MINUTES
Statewide Mapping Advisory Committee Meeting

Thursday, April 10, 2025, 1:30 – 3:30 PM
NCDEQ Green Square Training Room (#1210)

Welcome/Introductions

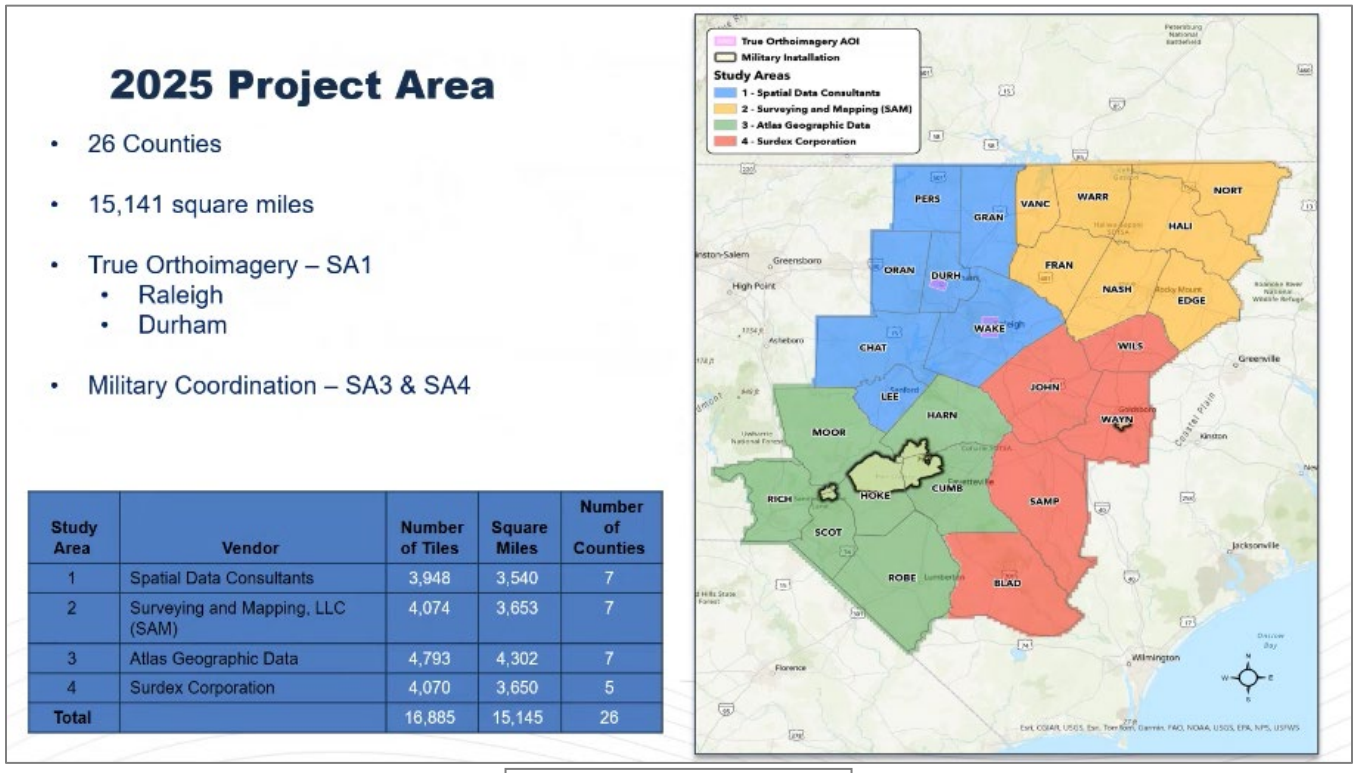
In attendance: See attendance sheet at end of minutes.

The minutes from the January 8, 2025 SMAC meeting were approved by the committee.

Working Groups and Related Geospatial Data

Working Group for Orthoimagery and Elevation

Ben Shelton updated the SMAC on the state's orthoimagery project. The Eastern Piedmont 2025 orthoimagery project is well underway, 26 counties in all. Four vendors were selected for the project (see Figure 1).



