

Supporting Statement for
NATIONAL SCIENCE FOUNDATION BUSINESS SYSTEMS REVIEW
GUIDE,

OMB Clearance No. 3145-0255

Part A. Justification

1. **Background.** The National Science Foundation Act of 1950 (Public Law 81-507) sets forth NSF's mission and purpose:

“To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense....”

The Act authorized and directed NSF to initiate and support:

- basic scientific research and research fundamental to the engineering process,
- programs to strengthen scientific and engineering research potential,
- science and engineering education programs at all levels and in all the various fields of science and engineering,
- programs that provide a source of information for policy formulation, and other activities to promote these ends.

Among Federal agencies, NSF is a leader in providing the academic community with advanced instrumentation needed to conduct state-of-the-art research and to educate the next generation of scientists, engineers and technical workers. The knowledge generated by these tools sustains U.S. leadership in science and engineering (S&E) to drive the U.S. economy and secure the future. NSF’s responsibility is to ensure that the research and education communities have access to these resources, and to provide the support needed to utilize them optimally, and implement timely upgrades.

The scale of advanced instrumentation ranges from small research instruments to shared resources or facilities that can be used by entire communities. The demand for such instrumentation is very high, and is growing rapidly, along with the pace of discovery. For major facilities and shared infrastructure, the need is particularly high. This trend is expected to accelerate in the future as increasing numbers of researchers and educators rely on such major facilities, instruments, and databases to provide the reach to make the next intellectual leaps.

NSF currently provides support for facility construction from two accounts: The Major Research Equipment and Facility Construction (MREFC) account, and the Research and Related Activities (R&RA) account. The MREFC account, established in FY 1995, is a separate budget line item that provides an agency-wide mechanism, permitting directorates to undertake major facility projects greater than \$100M and mid-scale research infrastructure projects between \$20M and \$100M. Smaller mid-scale and research instrumentation projects continue to be supported from the R&RA Account.

Facilities are defined as shared-use infrastructure, instrumentation and equipment that are accessible to a broad community of researchers and/or educators. Facilities may be centralized or may consist of distributed installations. They may incorporate large-scale networking or computational infrastructure, multi-user instruments or networks of such instruments, or other infrastructure, instrumentation and equipment having a major impact on abroad segment of a scientific or engineering discipline. Historically, awards have been made for such diverse projects as accelerators, telescopes, research vessels and aircraft, and geographically distributed but networked sensors and instrumentation.

The growth and diversification of major facility projects require that NSF remain attentive to the ever-changing issues and challenges inherent in their planning, construction, operation, management and oversight. Most importantly, dedicated, competent NSF and awardee staff is needed to manage and oversee these projects; giving the attention and oversight that good practice dictates and that proper accountability to taxpayers and Congress demands. To this end, there is also a need for consistent, documented requirements and procedures to be understood and used by NSF program managers and awardees for all such major projects.

The *Business Systems Review (BSR) Guide* is designed to provide reasonable assurance that the business systems (people, processes, and technologies) of NSF Recipients for management of NSF major facilities are effective in meeting administrative responsibilities and satisfying Federal regulatory requirements, including those listed in *NSF's Proposal & Award Policies & Procedures Guide (PAPPG)*.

A revised version of the *NSF BSR Guide* (including a listing of Significant Changes), effective June 2022 is included as **Exhibit 1** to this Supporting Statement

2. Use of Information.

Facilities are an essential part of the science and engineering enterprise, and supporting them is one major responsibility of the National Science Foundation (NSF). NSF makes awards to external entities—primarily universities, consortia of universities or non-profit organizations—to undertake construction, management and operation of facilities. Such awards frequently take the form of cooperative agreements. NSF does not directly construct or operate the facilities it supports. However, NSF retains responsibility for overseeing their development, management and successful performance.

