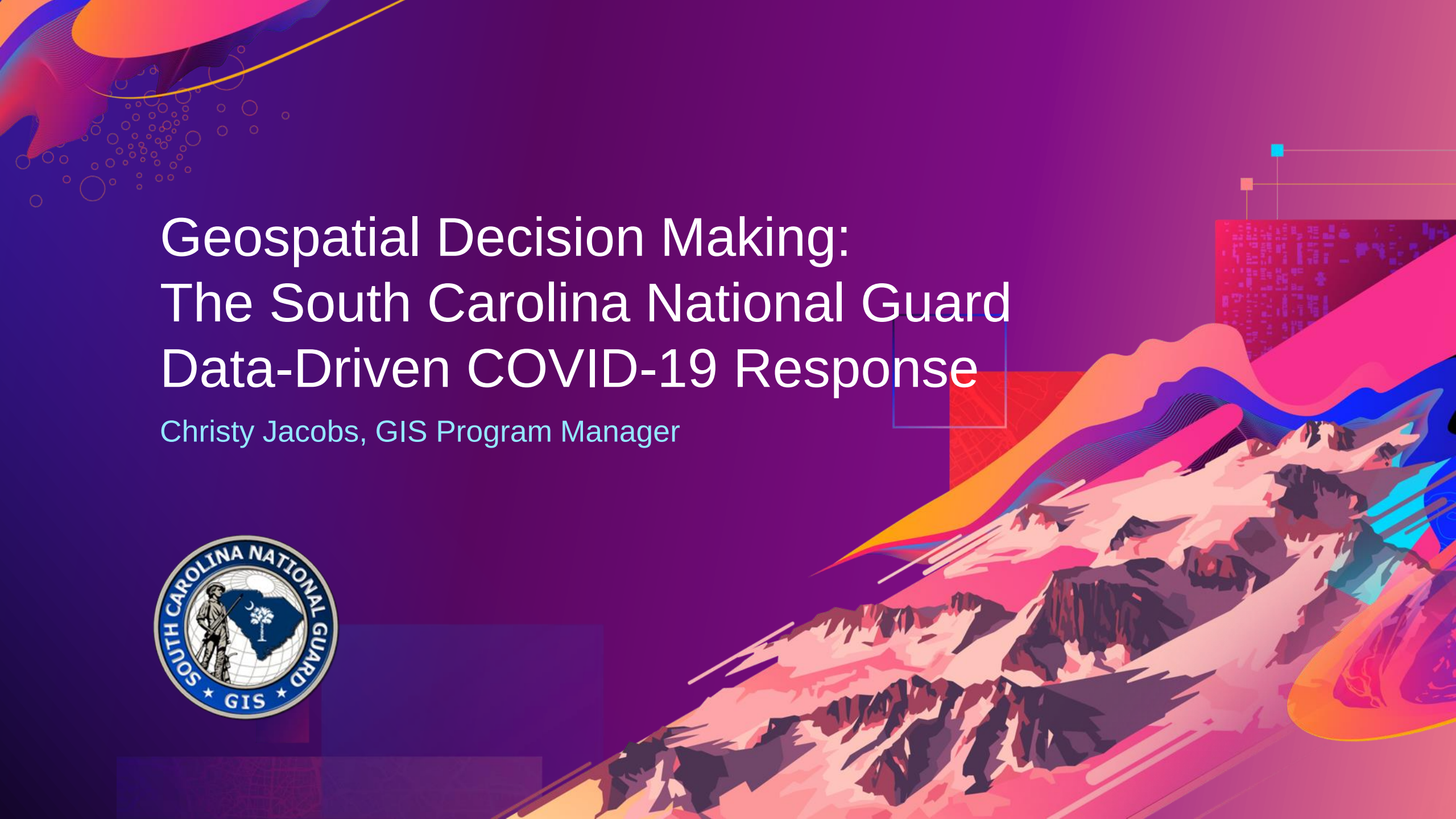
Geospatial Decision Making: The South Carolina National Guard Data-Driven COVID-19 Response

Christy Jacobs, GIS Program Manager



- **SC National Guard leadership relies on GIS as the primary source of information to drive decision making during the COVID-19 mission.**

- **ArcGIS Dashboard became the primary tool for COVID-19 response decision making.**

"I'm being briefed three times a week, but I've relied on that dashboard almost hourly for more than 300 days."

