# National Science Foundation

**Higher Education Research & Development (HERD) Survey and**

**Federally Funded R&D Centers (FFRDC) R&D Survey**

**for FY 2018 - 2021 Survey Cycles**

Statement of Work

February 2018

***\*Note that this sample has been revised from the source document on the Government Point of Entry as necessary to align formatting and applicable FAR procedures.\****

# I. Purpose

The purpose of this acquisition is to collect data on research and development (R&D) expenditures and activities at universities and colleges and federally funded R&D centers (FFRDCs) for survey cycles FY 2018, FY 2019, FY 2020 and FY 2021.

**II. Background**

The National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF) collects, maintains, and disseminates information on science and engineering resources in the United States. Specifically, Section 505 within the America COMPETES Reauthorization Act of 2010 directs NSF as follows:

“(a) Establishment- There is established within the Foundation a National Center for Science and Engineering Statistics that shall serve as a central Federal clearinghouse for the collection, interpretation, analysis, and dissemination of objective data on science, engineering, technology, and research and development.

(b) Duties- In carrying out subsection (a) of this section, the Director, acting through the Center shall--

(1) collect, acquire, analyze, report, and disseminate statistical data related to the science and engineering enterprise in the United States and other nations that is relevant and useful to practitioners, researchers, policymakers, and the public, including statistical data on--

(A) research and development trends;…”

NCSES collects data on U.S. resources allocated to the funding and performance of research and development (R&D).  Among other data, NCSES collects information on levels of R&D expenditures in different economic sectors and on the sources of funds that are used to conduct R&D. The higher education sector is one of four sectors (viz., business, government, higher education, and other private nonprofit) that perform R&D. NCSES combines higher education sector data with other sector data to estimate total national R&D expenditures and each sector’s contribution to the national figure (<http://www.nsf.gov/statistics/natlpatterns/>).

The Higher Education R&D Survey (HERD) provides essential data on the resources devoted to research and development in the U.S. higher education sector where over one half of the nation's basic research is conducted. The survey provides both summary data on R&D resources, by source and discipline, and data on individual institutions.

Conducted annually since FY 1972 and significantly redesigned and expanded in FY 2010, the HERD survey collects information on R&D expenditures by academic field as well as by source of funds. The results of the survey are primarily used to assess trends in R&D expenditures across the fields. This information is vital for federal, state, and academic planners in order to make decisions on future R&D funding priorities.

The FFRDC R&D survey uses a subset of the questions from the HERD survey to annually survey all FFRDCs. FFRDCs are facilities that perform R&D activities in support of specific federal agencies and receive at least 70% of their financial support from the federal government. This module collects information on total FFRDC R&D expenditures by source of funding and character of work. See <http://www.nsf.gov/statistics/ffrdclist/> for the most recent master list of FFRDCs.

**III. Survey Objectives**

The objective of this acquisition is to enter into a contract to:

* Conduct the 2018, 2019, 2020, and 2021 survey cycles for the Higher Education R&D (HERD) Survey and the FFRDC R&D Survey;
* Conduct research on survey design and methodologies including, but not limited to, eligibility criteria and screening of institutions to be included in the target population; the respondent contact strategy process; survey instruments; and editing and imputation;
* Maintain a database consisting of individual institution data from the HERD and FFRDC surveys;
* Generate data tables using the database;
* Produce publications to release the HERD and FFRDC data for each survey cycle;
* Prepare public use files for each survey cycle;
* Format the data for use in National Center for Science and Engineering Statistics (NCSES) databases;
* Prepare and deliver data files from each survey cycle to NCSES for the NCSES data repository;
* Maintain respondent relations and questionnaire development via site visits, workshops and expert panels.

**IV. Survey Methodology**

The HERD survey is a census of R&D-performing higher education institutions. The FY 2016 survey collected information from 902 academic institutions. Beginning in FY 2012, the HERD survey population was split into separate populations based on their R&D expenditures thresholds. Institutions reporting $1 million or more in R&D expenditures in the previous fiscal year are asked to respond to the full HERD survey, whereas institutions reporting under $1 million the previous fiscal year are sent a short form version of the survey containing only a few questions (Attachment 4). In FY 2016, 640 institutions were included in the full HERD survey and 262 institutions were included in the Short Form Survey. The short form data are only displayed in a subset of data tables, for the variables that are included in both surveys.

The HERD survey is completed by institutional coordinators at U.S. universities and colleges. The majority of the respondents work in one of the following institutional offices: accounting, grants and contracts, controller, financial, institutional research, or sponsored programs.

The survey target population includes U.S. institutions that award bachelor’s or higher degrees in any field and annually perform at least $150,000 in separately accounted for R&D.

Both the HERD survey and the FFRDC survey are primarily web surveys. Respondents can choose to print and submit an Adobe Portable Document Format (PDF) questionnaire, but no respondents have done this in the most recent cycles. They can also download a Microsoft Excel file containing the survey questionnaire and then upload their responses automatically into the web survey. This enables respondents to work offline and share their draft responses with others at the institution before uploading into the web survey system. Respondents are sent survey information and a user ID and password via e-mail. The web system contains instructions and built-in help aids which are replicated in the printable PDF version in order to ease reporting. Each institution's web survey displays data from 2 preceding years for arithmetical and trend checks. Large increases or decreases in expenditures compared to the preceding years are automatically flagged by the system and respondents are asked to explain and reconcile these differences before submitting the survey. Data collection begins in November each year with an official survey deadline announced as January 31. A series of reminder e-mail and phone call contacts are used to encourage prompt responses from institutions and response rates have consistently reached over 95 percent.

The FY 2017 HERD Survey requested the following data:

* R&D expenditures by source of funding (federal, state and local, institutional, business, nonprofit, or other)
* Types of funding included as institutionally funded R&D expenditures
* R&D expenditures from foreign sources
* R&D expenditures by type of funding mechanism (contract vs. grant)
* R&D expenditures within an institution’s medical school
* R&D expenditures for clinical trials
* R&D expenditures by type of R&D (basic research, applied research, development)
* R&D expenditures received as a subrecipient
* R&D expenditures passed through to subrecipients
* R&D expenditures by field and federal agency (for federally funded expenditures)
* R&D expenditures by top 10 agency sources included in “Other federal sources” above
* R&D expenditures by field and nonfederal source (state and local, business, nonprofit, institutional, or other)
* R&D expenditures by cost categories (salaries and fringe, equipment, software, etc.)
* Capitalization thresholds for software and equipment
* R&D expenditures for capitalized equipment by field
* Headcount of personnel paid from R&D accounts

The FY 2017 HERD Short Form requested the following data:

* R&D expenditures by source of funding (federal, state and local, institutional, business, nonprofit, or other)
* R&D expenditures by broad field and source of funding (federal or nonfederal)
* R&D expenditures passed through to higher education subrecipients
* R&D expenditures received as a subrecipient (from higher education pass-through entities)

Other key variables obtained from sources other than the survey instruments include:

* Name of academic institution
* Institutional characteristics (highest degree granted, historically black college or university (HBCU), public or private control)
* Geographic location (within U.S.)

The FY 2017 FFRDC R&D Survey requested the following data:

* R&D expenditures by source of funding (federal, state and local, business, nonprofit, or other)
* R&D expenditures by federal agency source
* R&D expenditures by type of R&D (basic research, applied research, development)
* R&D expenditures by cost categories (salaries and fringe, equipment, software, etc.)

