

## DOWNTOWN PROVIDENCE DURING THE HURRICANE OF '54



# Upper Bay Cities Prepare for an Ill Wind

By Monica Allard Cox

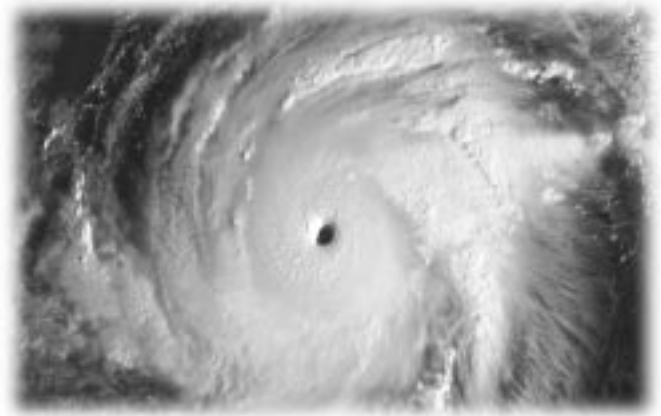


Photo courtesy NOAA.

Dave Vallee wants to know: What would you eat if you lost power for a week?

Vallee, hurricane specialist and science officer for the NOAA National Weather Service (NWS) in Taunton, Mass., says that when he was a child during the Blizzard of '78, his father had had the presence of mind to fill up the tank of their gas grill in advance, and they were able to cook meat that would otherwise have spoiled during the power outage.

Vallee, speaking to municipal officials and the public at hurricane preparedness presentations in Cranston, East Providence, Pawtucket, and Providence early in the 2006 hurricane season, says he fears that since it has been many years since the last significant storm hit Rhode Island—52 years since the last Category 3 hurricane—most people in the state will not be so prepared. Vallee is especially concerned about this because he is predicting that at some point in the next several years, the state will be hit by one or more major hurricanes. While the NWS downgraded its hurricane warning partway through the 2006 season, Vallee says that the overall trend of an increasingly warm Atlantic Ocean means that the Northeast will be seeing more severe hurricane activity than it has in 30 years. He points out that the Atlantic Ocean is even warmer now than it was in the 1950s, when Hurricane Carol struck. Are increasing ocean temperatures a result of global warming? "I don't care one way or the other," Vallee says, "You and I live here. We have to deal with the results."

Another challenge to Rhode Island's ability to prepare for a hurricane is the speed at which hurricanes move up the East Coast. "We understand hurricanes, but forecasting them is still a challenge," Vallee says, adding that the state should worry about "anything with a name in the Bahamas." However, by the time a hurricane could be predicted to head for Rhode Island, people will only have about 36 hours to prepare.

He can say that in the event of a hurricane, Rhode Island will face threats from rain, wind, and coastal flooding, with heavy rainfall along and west of the storm track and high winds and storm surges east of the track. Shoreline development since the 1950s has not only put more buildings and residents in the floodplain, but associated filling and other consequences of developing coastal areas have also increased the expanse of the floodplain and thus the number of vulnerable areas.

Of East Providence, Vallee says that in the event of a significant hurricane, a 10- to 15-foot storm surge is possible along the shore. While the city won't face damage from waves, the velocity and depth of the surge is a concern. "The trick is to get everybody out of harm's way," he says, noting that densely settled Bullock's Point is a particularly vulnerable area.

Pawtucket, where the Blackstone River meets Narragansett Bay, could be threatened by "a remarkably high surge in excess of 17 feet coming up from Narragansett Bay. You don't have a barrier to protect you," Vallee says. "Your challenges are due to the velocity and volume of water coming up the Bay and down the river."

Pawtucket also has its neighbor, Woonsocket, to thank for some of its increased vulnerability to flooding. In 1955, Tropical Storm Diane flooded that city with over 18 inches of rainfall in one day. Showing a slide of the devastation to

the city's downtown, Vallee says that it took Woonsocket decades to recover. However, he adds, "This floodplain doesn't flood anymore."

Woonsocket built floodwalls to protect the city, but those floodwalls, in combination with urbanization in the floodplain, contributed to unexpected flooding in parts of the Blackstone Valley during heavy rainfall in October 2005 and mean more floodwaters directed at Pawtucket during a hurricane.

In the state's capital city, a plaque on columns in the Providence Biltmore Hotel lobby shows how high floodwaters rose during Hurricane Carol. Vallee says that though "we typically see an increase of 40 percent elevation from Narragansett to the Port of Providence simply because the Bay is shaped like a funnel," he is confident that the hurricane barrier, built in the 1960s, will do its job protecting the city's downtown area. However, disruption of the port, which Vallee says usually stores three to four days' supply of oil, could mean a potential for an oil shortage. "The Port of Providence could be in tough shape for weeks," Vallee warns.

While Cranston has a comparatively short coastline, city officials face a variety of challenges in a hurricane. "We are a coastal community on one end and a wooded community on the other," says Robin Muksian-Schutt, Cranston's deputy administrator. Cranston, Vallee says, will have to deal with threats from the wind, including power outages, which could be lengthy in forested areas such as Scituate Avenue, as well as from the water, such as flooding at small streams.

Wave action in advance of a hurricane can flood coastal roads, which, for example, could prevent

people from getting to the Edgewood Yacht Club to pull their boats out, and even if they are able to, Vallee ascertains that the yacht club puts boats in its parking lot. “Well the parking lot is not that high, is it?” he asks, suggesting that propane, gas, or oil could spill from boats damaged in the parking lot.

