NATIONAL MESONET

Launched over a decade ago, the National Mesonet Program (NMP) team has grown to more than 50 partners and—with your help—will continue to increase in scope and impact in the years to come. Working closely with their National Weather Service (NWS) regions and Weather Forecast Offices, team members work to ensure their data is incorporated into daily NWS operations and that opportunities for improved collaboration and new data sets and types are continuously explored.

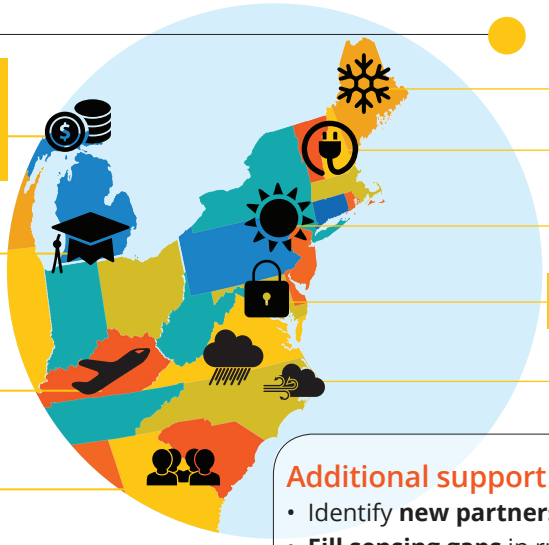
NWS Eastern Region

NMP Private Sector Partners: Advanced Environmental Monitoring, WeatherFlow, FLYHT, Weather Telematics, Sonoma Technology, L3Harris, Davis Instruments, Radiometrics, Synoptic Data PBC, Global Weather Corporation, FlightAware

NM Education Partners: UMass, Univ. at Albany, Penn State, Rutgers, Univ. of Delaware, NC State Univ., Mount Washington Observatory, Coastal Carolina Univ., Univ. of Vermont

Large concentrations of **transportation** and **economic activity**

Nation's most **densely-populated** region



Crippling **winter** storms

Very high **energy costs**

Intense **summer convection** impacting the nation's **busiest air corridors**

Large concentrations of **national security** assets

Major coastal and inland **flooding**, **hurricanes**, and **nor'easters**

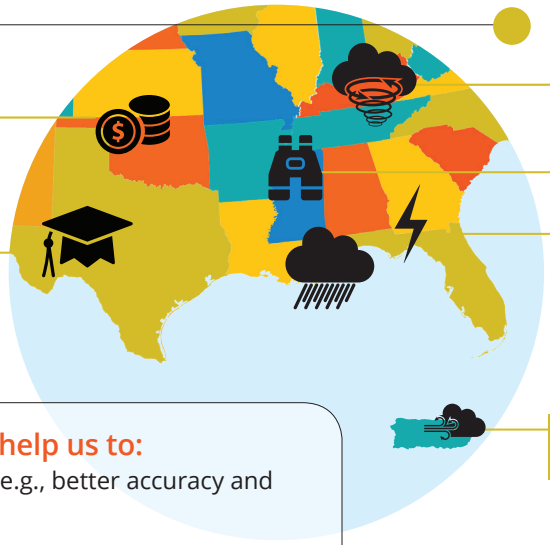
Additional support for NM will help us to:

- Identify **new partners** and assets
- **Fill sensing gaps** in rural areas
- **Reduce impacts** on agriculture, energy efficiency, and emergency response
- Integrate increased **marine weather observations** to improve Numerical Weather Prediction forecast performance

NWS Southern Region

NM Private Sector Partners: Advanced Environmental Monitoring, WeatherFlow, FLYHT, Weather Telematics, Sonoma Technology, L3Harris, Davis Instruments, Radiometrics, Synoptic Data PBC, Global Weather Corporation, FlightAware

NM Education Partners: Univ. of Florida, Univ. of Georgia, Univ. of Alabama at Huntsville, Univ. of S. Alabama, Mississippi St. Univ., LSU, Texas Tech Univ., Univ. of Oklahoma, New Mexico St. Univ.



Region most affected by **tornadoes** and related **severe weather**

Mountain terrain and forests make detection of localized severe weather difficult

Emerging "**Dixie Alley**" (Eastern TX to GA) has:

- Many strong and long-tracked **tornadoes**
- **63%** of the nation's overall tornado-related **fatalities**
- Many heavy **precipitation** events

Puerto Rico/U.S. Virgin Islands: **extreme impacts** from **hurricanes** and **flash flooding** events

Additional support for NM will help us to:

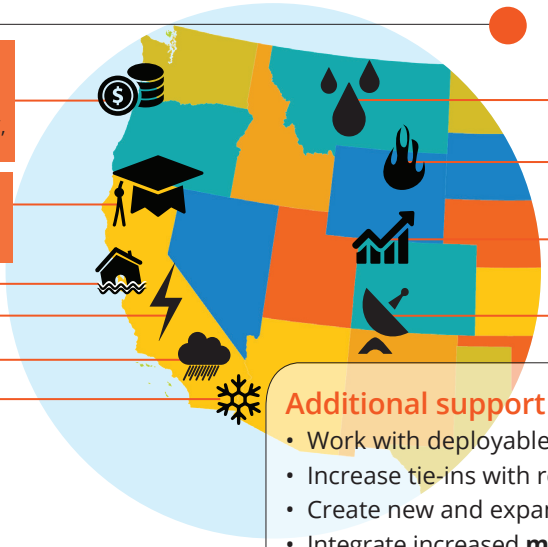
- Improve severe weather **detection** (e.g., better accuracy and lead time for warnings)
- Introduce **new technologies**
- Identify **new partners** and assets
- Support targeted **installations**
- Integrate increased **marine weather observations** to improve Numerical Weather Prediction forecast performance