All survey cycles will continue the annual data collection effort for the census of R&D performing higher education institutions and of all FFRDCs. All items on the questionnaires are reported at the institutional level except for the breakdown of institution funds within question 1 of the HERD surveys (institutionally financed research, institution cost sharing, and unrecovered indirect costs), and the amount of recovered vs. unrecovered indirect costs in question 12 on the full HERD survey. These items will be presented only as aggregate totals in resulting publications. The following confidentiality statement, covering these excepted survey items, is included on the questionnaires:

 " Information from confidential items is not published or released for individual institutions; only aggregate totals will appear in publications. In accordance with the National Science Foundation Act of 1950, as amended, and other applicable federal laws, your

responses will not be disclosed in identifiable form to anyone other than agency employees or authorized persons. Per the Federal Cybersecurity Enhancement Act of 2019, your data are protected from cybersecurity risks through screening of the federal information systems that transmit your data."

The Contractor shall make all staff working with confidential data aware of the importance and requirements for maintaining confidentiality; ALL Contractor staff (including any subcontractors) working on the NSF confidential data must sign an NCSES Data Use Agreement, acknowledging their responsibilities to protect the data. A duly authorized representative of the organization with legal authority to bind the organization must also sign the Organization Data Use Agreement. In addition, Contractor staff using NCSES confidential data will also be required annually to take NCSES-required training about data confidentiality. This training will be made available via the Internet.

The tasks in this statement of work are:

 Task 1.0 Transition, Project Plan, and Procedures

 Task 2.0 Project Management

 Task 3.0 Conduct the 2018 Surveys

 Task 4.0 Conduct the 2019 Surveys

 Task 5.0 Conduct the 2020 Surveys

 Task 6.0 Conduct the 2021 Surveys

 Task 7.0 Respondent Relations

 Task 8.0 Information Requests and Ad Hoc Analysis

 Task 9.0 Transition of Data, Materials, and Procedures to the Next Contractor

**V. Statement of Work**

Independently, and not as an agent of the Government, the Contractor shall furnish all the necessary services, qualified personnel, material, equipment, and facilities, not otherwise provided by the Government as needed to perform the statement of work below. The tasks required as part of this Statement of Work are below. All survey instruments, electronic and paper, and survey software developed under this contract are the property of NCSES.

**Task 1: Transition, Project Plan, and Procedures**

This task includes, but is not limited to, the transition of the HERD and FFRDC surveys from the incumbent contractor to the new contractor and the establishment of a management structure and plans, including the procedures under which the project operates. Transition for the 2018 survey cycle and remaining transition activities will take place within six months of contract award and will require a coordination effort with the incumbent contractor to ensure successful transition of all past survey operations and data related items in the inventory. The new contractor shall update the project management plan and schedule included in their proposal. The final management plan should ensure a successful and timely completion of the 2018 surveys within budget with a targeted response rate of at least 95 percent.

**1.1. Kick-off Meeting**

Within two weeks after the award of the contract, the Contractor shall meet with the Contracting Officer (CO), the Contracting Officer’s Representative (COR) and other NCSES staff to discuss and review tasks and deliverables. Discussions will include the overall project management plan and schedule for the 2018 surveys implementation, including plans for the transition from the incumbent. The Contractor shall prepare and submit the draft agenda three working days before the meeting for review/approval by the COR. This half-day meeting shall be held in Alexandria, VA at NSF.

Within one week following the initial meeting, the Contractor shall provide the COR with the meeting minutes describing each issue discussed, the conclusions reached, and revised plans as appropriate.

**1.2. Transition Plan and Processes**

Transition for the 2018 survey cycle and all transition activities will take place within six months of contract award. A closely concerted coordination effort with the incumbent contractor is needed to ensure successful transition of survey materials, data files, and documentation for all past survey operations and data-related items. Successful transition is instrumental in carrying out the initial survey activities for the 2018 surveys.

The contractor shall develop a transition plan that includes the status of materials provided by the incumbent contractor (see list below) and any needs by the new contractor for information or materials. The detailed transition plan shall be submitted to the COR within three weeks from award of the contract, and shall include a detailed plan for the transition, testing, and operation of all IT systems, and an assessment of the risks accompanying the transition process.

Within 1 month of the contract award date, NCSES will host a meeting at which the new contractor shall meet with the incumbent contractor. The purpose of the meeting will be to provide the new contractor with background and materials and to convey the urgency of a smooth and expedient transition for the 2018 HERD and FFRDC surveys. The two contractors shall work together to ensure that the transition does not disrupt survey operations and service to survey respondents.

Materials to be provided by the incumbent at the start of this project include, but are not limited to, the following:

* All software and associated systems documentation used for the 2017 HERD and FFRDC cycles;
* Detailed and complete inventory of past survey documentation (including data collection contact materials) and data files (including public use files, WebCASPAR files and NCSES data repository deliverables) provided by the incumbent and past contractors;
* Electronic files containing all programs developed under previous contracts;
* Master data file from the 2017 HERD and FFRDC cycles for use in the 2018 frame review and updating activities;
* Table specifications and programming code used to produce thedata tables and other reports;
* Contact information received from each institution during the FY 2017 survey cycles;
* Materials related to the evaluations, methodological research, and statistical activities performed by the incumbent contractor;
* Historical/archival data files.

All materials shall be safely stored and/or archived. In addition, a detailed and complete inventory of all materials received and of all materials developed shall be maintained by the Contractor, for transition to the next contractor at the end of this contract. The Contractor is encouraged to identify other aspects of the project that should be included in the transition activities.

**1.3. Survey Management Plan**

Based on the kick-off meeting discussions and consultation with the COR, the Contractor shall review and make revisions to the proposed Survey Management Plan. The Contractor shall submit a revised Survey Management Plan for NCSES review and approval within 2 weeks after the kick-off meeting.

The Survey Management Plan must contain the following:

*Resource Plan*

* Staffing information including an organizational chart and proposed personnel crucial to successful project outcomes by task assignments, and their contact information; resumes, hourly rates, and the number of proposed hours per person per task per year (or a percentage of their time);
* Status of materials provided by the incumbent contractor and identification of additional materials needed to move to a fully functioning operation

 *Communication Plan*

* Plan for establishing communication protocols between the Contractor’s staff and the COR;
* Plan for releasing data and other products developed under this contract;
* Plan to inform the respondent population about changes resulting from the transition to the new contractor, including changes in operations and procedures for communicating with the new contractor.

 *Project Management Plan*

* Schedule of activities under this contract using an electronic package such as MS Project for the development of a work breakdown schedule (WBS) which provides detailed schedules for completion of tasks and subtasks, to track/monitor progress and interrelated activities.
* Plan for development of a real time information management system (IMS) that provides up-to-date information on all actions on tasks and deliverables. This IMS should provide the COR access to real time information that assists NCSES in managing the project and shall include but is not limited to the following information: when surveys were sent to each institution and when each institution responded; the mode of response; the number of institutional contacts initiated by the Contractor by mode of contact (paper, e-mail or telephone), date of contact and reason for contact; date each institution first logged on to the website; contacts initiated by the institutions, date of contact, the mode of contact and the issues raised; response rates.
* Plan for budget and financial reporting system with detail, by year, task and subtask and at the task and subtask level actual versus projected costs by activity and staffing, to ensure careful monitoring of the negotiated costs vs. actual costs for the contract.

