Summary of public comments on NWS proposal to terminate air quality (AQ) predictions of ozone and fine particulate matter (PM2.5)

Summary:

NWS received over 100 comments on proposed termination of all ozone and developmental PM2.5 predictions. Overwhelming majority (98%) of comments oppose the proposed termination.

Table with comments received

O	**Comments opposing termination of predictions**
	State and local agencies, air quality forecasters and regional consortia involved in air quality forecasting
O1	

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101 • www.mde.state.md.us

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Secretary

Comments of the Maryland Department of the Environment on the Proposed Termination of NWS Air Quality Predictions

The Maryland Department of the Environment (MDE) hereby submits these comments on the proposal of the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) to terminate the National Air Quality Forecast Capability (NAQFC) ozone and fine particle pollution ($PM_{2.5}$) models. Maryland urges NWS to reconsider its proposed termination of the NAQFC models. Since 2004, NAQFC has worked toward developing and improving its air quality models to support the air quality scientific community. MDE provides the official air quality forecasts for ground-level ozone and $PM_{2.5}$ for Maryland residents. In doing so, MDE meteorologists frequently utilize NAQFC model guidance as an important resource when preparing the State's official air quality forecasts.

Ozone pollution is problematic for Maryland residents in sensitive groups, such as those with asthma or other respiratory disease, and at times, can even affect those that are generally in good health. As a result, Marylanders depend on MDE's accurate air quality forecasts to reduce their exposure to poor air quality conditions as they plan everyday outdoor activities, as well as to reduce their own emissions footprint during forecasted Code Orange or greater days. The NAQFC ozone forecast model is a great asset when used in conjunction with a trained meteorologists' analysis to improve the quality of the MDE air quality forecasts issued to the public. Any degradation in the air quality forecast's accuracy could adversely impact our capacity to alert citizens of health concerns, as well as cause unnecessary inconvenience for local companies that operate distributed generation engines who, under State of Maryland law, are not allowed to operate these engines during forecasted Code Orange or greater Air Quality Index days.

MDE meteorologists are active members of the NWS Air Quality Forecaster Focus Group and regularly attend the annual Air Quality Forecaster Focus Group Workshop in Silver Spring, MD. NAQFC model users offer feedback directly to the NAQFC Program at these workshops. During the 2012 workshop, forecast verifications shared by members indicated recent updates to the

	meteorological input for the ozone model significantly reduced the false alarm rate of the operational ozone modeling results and thus have the potential of becoming even more useful for future ozone seasons. Furthermore, the 2012 workshop featured a webinar option resulting in its highest number of attendants among federal, state, local agency and university-based forecasters, modelers, and researchers. This alone demonstrates that the NAQFC models service a large community, many of which actively participate in its scientific advancement and operational purposes. The NAQFC models have also allowed further improvements of its model platform forecasting ability, the Community Multiscale Air Quality (CMAQ) model, due to research and development efforts by NOAA Air Resources Laboratory. These improvements are a great asset that also enhance regulatory applications of CMAQ for retrospective and emissions control scenario simulations as well. Termination of the NAQFC ozone and fine particle pollution models would be an enormous loss for the air quality community and MDE urges NWS to reconsider its proposal to terminate the models. The NAQFC models, along with partnerships MDE has developed with local NWS weather forecast offices, are vital to air quality forecasting procedures and should be preserved. Discontinuing these forecast models will likely limit MDE's ability to timely alert Maryland residents of harmful pollutant concentrations.
O2	To Whom It May Concern – I am writing to comment on the ***Proposed Termination of NWS Ozone Air Quality Predictions***. I am vehemently opposed to the proposed termination of service of the ozone (O_3) and fine particulate matter ($PM_{2.5}$) numerical forecast models. The termination of these services will degrade the skill of air quality forecasts and will necessarily, and negatively, impact the health and well-being of that large fraction of the population who suffer from respiratory and cardio-vascular illnesses, including asthma and COPD. The impacts will be felt particularly in the northeastern United States. It also represents a significant waste of prior government resources and effort while providing an extremely minor cost savings in the near term. I have been forecasting O_3 and $PM_{2.5}$ in an operational setting since 1993 and have provided forecasts for the metropolitan areas of Baltimore, Washington DC and Philadelphia as well as the States of Delaware and Maryland. The single, most important, new forecast guidance tool that has been developed during my time in this field is the National Air Quality Forecast Capability (NAQFC) numerical O_3 forecast model. The skill of this model has steadily improved over time and now provides highly skillful forecasts (see ***Figure 1,*** below). Because the emissions of O_3 and $PM_{2.5}$ precursors have changed significantly throughout the past decade, a numerical forecast model like the NAQFC that is able to adjust quickly to these changes is an essential, and unique, objective forecast guidance tool. There are other numerical air quality forecast models that are available but they are either proprietary, with costs often beyond the means of local air quality agencies, or are of research grade and therefore not routinely available, in a timely and consistent fashion for operational forecast deadlines, and are liable to disappear entirely if the grant moneys that support them

were to dry up.

The NAQFC was developed during the 2000's at considerable cost and has been steadily upgraded so that now it is a skillful model, particularly in the highly populated, and polluted, NE Corridor. The bulk of the cost of this model is already "baked in" as they say. The cost of maintaining the system is a small fraction of the resources put into its development. Cutting it off at this point is a colossal waste of resources. This is even more wasteful when you consider that predictions of smoke, dust and volcanic ash will continue. A small addition to the resources required to run the smoke models will be sufficient to run the ozone and $PM_{2.5}$ models.

As noted in the National Weather Service Strategic Plan, a key goal is to enable "integrated environmental forecast services supporting healthy communities". Specifically, "high-impact, weather-dependent events, such as….poor air quality….pose significant risks to the health of individuals and communities". The strategy for achieving this goal states the NWS should "deliver, with NOAA and partners information….including: high-resolution ozone, smoke, dust and particulate matter forecasts". (http://www.nws.noaa.gov/com/weatherreadynation/files/strategic_plan.pdf). The proposed termination of services is, on its face, clearly inimical to the goals of the NWS Strategic Plan.

The NAQFC is the only numerical forecast model that is available every day, is fully documented, accessible for evaluation, and shows good forecast skill. It should be retained.

Sincerely,

[name removed], Research Scientist, The Pennsylvania State University

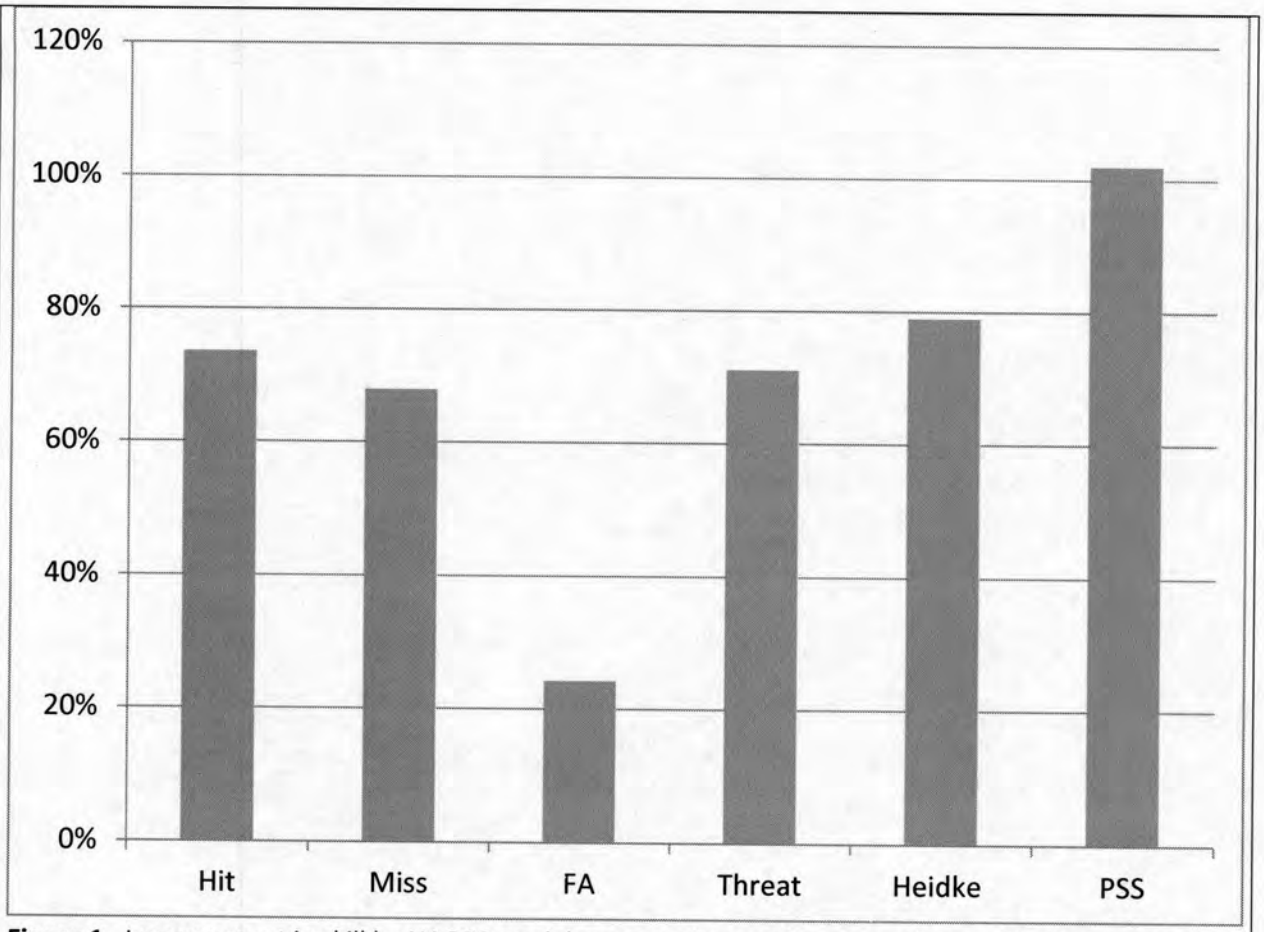


Figure 1. Improvement in skill by NAQFC model compared to persistence at the Health Alert Threshold (i.e., Code Orange O_3,76 ppbv for an 8-hour average) for the Philadelphia metropolitan area for the summer of 2012. "Hit" refers to forecasts of Code Orange that were also observed, "Miss" to observed Code Orange that was not forecast, and "FA" refers to "false alarms" or Code Orange that was forecast but not observed. The skills scores are given as the "Threat" score also known as the Critical Success Index (CSI), Heidke score and the Pierce Skill Score (PSS) also known as the Hanssen-Kuipers discriminant. Descriptions of the skills scores can be found in detail at: Stephenson, D. B., Use of the "odds ratio" for diagnosing forecast skill, *Wea. Forecasting*, **15**, 221-232, 2000. Persistence is the previous day's observed O_3 forecast for the current day. Because O_3 has a lifetime in summer of days to a week, persistence is a good predictor of current day O_3. For the Philadelphia metropolitan area (2003-2011), persistence can explain 36% of the variance in peak O_3 ($r = 0.60$, $r^2 = 0.36$).

O3

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

November 26, 2012

To nwssp.comments@noaa.gov via email:

It has come to my attention that the National Weather Service has proposed to terminate its air quality forecast predictions for ozone and fine particulate matter, undermining air quality forecasting across the United States. As Director of Air Management Services, the City of Philadelphia's air pollution control agency, I am deeply concerned about the impact this will have on our programs and our ability to inform the public about possible health impacts of air quality in our region.

Air Management Services is charged with protecting the health and quality of life of the people of the Philadelphia community from the adverse effects of air pollution. The Philadelphia metropolitan region is in nonattainment with national ambient air quality standards for ozone and fine particulate matter. It is estimated that in the 5-county area of southeastern Pennsylvania, diesel particulate is responsible annually for 260 premature deaths, 450 non-fatal heart attacks, 32,000 missed days of work, and 3,700 asthma attacks. In the City of Philadelphia alone, approximately 22% of children under the age of 18 suffer from asthma.

In addition, Air Management Services relies upon air quality forecasts to implement Air Management Regulation XV - Control of Emissions from Emergency Generators and Fire Pumps, which requires operators of emergency generators to defer testing of their units on Air Quality Action Days. Without an accurate forecast, we anticipate an increased likelihood of ozone and fine particulate matter air quality exceedances due to generator testing on days that are erroneously forecast as moderate air quality days. These errors will undermine our ability to meet our obligations under the Clean Air Act, with significant potential repercussions for the entire region.

Our agency works diligently to protect public health and to keep the public informed about the state of its air and the potential health effects of air pollutants. To do our work effectively, we require accurate air forecasting. The National Weather Service has spent many years cultivating its current modeling program, which serves as the nation's most powerful tool for informing the public of possible air quality issues. We urge you to continue this beneficial and incredibly worthwhile program.

Sincerely,

Signature and name removed

Air Director

O4

OZONE TRANSPORT COMMISSION

Connecticut

Delaware

District of Columbia

Maine

Maryland

Massachusetts

New Hampshire

New Jersey

New York

Pennsylvania

Rhode Island

Vermont

Virginia

J. Wick Havens
Interim Executive Director

444 N. Capitol St. NW
Suite 322
Washington, DC 20001
(202) 508-3840
FAX (202) 508-3841
Email: ozone@otcair.org

November 26, 2012

Laura K. Furgione, Acting Director
National Weather Service
National Oceanic and Atmospheric Administration
1325 East-West Highway
Silver Spring, MD 20910-3283

RE: Proposed Termination of NWS Air Quality Predictions

Dear Ms. Furgione,

The Ozone Transport Commission (OTC) is very concerned about the National Weather Service (NWS's) proposed termination of NWS ozone and fine particle air quality predictions and urges NWS to continue this important service. The OTC is a multi-state organization created under the Clean Air Act responsible for advising EPA on transport issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic United States. OTC members include: Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia.

State air quality programs are required under Section 127 of the Clean Air Act to conduct certain duties to protect public health. This includes issuing daily public forecasts of the air quality index, and air quality health advisories when appropriate. The NWS ozone and fine particulate forecast products are a core component of the OTC states' forecasting toolbox.

We understand that budgets are currently strained at all levels of government. However, termination of the daily ozone and fine particulate matter forecast will significantly reduce the information available to states for developing accurate ozone and fine particulate matter forecasts. We urge NWS to coordinate with the U.S. Environmental Protection Agency on this important public health issue, and work together to ensure that these critical prediction tools can be maintained. As a multi-state organization which has over 20 years of experience with efforts to improve ground-level ozone levels, OTC would welcome further discussion on this issue with NWS. Please contact me with any questions at Phone number removed

Sincerely,

Signature and name removed

Interim Executive Director

Cc: Gina McCarthy, Assistant Administrator for Air and Radiation, U.S. EPA
OTC Air Directors

O5	To Whom it May Concern: Thank you for this opportunity to comment on the proposed termination of National Weather Service (NWS) Ozone and Particle pollution forecasting. The North Carolina Division of Air Quality (NCDAQ) produces daily air quality forecasts for ozone and fine particulates across seven geographical regions within our State. Every day of the year, NCDAQ meteorologists conduct an extensive review of meteorological and air quality forecast models, then synthesize all of this information in an effort to produce the most accurate air quality forecasts possible for the protection of public health within our State. The NWS Ozone and fine particulate (PM2.5) forecast model is an important segment of the process we use to build our forecasts. Like many others in the air quality forecasting community, the NCDAQ has watched this model evolve over the years into an increasingly accurate and powerful forecasting tool that today serves as a reliable indicator of daily air quality concerns. The proposed termination of this model would serve as a detriment to the forecast process undertaken by the NCDAQ and other state and local air quality agencies to produce accurate air quality forecasts over the short and long term, for the short-term benefit of saving a few dollars. The NCDAQ strongly believes that keeping this model active and evolving produces benefits to the public health of the citizens of North Carolina and other states that far outweigh any cost to the NWS or any parent organization therein. These benefits include improved awareness of poor air quality days by the general public, especially those who are susceptible to adverse health effects resulting from poor air quality. This improved awareness and preparation for poor air quality days results in fewer health episodes requiring hospitalization or taking time off of work or school. The minimization of such episodes has a direct, positive impact on local economies, and consequently the State economy as well. The NCDAQ has worked tirelessly to build a coalition of outreach partners within the media, local air quality programs, industry, school systems and other sectors to increase awareness of air quality within North Carolina and what individuals can do to reduce pollution. The Air Quality Forecast page is among the most visited of any NCDAQ websites, and nearly 5,000 people within North Carolina receive air quality forecasts through the Enviroflash program. Additionally, NCDAQ adopted a rule prohibiting open burning under certain air quality forecasts and the North Carolina Department of Health and Human Services adopted a rule limiting the amount of time children are allowed to spend outside while in state-licensed daycare facilities when Code Orange or higher days are forecast. Both of these state rules are enforced based on the NCDAQ's Air Quality Forecast. Accurate air quality forecasts are a necessity to providing the public with tools to best protect their health, as well as to comply with state rules, and it is imperative that accurate forecasts continue to be produced in the future. The NWS Ozone and fine particulate forecast model helps us achieve this objective. Finally, the mission of the NWS is to "provide weather....data, forecasts and warnings for the protection of life and property and enhancement of the national economy." The operation and evolution of the NWS Ozone and fine particulate forecast model is in line with this mission for the reasons described above, and the termination of the NWS Ozone and fine particulate forecast model would be a significant contradiction to this mission. It is for these reasons that we ask the NWS to reconsider their proposed action, and continue to allow

	the necessary resources to keep this model running. We greatly appreciate this opportunity to comment on this proposed action, and we look forward to the reconsideration of this action by the NWS. Sincerely, *[name removed]* *[name removed],* Director NCDENR, Division of Air Quality 1641 Mail Service Center Raleigh, NC 27699-1641
O6	The City of Jacksonville, Florida, Environmental Quality Division, would like to request, that the National Weather Service continue running the Ozone and PM2.5 forecasting model. The Air Quality Model along with other meteorological forecasting tools is used in producing the daily Air Quality Forecast, which is sent to AIRNOW and distributed to the public through the Enviroflash notification system. The Air Quality Forecast aids the public by allowing them to make decisions on what outdoor activities to participate in. Thank you for the opportunity to comment on this issue.
O7	National Weather Service Air Quality Forecast Guidance (operational ozone predictions) has been used by the Air Quality Division of the Oklahoma Department of Environmental Quality (DEQ) for the past five years in our Ozone Alert Program and our Health Advisory Program. It has been an integral part of these programs which are vital in protecting public health in Oklahoma. It is a very valuable tool in predicting ozone concentrations. While not perfect, it provides insight to ozone formation and movement to our air quality staff that might be missed without it. It may be necessary for the Oklahoma DEQ to purchase ozone model software to replace it to continue our Ozone Alert and Health Advisory Programs.

