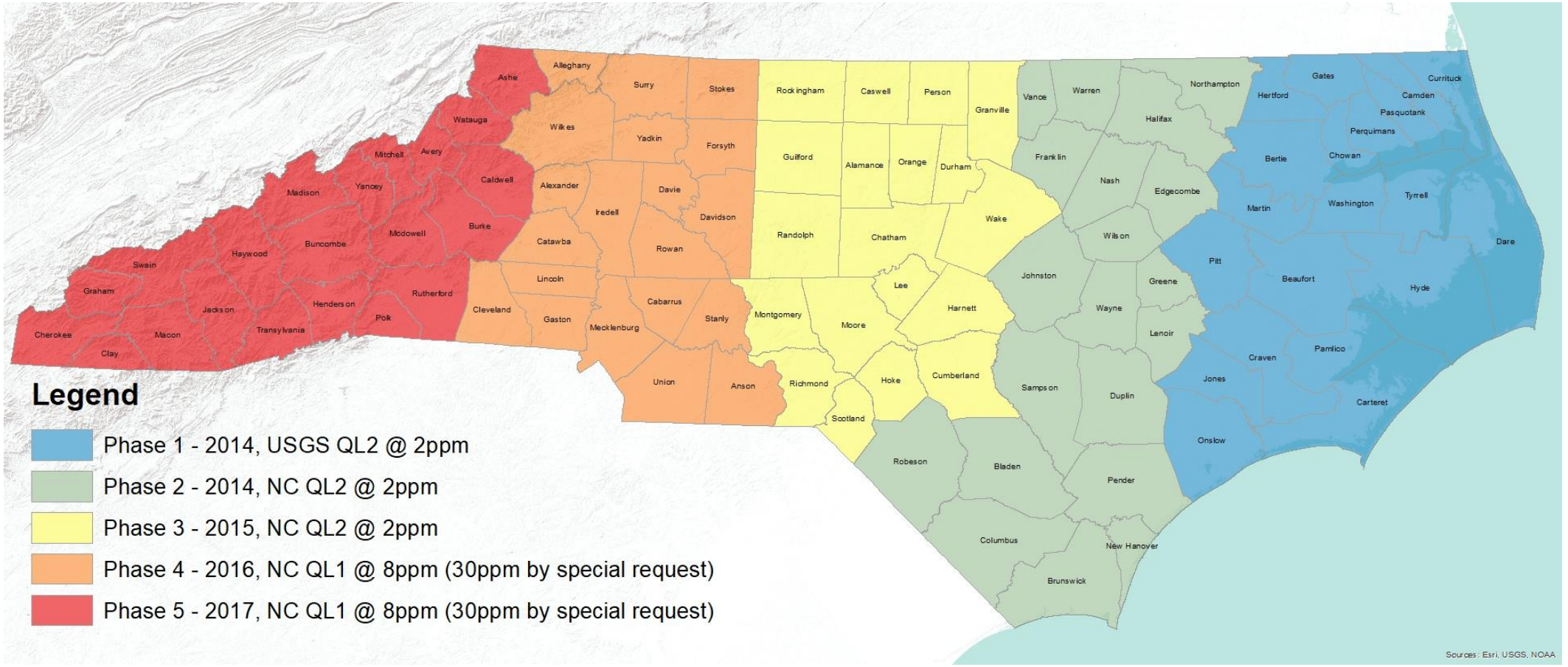
NC LiDAR

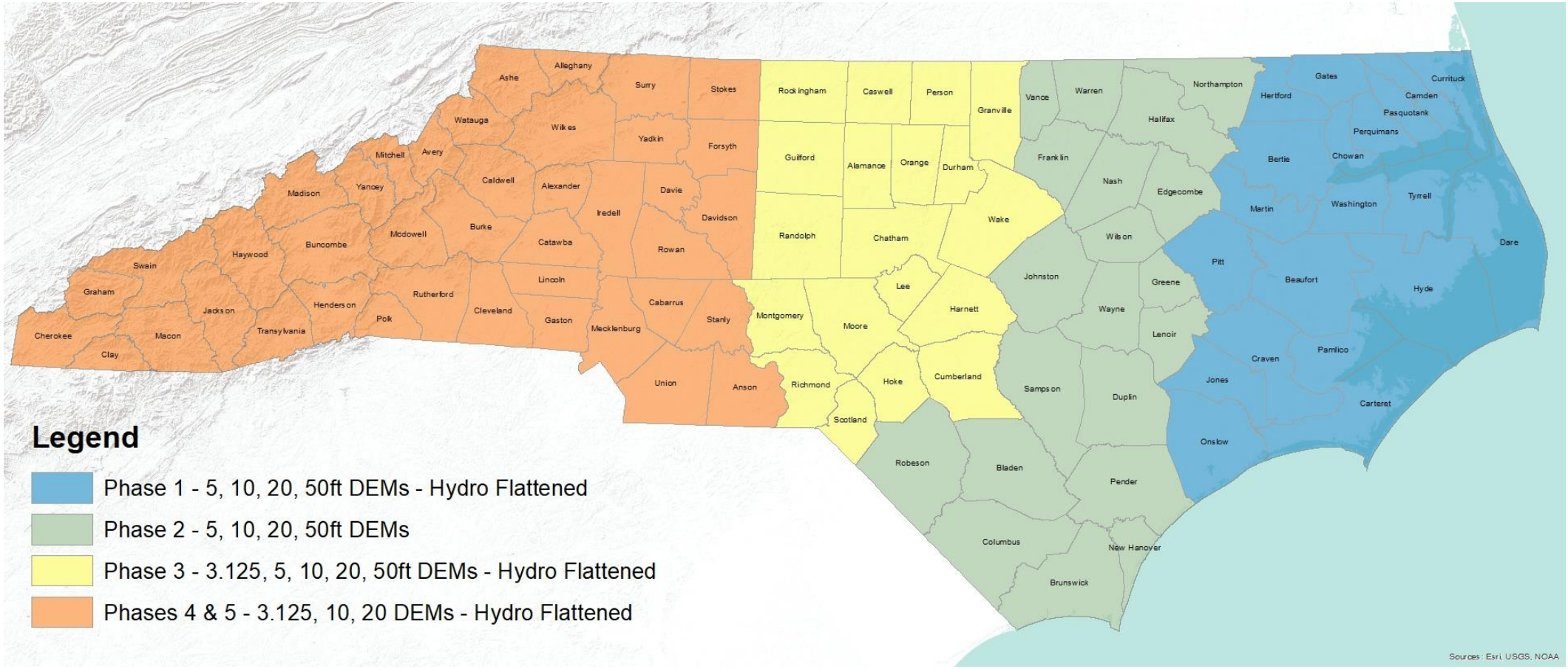
STATE OF THE STATE

LiDAR Phases and Availability



Data available on sdd.nc.gov

DEM Availability