*Quality Assurance and Quality Control Plan*

* The objective of Quality Assurance (QA) is the early identification and resolution of problems in cost, timeliness and quality of the survey processes and data file. The QA plan for the survey systems processes, files and databases shall contain procedures for quality assurance, and will evolve as the contract progresses. The QA plan shall also include risk assessments of any trade-offs involving data quality, the schedule, and the budget.
* The QA plan shall address detailed procedures that are integrated throughout the entire range of survey activities, including all phases of data collection, processing and analysis; for example, mailing packages that include the survey invitation and reminder letters, survey forms and instructions and other correspondence; response tracking; keying; data editing; table preparation and verification, and so forth. The QA results shall be used to provide timely feedback to the affected areas of survey operations to improve the quality of work. The IMS (specified in the Survey Management Plan/Schedule) shall be structured to help identify potential problems and to be proactive in responding to these problems.
* The QA procedures will evolve (e.g., the QA for the 2019 surveys should be revised based on the experience gained during the 2018 survey cycles and so on). The procedures will also be reviewed during each survey cycle and revised as need arises and in response to NCSES requests. Results of the QA plan shall be reported in the Methodology Report for each survey cycle.
* A Quality Control (QC) plan is also part of this task. The QC plan shall specify procedures the Contractor will use to ensure accuracy for all final products and deliverables including the microdata and metadata files, and shall designate the roles accountable for accuracy of a product, including the author, the reviewer, the QC checker, etc. QC procedures shall include “best practices” for web survey data collections and for all aspects of the survey process.
* The Contractor shall monitor and evaluate QC results from each survey operation for early detection of possible problems and resolution, and assessment of the overall quality of survey operations. All QC results shall be well documented and shared with the COR on a weekly basis and included in the Methodology Report for each survey cycle.
* The QA and QC plans shall be submitted to the COR within four weeks of the kick-off meeting for review and approval by the COR. After approval of the quality plans, the Contractor’s methods and procedures for quality (and general requirements for checking of work) shall be provided to each staff person on the project. Training in specific areas of quality as relevant to each task shall be provided to staff working on that task. The Contractor shall ensure that detailed QA and QC procedures are implemented and closely followed.

*Security Plan*

* The security plan should document the procedures the contractor will implement to ensure secure database development and maintenance, strict version control procedures, and the control of access to and dissemination of confidential data. The security plan must be approved by the NCSES Chief Statistician.
* The contractor shall submit the final version of the plan for NCSES approval no later than two weeks after receiving COR comments.

Any revisions to the plans requested by NCSES shall be incorporated by the Contractor and sent to the COR within two weeks.

**Task 2: Project Management**

The Contractor must have a project management system that identifies potential problems early, ensures high-quality data and adherence to schedules, controls project costs, and maintains close communication with the COR. Project operations shall include frequent discussions with NCSES concerning progress and challenges, meetings to discuss and resolve problem areas, and regular reporting between the Contractor and COR.

The Contractor's project director for the HERD and FFRDC surveys shall be committed to this project for a majority of his/her time for the duration of the contract and shall have proven management and broad technical skills to handle this complex project.

The Contractor’s IMS website shall provide up-to-date information on tasks and deliverables. The IMS website shall be updated on an agreed upon schedule with the COR so that project reports and deliverables can be closely monitored by the COR; it is expected that during data collection, updates on the progress will be made daily.

The Contractor shall maintain up-to-date records of all activities performed throughout the contract. These records shall form the basis for the HERD and FFRDC Methodology Reports and documentation for each survey cycle and shall provide sufficient depth and understanding of all project activities to meet the transparency requirements of the Office of Management and Budget (OMB) and NCSES Data Quality Guidelines (see Appendix B).

NCSES’ standards, guidelines, and protocols related to computer processing, data file documentation, survey standards, release of data, quality control, media contacts and NSF publications shall be followed in the work conducted under this contract. NSF and NCSES standards, guidelines and protocols are included as appendices to the SOW; the Contractor shall be notified immediately of any changes to these documents.

All copies of material developed during the conduct of the surveys, including computer programming codes, documentation, data files, web files and documentation, etc., are to be transmitted to NCSES or disposed of in accordance with instructions from NCSES upon completion of work.

All deliverables, reports, and tables shall be delivered to NCSES in standard, NCSES approved formats and software, such as Microsoft Office Word or Excel. Unless specified otherwise, all deliverables, reports and tables shall be delivered to the COR in electronic format.

All tasks requiring computer processing work shall be conducted at the Contractor's secure computer facility. All computer programs and data files such as those used in various stages of data collection, data processing and development of tabulations shall be fully documented. All computer software must be portable, that is, non-proprietary software capable of being transported to another Contractor. The Contractor shall implement procedures to back up the data on a regular basis and have a process for fast, secure recovery of archived data.

The web survey must be capable of running on a variety of web browsers such as Internet Explorer, Apple Safari, Mozilla Firefox, etc. with appropriate security procedures. In addition, the web survey and access must be transportable and compliant with section 508 of the Rehabilitation Act of 1973.

The Contractor shall follow the Federal Standards for Security (FIPS PUB 200) (see Appendix B).

All work conducted under this contract shall follow the applicable standards set forth in the statistical standards for the NCSES surveys (see Appendix B) which may change over the course of the contract.

Survey practices shall reflect state of the art survey research methodology, leading to improvement in data quality, timeliness, and cost efficiency. Contractor staff shall be familiar with any relevant Statistical Policy Working Papers and Office of Management and Budget (OMB) Standards and Guidance for Statistical Surveys (see Appendix B).

All tables and reports for NCSES publication or electronic dissemination on the NCSES website shall adhere to NCSES Publication Guidelines. The publication guidelines and a description of the NCSES review process are available in Appendix B; these may be updated by NSF/NCSES during the course of the contract. All tabulations shall be edited for consistency within and across tables. The programming codes used to produce these tables shall be documented and preserved for future reference.

All contract materials shall be submitted in formats and software specified by the COR. To meet publication goals, NCSES will typically require at least two weeks for the initial review of a draft report by the COR. Several iterations of the product may be necessary before it is submitted into the NCSES review process. Once in the review process, the Contractor shall be responsible for making any required changes from the review. The NCSES publication review process may take 2 months for a data release InfoBrief and a lengthier period for data tables, analytical InfoBriefs, or special reports, depending upon the extent of revisions required. Appendix B contains the File Format Guidelines for NCSES Publications in the Manual of Editorial Style and Publication Standards.

**2.1. Communication and Reporting**

**2.1.1. Monthly Project Reports**

Beginning one month after the contract award, the Contractor shall provide monthly progress reports to the CO and COR by the 15th of each month. This report shall include documentation on progress of survey activities and expenditures identified by task and subtask, problems encountered, actions required, and expenditure analysis for the month. The Contractor shall finalize the monthly report format in consultation with the COR.

The monthly reports shall include details on the progress of the survey, a summary of problems encountered, early warning of potential problems and concerns, and actual hours and costs incurred. The reporting period consists of the first full month of performance plus any fractional part of the initial month. Thereafter, the reporting period shall consist of each calendar month.

The monthly project reports should include:

* Task by task progress completion status
* Comparison and discussion of actual vs. planned (from last monthly report) activities by task
* Activities occurring during current reporting period
* Actual hours and costs incurred for reporting period
* Problems encountered, actual vs. proposed solutions and schedule changes
* Notification of any upcoming problems or challenges and proposed solutions
* Planned activities for the next reporting period
* Task by task financial reports
* Comparison and discussion of actual vs. projected individual staff hours
* Comparison and discussion of actual vs. projected costs
* Forecasted staff hours and costs for next reporting period

The contractor shall provide monthly invoices to coincide with the timeframe of the monthly progress reports. In addition, special purpose time and cost reports may be requested by the COR during the contract.

**2.1.2. Monthly Progress Meetings**

Beginning one month after contract award, the Contractor shall meet with the COR and other NCSES staff in person or via teleconference on a monthly basis to discuss the progress of the project. The Contractor shall submit a draft agenda via email for all meetings at least three (3) business days before the meeting. The Contractor shall be responsible for taking notes at these monthly meetings and all other meetings that the Contractor attends with NCSES, and prepare a written summary for NCSES. The summary shall be delivered to the COR via email within one week of the meeting for NCSES approval. The Contractor shall revise the summary, if necessary, and return the revised summary to the COR within one week.

