

MEMORANDUM FOR:	Matthew M. Kuzemchak, NWS NEPA Coordinator
FROM:	Jessica Schultz, Radar Focal Point, National Weather Service
SUBJECT:	Finding of No Significant Impact for Lowering the Minimum Scan Angle of the KBUF Weather Surveillance Radar - Model 1988 Doppler (WSR-88D) serving the Buffalo, NY, area – DECISION MEMORANDUM

Based on the subject environmental assessment, I have determined that no significant environmental impacts will result from the proposed action. I request your concurrence in this determination by signing below. Please return the memorandum for our files.

1. I concur \_\_\_\_\_ //signed 7/17/18// \_\_\_\_\_ Date
2. I do not concur \_\_\_\_\_ Date

Attachment

## MEMORANDUM

**TO:** All Interested Government Agencies and Public Groups

Under the National Environmental Policy Act, an environmental review has been performed on the following action.

**TITLE:** Lowering the Minimum Scan Angle of the KBUF Weather Surveillance Radar - Model 1988 Doppler (WSR-88D) serving the Buffalo, NY, area

**LOCATION:** Buffalo Niagara International Airport, Cheektowaga, Erie County, New York

**SUMMARY:**

The National Weather Service (NWS) owns and operates the existing Weather Surveillance Radar, Model 1988 Doppler (WSR-88D) serving the Buffalo, NY, area. The radio call letters of the radar are KBUF and the radar is located at Buffalo Niagara International Airport, 9 miles northeast of downtown Buffalo, NY. The KBUF WSR-88D was commissioned in 1996 and is one of 159 WSR-88Ds in the nationwide network.

The KBUF WSR-88D antenna transmits a narrow focused main beam with a width of 1 degree. In normal operation, the WSR-88D antenna rotates horizontally to cover all directions (i.e. azimuths). The radar antenna also varies the scan angle at which it points with respect to the horizon. The scan angle is measured along the axis of the main beam and can be changed in 0.1 deg increments. Currently, the KBUF radar operates at a minimum of scan angle of +0.5 degrees (deg) above the horizon. NWS proposes to reduce the minimum scan angle of the KBUF WSR-88D from the current minimum of +0.5 deg to +0.3 deg (the proposed action). Lowering the minimum scan angle would provide enhanced coverage of the lower portions of the atmosphere. No construction activities or physical modification of the KBUF WSR-88D would be required to implement the proposed action; the only change would be to the radar's operating software.

**RESPONSIBLE OFFICIAL:** Jessica Schultz, Radar Focal Point, National Weather Service, 1200 Westheimer Drive, Norman, OK 73069, Tel. (405)573-8808, email: [Jessica.a.schultz@noaa.gov](mailto:Jessica.a.schultz@noaa.gov)

The environmental review process led us to conclude that this action will not have a significant effect on the human environment. A copy of the finding of no significant impact, including the supporting environmental assessment is enclosed for your information. Please submit any comments to the responsible official named above by **August 20, 2018**.

Also, please send one copy of your comments to me in 1325 East-West Highway, Room 3353, Silver Spring, MD 20910.

Sincerely

Matthew M. Kuzemchak  
NWS NEPA Coordinator

Enclosure

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**  
**LOWERING THE MINIMUM SCAN ANGLE OF THE WEATHER**  
**SURVEILLANCE RADAR-MODEL 1988, DOPPLER (WSR-88D)**  
**SERVING THE BUFFALO, NY, AREA**

**ENVIRONMENTAL ASSESSMENT (EA) SUMMARY**

**Purpose and Need**

NWS is part of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce. NWS operates a nationwide network of 159 Doppler weather radars, which collect data on atmospheric conditions, and include precipitation type and intensity, wind speed and direction, and storms, from near ground level to above 10,000 ft in elevation above the ground. NWS staff uses these data to prepare daily forecasts and issue severe weather watches and warnings, and to further NWS's mission to protect and enhance life and property and the nation's economy. The WSR-88D serving the Buffalo, NY, area has radio call letters KBUF and is located at Buffalo Niagara International Airport, 9 miles northeast of downtown Buffalo, NY. Operating this radar at lower scan angles would increase the area of radar coverage, providing additional data on atmospheric conditions to NWS forecasters and other data users. The area covered at 2,000 ft above site level (ASL) would increase by 49.7%. Additionally, the floor of radar coverage over Erie, PA, would decrease from the current 4,100 ft above ground level to 2,460 ft.