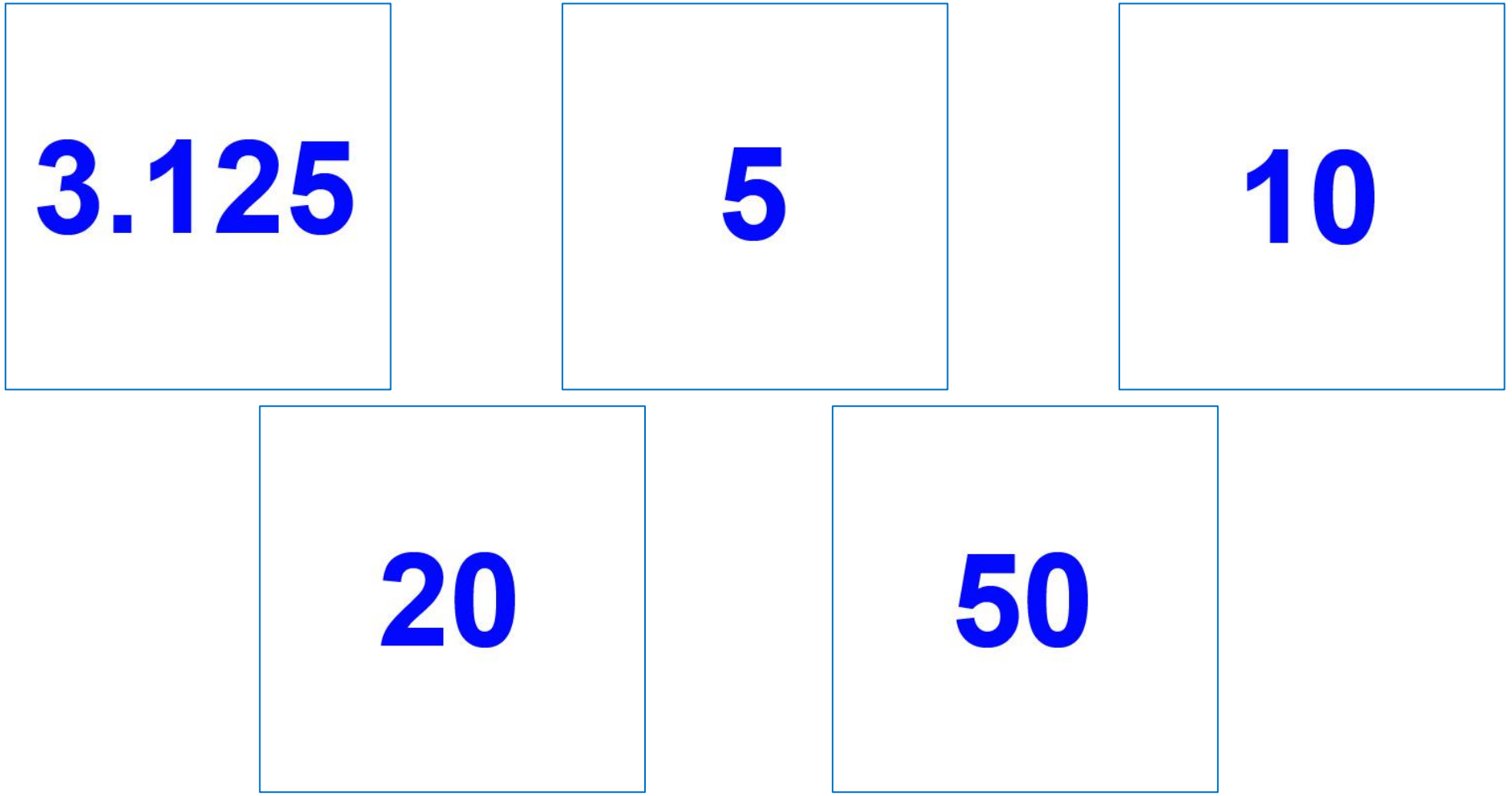


Data available on sdd.nc.gov

DEM formats

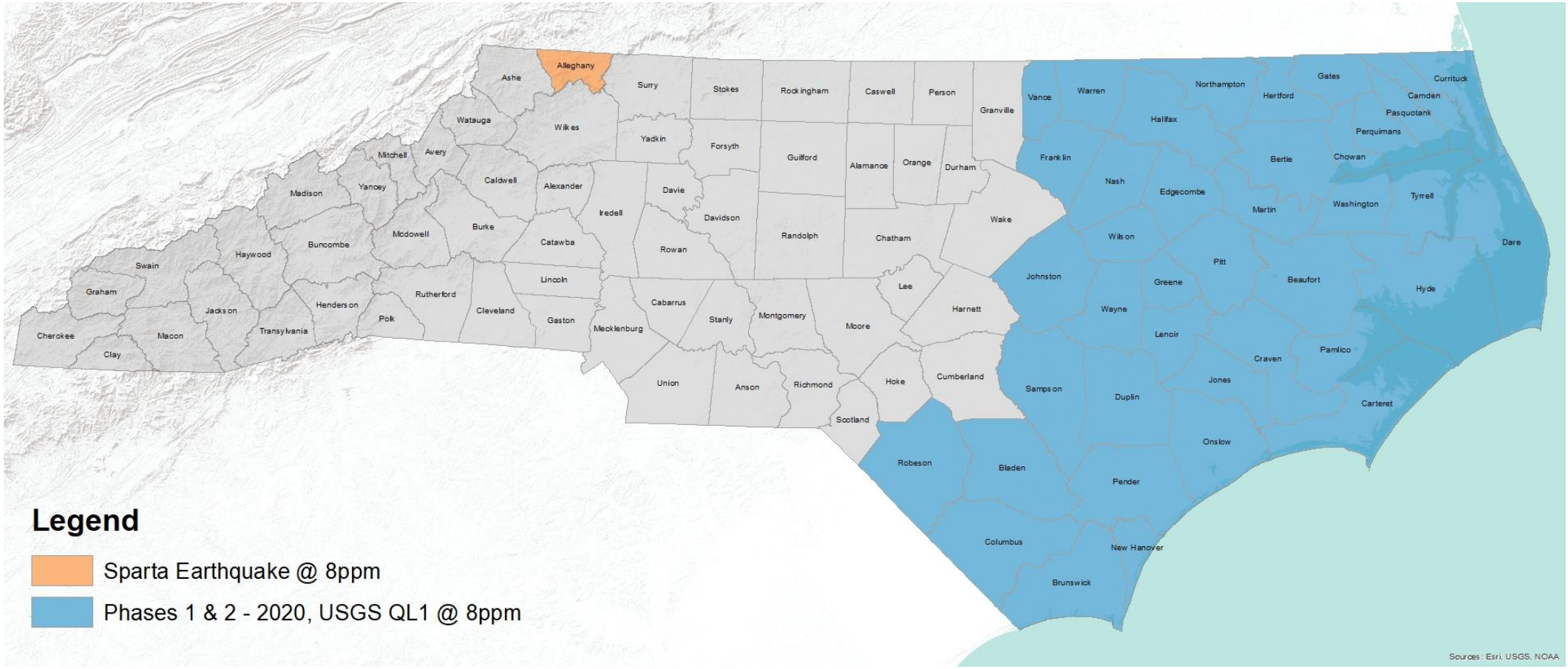
Data available on sdd.nc.gov

DEM Grid Sizes (in feet)