**2.1.3. Data Collection Status Reports**

During data collection, the Contractor shall provide weekly reports to the COR on the status of various operations to monitor progress, particularly response rates. The Contractor shall produce the outline of the weekly reports for approval by the COR. However, at a minimum these reports should include: a description of all survey activities conducted, response rates, names of respondent and nonrespondent institutions, and comparison of the progress of the current survey cycle with that of the previous survey cycle (to the extent that such information is available).

* + 1. **Data Collection Monitoring and Site Visits**

**2.1.4.1. Information Management System (IMS)**

No later than eight weeks after the contract award, the Contractor is required to establish an IMS, accessible by NCSES, for monitoring survey progress.

**2.1.4.2.** NCSES **Visits to Contractor’s Site**

NCSES staff will make on-site visits to the Contractor’s site to observe and monitor survey operations, including training, preparation of sample files, address lists, and printing and assembly of any mailing packages; receipt, edit, and keying of mail responses; conduct of any telephone interviews and scheduling; debriefing; coding; review of raw data files; etc. These on-site visits may occur up to two times during the survey cycle with each visit lasting one day.

**2.2. OMB Survey Clearance Support**

During the period of this contract, clearance requests must be submitted to OMB for the FY 2019-2021 survey cycles. The survey clearance package must be submitted to OMB by April 2019. In order to allow time for NCSES review and revisions, the draft OMB clearance packages will be due to NCSES by January 15, 2019. The Contractor shall prepare the OMB clearance package with significant input from NCSES (see Appendix B). The OMB clearance package shall include plans and proposed respondent burden hours for any methodological work, pilots, or pretests. The Contractor shall include the draft survey contact materials in the OMB clearance package. The format and content of the OMB clearance packages shall be specified and approved by the COR. The final OMB clearance package shall be submitted by NSF and the Contractor shall assist the COR in addressing any questions from OMB.

As necessary, the Contractor shall prepare OMB generic clearance packages for methodological research activities conducted for the HERD and FFRDC surveys. The Contractor shall draft for NCSES review and approval and provide final copies of all materials for the generic clearance package, including, but not limited to: letter to OMB under the generic clearance for methodological research; prototype materials; scripts used to recruit respondents; interview or focus group protocols or guides; study plans; and data analysis plans.

In order to provide input for the OMB forms clearance and generic clearance packages, the Contractor shall collect and maintain information on the respondent burden for both the HERD and FFRDC surveys via periodic sampling of respondents and pre-testing of any new or expanded questions. Any proposed respondent contacts requesting burden information shall be submitted to the COR for advance approval.

**Task 3: Conduct the FY 2018 Surveys**

**3.1. Population Review**

Prior to the survey launch, a population review shall be conducted to identify newly eligible institutions for the surveys. For the FFRDC Survey, the Contractor shall review the current NSF Master List of FFRDCs to update the population as needed. For the HERD survey, the Contractor currently contacts all four-year and above institutions reporting non-zero R&D expenses in IPEDS who were not previously included in the HERD survey population. The number of academic institutions contacted is estimated to be less than 250 per year. The final qualification criteria for inclusion in the survey population review for the FY 2018 survey shall be discussed and agreed upon during the initial meeting (Task 1.1).

As necessary, the Contractor shall review and revise the screening instrument provided by NCSES (Appendix B). As necessary, the Contractor shall also review and revise the respondent contact materials provided by NCSES. The Contractor shall submit the revised package of questionnaire and survey contacts via email to the COR for review. Within two weeks of receipt of COR comments, the Contractor shall make final revisions to the screening instrument and contact materials. The Contractor shall conduct the screening via mail, email, and/or web. Telephone follow-ups shall be used as needed to increase response. The screening shall request information from all institutions in the survey frame that have unknown R&D expenditures.

The Contractor shall construct a population review database to record the results of the screening. At a minimum, the Contractor shall add the following data variables for each institution to the database as applicable: institution name, IPEDS unit ID, highest degree granted, response to the screening survey, total research expenses reported in the most recent IPEDS Finance survey, R&D obligations to the institutions as reported in the most recent NCSES Federal S&E Support survey (FSS), contact name, title, address, telephone number, and email address.

The Contractor shall collect and report on the paradata for the screening operation including: respondent comments, item nonresponse rates, and interviewer logs of conversations or other individualized communications with respondents. NCSES may ask for additional paradata to be collected.

The Contractor shall achieve a minimum 90% response rate to the direct screenings of institutions.

Weekly screening data collection progress reports shall be submitted to the COR via email. These reports shall include a description of any problems encountered, attempted solutions, status of follow-up activities, response rates, and charts.

**3.2. Survey Instruments**

The Contractor shall update and maintain the web and paper survey instruments for the 2018 survey cycle, beginning with the instruments used during the FY 2017 HERD and FFRDC R&D surveys. The structure and content of the survey instruments may change as the result of problems identified in previous survey cycles, methodological work conducted under this contract as well as NCSES investigations outside this contract.

No later than eight weeks prior to the survey launch, the Contractor shall provide draft PDF versions of the FY 2018 HERD, HERD short form, and FFRDC R&D surveys. These drafts should incorporate any changes provided by the COR in addition to the necessary date changes.

No later than eight weeks prior to the survey launch, the Contractor shall provide a fully functional web survey system to the COR for beta testing. The Contractor shall make all changes to the system requested by the COR following the COR’s beta test. The web survey site shall be ready for data collection no later than two weeks prior to survey launch. The Contractor shall notify the COR when the website is open and provide them with passwords and access to the website.

The web instrument should follow current best web design practices. It should allow for entering data in multiple sessions, ensure data are saved regularly, include built-in data edits, and be easy for respondents to understand and use. The system shall build in indicators of problems that respondents may be having so that the Contractor can respond proactively.

The Contractor shall provide adequate and secured computer resources to handle the web survey volume throughout the web survey phase to avoid any Internet connection interruptions, and ensure timely completion of the data collection. The computer resources shall ensure data security and data integrity. The QA procedures shall include regular monitoring of the web survey data submissions to identify any Internet browser issues.

The Contractor shall continuously evaluate the HERD and FFRDC R&D web surveys and database software in order to make incremental changes. All such changes shall be discussed with the COR, described in writing, approved by the COR, and documented in the monthly report to NCSES. The Contractor shall not complete any modifications, enhancements, or revisions that result in an increase to the contract price/costs or perform any changes except as stated herein without the prior written approval of the Contracting Officer.

Upon receipt of COR approval, the Contractor shall conduct a minimum of eight (8) remote web usability tests (using remote access software such as Webex) to test any substantive software modifications in order to evaluate the effectiveness of the modifications before full implementation.

Upon receipt of COR approval, the Contractor shall proceed with any software modifications. The Contractor shall update technical system documentation within 30 days of any change, and provide to COR for review and approval.

The contractor shall submit two invoices. The first invoice shall be submitted when the final revised PDF versions of the questionnaires are accepted. The second invoice shall be submitted when the final revised web data collection instruments are accepted.

**3.3. Data Collection and Processing**

The Contractor shall update the HERD and FFRDC R&D survey contact protocols provided by NCSES as necessary and submit the revised package to the COR via email for review no later than six weeks prior to the survey launch date. Within two business days of receipt of COR comments, the Contractor shall make final revisions to the email package. The Contractor shall send the survey launch email to each institutional/FFRDC respondent notifying them of the survey and providing them with their institutional code, password and survey link. The Contractor shall email the packages to the survey participants no later than November 15 of each survey year (e.g. November 15, 2018 for the FY 2018 survey year).

For all variables collected on previous surveys, the Contractor shall allow institutions to view their responses for the previous 2 years as part of the FY 2018 data collection.