08

NESCAUM
www.nescaum.org

Northeast States for Coordinated Air Use Management
89 South Street, Suite 602 Boston, MA 02111
Phone 617-259-2000 Fax 617-742-9162
Arthur N. Marin, Executive Director

November 26, 2012

Laura K. Furgione, Acting Director
National Weather Service
National Oceanic and Atmospheric Administration
1325 East-West Highway
Silver Spring, MD 20910-3283

Re: Proposed Termination of National Weather Service Ozone Air Quality Predictions

Dear Ms. Furgione:

The Northeast States for Coordinated Air Use Management (NESCAUM) are responding to the National Weather Service's (NWS) Public Information Statement, Comment Request, published on Tuesday October 23, 2012, and entitled: "Proposed Termination of NWS Ozone Air Quality Predictions."[1] NESCAUM is the regional association of air pollution control agencies representing Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

We understand that, due to budgetary constraints, NWS proposes terminating all ozone and fine particulate matter ($PM_{2.5}$) forecasts, beginning the first quarter of 2013. These forecasts are operational and experimental ozone air quality predictions, and developmental predictions of $PM_{2.5}$ produced using the Community Multi-scale Air Quality Modeling System (CMAQ) at the National Centers for Environmental Prediction.

NESCAUM is concerned about the negative public health impacts of this proposed action, and urges the NWS to maintain these forecast products. State air quality programs are required under the federal Clean Air Act to conduct certain duties to protect public health. This includes issuing daily public forecasts of the air quality index (AQI), and air quality health advisories when appropriate. These forecasts and advisories are based on expected ozone and $PM_{2.5}$ air quality in their jurisdictions. The NWS ozone and $PM_{2.5}$ forecast products are a core component of the northeast states' AQI forecast toolbox.

Since 2011, the NWS ozone forecast has been the most reliable product from among the suite of models used to forecast ozone air quality, and is considered to be the "Gold Standard" by NESCAUM member agencies. While other ozone forecast products are available, they are either

[1] See: http://www.nws.noaa.gov/om/notification/pns12ozone_pm2.5removal.htm.

NESCAUM Members:
Connecticut Bureau of Air Management, Anne Gobin
Maine Bureau of Air Quality Control, Marc Cone
Massachusetts Bureau of Waste Prevention, Nancy L. Seidman
New Hampshire Air Resources Division, Craig Wright
New Jersey Division of Air Quality, William O'Sullivan
New York Division of Air Resources, David Shaw
Rhode Island Office of Air Resources, Douglas McVay
Vermont Air Pollution Control Division, Richard Valentinetti

costly proprietary models, research model results that are not available in time for operational forecast deadlines, or other less validated models on the web.

The high spatial resolution, ability for regional zooming, clear isopleth map depiction, and the ability to extract site-specific hourly time-series concentrations and vertical profiles are unique valuable features of NWS's air quality forecast products, as are the smoke, dust and regional HY-SPLIT trajectory forecasts. Additional insights are provided when forecasters can contrast multiple model results to evaluate model performance and to evaluate causes of historical pollution events.

Proposed downward revisions to the National Ambient Air Quality Standards for $PM_{2.5}$ and ozone underscore the need to maintain and improve national quality forecasting capabilities. Tighter new one-hour air quality standards for sulfur dioxide and nitrogen dioxide mean that either of these pollutants may drive future daily air quality indices. New multi-pollutant indices, such as the Canadian Air Quality Health Index (based on ozone, $PM_{2.5}$ and NO_2), emphasize the need for better forecasting capabilities for these pollutants.

We recognize that budgets are currently strained at all levels of government. Terminating this service, however, will have adverse public health ramifications. We urge NWS to coordinate with the U.S. Environmental Protection Agency on this important health issue, and work together to ensure that these critical prediction tools can be maintained. Please do not hesitate to contact name removed of my staff at phone removed if you have any questions.

Sincerely,

Signature and name removed

Executive Director

Cc: Gina McCarthy, Assistant Administrator for Air and Radiation, U.S. EPA
NESCAUM Directors

09

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

ENVIRONMENTAL MANAGEMENT
DIVISION OF AIR QUALITY
P.O. Box 420 Mailcode 401-02
TRENTON, NJ 08625-0027
609 - 984 - 1484

BOB MARTIN
Commissioner

November 26, 2012

Laura K. Furgione, Acting Director
National Weather Service
National Oceanic and Atmospheric Administration
1401 Constitution Avenue, N.W.
Washington, DC 20230

REFERENCE: Comment on Proposed Termination of National Weather Service Ozone and Fine Particulate Matter Air Quality Predictions

Dear Ms. Furgione:

The National Weather Service (NWS) proposed on October 23, 2012 to terminate all operational and experimental ozone (O_3) air quality predictions and developmental predictions of fine particulate matter ($PM_{2.5}$) produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). These predictions are scheduled to be stopped on or about January 22, 2013. The New Jersey Department of Environmental Protection (NJDEP) urges the NWS not to terminate these invaluable numerical forecast models.

State air quality programs are required under the federal Clean Air Act to conduct certain duties to protect public health, including issuing daily public forecasts of the air quality index, and air quality health advisories when appropriate, based on current and forecast levels of ozone and $PM_{2.5}$ concentrations in their jurisdictions. NJDEP air quality forecasters often use outputs from CMAQ to assist in predicting what the air quality will be in the state of New Jersey. Accurate forecasts are essential and are especially important for those susceptible to bad air quality, such as the young, elderly, and persons with respiratory diseases, such as asthma. The regulated community also depends on reliable and accurate air quality forecasts in New Jersey because of the fact that they are prohibited from testing emergency generators on days in which an Unhealthy for Sensitive Groups or above forecast is issued.

The numerical O_3 forecast provided by CMAQ is the most important guidance tool for issuing ozone forecasts in the state of New Jersey. It is consistently reliable in predicting ambient ozone concentrations and the geographic areas where ozone plumes are expected to develop. It also has high spatial resolution and allows users to extract site-specific hourly time series concentrations. There are other O_3 forecast models available, but they are often

New Jersey is an Equal Opportunity Employer · Printed on Recycled Paper and Recyclable

proprietary with costs outside the means of the NJDEP, or are research grade and, therefore, not routinely available in a timely and consistent fashion for operational forecast deadlines.

The NWS has invested to produce a quality product that states and media outlets rely upon to inform the public about O_3 and $PM_{2.5}$ air quality levels. The NWS CMAQ model is the only numerical forecast model that is available every day, is fully documented, is accessible for evaluation, and is reliable. The NWS CMAQ model is a vital tool and it is essential that it remain operational for O_3 air quality predictions to protect public health.

Sincerely,

Signature and name removed

Director, Division of Air Quality

c: Names removed, Assistant Commissioner
Assistant Director
Assistant Director
Bureau Chief
Section Chief
Air Quality Forecaster
, Air Quality Forecaster
, Air Quality Forecaster

O10

Dear Ms. Furgione,

As a local environmental agency, the Ozone Air Quality Prediction products, produced by the National Weather Service, help us provide daily air quality forecast to the USEPA AirNow website. In addition, the ozone prediction tools help us explain elevated ozone events to the media, our county officials and the general public.

As you know, predicting air quality with relative accuracy requires the development of sophisticated algorithms and models that are beyond the means of small local environmental programs like ours. With the recent tightening of all our program budgets we try to maintain services with fewer personnel. As a result, we rely on tools developed by our state and federal partners that enable us to provide quality services at the local level.

Produced twice daily, the ozone prediction products and graphical representations, are a valuable tool for forecasting air quality conditions in the Hillsborough County, Florida. Since our ozone season is year-round, utilizing the NWS web-based surface ozone models for 1- and 8-hour average concentrations is part of our daily practice to provide the public with local air

	quality forecasts. Therefore, we strongly encourage the National Weather Service to maintain funding for the Ozone Air Quality Prediction products. [name removed] *Sr. Engineering Specialist, Air Monitoring Program* *3629 Queen Palm Drive* *Tampa Florida 33619* *[phone numbers and email address removed]* *Environmental Protection Commission of Hillsborough County* An agency with values of environmental stewardship, integrity, honesty, and a culture of fairness and cooperation
O11	To: National Weather Service Re: Comments on the proposed termination of NWS air quality products NOACA is the lead agency responsible for air quality forecasts in Northeast Ohio. We rely heavily on NWS air quality predictions to capture temporal variations in regional air quality forecasts. Termination of the NWS predictions and web-based air quality products will result in impairment of our air quality forecasting capabilities, and will incur additional costs associated with procuring and implementing new forecasting models and/or services. Additionally, * Northeast Ohio is in nonattainment for the 2008 8-hr Ozone NAAQS. Reliable ozone forecasts are critical for the welfare of people in this region. * Northeast Ohio is in nonattainment for the 1997 Annual PM2.5 NAAQS and 2006 24-hr PM2.5 NAAQS. Reliable PM2.5 forecasts are critical for the welfare of people in this region. * National level forecasts have helped us foresee developing air quality scenarios. Reliability of our forecasts will be impacted if the proposed termination of services occurs. * Numerical geo-located ozone forecasts are currently fitted into NOACA's models to analyze the region's air quality. Disruption of NWS services will result in disruption to existing forecasting mechanisms. * Even though the experimental PM2.5 predictions are not ready to be made operational, they have the potential to play a vital role in the future. Termination of model development will hinder future progress in our air quality forecasting efforts. * Forecasting models like CMAQ require complex computational capabilities. Local agencies do not have access to the resources and expertise necessary to learn and implement such models. We believe that NWS air quality predictions have been of tremendous value to the forecasting community and also offer invaluable services to the public via air quality maps. We strongly urge NWS to keep the existing operational ozone predictions service and to keep developing the experimental PM2.5

	prediction models in the interests of agencies like NOACA. Please contact NOACA's Air Quality Planner, [name removed] at [email address removed] with any questions. Thank you for your consideration. Sincerely, [name removed] Executive Director Northeast Ohio Areawide Coordinating Agency Planning for Greater Cleveland 1299 Superior Avenue East Cleveland, OH 44114 [phone number and email address removed]
O12	Dear Sir/Madame: The southeast Missouri region contains two monitors for ground-level ozone. One of these monitors has a design value that is out of compliance with the National Ambient Air Quality Standard (NAAQS) for ozone and the other is at the maximum. There is, in sum, a distinct possibility that at least one county will be designated as a nonattainment area for ground level ozone. Since ozone is considered a risk to human health, I simply cannot imagine what justification NWS would have for terminating a program that can help us to protect health. I object, in the strongest possible terms to the termination of this program. This is especially relevant to us since an Ozone Alert program is one of the central components of our work with EPA under the Ozone Advance program. I have been unsuccessful in finding the NOAA/NWS budget, so I cannot offer specific suggestions for other possible areas to cut. If you will direct me to these documents I will be happy to work with you. Thank you for your time and attention. [name removed] Deputy Director Southeast Missouri Regional Planning Commission 1 West Saint Joseph Street P.O. Box 366 Perryville, MO 63775 [phone number and email address removed]

O13

LAKE MICHIGAN AIR DIRECTORS CONSORTIUM

9501 W. Devon Avenue, Suite 701
Rosemont, IL 60018
Phone: 847-720-7880 • Fax: 847-720-7891

November 21, 2012

National Oceanic and Atmospheric Administration
NOAA/NWS/OST
Silver Spring, MD 20910

To Whom It May Concern:

On behalf of the Lake Michigan Air Directors Consortium (LADCO), we are writing to urge NOAA to reconsider its proposed decision to discontinue operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter.

LADCO represents the Directors of the air pollution control programs in the States of Minnesota, Michigan, Indiana, Wisconsin, Ohio, and Illinois. NOAA provides the only publicly available numerical forecast of regional ozone and fine particulate matter concentrations and the predicted AQI at selected cities in our states. The LADCO states consider this an important tool for forecasting and notifying the public of impending air pollution episodes. Our states rely greatly on the NOAA forecast model to predict the impact of regional transport from upwind areas that can greatly influence ozone and particulate matter levels in downwind areas. Graphical and numerical output at http://airquality.weather.gov/ provides information to our states regarding the magnitude and spatial extent of these air pollutants that may be unhealthy for sensitive groups. NOAA's forecast model will become even more important for protecting public health and ensuring attainment if U.S. EPA tightens the air quality standards for these pollutants as expected in the coming months.

In our six states, information gleaned from the forecast model is used to communicate potentially adverse air quality conditions to millions of people. Many states employ ozone action days when unhealthy atmospheric conditions arise which have local financial implications; several companies have rules that force them to cut back on their production, bus fares are reduced, and mowing crews do not mow. NOAA's forecast model provides essential and easily accessible information to the states, and the public, as they seek to reduce exposure to unhealthful air pollution levels in a cost-effective manner.

It is for all these reasons that we strongly urge NOAA to re-evaluate its plan to discontinue this vital service.

Sincerely,

Signature and name removed

Executive Director
Lake Michigan Air Directors Consortium

O14

MARAMA

Mid-Atlantic Regional Air Management Association, Inc.

Allegheny County Health Dept., Air Quality Program, Pittsburgh, PA.
District of Columbia Dept. of the Environment, Air Quality Division
Delaware Dept. of Natural Resources & Environmental Control, Air Quality Mgmt. Section
Maryland Dept. of the Environment, Air & Radiation Management Admin.
New Jersey Dept. of Environmental Protection, Division of Air Quality
North Carolina Dept. of Environment & Natural Resources, Division of Air Quality
Philadelphia Dept. of Public Health, Air Management Services
Pennsylvania Dept. of Environmental Protection, Bureau of Air Quality
Virginia Dept. of Environmental Quality, Air Division
West Virginia Dept. of Environmental Protection, Division of Air Quality

8600 LaSalle Road ~ Suite 636 ~ Towson, MD 21286

Phone 443.901.1882 ~ Fax 443.901.1886 ~ www.marama.org

November 19, 2012

To nwssp.comments@noaa.gov via e-mail

I am writing on behalf of the Mid-Atlantic Regional Air Management Association (MARAMA) to strongly object to the ***Proposed Termination of NWS Air Quality Predictions***. MARAMA is the association of state and local air pollution control agencies in the Mid-Atlantic US. Our members represent ten state and local agencies charged with protecting public health by improving air quality.

The termination of daily ozone (O_3) and fine particulate matter ($PM_{2.5}$) numerical forecasts will degrade the skill of air quality forecasts and this will necessarily, and negatively, impact the health and well-being of that large fraction of the population who suffer from respiratory and cardio-vascular illnesses, including asthma and COPD. The maps enclosed with this letter show the areas in EPA's Mid-Atlantic Region that have been designated as nonattainment areas. These are areas where air quality is frequently unhealthy and states are required to adopt and enforce measures to reduce pollution. This process takes years to accomplish.

While the number of days on which air quality is unhealthy is declining as air pollution controls are implemented, at the same time the US Environmental Protection Agency continues to tighten air quality standards, effectively increasing again the number of days when air quality is of concern. Furthermore, annual changes in weather patterns lead to significant variation in the number of days when air quality is predicted to reach unhealthful levels. Scientists believe that for some sensitive individuals there is no safe level of fine particles in the air.

It is critically important that we inform the public who are breathing air that may damage their health and wellbeing, and it is required by Section 127 of the Clean Air Act. In the last 20 years, the ability to forecast air pollution and communicate to the public has seen tremendous progress. I have personally participated in providing information to the public, and I have seen how important this information is to people whose children have asthma or other medical conditions that make it so important for them to avoid exposure to polluted air.

The support of the National Weather Service is critical to our ability to inform the public of air pollution levels. For example, The National Air Quality Forecast Capability (NAQFC) numerical O_3 forecast model is an important tool used by all air quality forecasters in the MARAMA region. The NAQFC was developed during the 2000's at considerable cost and has been steadily upgraded so that now it is a skillful model, particularly in the highly populated, and polluted, region from Washington, DC through New York City. Because the emissions of O_3 and $PM_{2.5}$ precursors have changed significantly over the past decade, a numerical forecast model like the

NAQFC that is able to adjust quickly to these changes is an essential, and unique, objective forecast guidance tool.

MARAMA forecasters are meteorologists, and they recognize that other numerical air quality forecast models are available, but those other models are either proprietary, with costs beyond the means of local air quality agencies, or they are of research grade and therefore not routinely available in a timely and consistent fashion for operational forecast deadlines. The National Weather Service provides the only currently available non-proprietary tool that adds the critical emissions modeling piece allowing accurate forecasts of impending ozone or particulate matter events. This model links observed meteorology and atmospheric photochemistry. It would be imprudent to end support of this model after many years of work and refinement by NWS experts. Without this model health based forecasting accuracy will suffer, resulting in more false alarms.