Study Area	Vendor	Number of Tiles	Square Miles	Number of Counties
1	Spatial Data Consultants	3,948	3,540	7
2	Surveying and Mapping, LLC (SAM)	4,074	3,653	7
3	Atlas Geographic Data	4,793	4,302	7
4	Surdex Corporation	4,070	3,650	5
Total		16,885	15,145	26

Figure 1 – Project area in detail

They completed image acquisition March 2nd, which is earlier than usual, largely because of good weather conditions. The shorter imagery collection period will assist with color balancing. The orthoimagery is now being produced by the contractors. End-user ortho review will run from July to September. Figure 2 details the review schedule.

2025 Orthoimagery Review Schedule								
County	Review Start	Review End	County	Review Start	Review End	County	Review Start	Review End
Cumberland	21-Jul	15-Aug	Chatham	4-Aug	29-Aug	Bladen	18-Aug	12-Sep
Franklin	21-Jul	15-Aug	Edgecombe	4-Aug	29-Aug	Durham	18-Aug	12-Sep
Granville	21-Jul	15-Aug	Lee	4-Aug	29-Aug	Halifax	18-Aug	12-Sep
Harnett	21-Jul	15-Aug	Moore	4-Aug	29-Aug	Hoke	18-Aug	12-Sep
Johnston	21-Jul	15-Aug	Robeson	4-Aug	29-Aug	Northampton	18-Aug	12-Sep
Nash	21-Jul	15-Aug	Sampson	4-Aug	29-Aug	Richmond	18-Aug	12-Sep
Orange	21-Jul	15-Aug	Vance	4-Aug	29-Aug	Scotland	18-Aug	12-Sep
Person	21-Jul	15-Aug	Wayne	4-Aug	29-Aug	Wake	18-Aug	12-Sep
Wilson	21-Jul	15-Aug				Warren	18-Aug	12-Sep

Figure 2 – Detailed review schedule

The project qualification process has changed. The project team now has a pre-qualified vendor list that will run through the 2027 project (southern piedmont and mountains).

Alice Wilson asked about the datum that will be used in future projects. Ben responded by saying the new datum will be used starting with the 2028 project.

Geodetic Control

Gary Thompson briefed the committee. Figure 3 shows the current CORS (Continuously Operating Reference Stations) Network. Red stars indicate the locations of new stations. Of interest is the new location