Like Pawtucket, Cranston faces threats from floodwaters rushing down the river—in this case, the Pawtuxet—while storm surge flooding pushes back. “All of this meets at the two treatment facilities for Warwick and Cranston,” Vallee points out.

### Cities Prepare for Hurricane Threats

East Providence has a new redevelopment effort for seven miles of coastline. “We’ve been working to foster development without creating a situation that endangers residents or the people that have to respond to it,” says Jeanne Boyle, East Providence planning director.

Joseph Klucznik, East Providence’s fire chief, says that East Providence has undertaken a number of preparedness efforts, including making improvements to shelter facilities, establishing debris removal sites, providing public education through the media, and working with neighboring communities on planning efforts. The city held a joint training with Pawtucket for 35 volunteers, and tries to use volunteers “as much as we can in a variety of situations so they’ll be trained and ready to go,” such as in opening a shelter during October 2005 flooding, Klucznik says.

Providence is establishing a reverse 911-notification system that will allow the city to alert targeted geographical areas with hurricane warnings and evacuation notices in five or six different languages, says Leo Messier, Providence’s emergency management agency director.

Other efforts include arranging for school buses to take people to shelters. “I wanted to make sure the city of Providence has resources available to them. If we really had a statewide emergency, there’s not enough RIPTA buses to go around,” Messier says.

His agency has also given many community emergency preparedness talks and held its second annual “Prepare Providence” event on September 30, including demonstrations and distributing information and individual starter disaster preparedness kits.

Richard Delgado, Cranston’s fire chief, says that the city’s emergency operations plan covers everything from severe weather to weapons of mass destruction, but “we feel right now our biggest threat is a hurricane.” He says the city has plans that initiate activities up to 20 hours ahead of a hurricane, such as fueling up city trucks and rechecking generators, and has identified 882 residences in the coastal flood zone that may have to be evacuated.

“We’re in the process of talking to the marinas. If people are going to take their boats out, they have to take them out by a certain time,” he says, to avoid congestion in the streets. “What we really need to do now is to get out to the public and tell them they’ve got to be prepared,” Delgado says.

Despite all the preparations being made by officials, public complacency, caused in part by hurricanes’ infrequent visits to the area, may determine much about a city’s resilience. After all his slides showing hurricane paths, projected frequencies and intensities, and historic damages, Vallee’s essential warning to municipal officials and the public alike is to focus on personal responsibility and prepare a family hurricane plan.

The short advance notice of a hurricane headed to Rhode Island poses additional challenges.

“It’s hard to call an evacuation when the sun is shining and everybody’s happy,” Delgado says.

#### For more information, visit:

- Metro Bay Special Area Management Plan, [seagrant.gso.uri.edu/metrosamp](http://seagrant.gso.uri.edu/metrosamp)
- R.I. Emergency Management Agency, [www.riema.ri.gov](http://www.riema.ri.gov)
- Providence Emergency Management Agency, [www.providenceri.com/PEMA](http://www.providenceri.com/PEMA)



Above: Photo by Monica Allard Cox. Opposite page: Photo courtesy Sea Grant Sustainable Coastal Communities and Ecosystems Extension Program.

## The Dos and Don'ts of Personal Hurricane Planning

In Florida, Dave Vallee says, where preparing for hurricanes is “second nature,” Home Depot and Lowe’s stores print radio stations and shelter locations on their shopping bags.

Vallee, NWS hurricane specialist and science officer, has taken his presentation on hurricane preparedness to several communities in Rhode Island in the hopes of raising awareness and people’s level of readiness in a place that hasn’t seen a severe hurricane in over 50 years—but could in the near future.

One question he asks his audiences is, “Do you know what you own?” For instance, the electrical box going into your home belongs to you—not to the power company. So, if the box gets pulled off your house, you are responsible for having that fixed before the company will repair your power lines.

The discussions that were part of the presentations also helped clear up some misconceptions, such as whether or not people should try to shut their own gas off in their homes. (No.)

One audience member asked if it was true that people should open some of their windows during a hurricane to alleviate pressure on their homes. Vallee says no: “If your house is an envelope, you want to seal that thing up as tight as you can” so as not to allow a point of entry for wind to come in and push on the roof. He encourages people to install hurricane clips: “They’re remarkably effective and extremely cheap.”

Others wondered if closing Providence’s hurricane barrier would mean more flooding in communities south of the barrier. He reassured them it would not.

He implored each of his audiences, which included emergency responders and ordinary residents, to have family hurricane plans:

- Consider actions you will take before, during, and after a hurricane
- Consider shelter first
  - Do I need to evacuate?
  - Where do I go?
  - When should I leave?
- If staying at home, prepare for loss of electricity by having a battery-operated radio, TV, and flashlights
- Consider prescription medications
- Consider tanking up the family vehicles
- Consider having some cash on hand
- Tank up the gas grill
- Stock up on nonperishable foods
- Have necessary contact phone numbers available
- Have insurance papers in order, including photos and phone numbers
- Get outdoor furniture and other things inside
- Know where your local shelters are and how to get to them
- Boat owners:
  - Know your marina’s plan for storms
  - Determine when you will pull your boat out or secure it
  - Give yourself time
- Tape the plan to the back of a kitchen cabinet so you can get to it quickly when the storm strikes

*The full presentation on hurricane preparedness is available on-line at: [seagrant.gso.uri.edu/metrosamp/calendar\\_previous.html](http://seagrant.gso.uri.edu/metrosamp/calendar_previous.html).*

*—Monica Allard Cox is a Communicator for Rhode Island Sea Grant.*

