

**SUPPORTING STATEMENT FOR PAPERWORK REDUCTION SUBMISSION**  
**Grantee Reporting Requirements for National Science Foundation (NSF) Regional Innovation Engines (NSF Engines) Program**

**SUPPLEMENTARY INFORMATION**

**Title of Collection:** Grantee Reporting Requirements for NSF Regional Innovation Engines (NSF Engines) Program

**Type of Request:** Intent to seek approval to establish an information (3145-NEW)

**Section A. Justification**

The CHIPS and Science Act of 2022 codified the National Science Foundation's cross-cutting [Directorate for Technology, Innovation and Partnerships \(TIP\)](#), NSF's first new directorate in more than 30 years, and charged it with the critical mission of advancing U.S. competitiveness through investments that accelerate the development of key technologies and address pressing national, societal, and geostrategic challenges.

The (3) focus areas of TIP are:

- 1) Cultivate a broad range of innovation ecosystems throughout the U.S. to advance use-inspired research and innovation in key technologies to address the Nation's societal and economic challenges;
- 2) Advance U.S. competitiveness in critical and emerging technologies by developing and translating innovations and addressing national challenges; and
- 3) Grow a next-generation talent base and workforce that engages all members of a region around key technology and challenge areas, building expertise in necessary technical skills, use-inspired research and innovation, entrepreneurship, and translation.

The [NSF Engines program](#) was authorized in the [CHIPS and Science Act of 2022](#) (Section 10388) to (1) advance multidisciplinary, collaborative, use-inspired and translational research, technology development, in key technology focus areas; (2) address regional, national, societal, or geostrategic challenges; (3) leverage the expertise of multidisciplinary and multi-sector partners, including partners from private industry, nonprofit organizations, and civil society organizations; and (4) support the development of scientific, innovation, entrepreneurial, and STEM educational capacity within the region of the Regional Innovation Engine to grow and sustain regional innovation. The NSF Engines program serves as a flagship funding program of the TIP directorate, with the goal of expanding and accelerating scientific and technological innovation within the United States by catalyzing regional innovation ecosystems throughout every region of our nation.

Each NSF Engine is focused on addressing specific aspects of a major national, societal and/or geostrategic challenge that are of significant interest in the NSF Engine's defined "region of service." The NSF Engines program envisions a future in which all of America's population can participate in, and benefit from, advancements in scientific research and development equitably to advance U.S. global competitiveness and leadership. The program's mission is to establish sustainable regional innovation ecosystems that address pressing regional, national, societal, or geostrategic challenges by advancing use-inspired and translational research and development in key technology focus areas.

The programmatic level goals of NSF Engines are to:

- Goal 1: Establish self-sustaining innovation ecosystems;
- Goal 2: Establish nationally recognized regional ecosystems for key industries;
- Goal 3: Broaden participation in innovation ecosystems by enabling all members of a region to engage;
- Goal 4: Advance technologies relevant to national competitiveness;
- Goal 5: Catalyze regions with nascent innovation ecosystems;
- Goal 6: Increase economic growth;
- Goal 7: Increase job creation.

To achieve these goals, each NSF Engine will carry out an integrated and comprehensive set of activities spanning use-inspired research, translation research, innovation and entrepreneurship, and workforce development to nurture and accelerate industries within their region of service. In addition, each NSF Engine is expected to embody a culture of innovation and have a demonstrated, intense, and meaningful focus on improving diversity throughout its regional science and technology ecosystem.

The objective of this data collection—*Grantee Reporting Requirements for NSF Engines Program*—is five-fold, to:

- 1) ensure that NSF Engines program award recipients fulfill their duties and responsibilities, and meet their accountability requirements,
- 2) ascertain that the award recipients comply with the terms and conditions of the award, a stipulation that they agreed upon when receiving the grant from NSF,
- 3) allow managing Program Directors to monitor the progress of the projects, track the status of each Engine, and assess their progress with the submitted 5-Year Strategic Plan,
- 4) use responses collected as inputs to the feedback loop, and enable NSF and the Program to make corresponding adjustments and/or modifications to the current reporting requirements as necessary, and
- 5) inform future funding decisions.

