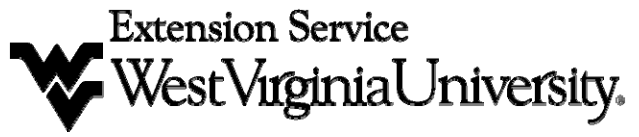


Nov. 13, 2003 Lincoln County Flood Photo Courtesy of Francis Holton

# West Virginia Flood Awareness Campaign March 19-25, 2006

Participating Agencies



# WEST VIRGINIA FLOOD AWARENESS CAMPAIGN

Campaign Messages, Statistics on Weather Events	3
Why Do Vehicles Float?	4
Flooding	5
Flood Safety & Products	6
Are You Ready for a Flood or a Flash Flood?	7
Safety Tips from the Fire Marshal	9
Flood Insurance Facts	10
Forces On Vehicles, Billion Dollar Weather Disasters	11
SPLASH! Flood Facts for Puddle Jumpers	12
Weather Radio Frequencies	14
Contacts	15



## Daily Campaign Messages

Sunday, March 19	Introduction to Campaign
Monday, March 20	Flood Terminology
Tuesday, March 21	Flash Floods
Wednesday, March 22	Low Water Crossing
Thursday, March 23	Turn Around, Don't Drown
Friday, March 24	NOAA All-Hazards Weather Radio
Saturday, March 25	Disaster Supplies Kit & Safety

Extra copies of this campaign booklet can be downloaded from our web site at:  
[www.weather.gov/charlestonwv](http://www.weather.gov/charlestonwv)

### Weather Related Fatalities in West Virginia 1993-2005

Floods/Flash Floods	43
Winter Weather	13
Lightning	6
Wind	6
Heat	1
Other	3

*Fatalities directly related to or caused by weather*

### Annual Fatalities in WV

1993	3	1999	3
1994	11	2000	4
1995	5	2001	6
1996	12	2002	3
1997	6	2003	6
1998	7	2004	3
		2005	3

### Warnings Issued in WV—2005

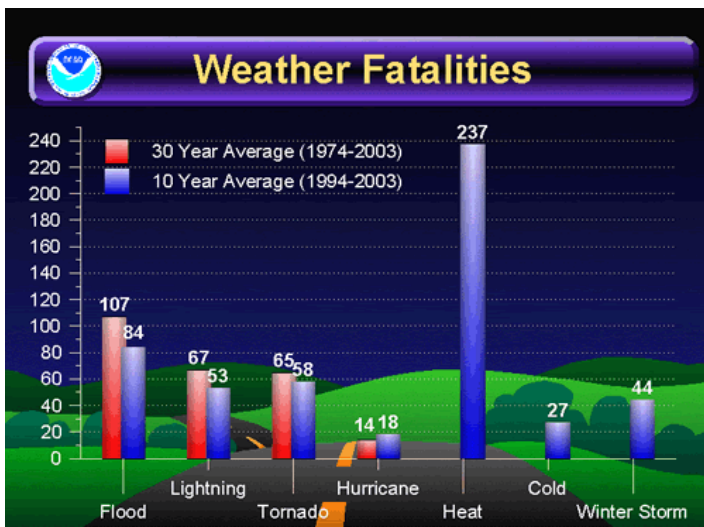
(Preliminary)

Severe Thunderstorm-	202
Tornado-	0
Flash Flood-	60

### # of Events—2005

(Preliminary)

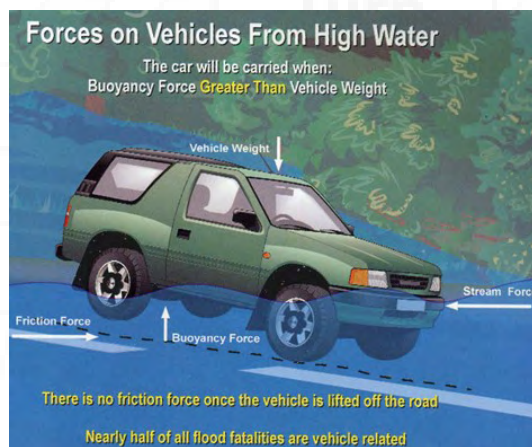
Confirmed Tornadoes-	0
Severe Events-	144
Flash Floods-	32



**In West Virginia, the #1 cause of weather related fatalities is driving through flooded roadways and low water crossings. Over 60% of the fatalities are due to this.**

**Why do vehicles float? They float for the same reason a 97,000 ton aircraft carrier floats, buoyancy!**

Where does this idea that "my heavy vehicle will keep me safe" come from? It comes from the false trust in the weight of the vehicle you are driving.



