

# BLACKSTONE RIVER VALLEY

# AT RISK

## WHAT DO WE HAVE TO LOSE?

### *Winds and Floods in Rhode Island*

---

#### 1904 Storm

---

- Property damage: \$1 million

---

#### Heavy Rains in 1927

---

- Property damage: \$1 million+

---

#### The Great Northeast Hurricane of 1938

---

- Deaths: 311
- Property damage: \$100 million
- Winds: 100 mph, gusts of 160 mph, ripped roofs from buildings statewide

---

#### Hurricane Carol 1954

---

- Deaths: 19
- Property damage: \$200 million
- Numerous buildings destroyed
- Winds: 90 mph, gusts to 110 mph

---

#### Tropical Storm Diane 1955

---

- Deaths: 2
- Property damage: \$175 million in uninsured property damage
- Flood waters to the level of street lights

---

#### Heavy Rains in 1979

---

- Property damage: \$5.8 million

---

#### Hurricane Bob 1991

---

- Property damage: \$115 million
- Winds: 105 mph

---

#### Floods of April 1994

---

- Property damage: \$1 million



*Historic Slater Mill (circa 1793)*

### **Wind and Riverine Flooding**

Riverine flooding can be a result of storm surge from hurricanes, winter storms, or excessive rainfall overflowing river and stream banks. The Blackstone River basin, which encompasses nine communities in Rhode Island and several more in southwestern Massachusetts, has experienced flooding many times, with records dating back as far as 1818. When land in a floodplain is developed, cyclical floods can become costly and dangerous.

### **Natural Hazards In Rhode Island**

- Today, high winds from a hurricane similar to the one in 1938 would cause over \$20 million in damages statewide for single-family structures.
- Rhode Island's tornado risk is rated as an average of 1-5 per year.
- The Blackstone River basin is located in a high-activity storm track where intense local storms have caused damages averaging over \$200,000 per flood. Today, 100-year storm damages could reach over \$3.5 million. A 100-year storm is one that in a given year has a 1 percent chance of striking.
- All 39 communities in the state have been identified by the Federal Emergency Management Agency (FEMA) as "flood-prone."

### **Dams at Risk**

- Seven dams along the Blackstone River in Rhode Island present a significant hazard. These dams are not necessarily in poor condition, but lives and property downstream are at risk. Providence County has a total of 14 high-hazard dams.

### **Insured Value of Property**

- Providence County has 783 flood insurance policies worth over \$83.5 million. There have been over 473 claims since 1978, including 51 repetitive loss properties. In order to qualify as repetitive loss, properties must have sustained a minimum of two events within the course of 10 years, with a combined damage expense equal to 25 percent of the market value of the property.



Slater Mill dam

# WHAT DOES PAWTUCKET HAVE TO LOSE?

## Pawtucket Statistics

### Vulnerability in the Floodplain

- There are a total of 97 flood insurance policies worth over \$7.4 million.
- City Hall is located in the lowest elevation in Pawtucket. If its basement were flooded, the utilities could be severely damaged, which would put public safety at risk.
- During a 100-year storm, an estimated 1,000 jobs would be in jeopardy in the Mineral Spring avenue area alone.

### Residential and Commercial Structures

- There are 48 structures in the floodplain (16 residential and 32 commercial/municipal).
- None of the existing structures in the floodplain have been brought up to the current floodplain standards, leaving them at risk of basement and first floor flooding.
- Many high-rise, wooden, multifamily and elderly housing units are at risk from strong winds or nor'easters.
- Flooding of some of the commercial and industrial sites could result in water quality degradation.
- Winds from the Great Northeast Hurricane of 1938 were so strong they toppled a wooden church steeple in Pawtucket, sending it crashing through the sanctuary into the cellar.
- In August 1955, Hurricane Diane caused record flooding along the main rivers in the Blackstone River basin. The river rose 15 feet above flood stage. Today, such a flood would cause damages estimated at more than \$26 million.

### Dams Along the Blackstone

- Pawtucket has two publicly owned dams that are considered a significant hazard.
- Water flow is monitored and controlled at Woonsocket's Thunder Mist Dam, which determines the water level in Pawtucket. With only about 15 miles between these neighboring cities, evacuation measures should be practiced.

## Riverine Flooding

The Blackstone River in Pawtucket consists of both "A" and "V" zones. A zones are areas that would be inundated by a 100-year flood, but are not subject to velocity wave impact. V zones are velocity zones that are subject to breaking wave action. In addition to A and V zones, Pawtucket also has several floodplain areas that act as a natural flood control measure by absorbing and retaining water during times of excessive precipitation or runoff.

Urban flooding from the overflow of storm sewer systems and inadequate drainage has proven to be a recurring problem in Pawtucket. In addition, the city has suffered property damage from the last few hurricanes due to flooded sewer lines. In order to help control flooding, the Army Corps of Engineers has constructed a flood control project along with several local protection projects designed to reduce flood damages in the river basin.

## Funding Opportunities

- **Flood Mitigation Assistance Program.** These funds are available to communities with a FEMA-approved local flood mitigation plan. A 25 percent match is required.
- **Hurricanes and Earthquakes.** States receive FEMA funds annually, based on risk formulas. No match is required. Cities and towns with mitigation policies already in place receive funding priority.
- **Post-Disaster FEMA Mitigation Funds.** The Hazard Mitigation Grant Program (HMGP) is funded following a presidentially declared disaster. It represents an additional 15 percent of all the infrastructure and individual assistance funds that are provided to the Rhode Island Emergency Management Agency (RIEMA) to repair damages and recover from losses. The funds are administered by the state in partnership with FEMA.

Pawtucket also is investigating the National Flood Insurance Program (NFIP) Community Rating System (CRS), available if the city exceeds the minimum standards for flood protection set out by the NFIP. CRS is an optional way for flood insurance policy holders in the community to reduce their premiums by 5 to 45 percent.

**For further information on risks from natural hazards and on what you can do to protect your home or business, contact:**

Rhode Island Emergency Management Agency: Raymond LaBelle, executive director, (401) 946-9996.



Coastal Resources Center  
University of Rhode Island