## A.1 Circumstances Requiring the Collection of Data

The reporting requirements are designed for the NSF Engines program awardees. This request is to seek approval from OMB in establishing a new data collection pertaining to grantee reporting requirements for the NSF Engines program. The reporting requirements consist of:

1. Quarterly Reports;
2. A Five (5)-year Strategic and Implementation Plan;

### *Quarterly Reports*

The *Quarterly Report* is to be submitted quarterly—with the initial report due at month three (3); and the others at subsequent intervals of six (6) and nine (9). The report at month twelve (12) will cover the activities and outcomes for the entire year including the last quarter.

Thereafter, the reporting will follow the same cadence until the end date of the project or the life of the award. The *Quarterly Report* contains 6 template files:

1. Quarterly Report
2. Leadership Team, Governance Board, Advisory Board
3. Engine Activities
4. Construction Activities
5. Budget and Resources
6. Risk Register

Items 2 – 6 are worksheets/spreadsheets that are designed to guide the grantees to populate, organize, and track the kind of data and information that would not only be useful for reporting, but also for partnership building activities. The grantees would use items 2 – 6, along with other information, to populate the quarterly report (the first item).

There are 11 sections to the *Quarterly Report*:

1. Governance and Management
2. Progress on the Engine's Five-year Strategic and Implementation Plan's component plans
3. Engine Activities and Projects: Use-inspired R&D, Translation, Workforce Development, and Ecosystem Building
4. Partners
5. Budget Expenditures
6. Commitments and Resources

7. Award-specific Terms & Conditions
8. Risk Assessment and Monitoring
9. Research Security
10. Cybersecurity Incidents
11. Infrastructure Construction and Associated Operations and Maintenance, and Sustainability Plan

For the *Quarterly Report*, the grantees are required to provide a brief description of the status for each section, and highlight any changes since the previous report and/or deviations from original plans outlined in the proposal. If there are no new activities or recent development/outcome to report for a certain section, the grantees are asked to note that in the report.

#### *A Five (5)-year Strategic and Implementation Plan*

The *Five (5)-year Strategic and Implementation Plan* contains 5 sub-plans:

1. Engine Mission and Vision Plan
  - a. Mission statement outlining core purpose, values, and primary objectives
  - b. Vision statement describing long-term goals and aspirations
  - c. Region of service
  - d. Key industries
  - e. Technology areas relevant to national competitiveness
2. Governance and Management Plan
  - a. Plan for Engine leadership: Governing Board, Advisory Board, CEO, Leadership Team
  - b. Plan for Engine governance and operations: charger, governance plan, financial and resources plan, and sustainability plan
  - c. Unit leadership
    - i. Unit leader
    - ii. Unit organization

- d. Governance and Management Plan Rubric describes the establishment of the organization and the appointment of the board
3. IP Management Plan
- a. Criteria of the rubric
    - i. Patent policy
    - ii. Trademark, copyright, and trade secrets policy
    - iii. Agreement with partner university's office of technology transfer
    - iv. Other IP-based agreements policy
    - v. Prospective investors' plan
    - vi. Intellectual property right compliance plan
  - b. Open response rubric
4. Partnership Agreement Plan
- a. Strategy for partnership(s)
    - i. Objectives of partnership(s)
    - ii. Cross-sector partnership analysis
    - iii. Outreach plan
    - iv. Partnership termination contingency plan
  - b. Partnership document
    - i. Template partnership agreement(s)
  - c. Open response rubric
5. Strength, Weakness, Opportunity, and Threat (SWOT) analyses
- a. Research, development, and translation
  - b. Workforce development
  - c. Broadening participation

Each sub-plan is to be tailored to the respective Engine's mission, operating structure, and region of service. Each of the 5 component plans will be submitted for NSF approval. The sub-plans need to be submitted once they are in a final form and ready for approval. After they are submitted, NSF will review and provide feedback on the plan document, typically within sixty (60) days of submission. The awardee may be requested by NSF to revise and resubmit the plan. NSF reserves the right to potentially continue this iterative process until 16 months following the award start date, at which point the last submitted component plan will be deemed as the final version of the document that NSF shall consider for approval in line with the program goals.

Owing to the complexity of the program design, the large amount of funding being awarded, and the lack of precedent programs that are similar in scopes to study and emulate, NSF might need to submit future request(s) to OMB to have additional component plans be added to the *Five (5)-year Strategic and Implementation Plan*, and/or modifications be made to the current component plan(s) based on the initial responses provided by the grantees. NSF will follow the requirements of the Paperwork Reduction Act by working on a full resubmission clearance request.