Many believe their 3,000 pound or more vehicle will remain in contact with the road surface, that it is too heavy to float. Think about that for a moment. Aircraft carriers weighing 97,000 tons float. Vehicles, including ships, float because of buoyancy. In fact, most cars can be swept away in 18-24 inches of moving water. Trucks and SUVs do not fare much better with an additional 6-12 inches of clearance.

U.S.S . Eisenhower





# Flood

## Safety & Products

### Flood Safety Rules

\* During periods of heavy rain, move to higher ground and stay away from low lying areas such as streambeds, drainage ditches, and culverts.

Water runs off streets and parking lots very rapidly causing natural and man-made drainage systems to overflow with rushing flood waters. These flood waters carry debris that can be deadly to someone in their path. A rapidly flowing stream or ditch can sweep you off your feet or even sweep your car downstream.

\* Stay out of flooded areas.

In flooded areas, the water may still be rising and is usually swift. Children are especially vulnerable and should not be allowed to play or walk in flowing water.

\* Never drive your car into water of unknown depths or around barricades

Most flash flood deaths occur when people drive their vehicles into flood waters. Flood waters may rise very quickly and could cover the vehicle or sweep it away. If your vehicle stalls, abandon it and immediately seek higher ground.

\* Be especially cautious at night, when it is harder to recognize flood dangers.

***Water is a very powerful force and should never be underestimated!***



### Types of Flood Watches and Warnings Issued by the National Weather Service

#### Watches

**FLASH FLOOD WATCH** - issued when conditions are favorable for flash flooding (sudden short-term flooding). This includes floods from dam or levee failure.

**FLOOD WATCH** - issued when conditions are favorable for long-duration flooding. This includes river flooding.

#### Warnings

**FLASH FLOOD WARNING** - issued when flash flooding is imminent.

**FLOOD WARNINGS** - issued when longer duration flooding is imminent.

**RIVER FLOOD WARNING** - issued when flooding is occurring or expected to occur near streams and rivers.

# Are You Ready for a Flood or a Flash Flood?

## Here's what you can do to prepare for such emergencies

### Know what to expect

- ✓ Know your area's flood risk—if unsure, call your local Red Cross chapter, emergency management office, or planning and zoning department.
- ✓ If it has been raining hard for several hours, or steadily raining for several days, be alert to the possibility of a flood.
- ✓ Listen to local radio or TV stations for flood information.

### Reduce potential flood damage by—

- ✓ Raising your furnace, water heater, and electric panel if they are in areas of your home that may be flooded.
- ✓ Consult with a professional for further information if this and other damage reduction measures can be taken.

### Floods can take several hours to days to develop—

- ✓ A flood WATCH means a flood is possible in your area.
- ✓ A flood WARNING means flooding is already occurring or will occur soon in your area.

### Flash floods can take only a few minutes to a few hours to develop—

- ✓ A flash flood WATCH means flash flooding is possible in your area.
- ✓ A flash flood WARNING means a flash flood is occurring or will occur very soon.

### Prepare a Family Disaster Plan

- ✓ Check to see if you have insurance that covers flooding. If not, find out how to get flood insurance.
- ✓ Keep insurance policies, documents, and other valuables in a safe-deposit box.

### Assemble a Disaster Supplies Kit containing—

- ✓ First aid kit and essential medications.
- ✓ Canned food and can opener.
- ✓ At least three gallons of water per person.
- ✓ Protective clothing, rainwear, and bedding or sleeping bags.
- ✓ Battery-powered radio, flashlight, and extra batteries.
- ✓ Special items for infant, elderly, or disabled family members.
- ✓ Written instructions for how to turn off electricity, gas, and water if authorities advise you to do so. (Remember, you'll need a professional to turn natural gas service back on.)

