E.O. 305 Section 3b

Feasibility and Status of High-Resolution Land Use/Land Cover Mapping Project [NOAA Coastal Change Analysis Program (C-CAP)]

Objectives: To improve the spatial accuracy and timeliness of areal extent estimates and change detection for major land cover and land use types within the State, thus supporting habitat protection actions such as developing conservation and restoration strategies for natural and working lands and wetlands. Enhanced natural and working lands and wetlands classifications within the proposed mapping project will not only provide data specific to Section 3b, but also provide information that can assist with fulfilling Section 3a of this Executive Order.

Description: On behalf of DEQ partners including the Divisions of Marine Fisheries (DMF) and Coastal Management (DCM), the Division of Water Resources (DWR), the Albemarle-Pamlico National Estuary Partnership (APNEP) is coordinating with the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management's Coastal Change Analysis Program (C-CAP) to produce a Level 2 (20-class) interpretation of the State of North Carolina at one-meter resolution. Through APNEP, DEQ is securing grant funds to provide to NOAA, whose contractors will perform the work. Additionally, APNEP has been able, through NOAA, to secure mapping of the watersheds that drain to South Carolina with funding from the SC Office of Resilience. The Division Water Resources obtained a grant from the Environmental Protection Agency (EPA) to support mapping in the western watersheds.

APNEP is also coordinating with NC Coastal Habitat Protection Plan (CHPP) partners and the Statewide Mapping Advisory Committee (SMAC), a statutory committee of the N.C. Geographic Information Coordinating Council (GICC). The SMAC advances the use of geographic information systems technology in North Carolina's decision-making by coordinating statewide geospatial data efforts and is primarily responsible for producing data specifications and recommendations for statewide datasets. The SMAC represents a wide GIS community including federal, state, and local governments, universities, and the private sector.

APNEP pursued additional funds to enable the same protocol to be applied to the Upper Roanoke, thus allowing the entire Albemarle-Pamlico Basin to have the same Level 2 highresolution C-CAP interpretation and expanded the boundary of the project to encompass the remaining watersheds in NC with funding from the DEQ State Energy Office. DCM is providing additional funding to support mapping high and low salt marsh in the 20 coastal counties that will help to track a variety of environmental indicators and inform management actions. Additional funding may be required to complete all 20 CAMA counties.

Background: Land cover mapping is foundational for understanding complex and pressing issues related to climate equity, hazard mitigation, and sustainability. High-resolution land cover data

is used to document key geographic and landscape features covering Earth's surface for communities across the country.

For more than two decades, NOAA's Office for Coastal Management has been producing consistent, accurate 30-meter land cover and change information through its Coastal Change Analysis Program (C-CAP). Thanks to funding from the Bipartisan Infrastructure Law and other sources, new 1-meter land cover data are now available for the coastal United States, including the Great Lakes. Communities are provided open access to C-CAP land cover data with an unprecedented 1-meter resolution. These data provide communities with the foundation needed to assess coastal resources, analyze land use and land cover changes, prepare for disaster risks, and adapt to a changing climate. [Learn more about NOAA C-CAP].

Initial high-resolution land cover products, <u>released in January 2024</u>, include three feature layers—impervious surfaces, tree canopy, and water features. By providing more detail (900 times that of the 30-meter regional land cover), these new land cover datasets <u>support a wide</u> <u>range of local and site-level applications</u> that are critical for climate adaptation and resilience planning.

Updated natural and working lands and wetlands data are a common need in North Carolina, as the scale and age of existing data severely limits its uses. The SMAC's Landcover Working Group was given the task of documenting user needs and data specifications for a statewide landcover dataset. Working Group members reviewed stakeholder needs across multiple agencies and industries and documented 15 common use cases for landcover data, 8 of which are directly related to water quality. They recommended the C-CAP 1-meter product as the most cost-effective and comprehensive solution to meet stakeholder needs. Beyond the identified needs from DEQ, this wider community will also benefit from updated landcover and wetlands mapping to support transportation planning, resiliency and recovery, local stormwater planning, flood and other hazard mitigation, forest health, wildlife habitat, riparian buffer protection, urban heat impacts, important agricultural land protection, land use change detection, environmental justice analysis, and community planning.

Feasibility and Progress to Date: DEQ finds that the feasibility of obtaining updated highresolution remotely sensed land cover data state-wide to assist in the assessment of type and extent of natural and working lands, including wetlands, is very good given existing momentum, coordination, funding availability, and federal partnership. The outcome will provide a statewide, full 20-class, one-meter resolution land use/land cover map. The map will support planning for community resilience to climate change, prioritizing habitat and wetland conservation and protection, and provide data to continue assessing land use and land use change over time. It is important to note that the NOAA partnership includes the State of South Carolina, promoting regional analysis, cooperation, and data continuity.

DEQ, through APNEP, is collaborating with NOAA to establish a contract to allow collective funding from various partners to be transferred to NOAA, who in turn will negotiate with their contractors to produce the deliverables. In early May 2024, NOAA contacted APNEP to relay that

changes in their financial system have resulted in the inability, at least temporarily, for the Agency to accept funds directly from states, resulting in the states, including North Carolina, being unable to contract with NOAA for services including C-CAP. This issue is expected to be resolved by late September-early October. Once the system allows for the transfer of funds, APNEP expects the final product from NOAA within 6-9 months.