

## 1 Supporting Statement – Part A

### **SOIL HEALTH IN TEXAS**

OMB No. 0535-0264

This supporting statement addresses the new data collection effort for the Soil Health in Texas. This project will collect data from a sample of farmers with land operated in 28 counties in the Brazos River Watershed of Texas. The reference period will be year 2019. The survey is planned for only year, 2020.

Data collected under this supporting statement are for a cooperative agreement between the National Agricultural Statistics Service (NASS) and Texas A&M University. The purpose of this survey is to ascertain a quantitative field method for measuring or monitoring how soil structure is affected by management practices such as no-till and cover cropping. Additionally, hydrology models are built to respond to changes in soil texture rather than changes in soil structure; but structure, not texture, is management dependent and is the fundamental soil physical property that affects surface partitioning of water.

While non-profit organizations and businesses are pushing for the adoption of soil health practices, the available models that simulate soil processes and hydrology are ill-equipped to study the effects of these adoption practices. Our proposed work attempts to address both biophysical knowledge gaps by:

- 1) providing quantitative measures of changes in soil condition, at the mm-scale, and
- 2) using these measurements to inform watershed-scale models of soil processes so that stakeholders can better understand the on-farm and off-farm consequences of improved soil health on soil ecosystem services

#### **A. JUSTIFICATION**

This survey is being conducted through a cooperative agreement with Texas A&M University under a full-cost recovery basis. NASS has cooperative agreements with State Departments of Agriculture and Land Grant Universities to fulfill its mission of providing timely, accurate, and useful statistics in service to United States agriculture. These cooperators often seek the assistance of NASS to provide statistics beneficial to agriculture, but are not covered by NASS's annual Congressional appropriation. General authority for conducting cooperative projects is granted under U.S. Code Title 7, Section 450a which states that USDA officials may, "enter into agreements with and receive funds...for the purpose of conducting cooperative research projects..."

NASS benefits from these cooperative agreements by: (1) obtaining additional data to update its list of farm operators; (2) encouraging both parties to coordinate Federal survey activities and activities funded under a cooperative agreement to

reduce the need for overlapping data collection and/or spread out respondent burden; and (3) facilitating additional promotion of NASS surveys and statistical reports funded by annual Congressional appropriations.

Respondents benefit from these cooperative agreements by: (1) having their reported data protected by Federal Law (U.S. Code Title 18, Section 1905; U.S. Code Title 7, Section 2276; and Public Law 107-347, Title V (CIPSEA)); (2) having data collection activities for Federal and Cooperative surveys coordinated to minimize respondent burden; and (3) having high-quality agricultural data that are important to a state or region be collected and published.

- 1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.**

The primary function of the National Agricultural Statistics Service (NASS) is to prepare and issue current official state and national estimates of crop and livestock production, value, disposition, and resource use.

General authority for these data collection activities is granted under U.S. Code Title 7, Section 2204. This statute specifies that "The Secretary of Agriculture shall procure and preserve all information concerning agriculture which he can obtain ... by the collection of statistics ... and shall distribute them among agriculturists."

- 2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.**

NASS will conduct a survey of agricultural operations in Texas. According to the NASS report "Farms and Land in Farms, 2017 Summary", there are an estimated 248,000 farms in Texas. Selected farmers in the targeted 28 county region (Brazos River Watershed of Texas) will be asked to provide data on

- Selected soil management practices of the whole field,
- Selected soil management practices of the selected field,
- Scenario questions on tillage preferences, and
- Likert questions on tillage preferences.