The *BSR Guide* is designed for use by both our customer community and NSF staff for guidance in leading these reviews. The *BSR Guide* defines the overall framework and structure and summarizes the details outlined in the internal operating guidelines and procedures used by BSR Participants to execute the review process. Management principles and practices are specified for seven core functional areas (CFA) and are used by BSR Participants in performing these evaluations. Roles and responsibilities of the NSF stakeholders involved in the process are outlined in the *BSR Guide* as well as the expectations of the Recipient.

This *Guide* will be updated periodically to reflect changes in requirements, policies and/or procedures. Award Recipients are expected to monitor and adopt the requirements and best

practices included in the *Guide* which are aimed at improving management and oversight of major facilities projects and at enabling the most efficient and cost effective delivery of tools to the research and education communities.

NSF has approximately twenty (20) major facilities in various stages of design, construction, operations and divestment. The need for a BSR and review scope is based on NSF's internal annual Major Facility Portfolio Risk Assessment and the assessment of various risks factors.

3. Use of Automation.

Some collected data is submitted electronically either through the NSF FastLane System or through two modernized systems that are replacing FastLane: Grant.gov and Research.gov.

The NSF FastLane System uses internet/web technology to facilitate the way NSF does business with the research, education, and related communities. All FastLane functions are accessed by using a web browser on the internet. FastLane modules are used for the following interactions between NSF and the science and engineering research and education community:

- communicate the Foundation's strategic priorities to proposer and awardee communities;
- proposal preparation & submission, including electronic signatures;
- proposal reviews;
- panel travel initiation;
- panel electronic funds transfer information;
- interactive panel system for panel meetings (including proposal ranking and submission and approval of panel summaries);
- proposal and award status inquiries (proposal status includes release of reviews to PIs and co-PIs);
- revised proposal budget preparation and submission;
- supplemental funding request preparation and submission including electronic signatures;
- access to award letters for use by PIs, Co-PIs, and Sponsored Project Offices;
- post award administrative notifications and requests for NSF approval;
- organizational management; and
- review and/or revision of organizational information.

Grants.gov also provides a common Website to simplify competitive discretionary grant management and eliminate redundancies for federal grants. There are 26 Federal grant-making agencies, including state, local and tribal governments, academia and research institutions, and not-for-profits. Since the inception of Grants.gov, NSF has been an active partner in Federal-wide electronic grant efforts. NSF continues to work with representatives from Federal research agencies under the auspices of the Research and Related subcommittee, to maintain and update the SF 424 (R&R), a standardized application for use with research and research-related proposals. NSF continues this leadership role by participating in various committees of the Council on Financial Assistance Reform (COFAR).

Proposers are authorized to submit proposals to NSF via either Grants.gov or the NSF FastLane system. Until such a time, however, as Grants.gov is able to accept all types of NSF proposal formats through the Grants.gov portal, a separately cleared application format for use by NSF applicants remains necessary.

Research.gov is NSF's grants management system that provides easy access to research-related information and grants management services in one location. Research.gov is the modernization of FastLane, providing the next generation of grants management capabilities for the research community.

In March 2013, NSF transferred all project reporting from FastLane to Research.gov (covered by OMB clearance 3145-0221, Research Project Performance Reporting). NSF awardee institutions also must use Research.gov to access all online financial services required for grants management, thus eliminating the quarterly Federal Financial Reports.

4. Efforts to Identify Duplication.

No duplication exists since no other federal agency collects data pertaining to these NSF facilities.

5. Small Business Considerations. Not applicable.

6. Consequences of Less Frequent Collection.

NSF requires periodic reporting and reviews on facility status throughout the facility life cycle. The *Research Infrastructure Guide* (OMB Clearance 3145-0239) contains requirements and guidance on the type and frequency of reports and reviews, which can vary significantly with the life cycle stage and with the unique details of each major facility. All status and review reports are collected electronically. The frequency of collection of information is at a level that allows NSF to be good stewards for funding and managing awards.

Materials related to proposal submission for funding awards are collected per the process described in the *NSF Proposal and Award Policies and Procedure Guide* (PAPPG) (OMB Clearance 3145-0058).