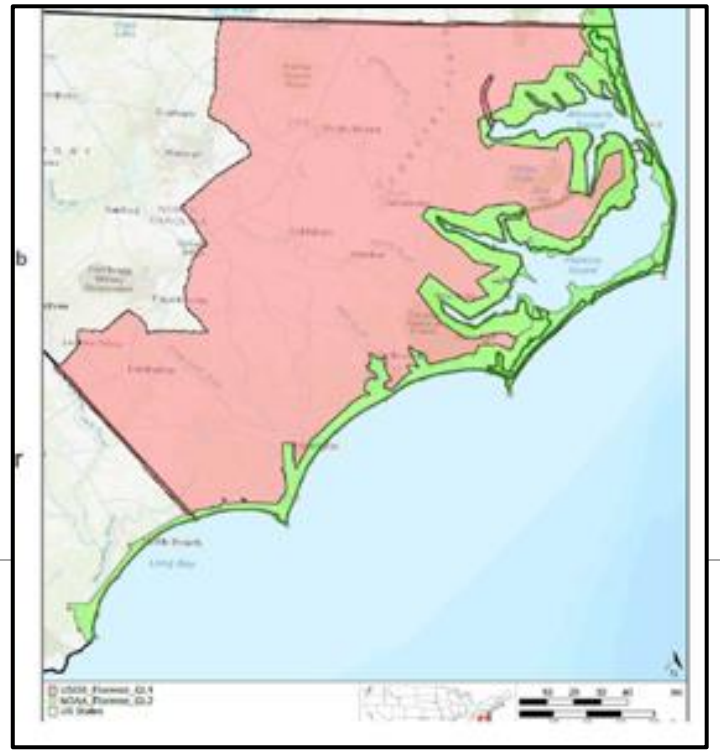
Data available on sdd.nc.gov

New LiDAR 2020



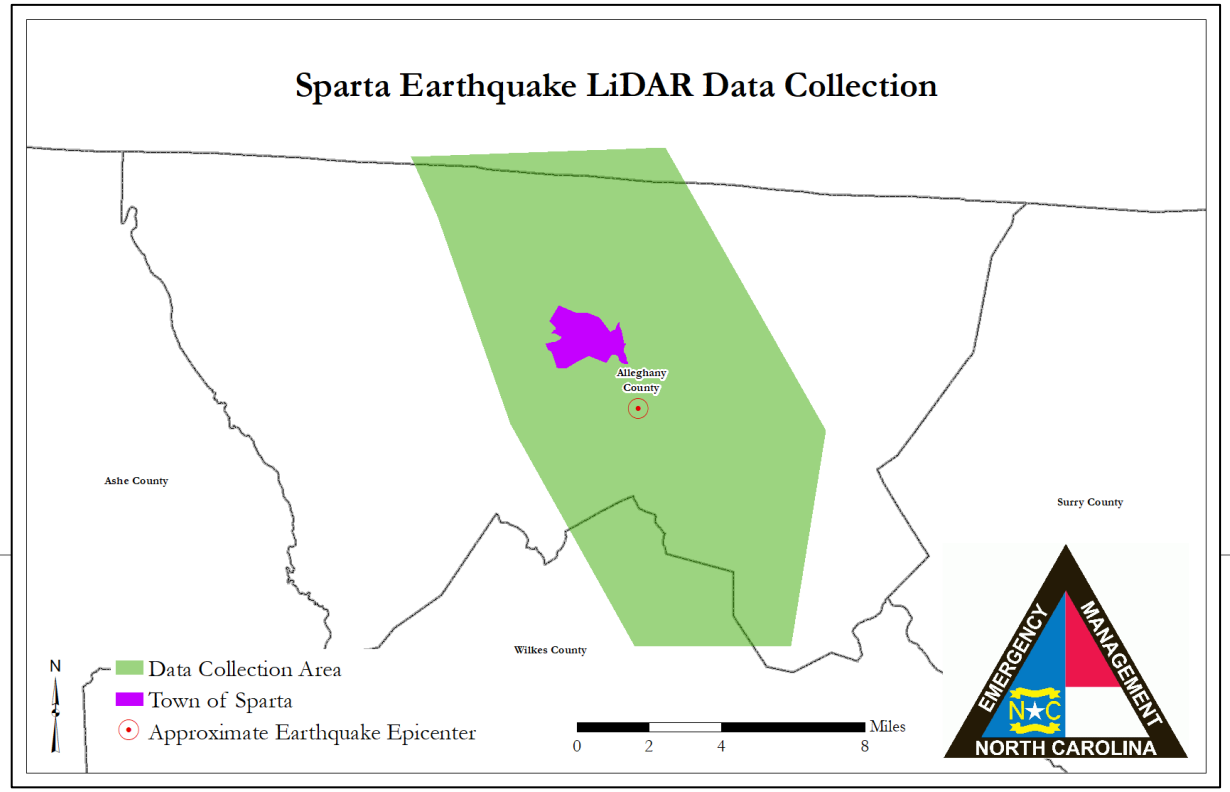
Data available on sdd.nc.gov

United States Geological Survey (USGS)/National Oceanic and Atmospheric Administration (NOAA) LiDAR Funds