The Contractor shall provide technical support for the survey respondents. The current contractor provides support by toll-free telephone and e-mail assistance using highly trained and professional staff to promptly answer any respondent questions, beginning with the initial e-mail to the respondents prior to the start of the data collection. The technical support staffing level must be adjusted to adequately meet the call/e-mail demands throughout data collection by closely monitoring the contact volume and times. The Contractor shall document the reasons for contact and shall evaluate and use this documentation to modify future survey cycles. The documentation shall be of sufficient detail to understand any challenges that occurred related to reporting specific items, to identify respondent concerns, and to facilitate improvement in the surveys. The Contractor shall provide the COR with reports summarizing the contact history on a weekly basis and in summary at the end of the 2018 data collection.

The Contractor shall also set up a project email account to answer respondent questions as well for use for any follow-up questions, reminders, or other survey operations. All email inquiries shall be responded to within the next business day. As with phone call-ins mentioned above, email inquiries shall be recorded in the same way, and summaries provided to the COR on a weekly basis during the data collection.

The Contractor shall use the IMS created in task 2.1.4.1 to monitor the data, response status, relevant comments from respondents, and other relevant interactions with respondents. The COR shall be able to see the real time status of each respondent in the same survey format that the respondent uses. The Contractor shall ensure that all respondent- and staff-related comments are entered in the system. The monitoring system shall minimally include: the name of the institution, the survey specific identification code of the institution, IPEDS unit ID, the name and contact information of the respondent, status of completion of survey, their survey responses to date, and status of reminders to respondents. The COR may ask via email for additional variables, reports, or other features to be included as needed.

The Contractor shall achieve a minimum 95% response rate no later than April 30 of each survey year (e.g. April 30, 2019 for the FY 2018 survey year). Response rates are to be calculated using the American Association for Public Opinion Research standard definitions and the OMB recommended guidelines. See 2016 HERD Methodology Report for the response rate procedures used. The survey deadline may be extended in order to achieve this response rate with the concurrence of the COR. The COR will make the final decision regarding the closing date of data collection.

The Contractor shall store the final institutional/FFRDC submissions in a manner that easily permits retrieval for the next survey cycle and ultimately for transfer to the next survey contractor.

The Contractor shall begin data retrieval activities with respondents (e.g., conversations or email messages that ask respondents to provide missing data, to resolve data inconsistencies, etc., in order to improve data quality) no later than two weeks after the receipt of an institution’s response. All data retrieval for all respondents shall end within four weeks of the receipt of the last survey.

The Contractor shall provide each institution electronically with their own survey data and a standard letter drafted by the Contractor and approved by NCSES thanking them for their participation and response within four weeks of completing data retrieval with the respondents.

The Contractor shall maintain complete, accurate documentation of all electronic data files and supporting software programs throughout the project. These shall form the basis for reports to be prepared by the Contractor at the end of the survey cycle.

The Contractor shall collect and report on the survey paradata including: respondent comments made on their survey responses, a frequency of all error messages triggered by survey input made by respondents, counts of institutions with edit flags after submission of data, item nonresponse rates, and interviewer logs of conversations and individual email correspondence with respondents. NCSES may ask for additional paradata to be collected.

At the end of data collection, the Contractor shall produce a Data Collection Report (no later than 8 weeks after survey closeout). This report shall include the paradata mentioned above as well as a table indicating the weekly response flow of data collection for each survey.

The contractor shall submit three invoices according to the following progress schedule. Invoice 1 shall be submitted when the survey is fielded. Invoice 2 shall be submitted at the time of the survey due date for respondents. Invoice 3 shall be submitted at the completion of all remaining task activities and deliverables.

**3.4. Editing**

The Contractor shall examine, edit and resolve all edit and error messages in the HERD and FFRDC data. For edit specs currently used, see Appendix B. Edit checking procedures were developed by the previous contactor. The Contractor shall send a Data Editing Procedures Memo to the COR via email ten weeks prior to survey launch assessing these edit procedures and suggesting alternative methodology and procedures as appropriate.

Edited values shall be flagged in the final data file for the survey cycle. During data processing, the Contractor shall at a minimum prepare a weekly Data Editing Report showing the number of institutions encountering edit and error messages for each survey item by message type, which may be e-mailed to the COR or available within the IMS.

The HERD and FFRDC web instruments shall include edit checks within the instruments. Error messages given to web respondents shall be specific to the edit/question failed and provide a clear indication to the respondent about what caused the edit failure.

The web-based survey instruments shall include a feature that identifies responses that are substantially greater than or less than the corresponding response from the previous survey cycle. The Contractor shall work with COR to determine an appropriate level of change to flag for the 2018 survey based on the 2017 survey results. Any response deemed substantially different from the prior year’s response shall be flagged as such in the web instrument, and a message shall be displayed requesting that the respondent provide an explanation for the identified increase/decrease. The conditions triggering these alerts to the respondent shall be based on both ranges and absolute differences in the counts.

Some institutions will require data retrieval phone calls to ask for explanations for changes, if original explanations were not sufficiently clear. These phone calls may resolve such questions. However, for a small set of schools, changes may need to be made to the completed survey data. These changes shall be tracked and flagged.

The contractor shall submit two invoices according to the following progress schedule. Invoice 1 shall be submitted at the time of the survey due date for respondents. Invoice 2 shall be submitted at the completion of all remaining task activities and deliverables.

 **3.5. Data Tabulation**

As data are collected, the Contractor shall create a data file to be used for analysis. Creation of the data file shall include data from any necessary follow-up with institutions. In addition, activities shall include where relevant: edits, verification of data entry, and production of preliminary frequency counts or other descriptive statistics to ensure the integrity of the data file. The Contractor shall perform edit checks for consistency across all totals and subtotals.

The Contractor shall add the following data variables for each institution to the data file for HERD institutions: institution name, NCSES/HERD ID code, IPEDS unit ID, highest degree granted, type of control (public or private), minority- and Hispanic-serving institutions flag, survey respondent and institution president names, titles, and addresses, telephone numbers, and email addresses. The Contractor shall notify the COR immediately of any changes to institution names or characteristics discovered during data collection in order to maintain updated information in the NCSES Taxonomy of Institution Names (TIN). The TIN is a master list of institutions and institutional characteristics that is shared across the NCSES institutional surveys. The Contractor shall add the following data variables for each institution to the data file for FFRDCs: FFRDC name, NCSES ID code, type of administrator (industry, nonprofit, or university), survey respondent and FFRDC director names, titles, and addresses, telephone numbers, and email addresses.

For institutional responses received from a paper survey, the Contractor shall enter the data into the data file via the web survey. The Contractor shall provide NCSES electronic (PDF) copies of all paper surveys submitted by respondents at the time that the data file is submitted to NCSES.

**3.6. Imputation**

The Contractor shall prepare and submit to NCSES for approval an Imputation Plan, within 12 weeks after survey the survey launch date, specifying the imputation procedures that will be used to fill in missing data after all follow-up efforts have failed. Historically, the FFRDC R&D survey has not required imputation. Before performing the missing data procedures, the Contractor shall provide NCSES with a complete listing of all reporting units and/or institutions requiring such procedures. Any imputed data shall be flagged and missing data shall be handled according to the specifications included in the approved Imputation Plan.

The Contractor shall perform the approved imputation following the survey closeout and compute imputation rates for all data cells and display the rates/measures in tabular form. An analysis of the impact of imputations on the survey data shall be included in the Methodology Reports each year. For the missing data imputation procedures currently used, see the 2016 HERD Methodology Report in Appendix B.

**3.7: Publications and Data Dissemination**

A major product of the HERD and FFRDC surveys is tabulations of descriptive statistics of the status and change in R&D expenditures in the higher education and FFRDC sectors. NCSES disseminates data and information on these surveys in a variety of formats:

* Annual *InfoBrief* publications
* Data tables (DT)
* NCSES online database, based on data files delivered to the NCSES data repository
* Public Use Data Files

No survey results shall be released by the Contractor to anyone other than the COR until approved in writing by NSF.