### Identify where you could go if told to evacuate. Choose several places . . . a friend's home in another town, a motel, or a shelter.

### When a flood WATCH is issued—

- ✓ Move your furniture and valuables to higher floors of your home.
- ✓ Fill your car's gas tank, in case an evacuation notice is issued.

### When a flood WARNING is issued—

- ✓ Listen to local radio and TV stations for information and advice. If told to evacuate, do so as soon as possible.

### When a flash flood WATCH is issued—

- ✓ Be alert to signs of flash flooding and be ready to evacuate on a moment's notice.

### When a flash flood WARNING is issued—

- ✓ Or if you think it has already started, evacuate immediately. You may have only seconds to escape. Act quickly!
- ✓ Move to higher ground away from rivers, streams, creeks, and storm drains. Do not drive around barricades . . . they are there for your safety.
- ✓ If your car stalls in rapidly rising waters, abandon it immediately and climb to higher ground.

### Your local contact is:

# Are You Ready for a Flood or a Flash Flood?



Prolonged rainfall over several days or an ice jam can cause a river or stream to overflow and flood the surrounding area. A flash flood from a broken dam or levee or after intense rainfall of one inch (or more) per hour often catches people unprepared.

Regardless, the rule for being safe is simple: head for the high ground and stay away from the water. Even a shallow depth of fast-moving flood water produces more force than most people imagine. The most dangerous thing you can do is to try walking, swimming, or driving through such swift water.

Still, you can take steps to prepare for these types of emergencies. Have various members of the family do each of the items on the checklist below. Then hold a family meeting to discuss and finalize your Home Flood Plan.

\_\_\_\_\_ **Determine whether you're in a flood area.**

Flood area:  Yes  No

\_\_\_\_\_ **If in a flood area, is flooding covered under your homeowner's or renter's insurance policy? (Most insurance policies specifically exclude flooding from rising water.)**

Flood insurance:  Yes  No

\_\_\_\_\_ **If flooding is not covered under your homeowner's or renter's policy, obtain separate flood insurance.**

Insurance company: \_\_\_\_\_

\_\_\_\_\_ **Keep current copies of all important papers or valuables in a safe-deposit box.**

Location of safe-deposit box: \_\_\_\_\_

\_\_\_\_\_ **Put together a Disaster Supplies Kit in a clearly labeled, easy-to-grab box.**

Location of Disaster Supplies Kit: \_\_\_\_\_

\_\_\_\_\_ **Write instructions on how and when to turn off your utilities—electricity, gas, and water.**

Instructions written: \_\_\_\_\_  
(date)

\_\_\_\_\_ **Decide where your family would go in case you must evacuate. Clear your plan with the relatives or friends you plan to stay with—or go to a Red Cross shelter. Also, get an extra map and mark two alternate ways to reach that destination. Add the map to your Disaster Supplies Kit.**

Evacuation plan completed: \_\_\_\_\_  
(date)

And remember . . . when a flood, tornado, earthquake, fire, or other emergency happens in your community, you can count on your local American Red Cross chapter to be there to help you and your family. Your Red Cross is not a government agency and depends on contributions of your time, money, and blood.

For more information, contact your local Red Cross chapter, National Weather Service office, or emergency management agency. You can also visit these Web sites:

American Red Cross: [www.redcross.org](http://www.redcross.org)

National Weather Service: [www.nws.noaa.gov](http://www.nws.noaa.gov)

Federal Emergency Management Agency: [www.fema.gov](http://www.fema.gov)

## Safety Tips for Flood Victims

The U.S. Consumer Product Safety Commission (CPSC) recommends several safety tips to the victims of floods. **This safety alert illustrates some dangerous practices which consumers may be tempted to engage in during efforts to rebuild or while staying in temporary housing, tents, or partially damaged homes. This information is provided in an effort to prevent injuries and deaths from consumer products as flood survivors make new beginnings.**

Do not use electrical appliances that have been wet. Water can damage the motors in electrical appliances, such as furnaces, freezers, refrigerators, washing machines, and dryers.