The information will be summarized and compared against the hypotheses for the Brazos River Watershed:

1. The greater the belief that no-till is useful, the greater an individual's intention to adopt or have adopted no-till. Data will be collected to the degree that farmers believe that using no till would be more profitable, greater yield, improve soil health, and so on. (See Section 5 of

- Questionnaire).
2. The greater the attitudes that no-till necessary, the greater an individual's intention to adopt or have adopted no-till. Examples would include good versus bad; helpful versus harmful; effective versus ineffective; profitable versus unprofitable in the use of no-till. (See Section 6 of Questionnaire).
  3. The greater the social pressure to adopt no-till, the more likely an individual's intention to adopt or have adopted no-till. Questions about social pressures will be of the following form: "To what degree do the following individuals supported and would support my adoption of no-till?" The list will include members of the farmer's family; other row crop producers in the area. A similar question will be asked regarding pressures not to engage in practices. (See Section 7 of Questionnaire).
  4. The greater the sense of obligation to adopt no-till, the greater an individual's intention to or have adopted no-till. Examples of the questions include "I feel it is my duty to protect the soil I work with." (See Section 8 of Questionnaire).
  5. The greater the perceived risk of adopting no-till, the less likely an individual's intention or have adopted no-till. Questions about the impact of risk on adoption will be similar to the following: "Regarding the use of no-till on your Base Field, please indicate your agreement or disagreement practices." "No-till increase the risk of low yields" "No-till is risky because my landlord may not want to renew my lease." (See Section 9 of Questionnaire).
  6. The greater an individual's confidence in their ability to adopt no-till or adopting no-till, the greater their intention to adopt or continue to use no-till. Examples of questions that will inform this hypothesis are: "I have the resources needed to adopt practices that improve soil condition"; "I have the ability to adopt practices that improve soil condition." and "I am suspicious of new ways of farming." (See Section 10 of Questionnaire).
  7. The greater an individual's trust in information from other producers or organizations, the greater their intention to adopt or have adopted no-till. To test the importance of trust in adoption of practices that improve soil condition, the questionnaire will include statements such as: "I believe that the following agencies will treat (or treated) me fairly and honestly when I considered adopting practices that improve soil condition." United States Dept. of Agriculture; Natural Resource Conservation Service, Texas A&M Agrilife Extension Specialists. (See Sections 11 and 12 of Questionnaire).
3. **Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.**

During this data collection, NASS will mail out a paper questionnaire along with a

cover letter and return envelope. Operators who do not respond to this mailing will be contacted for a Telephone Interview by a trained National Association of State Departments of Agriculture (NASDA) enumerator.

**4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.**

NASS cooperates with State departments of agriculture, land grant universities, and other State and Federal agencies to conduct surveys. Wherever possible, surveys meet both State and Federal needs, thus eliminating duplication and minimizing reporting burden on the agricultural industry.

**5. If the collection of information impacts small businesses or other small entities (Item 5 of OMB Form 83-I), describe any methods used to minimize burden.**

This information collection will not have a significant economic impact on small entities. Out of the estimated sample size of 2,900, over 98 percent of the samples are estimated as small operations (i.e. have TVP less than \$1 million dollars).

**6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.**

One planned use of the data is to present the summarized results to be available to Texas A&M Research Farms, the Texas Department of Agriculture, and USDA's Natural Resource Conservation Service to estimate the value of soil health attributes using the Choice Experiment Method, in which respondents are asked to make a series of choices between two hypothetical farms with various levels of soil health as well as a rental cost.

To estimate an economic model of the decision to adopt no-till among farmers in the Brazos River Watershed using both nonparametric and structural methods. The structural model would allow us to identify how various factors affect no-till adoptions including perception of immediate costs and benefits, perception of a range of risks associated with the practice, beliefs about the ability of no-till to change soil characteristics, and the value of soil health characteristics.

To estimate the salience of alternative indicators of soil health are salient to farmers, and therefore could be used to communicate the benefit of no-till and other conservation practices.

- 7. Explain any special circumstances that would cause an information collection to be conducted in a manner inconsistent with the general information guidelines in 5 CFR 1320.5.**

There are no special circumstances associated with this information collection.

- 8. Provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8 (d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments.**

The Federal Register Notice soliciting comments was published on December 10 2018.

**Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and record-keeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.**

The Texas A&M Researchers requested and received input on these questions from stakeholders, peer-review research, and cooperating agencies.

- 9. Explain any decision to provide any payment or gift to respondents.**

No payment or gifts will be provided to respondents.