All interactions with the news media received by the Contractor concerning the HERD and FFRDC surveys shall be directed to the COR. The news media includes but is not limited to - the editorial (i.e., news reporting) operations of publications; wire services; general and special interest publications (including scientific journals and association newsletters); radio, television, and cable station, networks; and all Web-based media. See NSF’s Policy Regarding News Media Relations in Appendix B.

All tables, graphs, figures and reports for NCSES publication and/or electronic dissemination on the NSF website shall adhere to NSF’s publication standards (Appendix B) as well as the OMB/NSF Quality Information Guidelines referenced earlier. The Contractor is responsible for keeping abreast of all changes in these guidelines that may be updated during the course of the contract. Files delivered for posting on the NSF website must comply with accessibility provisions stated in Section 508 of the Rehabilitation Act of 1973. Guidance on required compliance can be found in NSF’s Web Authorizing and Policy Manual (see Appendix B).

The Contractor shall confirm the accuracy and consistency of the survey data tables to be published in all the NCSES publications and released to various users. For example, HERD and FFRDC survey data in the DTs shall be consistent throughout all tables generated. All quality assurance measures shall be performed prior to preparation of any data product. No data table will be accepted by NCSES that does not meet these criteria. The actual data quality assurance measures to be used shall be specified in the Quality Control Plan (see 1.3). The Contractor shall implement quality assurance procedures on all tabular output to assure that data are accurate, the rows and columns add to totals, and that all data shown on all final tables are consistent with one another.

All materials for publication shall be submitted in formats fully comparable with software packages used and specified by NCSES. The Contractor is expected to make all revisions requested by NCSES. The final approved products shall be submitted in print and electronic formats specified by NCSES.

**3.7.1. Data tables (DTs)**

Each survey cycle, the Contractor shall prepare up to 100 DTs that will be used as part of the annual *Higher Education Research and Development* and *R&D Expenditures at Federally Funded R&D Centers* publication. In preparation for the populated data tables, the Contractor shall produce drafts and a final set of table shells for each survey for NCSES review and approval. The Contractor shall use the previous year’s DTs as the starting point for the current year’s table shells. Once the Contractor receives approval of the table shells and the data file is complete, the Contractor shall produce up to five drafts and a final set of DTs from the survey data in hard copy and electronic format. The table shells and the populated DTs shall be considered final when the data meet the standards detailed in the Quality Control Plan (see 1.3) and the NCSES Data Quality Guidelines.

The Contractor shall also prepare survey methodology information that follows the format and content specified by NCSES for inclusion in the DT technical appendices.

**3.7.2. Data Files**

As part of the transition, the incumbent contractor shall deliver to the new Contractor copies of archival files and associated documentation from all HERD and FFRDC cycles beginning with FY 1979. The new contractor shall retain custody of archival data files containing final edited data for prior years' surveys, and associated documentation.

Following editing and imputation, the Contractor shall produce the final data files no later than July 15 of each survey year, which shall be used to prepare the data tables (DTs). For example, the data files for the 2018 survey cycle shall be included in the archival file when processing for the survey cycle is complete. At the close of the 2018 survey cycle, the Contractor shall prepare a complete archival (master) file containing data from all surveys beginning with FY 1979.

The Contractor shall maintain and update the survey historical data files. The Contractor shall make any corrections to prior-year data in the historical files that may be required in light of the most recent survey submissions. The Contractor shall perform edits of the data in the historical file to ensure accuracy and internal consistency. All corrections shall be flagged as revised data within the institution level records. The Contractor shall also maintain static data files including each survey year’s final published data.

The Contractor shall confirm the accuracy and consistency of the final data files. All quality assurance measures shall be performed prior to preparation of any data product. No data table will be accepted by NCSES that does not meet these criteria. The actual data quality assurance measures to be used shall be specified in the Quality Control Plan (see 1.3).

**3.7.3. NCSES Data Repository Files**

The survey contractor shall deliver to the NCSES COR, no later than July 15 of each survey year, the survey (a) Microdata and Associated Files and (b) Products/Reports and Associated Files. The organization and content of the data repository deliveries (a) and (b) are specified in detail in the attached data repository delivery requirements document titled “NCSES Data Repository Delivery Requirements” and dated April 2012. The contractor shall use the checklists, provided in Appendix F of the data repository delivery requirements document, to ensure the key components for deliveries (a) and (b) are included in the Data Repository Delivery.

The Microdata and Associated Files shall be delivered, as soon as possible, after final approval of the microdata is given by the NCSES COR. The Products/Reports and Associated Files shall be delivered with the microdata or in a supplemental delivery after final approval of the product/report is given by the NCSES COR.

NCSES requires that each data repository delivery be packaged, handled, and delivered following the confidentiality and security guidelines specified under CIPSEA as needed. The deliveries shall be in an electronic format delivered via a secure FTP or package delivery service.

**3.7.4. Public Use Files and User Guide**

The Contractor shall prepare and submit data files for public use for both the HERD and FFRDC surveys, using the format of previous public use files provided by the COR. They shall not contain any confidential variables or respondent contact information. The Contractor shall document the survey data files in an annually revised electronic version of the Data User Guide (see Appendix B for examples of previous Data User Guides). A draft copy of the Data User Guide shall be submitted to the COR. The COR will approve or suggest modifications. Two weeks after receipt of COR approval, the Contractor shall submit a final copy.

**3.7.5. Survey/Systems Documentation and Survey Operations Plan**

At the beginning of the contract, the new contractor shall receive from the incumbent a detailed and complete inventory of past survey documentation, data files and a Survey Operations Plan (SOP). The new contractor shall maintain and update the inventory and the SOP. All deliverables from the 2018 survey cycle shall be added to the inventory as soon as they are completed.

The SOP shall provide a complete description of all aspects of the 2018 survey cycle. The Contractor is also required to maintain and document any procedure that has been approved by the COR and is different from the 2017 survey cycle and include the rationale for these changes. At a minimum, the SOP shall include a description of the population review procedures; survey design, survey instruments, and follow up materials; nonresponse analyses; data editing and processing procedures, missing data and imputation procedures and analysis; quality measures; and any limitations, caveats or qualifications that attach to the survey findings. The survey documentation shall conform to requirements of the NCSES Guidelines for Survey Documentation in effect at the time of the 2018 survey cycle (see Appendix B).

At the end of the 2018 survey cycle, the Contractor shall deliver to NCSES, in the way that NCSES requests it, complete documentation for all software, computer code/programming, metadata, databases, and data files used or developed during the survey cycle. This shall include all programs, files, specifications, systems, and other documentation used or developed for the 2018 survey cycle. All system designs, programming, and associated elements produced or developed under this statement of work are the property of the NCSES.

**3.8. Survey Methodology Report**

The Contractor shall maintain up-to-date electronic records of all activities conducted for the project, with easy COR access. These records shall form the basis for the methodology report. The methodology report shall provide sufficient depth and understanding of all project activities to allow replication of the work performed.

The Contractor shall send a draft methodology report to the COR via email. The methodology report shall provide a complete description of all aspects of the just-completed survey cycle including: universe selection, data collection methods, data processing procedures, nonresponse analysis, imputation, analytic specifications and procedures, the historical data files, public use files, and data repository files and how they are updated and maintained, and any caveats or qualifications that attach to the survey findings. It shall name and provide a brief description of all computer software programs used, as well as a history of past survey-cycle changes. It shall provide a list and brief description of any improvements in the just-completed survey cycle.