~Major General Stephen B. Owens~

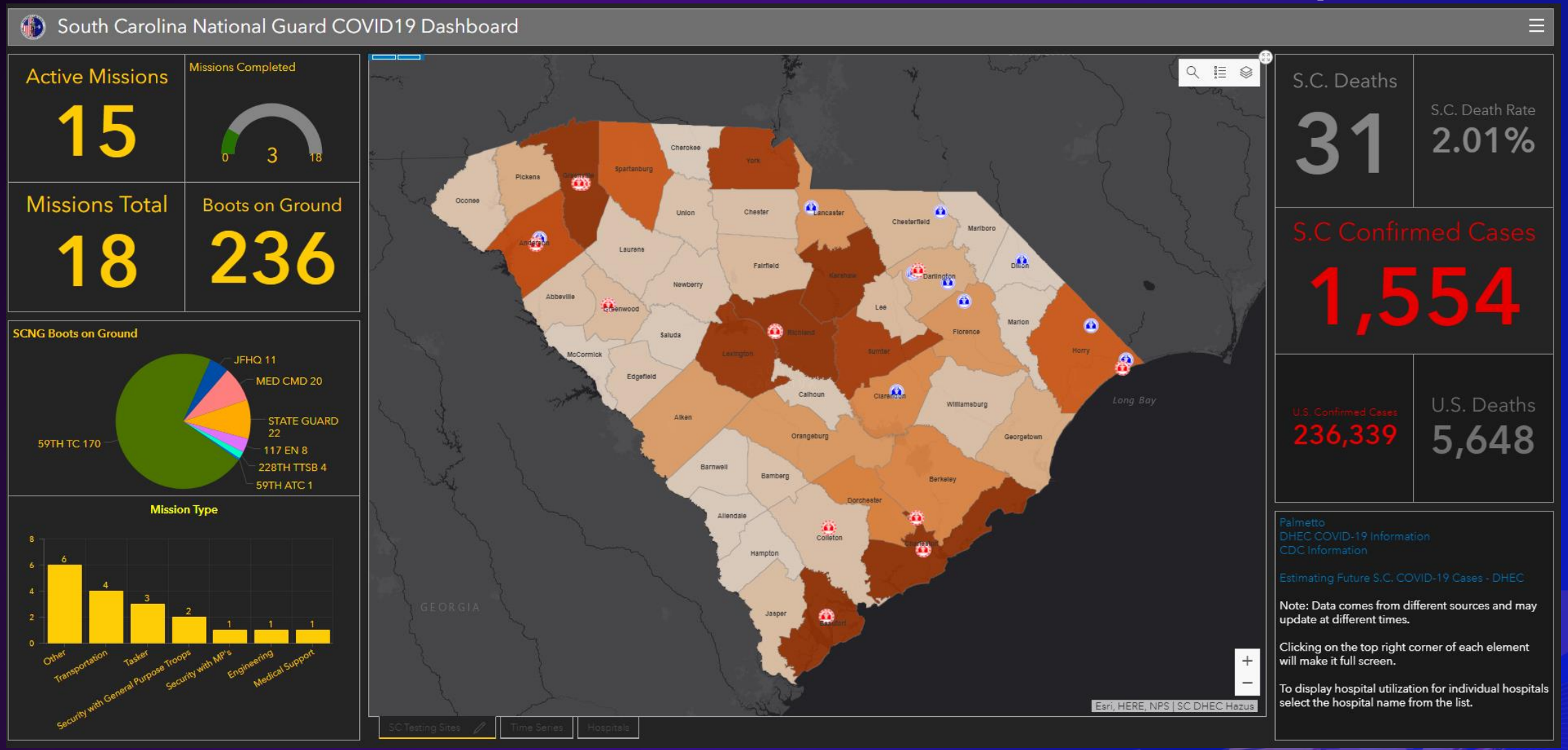
Assistant Adjutant General overseeing all of the SC National Guard COVID-19 response.