As noted in the National Weather Service Strategic Plan, a key goal is to enable "integrated environmental forecast services supporting healthy communities." Specifically, "high-impact, weather-dependent events, such as....poor air quality....pose significant risks to the health of individuals and communities." The strategy for achieving this goal states the NWS should "deliver, with NOAA and partners information....including: high-resolution ozone, smoke, dust and particulate matter forecasts."[1] The proposed termination of services is, on its face, clearly inimical to the goals of the NWS Strategic Plan.

The NAQFC is the only numerical forecast model that is available to regional air quality forecasters every day, is fully documented, is accessible for evaluation, and shows good forecast skill. It should be retained.

Sincerely,

Signature and name removed

Executive Director

Copies to: MARAMA Directors and

Diana Esher, Director, Air Protection Division, EPA Region 3, Esher.Diana@epamail.epa.gov

Gina McCarthy, Assistant Administrator for Air and Radiation, US Environmental Protection Agency, McCarthy.gina@Epa.gov

Chet Wayland, US Environmental Protection Agency, Office of Air Quality Planning and Standards, wayland.richard@epamail.epa.gov

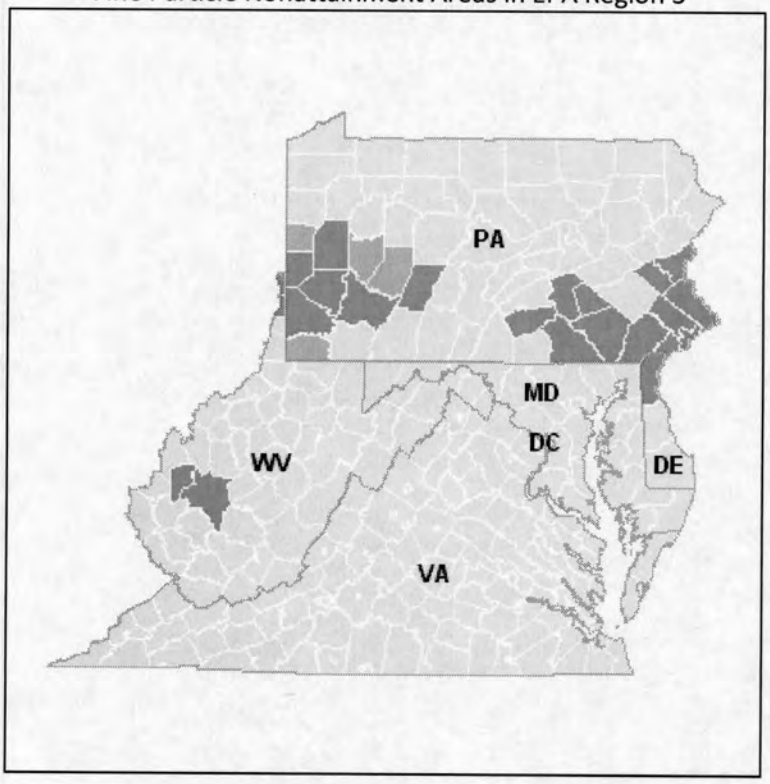
Ivanka Stajner, NOAA/NWS/OST, Silver Spring, MD 20910, ivanka.stajner@noaa.gov

Attachment: Maps of Fine Particle and Ozone Nonattainment Areas in EPA's Mid-Atlantic Region

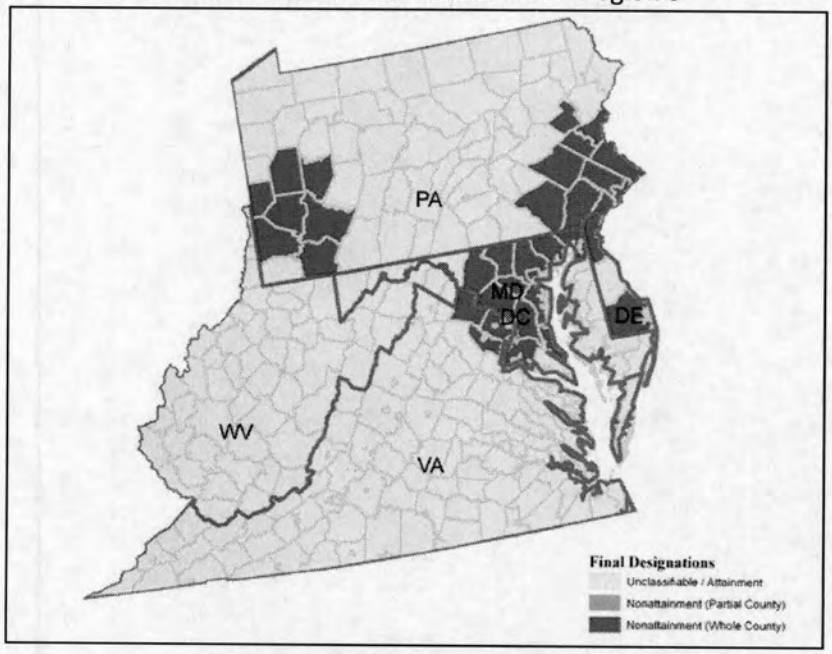
[1] See http://www.nws.noaa.gov/com/weatherreadynation/files/strategic_plan.pdf.

Maps of Fine Particle and Ozone Nonattainment Areas in EPA's Mid-Atlantic Region

Fine Particle Nonattainment Areas in EPA Region 3



Ozone Nonattainment Areas in EPA Region 3



015

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

November 19, 2012

Laura K. Furgione, Acting Director
National Weather Service
National Oceanic and Atmospheric Administration
1401 Constitution Avenue, N.W.
Washington, DC 20230

Re: Termination of NWS Ozone Air Quality Predictions

Dear Ms. Furgione:

The Maine Department of Environmental Protection is submitting these comments in regards to your October 23, 2012 Public Information Statement Comment Request on the proposed termination of all operational and experimental ozone (O_3) air quality predictions and developmental predictions of fine particulate matter ($PM_{2.5}$) produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP).

Maine is strongly opposed to termination of all operational, experimental and developmental O_3 and $PM_{2.5}$ numerical forecast models. The termination of these services will degrade the warning systems in place to help inform those who suffer from respiratory and cardio-vascular illnesses, especially along the more populated Northeast corridor of this country.

The Department has been forecasting air quality in Maine since the 1990's and the most important forecast guidance tool has been the development of the NWS CMAQ forecast model at the NCEP. Since 2011, this is the most reliable model of the suite of models that is used to forecast O_3 air quality and is considered the "Gold Standard."

The Department has analyzed the NWS CMAQ model results over the past two ozone seasons and now understands the bias of the model as the ozone season progresses (see **Figure 1** and **Figure 2**, below). This will help us with future forecasts if model predictions continue next year. If the NWS CMAQ model predictions are not available, the suite of models left include costly proprietary models, research model results that are not available in time for operational forecast deadlines or other models on the web.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

Furthermore, due to budget constraints, the Department may be unable to purchase a subscription to proprietary models; especially if, owing to a lack of competition, the rates rise.

The NWS has invested heavily to produce a quality product that states and media outlets rely upon to inform the public about O_3 and $PM_{2.5}$ air quality levels. The NWS CMAQ model is the only numerical forecast model that is available every day, is fully documented, accessible for evaluation, and is reliable. Terminating this tool would be a disservice to our country's most vulnerable citizens.

Sincerely,

Signature and names removed

[redacted] Director Bureau of Air Quality, State of Maine Department of Environmental Protection

CC: [redacted] CCM, Chief Meteorologist and [redacted] Senior Meteorologist, State of Maine Department of Environmental Protection, Bureau of Air Quality

Figure 1: 2011 ozone season trend of the bias of the NWS CMAQ model

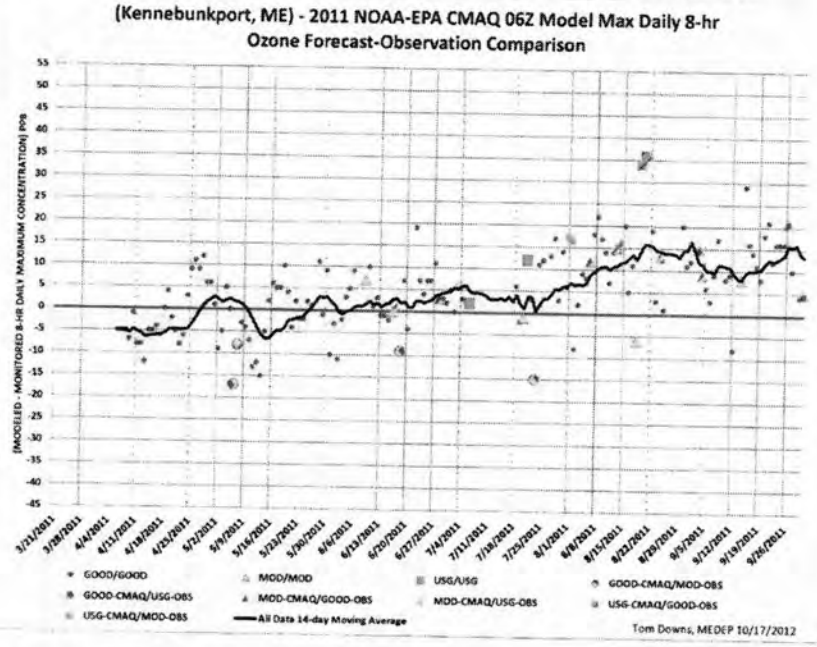
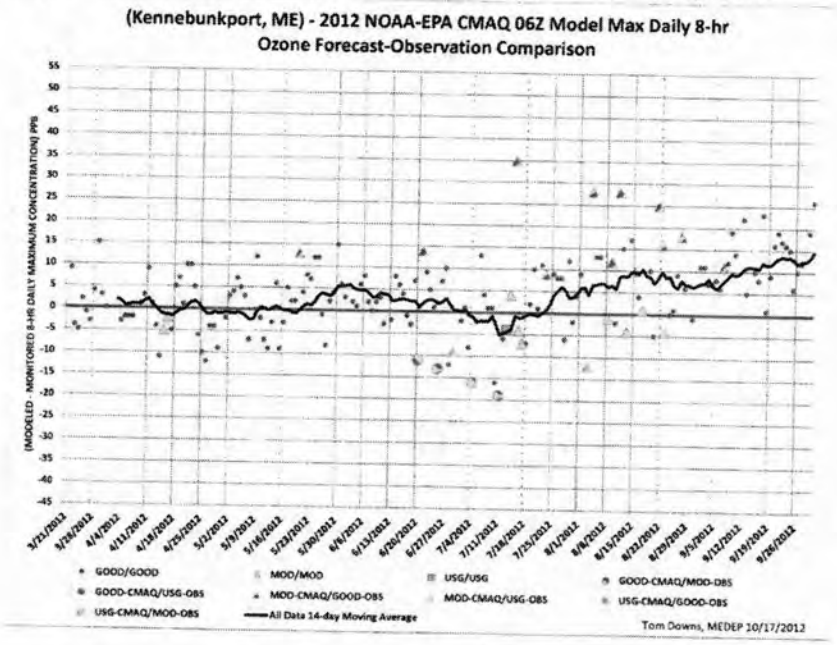


Figure 2: 2012 ozone season trend of the bias of the NWS CMAQ model



O16

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

November 16, 2012

Re: Virginia Department of Environmental Quality Comments on Proposed Termination of the National Oceanic and Atmospheric Administration's National Weather Service Ozone Air Quality Predictions:

The Virginia Department of Environmental Quality (DEQ) appreciates the opportunity to submit comments regarding the National Oceanic and Atmospheric Administration's proposal to terminate the National Weather Services' ozone air quality predictions and developmental predictions of PM2.5.

The National Oceanic and Atmospheric Administration (NOAA), through the National Weather Service's (NWS) National Air Quality Forecast Capability program, has provided daily operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter (PM2.5) for many years. These model predictions have provided the basis from which state air quality forecasters have relied upon to assist them in daily analyses to issue air quality forecasts.

The NOAA/NWS proposes to eliminate the National Air Quality Forecast Capability program and cease all operational and experimental ozone air quality predictions and developmental predictions of PM2.5 produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). NOAA/NWS proposes to end the operational ozone output on or about March 5, 2013, (just prior to the 2013 ozone season in the Mid-Atlantic region) and proposes to end the experimental ozone output and developmental PM2.5 predictions on or about January 22, 2013. The elimination of the National Air Quality Forecast Capability program will result in the termination of all surface ozone and development PM2.5 predictions over the continental United States, Alaska, and Hawaii.

DEQ urges NOAA/NWS to reconsider its proposal to eliminate the National Air Quality Forecast Capability program because its elimination would impede state efforts to protect public health.

The daily NWS operational and experimental ozone and developmental air quality predictions of PM2.5 provide critical and reliable information that are essential to DEQ's air quality forecasting program for the Commonwealth of Virginia. DEQ's mission statement is to "protect and enhance Virginia's environment, and promote the health and well-being of the citizens of the Commonwealth". The National Air Quality Forecast Capability (NAQFC) program provides a cornerstone for DEQ's air quality forecasting, and its elimination would seriously undermine DEQ's efforts to produce accurate air quality forecasts. In turn, that would adversely affect DEQ's ability to protect public health within the Commonwealth, especially for those who are most sensitive to poor air quality (such as the many thousands of people with heart ailments or respiratory ailments such as asthma, emphysema, or bronchitis).

In addition to the harm elimination of the NAQFC program would have on DEQ's air quality forecasting, several other sources of information that DEQ relies upon as air quality forecast tools are based on the NAQFC products. These include statistical products provided by private sector consultants which would no longer be available without NAQFC program product input and products from other states or universities. The elimination of the NAQFC program, therefore, would leave DEQ dependent on less reliable sources of air quality forecast information. Furthermore, while the NOAA/NWS proposal would eliminate the primary source of air quality forecast information, it fails to provide any alternatives or replacements that would render similar information on a reliable daily basis. Additionally, the proposed PM2.5 and ozone model prediction termination dates (January 22, 2013 and March 5, 2013, respectively) do not allow enough time for reliable alternatives to be developed and evaluated. At a minimum, NOAA/NWS should extend the proposed model termination dates through the 2013 ozone season to permit possible development and subsequent evaluation of any alternatives.

Although the NOAA/NWS proposal correctly allows for continued operational air quality predictions of smoke, dust, and volcanic ash as well as dispersion model predictions under limited circumstances to emergency management personnel when responding to extraordinary events that result in the release of harmful pollutants, this narrow savings provision would do nothing to provide information to air quality forecasters to enable the protection of sensitive individuals from unhealthy ozone and PM2.5 concentrations on a day-in, day-out basis.

Finally, an important part of NOAA's mission is the systematic study of the structure and behavior of the ocean, atmosphere, and related ecosystems. In NOAA's own words, its mission includes "integration of research and analysis; observations and monitoring; and environmental modeling." Furthermore, NOAA intends that the information it develops be used "to protect people and the environment." See www.ppl.noaa.gov/mission/. Certainly, the data developed through the NAQFC program is integral to NOAA's mission and the proposed elimination of the program would create an informational void that would hinder the ability of states like Virginia to adequately protect the health and environment of their citizens.

In conclusion, Virginia DEQ requests that NOAA/NWS reconsider its proposal to eliminate its NAQFC program and daily operational and experimental ozone air quality predictions and developmental predictions of PM2.5. Thank you for the opportunity to submit comments. If there are any questions, please contact:

[name removed]
Meteorologist
Office of Air Quality Assessments
Virginia Department of Environmental Quality
P.O. Box 1105, Richmond, VA 23218
[phone and fax numbers and email address removed]

Sincerely,

[name removed]
Director, Air Division
Virginia Department of Environmental Quality

cc: [names removed]

O17

VERMONT

Vermont Department of Environmental Conservation
Air Pollution Control Division
103 South Main Street, 3 South [phone] 802-241-3840
Waterbury, VT 05671-0402 [fax] 802-241-2590

Agency of Natural Resources

Dr. Ivanka Stajner
NOAA/NWS/OST
Silver Spring, MD 20910

November 14, 2012

Dear Dr. Stajner,

The Vermont Division of Air Pollution Control was disappointed to learn of NOAA's proposal to discontinue ozone and $PM_{2.5}$ air quality forecast model predictions using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). These NCEP model predictions provide critical information to Vermont and other state and local air quality programs which issue daily public forecasts of the "air quality index" (AQI) and issue occasional air quality health advisories, based on expected levels of ozone and $PM_{2.5}$ air quality in their jurisdictions.

Proposed downward revisions to national ambient air quality standards for $PM_{2.5}$ and ozone, clear evidence of health effects at exposures below current standards, increasing contributions from transcontinental transport, and increasing frequency of extreme weather events further emphasize the needs to maintain and improve our current national air quality forecasting capabilities. Tighter new 1-hour standards for sulfur dioxide and nitrogen dioxide mean that either of these pollutants may drive the future daily AQI, and new multi-pollutant indices such as the Canadian AQHI (based on ozone, $PM_{2.5}$ and NO_2) emphasize the needs for better forecasting capabilities for these pollutants as well.

There are currently other air quality forecast model predictions available, all of which are useful, but each has limitations: global forecast models such as the US Naval Aerosol Research Laboratory NAAPS model are limited by coarse spatial, temporal and chemical resolution which is not well suited to accurate predictions of local air quality. Canadian GEM-MACH ozone and $PM_{2.5}$ forecasts are available, although the 6-hour averaging time is not aligned to US standards or forecast periods for ozone or $PM_{2.5}$, and the model often severely over-predicts in our region. Ozone and $PM_{2.5}$ forecasts are available on a paid subscription basis from contractors like Barons Meteorological Services, but State's abilities to afford these subscriptions in the future is questionable, given decreasing state budget resources and increasing transfer of responsibilities and costs from Federal to State agencies.

The NOAA CMAQ model often provides the most accurate ozone and $PM_{2.5}$ forecasts among the available models. The high (12 km) spatial resolution, ability for regional zooming, clear isopleth map depiction, and the ability to extract site-specific hourly time-series concentrations and vertical profiles are also unique valuable features of the NOAA AQ forecast products, as are the separate NOAA smoke, dust and regional HY-SPLIT trajectory forecasts. Additional insights are provided when forecasters can compare and contrast multiple model results, each of which has strengths and weakness under different conditions, and when access is provided to archived historical model results – both to evaluate model performance and to evaluate causes of historical pollution events.

Among the different US agencies and private sector air quality modeling groups, NOAA provides unique meteorological expertise, and adds important research, development, and performance evaluation components to the routine forecast model activities. The collaboration between NOAA, EPA, and state air management agencies in air quality forecasting has resulted in steady improvements in forecast accuracy and provides substantial added value to all participants. Such collaboration will be even more important in the future as air quality standards and forecasts are applied to lower concentrations, over shorter averaging times or smaller spatial domains, extended to other gaseous pollutants or PM species, based on multiple pollutants, or adjusted to evaluate interactions between changing air pollutant emissions and climate forcing on regional, national and hemispheric scales.

	Assuming NOAA may be able to find the resources to continue this valuable air quality modeling effort, some of the following would be desirable enhancements to work toward in the future: • Continue/refine existing CMAQ ozone, CMAQ $PM_{2.5}$, smoke, dust and trajectory forecasts, • Provide access (at least on an experimental basis) to intermediate CMAQ forecast products, including gaseous precursors (SO_2, NO, NO_2, HNO_3, VOC, NH_3) and $PM_{2.5}$ species (SO_4, NO_3, NH_4, OC, EC, dust, SS), • Develop higher spatial resolution options (perhaps 2.5 or 4 km), for complex terrain, winter inversions, near-water, and other meteorologically complex regimes, • Extend forecast range from 24 hours to 48 and 72 hours, • Improve linkages to various satellite data and global air quality forecast models for improved depiction of episodic emissions and refined regional modeling boundary conditions, • Maintain and provide access to archive of forecast model results (& emissions input data) – to allow retrospective comparisons between models and between models and measurements, and to support retrospective analysis of pollution events (for example through http://datafed.net). As indicated above, the ozone and $PM_{2.5}$ forecasts NOAA has developed in the past have provided invaluable assistance to, and have been much appreciated by, state and local air quality management agencies which rely on these services to make daily air quality forecasts in their jurisdictions. We recognize that budgets are currently strained at all levels of government, but hope that the means can be identified for NOAA to continue, and expand upon these valuable efforts in the future. Sincerely, Signature and name removed Air Quality Planner
O18	I would like to voice opposition to your terminating this program. Perry County, Missouri, has an EPA ozone monitor. It is located in the middle of farm country in Farrar, Missouri but draws air from surrounding urban areas. We have spent considerable time and energy in developing a community plan to help limit our violations and the ozone alert system is an important part of our Ozone Advance program. Please do not take this tool away from us. [Name removed], City Administrator **City of Perryville** [phone and fax numbers removed]
O19	To Whom it may concern: The following comments come from the Tennessee Department of Environment and Conservation. The Division of Air Pollution Control's air quality forecasting program would like express our opposition to the proposed termination of NWS air quality predictions. We are responsible for issuing both ozone and pm2.5 forecasts for the state of Tennessee. While we operate our own statistical model it is helpful for our forecasters to use the CMAQ model in conjunction with it. Our regression model alone is insufficient for forecasting ozone and PM levels as it is not able to account for larger scale patterns. Our

	budget could not support a forecast model with the same capabilities of the CMAQ. If there is any way to retain these services it would be of great benefit to our forecast program here in TN. Thank you for considering our request to retain these services, [name removed] Meteorologist TN Air Pollution Control Division [phone removed]
O20	At the Texas Commission on Environmental Quality we have come to rely on the NOAA ozone model output as a valuable tool in evaluating our daily ozone forecasts. We review the output maps for Texas for every run and have kept statistics to help us evaluate model performance. The recent dust and smoke products have also been helpful for our PM2.5 and PM10 forecasts. We would like to see the continued daily running of these products, even if development is halted to reduce cost. We do not have a need for the ozone products from December through February when ozone levels are low, so seasonal discontinuation during this period each year might help to cut costs without affecting our forecast capabilities. [names removed] TCEQ Air Monitoring Division [phone number removed]
O21	Dear Sirs, I work for a state agency and one of our responsibilities is to warn the public of episodes of poor air quality. NOAA is attempting to perform a difficult job providing forecasts of regional pollutants PM2.5 and ozone. With their knowledge of meteorology and access to computational resources, I think NOAA is in the best position to provide the best possible science-based forecasts. The health thresholds for these pollutants are likely to become lower in the next year so this task is likely to become even more important. So I think this is a bad time for NOAA to divest from this job. However, in my view, the forecasts NOAA provides at present are not at the same level of quality and accuracy as its meteorological forecasts, and to be more useful, NOAA should set benchmarks and show that the predictive value of its forecasts is improving each year. Thank you, [name removed] Iowa DNR

O22	To Whom it may Concern: I'm disappointed to hear you will be discontinuing the ozone and smoke forecasts. Our office finds these particularly useful in the late spring and summer to estimate smoke concentrations on both prescribed burning and wildfire smoke. We understand funding or other limitations are probably driving the decision but as for our office, we find them valuable, and voice our support to keep them going. Thanks for taking the time to hear our concern. *[name removed]* *Meteorology Manager* *Oregon Department of Forestry* *[phone number removed]*
O23	To whom it may concern, Pinal County in central Arizona is currently designated nonattainment by EPA for both ozone and PM2.5. Additionally, we currently produce a daily air quality forecast for ozone and particulate matter (http://pinalcountyaz.gov/Legacy/AirQual/pdf/Forecast/aqforecast.pdf). We use the National Weather Service air quality forecast products as tools in developing our air quality forecasts. Termination of these products would be detrimental to our air quality forecasting program. Please reconsider the proposed termination of the ozone and PM2.5 predictions ad they are vital to the accurate air quality forecasts in Pinal County. It is through those accurate air quality forecasts that the citizens of Pinal County can plan their daily outdoor activities in a way that can minimize health impacts from elevated air pollutant levels (i.e. ozone, particulate matter). Please feel free to contact me directly with any questions or comments. Thank you for the opportunity to provide comments on this important topic. Sincerely, [name removed] Air Quality Planning Manager Pinal County Air Quality [phone number removed]
O24	This is a terrible decision. I have come to rely on these predictions from May-Sep in Denver, CO. This is pretty much the only source of real-time forecast data for ozone and PM2.5. The forecasts from this tool are usually better and always more timely than the manual forecasts put out by our state health department and allow for better planning for the next day.

	As the EPA looks to make the ozone NAAQS more stringent over the coming years, many states and cities will be forced to undertake the painful process of ozone modeling. The problem there is that one can only model retroactively. If the NAAQS standards are lowered, as expected, many more people will become aware of the need to pay attention to ozone and/or PM2.5 (where they might not have before when they were always in attainment) and would find this tool to be of great value. This tool combines NWS forecast models with CMAQ and while it may not be widely utilized or known about, has great potential. Since I am guessing much of the developmental work has been conducted, it's too bad budget cuts are hitting this program. Maybe I am wrong in assuming that this is now largely an automated process. Consider my voice one for reversing this decision, getting input from states and locals on how to reduce costs while maintaining the most critical services (ozone season), and perhaps better marketing the tool. Thank you for considering these comments. [name removed] Environmental Assessment and Policy Section Supervisor Denver Department of Environmental Health 200 W 14th Ave, Dept 310 Denver CO 80204 [phone number removed]
O25	I think it would be great if the NOAA model could continue to be operational just because of all the time and effort that has been put into its development over the years. After having served on the NOAA Air Quality focus group for several years I have seen it perform better this past year than in previous years. It has historically over-predicted for Metro Atlanta, but the NOAA model still seemed to hit the very high AQI (poor air quality) days well. We have always looked at it as a helpful guidance tool, once we come up with our own ozone and PM2.5 forecast. So based on it's improving performance for Atlanta, and the amount of time and effort of tweeking and development that has been done, it would make sense to try to keep it operational as a guidance tool if possible. Protecting public health is critical during smog season, especially in a large urban area such as Metro Atlanta, where the meteorological regime is complicated due to differing synoptic flows and orographic effects. The more forecasting tools that air quality forecasters have to use in coming up with the next day's ozone and PM2.5 forecast, the better. Hope this info helps, [name removed] [name removed], Ph.D. Chief Meteorologist/State Climatologist-GA EPD

	[phone number removed]
O26	To whom this may concern: Ozone air quality predictions are important to the health and well-being of North Carolinians, in particular those North Carolinians with existing health conditions such as asthmatics. With climate change, increased days with high temperatures will only increase the amount of ozone. Therefore, it is imperative to have accurate, timely ozone air quality predictions in order to advise citizens what precautions to take to protect health. It is my opinion that ozone air quality predictions place North Carolinians in a better position to adapt to the adverse health impacts of climate change. Best wishes, [name removed] [name removed], MSPH Public Health Epidemiologist, Climate Change Occupational & Environmental Epidemiology Branch Division of Public Health North Carolina Department of Health & Human Services [phone number and email address removed]
	Concerned Scientists
O27	Subject: maintain NOAA air quality forecasts Dear Sir/Madam: I urge NOAA not to abandon its ozone and PM air quality forecasts. They are important for building air quality awareness in the US population. They also provide a foundation for NOAA to develop improved models of atmospheric composition for both air quality and climate implications. The Europeans are presently expanding the scope of their air quality forecasts, and the US would retreat? That seems unconscionable. Sincerely, [name removed] [name removed] [distinguished title removed] Professor of Atmospheric Chemistry and Environmental Engineering School of Engineering and Applied Science and Department of Earth & Planetary Sciences Harvard University [address removed]

	Cambridge, MA 02138 USA [phone and fax number, email, web address and alternate contact information removed]
O28	TO: Laura K. Furgione National Weather Service Director (Acting) RE: Proposed Termination of NWS Ozone Air Quality Predictions FROM: [name removed], Professor, The University of Maryland College Park The ozone (O_3) and fine particulate matter (PM2.5) numerical forecast models serve an essential purpose for public health, basic science, and education. To terminate them would be a tragedy. The annual death toll from air pollution in America rivals that from traffic accidents. Forecasters from The University of Maryland, the Maryland Department of the Environment, and other institutions in the Mid-Atlantic States depend on these model runs to support our public awareness and warning efforts. This capability, which allows communities to prepare for the worst and take action when necessary, would be severely weakened by short-sighted budget cuts. For nearly 20 years, we have been working with MDE and DNS on the Regional Atmospheric Measurement, Modeling, and Prediction Program (RAMMPP) to forecast pollution events. The National Air Quality Forecast Capability (NAQFC) stands the single greatest advancement in skill, and it allows us to evaluate our theoretical understanding – and ultimately control – of smog and haze events. We also rely on accurate forecasts for flight planning for annual monitoring flights with the Cessna as well as for the major DISCOVER-AQ campaign funded by NASA. These combined theoretical/experimental projects help evaluate remote sensing for NASA, EPA, and NOAA. The Departments of Atmospheric Science, Chemistry, and Chemical Engineering at UMCP are all involved in air quality education and research. Many graduate students are doing doctoral research use CMAQ, the same model used by NOAA in NAQFC. This model is in effect required for State Implementation Plans and the real test of a model is its predictive capability. Having outstanding scientists actively running CMAQ in the forecast mode, then evaluating, refining and improving it is of great value to the CMAQ user community. CMAQ is essential to our fundamental understanding of the chemistry, physics, and meteorology of air quality as well as to evaluating the efficacy of abatement strategy. Its output helps inform earth system science and water quality studies including eutrophication of the Chesapeake Bay. The wrong control measures could cost taxpayers billions of dollars each year as well as exacerbate morbidity and mortality. In summary, public welfare, basic science and education, as well as wise environmental policy all require a top quality numerical forecast model: available every day, with good forecast skill, fully documented, and accessible for evaluation. Only the NAQFC fits the bill – it must be retained.
O29	Dear Dr. Laura K. Furgione, In full agreement with [name removed], the ozone and fine particulate matter forecasts are essential to research, education and public health. Please keep that program alive for the benefit of the nation. Sincerely,

	[name removed]
O30	To Whom it May Concern: I'm writing to express my deep concern and dismay regarding the proposed termination of all operational and experimental ozone air quality predictions and the developmental predictions of fine particulate matter, in the NOAA air-quality forecast program. I have served for the last five years as a member of the international external review panel for the program that encompasses these products, so I have come to know the program well. My first concern regarding the cancellation of this part of the program is the impact the cancellation will have on US citizens. The Vision statement on NOAA's air-quality forecasting web page (http://www/nws/noaa/gov/ost/air_quality) states the need for a system "which provides the US with ozone, particulate matter and other pollutant forecasts with enough accuracy and advance notice to take action to prevent or reduce adverse effects." The main adverse effects referenced are with regards to human health, specifically for ozone and particulate matter. Surface level ozone and particulate matter have been shown in overwhelming numbers of health studies to be linked with health concerns ranging from chronic conditions such as asthma, up to acute conditions including mortality. Time and again these studies have shown that hospital admissions increase, and deaths increase, when concentrations of these pollutants are high. The provision of an ozone and $PM_{2.5}$ air-quality forecast allows those at risk to modify their activities, to prepare for future poor air quality days. The forecast also gives communities the opportunity to modify their emissions on a temporary basis – again, reducing the risk to the health of US citizens. With these forecast products, poor health and deaths of US citizens are prevented. Lacking them, the citizens of the US will suffer poor health and suffer deaths that would otherwise be preventable. My second concern is that the NWS is considering cancelling a large and fundamental part of a scientifically world-class air pollution forecasting program. The work carried out to date is scientifically of very high calibre, easily the equal and in some ways superior to air quality forecasting programs in other countries and jurisdictions such as Canada and the European Community. The cancellation of this program will adversely affect the development of this important science around the world. The absence of NOAA air pollution forecast scientists at recent international meetings, as a result of the proposed cuts, has been discussed with dismay throughout the international research community. The USA is usually thought of as a leader in this field – the proposed cancellation of these forecast products is already sending the opposite message to the international community. The proposal is not being made on the basis of the quality of the science delivered. My third concern is with regards to efficiencies of funding and "bang for the buck" – the NOAA O_3 and $PM_{2.5}$ air-quality forecast infrastructure constitutes a very small fraction of the NOAA budget, yet the health impacts of poor air quality are estimated at $150 billion US/year (http://www.nws.noaa.gov/ost/air_quality, "Summary of Air Quality Forecast Capability"), and were the cause for Congress to direct NOAA to provide this program. The ozone and PM2.5 forecasts are the key to forecasting the adverse health effects, as noted above. A budget

reduction of the same magnitude across NOAA would have allowed this important program to continue. This targeted reduction will have a minimal impact on NOAA's overall budget – yet will remove key forecast products for the American public, and potentially will result in health care costs in the billions of dollars. The cancellation of this key ingredient of the forecast program thus makes very little fiscal sense.

My fourth point, speaking as a scientist with an intimate understanding of this field, is that this decision would ultimately lead to the USA falling behind in the development of improved weather forecasts. The last ten years has seen the development of a scientific consensus that particulate matter and ozone influence the weather. Weather forecast models, in the absence of an air-quality component, use highly simplified climatologies for ozone and particulate matter – which are then used for the weather forecast model's radiative transfer and cloud and precipitation forecasting. Some of the most recent science carried out at the European Centre for Medium-range Weather Forecasts (ECMWF) has shown that the weather forecast accuracy can improve when driven with climatologies generated by air-quality models. Research in both Europe and the USA has shown that fully coupled forecast models (in which the weather and air-quality forecasts are performed together within a single modelling framework) can also result in improved cloud forecasts. The development and operation of an uncoupled air-pollution model forecast, such as the NOAA CMAQ program is a necessary first step in achieving a coupled model forecast or the improved climatologies required for weather forecast model input. By halting this activity, the United States is actually taking a step backward, a step that will cause the US to miss out on the next phase of improvements to weather forecast model predictions. The value of these improved forecasts will rest with other nations, putting the United States at a technological and strategic disadvantage.

My final point is that the cancellation of these forecast products would be a terrible waste of an investment in resources. Creating an air-quality forecast product takes time – both for the development of the forecasting model and the building of client relationships. Three hundred US cities issue air-quality alerts, and the forecasts upon which these forecasts are based now depend on NOAA's ozone forecast products for guidance. This guidance has been shown to improve the forecast, in scientifically solid statistical measures carried out by NOAA. Cancelling these products would leave this client base without guidance – and the time, money and personnel used in building that client base will have been wasted, with a consequent diminution of NOAA's reputation on the national stage.

Again, I reiterate my concern and dismay at the proposed termination of these forecast products. I would like to express my sincere hope that the administration will not follow through on this proposal.

Regards,

[name removed]
Senior Research Scientist
Air Quality Modelling and Integration Section
Air Quality Research Division
Environmental Science and Technology Directorate

	Environment Canada Toronto, Ontario, Canada, M3H 5T4 [phone and email removed]
O31	To Whom It May Concern: Approximately 30% of the American people live in locations with air quality that frequently fails to meet one or more air quality standards. The Health Effects Institute (Kaiser, 2000) estimates that exposure to high levels of particulate matter (PM) alone is responsible for up to 60,000 deaths each year in the U.S. The World Health Organization reported that a PM10 (particles with aerodynamic diameters <10 μm) concentration of 50 μg m-3 in the air results in a 5% increase in daily mortality and a 12% increase in hospital admissions. Air pollution places a very real economic burden on the country. Adjusted for inflation (3% per year), an American Lung Association estimate of the current annual cost of air pollution related illness in the U.S. is approximately $152 billion. Maintenance of an accurate and timely AQF system will maintain NOAA's potential to contribute to improved public health while reducing the economic impact of treating air pollution related disease. Termination of NOAA's Air Quality Forecasting program is a misplaced response to risk. Although the forecasting of events such as hurricanes or tornadoes appeal to meteorologists; these result in far fewer deaths and economic losses than air pollution every year. Therefore termination of NOAA's air quality forecasting program will be a shirking of NOAA's duty to provide the American public with lifesaving weather related information. *[name removed]* Note: these comments are my own and do not represent those of Howard University.