The methodology report shall conform to the requirements of methodology reports as stated in the NCSES Statistical Guidelines for Surveys and Publications (Appendix B). Within two weeks of receiving the COR comments, the Contractor shall submit a final methodology report via email.

**Task 4: Conduct the FY 2019 Surveys**

During the 2018 survey cycles, problems may result that require alteration to the survey design, procedures, survey instruments, survey infrastructure, or any other aspect of the project. The Contractor shall prepare options for resolving any problems along with a cost estimate for the options. In addition, NCSES-requested changes may be required based on improvement needs. Upon approval of NCSES, the Contractor shall implement the design changes in the 2019 survey cycles.

Unless otherwise modified, the Contractor shall conduct the 2019 surveys according to the procedures and tasks for Subtasks 3.1 through 3.8 from the 2018 surveys and any procedures and tasks listed below. The Contractor shall produce the same deliverables for the 2019 survey cycles as for the 2018 survey cycles and the deliverables for the procedures and tasks listed below.

**Task 5: Conduct the FY 2020 Surveys**

During the 2019 survey cycles, problems may result that require alteration to the survey design, procedures, survey instruments, survey infrastructure, or any other aspect of the project. The Contractor shall prepare options for resolving any problems along with a cost estimate for the options. In addition, NCSES-requested changes may be required based on improvement needs. Upon approval of NCSES, the Contractor shall implement the design changes in the 2020 survey cycles.

Unless otherwise modified, the Contractor shall conduct the 2020 surveys according to the procedures and tasks for Subtasks 3.1 through 3.8 from the 2018 surveys and any procedures and tasks listed below. The Contractor shall produce the same deliverables for the 2020 survey cycles as for the 2018 survey cycles and the deliverables for the procedures and tasks listed below.

**Task 6: Conduct the FY 2021 Surveys**

During the 2020 survey cycles, problems may result that require alteration to the survey design, procedures, survey instruments, survey infrastructure, or any other aspect of the project. The Contractor shall prepare options for resolving any problems along with a cost estimate for the options. In addition, NCSES-requested changes may be required based on improvement needs. Upon approval of NCSES, the Contractor shall implement the design changes in the 2021 survey cycles.

Unless otherwise modified, the Contractor shall conduct the 2021 surveys according to the procedures and tasks for Subtasks 3.1 through 3.8 from the 2018 surveys and any procedures and tasks listed below. The Contractor shall produce the same deliverables for the 2021 survey cycles as for the 2018 survey cycles and the deliverables for the procedures and tasks listed below.

**Task 7: Respondent Relations**

NCSES believes that it is critical to have good working relationships with respondent institutions. The validity and reliability of the data depends on a mutual understanding of survey questions and terminology by those who conduct the survey and those who respond to the survey.

As part of this task the Contractor shall conduct activities that improve understanding of the survey among the respondent community. This relationship requires Contractor staff who can relate to the staff in the responding academic offices in a collegial, professional manner.

**7.1. Site Visits and Conference Attendance**

To improve relations, minimize refusals, and encourage on-time reporting, the Contractor shall conduct site visits annually to institutions selected by the COR. The Contractor should anticipate 2 week-long site visit trips per year (half-day visits to approximately 8 institutions).

The Contractor shall be responsible for coordinating all activities related to the site visits including a list of potential participants, development of an agenda, preparation of pre-meeting and post-meeting materials, coordination of all travel and other logistics, and conduct of the site visits. The Contractor shall send a copy of the final report and a thank you letter from NSF to each site visit participant.

The Contractor shall provide a summary of the site visits that shall include:

* the time, date, and place of the visits;
* a list of attendees, their position, their affiliation and their contact information;
* a complete and accurate description of each matter discussed and conclusions reached; and
* copies of each report or other documents considered by the participants.

The Contractor shall submit a draft summary of the site visits no later than four weeks after the site visit trip date. Within two weeks of receiving the COR comments, the Contractor shall submit a final site visit summary.

In addition, at least one member of the Contractor staff shall attend one national meeting in each year of the contract—the Association of Institutional Research (AIR) annual meeting in May/June, the National Council of University Research Administrators (NCURA) annual meeting in August, or another as appropriate. These meetings afford the opportunity to meet respondents, discuss problems in responses, and provide information and best practices to respondents. Staff may be asked to prepare and present a paper on the Higher Education R&D Survey at the meeting.

This task shall be billed for time and materials.

**7.2. Expert Panel Meeting**

The Contractor shall assist NCSES in establishing an expert panel for the HERD survey. The panel will provide NCSES with expertise on potential survey topics and information relevant to writing new survey questions. In addition, the panel (10 to 12 members) will provide consultation on assessing data quality and the extent to which the data meets the needs of decision-makers and data users.

The Contractor shall convene the panel twice during this contract period, at the COR’s discretion, for a one-day expert panel meeting in the Washington DC area. The Contractor shall be responsible for coordinating all activities related to these meetings including a potential list of experts for the panel, development of the agenda, preparation of pre- and post-meeting materials, coordination of all meeting travel and other logistics, and conduct of the panel meeting. At least three weeks prior to the meeting, the Contractor shall provide the materials approved by the COR to the panel members.

The Contractor shall take minutes of the meeting that shall include at least the following:

* the time, date, and place of meeting;
* a list of attendees, their position, their affiliation, and their contact information;
* a complete and accurate description of each matter discussed and conclusions reached; and
* copies of each report or other document considered by the group.

The Contractor shall submit the draft minutes of the meeting no later than four weeks after the panel meeting date. Within two weeks of receiving the COR comments, the Contractor shall submit the final panel minutes via email.

The Contractor shall send the COR via email a draft thank you letter from NSF to the panel participants within one week of the panel date. Within three business days of receiving COR comments, the Contractor shall send a copy of the minutes and the thank you letter to each participant.

This task shall be billed for time and materials.

**7.3.** **Respondent Workshop**

The Contractor shall hold a one-day workshop with survey respondents on survey content issues or other reporting issues during the first year of this contract and, at NCSES’s discretion, up to two more times during this contract period. The workshop shall have 10 to 12 participants. The topic of the workshop shall be chosen by NCSES. At least three weeks prior to the workshop, the Contractor shall provide the materials approved by the COR to the workshop participants.

The Contractor shall be responsible for coordinating all activities related to the workshop including a list of potential participants, development of an agenda, preparation of pre-meeting and post-meeting materials, coordination of all travel and other logistics, and conduct of the workshop. The Contractor shall send a copy of the final report and a thank you letter from NSF to each workshop participant.

The Contractor shall provide the minutes of the workshop that shall include:

* the time, date, and place of workshop;
* a list of attendees, their position, their affiliation and their contact information;
* a complete and accurate description of each matter discussed and conclusions reached; and
* copies of each report or other document considered by the participants.

The Contractor shall submit a draft summary of the workshop no later than four weeks after the workshop date. Within two weeks of receiving the COR comments, the Contractor shall submit a final workshop summary via email.

This task shall be billed for time and materials.

**7.4. Update Survey Content**

Based on input from the expert panels, workshops and site visits, the Contractor shall propose new or revised survey questions no later than 6 months prior to the start of each survey cycle beginning with the FY 2019 cycle. The Contractor shall draft the OMB generic clearance documents and requirements for submission to the COR. With COR and OMB generic clearance approval, the Contractor shall conduct twelve (12) to fifteen (15) cognitive interviews to test any new or revised questions. These will be structured telephone interviews and, when convenient, face-to-face interviews in the local area. The protocol for the interviews shall be subject to NCSES review. The Contractor shall produce a draft and final report summarizing the results of the tests. The report shall include written summaries of the tests and recommendations on final revisions to the survey questions, instructions, and layout. The Contractor shall confer with NCSES on final changes to the survey based on the results of the cognitive interviews. All changes agreed to by the COR shall be made to the PDF instrument and the web survey instrument no later than 2 months prior to the start of data collection.