If electrical appliances have been under water, have them dried out and reconditioned by a qualified service repairman. Do not turn on damaged electrical appliances because the electrical parts can become grounded and pose an electric shock hazard or overheat and cause a fire. Before flipping a switch or plugging in an appliance, have an electrician check the house wiring and appliance to make sure it is safe to use.

### Electricity and water don't mix.

Use a ground fault circuit interrupter (GFCI) to help prevent electrocutions and electrical shock injuries. Portable GFCIs require no tools to install and are available at prices ranging from \$12 to \$30.

**When using a "wet-dry vacuum cleaner," be sure to follow the manufacturer's instructions to avoid electric shock.** Do not allow the power cord connections to become wet. Do not remove or bypass the ground pin on the three-prong plug. Use a GFCI to prevent electrocution. **NEVER** remove or bypass the ground pin on a three-pronged plug in order to insert it into a non-grounded outlet. **NEVER** allow the connection between the machine's power cord and the extension cord to lie in water.

**To prevent a gas explosion and fire, have gas appliances (natural gas and LP gas) inspected and cleaned after flooding.** If gas appliances have been under water, have them inspected and cleaned and their gas controls replaced. The gas company or a qualified appliance repair person or plumber should do this work. Water can damage gas controls so that safety features are blocked, even if the gas controls appear to operate properly. If you suspect a gas leak, don't light a match, use any electrical appliance, turn lights on or off, or use the phone. These may produce sparks. Sniff for gas leaks, starting at the water heater. If you smell gas or hear gas escaping, turn off the main valve, open windows, leave the area immediately, and call the gas company or a qualified appliance repair person or plumber for repairs. Never store flammable materials near any gas appliance or equipment.

Never use gasoline around ignition sources such as cigarettes, matches, lighters, water heaters, or electric sparks. Gasoline vapors can travel and be ignited by pilot light or other ignition sources. Make sure that gasoline powered generators are away from easily combustible materials.

When cleaning up from a flood, store medicines and chemicals away from young children. Poisonings can happen when young children swallow medicines and household chemicals.

Keep household chemicals and medicines locked up away from children. Use the child resistant closures that come on most medicines and chemicals.

**WARNING:** Submerged gas control valves, circuit breakers, and fuses pose explosion and fire hazard! Replace all gas control valves, circuit breakers, and fuses that have been under water: **GAS CONTROL VALVES** on furnaces, water heaters, and other gas appliances that have been under water are unfit for continued use. If they are used, they could cause a fire or an explosion. Silt and corrosion from flood water can damage internal components of control valves and prevent proper operation. Gas can leak and result in an explosion or fire. Replace **ALL** gas control valves that have been under water. **ELECTRIC CIRCUIT BREAKERS AND FUSES** can malfunction when water and silt get inside. Discard **ALL** circuit breakers and fuses that have been submerged

# Flood: Are You Protected from the Next Disaster?

Devastating floods occur throughout the U.S. every year. Flooding causes more than \$2 billion in property damage each year, and losses due to flooding are not covered under most homeowners or business policies. However, flood insurance is available to protect homes and businesses and their contents in communities that participate in the National Flood Insurance Program (NFIP).

## Flooding is a National Problem

Until the late 1960s, most property owners were unable to get insurance coverage against flood damage. Private insurance firms, aware of the potential for catastrophic losses, were unwilling to assume the financial risk alone. This put the burden on taxpayers to provide costly disaster relief to a growing number of flood victims.

In 1968, Congress addressed this issue by creating the NFIP. This Federal program provides flood insurance at a reasonable cost in exchange for the careful management of flood-prone areas by local communities.