**Description of Proposed Action**

The KBUF WSR-88D is an S-band Doppler, dual polarized weather radar, which NWS uses to collect meteorological data to support weather forecasts and severe weather warnings for Western NY state and northwestern Pennsylvania. The KBUF WSR-88D antenna transmits a narrow focused main beam with a width of 1 degree. In normal operation, the WSR-88D antenna rotates horizontally to cover all directions (i.e. azimuths). The radar antenna also varies the scan angle at which it points with respect to the horizon. The scan angle is measured along the axis of the main beam and can be changed in 0.1 deg increments. Currently, the KBUF radar operates at a minimum scan angle (at the center of the beam) of +0.5 degrees (deg) above the horizon. NWS proposes to reduce the minimum scan angle of the KBUF WSR-88D from the current minimum of +0.5 deg to +0.3 deg (the proposed action). Lowering the minimum scan angle would provide enhanced coverage of the lower portions of the atmosphere. No construction activities or physical modification of the KBUF WSR-88D would be required to implement the proposed action; the only change would be to the radar's operating software.

**Alternatives Considered**

NWS evaluated the benefits and potential impacts of lowering the minimum scan angle of the

KBUF WSR-88D to each angle between +0.4 and -0.2 deg in 0.1 degree increments. That analysis found that a minimum scan angle of +0.3 deg would result in improvement of radar coverage while not causing significant environmental impacts. Operating the KBUF WSR-88D at center of beam minimum scan angles at +0.2 deg or lower (i.e. between +0.2 and -0.2 deg) would not improve radar coverage and would increase ground clutter return. Based on this information, NWS selected a minimum scan angle of +0.3 deg as the proposed action analyzed in this EA.

The no action alternative consists of continued operation of the KBUF WSR-88D at the existing minimum scan angle of +0.5 dg. The improvements in radar coverage would not be achieved and the project objectives would not be met. The proposed action would result in increased RF exposure at certain portions of the atmosphere while the no-action alternative would not change RF exposure levels from existing levels. The nearest structure that would be directly illuminated by the WSR-88D main beam operating at +0.3 deg scan angle would be the Buffalo Niagara International Airport Traffic Control Tower (ATCT), located 5,600 ft south-southeast. Under both the proposed action and the no action alternative, radiofrequency (RF) exposure levels would conform to safety standards established by American National Standards Institute / Institute of Electrical and Electronics Engineers, Occupational Health and Safety Administration, and Federal Communications Commission at the ATCT and all other structures and ground-level locations.

### **Environmental Consequences**

NWS prepared an Environmental Assessment (EA) analyzing the potential environmental consequences of the implementing the proposed action in compliance with the President's Council on Environmental Quality (CEQ) National Environmental Policy Act implementing regulations (40 Code of Federal Regulations Parts 1500 – 1508) and NOAA Administrative Order (NOA) 216-6, *Environmental Review Procedures for Implementing the National Environmental Policy Act*.

Lowering the minimum scan angle of the KBUF WSR-88D would not require physical changes to the radar, vegetation removal, or ground disturbance. The proposed action would not result in significant effects in the following subject areas:

- Land Use and Coastal Zone Management
- Geology, Soils, and Seismic Hazards
- Drainage and Water Quality
- Transportation
- Air Quality
- Flood Hazards
- Wetlands
- Biological Resources / Protected Species

- Cultural and Historic Resources
- Environmental Justice Socioeconomic Impacts
- Farmlands
- Energy Consumption
- Visual Quality/ Light Emissions
- Solid and Hazardous Waste
- Wild and Scenic Rivers

The lower minimum scan angle would not result in the KBUF WSR-88D main beam impinging on the ground in the vicinity of the WSR-88D site. The proposed action would slightly increase RF exposure levels in the vicinity of the KBUF WSR-88D. RF exposure would comply with the national safety standards developed by the IEEE and the adopted by ANSI. RF emissions during would also comply with FCC and OSHA safety standards for RF exposure of the general public and workers. Because the KBUF WSR-88D operates in a frequency band dedicated to government relocation services and the main beam would not impinge on the ground surface in the radar vicinity, the proposed action would have low potential to cause radio interference with television, radio, cellular telephone, personal communications devices (PCDs), electro-explosive devices, fuel handling, active implantable medical devices, or astronomical observatories.

#### **Public and Agency Review of the Draft EA**

The NWS distributed the Draft EA to interested members of the public and government agencies for review and comment. Comments on the Draft EA were accepted by NWS during a 39-day comment period ending on June 29, 2018. No comments were received on the Draft EA.

### **FINDING OF NO SIGNIFICANT IMPACT**

The CEQ Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR 1508.27). In addition, NAO 216-6A, Section 6.01(b) 1 – 11, provides eleven criteria, the same ten as the CEQ Regulations and one additional for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

*1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?*

No. The EA report analyzes the potential for implementation of the proposed action to cause environmental consequences based on established standards and criteria. The proposed action would not result construction or ground disturbance. The only environmental consequence would be a slight increase in RF power density in a small portion of the atmosphere. During normal

operations, WSR-88D RF emissions would comply with national and international safety standards for human exposure.