This task shall be billed for time and materials.

**Task 8. Information Requests and Ad Hoc Analysis**

The Contractor shall confirm receipt within two business days of any information request referred to the Contractor by the COR. These requests shall be ‘short turn-around’ requests (usually one to five business days) and may include, but are not limited to, requests for special data tables, files, special tabulations or statistical analysis of survey data. The COR may request preliminary or final tables or tabulations or extracts from the survey data files for customer requests, survey respondents– or for any other purpose. The items shall be provided in the form specified by the COR, e.g., hard copy, CD, or on-line. The Contractor should expect approximately fifty requests per survey cycle.

This task shall be billed for time and materials.

**Task 9: Transition of Data, Materials, and Procedures to the Next Contractor**

The contractor shall cooperate in a timely transition to a new contractor at the end of the contract. The contractor shall transfer all work products, including the web survey and management system, updated Survey Operations Plan, files used to produce the paper version of the survey, release and transfer of domain name for the survey, materials necessary to perform data collection, bounce back message for the survey email address, and any other items associated with and necessary to operate the next survey cycles.

**Appendix A: Schedule of Deliverables**

During the performance of this contract the Contractor shall deliver the following products:

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| **Task 1 Transition, Project Plan, and Procedures** |
| **Section** | **Deliverable/Milestone** | **Due Date** |
| 1.1 | Kick-off Meeting | Within 2 weeks of contract award |
| 1.1 | Kick-off Meeting Minutes | Within 1 week of kick-off meeting |
| 1.2 | Transition Plan  | Within 3 weeks of contract award  |
| 1.3 | Survey Management Plan/Schedule | Within 2 weeks of kick-off meeting |
| 1.3 | Quality Assurance and Quality Control Plans | Within 4 weeks of initial meeting |

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|  | **Task 2 Project Management** |
| **Section** | **Deliverable/Milestone** | **Due Date** |
| 2.1.1 | Monthly Project Reports | 15th of the month throughout the contract |
| 2.1.2 | Monthly Progress Meetings  | Monthly throughout the contract |
| 2.1.2  | Monthly Progress Meeting agenda | 3 business days prior to meeting |
| 2.1.2 | Monthly Progress Meeting Minutes | Within one week of meeting |
| 2.1.3 | Data Collection Status Reports | Weekly during data collection  |
| 2.1.4.1 | Information Management System | Within 8 weeks of contract award |
| 2.1.4.3 | NCSES Visits to Contractor’s Site | As requested by COR, up to 2 times per year |
| 2.2 | 2019 – 2021 OMB Forms Clearance Package | January 15, 2019 |

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| **Tasks 3, 4, 5, 6 Conduct Surveys (for 2018, 2019, 2020, and 2021 survey cycles)**  |
| **Section** | **Deliverable/Milestone** | **Due Date** |
| 3/4/5/6.1 | Population Review Screening Survey and Contact Materials Update | 12 weeks prior to survey launch date |
| 3/4/5/6.1 | Population Review | 4 weeks prior to survey launch date |
| 3/4/5/6.1 | Weekly Population Review progress reports | Weekly during population review |
| 3/4/5/6.2 | Draft PDFs of Survey Instruments | 8 weeks prior to survey launch date |
| 3/4/5/6.2 | Draft webSurvey System | 8 weeks prior to survey launch date |
| 3/4/5/6.2 | Final webSurvey System | 2 weeks prior to survey launch date |
| 3/4/5/6.3 | Revised Survey Contact Protocols | 6 weeks prior to survey launch date |
| 3/4/5/6.3 | Survey Launch | November 15 yearly |
| 3/4/5/6.3 | Survey Close-out | April 30 yearly |
| 3/4/5/6.3 | Data collection annual report | 8 weeks after survey closeout |
| 3/4/5/6.4 | Data Editing Procedures Memo | 10 weeks prior to survey launch date |
| 3/4/5/6.4 | Data Editing Weekly Report | Weekly during data collection |
| 3/4/5/6.6 | Data Imputation Plan | 12 weeks after survey launch date |
| 3/4/5/6.7 | **Publications and Data Dissemination** |  |
| 3/4/5/7.1 | Data tables (DTs) Shells | February 15 yearly |
| 3/4/5/7.1 | Populated DTs and Technical Appendices | July 15 yearly |
| 3/4/5/6.7.2 | Final Data File | July 15 yearly |
| 3/4/5/6.7.3 | NCSES Data Repository Files | July 15 yearly |
| 3/4/5/6.7.4 | Public Use Files and User Guide | September 15 yearly |
| 3/4/5/6.7.5 | Survey Documentation and Operations Plan | October 15 yearly |
| 3/4/5/6.8 | Methodology report | September 15 yearly  |

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|  **Task 7 Respondent Relations** |
| **Section** | **Deliverable/Milestone** | **Due Date** |
| 7.1 | 8 institution Site Visits | Yearly |
| 7.1 | Site Visit Agenda and Materials | 3 weeks prior to site visit |
| 7.1  | Site Visit Summary Report | Within 4 weeks of site visit trip |
| 7.2 | Expert Panel Meeting | Once every 2 years |
| 7.2 | Expert Panel Agenda and Materials | 3 weeks prior to meeting date |
| 7.2 | Expert Panel Meeting Minutes | Within 4 weeks of meeting date |
| 7.3 | Respondent Workshop | Once every 2 years |
| 7.3 | Respondent Workshop Agenda and Materials | 3 weeks prior to workshop date |
| 7.3 | Respondent Workshop Meeting Minutes | Within 4 weeks of workshop date |
| 7.4 | Update Survey Content | 6 months prior to survey launch date beginning with FY 2019 survey |

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|  **Task 9 Transition to New Contractor** |
| **Section** | **Deliverable/Milestone** | **Due Date** |
| 9 | Transition documentation | 6 months prior to end of contract |

**Appendix B: Government Furnished Material**

1. FY 2016 data tables: <http://www.nsf.gov/statistics/herd/>

2. NCSES Statistical Guidelines for Surveys and Publications:

<http://www.nsf.gov/statistics/infoqual.cfm>

3. FY 2017 Higher Education R&D Survey questionnaire: <https://nsf.gov/statistics/questionnaires.cfm>

4. FY 2017 Higher Education R&D Short Form questionnaire: <https://nsf.gov/statistics/questionnaires.cfm>

5. FY 2017 FFRDC R&D Survey questionnaire: <https://nsf.gov/statistics/questionnaires.cfm>

6. FY 2017 HERD population screening survey questionnaire

7. FY 2016 HERD methodology report

8. FY 2016 FFRDC R&D Survey methodology report

9. FY 2016 HERD and FFRDC survey operations manual

10. NCSES Data Repository Checklist and Data Requirements Document

11. HERD 2016-18 OMB Supporting Statement

12. NSF Public Communications & Media Policy

 <http://www.nsf.gov/news/policies_for_media.jsp>

13. NSF Web Development Policy and Standards Manual (July 2016)

14. NCSES Data Quality Guidelines <http://www.nsf.gov/statistics/information-quality.cfm>

15. Guidelines for Preparing Technical Documentation for NCSES Surveys (July 2015)

16. OMB Standards and Guidance for Statistical Surveys

17. Federal Standards for Security (FIPS PUB 200): <http://csrc.nist.gov/publications/fips/fips200/FIPS-200-final-march.pdf>

18. Development, Review, and Production of NCSES Publications (November 2015)

19. Manual of Editorial Style and Publication Standards (November 2015)

20. HERD public use file data user guide:

 <https://www.nsf.gov/statistics/herd/data/fy-2015-herd-dug-text-file-format.pdf>