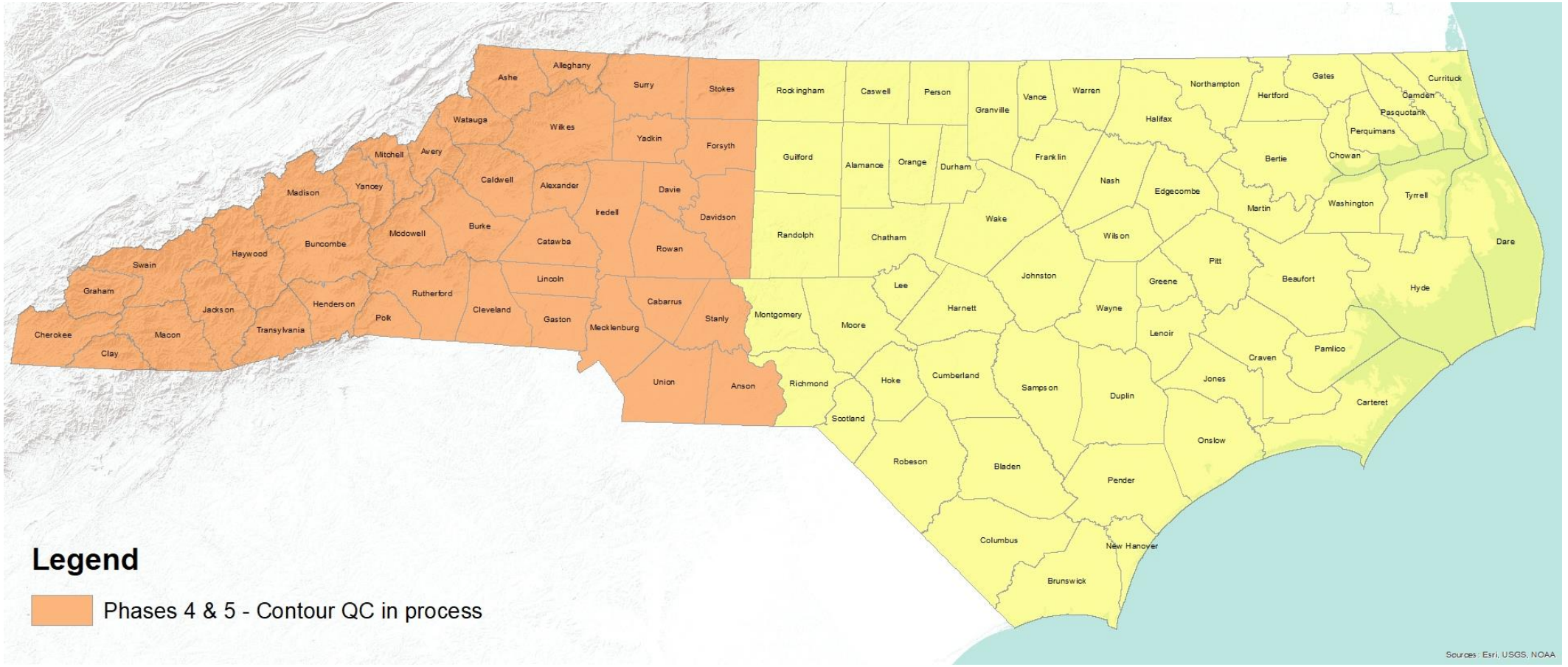
Data Collection Completed

USGS Sparta Earthquake LiDAR Project

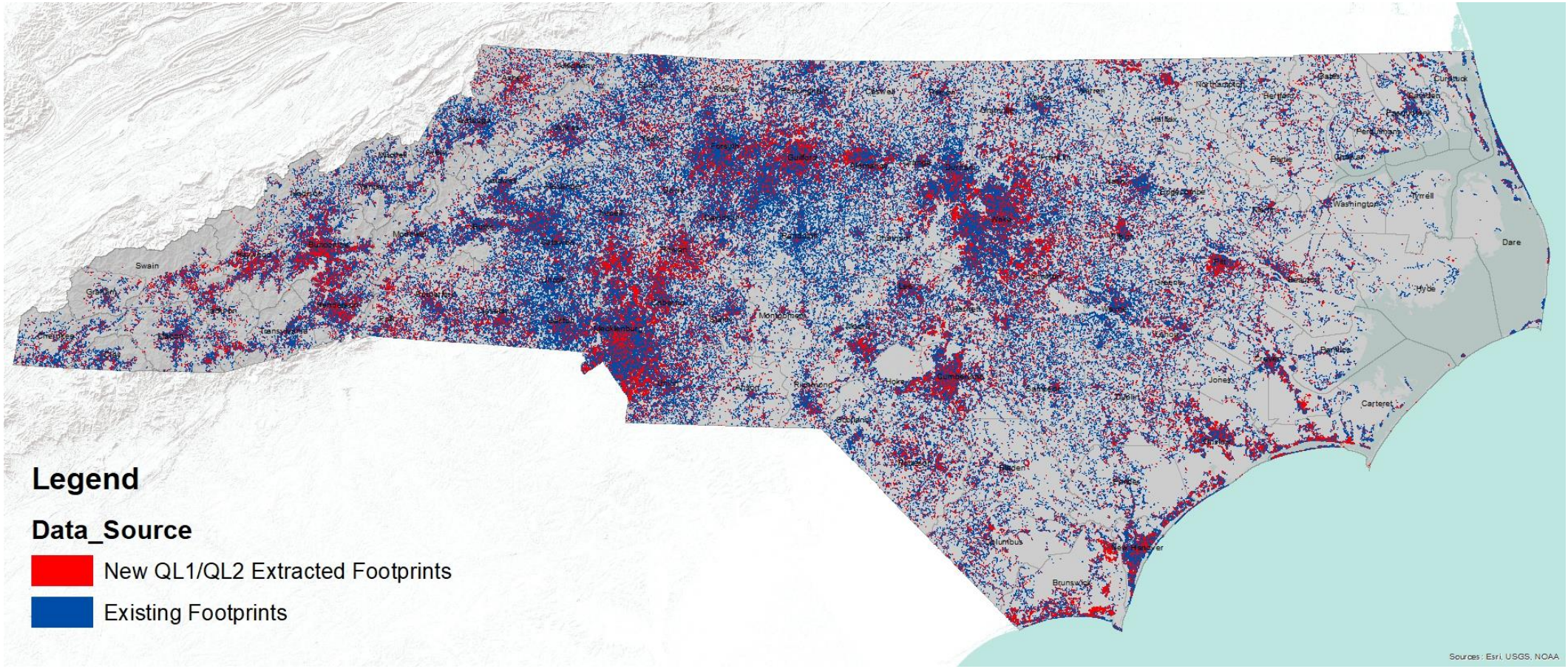


Data Collection Completed

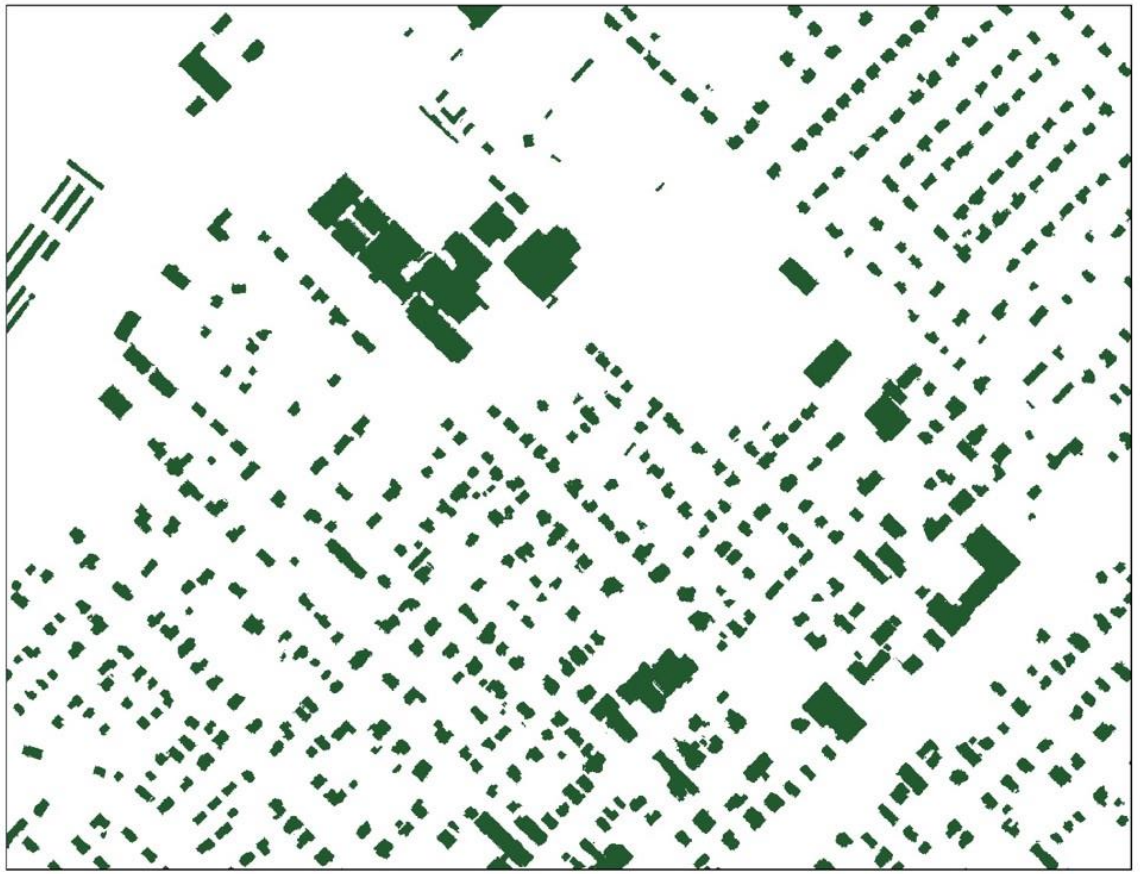
New Derived Products – 1ft Contours



New Derived Products – Building Extraction

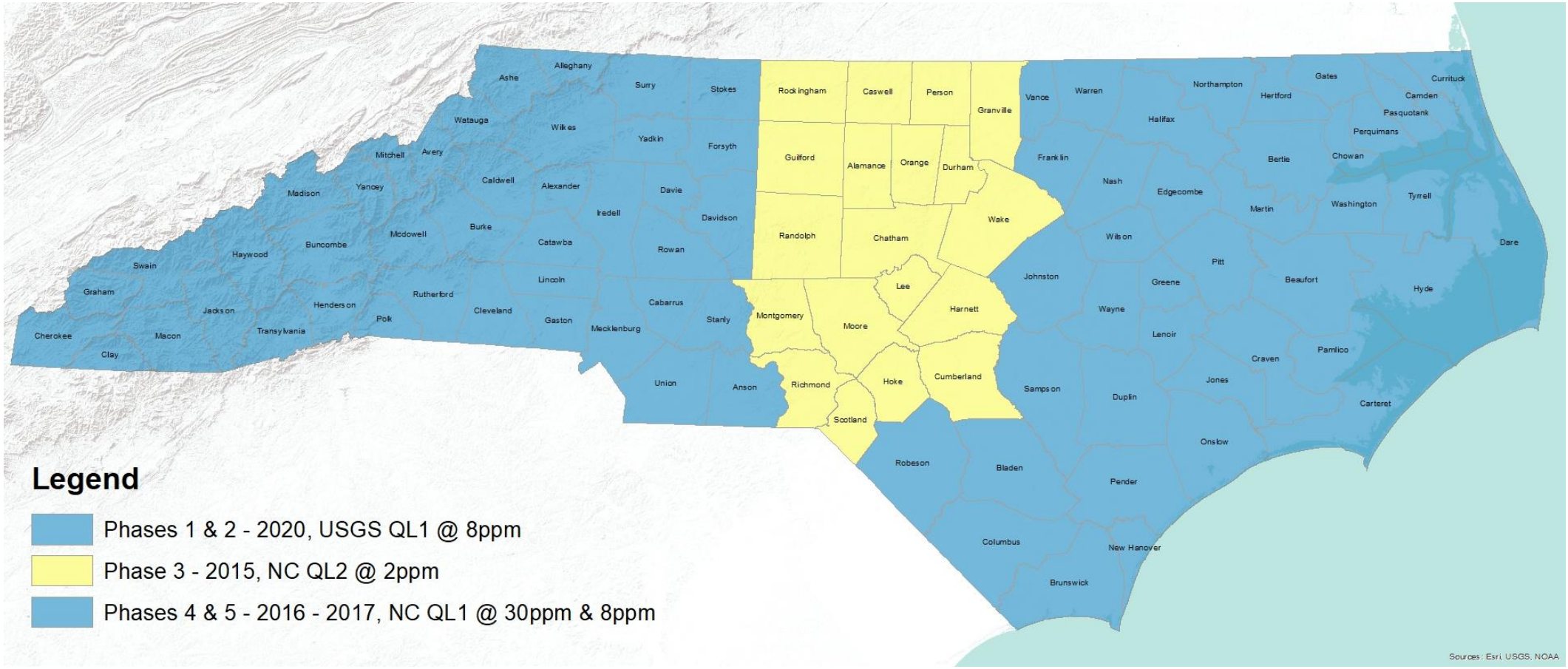


New Derived Products – Building Extraction



Future Needs

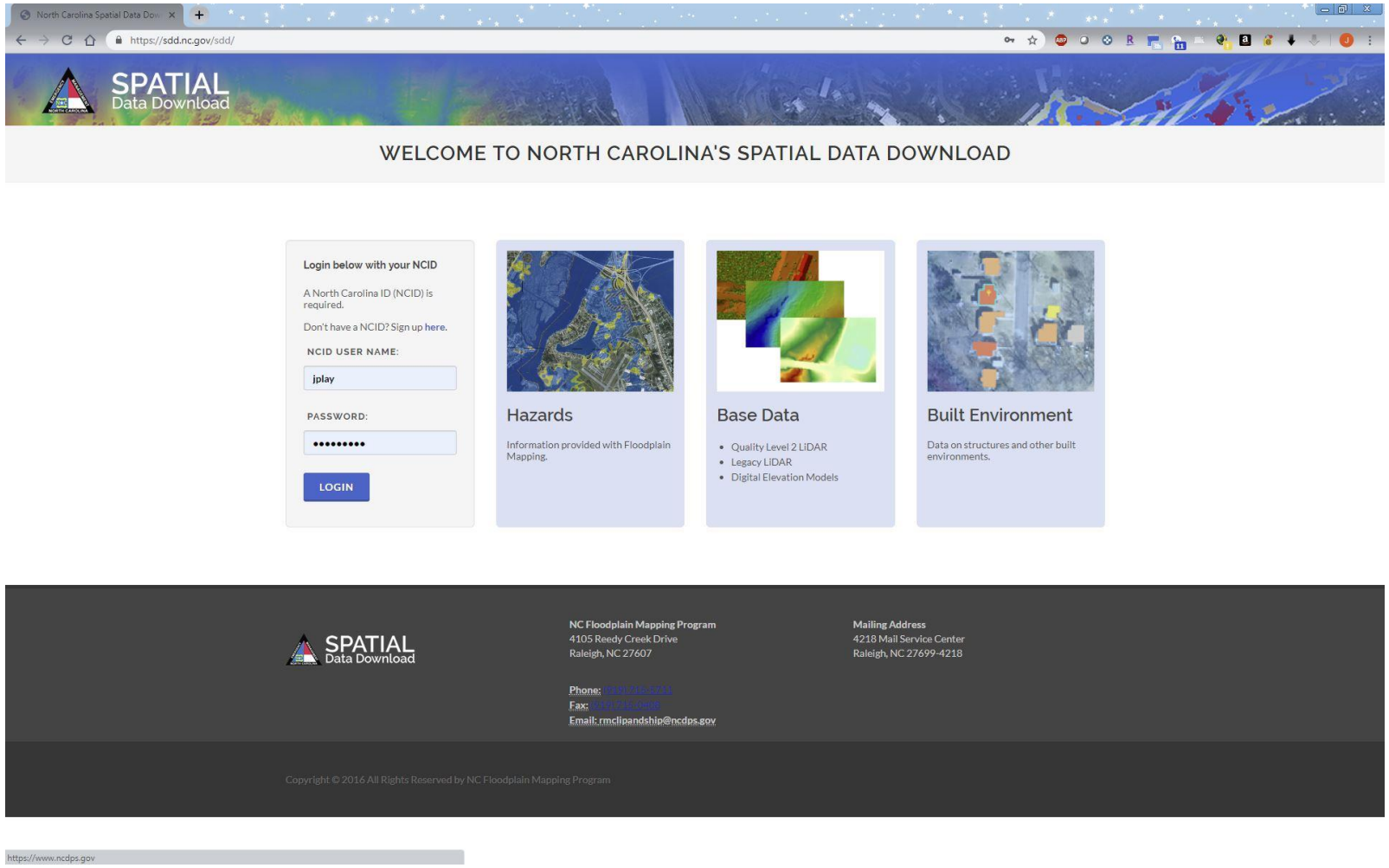
Phase 3 LiDAR



Data available on sdd.nc.gov

Spatial Data Download

https://sdd.nc.gov/sdd/



File Size limitations

Phase	Sq. Miles	ACRES	Tiles 5000x5000	Tiles 2500x2500	Legacy Pt (GB)	QL2 Pt (GB)	QL1 Pt (GB)	Tiles 1250x1250	QL0 Pt (GB) (LAZ)	1ft Contours (GB)
1	12,440	7,961,754	11,981		47	3,468				299
2	12,485	7,990,729	14,081		251	4,114				462
3	10,007	6,404,702	11,339		162	5,442				481
4	8,999	5,759,401		40,759	61		19,608	78,432	15,220	667
5	8,728	5,585,680		39,619	113		35,698	142,792	22,803	1,560
Total	52,660	33,702,266	37,401	80,378	633	13,024	55,306	221,224	38,023	3,469

File Size limitations

Phase	Sq. Miles	ACRES	Tiles 5000x5000	Tiles 2500x2500	Legacy Pt (GB)	QL2 Pt (GB)	QL1 Pt (GB)	Tiles 1250x1250	QL0 Pt (GB) (LAZ)	1ft Contours (GB)
1	12,440	7,961,754	11,981	47,924	47	3,468	13,872			299
2	12,485	7,990,729	14,081	56,324	251	4,114	16,454			462
3	10,007	6,404,702	11,339		162	5,442				481
4	8,999	5,759,401		40,759	61		19,608	78,432	15,220	667
5	8,728	5,585,680		39,619	113		35,698	142,792	22,803	1,560
Total	52,660	33,702,266	37,401	184,626	633	13,024	85,632	221,224	38,023	3,469

Additional Data Formats?

Civil 3D (AutoCAD) no longer supports the LAS format

Hydro enforced DEMs

Single classification LAS (bare earth)

Task	Deliverables
Task 1: LiDAR Data Acquisition	• Project boundary GIS file and map (State 2,500ft X 2,500ft tiling scheme with 100 meter buffer) • Flight line layout GIS file and map • Ground control GIS file and map • Adjacent Contractor Coordination Agreement • GPS ground control survey points (approximately 390)