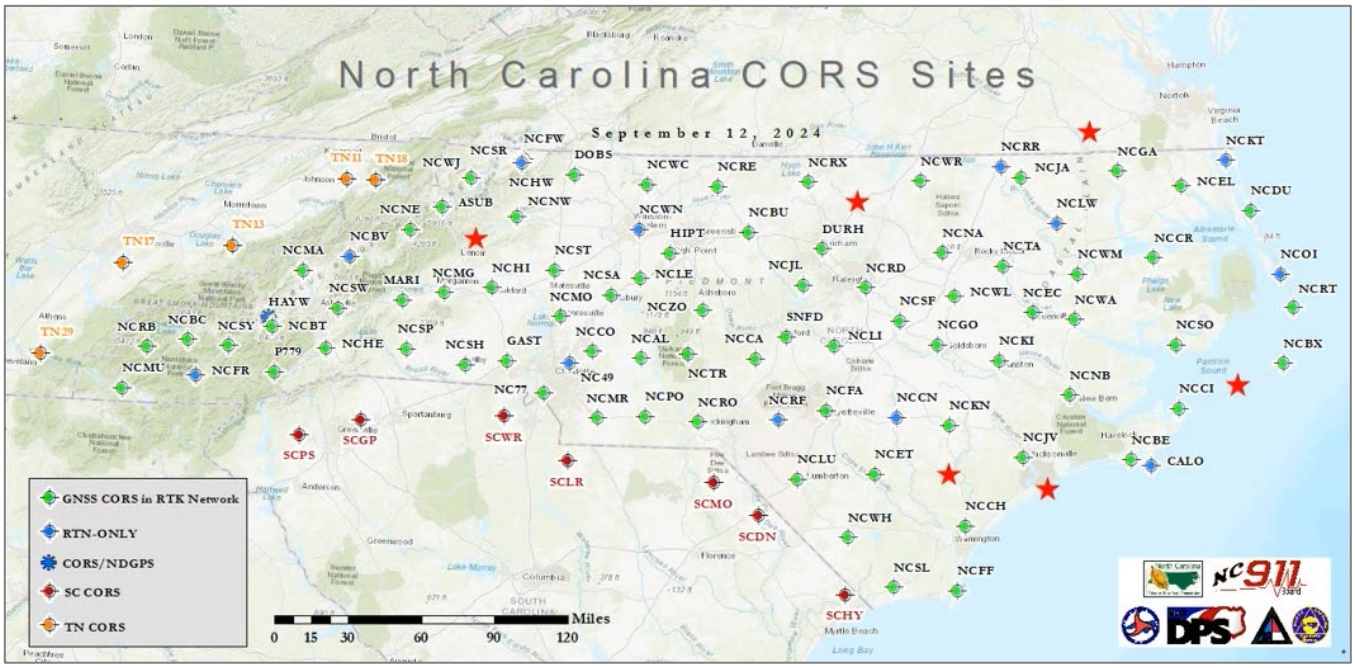


Figure 3 – Current and planned CORS locations

in southern Virginia. This is the first of 3 CORS along the NC/Va border that will assist with post-processing and real-time coordinates. This is a cooperative agreement with Virginia Tech.

The CORS in Beaufort will need to be relocated, possibly on Cape Lookout.

Reference Frame

Gary continued with a reference frame datum update. The new datum is still scheduled to be rolled out in the Spring of 2026. At that point software vendors can provide transformation parameters.

A subgroup of the working group that will reconvene to help prepare state agencies for the datum change.

Alice asked if there was a "how-to" for local governments. Gary said there is such a document, and he has about 90% of it completed.

NC LiDAR Update

Gary indicated the green area on Figure 4 shows the current data collection effort. Phase 3 data was collected in partnership with NCDOT. Once collected the data will be shared with the federal 3DEP program, NOAA and CGIA. NCEM will also have it available on their spatial data download web site.

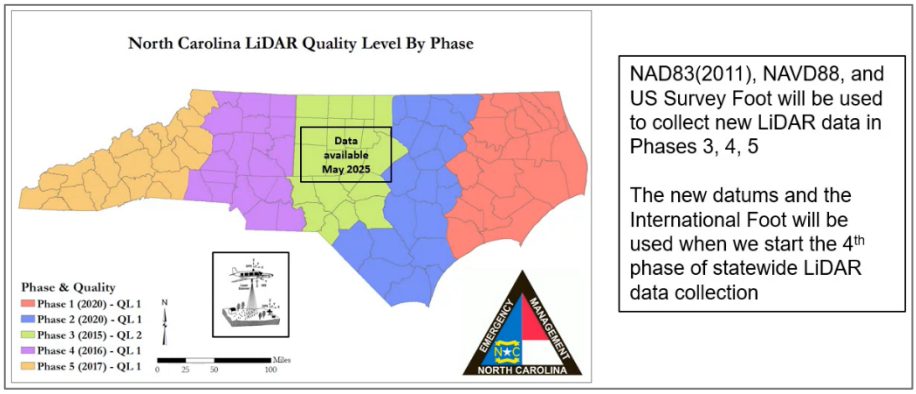


Figure 4 – Current LiDAR collection

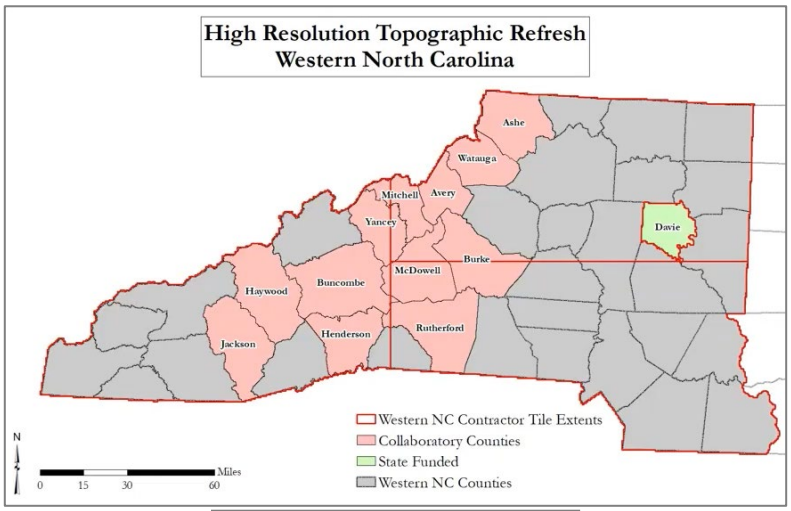


Figure 5 – Collaboratory counties

In addition, the NC "Collaboratory" has collected topography and imagery for select counties in the western part of the state, as shown in Figure 5. The LiDAR data is QL1 and classified. Imagery is 6" pixels, full color, and collected according to LRMP specifications. However, the sun angle specification was changed to acquire the imagery faster.