O32

TO: Laura K. Furgione
National Weather Service Director (Acting)
RE: Proposed Termination of NWS Ozone Air Quality Predictions

I am writing to ask that you reconsider your termination of the operational air quality predictions now being carried out by the NWS in conjunction with NOAA's Air Resources Laboratory (ARL). While the NWS has continued its investments in severe weather forecasts through models, analyses and infrastructure (radars), the deaths attributed to air pollution in this country far exceed those of hurricanes, tornadoes and lightning together. While, the air pollution deaths are not as dramatic and one can argue some with the numbers, the deaths prey on the weak and elderly and deserve the Nations attention as much as storm deaths.

Even property damage due to air pollution can rival that of storms because it is so pervasive and persistent. Premature aging of tires, nylons and seals cost millions in replacement costs. Corrosion of metals and paints requiring replacement and maintenance are a huge cost. Crop damage, though not as immediately dramatic as this summer's drought, can cause reductions in yields amounting to 100's of millions across the country.

The costs of air pollution control in this country each year are greater than all the storm damage combined. Models are an effective way to produce more efficient air pollution control strategies. Your daily forecast system provides a unique path for testing and improving models upon which air pollution control strategies are based.

Finally, should you go forward with termination of the chemical forecast system, I hope you will recognize the need for strong support of ARL. The NWS has a long history and commitment to improving air quality predictions through better understanding of the physical atmosphere. This includes the Air Pollution Desk at WFOs. ARL has provided the link between the air pollution community and the NWS. NWS weather forecast models such as WRF are used as the physical driver of air quality models used to set air pollution regulations. The NWS should continue and strengthen its commitment to improving the physical atmosphere characteristics in models that impact air pollution.

Thank you.

Signature and name removed

Distinguished Professor of Science, Emeritus
University of Alabama in Huntsville

O33	As a concerned citizen and an environmental scientist at MIT, I am very upset by the proposed termination of all operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter (PM2.5). Poor air quality kills 40,00 - 60,000 per year. This is far more than caused by tornadoes and hurricanes combined over decades. Canceling NOAA's program is an example of extremely misplaced priorities. I encourage NOAA to maintain its air quality predictions. I understand that we are in a difficult fiscal environment, but insuring clear air for fellow Americans is not the right place to make cuts. Sincerely, *[name removed]*
O34	Dear NWS Director/To whom it may concern, I am shocked to learn that the NWS may discontinue operational ozone forecasts. Ground level ozone is a serious public health problem, and the NWS forecasts provide important information that can help people plan recreational activities around "bad air" days. I for one check ozone forecasts regularly from May-September. Every organization in the country is in some budget crisis. Don't cut important stuff. At the very least, appropriate money to keep the operational ozone forecasts running throughout the summer months. Killing the program entirely would be foolish. Regards, [name removed] --- *[name removed]* Postdoctoral Research Associate Climate Change Institute University of Maine
O35	Air quality forecast is an essential part of NWS' mission. High concentrations of ozone and PM2.5 are harmful to a substantial fraction of the population. Good visibility, which is strongly affected by particulate matter concentrations, is important for our standard of living and operations of many industries. Developing high quality forecasts of these pollutants is as important as developing high quality weather forecast. The proposed termination of NWS air quality predictions cannot possibly be justified if the NWS's mission is for "the protection of life and property and enhancement of the national economy. [name removed] -- *[name removed]* Professor School of Earth and Atmospheric Sciences Georgia Institute of Technology 311 Ferst Drive, Atlanta, GA 30332-0340 *[phone and fax numbers and personal web page removed]*

O36	This seems like a real retreat in an area that many many people in the community have come to rely on for health reasons. I know of folks who are very sensitive to ozone and particulates and use the forecasts for planning their lives. It will be seen as politically motivated, which is not something that will make the NWS look strong in the eyes of the majority of the electorate. I urge you to reassess and reconsider. Respectfully, [name removed] Professor *[name removed]* Department of Meteorology 2525 Correa Rd. University of Hawaii Honolulu, Hawaii 96822 http://weather.hawaii.edu/ *[email address, phone and fax numbers and personal web page removed]*
O37	To whom it may concern, I am writing to comment on the proposed termination of NOAA's operational air quality forecast capability. I was the team lead in NOAA's Atmospheric Sciences Modeling Division located at the U.S. Environmental Protection Agency (EPA) in 2002 when discussions began on creating the nation's first numerical air quality model forecast guidance capability. Formal agreements were created between NOAA and EPA on the cooperation between the two agencies for the scientific and technical research and development to create and maintain the numerical modeling systems that would provide daily forecast guidance for air quality related to ozone and fine particulate matter, as well as for the operational aspects of the system and data flows into and out of the modeling system. A Herculean effort on the part of scientists in both agencies led to the initial operational system coming online in 2004 for the northeast United States, and in subsequent years expanding out to include the entire nation. The effort was not easy, and leveraged the technical talents of dozens of staff from NOAA, EPA, and their contractors in a closely coordinated program. As team leader I was well aware of the burden on the staff for this project, with many staff scientists putting in many more hours than anticipated on the air quality forecast project, while at the same time carrying out their responsibilities for their other projects. Everyone was dedicated to the task and excited by the operational aspects of the forecast system. The feedback from users over the last decade has been positive and gratifying as the forecast system has advanced in scope. I am saddened and chagrined at the prospects of the termination of this program, which many of us worked very hard to get started. I am well aware of the fiscal climate that has precipitated the decision to terminate. The scientific and technical expertise needed to develop and support an air quality forecasting program is highly specialized and difficult to find. Many of these specialized staff scientists have already left the program and found other positions as word of the program's demise began to spread. To reconstitute such expertise and train new people would take years. The incremental costs to NOAA to continue the air quality forecast program would not seem to be large compared to the main weather forecasting mission of the agency. This is especially true if the talents of relevant individuals

	working on air quality modeling within the government in various agencies, including NOAA, EPA, Forest Service, were more effectively harnessed and leveraged together. NOAA should not necessarily bear the burden alone. State and local air pollution agencies have the responsibility to issue air quality forecasts, alerts, and warnings to their local communities. The state forecasters have come to use and rely on the daily national guidance issued by NOAA. In the absence of such guidance, the state forecasters will use other data, including North American air quality forecast guidance issued daily by Environment Canada, whose forecast models also cover the United States. Canada has effectively leveraged its resources to create a world-class air quality forecast system, in tandem with its meteorological and climatological forecast model responsibilities. They appear to be forging ahead developing new capabilities for their system. So why should the U.S. be left behind if Canada can be a world leader in this field? And it is not only Canada, but also France, United Kingdom, and many other developed nations in Europe, Asia, and elsewhere have national air quality forecast systems. Constituencies within their populations have come to depend on them. It is my hope that NOAA will reconsider the decision to terminate the air quality forecast program, and seek ways to continue this valuable guidance, through cooperation with other federal agencies and the private sector, and with additional efficiencies within the program itself, such as making all forecast guidance experimental without the need for fully operational status as used for the meteorological forecast products. Sincerely, *[name removed]* (NOAA and U.S. EPA, retired)
O38	To Whom It May Concern: Please accept this comment in support of continuing the ozone forecasting program. I have been a scientist in the natural sciences my whole careers, served in various capacities for the US EPA on committees evaluating air regulations include the CAA, and been involved with climate change assessment and adaptation at the state and regional level. There is little debate on the negative consequence of ozone to crops and human health, likely to be exacerbated by our changing climate. There is little question about the cost efficacy of policies to improve air quality. There is also little question about the growing importance to have high quality monitoring of environmental quality to provide for appropriate management decisions. This includes humans getting out of harms way during anticipated high ozone events. While I recognize the realities of our current fiscal crisis, this seems short-sighted on many levels. I urge continued support of this program. Thank you. -- *[name removed]* University of Maine

	Orono, ME 04469-5722 USA *[address, email address, phone and fax numbers removed]*
O39	Dear NWS, The proposed termination of the ozone air quality prediction service will be devastating to my current work with high school and middle school students and teachers -- we use these data regularly to study environmental monitoring, modeling, and to develop students' data literacy. Without access to such real data, it will be meaningless to try and teach students about evidence-based reasoning, and it eliminates one more rich example of how modeling and historical data are coupled to understand the complexity of our fast-changing environment and to predict (and adapt to) future conditions. The marine buoy system has been undermined, USGS streamflow sites are being eliminated, The Framework for the Next-Generation Science Standards -- promoted by the current administration and many on both sides of the aisle -- emphasizes students learn to: 1. Ask questions (for science) and define problems (for engineering) 2. Develop and use models 3. Plan and carry out investigations 4. Analyze and interpret data 5. Use mathematics, information and computer technology, and computational thinking 6. Construct explanations (for science) and design solutions (for engineering) 7. Engage in argument from evidence 8. Obtain, evaluate, and communicate information **PREPUBLICATION COPY---Uncorrected Proofs** Copyright © National Academy of Sciences. All rights reserved.A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas Chapter 3: Dimension 1: Scientific and Engineering Practices 3-6 Dismantling environmental monitoring and modeling programs, and public access to the data, is a critical misstep scientifically and in terms of preparing the next generation of scientists. It is an issue of public health, education, jobs, and scientific progress. Keep the service going. Sincerely, *[name removed]* *[name removed]* Asst. Professor, Dept. of Earth and Climate Sciences University of Maine Climate Change Institute Maine Center for Research in STEM Education Hutchinson Center Science Program Coordinator [address removed] University of Maine, Orono, ME 04469

O40	As a former air quality forecaster for Philadelphia, PA, I am very disappointed to learn that NWS is planning to terminate all operational and experimental ozone air quality predictions and developmental predictions of PM2.5 produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). NOAA and EPA, through their Memorandum of Understanding, have put a great deal of effort and funding into developing and maintaining the ozone and PM2.5 modeling capability over the past 10 years. These models have become invaluable forecasting tools for state and local air quality forecasters in the U.S., and they have increased the accuracy of local ozone and PM2.5 forecasts, thereby helping to protect public health. These advances will be completely lost if NWS proceeds to discontinue support for the ozone and PM2.5 modeling programs. Continued operational air quality predictions of smoke, dust, and volcanic ash, as well as dispersion model predictions for the emergency management community responding to harmful releases, while valuable, are not sufficient for operational air quality forecasters. Private companies do offer analogous ozone and PM2.5 modeling output, but in the current climate of fiscal austerity on the state and local level, most programs will not be able to afford to purchase private air quality modeling output. As a result, most state and local air quality forecasting programs will be at a distinct disadvantage in terms of operational forecasting of ozone and PM2.5. The proposed action to terminate NOAA's ozone and PM2.5 predictions seems short-sighted, reckless, and dangerous, and I hope NWS will reconsider their decision. Sincerely, *[name removed]* Battelle Memorial Institute 2111 Wilson Blvd, Suite 900 Arlington, VA 22201 *[email address, phone and fax numbers removed]*
O41	Comments on the NWS proposal to curtail operational, experimental and developmental air quality forecasts. *[name, address, email address and phone number removed]* Boulder, CO 80303 To whom it may concern, First, let me quote NOAA's most recent strategic plans as to why air quality forecasts have been, and should continue to be, incorporated within NOAA's forecast responsibilities. **I. Reference: <u>Chart the Future, NOAA's Next Generation Strategic Plan, January 2012</u>** Available at: http://www.ppi.noaa.gov/ngsp/ Page 4, NOAA's Mission: Science, Service, and Stewardship To understand and predict changes in climate, weather, oceans, and coasts To share that knowledge and information with others, and Page 4, NOAA's Long-term Goals in support of NOAA's Vision of the Future:

A Weather-Ready Nation

A Weather-Ready Nation:
Page 21, Objective: Healthy people and communities due to improved air and water quality services.
"Poor air quality causes people to suffer from chronic respiratory illnesses and is responsible for up to 60,000 premature deaths in the U.S. each year..."
Page 22, "To achieve this objective, NOAA will develop and deploy a suite of integrated, nationwide health- and ecosystem-based weather, water, and climate services to address regional and urban needs. Key requirements include high-resolution ozone, smoke, dust, and other particulate matter forecasts;..."
"NOAA will improve modeling and prediction capabilities within an Earth system framework for air and water quality..."

II. Reference: Most recent 5 yr strategic plan: Research in NOAA, Toward Understanding and Predicting Earth's Environment, A 5 year plan: Fiscal Years 2008-2012, January 2008.
Available at: http://www.nrc.noaa.gov/plans.html
Page 37, Weather and Water Mission Goal: Serve Society's Needs for Weather and Water Information
"Poor air quality has had a significant effect on our nation's health and economy as pollution causes an estimated tens of thousands of premature deaths and more than $100 billion in costs per year. Although complete protection from weather and water events is not possible, considerable amelioration in deaths and property losses could be achieved with modest increases in forecast and warning skill.
Continued improvements in the ability of individuals and organizations to plan for and react to weather and water related impacts are critical to advancing community and economic resiliency in natural events throughout the United States....."

Page 39, "Environmental predictive models and information delivery systems must be improved through community model development, including improving and linking numerical modeling systems to adequately simulate weather, air quality, runoff, water, climate, and other geophysical phenomena in common modeling systems."

Page 40, Under: Research activities supporting NOAA objective and their associated research milestones:
Pages 44-45, Section 7.4.3 Provide information to air quality decision makers and improve NOAA's national air quality forecast capability.
Page 45, Table 7.4, Milestones for Providing Information to Air Quality Decision Makers and Establishing and Improving a National Air Quality Forecast Capability
Performance Objective: Improve predictability of the onset, duration, and impact of hazardous and severe weather and water events: 3-5 Year Milestones: Improve understanding of the connection between climate and shorter-term high impact air quality events to inform decision-makers.
Performance Objective: Reduce uncertainty associated with weather and water decision tools and assessments: 3-5 Year Milestones: Develop an advanced air quality model by linking the Weather Research and Forecasting (WRF) model to chemical processes for regulatory assessments.

General Comments:
The premature deaths and associated costs linked with poor air quality are thought to be due primarily to ozone and PM2.5 (PM less than 2.5 micron diameter). Moreover, these stated deaths and costs greatly exceed those inflicted on our nation by tornadoes and hurricanes combined, and continuously

	affect a much larger population. Mitigation efforts and strategies to protect the public will critically rely on ozone and PM2.5 predictions based on the best available science and forecasting techniques. Despite its disproportionate impact to the nation's populous, the relatively small price to NOAA to maintain the current air quality forecast system (~$5 million/yr) is a tiny fraction of amount NOAA spends on forecasts related to tornadoes and hurricanes. The decision by NOAA to curtail operational forecasts of ozone, along with the experimental and developmental forecasts of PM2.5, is depriving all Americans the valuable information related to air quality that we can use to plan our daily lives. This is most critical for those whose health is directly at stake, such as the elderly, people who suffer from asthma or other lung ailments, and the very young. The current air quality forecast system is well utilized by state, local, and commercial air quality forecasters that rely on its continued operational capability. The reliability of the ozone forecasts has improved over time, and so has the experimental PM2.5 forecasts. By all accounts the air quality program has been a success, and a great service to the country despite being woefully underfunded. One only has to look at Europe, Canada, Mexico, Japan, Chile, China...etc., to see that other countries realize an investment in air quality forecasting is an investment in public awareness and health information. Sadly, the US government (NOAA) is about to disenfranchise its citizens from having this information. Just as significant, the US will signal to other nations its lack in leadership accountability or morale obligation to its citizens in terms of air quality information it can provide. NOAA's decision to curtail ozone and PM2.5 forecasts is both short-sighted and heartless. Two Suggestions: 1. NWS/NOAA has an obligation to recommend an air quality forecast alternative to those agencies or people that currently rely on their forecasts. The best alternative, and the one that should be recommended, is the operational forecast provided by Environment Canada. This covers all of the continental U.S. except southern Texas and Florida. The Canadian air quality forecast includes a health index that incorporates ozone, PM2.5 and NO_2. Another alternative would be to recommend the suite of air quality forecasts available through NOAA/ESRL/GSD. Though not officially operational, these are available most of the time, and utilize NOAA's best science in terms of forecasting techniques, such as real-time data assimilation of ozone or PM2.5, and coupled chemistry-meteorology forecast models. 2. The impact of curtailing the air quality forecasts should be quantitatively documented. The logical choice would be statistical evaluations through hospital admittances, toxicology/death reports, or other health related information, comparing before curtailment to post-curtailment. Simple surveys to air quality planners and forecasters in state and local governing agencies could also be devised in order to objectively determine a response to the curtailments. Perhaps the administrators in charge of this misguided decision are right, and the nation can live without air quality forecasts. But it will be just as important to know how many Americans DIDN'T live without air quality forecasts.

O42

To whom it may concern,

I am writing in response to the solicitation for comments on the proposed termination of the NWS Ozone Air Quality Predictions.

I strongly oppose the proposed termination of the NWS numerical air quality model services. Terminating such services would reduce air quality forecast skill to the point where air quality forecasts could be useless to decision makers. Terminating such services would also waste millions of tax-payers' dollars and government resources invested in the program before the full potential of the program is realized.