Task 2: Ground Survey and Support for Acquisition	• Signed and sealed ground survey report
Task 3: Classification of LiDAR Points	• ASPRS LAS 1.4 (using WKT VLR for projection) classified LiDAR point clouds (full tiles of the State's 5K tiling scheme; approximately 14,400 tiles) • Fundamental Accuracy Control Report
Task 4: Development of DEMS in ESRI Grid Format	• 3.125 feet cell size Hydro-flattened ESRI raster datasets • 10 feet cell size Hydro-flattened ESRI raster datasets • 20 feet cell size Hydro-flattened ESRI raster datasets • 3D breakline files • *All datasets will be on the same tile scheme as the Classified LiDAR LAS files*
Task 5: Terrain Datasets by County	• Individual countywide terrain datasets within a file geodatabase
Task 6: High Detail Road and Bridge Classifications	• Incorporated into deliverable for Task 2 • Collected road polygons in ESRI GDB format
Task 7: Intensity Images	• Intensity image files (8-bit, GeoTiff, 5 foot raster cell size) • *All datasets will be on the same tile scheme as the classified LiDAR LAS files*
Task 8: Building Change Detection	• Building footprint and change detection update maps in ESRI file geodatabase
Task 9: Quality Assurance/Quality Control Plan	• QA/QC Report
Task 10: Preparation of Project Reports	• Weekly Status Reports • Collection Report (mission planning and flight logs) • Survey Report (survey and calibration) • Processing Report (product generation and methodology)
Task 11: Metadata	• FGDC compliant metadata for classified LAS point clouds • FGDC compliant metadata for 3.125, 10, 20, and 50 feet Hydro-flattened raster datasets • FGDC compliant metadata for ESRI Terrain Datasets • FGDC compliant metadata for Intensity Images

USGS Classification does not match NC Classification

ASPRS:

Class 13 = Wire – Guard

Class 14 = Wire – Conductor (Phase)