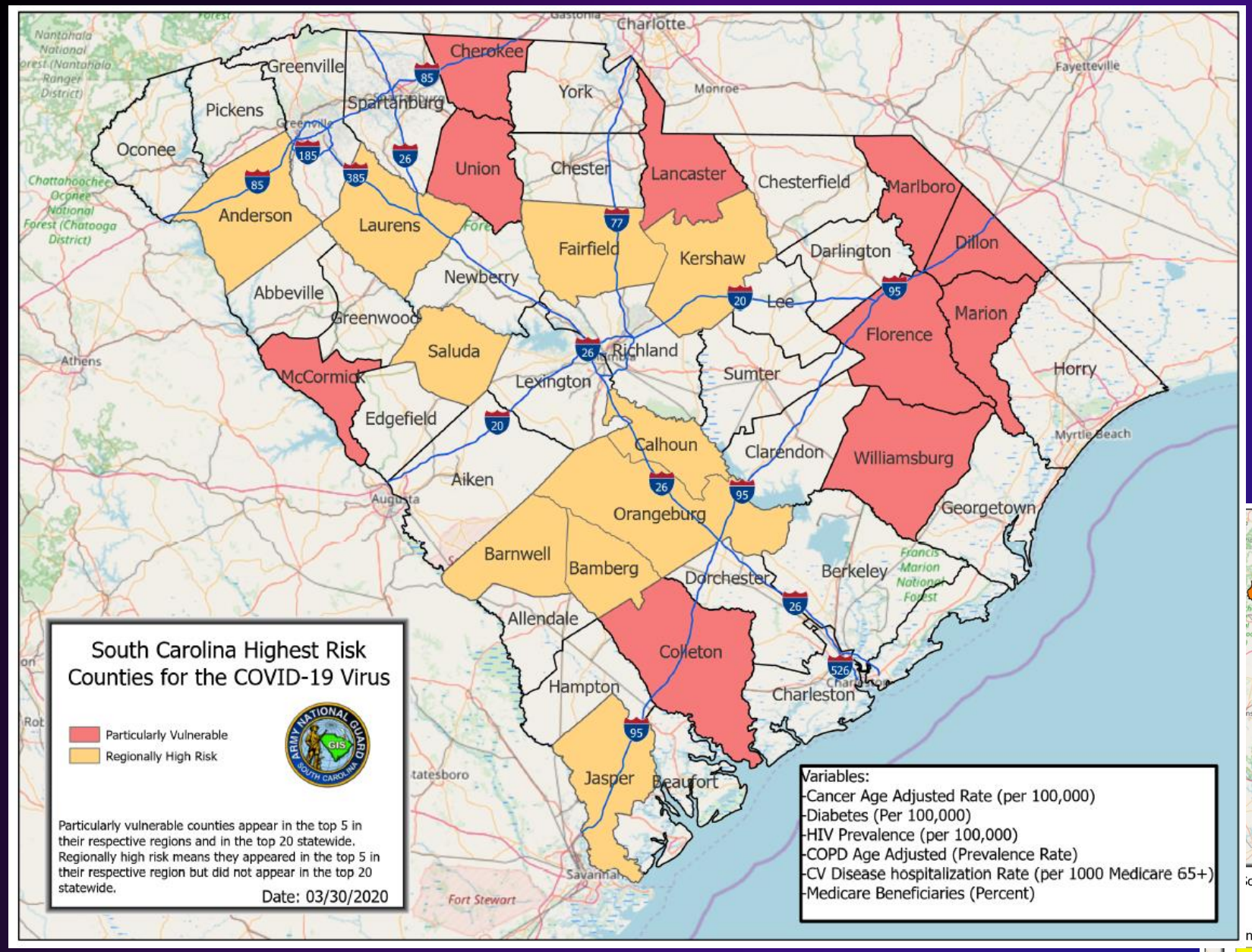
First COVID-19 Phase

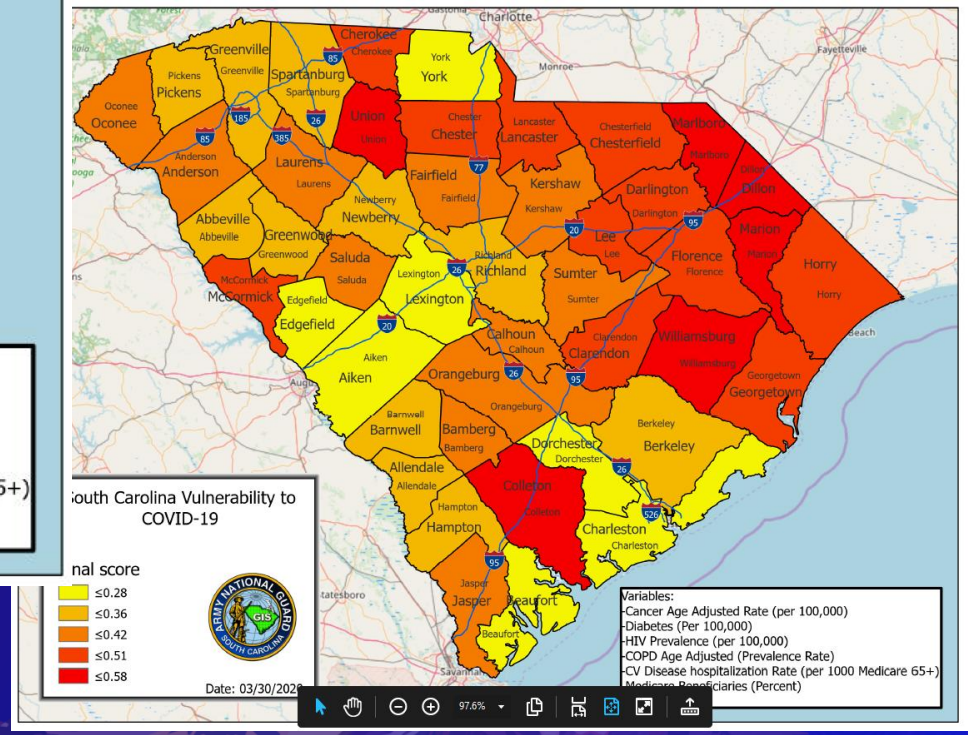
Creation of COVID Dashboard, Health Vulnerability Analysis, Site Suitability Analysis for Testing Sites