## Facts You Should Know

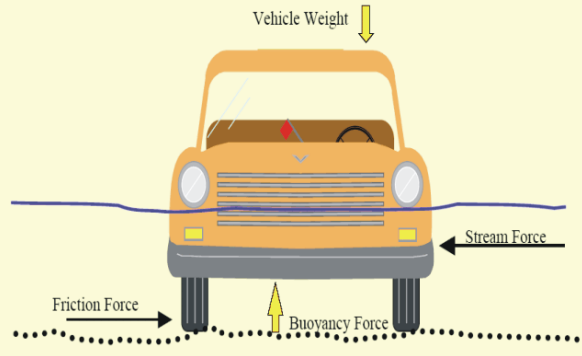
1. There is a 26% chance of experiencing a flood during the life of a 30-year mortgage compared to a 4% chance of a fire.
2. Find out if you are located in a floodplain, which is considered a Special Flood Hazard Area. If you are, you are still eligible for flood insurance. In fact, in some cases, you may be required by law to have flood insurance. Your city or county government (start with the Building or Planning Department) has Flood Insurance Rate Maps, published by FEMA, which are available for public inspection. If your building is located in a flood zone that begins with the letter A or V, you are in a Special Flood Hazard Area.
3. The average premium is approximately \$400 per year depending on where you live and the coverage you choose.
4. In low-to-moderate risk areas, coverage can be purchased for just over \$100 a year.
5. Buy as much flood coverage as you can. Primary residences insured for 80% of their value, or the maximum amounts available, get replacement cost coverage. It pays the amount needed to repair or replace most of the building elements up to the policy limits, without deduction for depreciation, once repairs are made.
6. There is a 30-day waiting period from the time a policy is purchased until you are covered, with the following exceptions:  
  
*There is no waiting period* if you have an existing flood insurance policy and an additional amount of flood insurance is required with the making, increasing, extending or renewing of a loan, such as a second mortgage, home equity loan, or refinancing. Coverage is effective immediately, as long as the premium is presented at or prior to loan closing.  
  
*There is no waiting period* when flood insurance is required as a result of a lender determining that a loan which does not have flood insurance should be protected by flood insurance. Coverage is effective immediately, as long as the premium is presented at the completion of a loan application.  
  
*There is a one-day waiting period* when an additional amount of insurance is required as a result of a map revision. This applies when the map revision is from a non-Special Flood Hazard Area to a Special Flood Hazard Area and only if the endorsement is received within 13 months following the map revision.
7. Flood insurance is required by law in some instances. To get Federally secured financing to buy, refinance, build, repair, reconstruct or improve structures in Special Flood Hazard Areas, you may be required to purchase flood insurance. This includes most types of mortgage loans, as well as FHA and VA loans.
8. A flood insurance policy also reimburses you for actions you take to prevent flood damage

For more information about the NFIP and flood insurance, contact your insurance company or agent, or call the NFIP at **1-888-CALL-FLOOD, TDD# 1-800-427-5593**.

