FORMAL TESTIMONY OF

Barry Lee Myers, CEO
AccuWeather, Inc

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A Hearing on: *Forecasting Success: Achieving U.S. Weather Readiness for the Long Term*

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Chairman Begich, Ranking Member Rubio, and distinguished members of the Subcommittee: I appreciate the opportunity to testify today on this important issue.

My name is Barry Lee Myers and I have been with AccuWeather since it was founded by my older brother in 1962.

I served as Executive Vice President and General Counsel for many years and in 2007 became the Chief Executive Officer.

The 50 year odyssey from the founding of AccuWeather until today's hearing is a study in the evolution; and a story whose pages continue to be written daily.

On average, the United States experiences 100,000 thunderstorms annually, resulting in more than 1,200 tornadoes. The tornado is the most violent storm on Earth.

The United States has more tornados than any nation; in fact, we have four times the number in all of Europe.

We also report more violent EF4 and EF5 tornadoes than anywhere else.

When hit by a powerful tornado, often entire buildings are destroyed . . . sometimes literally wiped off the face of the earth.

We saw the devastating and heart sickening results again in 2013.

The Magic of Weather Forecasting.

Meteorology is a rewarding field and also, like the job of first responders, one often filled with gratitude and horror, all at the same time.

Those in the field of meteorology have the ability to tell, with significant accuracy, what the future will hold.

We can tell ***what*** the temperature will be tomorrow or next week and whether it will be sunny or cloudy.

We can tell ***whether*** in the next 30 minutes, people are likely to be killed if they continue to stand where there are – in the path of a tornado or tsunami.

Based on seeing the future, one can decide whether to start planning to move the Sunday wedding indoors or under a tent. One can decide to take shelter, or leave town, and save a life.

We have a Crystal Ball that allows us to know the future. It is a privilege to have it. And it is a responsibility to continually improve the tools we have, and might develop, to improve the clarity of that crystal ball, to save lives and help people prosper.

The crystal ball in am referring to is not actually round and clear; and when it is seen, one may not realize they saw it.

But there is a magic in meteorology.

From Government Operation to a Partnership Enterprise

This year marks the 50th Anniversary of AccuWeather's creation. That is interesting in light of how far the weather enterprise, and especially the weather industry, has come.

I will tell you that when the first customer of the company that would grow to be AccuWeather signed up for $50 a month in 1962, meteorology was still in relative infancy.

And what would become the American Weather Enterprise – consisting of the U.S. Weather Bureau (later NOAA's National Weather Service), academic and research organizations, and America's weather industry – was not a full concept in 1962.

TIROS-1 was launched just two years earlier and had operated for 78 days. And the first recorded weather radar observation occurred only 9 years before.

Work building AccuWeather began around my older brother's kitchen table with a single rotary dial telephone. Joel Myers made perhaps 10,000 calls to secure the first dozen or so customers in the first two years.

So it would seem that the competitive landscape was wide open for those who would make the effort.

But that was not so.

At the time, weather forecasting was more art, than science, and even a forecast for a heavy snow storm just hours away might result in a sunny afternoon.

And a tornado might form at night and in the darkness, unknown to those in its deadly path – as no radar was there to help a forecaster spot a hook echo signature.

A storm like Hurricane Sandy, without a weather satellite, would have thought to have moved away out into the ocean and dissipated, only to return as a deadly surprise. It would have been like the great Galveston hurricane of 1900 that no one knew was coming, because there were no eyes in the sky.

In 1962, most of the weather information reaching business, industry, the media, and the public came from the United States Weather Bureau – the government.

So, the idea of starting a weather company, literally on pocket change, and competing with the government's free services, is the story of AccuWeather . . . and American's weather industry in general.

When Joel and I were thinking through the weather company concept in those early years - probably 95% of all the weather information reaching the public came from the government.

Government employees did the weather broadcasts on radio.

Government employees did the newspaper weather maps and charts for The Associated Press and many newspapers.

Government employees consulted free with anyone who called them on the phone or stopped into their offices, and provided special scheduled services to large and small companies.

At the same time, as our business struggled to grow through the 1960s and 1970s, sometimes government employees discouraged potential customers from using our services, calling them up and offering services for "free," at government expense.

It was like the Post Office and Federal Express, except it would be like the Post Office offering to carry every letter without postage, and every package for free. Why would someone use FedEx at all under those circumstances.

Despite that, it is estimated today, that 95% of the weather information reaching business and industry, the media, and the public comes - not from the National Weather Service - but from AccuWeather and other members of America's weather industry.

This is a complete reversal from 1962.

Basis for America's Weather Success

In 1994, I was asked to offer thoughts to the U.N.'s World Meteorological Organization about weather information and its use. What I said was, in part:

- Weather is a world-wide resource.
- In gathering weather information, time is of the essence.
- In analyzing it, and in distributing the results of that analysis of weather observations, time is critical.
- And, in getting this analysis into the hands of those who need it to protect life and property, not only is time critical, but the very nature of the message and its

understandability and related action-ability needed by those receiving it, is paramount.

In the United States, the National Weather Service has a specific role to play and America's weather industry has a specific role to play. Each have important and complementary roles to play. It is a unique environment and special partnership for the benefit of the public.

The laws of the United States do not hamper or restrict the nature of the private sector. In fact, unlike many other countries, they encourage private sector and especially weather industry activities. This has been a huge benefit to the nation.

The United States government collects, and disseminates data from local and remote sensor platforms, runs forecast models, and prepares and makes special warnings and also general public forecasts.

Weather companies also collect and disseminate data, and make weather forecasts, some specific and tailored, prepare and make special warnings and also general public forecasts.

Weather companies also develop communication methods designed to move weather information as quickly and as understandably as possible to the end user.

Weather companies are part science company and part media and communications company.

In fact, the government and the weather industry work together, to carry out these functions.

This joint system of public and private cooperation helps to save countless lives and prevent hundreds of millions of dollars in property damage per year in the United States – in fact it has a name – The Public/Private Partnership.

This cooperative effort, better than anywhere else on earth, is dedicated to the proposition that weather information is (1) highly time sensitive and (2) a perishable scientific commodity, which, if utilized quickly and communicated to people who are in a position to act, effects real economic efficiencies, saves lives, and, results in benefit to the nation.

Another guiding principle is that all scientists should be free to access scientific data so that they may render timely viewpoints and opinions on what future weather may be – that is create forecasts and warnings.

This freedom of access to scientific data and its free use for the benefit of society is typically American.

In the United States this "free and open access" is founded upon principles having to do with free speech and freedom of information.

These comments seem self-evident to many. In making remarks to the World Meteorological Organization, almost 20 years ago, comments about free and open access did not seem self-evident to many of the hundreds in the audience from around the world.

The weather industry in the United States was born of the concept of "free and open" availability of weather information.

It has led the world as a model of growing success, transitioning from a government agency "doing it all," at the end of World War II, to massive infusion of weather into every American's life through companies like AccuWeather - and a growing global presence by American companies as the preferred suppliers of weather to the world.

It has been a transition of work from the government to private industry involving no letting of government contracts, no industry subsidies, and no cost to the government.

In fact a tax paying industry creating perhaps tens of thousands of jobs - has been born.

It truly has built on a concept that if information is free for all, we should leave the rest to ingenious, innovative, and entrepreneurs, who would find ways to make a viable industry.

By the end of 2013, figures suggest that American Weather Companies will have weather apps and access portals on or accessible from perhaps two billion digital devices worldwide.

People who had no weather forecast of merit for 25 minutes ahead, now have forecasts, on an hour by hour basis, for 25 days ahead on AccuWeather.com.

People who had no warnings for severe and deadly weather, now can use at a device that looks like something they would have used to ask Scotty to beam them up, that contains more information than Star Trek creators ever imagined.

These comments seem self-evident to many today.

In speaking at the WMO in 1994 if I had told anyone that by 2008 a private weather company in Pennsylvania would tell a manufacturing facility in Mississippi, a thousand miles away, 21 minutes in advance, that a severe tornado was heading right at it and they needed to shelter their people – and that the private weather warning would save 88 lives in a single electronic message – it would not have been believed.

In 2005 the U. S. Congress Bi-partisan Committee on the review of Hurricane Katrina cited AccuWeather saying "AccuWeather issued a forecast predicting the target of Katrina's landfall nearly 12 hours before the NHC [National Hurricane Center] issued its first warning, and argued the extra time could have aided evacuation of the region."

I am not telling you this to place AccuWeather in the spotlight. My friends at The Weather Channel and at many other non-governmental organizations have this and other important capabilities.

Everywhere within the American Weather Enterprise there are meteorologists, scientists, researchers, and professionals of all kinds of equal merit.

But the government is uniquely positioned to ensure and enhance the provision of weather data and the issuance of warnings for the public aimed at the protection of life and property.

These activities also require research and development, transfer of knowledge, technologies and applications to other government agencies and the private sector.

And this is needed with regard to advanced radar technologies, aerial observing systems, high performance computing networks, advanced forecast modeling and other government-appropriate activities.

We all need to protect this core functionality and the research by the government that keeps the entire American weather enterprise ahead of the curve.

America's Unique Weather Enterprise

If we want to successfully approach the present problems the weather enterprise may face we should understand that the huge success we have had, did not occur serendipitously.

It may have followed a sometimes indirect path, but the path as supported through decades of sustained effort and shared vision in the weather enterprise.

AccuWeather's Mission Statement begins: "To save lives, protect property, and help people prosper . . . ." The mission is substantially similar to that of NOAA's National Weather Service.

In 1980 the paperwork Reduction Act was passed. The law stated its purpose was to, among other things ensure the greatest possible public benefit from information created, collected, maintained, used, shared, and disseminated by or for the Federal Government.

It also said one of its purposes was to provide for the dissemination of public information on a timely basis, on equitable terms, and in a manner that promotes the utility of the information to the public and makes effective use of information technology.

In follow up to the law, the Office of Management and Budget issued Circular A-130, which was updated over the following decades.

The Circular is lengthy, but states in part:

- The free flow of information between the government and the public is essential to a democratic society. It requires dissemination of information on equitable and timely terms.
- It states the government must avoid establishing, or permitting others to establish on their behalf, exclusive, restricted, or other distribution arrangements that interfere with the availability of information dissemination on a timely or equitable basis.
- It declares agencies shall avoid establishing restrictions or regulations, including the charging of fees or royalties, on the re-use, resale, or re-dissemination of Federal information, setting user charges at a level only sufficient to recover the cost of dissemination, but no higher.

Under Section 105 of the Copyright Act of the United States, in general, government information is not entitled to domestic copyright protection declaring it free – domestically.

The 1991 NWS Public Private Partnership Policy was an early cooperative attempt to implement concepts from the Paperwork Reduction Act, Circular A-130 and issues relating to the growing weather industry.

About ten years later the National Research Council was requested by the National Weather Service to undertake a study of the status of the enterprise and the *Fair Weather Report* was issued in 2003.

This led to the AMS Commission on Weather and Climate Enterprise.

And, the Fair Weather Report led to a new partnership policy issued by NOAA governing its relationship with America's weather industry.

In the main policy section, the first sentence says: "NOAA will adhere to the policies contained in the Paperwork Reduction Act, OMB Circular A-130 and other relevant laws."

The second sentence says: "These policies are based on the premise that government information is a valuable national resource, and the benefits to society are maximized when government information is available in a timely and equitable manner to all."

It goes on to endorse "Open and unrestricted access."

And further that NOAA will promote the open and unrestricted exchange of environmental information worldwide.

NOAA also states it will avoid duplication and competition in areas not related to the NOAA mission.

So today's policies trace their origins to the core nature of the republic and critical pieces of federal legislation and rules long a part of the fabric of the country's legal structure.

Building on this, NOAA and NWS have developed formal and internal directives defining what they will do and not do and specifically stating where government personal will defer to the America's weather industry.

Even the Weather Ready Nation program now specifically endorses the role of America's weather industry and states that the requirements and activities of Weather Ready Nation participants may be fulfilled through arrangements with America's weather industry.

Recently, the National Academy of Sciences report "*Weather Services for the Nation: Becoming Second to None*;" and, the National Academy of Public Administration report *"Forecast for the Future: Assuring the Capacity of the National Weather Service"* have been published. Both support the primary tenant that reflects the reality of the state of the Weather Enterprise and the continuing robust growth of America's weather industry.

Essentially, in a nutshell, they state that growing the "secondary value chain" in the weather enterprise is not a choice for the government; it is a market reality which benefits the nation and needs to be unconditionally supported and accelerated by NOAA's NWS.

Methods of doing this include, but are not limited to, developing, acquiring, supporting, maintaining and making available core infrastructure; data, models, warnings, and support for the public and the weather industry. This leverages government investments in high multiples.

A recent example of the recognition of this important concept is found in the Open Data Executive Order signed by President Obama on May 9, 2013, which stated:

"For example, decades ago, the Federal Government made both weather data and the Global Positioning System (GPS) freely available to anyone. Since then, American entrepreneurs and innovators have used these resources to create navigation systems, weather newscasts and warning systems, location-based applications, precision farming tools, and much more."

Interesting, the effective use of the nation's weather data also depends on the GPS system to assist mobile devices locate themselves to provide their users with weather information geared to their location, because all weather is local in its affect to the location of people in its greatest impact.

Nature of America's Weather Industry Success

America's Weather Industry is the most robust weather industry existing in the world today.

AccuWeather and other companies in the weather industry are out of the kitchen, and into every ones garage, home, television, radio, newspaper, internet, and mobile device.

Weather is on the gas pump where you fuel your car or truck.

It is on the electronic signage in your doctor's office or retail store.

It is on the counter of the check-in desk at the hotel where you stay.

If products travel by rail or truck, America's weather industry helps get them to the nation.

If food is served, the weather industry helped grow it and assisted the commodities traders who transacted in it.

In banking or financial services the industry helps customers be more efficient and better able to pay their loans and increase their deposits.

In insurance, the weather industry helps in planning for loss reserves and adjusting customers' claims after a weather-related loss.

Weather is about the national economy.

No matter the business, the weather industry can protect property, increase efficiencies, and save lives.

The weather is also the ***news every day.***

It is the single most accessed piece of information watched, listened for, or selected on radio, television, the wired web, and mobile devices.

You can watch local weather channels.

You can access the AccuWeather forecast on AccuWeather.com from anywhere on earth.

AccuWeather and other weather sources are available on just about any mobile phone or other mobile device you carry and your friends and family might carry.

And the AccuWeather mobile web site is available globally and in 48 languages and a hundred dialects.

You find it as a widget you can click on, on the screen of your new television set.

So weather is a media phenomenon, and it drives weather companies that wish to be successful - to become media companies - with weather as their core information.

While the weather may be interesting to many, and of economic importance to others, accuracy of weather information is the most important secret sauce of the weather - for businesses, government, and the public.

And the secret sauce potentiating accuracy – is communication.

The most accurate forecast or warning, not communicated in an effective and timely way, not understood and not leading to action, is merely a theoretical exercise.

As a result, many weather companies are media companies empowering all weather information to be actionable and empowering businesses and people who receive it to use it to their advantage.

So, it is estimated that over two billion electronic devices world-wide can access the information from America's weather companies. I know that AccuWeather alone serves up about one quadrillion separate "pieces" of data annually to global users.

And jobs continue to be created in this and the related device and communications sectors to support this growth. Many of these are quality American jobs.

But the fact that America's weather industry is the most robust on the world today does not mean the American Weather Enterprise has the best tools at its disposal that is possible.

There is room for enhancement, there is room for improvement.

And improvement in the field of meteorology means saving lives and property.

Success Stories from the Partnership

Often warnings are issued by the government for tornados.

Usually community-warning sirens go off.

On February 5, 2008, at about 5:37 PM, a Caterpillar company plant in Oxford, Mississippi, was bustling with activity, as 88 people were at work.

No government tornado warning extended to the location of the plant.

No warning siren was sounded.

In the winter darkness miles away, a tornado dipped from the sky, unseen by the naked eye, and began racing toward the plant.

Twenty-one minutes later the violent tornado struck the plant with a horrifying fury ripping and chewing the plant to pieces.

Steel girders twisted and collapsed, metal walls shredded.

All that debris fell in to the space people occupied inside.

The calm orderly work environment was suddenly a violent swirling mass of shrapnel, totally exposed to the monster storm.

It left a picture of a plant perhaps hit by an aerial bomb or a terrorist attack. People would be lucky to have survived.

As the monster tornado formed in the darkness that winter night and began to dip from the sky, and started its race toward the people in the Caterpillar plant, a meteorologist at our office in Wichita was at work.

He saw a tornado signature on a radar image on a computer screen. He didn't just "happen" to see it. He was looking for it.

He knew what circumstances could lead to a tornado that night.

He had cutting-edge computer tools, developed by, and proprietary to AccuWeather, that notified him to be on guard.

He had access to the government's Doppler radar system; that did not exist in 1962 when AccuWeather began.

At another time, or in another place, he might have looked on in horror wondering what humanity the monster storm would claim.

Instead, he pressed a key stroke and an AccuWeather computer sent an electronic message to another computer at the Caterpillar plant in Oxford, Mississippi.

A human at the plant was required to confirm receipt of the message.

In fact, a person-to-person telephone contact was also immediately established with the plant's safety director.

The message was clear; a tornado was forming about 30 miles southwest of the plant, and may be at or near the plant in about 22 minutes.

The first images of the destroyed plant were seen by the people who worked at the plant, not as they watched the horror around them, not as they and their co-workers were contemplating death, but as they emerged from their tornado shelter, after the tornado had done its destructive work and moved on.

Not a single person was injured, not a single person died. They all went home - shaken, but safe.

Hundreds of miles away, an AccuWeather meteorologist also went home - shaken, but safe.

He went home knowing he had just saved the lives of scores of people, and the misery that death and injury would have brought to their families.

The government/private sector collaboration worked. A government radar network and a private weather company, working together, saved lives.

Why Support the American Weather Enterprise?

Questions arise as other governments in other nations invest in improved modeling both in accuracy and timeliness.

This means others can forecast better for American shores than America itself.

Of special focus was the ECMWF (so called European Model) during Hurricane Sandy, which model did a better job at some points in the storm track, than the U.S. models did.

This gap presents issues from an economic, safety, and national security standpoint.

From an economic standpoint foreign companies and investors could potentially get the jump on Americans relative to weather events occurring on American shores.

Additionally, as America's weather industry continues to expand worldwide, restricted access to quality models could place it in a position of having second class primary information.

And interestingly, many foreign governments do not look at the weather industry as their partners, like we do here in America. And so those countries do not get to leverage the value of their government investment, like we do here. So a dollar spent on improved modeling, for example, in America, has greater value to our economy than a dollar spent by other governments.

Relying on other countries, for better weather models, places America in a weakened position in time of national and international crisis. And we cannot get full access even to the European Model from what my government sources tell me.

Weather infrastructure and related research and development, and operation of core infrastructure remain a matter of national urgency today.

They are matters of national security.

Many functions that were only government functions at the dawn of the development of America's weather industry 50 years ago – such as media weather forecasting, business targeted weather forecasting, and general public weather forecasting have been subsumed by America's weather industry.

Even some data sources such as mesonets and lightning networks have been taken under the wing of private sector entities. This is a positive trend saving government expenditures and we can expect to see privatization of other remote sensing platforms such as satellites.

The caution here is that privately developed data, in order to enter the core data set, needs to be publically available to all those who need it in the weather enterprise, if the government is to buy it and sanction it, to secure a common data set for the whole weather enterprise, lest we fragment the very uniformity of core data that drives the whole enterprise.

Much remains, and may forever need to remain, government functionality. But much has been converted to private sector activity and much will continue to migrate there.

So I entreat you to consider joining with me to support five primary tenets:

1. To empower and facilitate the American weather enterprise to achieve its full potential

2. To define the value chain of all parts of the American weather enterprise, as stated in the recent NAPA report, to ensure the American public is served with the best possible information employing the most cost efficient combination of private and public institutions.

3. To place special focus and funding on NOAA/NWS role as the builder of the nation's core weather infrastructure, core data sensing, core research and model development, operational modeling, public warnings for weather events that pose imminent threat to life and property, and working with and through America's weather industry, to achieve national and world-wide leadership in weather and weather media.

4. To focus federal support to ensure a legislative and budgetary agenda which makes maximum and optimum use of all parts, public and private, of the American weather enterprise.

5. And to encourage the execution of the aligned missions and roles through public and private partnerships based on principles that will drive continuing growth of the weather enterprise.

Thank you for your time.

END