Materials related to the administrative business systems supporting the major facility are collected per the process described in the *NSF Business Systems Review Guide*.

7. Collection Inconsistent with Guidelines in 5 CFR 1320.6.

Evaluators of NSF proposals are given a pledge of confidentiality that their names will not be released in connection with their comments (see paragraph "10" below).

8. Federal Register Notice.

Public Notice for the *Business Systems Review* January 24, 2022, at 87 FR 01249, and twelve (12) comments were received. A summary of the comments received in response to NSF's request for public comment on the *Business Systems Review Guide* is as follows:

- 5 requested clarifications regarding the questions associated with the principles for core functional areas;
- 4 requested clarifications and updates on the citations governing the Business Systems Reviews;
- 1 requested clarification on roles and responsibilities; and
- 2 were editorial.

Exhibit 2 contains the full text of the comments received in response to the Federal Register Notice and the associated NSF response.

Outside Consultation.

The policies and guidelines for management and oversight of awards related to major facilities have been developed over many years, with assistance from many external sources. These sources include other Federal agencies and industry experts with expertise in areas applicable to the unique facilities under NSF awards, as well as proposing organizations.

Additionally, a large percentage of NSF program officers, who are responsible for making funding recommendations, are from the research community. These individuals bring experience and practical knowledge of constructing and operating NSF facilities and have provided significant input on how the guide materials can be improved.

9. Gifts or Remuneration.

Not applicable.

10./11. Confidentiality/Sensitive Questions.

Not Applicable.

12. Burden on the Public.

The Foundation estimates that approximately one (1.0) Full Time Equivalents (FTEs) are necessary for each major facility project to respond to a single BSR's requirements; or 2,080 hours per year. With an average of four (4) conducted a year, this equates to roughly four (4) FTEs or 8,320 public burden hours annually.

13. Annualized Cost to Respondents.

The annualized cost for respondents who participate in a BSR is approximately \$115,000 per

BSR for a total of \$460,000.

14. Annualized Cost to the Federal Government.

The cost estimate for execution of a BSR following the updated NSF *Business Systems Review Guide*, which we anticipate will be issued in fall 2022, is \$553,000. The cost estimate for development of the updated NSF *BSR Guide* is \$207,000. The main method of accessing and printing this new *Guide* will be via download from the NSF website. The following supporting documentation is the basis used to develop the estimate of the cost to gather information, develop, coordinate and execute a BSR including maintenance of the *BSR Guide*.

Cost per BSR

LF Office Head and CSB Deputy Branch Chief: 160hrs x 176 avg hourly rate combined = \$28K

Program Officer (AD-4), Grants Officer (GS-14), LFO Liaison (GS-15): 716hrs x \$217 avg hourly rate combined = \$155K

Total NSF salaries = \$183K

Contractor Services: Estimated cost of \$370K per BSR.

Cost to Update and Maintain the BSR Guide

LF Office Head: 20hrs x \$90 hourly rate = \$2K

LFO Liaison (GS-15) and Grants Officer (GS-14): 500hrs x \$80 hourly rate = \$40K

Total NSF salaries = \$42K

Contractor Services: Estimated cost of \$165K

15. Changes in Burden. The program had a chance to review and refine the time and costs associated with this collection.

16. Publication of Collection. Not applicable.

17. OMB Expiration Date. Not applicable.

18. Exceptions for Certifications. Not applicable.

B. STATISTICAL METHODS. Not applicable.

DATA COLLECTION INSTRUMENT, INCLUDING CORRESPONDING INSTRUCTIONS

See Exhibit 1

ATTACHMENTS:

National Science Foundation Act of 1950 (Public Law 81-507)

EXHIBITS:

Exhibit 1: Revised version of the *NSF Business Systems Review Guide*, Effective September 2022.

Exhibit 2: Public Comments Received on the *NSF Business Systems Review Guide* along with associated NSF response.