The collaboratory data sets will be available by the end of May. The same counties have data collected for them in 2026 as well. This data will assist the NC Floodplain Mapping Program flood studies.

The data will be delivered to the counties and to CGIA for

dissemination, and available from the NCEM spatial data download web site.

Working Group for Seamless Parcels

Katie Doherty updated the SMAC on the parcels project. To date in 2025, 79 counties uploaded their cadastral data to the transformer (Figure 6). Nineteen counties last shared their parcel data with the transformer in 2024. Scotland and Bladen counties last provided an update in 2023 or earlier. Elizabeth Daniel is in contact with those counties.

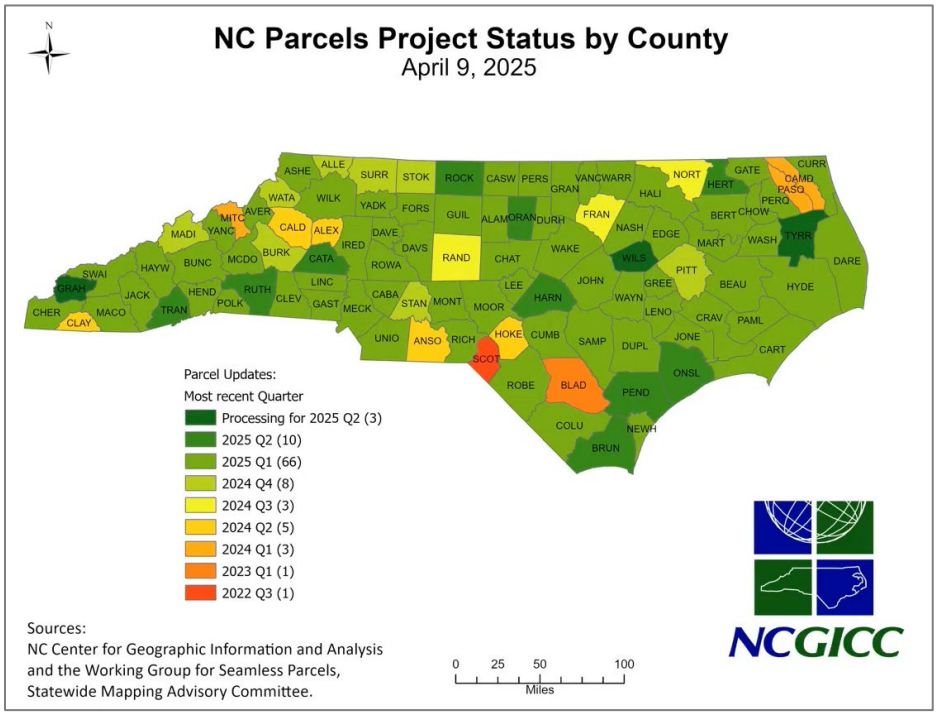


Figure 6 – NC Parcels status

Cadastral

The data sharing group of the WGSP last met on March 4th. Another meeting is scheduled for tomorrow. The goal is to schedule the very first meetings with select CAMA vendors.

Hydrography Working Group

Cam McNutt said that a smaller team from the HWG has been meeting every two weeks for the past few months to arrive at a Memorandum of Agreement between DOT, DEQ, and DIT. The MOA references a governance document that will guide geometry changes and updates, outline the approval processes/specifications for mapping hydrography, and assure alignment with ATLAS and DEQ business processes. A governance group will be created to approve changes.

The committee will draft a charter and a proposed list of governance group members and share with the SMAC for feedback.

Working Group for Administrative Units

Municipal Boundary and Annexation

Bob Coats was impressed with the conversations and positive feedback at the NC GIS Conference related to the municipal boundaries tool. Luca Venegoni said the exact numbers so far for data updates tallied 168 boundaries and 210 annexations.