ArcGIS COVID-19 Dashboard 1.0

April 2, 2020

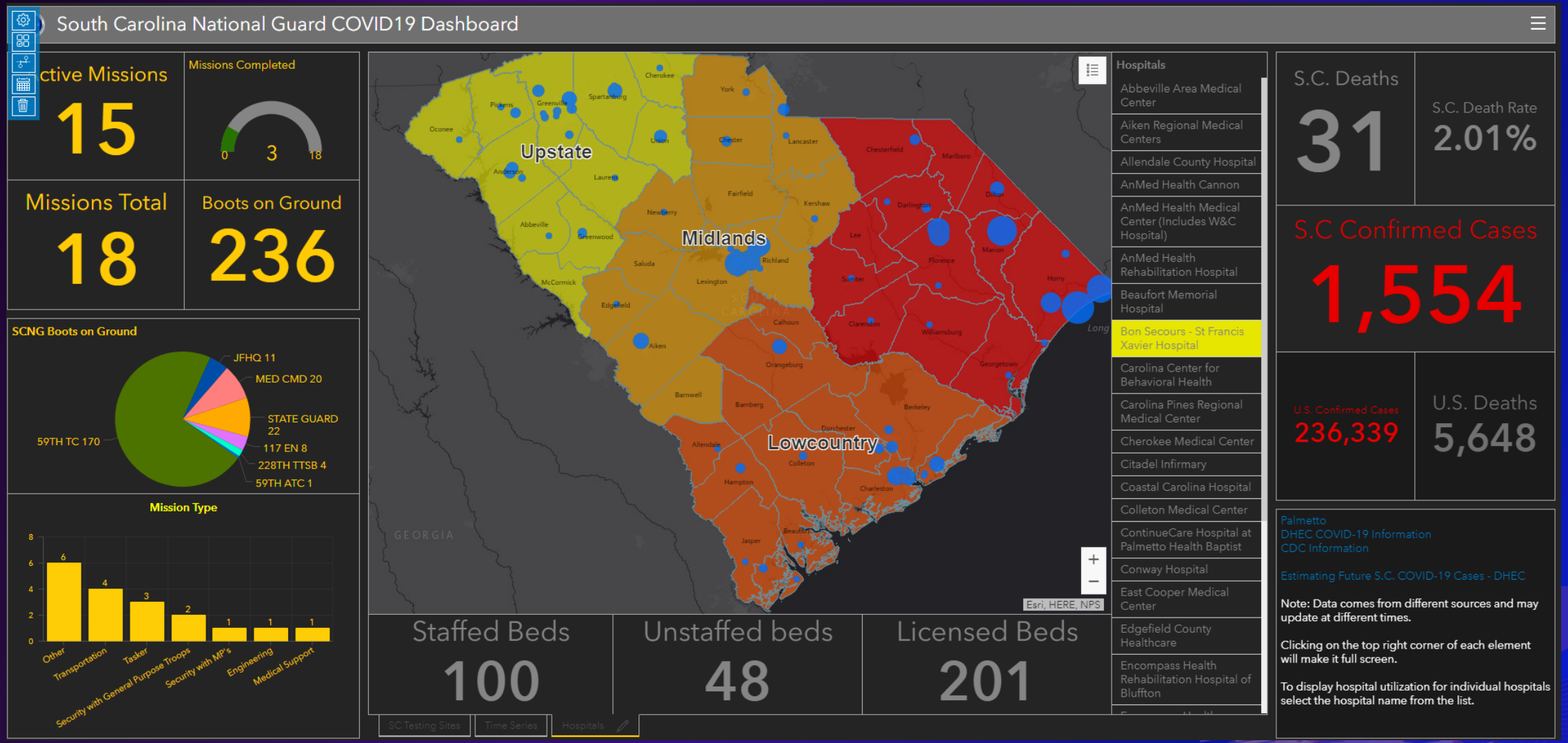



South Carolina Highest Risk Counties for the COVID-19 Virus
Particularly Vulnerable
Regionally High Risk
Particularly vulnerable counties appear in the top 5 in their respective regions and in the top 20 statewide. Regionally high risk means they appeared in the top 5 in their respective region but did not appear in the top 20 statewide.
Date: 03/30/2020
Variables:
-Cancer Age Adjusted Rate (per 100,000)
-Diabetes (Per 100,000)
-HIV Prevalence (per 100,000)
-COPD Age Adjusted (Prevalence Rate)
-CV Disease hospitalization Rate (per 1000 Medicare 65+)
-Medicare Beneficiaries (Percent)
Cherokee
Greenville
Pickens
Spartanburg
York
Oconee
Union
Chester
Lancaster
Chesterfield
Marlboro
Anderson
Laurens
Fairfield
Kershaw
Darlington
Dillon
Newberry
Abbeville
Greenwood
Lee
Florence
Marion
Saluda
Richland
Sumter
Horry
McCormick
Lexington
Edgefield
Calhoun
Clarendon
Williamsburg
Aiken
Orangeburg
Georgetown
Barnwell
Bamberg
Dorchester
Berkeley
Allendale
Colleton
Hampton
Charleston
Jasper
Beaufort


outh Carolina Vulnerability to COVID-19
nal score
≤0.28
≤0.36
≤0.42
≤0.51
≤0.58
Date: 03/30/2020
Variables:
-Cancer Age Adjusted Rate (per 100,000)
-Diabetes (Per 100,000)
-HIV Prevalence (per 100,000)
-COPD Age Adjusted (Prevalence Rate)
-CV Disease hospitalization Rate (per 1000 Medicare 65+)

ArcGIS COVID-19 Dashboard 1.0

April 2, 2020



COVID Testing
Site Suitability Analysis
with Rural Health Clinics

Clarendon County

- Hospital
- Rural Health Clinics
- DHEC Approved Testing Sites

Rank of Suitable Testing Sites

- ≤0.21
- ≤0.66
- ≤0.81
- ≤0.87

Suitability Analysis based on the following criteria:

-- Located at a public school AND

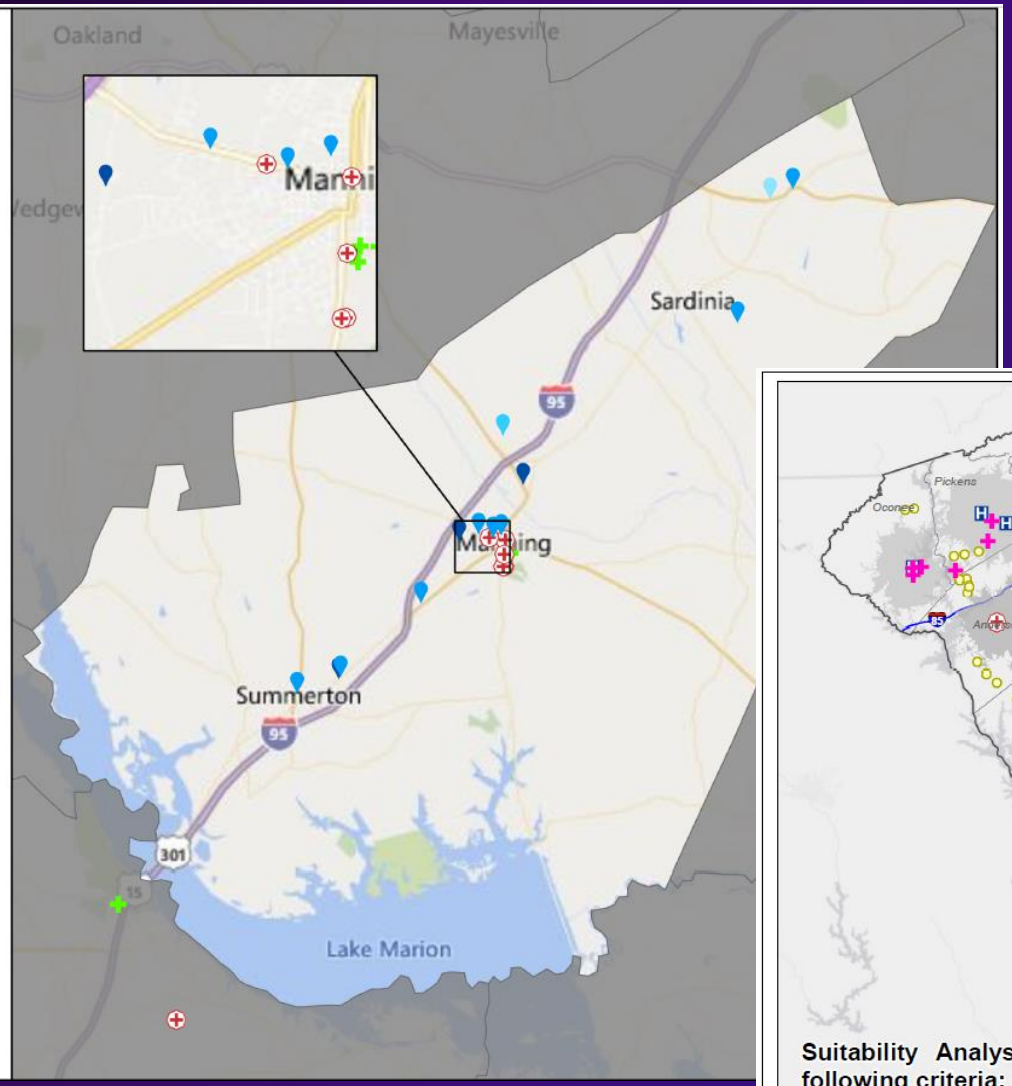
-- Ranks based on

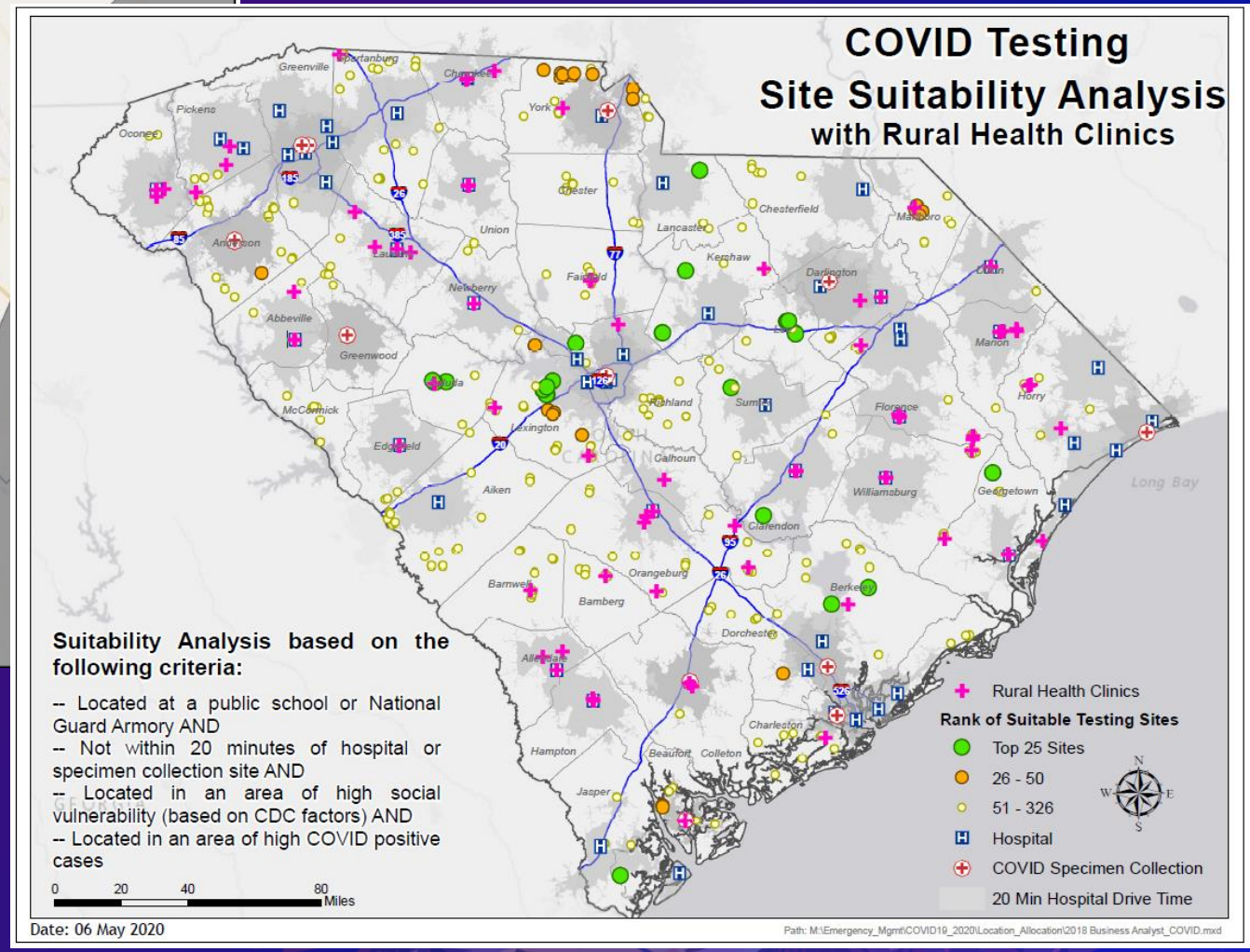
--High Social Vulnerability Index (Based on CDC) -60% Weight