*2. Can the proposed action be expected to significantly affect public health or safety?*

No. The lower minimum scan angle would not result in the KBUF WSR-88D main beam impinging on the ground in the vicinity of the WSR-88D site. The proposed action would slightly increase RF exposure levels in the vicinity of the KBUF WSR-88D. During normal operation of the radar with rotating antenna, RF exposure would comply with the national safety standards developed by the Institute of Electrical and Electronic Engineers (IEEE) and the adopted by the American National Standards Institute (ANSI). RF emissions during normal operation would also comply with Federal Communications Commission and Occupational Safety and Health Administration safety standards for RF exposure of the general public and workers. This is true for the Buffalo Niagara International Airport Traffic Control Tower, located 5,600 ft south-southeast, the nearest structure within the WSR-88D main beam. RF emissions from the WSR-88D would also comply with RF exposure standards for implantable medical devices established by the FCC and the Association for Advancement of Medical Instrumentation and would not interfere with operation of those devices.

*3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?*

No. The only place listed on the National Register of Historic Places within the proposed action's area of potential effect (APE) is the War of 1812 Cemetery in Cheektowaga (95NR00891), located about 1,800 ft east-southeast of the WSR-88D. The cemetery is at elevation 685 ft MSL, which is 106 ft lower than the center of the WSR-88D antenna. When operating at the proposed minimum scan angle of +0.3 deg, the bottom of the WSR-88D main beam would have at an elevation of 771 ft or 86 ft above ground level at the cemetery of 1812. No adverse effects on activities or structures at the cemetery would result and the proposed action would not have the potential to affect any properties listed on the NRHP. The KBUF WSR-88D is not in proximity to prime farmlands, wetlands or wild and scenic rivers and those resources would not be affected. The project area is not within and/or does not contain critical habitat or other ecologically critical areas. The proposed action would not adversely affect or restrict outdoor recreation opportunities in the vicinity of the WSR-88D.

*4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?*

No. The proposed action would not result in construction or ground disturbance and would comply with safety standards for human exposure to RF emission.

*5. Are the proposed action's effects on the human environment likely to be highly uncertain or*

*involve unique or unknown risks?*

No. The proposed action would not increase the radar's power output, but would spread those emissions over a larger portion of the atmosphere. RF power densities at the newly covered area would be the same as at existing covered portions of the atmosphere. The EA contains detailed calculations of RF exposure levels and compares projected exposure levels to safety standards for RF exposure of the general public and workers, potentially RF sensitive activities (e.g. fuel handling, use or transport of electro-explosive devices), and active implantable medical devices. The proposed action would comply with all safety standards. The WSR-88D main beam would also not directly illuminate any astronomical observatories and would not have the potential to affect their operation. There is very little potential for unknown or uncertain impacts to result.

*6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?*

No. The proposed action is limited to lowering the minimum scan angle of the existing KBUF WSR-88D serving the Buffalo, area, and the EA analysis is specific to that radar. If the NWS were to consider lowering the minimum scan angle of another WSR-88D in the nationwide network, they will perform a site specific analysis of potential effects for that radar in compliance with NEPA and NAO 216-6A. No precedents would result for future actions with significant effects or a decision in principle about a future consideration.

*7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?*

No. The Final EA report evaluates the potential for the proposed action, in conjunction with past, present, and reasonably foreseeable future actions to cause significant environmental effects. The proposed action is not reliant upon or connected to other actions, nor is it relied upon for the occurrence of other actions. Therefore, the proposed action will not result in a significant cumulative impact to the human environment.

*8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?*

No. As discussed in the answers to questions 3 and 5, the EA identified historic places within the action's APE proposed action and astronomical observatories within 150 miles of the KBUF WSR-88D. The potential for the proposed action to adversely affect those places was analyzed and the EA found that no adverse would result.

*9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?*

No. Based on information obtained from the U.S. Fish and Wildlife Service, the proposed action would not adversely affect threatened and endangered species or critical habitat.

*10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?*

No. The effect of the proposed action on the human environment has been analyzed relative to applicable Federal, state and local environmental laws or regulations. No regulatory violations or other significant environmental effects are expected to result.

*11. Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?*

No. The proposed action has no potential to cause the transport, release, propagation or spread of non-indigenous species.

### **DETERMINATION**

After careful and thorough consideration of the Final EA report, the undersigned finds that lowering the minimum scan angle of the KBUF WSR-88D serving the Buffalo, NY area from the current +0.5 deg to +0.3 deg is consistent with existing national environmental policies and objectives set forth in sections 101(a) and 101(b) of NEPA and will not significantly affect the quality of the human environment or otherwise result in any condition requiring consultation pursuant to section 102(2) (c) of NEPA.

As described in section 5.03c of NOA 216-6A, a Finding of No Significant Impact is supported and appropriate for lowering the minimum scan angle of the KBUF WSR-88D from the current +0.5 deg to +0.3 deg. as analyzed in the EA report. Preparation of an environmental impact statement for this action is not necessary.

//signed 7/17/18// \_\_\_\_\_  
Jessica Schultz  
Radar Focal Point  
Radar Operations Center  
National Weather Service

\_\_\_\_\_  
Date