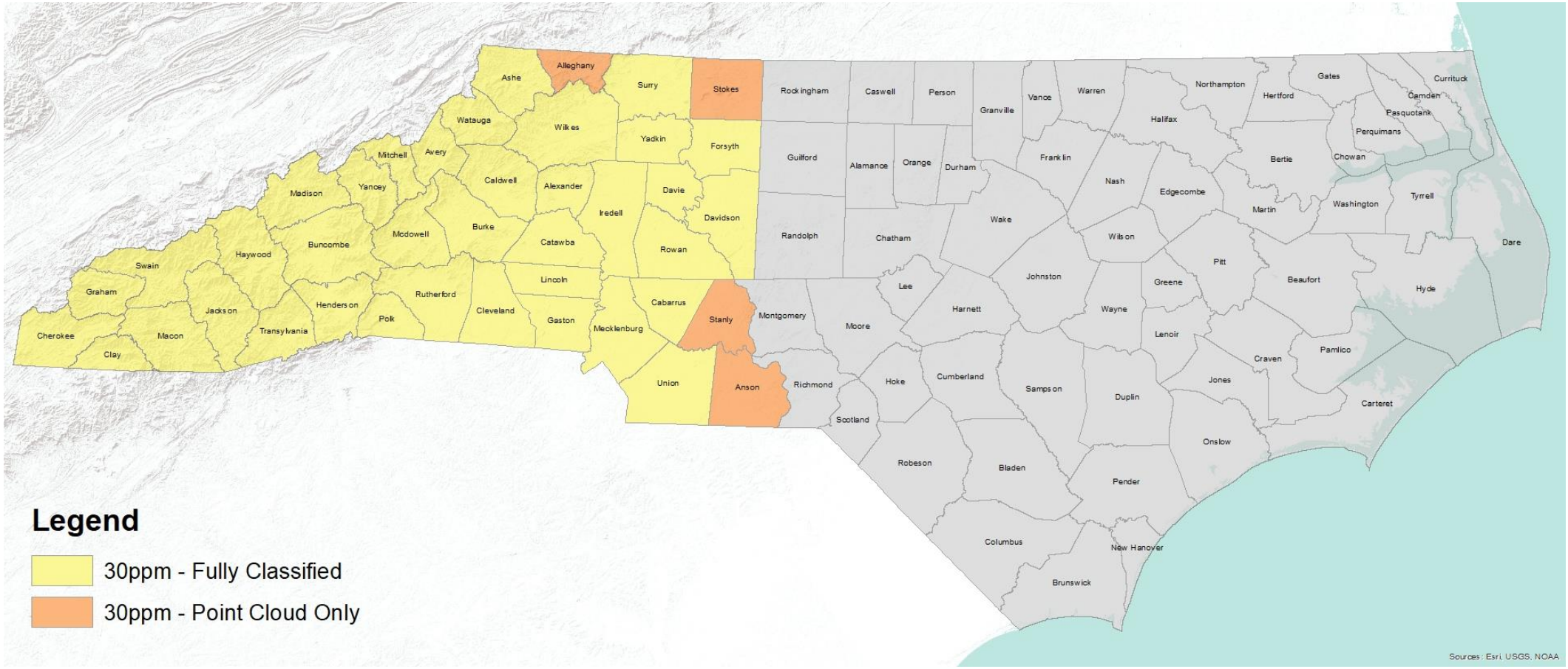
NC Classification

Class	Description	Class	Description
1	Processed Unclassified	8	Undefined
2	Ground	**9**	Water (Hydro Cleaned Areas)
3	Low Vegetation (0.5 – 3ft)	10	Breakline Proximity
4	Medium Vegetation (3 – 10ft)	11	Noise (High Point)
5	High Vegetation (10-220 ft)	13	Roads
6	Buildings (Automated)	14	Bridges
7	Noise (Low Point)		

USGS Classification

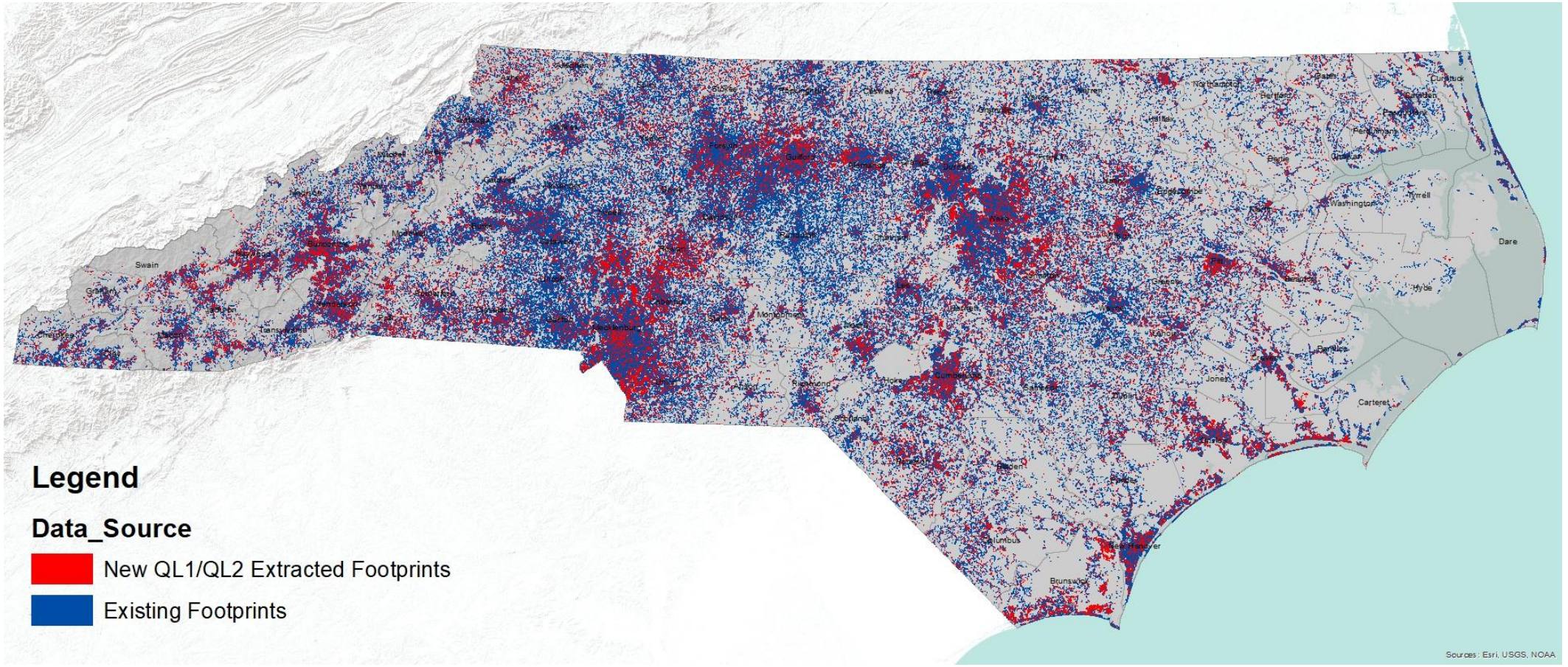
Class	Description	Class	Description
1	Processed Unclassified	8	Undefined
2	Ground	**9**	Water (Hydro Cleaned Areas)
		11	Noise (High Point)
		17	Bridges
7	Noise (Low Point)		