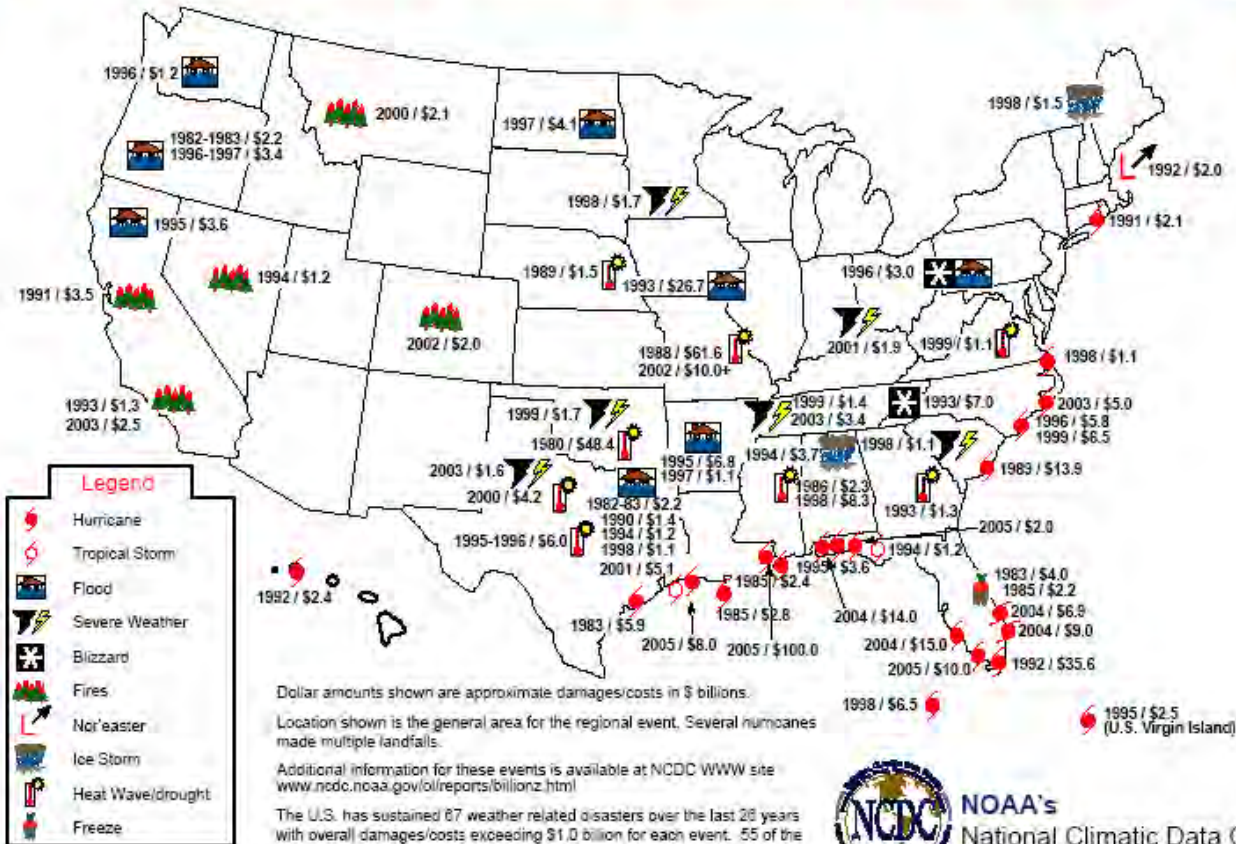


## Forces on Vehicles Crossing Streams

The car will float downstream when:  
Stream Force > Friction Force



## Billion Dollar Weather Disasters 1980 - 2005



# NOAA Weather Radio - The Voice of the NWS



Known as the “Voice of the National Weather Service,” the National Oceanic and Atmospheric Administration (NOAA) Weather Radio is provided as a public service by NOAA, a division of the Department of Commerce. NOAA Weather Radio includes more than 800 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, U.S. Virgin Islands, and U.S. Pacific Territories. NOAA Weather Radio requires a special radio receiver or scanner capable of picking up the signal.

Broadcasts are found in the public service band at these seven frequencies (MHz):

•162.400      •162.425      •162.450      •162.475      •162.500      •162.525      •162.550

NOAA Weather Radio broadcasts NWS warnings, watches, forecasts and other hazard information, 24 hours a day. NOAA Weather Radio is not just for emergencies. It is a round-the-clock source of weather reports and information to help people prepare for the day ahead. Each National Weather Service office tailors its broadcast to suit local needs. Routine programming is repeated every few minutes and consists of the local forecast, regional conditions and marine forecasts. Additional information, including river stages and climatic data is also provided.

## **Seconds Save Lives!**

Weather radios equipped with special alarm-tone features sound alerts to give immediate information about a life-threatening situation. During an emergency, National Weather Service forecasters will interrupt routine weather radio programming and broadcast a special tone that activates weather radios in the listening area.

## **Who Needs NOAA Weather Radio?**

Public safety experts agree that tone-alert weather radios should be standard equipment in every home. They are especially valuable in places that are entrusted with public safety, including hospitals, schools, places of worship, nursing homes, restaurants, grocery stores, recreation centers, office buildings, sports facilities, theaters, retail stores, bus and train stations, airports, marinas and other public gathering places.