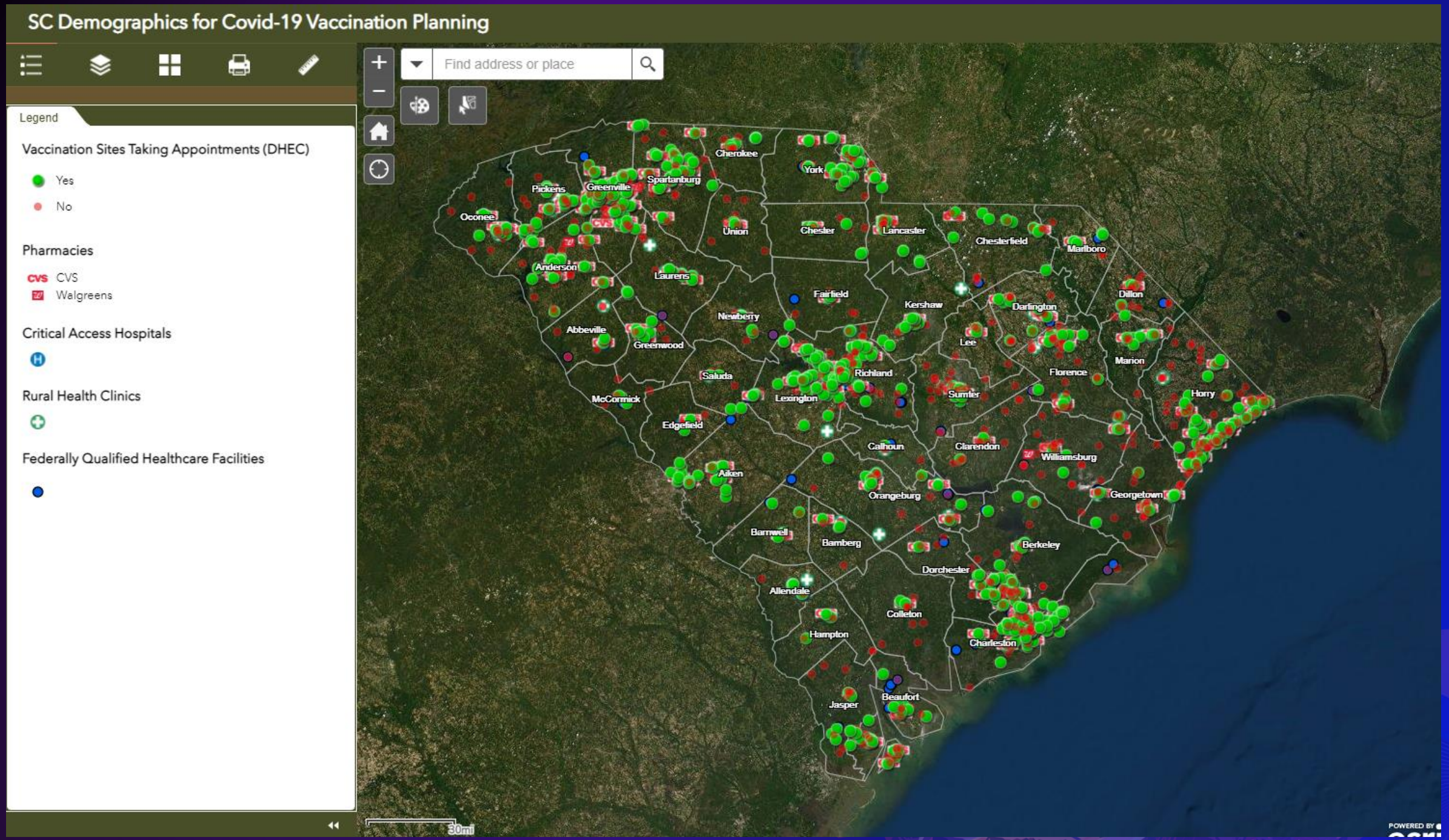
-- High Covid19 cases - 20% Weight

--Not near another testing facility - 20% weight

Date: 07 May 2020






SC Demographics for Covid-19 Vaccination Planning
Find address or place
Legend
Vaccination Sites Taking Appointments (DHEC)
Yes
No
Pharmacies
CVS
Walgreens
Critical Access Hospitals
Rural Health Clinics
Federally Qualified Healthcare Facilities
Cherokee
York
Pickens
Greenville
Spartanburg
Oconee
Union
Chester
Lancaster
Chesterfield
Marlboro
Anderson
