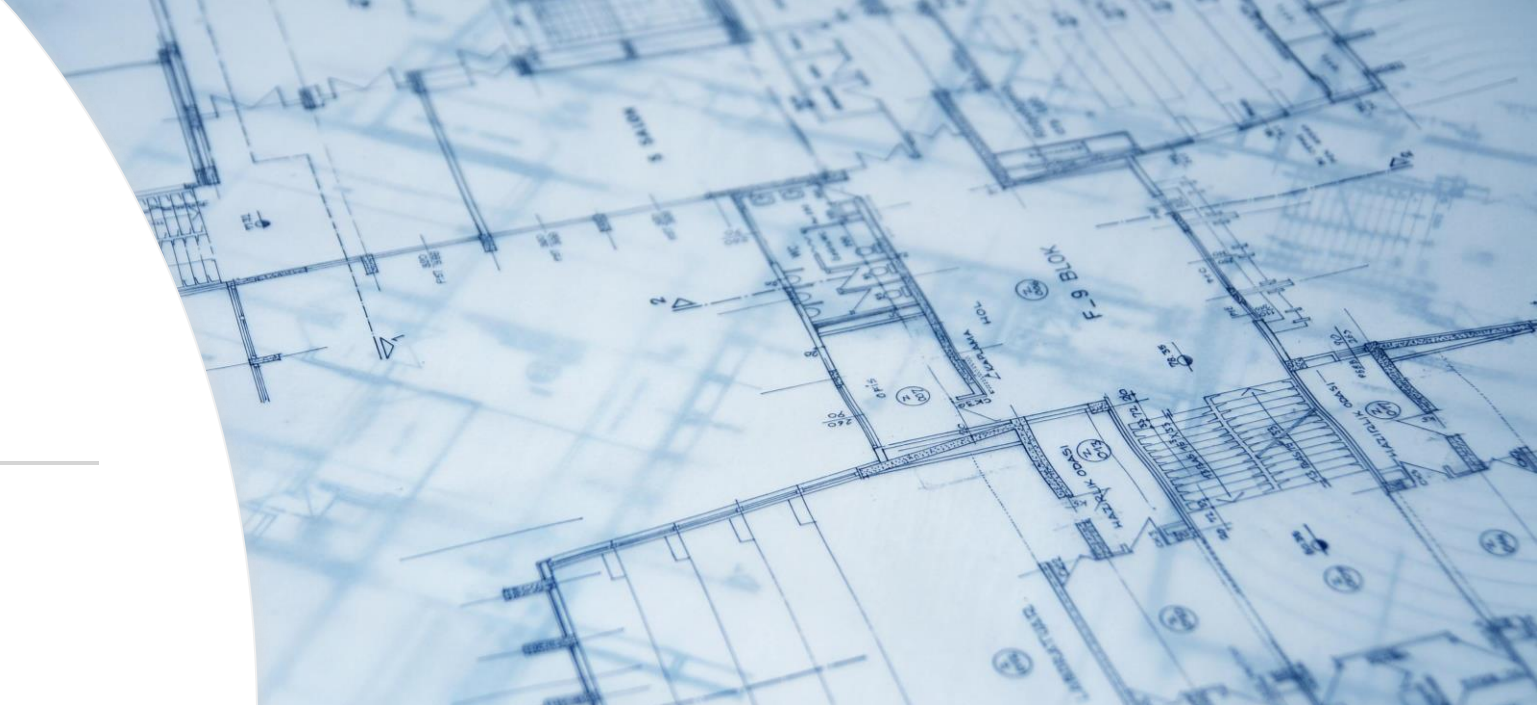
Estimated date based on Budget Requests to Congress. *Divestment activities completed December 31, 2021.