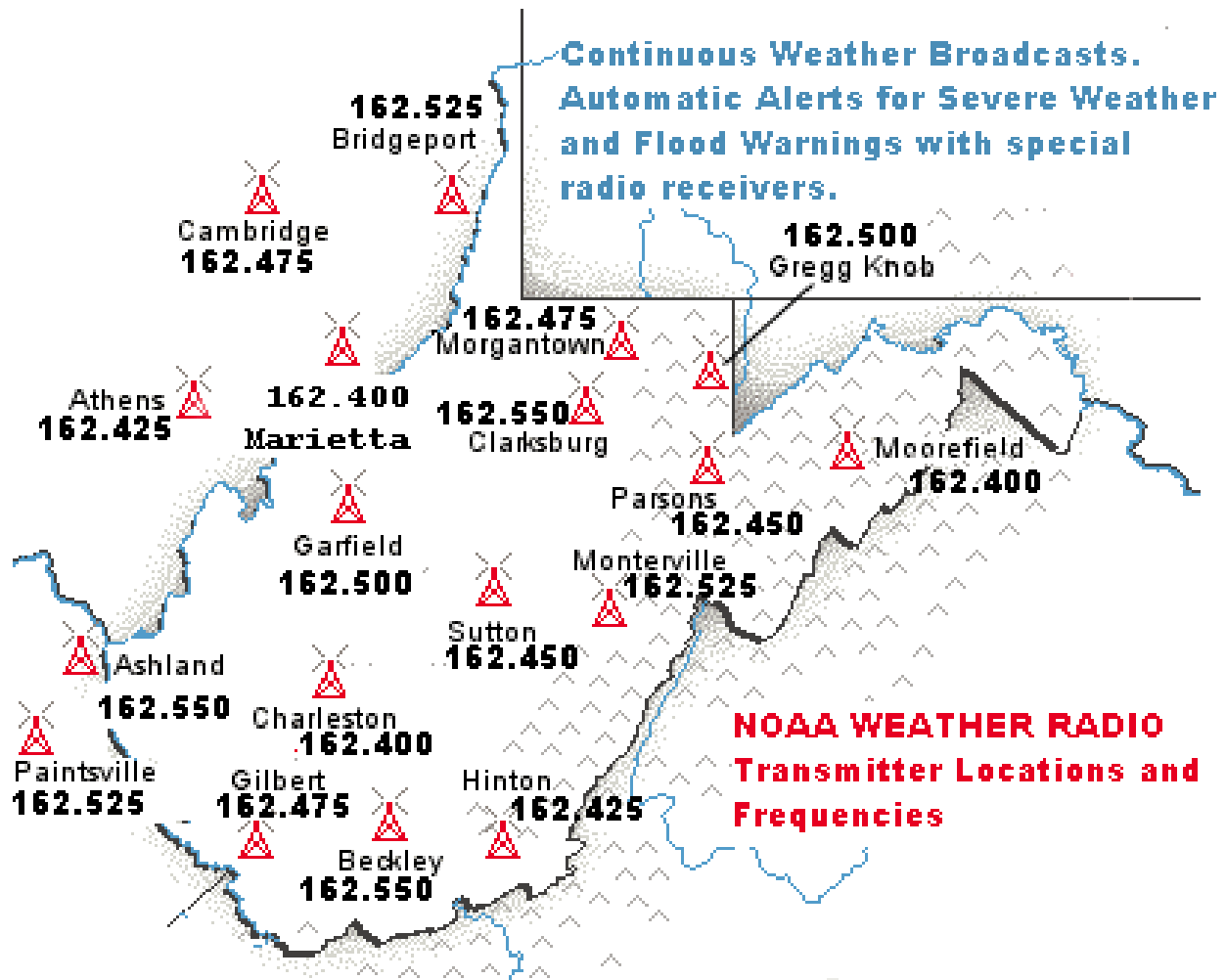
## **Can NOAA Weather Radios help people who have hearing impairment?**

Yes. NOAA Weather Radio offers nonverbal information imbedded in its broadcasts to provide timely, critical warnings of life threatening events to the hearing impaired. Some receivers are equipped with special output connectors that activate alerting devices such as vibrators, bed shakers, pillow vibrators, strobe lights and other alerting systems.