Shifting gears to the US Census, Bob said there is some ambiguity with regards to next year's BAS. The goal was to have NC sign a statewide partnership for the BAS, however uncertainty surrounding the US Census Bureau in general, the partnership may be in a holding pattern. This, however, should not stop the impressive work currently going on with the municipal boundaries. The effort needs to continue to push people to review their boundaries and provide their updates.

County and State Boundaries

Gary Thompson briefed the SMAC on the progress of county boundary surveys across the state. The Jackson-Macon boundary runs across ridge lines. Plats will be recorded then impact letters will be sent to property owners. Figure 7 summarizes the other survey projects in progress.

Figure 7 – County boundary surveying status

NC Board on Geographic Names

Cam McNutt said there were three waterfall features and one water feature for the SMAC – Respite Branch (Wilkes County), Owens Creek (Gaston County), Shady Falls (Transylvania County), and Bailey Creek (Rutherford County). All the features are on existing maps. The SMAC approved the four names. The US BGN will now receive the recommendations.

NC Data Projects

Wetlands

Jim Stanfill, Deputy Director of DEQ – Division of Mitigation Services, presented to the SMAC the responsibilities of DEQ related to wetlands under Executive Order (EO) 305.

The EO set three major goals: conserve 1,000,000 new acres in NC, restore/reforest 1,000,000 new acres, and plant 1,000,000 new trees in urban regions. North Carolina currently has approximately 5,000,000 acres of wetlands.

The Sackett Supreme Court case changed how waters in the United States are evaluated as wetlands. The case narrowed the definition of what a wetland is under the Clean Water Act. Shortly after the Supreme Court case the NC General Assembly passed the 2023 Farm Bill. The Bill said the regulations for NC wetlands shall not be any more stringent that those at the federal level.

NCDEQ performed two studies after the Farm Bill to determine what percentage of wetlands were at risk to have lost protection under the rules and laws. Using DCM wetlands types to assess risk it was determined that 57.1% were at high risk. A second analysis was conducted using hydrogeomorphic classifications which covers about 85% of all wetlands in NC. This outcome showed that 63.7% of wetlands were at high risk.

Given that the DCM wetlands data is old, the first task in the EO was to determine ethe feasibility of obtaining high quality land cover data (20 classifications, high-resolution). DEQ was already engaged in procuring that data set. Preliminary data is already available. The final data will be delivered in late 2025 or early 2026.

Task #2 was to develop a methodology to update wetlands maps. Eighteen different wetland inventories were assessed. The two big wetlands data sets that NC has are from DEQ - Coastal Management (DCM) and the National Wetlands Inventory (NWI). The NWI, in many cases, used very old methodologies and aerial photography from the last 1980s.

Several methodologies were developed. The first was to simply identify the best wetlands data sets in production and just update those. For the 40 NC coastal counties that is clearly the DCM data set. It was 89% accurate when produced with one acre resolution. Undoubtedly there will be some boundary, shoreline, and land use changes, but from a permitting perspective there have not been a lot of permitted wetland losses over the last 20-30 years. Combing this with the 1-meter land cover product will yield a solid coastal plan data set.

The problem is the methodology erodes moving westward, with the NWI being the only data set NC has. This can be combined with the 1-meter land cover but will produce an inferior product. A more promising technique is to use information from NCDOT involving AI and machine learning from about 40 different data sets, along with ground truthing, to map the probability of wetlands. Where NWI may be 50% accurate in the NC mountains, the machine learning product was upwards of 89% accurate. That was the recommendation for a longer-term approach.

Another recommendation was a wetlands product produced by the US Fish and Wildlife Service. This is a much higher resolution data set with better accuracy. NWI Plus adds hydrogeomorphic classifications to the data which is extremely valuable. For approximately $4 million the whole state could be mapped.

The third task was to develop methodologies to evaluate the Sackett effect, regarding what constitutes a wetland type, using hydrogeomorphic classifications, and determining hydrologic connectivity.

Task #4 was the publication of special boundary maps. In these DEQ mapped mountain bogs, pocosin wetlands, Carolina bays, coastal wetlands, and sea marsh corridors. In response to the EO, DEQ produced a hub web site where the GIS data is available, except for the mountain bogs (unless there is a demonstrated need). This is due to endangered species mapped in the bog data.