****Partially divested. Divestment activities began during the scope period and are expected to be completed by end of FY

What We Found

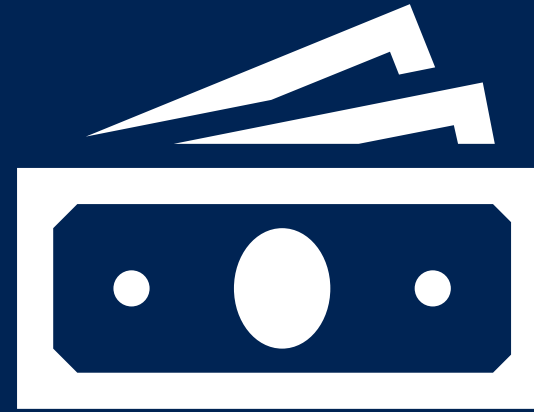
NSF has some processes for planning and managing divestment of its major facilities.

- ✓ NSF identifies major facilities for divestment based on input from the scientific community.
- ✓ NSF starts planning and estimating the costs for a major facility's divestment during the facility's design phase.



Areas for Improvement

- NSF did not have an agency-level view of divestment.
- NSF had not planned divestment for the older facilities we reviewed.
- NSF did not ensure divestment cost estimates were reasonable.
- NSF did not provide Congress full life-cycle cost information.
- NSF does not have enough policies and procedures to guide divestment



Agency- Level View

- NSF issued Standard Operating Procedure *Process for Recommending Competition, Renewal and Divestment of Major Facilities* in May 2021
- NSF Director reviews the final decision of directorate or division.
- Facility/Division-focused and not entire NSF portfolio.

A birthday cake with white frosting and blue decorations, topped with several lit, colorful candles. The background is a solid blue color. A large, light blue circular graphic is overlaid on the left side of the image, containing the text.

Older Facilities

NSF did not have an Internal Management Plan that covered divestments for older facilities built before 2003.

Reasonableness of Cost Estimates

- NSF reviewed proposed costs but did not review the reasonableness of divestment costs proposed.
- NSF did not report estimates of the full life-cycle costs in requests to Congress, as required.



NSF Needs Additional Policies and Procedures

NSF's Research
Infrastructure
Guide is missing
NSF staff roles and
responsibilities and
specific steps for
divestment.



A close-up photograph of a person with long dark hair looking through black binoculars. The person's hands are holding the binoculars up to their eyes. The background is a bright blue sky and a blurred, golden-brown field. A dark grey semi-transparent banner is overlaid on the bottom left of the image, containing white text.

Recommendation 1

Develop a process that establishes an agency-level view of all major facilities to enable NSF leadership to make agency-wide divestment decisions.

The background features a blue-tinted image of a financial spreadsheet with various numerical entries. A white calculator is positioned in the lower right corner, with several buttons like 'ON', 'CE', '+/-', and 'M' clearly visible. A dark, semi-transparent triangular overlay is placed over the bottom left portion of the image, containing the text for 'Recommendation 2'.

Recommendation 2

Develop a process to ensure full life-cycle costs, including ones associated with divestment, are developed, deemed reasonable, and included in the Budget Requests to Congress, as required by the NSF Authorization Act, as amended in 2002.



Recommendation 3

Improve policies, procedures, and guidance to clearly define the last major facility life-cycle phase and how NSF will carry out these transitions. These documents should identify steps for managing the transition, for designating and identifying internal resources to facilitate the process, and for obtaining required reviews and approvals.

NSF Response and Corrective Actions

The National Science Foundation (NSF) greatly appreciates the professionalism and diligence of the Office of the Inspector General (OIG) in conducting the audit of the agency's procedures related to divestment, the final stage in the major facility life-cycle. We agree with the three recommendations presented and, due to frequent dialogue with the OIG during the audit process, have already taken proactive steps toward their resolution by leveraging NSF's 2022 Strategic Review process. We will develop the required Corrective Action Plan to resolve and close all of the recommendations in a timely manner.

We would like to thank the OIG for the strong partnership in making the agency more effective in supporting the U.S. scientific enterprise and building trust with the American taxpayer on these significant investments.

Upcoming “Planned” Audits

- Audit of Mid-Scale Projects
- Awardee Compliance with Harassment Policies





What If I Am Selected for Audit?

Don't panic!
We will over
communicate.



Questions?