30ppm LiDAR

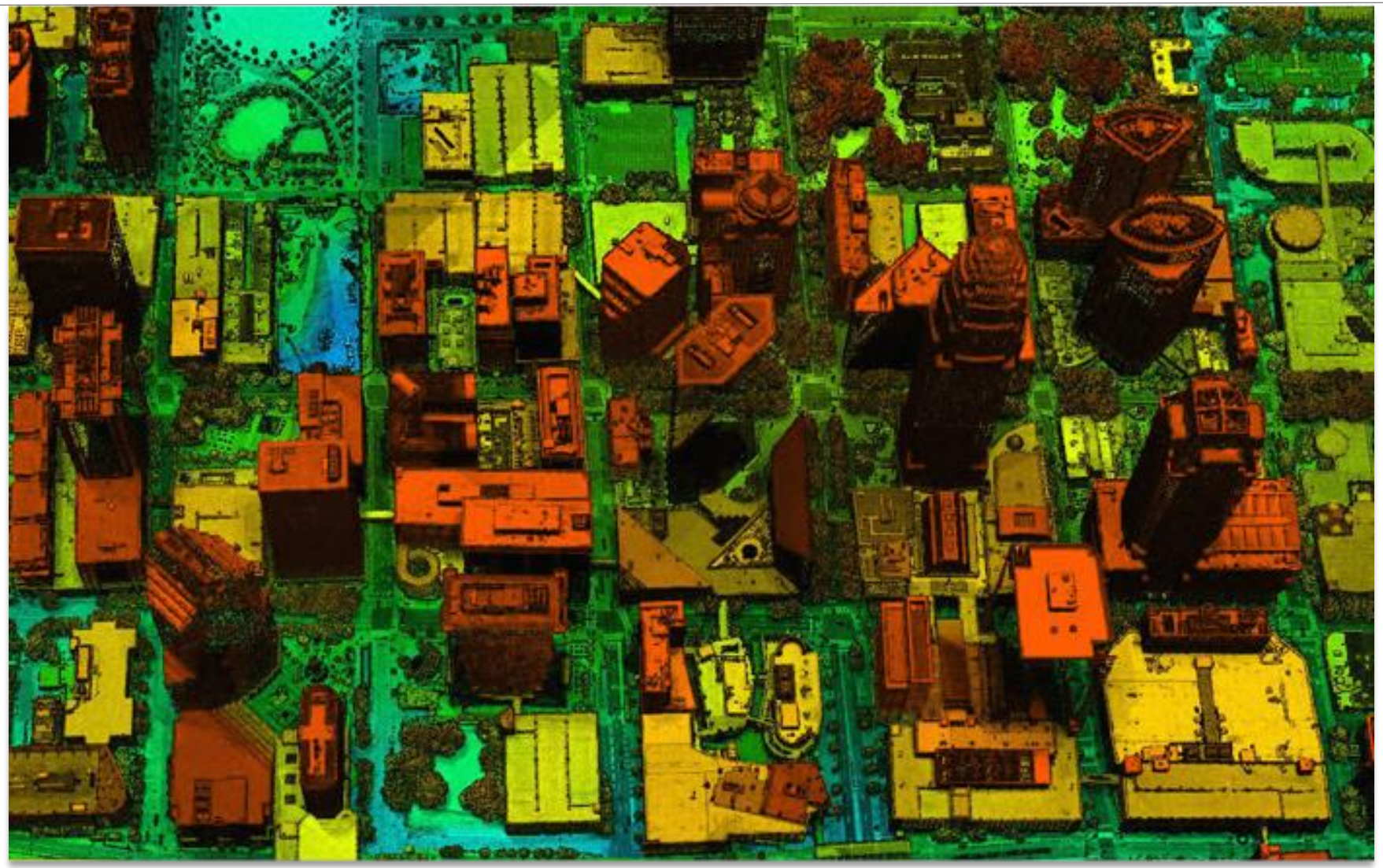


Data available on sdd.nc.gov

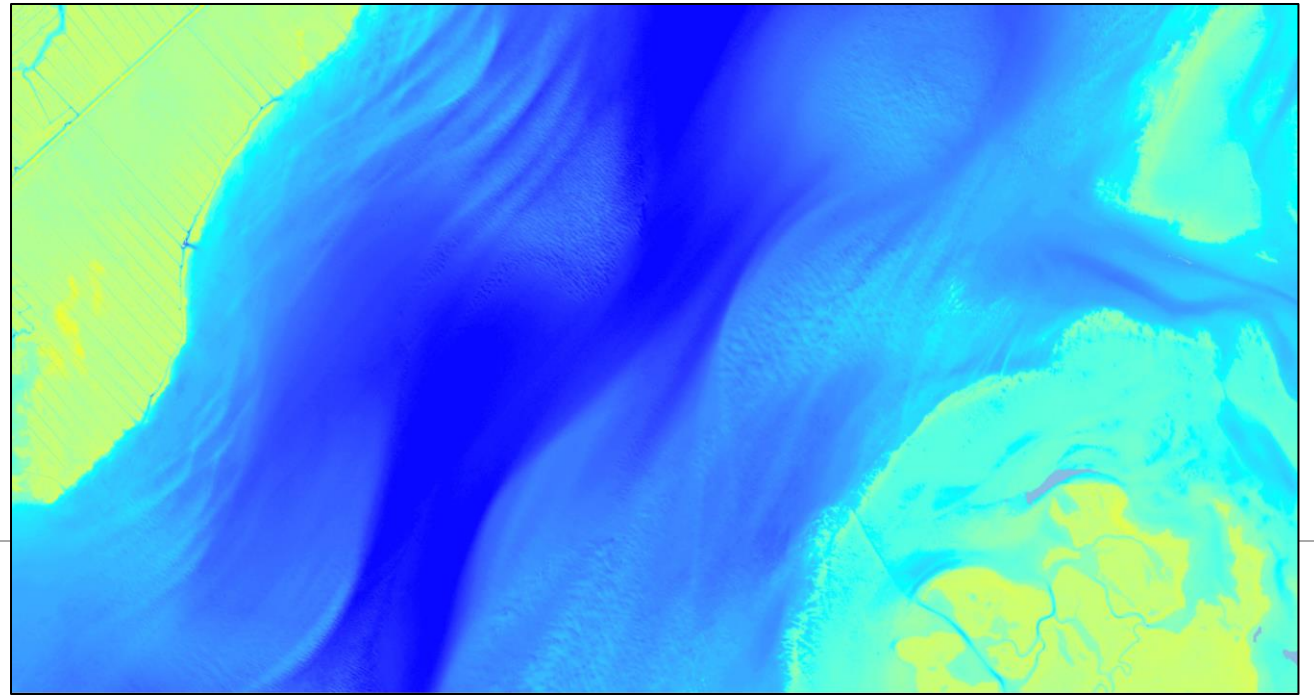
Building Conflation and RISK



Questions

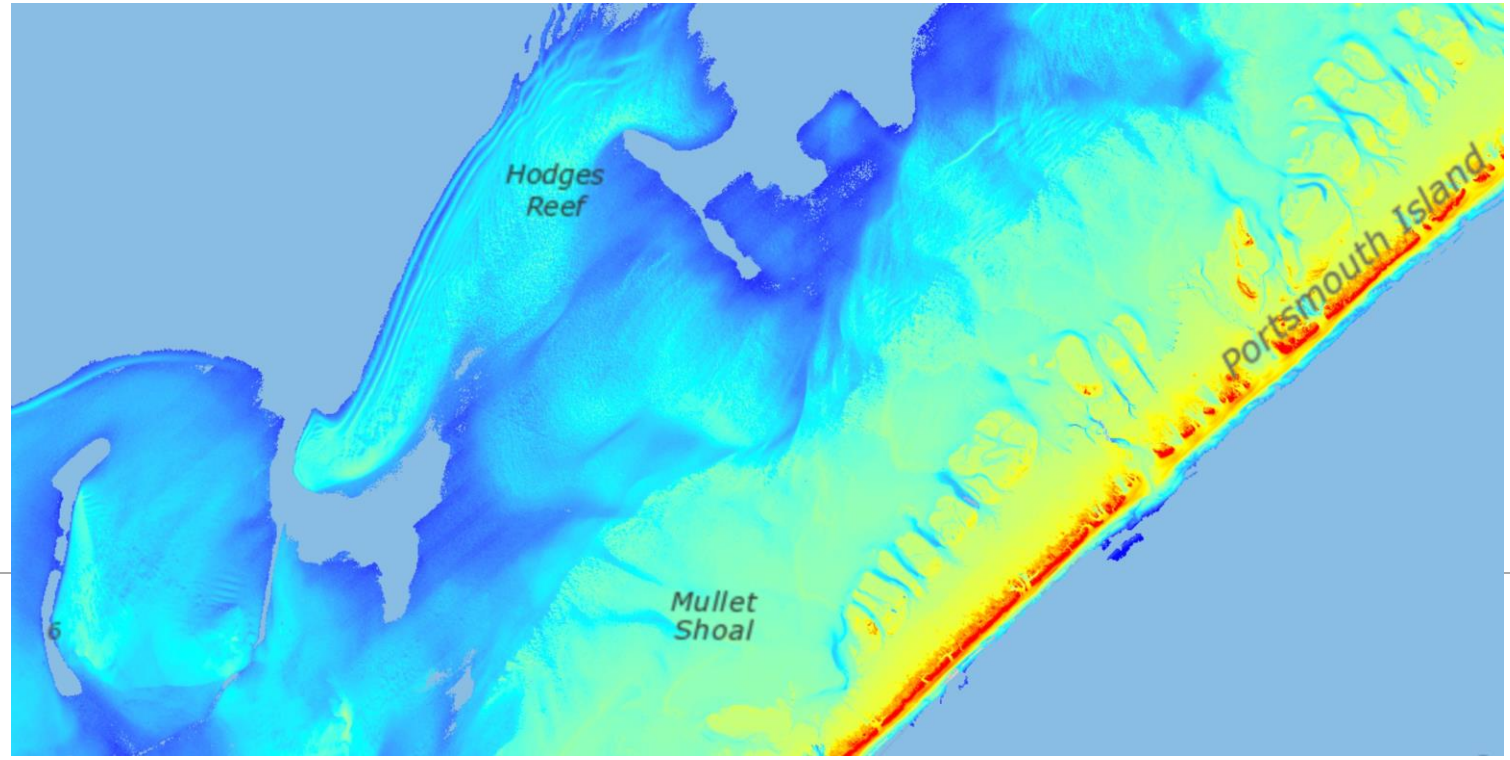


United States Geological Survey (USGS)/National Oceanic and Atmospheric Administration (NOAA) LiDAR Funds