Laurens
Fairfield
Kershaw
Dillon
Darlington
Newberry
Abbeville
Greenwood
Lee
Marion
Florence
Saluda
Richland
Horry
McCormick
Lexington
Sumter
Edgefield
Calhoun
Clarendon
Williamsburg
Aiken
Orangeburg
Georgetown
Barnwell
Bamberg
Berkeley
Dorchester
Allendale
Colleton
Hampton
Charleston
Beaufort
Jasper
30mi

Second COVID-19 Phase

Data Sharing and Hospital Status

Data Sharing

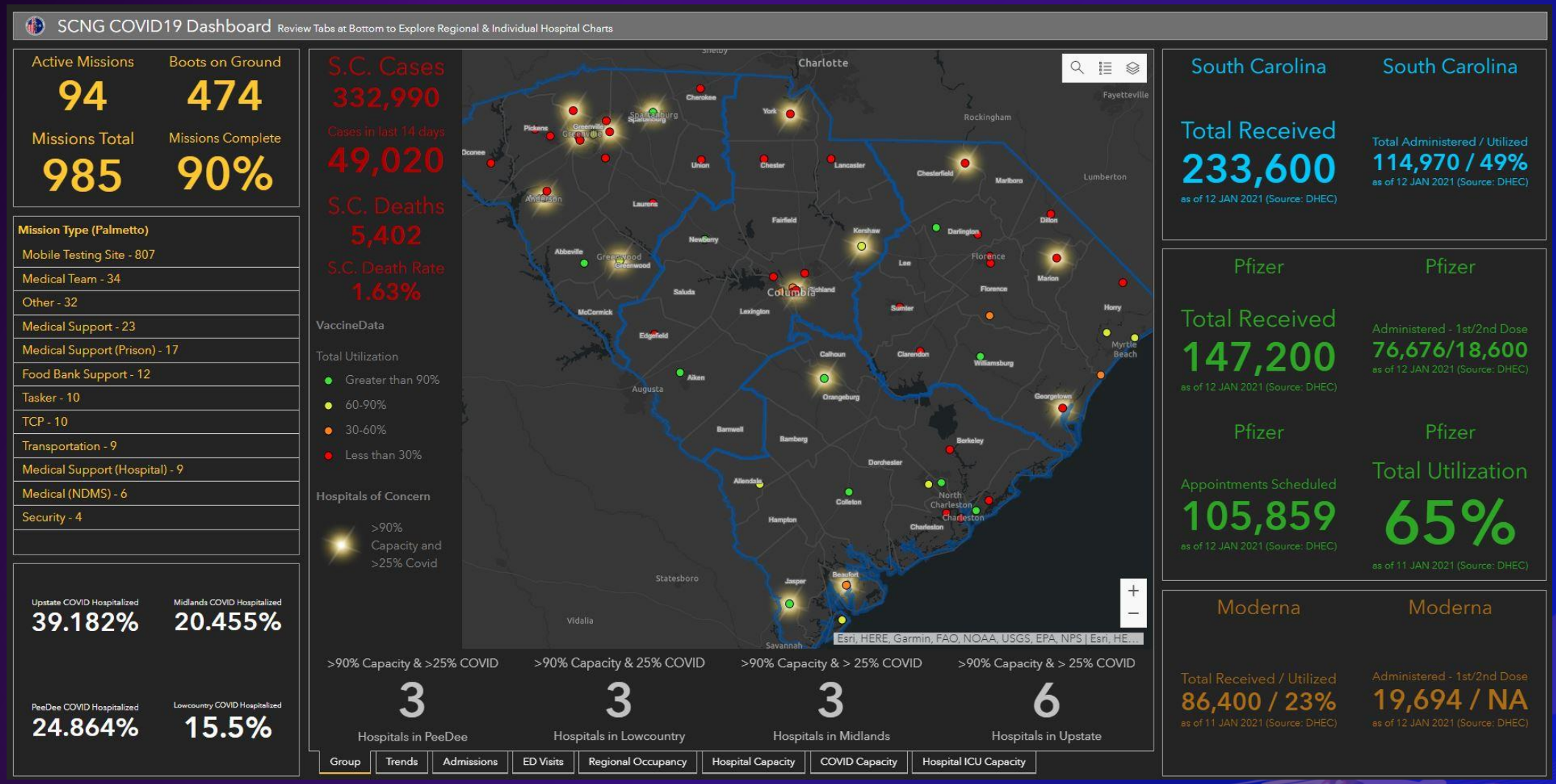
- Second phase began in June 2020
- Data sharing challenges
- Data sharing solutions