The last task (Task #5) was a research request to perform a evaluation on the social, environmental, and economic impacts of the Sackett decision and the Farm Bill. Four main questions arose:

1. What is the environmental value of conserving the wetlands?
2. What will the impact of the Sackett decision be?
3. What are the costs to NC over the next 5 to 10 years?
4. What policy options and value/benefit can be expected from the conservation of the wetlands systems?

Research institutions were solicited – commercial, private, non-profit, educational – to gauge interest. There were approximately 10 that responded. They were urged to work in teams. From that there were 2 teams that submitted scopes of work. This is where the project currently is. DEQ has received the documents and are evaluating them. If funds become available, they can be awarded.

Addresses

Darrin Smith informed the SMAC on the AddressNC project. Since the January SMAC meeting there were over 39,000 new points statewide, and 80% of counties had a change of some kind.

AddressNC data is being added to other data sets. Addresses have been added to the NAD (National Address Database) yielding an error acceptance rate of only .02%. For the seventh quarter in a row, points have also been added to the Esri World Geocoding Service.

The AddressNC geocoder has added three additional types of returns:

1. If the exact street number doesn't exist, the point will be placed on the street centerline (source: NextGen911) depending on the address range for the segment.
2. If there is no street number at all and just a street name, the geocoder will attempt to find the address based upon the ZIP code.
3. The geocoder will find the intersection of two streets (separated by an ampersand).

With regards to outreach, the project team is close to releasing a web site that can assist county GIS managers and those managing address data to visualize the data and any inconsistencies or abnormalities in it. The desire is to release the web site in early May.

Building Footprints

Gary Thompson updated the SMAC on building footprint mapping at NCEM. The agency will add at least four people next month to complete the mapping. Figure 8 shows the current mapping status.