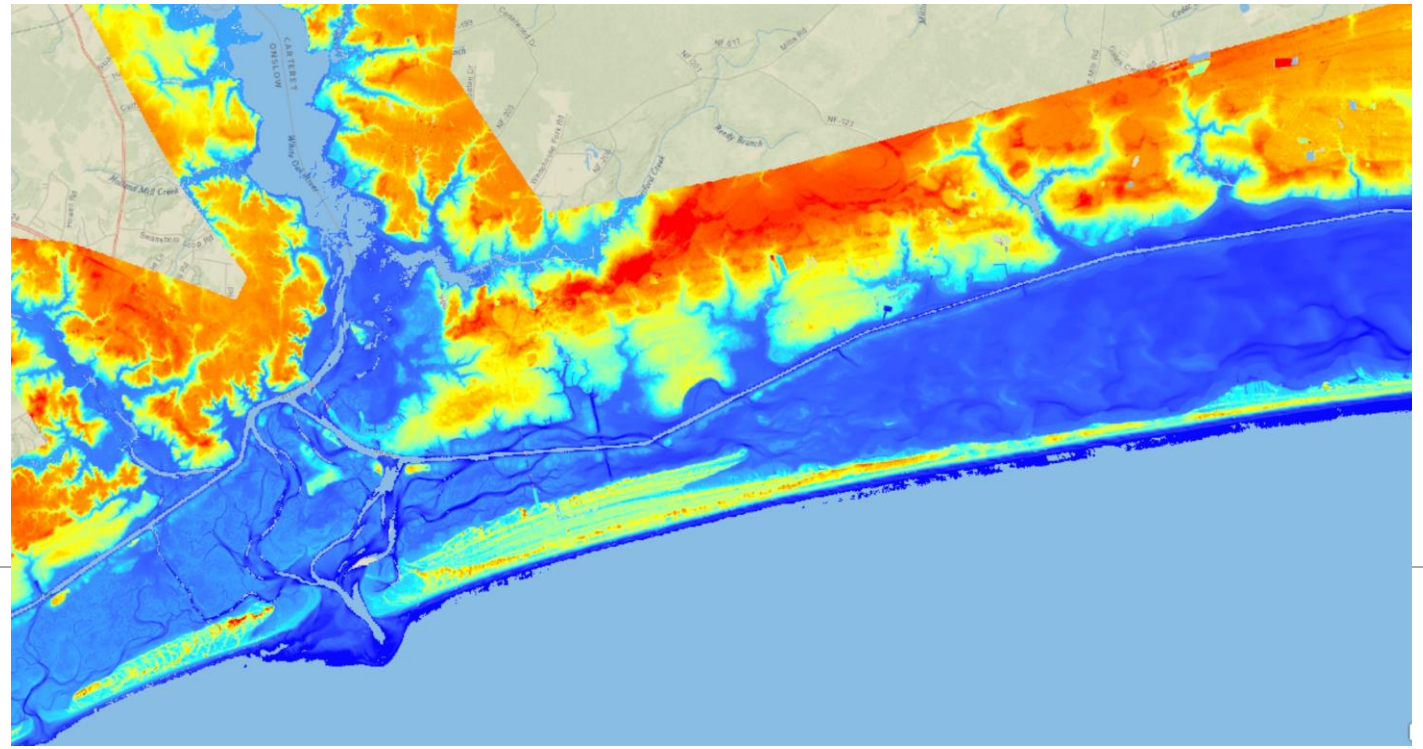
Core Sound

United States Geological Survey (USGS)/National Oceanic and Atmospheric Administration (NOAA) LiDAR Funds



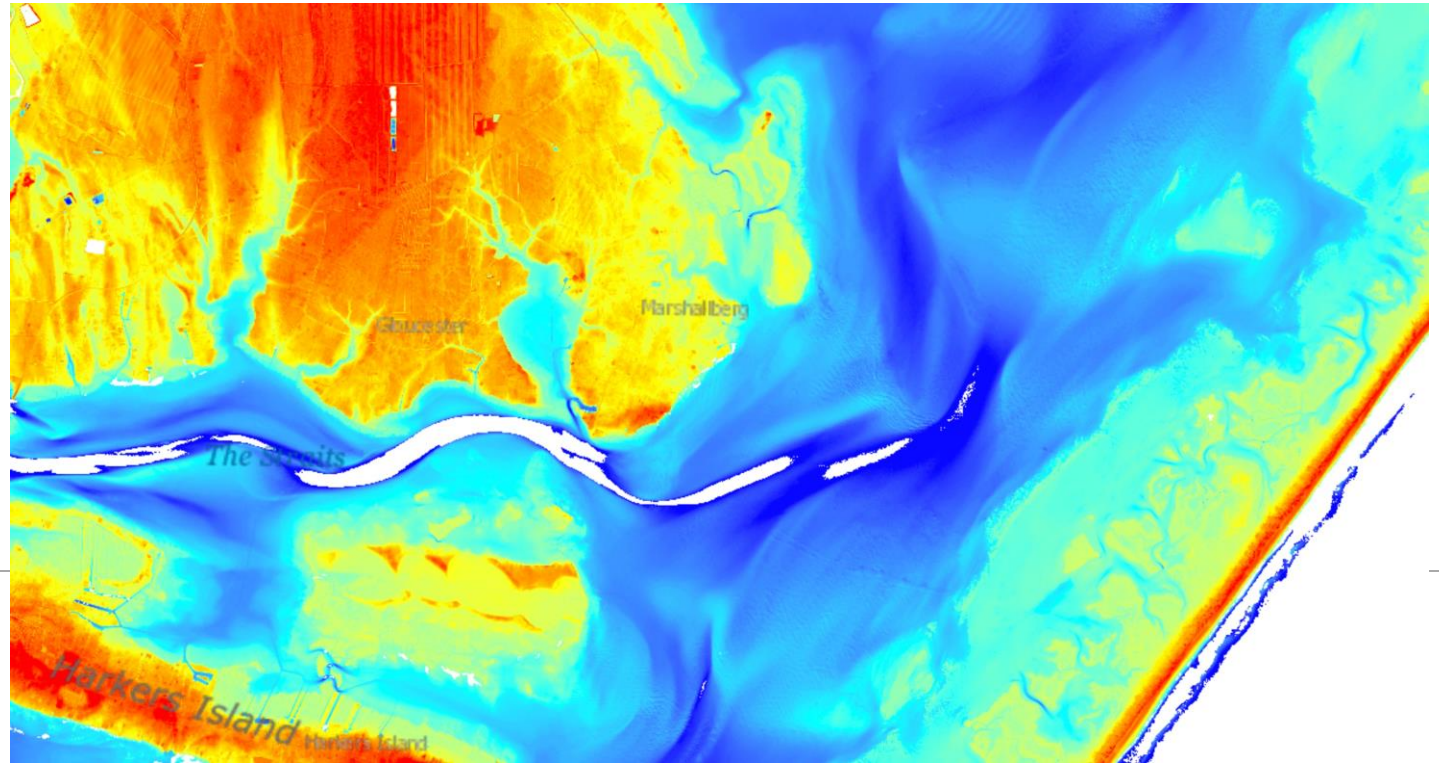
Portsmouth

United States Geological Survey (USGS)/National Oceanic and Atmospheric Administration (NOAA) LiDAR Funds



Emerald Isle

United States Geological Survey (USGS)/National Oceanic and Atmospheric Administration (NOAA) LiDAR Funds



Harkers Island