Key Partners

- The SC National Guard
- SC Emergency Management Dept.
- SC Dept. of Health and Environmental Control

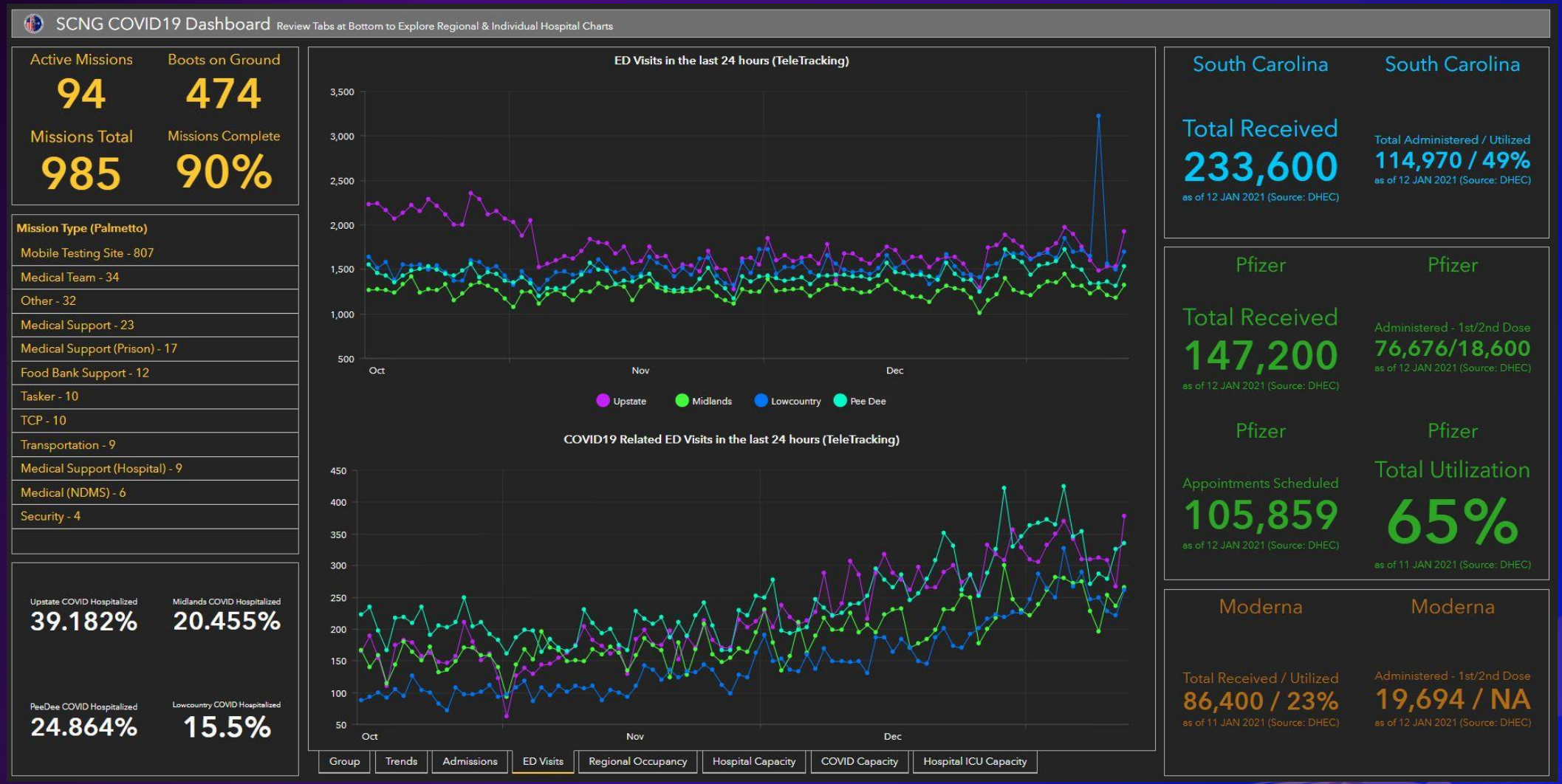
ArcGIS COVID-19 Dashboard 2.0

January 11, 2021



ArcGIS COVID-19 Dashboard 2.0

January 11, 2021



ArcGIS COVID-19 Dashboard 2.0

January 11, 2021