NWS Western Region

NM Private Sector Partners: Advanced Environmental Monitoring, WeatherFlow, FLYHT, Weather Telematics, Sonoma Technology, L3Harris, Davis Instruments, Radiometrics, Synoptic Data PBC, Global Weather Corporation, FlightAware

NM education partners: Washington St. Univ., Univ. of Utah, Utah St. Univ., Univ. of Montana, Univ. of Arizona, Desert Research Institute

All types of **weather extremes:**
- Coastal flooding
- Monsoons
- Droughts
- Intense thunderstorms
- Heavy snowfalls



Heavily **water-dependent**

Extremely susceptible to dangerous **wildfires**

Rapid (business and population) **growth**

Complicated terrain = large **gaps** in weather **radar coverage**

Additional support for NM will help us to:

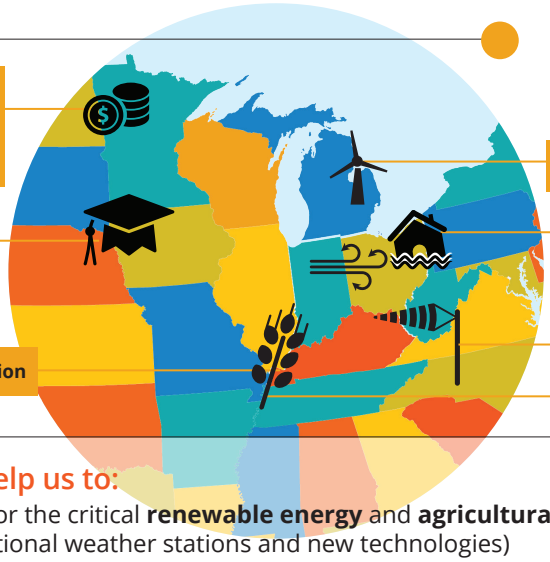
- Work with deployable radars to **fill coverage gaps**
- Increase tie-ins with regional **hydrological sensor** networks
- Create new and expanded **partnerships**
- Integrate increased **marine weather observations** to improve Numerical Weather Prediction forecast performance

NWS Central Region

NM Private Sector Partners: Advanced Environmental Monitoring, WeatherFlow, FLYHT, Weather Telematics, Sonoma Technology, L3Harris, Davis Instruments, Radiometrics, Synoptic Data PBC, Global Weather Corporation, FlightAware

NM Education Partners: Univ. of Wyoming, Colorado St. Univ., North Dakota St. Univ., South Dakota St. Univ., Iowa St. Univ., Univ. of Nebraska, Kansas St. Univ., Univ. of Missouri, Univ. of Illinois, Indiana Univ., Purdue Univ., Michigan St. Univ., Minnesota DNR, Western Kentucky Univ.

Home to major portion of U.S. **agricultural production**



Important and growing **renewable energy** sector

Subject to **extreme weather** conditions

Sensing gaps remain:
- Monitoring boundary level conditions critical to **wind energy**
- Density and quantity of stations required to support **precision agriculture**

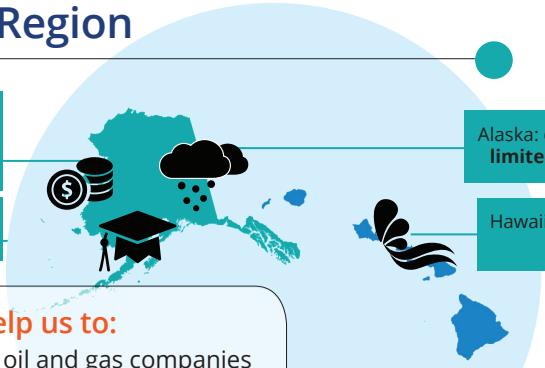
Additional support for NM will help us to:

- Support **tailored sensing programs** for the critical **renewable energy** and **agricultural** sectors (including leveraging non-traditional weather stations and new technologies)

NWS Alaska and Pacific Region

NM Private Sector Partners: Advanced Environmental Monitoring, WeatherFlow, FLYHT, Sonoma Technology, L3Harris, Davis Instruments, Synoptic Data PBC, FlightAware

NM Education Partners: University of Alaska Fairbanks, University of Hawai'i at Mānoa



Alaska: **extreme weather** conditions, **long distances**, and **limited infrastructure** make every observation precious

Hawaii: more moderate, but a **delicate balance** between atmosphere and the vast Pacific Ocean

Additional support for NM will help us to:

- Identify **new local partners** (including oil and gas companies and other private sector providers)
- **Fill sensing gaps**
- Introduce **new technologies**
- Integrate increased **marine weather observations** to improve Numerical Weather Prediction forecast performance

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