## **A.2 Purposes and Use of the Data**

The information under this data collection will be used primarily by managing Program Directors for award oversight, project monitoring, and effective administration. Additionally, all documents collected will also be used by the project team to benchmark, coordinate, and assess indicators of success of the project towards project goals and also by external merit review teams to aid in the assessment of the project's progress.

Collection of these data serves several purposes, including: (1) providing information on the progress and outcomes of the research investments in terms of advancements in science, technology, and society impact in NSF-funded projects; (2) ensuring compliance with Foundation responsibilities to monitor the effectiveness of NSF-sponsored projects; (3) identifying outputs of projects funded under NSF awards for management and for reporting to the Administration and Congress; and (4) ascertaining that NSF Engines program awardees comply with terms and conditions as stipulated in their award agreements.

NSF relies on the information from the progress reports to gain insights into the effectiveness of the program, identify areas for improvement, and might use them to make strategic funding decisions. The *Five (5)-year Strategic and Implementation Plan* serves as a means of accountability, ensuring that NSF Engine award recipients are fulfilling their obligations and delivering on their proposed objectives. Finally, the reporting requirements also facilitate transparency and communication, as they provide a platform for sharing progress with stakeholders, including NSF, the NSF Engine award recipients, their partners, and the broader community; these requirements play a crucial role in ensuring the success of the NSF Engines program.

## **A.3 Use of Information Technology to Reduce Burden**

The data collection(s) under this clearance request will utilize electronic forms to minimize data errors and respondent burden. In some cases, Program Directors may contact the respondent

for clarifications or follow-up questions and will update the data gathered from these conversations accordingly.

#### **A.4 Efforts to Identify Duplication**

The data collection does not duplicate efforts undertaken by NSF, other federal agencies, or other data collection agents.

#### **A.5 Small Business**

The *Grantee Reporting Requirements for NSF Regional Innovation Engines (NSF Engines) Program* might collect information from small businesses, if these businesses are part of an NSF Engine or partners to an NSF Engine. The only impact of this data collection on these businesses will be the time required for respondents to gather the information, complete a few sections if necessary, and/or engage in clarifying conversations with managing Program Directors.

#### **A.6 Consequences of Not Collecting the Information**

If the information were not collected, the NSF Engines program would be unable to 1) conduct its due diligence on award oversight, 2) verify and validate compliance requirements to the award's terms and conditions, 3) meet its accountability requirements or assess the degree to which each Engine is meeting its goals and objectives over time, and 4) document progress and outcomes of each respective NSF Engine and the program overall.

#### **A.7 Special Circumstances Justifying Inconsistencies with Guidelines in 5 CFR 1320.6**

Data collected will comply with 5 CFR 1320.6. First, a valid OMB control number will be displayed at the beginning of the electronic form. Second, as the reporting requirement is mandatory, the NSF Engines program has communicated clearly—by ways of proposal solicitations, program announcements, and terms & conditions of the award—that such collection of information will be treated as a means for proving and satisfying a condition for the receipt of the NSF Engines award.

#### **A.8 Federal Register Notice and Consultation Outside the Agency**

The agency's notice, as required by 5 CFR 1320.8(d), was published in the *Federal Register* on March 25, 2024, at 89 FR Doc. 2024-06183 and one comment was received and addressed. The comment pertains to a suggestion from a researcher at George Washington University proposing to NSF in using this reporting requirement as a data collection vehicle for all the regional innovation programs across the federal government. Due to the bespoke nature of our data requirements, we explained to the commenter that such information would not be very useful to other agencies.

#### **A.9. Payments or Gifts to Respondents**

Not applicable

### A.10. Assurance of Confidentiality

Respondents will be informed that any information on specific individuals is maintained in accordance with the Privacy Act of 1974. Every data collection instrument will display both OMB and Privacy Act notices.

Respondents will be informed that the data collected are available to NSF officials and staff, and contractors hired to manage the data and data collection software. Data will be processed according to federal and state privacy statutes. The system will limit access to personally identifiable information to authorized users. Data submitted will be used in accordance with criteria established by NSF for monitoring research and education grants and in response to Public Law 99-383 and 42 USC 1885c.

### A.11 Questions of a Sensitive Nature

In the *Grantee Reporting Requirements for NSF Regional Innovation Engines (NSF Engines) Program*, information from respondents, including name, affiliated organization, phone number, and email address might be requested. These data are collected for administrative records purposes.

