Transcript: NEON Webinar PowerPoint Presentation
September 11, 2019

Slide One, Title: Good afternoon, welcome to the National Ecological Observatory Network, or NEON, competition webinar. My name is Roland Roberts, I am the Program Officer for NEON operations.

Slide Two, Overview: This presentation provides information about the NEON project, and the management competition that will be conducted by NSF over the next two years. Specifically, we will cover information about NEON's intent and design, the data themes and resulting data products, provide a brief overview of some of the project subsystems and components, and aspects of its operational requirements. In the last few slides, we will provide a list of key dates associated with the competition and offer a brief introduction to the mechanism that NSF uses for oversight of large facility awards. We will then use the remaining time to answer questions.

Slide Three, NEON: Intent: NEON has attempted to add another dimension to ecological research. It increases geographic breadth, enabling regional to continental scale research projects, and its span of 30-year life span adds temporal depth for the most part previously missing. It is the vision that this capability will enable individual and collaborative projects that are catalyzed by the collection of standardized ecological data at these scales and essentially democratize research opportunities in the ecological sciences nationwide.

Slide Four, NEON: Design: To accomplish this, NEON's field and laboratory infrastructure - though geographically distributed - is fully networked in a robust cyberinfrastructure platform that is equipped to transmit and make accessible quality data via its data portal. This capability is aided by the consistent execution of an array of sensor and observation protocols across the network of sites. All of these activities are currently managed out of the project's headquarters in Boulder, Colorado.

Slide Five, NEON: Location and Domains: The management of NEON operations involves the coordination of activities across this large facility that is distributed throughout the United States including Alaska, Puerto Rico and Hawai'i. The facility is composed of 20 ecoclimatic domains – subdivided into 81 sites: 34 aquatic and 47 terrestrial - and executes standardized protocols to collect data pertaining to land, air, water, animals, and plants across all sites. This capability is enhanced by over 500 permanent and seasonal employees involved in data collection across the observatory - data are processed and shared freely through the project's data portal.

Slide Six, NEON: Data Themes and Data Products: NEON's data represent 5 major themes: atmospheric, biogeochemistry, ecohydrological, land cover and processes, and organisms, populations and communities. Data across these themes are processed in to 179 data products that are used to facilitate research projects that monitor conditions at varying time scales and allow the ecological community to integrate observations and other data types. Through its facilitation of these activities, NEON accomplishes the following: it enables the observation of the causes and consequences of environmental change, to establish the link between ecological cause and effect.

It allows for detecting and quantifying ecological responses to and interactions between climate, land use, and biological invasions over decades. It enables the research community to address ecological processes at regional to continental scales. It provides information to scientists, educators, students, the general public, government and non-governmental decision makers, and provides infrastructure so that the community can deploy additional sensors, experiments, and learning opportunities. The managing organization must oversee the quality, ensure usability and coordinate and disseminate all of these data types to enable NEON to meet its promise.

Slide Seven, NEON: Subsystems: NEON's data are collected by numerous subsystems or components that make up the NEON infrastructure. They include the terrestrial and aquatic instrument systems, composed of meteorological stations, phenocams, soil sensors, surface-water sensors, groundwater monitors, and surface air exchange systems such as the carbon flux system. Another component, the terrestrial and aquatic observation system, collects data about aquatic and terrestrial organisms, soil, sediments, DNA sequences, biogeochemical processes, geomorphology, and pathogens. NEON also has a remote sensing capability in the form of the airborne observation platform. This component collects lidar, hyperspectral, and high resolution camera data and involves leasing aircrafts to deploy this capability. The biorepository, another component of NEON, is currently managed as a subaward to Arizona State University. It houses samples and specimens collected by the NEON project, approximately 70,000 samples and specimens are collected each year. Finally, NEON's management involves the running of the assignable assets program. These are components and services that are provided to the research community on a cost-recovery basis, they include an airborne observation platform, 5 mobile deployment platforms consisting of a subset of aquatic and terrestrial sensors for fast deployment, access to sensor infrastructure, and access to observational sampling resources.

Slide Eight, NEON: Operations: To meet the expectations outlined above NEON's management is expected to achieve requirements for data acquisition, data quality assurance and quality control, data dissemination and cyberinfrastructure maintenance. Additionally, efficient and effective management of NEON's human resources is expected, including the over 500 employees at peak operations during the late spring and summer months. Another important expectation is engagement and outreach related to NEON. The organization managing NEON operations is expected to solicit advice from groups of experts on the strategic science and technical aspects of NEON and develop and implement plans to engage with the scientific community and for education and training designed to prepare the next generation of NEON users.

Slide Nine, NEON: Competition: Now that we have provided you with some background on the NEON project and the NSF's expectations for its management let's talk a bit about the NEON competition as outlined in the recently published Dear Colleague Letter. The announced competition is part of NSF's normal process for large facilities management. As we move forward with this process, here are a few events and timeframes you should keep in mind. Submissions of comments and questions to NSF are due by September 30th, these comments and questions will inform the preparation of the solicitation and the formulation of a suite of frequently asked

questions that will be shared with the community. The solicitation is expected to be released late Fall 2019. It is anticipated that the solicitation will require letters of intent. These letters of intent do not obligate an institution but are required for participation in the competition. Full proposals are due in June 2020 and the potential award date that we anticipate is late 2021.

Slide Ten, NSF's Oversight of Large Facilities: Now I will spend a little bit of time talking about NSF's award oversight process. NSF's oversight process for awards to organizations managing large facilities differs from that for regular smaller awards. The oversight mechanism for these large awards is the Cooperative Agreement, or the CA. The key difference is that CAs allow for substantial involvement and interaction between the NSF and the awardee in carrying out the activities stipulated in the award. Also, CAs are living document that are modified when agreed upon by NSF and the awardee. Please see the Proposal and Award Policies and Procedures Guide for more details on the use of Cooperative Agreements as award vehicles.

Slide Eleven, Summary: So in summary, we've provided you with several pieces of information today that include details on NEON's intent and design to enable predictive continental-scale research, the complex distributed nature of the infrastructure, and its human resource requirements, key dates in the competition timeline, and some unique attributes of NSF's oversight via the Cooperative Agreement.

Slide Twelve, Questions: We now welcome your questions about this presentation and the competition process as its outlined in the Dear Colleague Letter. Thank you.