- 10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.**

Questionnaires include a statement that individual reports are confidential. U.S. Code Title 18, Section 1905; U.S. Code Title 7, Section 2276; and Public Law 107-347, Title V (CIPSEA) provide for confidentiality of reported information. All employees of NASS and all enumerators hired and supervised under a cooperative agreement with the National Association of State Departments of Agriculture (NASDA) must read the regulations and sign a statement of compliance.

Additionally, NASS employees and NASS contractors comply with the OMB implementation guidance document, "Implementation Guidance for Title V of the E-Government Act, Confidential Information Protection and Statistical Efficiency Act of 2002 (CIPSEA)." CIPSEA supports NASS's pledge of confidentiality to all respondents and facilitates the agency's efforts to reduce burden by supporting statistical activities of collaborative agencies through designation of NASS agents, subject to the limitations and penalties described in CIPSEA.

The following confidentiality pledge statement will appear on all NASS

questionnaires.

The information you provide will be used for statistical purposes only. Your responses will be kept confidential and any person who willfully discloses ANY identifiable information about you or your operation is subject to a jail term, a fine, or both. This survey is conducted in accordance with the Confidential Information Protection provisions of Title V, Subtitle A, Public Law 107-347 and other applicable Federal laws. For more information on how we protect your information please visit:  
<https://www.nass.usda.gov/confidentiality>.

All individuals who may access these confidential data for research are also covered under Titles 18 and CIPSEA and must complete a Certification and Restrictions on Use of Unpublished Data (ADM-043) agreement.

**11. Provide additional justification for any questions of a sensitive nature.**

There are no questions of a sensitive nature.

**12. Provide estimates of the hour burden of the collection of information. The statement should indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in Item 13 of OMB Form 83-I. Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories.**

Burden hours based on the average completion time per questionnaire are summarized below.

Burden hour calculations are shown below. The minutes-per-response figures were estimated based on consultation with Texas A&M researchers and stakeholders. Cost to the public of completing the questionnaire is assumed to be comparable to the hourly rate of those requesting the data. Reporting time of 468 hours is multiplied by \$36.84 per hour for a total cost to the public of \$ 17,241.12.

NASS uses the Bureau of Labor Statistics' [Occupational Employment Statistics](#) (most recently published on March 29, 2019 for the previous May) to estimate an hourly wage for the burden cost. The May 2018 mean wage for bookkeepers was \$20.25. The mean wage for farm managers was \$38.43. The mean wage for farm supervisors was \$24.42. The mean wage of the three is \$27.70. To calculate the fully loaded wage rate (includes allowances for Social Security, insurance, etc.) NASS will add 33% for a total of \$36.84 per hour.



**13. Provide an estimate of the total annual cost burden to respondents or record-keepers resulting from the collection of information.**

There are no capital/start-up or ongoing operation/maintenance costs associated with this information collection.

**14. Provide estimates of annualized cost to the Federal government; provide a description of the method used to estimate cost which should include quantification of hours, operational expenses, and any other expense that would not have been incurred without this collection of information.**

The projected annual cost to conduct the Soil Health in Texas Survey is approximately \$33,400, most of which is staff costs. The costs will be reimbursed by the Texas A&M University. There will be no cost to the Federal government.

**15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-I (reasons for changes in burden).**

This is a new request, so there is no current inventory.

**16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.**

The Regional Field Office (RFO) is responsible for manually editing and processing the questionnaires. The RFO creates and provides editing guidelines and estimation documentation to help ensure that all questionnaires are edited and analyzed in a consistent manner. After the data has been key entered and run through computer edits, detailed computer analyses and summaries of the data are provided by the RFO for evaluation and estimation.

The Client anticipates at least one peer-reviewed journal article and dissertation chapter within 12 weeks of data summary.

2020 Survey:

Survey design.....	July - September, 2019
Sample selection.....	October, 2019
Questionnaire design.....	June, 2018 - August, 2019
Mail Survey.....	April, 2020
Phone Follow-up.....	May, 2020
End of Data Collection.....	May, 2020
Publication.....	July, 2020



- 17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.**

No approval is requested for non-display of the expiration date.

- 18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions" of OMB Form 83-I.**

There are no exceptions to the certification statement.