### A.12 Estimates of Response Burden

#### A.12.1. Number of Respondents, Frequency of Response, and Annual Hour Burden

Table 1. Respondents, Responses, and Annual Hour Burden

Reporting Requirements	Number of respondents per year	Number of responses per year	Minimum burden per response (hours)	Maximum burden per response (hours)	Annual burden (hours) per Engine
<i>Quarterly Reports</i>	10	4	10	20	40 – 80
<i>A Five (5)-year Strategic and Implementation Plan</i>	10	1	Year 1: 200	Year 1:400	200 - 400
	10		Year 2: 80	Year 2: 160	80 - 160
	10		Year 3: 80	Year 3: 80	80 - 160
<b>Total</b>	<b>50</b>	<b>5</b>			<b>2,800</b>

As shown in Table 1 above, the annual response burden for the collections under this request for each NSF Engine award is between 120 and 480 hours with the upper bound occurring in the first year of the project.

To date, 10 NSF Engine teams have been awarded, which put the estimated burden between 1,200 and 4,800 hours across the 10 NSF engines for the next three years.



If 10 more NSF Engines were to be awarded within the next 3 years (subject to funding availability), the burden estimates would be doubled to: 2,400 and 9,600 hours accordingly. We are hereby requesting OMB to grant us the flexibility to have the range of burden set between 2,400 and 9,600 hours for this data collection for the next 3 years to allow and accommodate for the possibility of additional awards being made by the program.

Finally, it is important to point out that innovation is a collaborative and participatory activity across partners, enterprises, commercial and non-commercial institutions. As such, data and information pertaining to innovative activities would also require collaborative and coordinated efforts across members of the leadership team of an NSF Engine, which consists of 8 to 12 persons, and the Governance Board, which consists of 10 to 20 persons. Therefore, while the estimated burden hours may seem high, the burden is being divided and distributed, as the expectation is that these reporting requirements would involve and engage multiple people and/or entities within an NSF Engine.

Finally, the burden hours are expected to decrease in subsequent years after the initial data collection efforts have been established and initiated, paving ways for more consistent and structured reporting in later years.

**A.12.2. Estimates of Annualized Cost to Respondents for the Hour Burdens**

The following table shows the annualized estimate of costs to the respondents, which would be the Engines leadership team, who are generally university professors and business managers.

**Table 2. Annualized Cost to Respondents**

Respondent Type	Number of respondents	Minimum burden hours	Maximum burden hours	Average Hourly Rate	Estimated Annual Cost
Leadership team and/or Governing Board of an NSF Engine	50	120	2,800	\$53	\$42,506

This estimated hourly rate is based on a report from the American Association of University Professors, "[The Annual Report on the Economic Status of the Profession, 2022-23](#)", Survey Report Table 1.

According to this report, the average salary of an associate professor across all types of doctoral-granting institutions (public, private-independent, religiously affiliated) was \$110,945. When divided by the number of standard annual work hours (2,080), this calculates to approximately \$53 per hour.

At the moment, there are 10 NSF Engines awards, which made the estimated annual cost to the respondents to be: \$63,600 - \$254,400

If 10 more awards were made in the next 3 years, the projected annual cost to the respondents would be double, totaling to: \$127,200 - \$508,800.

**A.13 Estimate of Total Capital and Startup Costs/Operation and Maintenance Costs to Respondents or Record Keepers**

Not applicable.

**A.14 Estimates of Costs to the Federal Government**

On average, the managing Program Director will take about 80 hours to review the documents for each NSF Engine. Reviewing is part of the due diligence process for award oversight that each Program Director needs to perform to monitor the project(s), ensure the grantee's compliance with the requirements, and ascertain that the award is in good standing.

Task	Number of Engines	Review Time	Total Time
Program Directors reviewing technical narratives and evaluation reports	10-20	80 hours/Engine	800 – 1,6000 hours/year

In addition, the guidance development of the *Five (5)-year Strategic and Implementation Plan* was supported by the Institute for Defense Analyses. And the cost of their support for this effort was: \$275,325.

**A.15. Changes in Burden**

Not applicable.

**A.16. Plans for Publication, Analysis, and Schedule**

The awardees are asked to make selected component plans of the *Five (5)-year Strategic and Implementation Plan* available to the public once they have received approval from the NSF.

**A.17. Approval to Not Display Expiration Date**

Not applicable.

**A.18 Exceptions to Item 19 of OMB Form 83-I**

No exceptions apply.

**Part B.**

Not applicable.