



## Q&A ON WASHINGTON STATE COASTAL RADAR

AS OF JUNE 21, 2010

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### **Q: Is there sufficient funding to purchase a new radar system for Washington State?**

- The US Congress has appropriated adequate funds to install a new radar system in Washington State.

### **Q: What type of radar system would be installed?**

- The new radar will be a NEXRAD Doppler weather radar, officially called the Weather Surveillance Radar – 1988 Doppler (WSR-88D).
- The new Washington Coast WSR-88D will be upgraded at the time of installation with the latest Dual-Polarization technology.
- The WSR-88D is the NWS' high-power, S-band (~10 cm wavelength) Doppler weather radar in service nationwide, including near Seattle, WA and Portland, OR.
- The WSR-88D, though first installed in the 1990's, has been continually upgraded with new hardware, computers, scientific algorithms, and communications technology to keep it a state-of-the-art weather radar. The addition of dual-polarization technology next year will maintain its status as the best weather radar available.
- NOAA will immediately integrate the new radar into the national WSR-88D network including connectivity with NWS, U.S. Air Force and FAA display systems.
- The public will also have immediate access to the radar's data and products, in the same way they are currently available from 155 other WSR-88Ds.

### **Q: Would a new radar system improve weather forecasts for the State of Washington?**

- A new radar system on the Washington coast would be a welcome addition to the National Weather Service tool set. Any additional data available to a forecaster is helpful to the forecast and warning process.
- The new radar will expand radar coverage in the terrain-blocked region improving short-term (zero to 12 hours) prediction of storm systems that frequently impact Washington State and the Pacific Northwest by 'looking into storms' as they reach the coastline.
- Data from the radar will also enhance forecast information for the interior of the Pacific Northwest and even the rest of the nation as Pacific storms move inland.
- Dual Polarization technology will further improve precipitation estimates and forecasts.

### **Q: When could the new radar be in place?**

- NOAA is planning to start operating the radar by 30 September 2011.

### **Q: Why does it take so long to install a new radar system?**

- A one-year site survey and environmental assessment period has just now completed and is one of many actions that must be completed before the radar can be installed.
- Acquiring the real estate for the radar site is a 6 to 12-month process and cannot begin until after the environmental assessments of potential land sites are complete.

- Some of the large radar components that must be purchased for the new radar have long-lead times because they are made to order for the NWS.
- Site preparation, installation, and system checkout requires several months and cannot begin until after the real estate has been procured.

**Q: Where will the new radar be located?**

- Selecting a radar site is a complex process and requires extensive analysis and planning.
- NOAA has reviewed numerous potential sites for the new radar and anticipates the radar will be sited in Grays Harbor County within a few miles of the coast.

**Q: Will the radar fill the coverage gap in Western WA and along the coast?**

- Yes, one of the main criteria for siting the radar is to optimize radar coverage in the current gap area southwest of the Olympic Mountains, along the coast and off-shore.
- We anticipate that radar coverage will extend at least 100 miles off shore.

**Q: What are the criteria for siting the radar?**

- General criteria include finding a site that maximizes low-level coverage both inland and offshore; has adequate access to communications, electric power, and roads; avoids obstructions such as trees, hills, buildings, other tall structures; and, avoids interfering with, or being interfered by, other microwave sources.
- The site should improve radar coverage southwest of the Olympic Mountains, which currently lacks coverage from the Seattle WSR-88D due to beam blockage.
- The site should improve precipitation estimates on the west slopes of Olympic Mountains, on the Willapa Hills in SW Washington, over the Strait of Juan de Fuca (NW of Seattle) and the mouth of the Columbia River.
- The site should improve the detection of the atmospheric structure and wind field over coastal waters, and the detection of severe convective storms.
- The site should improve the detection of precipitation type (melting level) in the areas currently lacking coverage.

**Q: Why is there not a coastal radar system located in Washington State now?**

- NOAA's National Weather Service currently has 4 WSR-88D radar systems, 2 of which are in Oregon, that provide coverage of Washington State.
- Due to the unique terrain features in Washington State these radar systems are subject to radar beam blockage.
- Currently, NWS meteorologists use multiple tools such as radar, buoys, satellite and land-based observations combined with computer models and their own experience to prepare accurate and timely forecasts.

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