As a graduate student, I perform research on the economic value of air quality forecasting. I study the mid-Atlantic region, where over 8.5 million people reside and an additional 2 million people visit annually. The 2012 State of the Air (http://www.stateoftheair.org/2012/assets/state-of-the-air2012.pdf) lists this region among the worst for ozone pollution. I found that the numerical model predictions supplied by the NWS have significant economic value in forecasting ozone exceedances (ozone concentrations exceeding the National Ambient Air Quality Standards) in this region and that the numerical model provides the best overall value for specific decision scenarios when compared to other forecasting methods (Garner and Thompson, 2012). I've also found that the latest upgrades in the beta version of the numerical model will significantly improve upon this value (Garner et. al, 2012 submitted), potentially saving end-users in the mid-Atlantic region thousands of dollars per ozone season. I believe that this value, integrated over the entire forecast domain, would provide ample evidence for the continued support of the NWS numerical ozone predictions.

Sincerely,

Signature and name removed

PhD Candidate (ABD) - Meteorology
503 Walker Building
The Pennsylvania State University
University Park, PA 16802
Email:

Garner, G. G., Thompson, A. M.: The Value of Air Quality Forecasting in the Mid-Atlantic Region. Wea. Climate Soc. 4, 69-79 (2012) DOI 10.1175/WCAS-D-10-05010.1

Garner, G. G., Thompson, A. M., Lee, P., Martins, D. K.: Evaluation of Numerical Air Quality Model Performance in Forecasting Near-Surface Ozone during the 2011 DISCOVER-AQ Campaign. Submitted. J. Atmos. Chem. (2012)

O43	Reading, UK, 20 December 2012 To: Dr. Laura K. Furgione RE: Termination of NWS Ozone and PM2.5 Air Quality Predictions Dear Dr. Furgione, We are writing today on behalf of members of the International Cooperative for Aerosol Prediction (ICAP). ICAP is a grassroots-style organization to advance global aerosol prediction and analysis through the open exchange of knowledge and best practices between data provides and developers of global aerosol forecasting systems (e.g., ECMWF, JMA, NASA, NCEP, NRL, UKMO, etc). While we do not speak for our respective agencies, ICAP members are at the forefront of aerosol technology and are greatly concerned with the future of aerosol modelling in particular, and atmospheric composition forecasting in general. ICAP members are well acquainted with the economics of operational atmospheric composition forecasting. Slowdowns in the global economy are straining budgets across the world, and sadly science is suffering. We have received the news of the proposed termination of all operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter (PM2.5) produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). We understand NCEP will retain some prediction capabilities related to emergency situations such as smoke, dust, and volcanic ash prediction, but will no longer offer predictions of ozone and particulate matter. We also acknowledge that there will still be air quality services provided by state and local authorities. Nevertheless, we would like to express our deepest concerns regarding this decision for the following reasons: o According to the World Health Organization, air pollution causes about 3.3 million deaths annually worldwide, and of these 1.3 million are due to outdoor urban air pollution. o Skin cancer is the most common of all cancers. It accounts for nearly half of all cancers in the United States. More than 2 million cases of basal and squamous cell skin cancer are found in the US each year. Melanoma, the most serious type of skin cancer, will account for more than 75,000 cases of skin cancer in 2012. The number one risk factor is unprotected and/or excessive exposure to ultraviolet (UV) radiation. These statistics indicate that the situation could always be considered an "emergency," and it should therefore be considered a priority of the National Weather Service to inform the American citizens regarding the status of the air quality and the ozone levels related to both pollution aspects (particulate matter and tropospheric ozone) and UV index (stratospheric ozone).

The decision of NWS to stop air quality prediction services will likely have consequences related to global research and development of these types of predictive capabilities. Many countries are starting to develop state-of-the-art capabilities to predict air quality, ozone and UV indicators (Europe, China, India, Japan), and operational centres are recognizing the importance of integrated modelling activities (i.e., chemical species in conjunction with particulate matter). It is undeniable that the US has a leading role world-wide as far as the application of satellite observations for weather prediction applications. For data assimilation to reach its full potential, both healthy satellite and global modelling programs are required. The inclusion of NCEP in the global development community for chemical weather forecasting will certainly drive further advancement in our ability to utilize satellite data in models and improve air quality prediction.

In chemical weather prediction, the United States has been at the forefront of the crossover of climate systems for use in forecasting. We hope this can continue in the future. In particular, NCEP should look to the the recently funded NASA geostationary Tropospheric Emissions: Monitoring and Pollution (TEMPO) sensor which will in 6 years provide hourly data over North America of such species as tropospheric ozone, NO_2, SO_2, and particulate matter. This is likely to be followed by GEOstationary Coastal and Air Pollution Events (GEOCAPE) mission. Globally, ESA will launch Sentinel 4 and 5, and in Asia we anticipate Geostationary Environmental Monitoring Spectrometer (GEMS). If NCEP is to make use of this global constellation, continued model development is required. If NCEP relinquishes a leadership role in atmospheric composition modelling and prediction, technology will be developed elsewhere. It would be unfortunate if NCEP, representing prediction from the United States, were not also a leading developer of these activities.

For these reasons, as co-chairs of the International Cooperative for Aerosol Prediction (ICAP) we would like NCEP/NWS to reconsider this planned termination. While termination might appear to be a solution to the current funding climate, it will likely have significant long term consequences in the United States and abroad.

Yours sincerely,

[signature removed]

[name removed]
Co-Chair of ICAP
Aerosol Data Assimilation Scientist
Monitoring Atmospheric Composition and Climate project.
European Centre for Medium-Range Weather Forecasts
Shinfield Park, Reading RG2 9AX

	[signature removed] *[name removed]* Co-Chair of ICAP *[signature removed]* *[name removed]* Co-Chair of ICAP Disclaimer: The views expressed here represent solely the opinion of the co-signers as concerned scientists and do not express the official position of their respective employers.
O44	To: Laura K. Furgione, National Weather Service Director (Acting) Regarding: Proposed Termination of NWS Air Quality Ozone and PM2.5 Forecasts We are writing to express our concern and opposition to the proposed termination of the NWS and NOAA's air quality ozone and particulate matter predictions. These predictions are an important resource for the scientific community and, we feel, a needed tool for continued public awareness and education of air quality issues. The NWS forecasts are also an important public health service, allowing people in sensitive groups to be aware of and manage their air pollution exposure. We are finishing our first year of an "Ozone Garden" public education and research project in the St. Louis, MO metro area. Goals of our project include increasing public awareness of ground-level ozone pollution and its detrimental effects on many plant species, both natural and agricultural, and to collect high quality O_3, weather, and O_3 induced foliar injury data. By extension, the Ozone Garden also educates the public on other air quality issues including human health. Our 2012 prototype plot was located in a highly trafficked area at the St. Louis Science Center. The project was well received and we are planning at least two more gardens in St. Louis in 2013, with hopes for a network of gardens across the country in the future. Part of our educational display includes the daily AQI forecast, so we use the NWS predictions every day. The St. Louis metro area has historically been in violation of the ambient air quality standards for ozone and many educators have made concerted efforts to reduce pollution by teaching concepts regarding air quality starting in elementary school. One tool often used by teachers, as well as by us in the St. Louis Ozone Garden, are the air quality forecasts that are now routinely published in local papers, as well as being displayed on electronic billboards along many of the major highways in the St. Louis region. Thus, the air quality information published daily by the Weather Service has now become an important educational tool that has generated an unprecedented awareness of ambient air quality conditions. The National Weather Service serves a public good. If the ozone and particulate matter forecasts are discontinued, an important tool utilized by many air quality organizations would cease to exist. For our work, St. Louis, and aiming to improve quality of life for all, we ask this

	service be continued. Sincerely, *[name removed]* Project Manager, The St. Louis "Ozone Garden" Center for Environmental Sciences Saint Louis University *[name removed]* Director, Center for Environmental Sciences Professor, Department of Earth and Atmospheric Sciences Saint Louis University
	General Public
O45	Subject: Keep the ozone prediction service going! Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts. The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Sincerely, *[name, address, email address and phone number removed]* Seattle WA
O46	Subject: Map Ending To whom it may concern !

	Please fight to keep the ozone maps from being discontinued. I have COPD and recently discovered the negative effects that ozone and particulates have on me. Your maps are great, I use them everyday as a guideline. How about running a few commercials to promote these maps and that they will soon be discontinued, you might be surprised at the support you would receive. Thanks for your consideration ! *[name removed]*
O47	Subject: Please continue to monitor air pollution This is a necessary expenditure just as air is necessary to human life and health. Thank you, *[name removed]* Mother of 2 children who deserve to know when the air outside is unsafe
O48	Subject: Keep the ozone prediction service going! My family is plagued with breathing problems. We rely on the predictions to know when/what medicines to take/give. Please keep the ozone prediction service running, for the sake of our (my) children and their (my) health. Sincerely, *[name, address, email address and phone number removed]* Winston Salem NC
O49	Subject: Ozone Prediction Service Please do not discontinue your Ozone Prediction Service! It is especially helpful for people with respiratory problems, but it also helps protect others, as well. *[name removed]*
O50	Subject: air quality forecast Dear folks at NOAA, Please do not terminate this valuable public service. Those of us with asthma, COPD, and other breathing challenges need this information to help us plan our day in a way that will help avoid the addition of more pollutants to an already overburdened repiratory system. Thank You, *[name removed]*

O51	Subject: Comments Requested by November 26, 2012, on Proposed Termination of NWS Ozone Air Quality Predictions Dear Acting Director Furgione, I apprec iate the fiscal cnatraints facing our government, but beg you to reconsider termination of ozone and air quality prediction. My family depends on thwse services for our health, being frequent travelers around this country. We use your web products on a regular basis. Ozone and particulate forecasts Are an importantpublc service not readily available from the private sector, and I am happy to have my tax dollars so employed. This is a public health issue and thenpublic will suffer! Please look elsewhere for budget cuts that will not affect the health and activity and travel choices of the citizenry. Thankyou for your consideration, love the work that you do and hopemit wont stop! *[name removed],* Cape Neddick, ME
O52	Subject: Please Don't I am a 65 y/o woman with asthma who lives in the NC mountains. I depend on nws reports of air quality about ozone and fine particles to understand how much advance protectionI should provide my airway for the day. Please continue to report ozone and fine particles for citizens like me with respiratory diseases and also for those with CV diseases and diabetes. We , and ALL children, are especially vulnerable to ozone and fine particles! Thank you *[name removed]*, Brevard, NC
O53	Subject: proposed termination of air quality predictions To whom it may concern, I was most disappointed to learn that the National Weather Service is proposing to terminate ozone air quality and fine particulate matter predictions. Having respiratory issues, I regularly follow your predictions in summer and periodically follow them the rest of the year. I particularly like the air quality maps at www.noaa.gov because they show ozone off shore --- useful information to an open water swimmer. Please consider keeping these services available. Thank you, *[name removed]*

O54	Subject: proposed termination of air quality predictions Dear NOAA, I'm afraid that I find your decision to terminate operational ozone predictions extremely disturbing. Many of us who live in the NE United States rely on this data in the course of our normal daily lives. I, for one, use these forecasts as an essential guide for air quality and base my activities upon them. Please, Please do not scrap such a useful, and necessary public service. Sincerely, *[name removed]*.
O55	Subject: Ozone Image Discontinuance!!! I would think that with the current environmental Armageddon we are experiencing interest would be in expanding the reporting of green house gases and the damage they are creating rather than limiting. unless of course the "Clean Coal" lobby is attacking once again. As no progress has ever occurred and no increase reporting of real-time GHG levels has occurred we may as well proclaim defeat to the lobbyists so they can continue to call for deregulation and hide the damage they are causing. Currently, between the pollen levels and "Clean Coal" emissions most of us will probably perish soon anyway. Thanks for caving!!!
O56	Subject: Proposed Termination of NWS Ozone Air Quality Predictions This decision is contraindicated to a fundamental right of "Life, Liberty and the pursuit of Happiness"! Examples: • I warn my family not to exercise outdoors on high ozone days. • Daily observation pinpoints the sources of pollution. • Ozone is one of the primary reasons for annual automobile pollution testing. • Ozone aggravates conditions in people with breathing problems. *[name removed]* Sussex, WI
O57	Subject: discontinuing your air quality webpage PLEASE continue to offer air quality reports for the public! I have a lung condition, so I need to consult your service several times a week, even have it bookmarked. I do a lot outside, and I need to know how strenuous I can be, or even if I can be

	outside. And when I have trouble with energy, I need to know whether it's a problem with the air, or if I need to be concerned about my lungs. Please continue to offer your valuable air quality webpage resource. Thank you, *[name removed]*
O58	Subject: Discontinuing Ozone predictions I just read the notice about the discontinuation of operational and experimental ozone quality predictions proposed by NOAA. As someone who suffers from asthma, these predictions have been very helpful to me. It helps me plan when I can do outdoor activities and in which part of the country. Ozone predictions are more important to my day-to-day life than predictions of precipitation and wind. Along with smoke and dust, this information is necessary for me to function safely. I get it that there are financial constraints but dropping this service will have a negative impact on people with various forms of respiratory disease. Air quality is a public health issue that affects the entire country and is a legitimate and necessary role for the federal government. So, if NOAA doesn't do these predictions, how will I get them? *[name, address, email address and phone number removed]* Bettendorf, IA
O59	Subject: Air pollution is weather! The public benefits from air quality reports.
O60	Subject: We need the particulate and ozone reports daily for asthma monitoring Please do not terminate the particulate < 2.5 mu daily reports. These are essential for planning for those with respiratory and asthma conditions. The ozone report daily is similarly essential for planning daily activities. If these reports are terminated, we might have to err on the side of caution and avoid vacationing or planning to move to locations where we are aware there are smog problems and ozone problems. We prefer to have the real data. Sincerely, *[names removed]* Lexington, MA *[zip code removed]*
O61	Subject: NOTICE: The National Weather Service is proposing to terminate operational ozone predictions on or about March 5, 2013. Please do not discontinue the ozone and particle matter guidance provided in Air Quality Forecast! The discontinuance of this vital "public" information

	is life threatening to the public at large and the physically impaired with respiratory and heart ailments. The public cannot rely on "other sources" for this necessary information. The impact of weather models generated by the NWS are integral to the forecasting of air quality. The economic costs to our societal health far outweigh the cost to provide the information to the public.
O62	Subject: fine particulate matter (PM2.5) produced using the Community Model for Air Quality NWS is proposing to terminate all operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter (PM2.5) produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). I access this information on a regular basis and personally feel that the loss of the PM2.5 Community Model would be a dire blow to population disease dynamics and infectious disease spread. Please do not allow the loss of this vital resource. Wr/ *[name removed]*, M.A., M.S., Ed.S., D.M.D., Ph.D. Captain, Dental Corps, United States Navy *[distinguished position removed]* U.S. Naval War College Center for Naval Warfare Studies 686 Cushing Road Newport, RI 02841-1207
O63	Subject: Stopping Ozone reporting I own a property in Phoenix and I use the forecast model daily. I would actually like to see more pollution reporting rather than less as far as air quality. I understand that cutbacks are necessary, however isn't there some less important area that could be cutback? I have suffered from Asthma and it is an important tool for me.
O64	Subject: ozone and PM2.5 Please do not stop the air quality forecasting operations for ozone and PM2.5! They are much needed! Thanks, *[name removed]*
O65	Subject: Proposal to terminate Ozone Predictions in 2013 Oh my gosh! I use these predictions to help me breathe! Without these predictions I may again find myself in the emergency room often, where now, with your predictions, I can prepare for high ozone days and thus have kept myself out of harms way. I have met many others with breathing problems who

	now, with my advice, rely on your predictions to stay safe. Please continue these predictions. Perhaps your decision makers have little idea how many of us rest our lives on your hard work regarding ozone levels. The entire country should be heading toward a much higher level of interest in our air quality. Most don't have any idea how polluted our air is and that the pollution is growing. Without your predictions, those closed eyes will never see the growing danger until they become gravely ill. With all the arguments about climate change, the last thing we need is to have less information on our air. We should only expand the information and put it in front of the faces of those who mess with our laws and disregard the real problems we have which are with our environment. Thank you for your attention and action in favor of our health. *[name removed]*
O66	Subject: terminating <<airquality.weather.gov>> I object to the termination of this information as it is invaluable to asthmatics and patients with other respiratory diseases. I read air quality websites every day to determine how much outdoor activity I can safely do. With an estimate of 12 to 15% of our population with respiratory diseases (American Lung Association) we are a large body of people who need this information. This could amount to a huge voting block of people who, if united, could be a sizable force supporting healthy air. These millions of people need to know the facts about the air they breath.
O67	Subject: NOUS41 KWBC 231135 Do not stop monitoring and predicting air quality. The loss of such a valuable service is irresponsible and short-sighted.
O68	Subject: Regarding proposed termination of air quality predictions Ms. Stajner (and whom it may concern), I recently was made aware of this notice about a proposal to terminate most air quality forecasting done by the NOAA. I do not accept the premise that this decision is being made on budgetary grounds. If the federal government can spend trillions of dollars on bank bailouts and the military, surely a relatively small expenditure that benefits the health and well-being of hundreds of millions of American citizens is worth our taxpayer money. In this time when corporate polluters are pushing to abolish the EPA and strip state and federal regulations protecting us from unsafe mining (they've already done so for natural gas fracking) and industrial pollution, I cannot help but think this is a political decision meant to benefit corporate polluters at the expense of increased asthma, cancer, and premature death for the rest of us. They

	would like to see us kept in the dark about the impacts of their pollution on our air quality. Please rest assured that many of us are committed to fighting the rollback of environmental protections and enforcement budgets, and do not cut this important data collection and reporting program. Sincerely, *-[name removed]* Madison, WI
O69	Subject: NWS Ozone Map Hello, I would like to say that I think that cancelling NOAA's ozone predictions is not a good idea. Air quality kills many thousands of people each year, and reduces quality of life for many more. I think providing information on air quality to interested people is important. The scientific community also uses the model output that is scheduled to be terminated, and their work on air quality would also be negatively impacted if this information would no longer be available. Thank you, Sincerely, *[name removed]*, US citizen
O70	Hello I really think the ozone map is truly important information for people like myself who cannot tolerate elevated ozone. This mapping grabs your attention in a way a table of values doesn't do. Also what about fires and hydrofracking impacts on the ozone. We need to know and visualize how the ozone is changing and perhaps changing for the worse in this nation. Thank you *[name removed]*
O71	No subject Dear Noaa, If I understand correctly you might be getting rid of the Ozone part of the air quality information. Please don't. I find it very valuable to know what the Ozone predictions are. I feel it is a valuable tool for a healthy America. This is very important knowledge. Please reconsider. Sincerely, *[name removed]*
O72	Subject: don't terminate ozone report...

	Hi! Please don't terminate the ozone report. It is the best way to determine if it's OK for our kids to play strenuously outside during the summer, or in fact, anytime during the year. Since we're in the tailpipe here in Maine, it's really important for us to have air quality information. Best, *[name removed]* York, ME
O73	Subject: ozone forecasts Hello, I was very discouraged to see that you are considering the cessation of your ozone forecasts, per the following notice: Public Information Statement, Comment Request National Weather Service Headquarters Washington DC 735 AM EDT Tue Oct 23, 2012 To: Subscribers: -Family of Services -NOAA Weather Wire Service -Emergency Managers Weather Information Network -NOAAPORT -NWS Air Quality Focus Group Other NWS partners and employees From: Laura K. Furgione National Weather Service Director (Acting) Subject: Comments Requested by November 26, 2012, on Proposed Termination of NWS Ozone Air Quality Predictions I review these forecasts very frequently, roughly once every week or two, for both professional and personal use, and find them extremely valuable. In fact, I keep hoping you'll expand this data through means such as compiling all predictions made in a year to construct annual average concentrations (knowing that these are all modeled estimates, not actual readings, but nonetheless useful as ballpark indicators of patterns seasonally and throughout the year). I also would very much like to see the fine particulate data made public. In any case, I sincerely hope you continue to at least provide the daily/hourly ozone modeling service. I also review the smoke and dust data at about the same interval as my ozone reviews, and am glad to hear you're at least keeping them. Thank you for your attention. *[name removed]*
O74	Subject: Air Quality Report Please keep this web page open on NOAA. Having COPD, I feel it give me

	warning in advance. Thanks, *[name removed]*
O75	Subject: I object to the dropping of the Ozone and Fine Particulate forecasting daily operation CC: BarackObama@whitehouse.gov NOUS41 KWBC 231135 PNSWSH Public Information Statement, Comment Request National Weather Service Headquarters Washington DC 735 AM EDT Tue Oct 23, 2012 Dear Acting National Weather Service Director Laura K. Furgione, I think that the forecasts are a help to asthmatics and to the elderly. There are correlations between the death rate in the elderly and high particulate pollution. There is also much to be learned technically from proper forecasting of the ozone levels and particulate in the atmosphere. In terms of national security and disaster preparedness the daily operational forecasting provides a continuing knowledge gain regarding dispersal patterns in the atmosphere. This means response time to events which could require incredibly rapid response is possible. A daily operational forecasting practice as is currently conducted includes local interfaces on a regular basis. Trying to develop the analytical response, do the modeling, and promulgate the information, simply won't occur fast enough if this is cut. In addition significant regulatory costs are imposed on industry in a variety of ways in order to improve air quality. This type of forecasting of ozone and fine particulates protects citizens and industry by providing an information base to work from and an opportunity to work to mitigate the highest pollution levels. Thank You *[name removed]* To: Subscribers: -Family of Services -NOAA Weather Wire Service -Emergency Managers Weather Information Network -NOAAPORT

	-NWS Air Quality Focus Group Other NWS partners and employees From: Laura K. Furgione National Weather Service Director (Acting) Subject: Comments Requested by November 26, 2012, on Proposed Termination of NWS Ozone Air Quality Predictions NWS is proposing to terminate all operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter (PM2.5) produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). This termination is proposed due to the current fiscal environment. NWS will maintain operational air quality predictions of smoke, dust, and volcanic ash, as well as dispersion model predictions for the emergency management community responding to harmful releases. Please provide comments on the proposed termination, by November 26, 2012, to:
O76	Subject: Air Quality Comment Laura K. Furgione National Weather Service Director (Acting) From: *[name and address removed]* Fredonia AZ Bad move cutting such crucial information to the US/World ... something everyone should be aware of i.e: http://www.nws.noaa.gov/om/notification/pns12ozone_pm2.5removal.htm Cut some of your fluff i.e. Facebook / Twitter or your stories like your headline story: the one on Lionfish "All You Can Eat": http://oceantoday.noaa.gov/allyoucaneat/ Informative and cute but really does it impact every living thing on the planet the way the global air quality / Ground Level Ozone does? I wish my comments here to be kept private and in confidence for the soul purpose as for use of expressing my opinion against the National Weather Service's intent of terminating of **operational ozone predictions i.e.:** **http://airquality.weather.gov/** **on or about March 5, 2013.** **Sincerely,** *[name removed]*
O77	Subject: Keep the ozone prediction service going! We should know about what's going on with the ozone layer. The ozone layer protects us from ultraviolet rays, which can cause cancer. Sincerely,

	[name, address, email address and phone number removed] Brooklyn NY
O78	Subject: Please do not terminate operational or experimental ozone predictions, nor experimental or operational fine particle predictions. Dear NWSSP: To protect the public from the ill-health effects of pollution from burning fossil fuels, the National Weather Service provides invaluable and unique maps reporting and projecting ozone pollution over the United States, at http://airquality.weather.gov/sectors/conus.php and over particular areas of the US, e.g., http://airquality.weather.gov/sectors/southplains.php#tabs The National Weather Service site is among the few, and perhaps the only, site that shows graphically just how many Americans are living under smoke, dust, and ozone pollution, and just how bad it will be, in time for we members of the public to take defensive action to reduce our exposure and the exposure of the vulnerable around us to the worst levels. "Real time" readings are delivered hours after the fact, and too late for us to take protective measures. The NWS operational site already makes graphically clear where ozone pollution is coming from, e.g. from the Ohio River Valley, from Gulf Coast refineries, and from intense traffic areas, e.g., Southern California. Additional invaluable mapping of fine particle pollution, e.g. from coal emissions, has been planned, but not yet implemented. In addition to graphically tracing the causes of pollution to community health consequences, the NWS maps providing forward-looking projection allow those likely to be affected to plan outdoor activities or exercise for a day or two ahead. The NWS site is among the very few sites that provide this kind of detailed comprehensible cause-effect and forward-looking projection information. The NWS's computer programs for tracking the movement of air to deliver weather predictions make it uniquely suited to provide this model, which is among the best or is the best that currently exists. The below termination notice has appeared on the NWS site **NOTICE: The National Weather Service is proposing to terminate operational ozone predictions on or about March 5, 2013.** **For more information, read the Public Information Statement by clicking here Comments on this proposal should be emailed to nwssp.comments@noaa.gov by November 26, 2012.** Taking down this ozone reporting would be a public health disaster. It is a key and necessary tool of people trying to minimize ill-health effects from exposure to ozone pollution. At the site's initial launch of the service in 2006, : Dr. Jeff Masters posted this regarding the resulting huge advance in air pollution forecasting:

	"... with the arrival of new NOAA forecasting guidance to improve forecasters ability to predict the onset, severity, and duration of poor air quality. For communities in most of the country, this will be the first time that comprehensive air quality predictions, with hour-by-hour information for cities, suburbs and rural communities alike will be available. http://www.wunderground.com/blog/JeffMasters/comment.html?entrynum=357&tstamp=200605 The National Weather Service site lets us know when we are going to have poor air quality days, how bad they will be and how long they will last. It gives us hour by hour information on air quality. It is used by weather wire services that feed television and newspapers their information, and by emergency managers of weather information. This kind of information lets us know when the air is dangerous for our children, so they shouldn't go outside to play. If the NWS ozone guidance goes dark, the communities served will again be without comprehensive air quality predictions or hour-by-hour information. The NWS system has already been developed - a considerable investment for an important public health benefit. The web reporting functions already in place can be maintained in its current state almost indefinitely for comparatively very little additional operational cost. It makes no sense to shut it down. It is extremely cost effective in allowing we the vulnerable to protect ourselves from exposure to some of the highest levels. Rather than termination, pollution modeling should be expanded and made even more accurate and granular, longer term, and cover more pollutants with deleterious health effects. Thank you for your consideration. Cordially *[name and email address removed]*
O79	Subject: The notice deceptively says only that "operational ozone" predictions will be terminated, effectively concealing that more terminations are proposed Dear NWSSP: The notice says only that "*operational ozone*" predictions are proposed to be terminated: **NOTICE: The National Weather Service is proposing to terminate operational ozone predictions on or about March 5, 2013.** Only by clicking through does one learn that it is not only "*operational ozone*" predictions that will be terminated. operational **"and experimental"** ozone air quality predictions **and developmental predictions of fine particulate matter (PM2.5)** produced

	using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). I would respectfully request a fuller notice be provided and ample additional time be allowed for public comment before a decision is made to terminate. Cordially *[name and email address removed]*
O80	Subject: Ozone Greetings: I wish you could get the money to continue ozone monitoring. Ozone levels affect people with health problems. I'd rather have this product than a bridge or harbor to nowhere or a war that doesn't help Americans. Thank you. Respectfully, *[name removed]*
O81	Subject: Air Quality Forecasts Survey 1. On a scale of 0 to 10 (10 highest), rate technical quality of thisproduct/service (e.g., forecast accuracy, timeliness, problems with display). RATING: 5 COMMENT: Sometimes it\'s correct, sometimes not, but it\'s helpful, anyway. 2. On a scale of 0 to 10 (10 highest), rate how easy you found theproduct/service to interpret and use. RATING: 10 COMMENT: not provided 3. What features did you like or find useful? RATING: not applicable COMMENT: not provided 4. What features did you not like? (Explain briefly) RATING: not applicable COMMENT: not provided 5. How often do you use this product/service? RATING: Weekly COMMENT: not provided 6. Tell us how you plan to use the information provided in thisproduct/service (e.g., information only, to support personal decision-

	making,to support business decision making, etc)? RATING: not applicable COMMENT: I use the airnow.gov site to decide whether it\'s safe to go outside. It seems to be correct about 70%, which is pretty good. 7. Comments on the Product/Service Description Document(documentation) provided. RATING: not applicable COMMENT: not provided 8. Do you feel it is appropriate for NWS to provide this product/service? RATING: Yes COMMENT: I think you should continue to provide the data (BOTH ozone and PM 2.5) to airnow.gov and let them deal with the website. 9. Any additional comments/suggestions concerning this product/service. RATING: not applicable COMMENT: Don\'t stop the service. Tell Congress if they lived where I live, they\'d want it, too. 10. What is your affiliation? RATING: Individual COMMENT: not provided
O82	Subject: Don't remove Ozone OR PM 2.5 predictions I'm just a "person" who uses http://airquality.weather.gov/sectors/southeast.php to decide whether it's safe for me to take my lungs outside. I am reading http://www.nws.noaa.gov/om/notification/pns12ozone_pm2.5removal.htm . It looks like you're keeping smoke predictions ("NWS will maintain operational air quality predictions of smoke, dust, and volcanic ash, as well as dispersion model predictions for the emergency management community responding to harmful releases.") but are totally removing ozone predictions. èYou should provide PM2.5 and PM10 dispersion model predictions to the public, not just EMC's. EMC's don't necessarily tell the breathing public anything. èI think you ought to keep some kind of ozone prediction somewhere. Especially for Florida, where there are so many cars and such hot sun. AND, so many old people who need to know when the ozone is high. Florida's DEP is unreliable when it comes to being proactive about clean air. I have deadly lung disease and any kind of pollution seriously damages me. So I see that you're removal of the data feed to Airnow.gov will put that prediction site away also. That's stupid crazy. I can see that the http://airquality.weather.gov/sectors/southeast.php is redundant with airnow.gov . Keep the data feed to Airnow.gov and drop the NWS sites. Who's responsible for this? I'll write to that person.

	Thanks, *[name removed]*
O83	Subject: Keep the ozone prediction service going! PLEASE keep the ozone prediction service running, for the sake of our children and their health. Sincerely, *[name, address, email address and phone number removed]* Boston MA
O84	Subject: Why on earth would you do this? I don't get it. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts. The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the FOSSIL FUEL COMPANIES responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Actually, what else do you do that we care so much about? Sincerely, *[name, address, email address and phone number removed]* Davis CA
O85	Subject: Keep the Ozone Prediction Service Going Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be, and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts.

	The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Thank you. Sincerely, *[name, address, email address and phone number removed]* Brick NJ
O86	Subject: Keep the ozone prediction service going! There is a reason - actually, many good reasons - why this service was started in the first place. It is of vital importance to the health and well-being of millions of people. Do the right thing, and keep it operational. Sincerely, *[name, address, email address and phone number removed]* West Shokan NY
O87	Subject: Keep the ozone prediction service going! Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts. The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health.

	Sincerely, *[name, address, email address and phone number removed]* Vandergrift PA
O88	Subject: I HAVE ASTHMA ~ Keep the ozone prediction service going! Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts. The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Sincerely, *[name, address, email address and phone number removed]* Crown Point NY
O89	Subject: Keep the ozone prediction service going! Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts.

	The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Sincerely, *[name, address, email address and phone number removed]* Austin TX
O90	Subject: Keep the ozone prediction service going! Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts. The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Thank you for your time and serious consideration toward this very important issue. Sincerely, *[name, address, email address and phone number removed]* Wichita KS
O91	Subject: Air Quality Forecasts Survey 1. On a scale of 0 to 10 (10 highest), rate technical quality of thisproduct/service (e.g., forecast accuracy, timeliness, problems with display). RATING: 10

COMMENT: not provided

2. On a scale of 0 to 10 (10 highest), rate how easy you found theproduct/service to interpret and use.
RATING: 10
COMMENT: not provided

3. What features did you like or find useful?
RATING: not applicable
COMMENT: ozone level prediction

4. What features did you not like? (Explain briefly)
RATING: not applicable
COMMENT: not provided

5. How often do you use this product/service?
RATING: Several times a week
COMMENT: especially in summer

6. Tell us how you plan to use the information provided in thisproduct/service (e.g., information only, to support personal decision-making,to support business decision making, etc)?
RATING: not applicable
COMMENT: to support family decision-making re immediate healthcare concerns, to coordinate planning for family activities

7. Comments on the Product/Service Description Document(documentation) provided.
RATING: not applicable
COMMENT: not provided

8. Do you feel it is appropriate for NWS to provide this product/service?
RATING: Yes
COMMENT: Can\'t imagine life without it. My family depends on it, as my spouse has asthma--until you see your spouse bent over on the ground, struggling to breathe, you may not understand the urgency.

9. Any additional comments/suggestions concerning this product/service.
RATING: not applicable
COMMENT: To consider not having this service sends a shock-wave through our family. Does it make fiscal, including healthcare, sense to delete a service that supports family health and well-being? If deleting a healthcare support results in poorer health and greater need for healthcare services, who economically profits? Families? No. Healthcare industry? Yes

10. What is your affiliation?
RATING: Other
COMMENT: Urgently concerned family member; see above.

Urgently concerned healthcare consumer; see above.

Urgently concerned USA citizen; see above.

[name removed]
TITLE: na
WFO-CODE: na
[address and email address removed]

O92	Subject: Keep the ozone prediction service going! Americans rely on the ozone prediction service to measure air pollution and its duration. We are told that the ozone prediction service may be curtailed as early as 5 March--and we only have until 26 November to tell you that we oppose letting it go dark. The ozone guidance system has already been built and the cost of keeping it going is minimal. We strongly suggest making the fossil fuel companies responsible for ozone pollution be taxed to keep the service going. Sincerely, *[names, address, email address and phone number removed]* Steuben ME
O93	Subject: Keep the ozone prediction service going! This is ludicrous. Do your job and protect us from poison. Sincerely, *[name, address, email address and phone number removed]* Winter Park FL
O94	Subject: Keep the ozone prediction service going! Families across the country are relying on your ozone prediction service to tell us when to expect periods of bad air quality, how bad those periods will be and how long they will last. That service provides us hour-by-hour information on air quality, which lets us know when to keep our children indoors due to dangerous air pollution. Now we're hearing that you might shut down the ozone prediction service as early as March 5th--and we only have until Monday, November 26th, to tell you that we oppose letting it go dark. The ozone prediction service is of enormous benefit to public health--ozone triggers asthma, breathing difficulties, strokes, and is bad for our hearts. The ozone guidance system has already been built and the cost of keeping the system going is minimal. Why not make the fossil fuel companies responsible for ozone pollution use their billions of dollars in profits to keep this

	lifesaving service going? I urge you to keep the ozone prediction service running, for the sake of our children and their health. Sincerely, *[name, address, email address and phone number removed]* Erie PA
O95	Subject: Proposed termination Hello to whom it may concern, I have just recently found the NOAA and Ozone, air quality tab. I am grateful I did. I have moved recently and started noticing changes in my respiratory system. Allergies are not something I am use to, but now I am feeling a difference in how I am breathing and sleeping. Someone mentioned your website and to check the air quality to see if there were any changes in air quality I now live. At first it was a little hard to understand what it all meant, I didn't understand what the different colors meant, blue to red. Or how the changes were affecting the different areas or states. (A little heard to read for a common person), but the more I played with the site and had someone with a little knowledge about how it works, I understand more and check it often, especially when I am having a harder time with breathing. This also has helped me to understand, if I want to move again. To check the air quality before going. The Ozone quality has been in the press numerous times. The importance of it and how we should be more aware of the dangers of the changes. I believe if you terminate a source of awareness that you might be contributing to the ignorance of people. I am sorry it took me this long to find it. If anything I believe you should promote the site and make people more aware of it. Plus make it a little more understandable for laymen people. Thank you for the opportunity to share my opinion and comments, *[name removed]*
O96	Subject: Proposal to Terminate Ozone Predictions Why are you proposing to terminate this valuable service , please? Is this a service considered optional as an overall cost-saving measure?
O97	Subject: Don't cease air quality monitoring!

	With regard to the cessation of air quality monitoring: I strenuously protest the cessation of air quality monitoring! Are you an entirely owned subsidiary of the coal companies and the Koch brothers? Regards, *[name removed]*
O98	Subject: Make the information relevant to your audience. TELL THE AVERAGE PERSON WHY THIS INFORMATION MATTERS TO THEM! TELL THEM WHY THEY SHOULD CARE! There is **nothing** on http://airquality.weather.gov/ that explains this. At all.
O99	Subject: canceling the ozone predictions Please don't cancel the ozone predictions starting in March of 2013. There are lot of people out here with asthma, copd and emphysema that rely on those predictions to help them get thru a day. I am one of them. I check it everyday to see if it is safe to go out and determine how long I might be able to stay out without causing further problems to my health! Thank you for your consideration!
O100	Subject: NOAA's proposed discontinuance of ozone and PM2.5 monitoring Dear Ivanka, My name is [name removed] and I found the NOAA announcement amongst my feeds only this evening in which NOAA proposes to terminate its air quality forecasting for ozone and $PM_{2.5}$. I can't tell you how distressing I find this announcement. I would greatly appreciate your clarification as to whether this monitoring service will be picked up by NASA or any other federal agency equipped with this technical capacity. I reside in Cleveland which has problems with compliance and has had for several years. Climate change effects are anticipated to increase the number of ozone days Cleveland typically experiences, due to the predicted warming trend, emissions stemming from our Industrial Valley and congested traffic. Specifically, I reference this report's findings from the U.S. Global Change Research Program: **http://globalchange.gov/publications/reports/scientific-assessments/us-impacts/full-report/climate-change-impacts-by-sector/human-health** Warming is likely to make it more challenging to meet air quality standards necessary to protect public health. Poor air quality, especially in cities, is a serious concern across the United States. **Half of all Americans,**

158 million people, live in counties where air pollution exceeds national health standards.[290] **While the Clean Air Act has improved air quality, higher temperatures and associated stagnant air masses are expected to make it more challenging to meet air quality standards, particularly for ground-level ozone (a component of smog).**[13] It has been firmly established that breathing ozone results in short-term decreases in lung function and damages the cells lining the lungs. **It also increases the incidence of asthma-related hospital visits and premature deaths.**[272] Vulnerability to ozone effects is greater for those who spend time outdoors, especially with physical exertion, because this results in a higher cumulative dose to their lungs. As a result, **children, outdoor workers, and athletes are at higher risk for these ailments.**[163]

Projected Change in Ground-Level Ozone, 2090s

The maps show projected changes in ground-level ozone (a component of smog) for the 2090s, averaged over the summer months (June through August), relative to 1996-2000, under lower and higher emissions scenarios, which include both greenhouse gases and emissions that lead to ozone formation (some of which decrease under the lower emissions scenario).[297] By themselves, higher temperatures and other projected climate changes would increase ozone levels under both scenarios. However, the maps indicate that future projections of ozone depend heavily on emissions, with the higher emissions scenario[297] increasing ozone by large amounts, while the lower emissions scenario[297] results in an overall decrease in ground-level ozone by the end of the century.[297]

Download Hi-Res Graphic

Ground-level ozone concentrations are affected by many factors including weather conditions, emissions of gases from vehicles and industry that lead to ozone formation (especially nitrogen oxides and volatile organic compounds [VOCs]), natural emissions of VOCs from plants, and pollution blown in from other places.[290,297] A warmer climate is projected to increase the natural emissions of VOCs, accelerate ozone formation, and increase the frequency and duration of stagnant air masses that allow pollution to accumulate, which will exacerbate health symptoms.[298] **Increased temperatures and water vapor due to human-induced carbon dioxide emissions have been found to increase ozone more in areas with already elevated concentrations, meaning that global warming tends to exacerbate ozone pollution most in already polluted areas.** Under constant pollutant emissions, by the middle of this century, Red Ozone Alert Days (when the air is unhealthy for everyone) in the 50 largest cities in the eastern United States are projected to increase by 68 percent due to warming alone.[298] **Such conditions would challenge the ability of communities to meet health-based air quality standards such as those in the Clean Air Act.**

Health risks from heat waves and air pollution are not necessarily independent. The formation of ground-level ozone occurs under hot and stagnant conditions – essentially the same weather

	conditions accompanying heat waves (see box page 102). Such interactions among risk factors are likely to increase as climate change continues. The State of Ohio has approximately one million asthmatics, one quarter million of whom are children. If this service is officially discontinued, and not replaced, it will have grave implications for those suffering from asthma, particularly our children, and for those who suffer from other serious respiratory conditions, not only in Ohio, but around the country. I would certainly appreciate your qualification of this decision, as I noted above, which will have terrible health consequences if this service is not assumed by another agency of NOAA's outstanding scientific caliber. Frankly, I am reeling from reading this. Thank you in advance for your response and I hope you will provide me the details so I might fully apprise others of the impending possibility for the discontinuation of this protective and essential service. *[name removed]* Concerned Citizen
S	**Comments supporting termination**
S1	Subject: Termination of operational ozone and particulate matter forecasts I concur with the NWS plans to terminate these forecasts. There are sufficient and better private-sector forecasts available at lower overall cost to the public. Regards -- *[name removed],* Chief Scientist Baron Advanced Meteorological Systems 1009 Capability Drive, Box #4, Suite 312 Raleigh, NC 27606 *[phone number removed]*
S2	Subject: Ozone air quality forecasts You've got our vote: get rid of them.
M	**Other comments**
M1	Subject: Vog Forcast I depend on the wind and vog forecast as I have serious health Issues. I am very susportive of you

	continuing to help the people fromthe state of Hawai Sincerely *[name removed]*
M2	Subject: Cancellation of ozone and smoke forecasting website If you are canceling the ozone and particulate reporting on the website, airquality.weather.gov, *does that mean we will not have surface smoke and smoke dispersion information as presented on the website?* Living in Colorado for 70 years, I have never seen forest wildfires like we've experienced since March. It is the end of October and currently there are four wildfires burning in the state. In addition, we've had smoke from fires in Washington, Montana, Wyoming, Nebraska and Idaho throughout the summer. I have been totally dependent on this website for smoke information. I'm only one of many seniors who have never had allergies but are now developing many problems from breathing smoke since last March. Now we have the cold weather inversion factor where the smoke is at surface level and much worse at night than it was. Our local forecasters never speak of the smoke problem. They mention "hazy" skies and talk about "hazy clouds that are the kind that don't produce moisture." The AQI can be good and you can go outside and see and be affected by the smoke in the air. I've seen good AQI for the last couple weeks with a VSI over 200 in the Greeley/Ft. Collins area. VSI is usually not reported for the Denver metro area. There must be some reason that it is not part of the weather forecasting. Without your website predictions, I have no means of checking surface smoke and its dispersion. Without a forecast, I cannot plan when I need to stay indoors as much as possible. I risk going out to run errands and then returning home to suffer the consequences. Your forecasting is a vital service to the nation. Thank you. *[name and email address removed]*
M3	Subject: OZONE I always reported any coming bad air quality, but I must say I just depend on the local NWS office to send out any statements. I never looked at forecast data. *[name removed]* FOX 25 Boston Chief Meteorologist
L	**Comments that arrived after November 26, 2012**
L1	To Whom It May Concern: Re: National Weather Service's Proposed Termination of Ozone Air Quality Predictions On October 23, 2012, the National Weather Service (NWS) proposed to terminate all operational and

	experimental ozone air quality predictions and developmental predictions of fine particulate matter ($PM_{2.5}$) based on the current fiscal environment. The Florida Department of Environmental Protection (FDEP) understands and respects NWS's commitment to cut unnecessary expenses in today's fiscal environment. However, if your proposal is based on the assumption that NWS's ozone and $PM_{2.5}$ predictions are underused or undervalued by states, this is not the case for Florida. FDEP relies heavily on the NWS predictions to conduct its required daily air quality forecasting. Moreover, the NWS predictions have become exceptionally reliable over the years in light of the many improvements that have been made to the Community Model for Air Quality. The termination of these ozone and $PM_{2.5}$ predictions could decrease government efficiency, nationally, by necessitating multiple state and local air quality programs to recreate and operate duplicative forecasting models. For these reasons, FDEP urges you to reconsider the termination of operational and experimental ozone air quality predictions and developmental predictions of $PM_{2.5}$. *[name removed]* Division of Air Resource Management Department of Environmental Protection 2600 Blair Stone Road, MS 5500 Tallahassee, FL 32399-2400 *[email address and phone number removed]*
L2	TO: Laura K. Furgione, National Weather Service Director (Acting) We write to strongly encourage NWS to continue operational air quality forecasting, and to continue developing the National Air Quality Forecast Capability (NAQFC) as an integral toolkit for making the United States a Weather-Ready Nation. In the past four years, we have contributed to national and urban AQ forecasting systems now operational in India, Chile, and China. We are currently developing a chemical weather forecasting and assimilation testbed for the Midwest, in part to provide an interim operational forecast for regional wintertime fine particle events before public release of the NAQFC for PM2.5, to support the documented needs of citizens, air quality decision-makers, public health officials, point source operators, and prescribed burn managers. So far, our nation has seen only a first glimpse of an operational NAQFC, and we have not yet had even a first opportunity to implement proactive policies for managing regional air quality based on reliable daily PM2.5 forecasts. We encourage extension of the NAQFC not just for the well-documented health, welfare, and economic value of timely and accurate AQ forecasts and their potential policy applications, but especially because it strengthens NWS as a world leader across all its environmental forecasting missions. Investment in NAQFC has the potential to catalyze unique and lasting high-impact improvements across core NWS forecast activities and services: 1. Improved mid-range weather forecasts. Skillful AQ forecasting requires improvements for a more extensive range of meteorological features than those central to skill for traditional weather products. Weather forecasts will benefit from ongoing advances in how models represent the atmospheric dynamics that drive AQ prediction. 2. More sophisticated weather forecast models. Weather forecasting has

	improved extensively in recent years from improved initial conditions gained by assimilating in-situ observations and remote sensing products, but better models will define next generation of improvements. Radiative forcing by ozone and particles contributes directly to changes in temperature and wind speed, while particles influence cloud evolution pervasively, changing cloud lifetime, precipitation, and even storm tracks. Weather forecast models will eventually need to include this additional complexity to continue improving. We cannot afford to wait decades to implement better models, and NWS can leverage years of prior investment in the NAQFC as a springboard on the inexorable path of progress toward more complex and realistic atmospheric models. 3. A more integrated weather forecast capability. The National Weather Service Strategic Plan identifies a core NWS mission in providing "integrated environmental forecast services supporting healthy communities". The NAQFC represents one of the first and most technically challenging national-scale forecast extensions to provide an integrated forecast. Its success will provide a needed roadmap for implementing integrated environmental forecast services according to the NWS Strategic Plan. Finally, AQ forecasting is a challenge only your team at NWS can meet. While a vibrant private sector weather enterprise provides alternatives and value-added extensions to many NWS operational forecasts, the private sector has limited capabilities and business models for operational AQ forecasts, and most early customers for the nascent NAQFC come from federal, state, tribal, and local government agencies. The 2011 NWS Strategic Plan has it right: NWS should be a leader in the business of air quality forecasting, because only the federal government is positioned to step in to provide this public good for the United States, and the NWS is the federal agency whose mission, personnel, institutional knowledge, and infrastructure combine to excel at this important task. Sincerely, *[name removed]* Professor, Chemical and Biochemical Engineering Co-Director, Center for Global and Regional Environmental Research University of Iowa Chair, Scientific Advisory Group, WMO GAW Urban Research Meteorology and Environment Program *[name removed]* Assistant Professor, School of Urban and Regional Planning Assistant Director, Environmental Policy Research, Public Policy Center University of Iowa
L3	Attached are EPA's Region 7 Comments *(See attached file: NWS comments-Air quality predictions.docx)* Thanks,

[name removed]
Air and Waste Management Division
Air Planning and Development Branch
U.S. EPA Region VII
11201Renner Boulevard
Lenexa, Kansas 66219
[phone number removed]

Attention Laura K. Furgione, National Weather Service Director (Acting)

Regarding: Proposed Termination of NWS Ozone Air Quality Predictions by the National Weather Service (NWS)

On behalf of EPA Region 7, we thank you for considering these comments on the proposal by the NWS to terminate all operational and experimental ozone air quality predictions and developmental predictions of fine particulate matter (PM2.5) produced using the Community Model for Air Quality (CMAQ) at the National Centers for Environmental Prediction (NCEP). As you are aware the operational and experimental predictions from NWS are used nationwide in informing the public by providing daily forecasts of air quality for pollutants such as ozone and fine particulate matter.

We are writing to express our concerns that public health will be adversely impacted by removing this forecast information from various public sites. For example, relatively low levels ozone can cause health effects. People with lung disease, children, older adults, and people who are active outdoors may be particularly sensitive to ozone. Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma. It is important for many residents, especially those sensitive to poor air quality, within the EPA Region 7 four state area to have access to these air quality forecasts in order to avoid potentially harmful pollution exposure. The removal of this forecast information will also have a direct negative impact specifically on an area in Region 7 that uses the information to determine the best days for local citizens to do prescribe burning. The information provided by the forecast is not only critical to the citizens' decision to burn or not to burn on a particular day in this area, but it also impacts the health of citizens in surrounding areas. Discontinuing this service removes an important public tool used by citizens nationwide, including citizens in Kansas, Nebraska, Iowa and Missouri.

As mentioned in the public information statement, many web-based visual displays informing the public of potential unhealthy air quality will no longer be provided including forecasts on http://airquality.weather.gov and http://airnow.gov. Thousands of citizens nationwide rely upon this type of forecast information used in daily reports for many areas. For example, airnow provides the Air Quality Index (or AQI) to tell individuals how clean or polluted the air is. EnviroFlash, a free service of airnow that also relies on forecast information, can alert you via email when your local air quality is a concern. Like the weather, air quality can change from day to day, or even hour to hour and information from good forecasting tools are important to those people in higher risk groups as described above. Discontinuing the NWS forecasting service will have an adverse impact on those individuals who rely upon these public services to make daily decisions to limit their exposure to ozone and fine particulate matter.

Region 7 respectfully urges the NWS to reconsider its proposed termination of air quality predictions. Just as accurate and timely weather forecasts can save lives, air quality forecasts can help save lives by informing citizens in sensitive groups when air quality is poor. For example, terminating heat warnings/advisories that NWS provides could potentially result in additional heat related deaths. The same type of important health information in air quality forecasts is currently being provided by the NWS and terminating this service could potentially impact health or even cost lives. The NWS is likely in the best position to continue this air quality forecasting service as the meteorological forecasts datasets already generated by the NWS are directly used in the air quality forecasts.

L4

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

November 29, 2012

TO: Laura K. Furgione, Director (Acting)
National Weather Service

FROM: [redacted] Program Manager
Air Quality Program [redacted]

SUBJECT: Comments on Proposed Termination of NWS Ozone Air Quality Predictions

Thank you for the opportunity to comment on the National Weather Service (NWS) proposal to terminate air quality forecast information from the National Centers for Environmental Predictions.

The Washington Department of Ecology, along with Washington's clean air agencies and the public receive valuable public health, public awareness, and technical benefits from these air quality predictions. We are concerned about the proposal to discontinue this service, and would like to express our support for the NWS to continue:

- Producing ozone and $PM_{2.5}$ air quality predictions, including updating models and emission inventories.
- Making air quality forecast information available to all web users.
- Prominently displaying an "Air Quality" page on its web site.

There is still a lot of work to be done in raising public awareness about air quality and the ozone and $PM_{2.5}$ information on the NWS website helps to do that. From the public awareness perspective, it will be a step backwards if a national forecasting web site no longer features air quality information. Eliminating this tool sends a message to the public that air quality is not important, when a growing body of health information shows that it is important, especially for sensitive populations such as kids, the elderly, and people with lung and heart conditions.

From the technical perspective, we find the NWS ozone prediction tool useful in Washington for several purposes:

1. Quality Assurance: When AIRPACT, our primary air quality forecasting model, shows suspicious values, we rely on the NWS ozone prediction tool as a second source of information and to help identify improvements to AIRPACT's model.
2. Back-UP: When AIRPACT is not available, the NWS ozone predictions tool is our back-up data source.

Unlike many other areas of the country, Washington does not rely on the NWS air quality forecasting in our everyday operations; however, if the forecasting is eliminated, our ability to forecast air quality will be impacted. It may lead to less accurate and timely predictions. This potentially impacts the public's ability to protect themselves from elevated levels of ozone and particulate matter, and their trust in our ability to produce high quality and accurate predictions.

Accurate predictions will be even more important as we see more hot days due to the predicted effects of climate change. Higher temperatures are expected to increase the number of days with high ozone concentrations and cause more wildfires, which impact both ozone and $PM_{2.5}$ levels. Under these circumstances, it would seem even more important to continue providing the public with the air quality information on a national web site.

We understand that limited resources require the need to make choices. However, we believe that the air quality forecasting tools provided by the NWS provide a number of important benefits to other air quality forecasters and the public and we hope the NWS can find a way to continue supporting these important tools.

cc: [redacted] Section Manager, Program Development
[redacted] Program Manager, Science and Engineering

I	**Interest to provide additional comments**
I1	Hi Ivanka, Do you have an update on the proposed change: http://www.nws.noaa.gov/os/notification/pns12ozone_pm2.5removal.htm I see the date for comments just passed. I'm interested to know if you're still accepting comments. I have a number of folks from my area interested in this. Thanks, [name removed] -- [name removed] Warning Coordination Meteorologist, Phoenix [email removed]