Climavision
RADAR AS A SERVICE

MINNESOTA

We Didn't See It Coming.

The Problem: Weather Gaps

Radar gaps impact us all. While we have a federally owned and operated backbone weather radar network in the US, NEXRAD, it does not provide **complete** and **equitable** coverage in the lower levels of the atmosphere, leaving people and property vulnerable to volatile weather that seemingly pops up out of nowhere. In many cases, people don't even know what's coming until they're feeling the impacts. This problem is known as a "weather gap."

Weather gaps are nothing more than a physics problem. The earth is curved and radars operate at a slight tilt, so the further you are from a NEXRAD radar, the higher it is looking over your head. Without new observations, radar data for these areas is from thousands of feet above the ground - meaning forecasters, meteorologists, public servants, and residents don't see the full weather picture and can't prepare quickly or accurately.

Weather gaps disproportionately impact rural populations, businesses, and diverse and vulnerable populations such as senior citizens and low-moderate income families. Shockingly, over 130-million Americans live in a low-level weather gap, approximately 2.5 million of which live in Minnesota.

The only solution for weather gaps is to install new weather radars to observe low levels. Speed, cost, and expertise have been the main roadblocks for accelerating gap-filling sensors.

Fast, Affordable, Comprehensive Solution

We've got a sense of urgency and we're on a mission to fill every gap in the country with a strategically placed supplemental weather radar - about 200 radars to be exact. These radars will supplement the backbone network and provide real-time, needed observations so that there is full visibility into weather patterns from the ground up - from coast to coast - and beyond.

STATE STATS

>$1B Loss

As of November 1, 2024, there were 24 confirmed weather/climate disaster events with losses over $1 billion each in the United States. These events included 17 severe storms, 4 tropical cyclones, 1 wildfire, and 2 winter storms. These events resulted in 418 deaths and significant economic impacts to impacted areas.[1]

>130M Americans in Radar Gap

An estimated 130-million Americans live directly in a low-level radar coverage gap. Many of these gaps impact rural, underserved, and vulnerable populations.[2]

~62M Property Damage

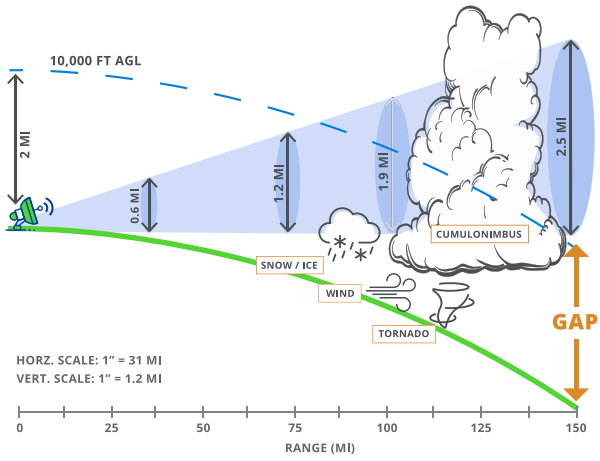
Between 2022-2023, Minnesota had approximately 62M in property damage due to severe weather.[3]

~2.5M in Low-level Gaps

Approximately 2.5 million Minnesotans now live in a low-level weather gap and are vulnerable to undetected severe weather.[4]

1. National Center for Environmental Information.
2. US Census Data 2020. 3. NCEI. 4. US Census Data 2020.

Why Radar Coverage Gaps Exist



Our Business Model

Ad hoc or one-off solutions often fail because of ownership, expertise, and funding challenges. We take these burdens on - ownership, installation, maintenance, scientific quality controls, and integration with federal partners - so that users only worry about one thing - getting the data they need to respond to incoming weather fast.

Much like a software subscription, we provide users a data feed in their preferred platform or one of ours, through Radar-as-a-Service - which provides the benefits of a weather radar, at a fraction of the cost.

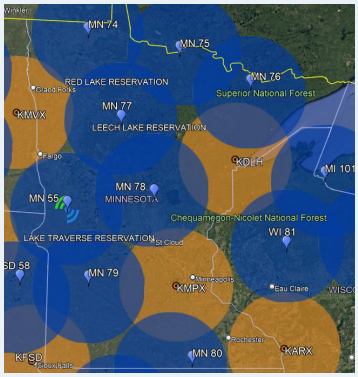
Minnesota Investment

We're installing up to 8 radars in the state. The first system is already online in Wendell, MN and Climavision expects to install 4 more systems in 2025 to complete Phase 1 of the state network rollout. The remaining Phase 1 systems will be located in or near Faribault Co, Kandiyohi Co, Crow Wing Co, and Beltrami Co. The last 3 systems, Phase 2, will be complete by the end of 2026 with locations in or near Roseau Co, Koochiching Co, and Lake Co. Each radar covers a 60-mile range, operates 24/7, and can be integrated into existing dashboards for key agencies, such as DPS, MnDOT, MDA, MPCA and county or city operations. The data can also be displayed as a MOSAIC on a public website.

Federal Collaboration

Climavision is working closely in partnership with the National Oceanic and Atmospheric Association (NOAA) and its sub-agencies, including NSSL and the National Weather Service, to enhance weather forecasting capabilities. NOAA has officially recognized Climavision's supplemental radar network as an integral part of the Radar Next initiative, effectively positioning it as a "Radar Now" component within the larger vision. This data has undergone rigorous evaluation by trusted weather agencies through an ongoing cooperative research and development agreement (CRADA) with the NSSL, which was just extended for another 5 years. Through the success of this partnership, data has been provisioned to the NWS through the National Mesonet Program and proven through operational access for meteorologists at twenty Weather Forecast Offices (WFOs) across the Central, Eastern, and Southern regions of NOAA's National Weather Service, where it is used to support watches, warnings, and alerts. Additionally, the November 2023 NOAA Science Advisory Board (SAB) Report on Radar Gaps, prepared by the Environmental Information Services Working Group (EISWG), highlighted Climavision's achievement of installing nearly 30 radars in just two years, further underscoring the company's significant contribution to advancing radar capabilities. As Climavision's network continues to scale, the company will continue to work with federal agencies to scale their access as well.

Filling Radar Data Gaps in Minnesota



Circle represents coverage below 4000ft

NEXRAD coverage Climavision coverage

Minnesota State Access Structure

Authorized Access

- **Up to 4 state agencies - more can be added on request** (EMA, Transportation, Ag, Air Quality, Water, Conservation)
- **All state and local public safety officials** (Local county emergency managers, PSAPs, Sheriff's offices, storm spotters)

*NWS integration handled separately through National Mesonet Program

Integration Options

- **GIS Dashboards** (i.e., ESRI, ARCGIS, etc.)
- **White label desktop and mobile application**
- **GR Analyst**
- **Custom plumbing into existing dashboards***

*3rd party vendor integration is possible, but may be subject to vendor's engineering fees.

Cost

- **Year 1: $1,270,000 per year subscription for access to 5 radars for up to 1,000 users and a public mosaic.**
- **Year 2 and on: $2,000,000 per year subscription for access to all scheduled radars, a total of 8 systems, for up to 1,000 users and a public mosaic.** (Radar-as-a-Service)

*Price is all in - no additional fees such as maintenance, parts, etc.

Compared to Radar Ownership

- **$3-5m capital investment per system**
- **$1m/yr ongoing maintenance, operations, expertise, parts per system**