## **NOAA Weather Radio . . . Improving For the Future**

Implementation of additional NOAA Weather Radio (NWR) transmitters will continue to expand the nationwide network coverage. New digital technology (termed “SAME” - Specific Area Message Encoding) now allows lifesaving messages to be targeted to a specific area, like a county or portion of a state. Weather radios come in many sizes and with a variety of functions and costs. Most NWR receivers are either battery-operated portables or AC-powered desktop models with battery backup, so they can be used in the absence of commercial electric power.

NOAA Weather Radios are available at most electronics and department stores. For additional information, visit the National Weather Service Web site: [www.nws.noaa.gov/nwr](http://www.nws.noaa.gov/nwr).





## Contacts

### National Weather Service

Charleston - Dan Bartholf (304) 746-0173  
 e-mail: [daniel.bartholf@noaa.gov](mailto:daniel.bartholf@noaa.gov)  
 400 Parkway Rd.  
 Charleston, W V 25309  
 Internet: [weather.gov/charlestonwv](http://weather.gov/charlestonwv)

Pittsburgh - Rich Kane (412) 262-1591  
 192 Shafer Rd.  
 Coraopolis , PA 15108  
 Internet: [weather.gov/pittsburgh](http://weather.gov/pittsburgh)

Blacksburg, VA - Phil Hysell (540) 552-1613  
 VA Tech Corp. Research Ctr.  
 1750 Forecast Dr.  
 Blacksburg, VA 24060  
 Internet: [weather.gov/blacksburg](http://weather.gov/blacksburg)

Sterling, VA - Dave Manning (703) 260-0209  
 44087 Weather Service Rd.  
 Sterling , VA 20166  
 Internet: [weather.gov/sterling](http://weather.gov/sterling)

### Emergency Services

West Virginia Office of Emergency Services

Bldg. 1, Room EB-80  
 1900 Kanawha Blvd. East, Charleston, W V 25305  
 (304) 558-5380

City of Charleston Office of Emergency Services  
 and Homeland Security

P.O. Box 2749  
 Charleston, WV 25330  
 (304) 348-8130 Fax (304) 348-6419  
 Mark Wolford, Director [mark.wolford@cityofCharleston.org](mailto:mark.wolford@cityofCharleston.org)  
 Pat Epperhart, Deputy Director

West Virginia Library Commission  
 Susan Hayden, Adult Services Consultant  
 1900 Kanawha Blvd. E  
 Charleston, WV 25305  
 1-800-642-9021 (toll free in WV only)  
 (304) 558-3978, ext. 2014 Fax: (304) 558-1612  
[haydens@wvlc.lib.wv.us](mailto:haydens@wvlc.lib.wv.us)

West Virginia State Fire Marshal's Office  
 Public Education Div.  
 1207 Quarrier St., 2nd Floor  
 Charleston, WV 25301  
 (304) 558-2191 Ext. 223  
 Carol Nolte [cnolte@wvfiremarshal.org](mailto:cnolte@wvfiremarshal.org)

West Virginia University Extension  
 Peter Marshall, Center for ANR Development  
 P.O. Box 6031  
 Morgantown, WV 26506  
 (304) 293-6967 ext. 3427  
[hpmarshall@mail.wvu.edu](mailto:hpmarshall@mail.wvu.edu)

### Web Resources

[www.nws.noaa.gov/floodsafety/](http://www.nws.noaa.gov/floodsafety/)  
[www.floodsmart.gov](http://www.floodsmart.gov)  
<http://tadd.weather.gov/>  
[www.fema.gov/kids/](http://www.fema.gov/kids/)  
[www.fema.gov/kids/teacher.htm](http://www.fema.gov/kids/teacher.htm)  
[www.ready.gov](http://www.ready.gov)  
[www.redcross.org](http://www.redcross.org)  
[www.floodsmart.gov](http://www.floodsmart.gov)  
[www.ready.gov](http://www.ready.gov)  
[www.ccrfcd.org](http://www.ccrfcd.org)



Campaign billboard near Louisa KY on U.S. 23. Other billboards are located in southwestern West Virginia.

## West Virginia Flood Awareness Campaign

March 19-25, 2006

National Weather Service  
400 Parkway Rd.  
Charleston, WV 25309

To: