



National Weather Service
Employees Organization

TESTIMONY OF JOHN WERNER

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Before the Committee on Science, Space, and Technology
United States House of Representatives
Hearing on the *Future of Forecasting: Building a Weather-Ready Nation on All Fronts.*
October 14, 2021

Chairwoman Johnson, Ranking Member Lucas and Members of the Committee - On behalf of 3,300 forecasters, hydrologists, physical scientists, technicians and support personnel at over 160 offices of the National Weather Service nationwide, I appreciate the opportunity to share their views about the current state of the National Weather Service. As you know, the employees NWSEO represents are the folks that are responsible for the actual preparation and delivery of the nation's weather forecasts, warnings and Impact-Based Decision Support Services (IDSS) that save lives, protect property and enhance the national economy, twenty-four hours a day, seven days a week, every day of the year.

Despite an ever-expanding mission, increasing decision support responsibilities, and growing frequency of flooding and hazardous weather events, *the National Weather Service has four to five hundred fewer employees than it did ten years ago.*

Most of our vacant positions are operational and classified as “emergency-essential.” These empty seats lead to serious consequences. The NWS conducts a Service Assessment after every major storm event where there were multiple fatalities or a major economic impact. Assessment teams, composed of experts from within and outside the NWS, generate a report that serves as an evaluative tool to identify and share best practices in operations and procedures, and to identify and address service deficiencies. *Service assessments conducted following thirteen major storms that occurred between 2008 and 2018 found that the ability of the NWS to protect lives during these major events was compromised due to already inadequate staffing at Forecast Offices or River Forecast Centers.*¹ For example, the Assessment of the NWS's response to

¹ Central U.S. Flooding of June 2008; Southeast U.S. Floods, September 18-23, 2009; Record Floods of Greater Nashville: Including Flooding in Middle Tennessee and Western Kentucky, May 1-4, 2010; Historic Tornadoes of April 2011; Missouri/Souris River Floods of May-August 2011; Middle and Lower Mississippi River Valley Floods of Spring 2011; Remnant of Tropical Storm Lee and the Susquehanna

Hurricane Matthew found that “even though significant effort was made to deploy additional personnel to WFOs, the service assessment team found that these deployments fell short of meeting operational needs. Lack of available staffing led to potentially dangerous forecaster fatigue and limitations to WFO IDSS efforts.”

The nation’s 122 Weather Forecast Offices operate 24/7, and most of the time have just two forecasters on duty. Thus, even with full staffing, there is usually only the minimal number of forecasters on duty to be alert for severe weather and to call in the additional staffing when it occurs. According to the National Academy of Sciences:

Though this works well in fair weather, it can become problematic in severe weather, particularly when events develop rapidly under seemingly benign conditions. While managers at individual WFOs generally plan ahead to add sufficient staff to cover forecasted dangerous weather situations, more innocuous weather scenarios that suddenly and unexpectedly "blow up" often lead to shortcomings that are directly attributed to having insufficient manpower. Several recent Service Assessments (e.g., NWS, 2003, 2009, 2010) illustrate the critical role that adequately enhanced staffing (or lack thereof) plays in the success (or weakness) of NWS performance during major events. Appropriate levels of staffing, beyond normal fair weather staffing, during major weather events, are critical for fulfilling the NWS's "protection of life" mission.

NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES, THE NATIONAL WEATHER SERVICE MODERNIZATION AND ASSOCIATED RESTRUCTURING: A RETROSPECTIVE ASSESSMENT, 60-61 (2012).

According to a study completed in 2015 by McKinsey and Co., the workload at most forecast offices exceeds the available meteorologist workforce. *Operations and Workforce Analysis Catalogue*, (September 2017) at page 18.

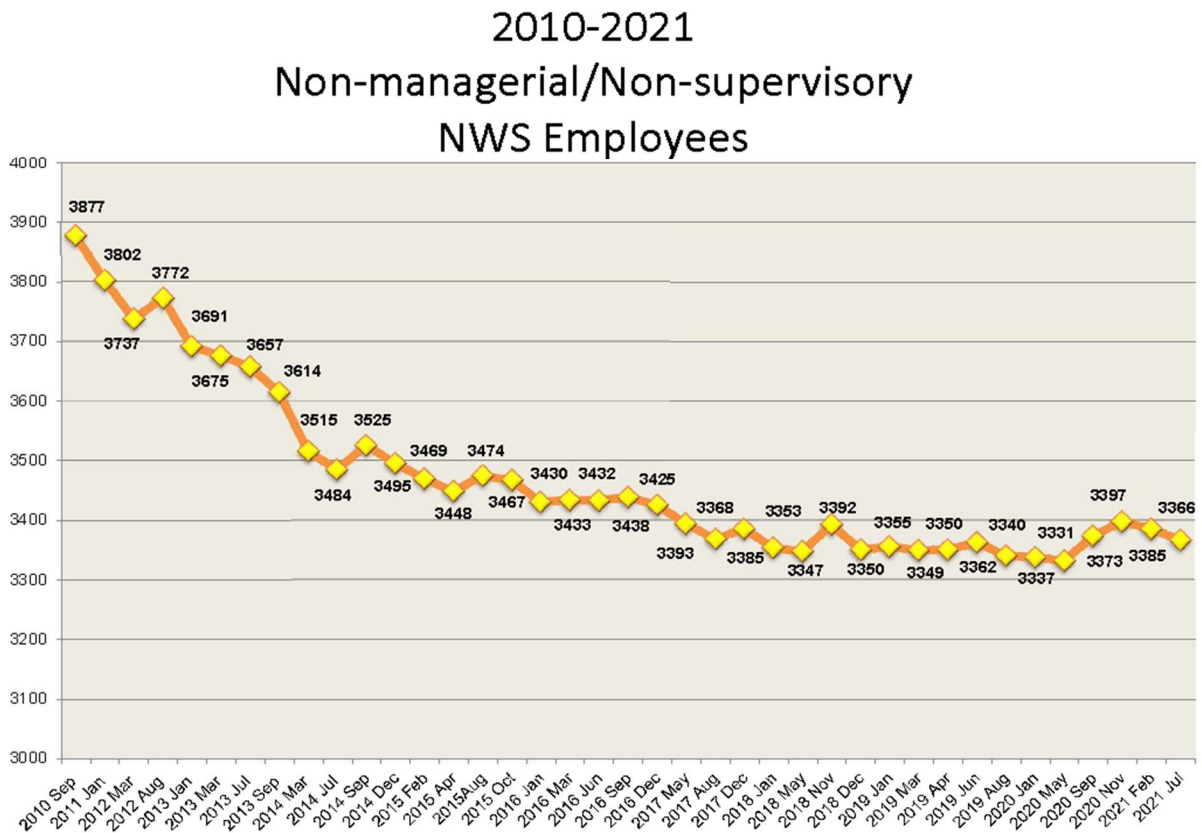
https://www.weather.gov/media/nws/OWA_Catalog_09072017.pdf.

In May 2017, the GAO released a study requested by Members of the House Science Committee which revealed that the vacancy rate in NWS operational units has reached a point where NWS employees are “unable at times to perform key tasks.” The GAO also found that NWS “staff experienced stress, fatigue and reduced morale resulting from their efforts to cover for vacancies” due to lack of time off and a loss of training. According to the GAO, NWS managers admit “that employees are fatigued and

River Basin Flooding of September 6-10, 2011; Hurricane/Post Tropical Storm Sandy, October 22-29, 2012; Historic South Carolina Floods of October 1-5, 2015; Historic Nor’easter of January 2016; October 2016 Hurricane Matthew; August/September 2017 Hurricane Harvey; 2018 Hurricane Florence and Hurricane Michael. These reports can be found at: <http://www.weather.gov/publications/assessments>

morale is low” and that employees “were demoralized because they had to cover the workload for multiple vacancies.”

Since the GAO and McKinsey studies were conducted, understaffing at the NWS has *not* improved. The following chart shows the number of non-managerial, non-supervisory employees over the past ten years according to data the NWS routinely provides the union:



According to the NWS, there were 592 vacant positions in 2015. Of that number, the NWS had appropriations sufficient to cover the salaries of 344 of those vacancies. *Operations and Workforce Analysis Catalogue*, (September 2017) at page 15. https://www.weather.gov/media/nws/OWA_Catalog_09072017.pdf. In May 2019, NWS Director Uccellini and Assistant Secretary for Environmental Observation and Prediction Jacobs testified that there were 434 funded vacancies in the NWS. <https://science.house.gov/imo/media/doc/Final%20NOAA%20HSST%20Weather%20Jacobs&Uccellini.docx.pdf> at page 11. However, the NWS now professes to have fewer than 100 funded vacant positions, even though there are no more employees on board now

than there were in 2015 or 2019, and even though Congress appropriated an additional \$20 million in funding for staffing this past fiscal year.

Although NOAA requested substantial additional funding for worthwhile initiatives in FY 22, the request failed to redress the longstanding understaffing of the NWS. Earlier this year, the Administration sought, and the House Appropriations Committee approved, an 11% increase in NWS funding for Operations, Research and Facilities for FY 22 - but not a single dollar was sought or approved to fill any of these vacant positions.

Appropriate staffing is key to our ability to continue to provide accurate and timely forecasts and warnings, and to meet the current and growing demands for our decision support services to critical partners in the emergency management community at all levels of government. The need for critical Impact-Based Decision Support Services is particularly acute at the local level where most of the key decisions directly affect people. FEMA provides assistance, but it is the local emergency managers and public safety officials who take the necessary actions, when required, to protect our communities. NWS forecast offices know their local, unique weather conditions and understand their community needs. These local connections are essential, and our partners need to be able to count on us informing them or alerting them so they can make the preparations necessary to mitigate the threat to the local communities.

NWSEO from the outset pushed the concept of IDSS and worked with NWS to develop Pilot Projects in 2012 to test these concepts. I initially Co-Chaired these efforts to get them started. NWSEO members also played a key role within the NWS in expanding IDSS concepts through key participation in the Operations and Workforce Analysis (OWA) study contracted to McKinney and Company in 2015/2016. From the feedback NWSEO has received from partners, IDSS has been a resounding success and demands for such services continue to expand rapidly.

Other factors that may hinder the building of a Weather-Ready Nation are the unequal distribution of experienced forecasters and the departure of employees due to the lack of mobility. This began in 2019 when the GS 5-12 Meteorologist Career Ladder Progression was implemented, and the NWS two to three-year meteorologist intern program was terminate. Prior to 2019, each shift at each of the 122 Weather Forecast Offices was typically staffed by a GS-12 Journey Level forecaster and a GS-13 Lead Forecaster. Entry level meteorologists were generally hired in as Meteorologist Interns for an apprenticeship that typically lasted two to three years before they were expected to bid on GS-12 Journey level positions, typically at other locations. When they completed their internship and were promoted to a GS-12, they were capable and fully responsible for issuing forecasts and warnings with minimal supervision. Meteorologists entering the NWS as Interns often accepted assignments to what they considered “less desirable” locations, knowing they could bid out for a GS-12 position in a few years at a more

favorable location. These employees became trapped at their current location when the system changed, because the NWS does not have a lateral transfer program. As vacant forecaster positions at other offices are filled, managers are discouraged from selecting current, experienced employees, rather than new hires from outside of the agency, even when there is a large experience gap in the office due to retirements and promotions. Offices that have experienced a large turnover during the past couple of years have lost a good deal of valuable and important forecaster experience. Where they used to typically have five or six fully proficient GS-12 forecasters, they now may have one or two, because these experienced forecasters are being replaced by entry level hires. This lack of experience may limit offices' capabilities until the new employees become fully proficient over two to three years. This deficiency could be remedied by considering experience and proficiency levels at offices when filling vacancies, and by allowing experienced, current employees with experience to transfer to locations where experienced forecasters are needed, without a pay grade penalty. Currently, in the rare event an experienced employee is selected on one of the external hiring announcements, their pay is reduced to the entry level grade for 90 days.

The NWS's recent efforts to reduce duplication of effort and unlock staff time in order to provide IDSS have not resulted in the anticipated time savings. One hypothesized time unlock is the use of the National Blend of Models (NBM) as a starting point for our gridded forecast database, with forecasters adding value through their local expertise, in collaboration with neighboring offices to retain consistency. We are unsure at this time how much of an eventual unlock this will be, if any. The concept and the work put into the NBM is ongoing and still evolving. Some of our offices are using it now to varying degrees, with many testing its performance in the extended forecast periods (e.g., days 4 -7) and assessing its strengths and weaknesses. Problems have been noted and solutions worked to improve the model's performance. We understand the NWS's goal is to have every weather forecaster start with the NBM in the believe that a having the NBM as the starting point will foster a more collaborative forecast process and allow forecasters to focus more on impactful weather events expected during the forecast period. We believe the challenge is to ensure the forecast is not degraded by the loss of local weather expertise that our experienced forecasters add to the process. This is one area where a more robust Operations Proving Ground (increased hardware/software, staff and perhaps additional facility space) could accelerate and enhance the testing and validating of model performance and forecast tools like the NBM before they are released to the field.

It is important we continue to invest in the enhancement of our research infrastructure within the NWS and NOAA. Scientific research and the transition of research into operations will ensure the enhancement of IDSS and warnings not just for today, but into the future.

The NWS's current information infrastructure has proven to be unreliable, with unexpected communication outages adversely and repeatedly impacting our ability to provide the level of weather, water and climate support our partners and the public are accustomed and entitled to. These outages tended to hit when communications were most needed and were so widespread at times, they made it into the national news cycle and major media outlets. We need to operate on a stable information infrastructure if we are to become a "Weather-Ready Nation on All Fronts." There were too many cases over the past couple of years where one of our critical operational or decision support tools failed. NWSEO is encouraged to see that the house appropriations recommend an increase in FY22 of close to \$37 million in funding for NWS Dissemination, but we need to do better.

Moving to a scalable, secure, commercial cloud type platform should decrease the stress on our current infrastructure, which tends to become oversaturated by increased demand during high impact environmental events, sadly failing when it is most needed. Accelerating the development of AWIPS (Advanced Weather Interactive Processing System) in the cloud could decrease the heavy workload of operational employees and allow for increased telework flexibility. AWIPS in the cloud would also assist our Incident Meteorologists (IMETS), who are deployed to large wildfires providing on-site weather and forecast information to the incident commanders.

Another extremely important dissemination and communication tool in need of upgrading is NWSChat. NWSChat was a grass roots initiative originally developed for local use by a few dozen people, and it is now widely used by thousands of emergency managers, media partners, and NWS forecasters to discuss in real time thoughts on hazardous events and warnings and allow interactive engagement with these core partners. It has been a popular and widely used platform, but unfortunately was never made robust enough to support the increasing demand and use of its resources. The limited bandwidth of this service has caused it to fail during adverse weather events when it is needed most. NWSEO is pleased to see that the NWS is now exploring more sustainable commercially available technology to provide us and our partners with a more robust communications platform that meets today's demands and that should be able to scale up to meet the demands of the future. Going forward the NWS should engage NWSEO and the employees we represent to develop a process to identify potential problems before a failure occurs.

I would be remiss if I did not mention the state of NWS facilities infrastructure. Most of our WFOs were built in the 1990s and many need significant maintenance or repairs. The NWS would greatly benefit from maintenance to many of our aging facilities, to ensure they are resilient to increasingly adverse weather associated with climate change. Our offices along the Gulf and Atlantic coasts are especially susceptible to the impacts of more frequent and stronger hurricane activity and potential sea level

rise, and many of our offices are threatened by the increasing intensity and frequency of severe weather and even wildfires.

Once again, I thank Chairwoman Johnson, Ranking Member Lucas and Members of this Committee for their support of the employees that the National Weather Service Employees Organization represents. I genuinely believe that the NWS, along with the rest of NOAA, is a fantastic organization with an unparalleled mission fulfilled by dedicated and passionate people. I also believe the future of the agency is bright as we continue to invest in the infrastructure as well as the science and technology to improve our forecasts, warnings, IDSS and most importantly, in our employees who are the key to mission success. If you take care of the people, they will take care of the mission.