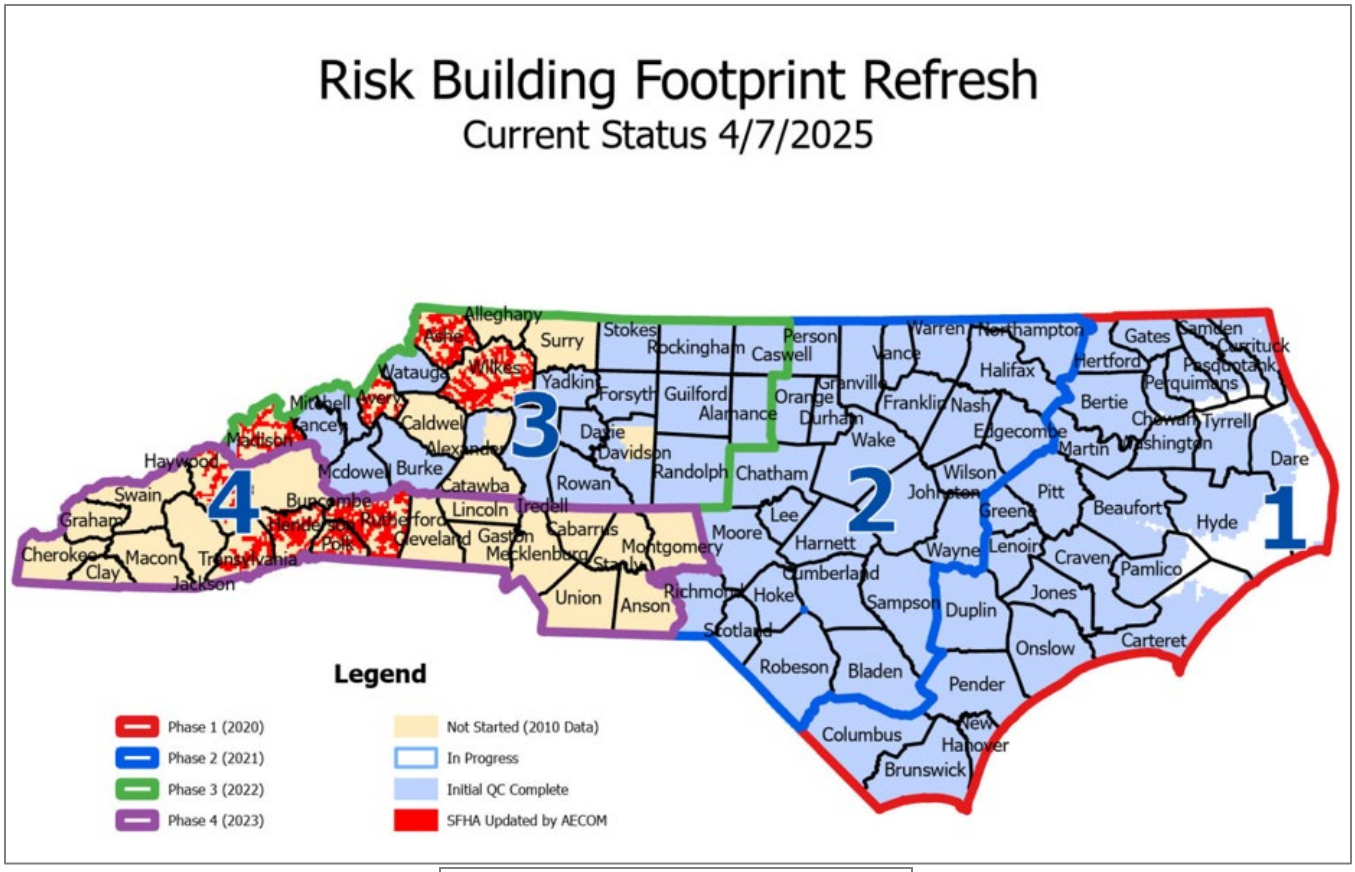


Figure 8 – Building footprint mapping status

Blue counties have been mapped. Footprints in the Special Flood Hazard Areas (red) are also complete in western NC in response to Hurricane Helene. However, those full counties are not complete. The next step is to go back to the eastern counties and begin to update. The updated data will be reflected in FRIS and FIMAN.

Regular Status Updates

NC GIO Report

Matt McLamb appreciated all the support leading up to and during the NC GIS Conference. There was a total of 597 attendees with over 120 presentations and 34 exhibitors.

On other fronts, CGIA is wrapping up a system architecture review with Esri that will lead to a revamped design allowing data that CGIA contributes to NC OneMap (parcels, addresses, imagery, etc.) to become more reliable through failover and redundancy. Matt indicated that hopefully by the next SMAC meeting there will be firm timelines for the deployment.

USGS/National Geospatial Programs Office

Jo Baker brought to the SMACs attention updates related to USGS' online presence. One of the agency's primary applications, the National Map Viewer, underwent an update recently. The UI was slightly modified but the major update was to allow for 3D viewing capability. Secondly, the NationalMap.gov web page was revamped to function as a hub to all of the USGS maps, data, and applications.

NC OneMap

David Giordano indicated that the NC OneMap team is working to rectify the slow or sometimes unavailable parcels web service. Also, due to popular demand CGIA will once again publish historical imagery from 1995 – 2009; imagery that precedes that collected through the NC imagery program (started in 2010). There is not blanket coverage in every county for every year, however, as this is imagery that CGIA has collected through the years from various projects.

Other Business

Adjourn

Attendance In-Person:

Name	Association
Paul Badr	GPI, SMAC Chair
Nathan Bland	NC Sec. of State
Gary Thompson	NCEM
Colleen Kiley	CGIA
Alice Wilson	City of New Bern
Matt McLamb	CGIA
David Giordano	CGIA
Ben Shelton	CGIA
Darrin Smith	CGIA
Rich Elkins	NC Sec. of State
Elizabeth Daniel	CGIA
Bob Coats	OSBM
Cam McNutt	DEQ
Jim Stanfill	DEQ

Attendance On-Line:

Name	Association
Ashley Yandle	DNCR
Kitty Kolb	USGS
Shelby Bourquein	USBGN
Katie Doherty	Rutherford Co.
Mitch East	DNCR
Richard Greene	NCDOT
Jo Baker	USGS
Steve Averett	City of Greensboro
Luca Venegoni	CGIA
Dwain Veach	DEQ
Zsolt Nagy	AECOM
Jeff Essic	NC State Libraries
Joe Battinelli	Cabarrus Co.
Christian Vose	NCDACS
Ashton Bailey	CGIA