



National Science Foundation
Climate Change Adaptation Plan
FY 2015 – FY 2018

October 30, 2015



Policy Statement

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950 to promote the progress of science, advance national health, prosperity, and welfare, and secure national defense. To manage the impacts of a changing climate on our day-to-day operations, NSF will keep abreast of the challenges posed by climate change, based on the latest science, and take appropriate actions to address vulnerabilities and risks. NSF is committed to following the guidance in Executive Order 13653, *Preparing the United States for the Impacts of Climate Change*, to help ensure the resiliency of our mission.

The designated Chief Sustainability Official (CSO) for NSF is responsible for coordinating implementation of all aspects of this policy and will consult with the individual directorates and offices.

A handwritten signature in blue ink, reading 'Richard O. Buckius', is positioned above the printed name and title.

Richard O. Buckius
Chief Operating Officer

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Acronyms

| | |
|------|---------------------------------|
| COOP | Continuity of Operations Plan |
| CY | calendar year |
| FY | fiscal year |
| GSA | General Services Administration |
| GSF | gross square feet |
| HQ | Headquarters |
| NCA | National Climate Assessment |
| NSF | National Science Foundation |
| OEP | Occupant Emergency Plan |

National Science Foundation Climate Change Adaptation Plan

Background on the National Science Foundation

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950 to promote the progress of science, advance national health, prosperity, and welfare, and secure national defense. The Foundation fulfills its mission primarily by issuing limited-term competitive grants and by sponsoring grantee organizations that conduct basic scientific research in the interest of the nation. NSF is headquartered in Arlington, VA, in space leased by the General Services Administration (GSA), but in fiscal year (FY) 2017 it anticipates relocating to a newly constructed building in Alexandria, VA—still a GSA lease.

Vulnerability and Risk Assessments

Since NSF Headquarters (HQ) is relocating to newly constructed space in FY 2017, by the third quarter of FY 2016, NSF expects to conduct assessments of HQ's potential vulnerabilities to climate change based on the new facility's location and design. NSF has already conducted an analysis of flooding risk at the new location and determined that it is not an immediate concern given the elevation and distance from areas prone to flooding and storm surge. As described below in Action #4, NSF will, as resources permit, conduct vulnerability and risk assessments of some of the facilities occupied by scientific awardee organizations in FY 2018, after the next National Climate Assessment (NCA) is issued. The assessments will be limited to buildings owned by NSF, located in the United States, and having areas greater than 10,000 gross square feet (GSF). Facilities meeting these criteria are located in Arizona, Colorado, Hawaii, Louisiana, New Mexico, Puerto Rico, Washington State, and West Virginia.

Interagency Efforts to Support Climate Preparedness and Resilience

NSF will continue to participate in the Community of Practice working group of the Interagency Climate Change Adaptation Task Force. NSF also participates in the following interagency workgroups aimed at sustainability, but which can also be related to climate change adaptation: the Interagency Sustainability Workgroup, Sustainable Acquisitions and Material Management Workgroup, and Federal Electronics Stewardship Workgroup.

Planned Actions to Improve Resiliency to Climate Change

The primary actions NSF plans to implement from FY 2015 through FY 2018 are shown below.

| Action 1: Vulnerability and Risk Assessments on the New NSF Headquarters | | | |
|---|---|--------------|-------|
| Description | Conduct climate change vulnerability and risk assessments on NSF operations and the new HQ facility, and repeat the assessments every four years after each quadrennial NCA is issued. | | |
| Goal | To understand the vulnerabilities and risks posed by climate change to NSF HQ. | | |
| Lead | Office of Information & Resource Management | | |
| Risk Addressed | To generally improve the resilience of NSF to climate change risks. | | |
| Timeframe | By the third quarter of FY 2016, and during the FY following each issuance of the NCA. | Scale | Local |
| Implementation Methods | <p>NSF will consult the latest scientific understanding of climate change threats in the area, and for each threat NSF will evaluate vulnerability (the sensitivity of NSF's mission and operations to it and NSF's capacity to adapt to it), and the risk (the consequence of the threat occurring, and the likelihood that the threat will occur).</p> <p>Sources of such data will include, but not be limited to the National Climate Change Assessment Report at http://nca2014.globalchange.gov/report</p> <p>The evaluation will be conducted using scales from very low to very high to enable NSF to rank the seriousness of the threats relative to one another.</p> | | |
| Performance Metric(s) | Prioritized ranking of climate change threats generated. | | |

| Action 2: Continuity of Employee Productivity | | | |
|--|---|--------------|-------|
| Description | Technology improvements to ensure that employees are able to productively perform work outside of the HQ building. | | |
| Goal | To improve the ability of NSF employees to be productive from remote locations. | | |
| Lead | Office of Information & Resource Management | | |
| Risk Addressed | Temporary disruptions that prevent some or all employees from commuting to the HQ building. | | |
| Timeframe | By the third quarter of FY 2016. | Scale | Local |
| Implementation Methods | NSF will continue to improve remote access and video technology to enable staff to perform their jobs outside of the HQ building. | | |
| Performance Metric(s) | Technology needed for productive teleworking evaluated, and improvements initiated as needed. | | |

| Action 3: Evaluate Provisions for HQ Operational Resilience | | | |
|--|---|--------------|-------|
| Description | Evaluate whether: (a) the continuity of operations plan (COOP) and Occupant Emergency Plan (OEP) need revision to remain effective if changes occur in the operating environment due to anticipated climate change impacts; and (b) the systems planned for the new facility are adequate to ensure reliable power supply in the face of outages or voltage drops in the electricity grid. | | |
| Goal | To ensure that provisions in place for NSF's operational continuity are adequate under conditions of a changing climate. | | |
| Lead | Office of Information & Resource Management | | |
| Risk Addressed | To generally improve the resilience of NSF HQ to climate change risks. | | |
| Timeframe | (a) By the third quarter of FY 2016 and again by the end of the FY in which the next NCA is issued; (b) by the end of FY 2017. | Scale | Local |
| Implementation Methods | Review the COOP, OEP, and the OEP Personal Protective Measures "Pocket Flip" to determine whether updates are needed to ensure their effectiveness in the event of changes to NSF's operational environment due to anticipated climate change impacts. Identify the critical systems for the new HQ that must remain powered in the event of an outage or significant voltage drop, and evaluate the current back-up power equipment and procedures to ensure that they are sufficient to maintain reliable electricity for critical systems. | | |
| Performance Metric(s) | (a) COOP evaluated; (b) power supply continuity systems evaluated. | | |

| Action 4: Vulnerability and Risk Assessments on Grantee Organizations | | | |
|--|---|--------------|-------|
| Description | Conduct vulnerability and risk assessments on buildings occupied by scientific grantee organizations that are owned by NSF, located in the United States, and have areas greater than 10,000 GSF. | | |
| Goal | To generally improve the climate change resilience of the research conducted in NSF-owned facilities occupied by NSF scientific grantee organizations. | | |
| Lead | Office of Information & Resource Management | | |
| Risk Addressed | To generally improve resilience to climate change risks. | | |
| Timeframe | By the end of FY 2018. | Scale | Local |
| Implementation Methods | NSF will work with the facility program managers in cooperation with the awardee organizations to gain site-specific knowledge, apply the vulnerability and risk assessment process outlined under Action #1 to all awardee organization buildings owned by NSF that are in the United States and have areas greater than 10,000 GSF. | | |
| Performance Metric(s) | Vulnerability and risk assessments completed for all buildings meeting the criteria in the action description. | | |