

## **Borough of Northumberland Flood Plan Revised 11/23/2005**

### **The Flood Hazard**

Properties in Northumberland's floodplain are subject to three flood problems: overbank flooding, local drainage, and sewer backup. You could be faced with one, two or all three of these hazards.

**Overbank Flooding:** The major flood problem facing Northumberland Borough is flooding of the West Branch and the Susquehanna River. Since 1891, 56 floods have caused the Susquehanna River to exceed its channel capacity and inundate riverfront communities. Although some of the most notable floods were the result of tropical storms, the majority of flood events are attributed to snowmelts; 20 of the 25 largest floods of record occurred between January and April. Major flood events occurred in 1936, 1972, 1975, and 1996.

Overbank flooding also occurs along smaller tributaries that drain toward the Susquehanna River and West Branch Susquehanna River: A flash flood occurred on these smaller streams in September 1999.

Overbank flooding affects properties in the Borough along Penn Street, and the lower ends of King and Queen Street and Orange Street. A total of 60 buildings are subject to damage during the 100-year flood according to GIS and the Flood Insurance Rate Map. Flooding also presents a safety hazard. Velocities can be as high as 6 or 7 feet per second – so fast that the flood will wash people off their feet in only ½ foot of floodwaters.

**Local Drainage:** There are several areas of local drainage problems where stormwater collects and does not drain away. These include properties on between 4th and 5th Street. Sometimes, flooding is aggravated by debris that has been carelessly thrown into the channel.

**Sewer Backup:** With no place to go, sewers back up and flow into the lowest opening in the sewer line. Sanitary sewers back up into basements and storm sewers back up into streets. Northumberland has had basement flooding caused by sewer backups. The worst problems were when the Susquehanna was also flooding and there was nowhere for the stormwater to go.

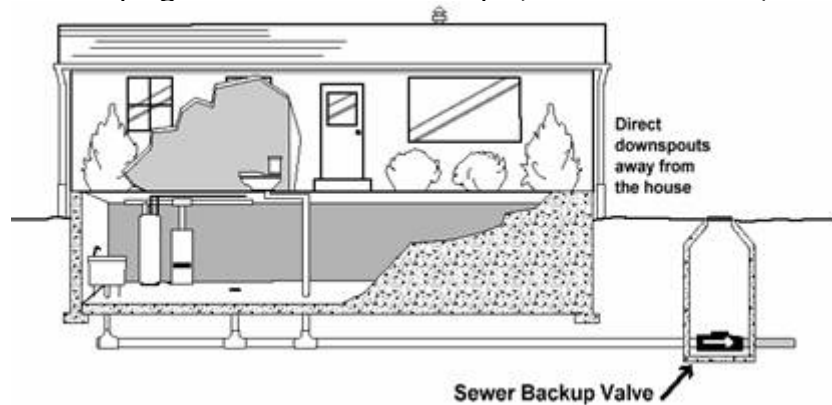
### **Keep in Mind:**

*Find out if your property is in the mapped floodplain and subject to overbank flooding by calling the Borough Office at 570-473-3414.*

## **Floodproofing**

Floodproofing a house means altering it so floodwaters will not cause damage. Different floodproofing techniques are appropriate for different types of buildings. Use the following as a guideline:

| If you have a basement, split level, or other floor below ground level, there are lots of ways to protect your basement or lower floor from seepage and sewer backup (see illustration).



A Backup valve is the one way to prevent sewer backup

| If you have a basement, split level, or other floor below ground level, there are lots of ways to protect your basement or lower floor from seepage and sewer backup (see illustration).

| If your house is on a slab foundation, investigate a low floodwall, berm or "dry floodproofing" (i.e., making the walls watertight and closing all the openings when a flood comes).

| If your house is on a crawlspace, a low floodwall, berm or "wet floodproofing" will work. "Wet floodproofing" means moving all items subject to damage out of harm's way so water can flow into the crawlspace and not cause any problems. If floodwaters go over the first floor, it is relatively easy to elevate the building to get the first floor above the flood level.

Emergency measures: No matter what kind of building you have, some last minute emergency measures can always help. For example, you could move valuable items (photos, antiques, and other "irreplaceables") or items that are most damaged by floodwaters

(upholstered furniture, stuffed toys, mattresses, foam rubber, etc.) up to a higher level. You can place sandbags or plastic sheeting in front of doorways and other low entry points.

Whatever emergency protection measures you use, it is always best to have a plan written in advance to make sure you don't forget anything after you hear the flood warning.

## **Flood Insurance**

Flood insurance is highly recommended because no floodproofing measure is 100% foolproof. Most homeowners insurance policies do not cover a property for flood damage. The Borough of Northumberland participates in the National Flood Insurance Program (NFIP). Local insurance agents can sell an NFIP policy under rules and rates set by the Federal government. Any agent can sell a policy and all agents must charge the same rates.

Any house in Northumberland can be covered by a flood insurance policy. Detached garages and accessory buildings are covered under the policy for the lot's main building. There are two types of coverage which can be purchased separately:

| Building coverage covers everything that stays with a house when it is sold, including the furnace, cabinets, built in appliances, and wall-to-wall carpeting.

| Contents coverage covers furniture and other personal possessions except for money, valuable papers, and the like. Renters can buy contents coverage, even if the owner does not buy building coverage.

There is no coverage for things outside the house, like the driveway and landscaping. If you have a policy, check it closely. Some people have purchased flood insurance because it was required by the bank when they got a mortgage or home improvement loan. Usually these policies just cover the building's structure and not the contents. You may only have building coverage. If so, your furniture, carpeting, appliances, and other contents are not covered.

An NFIP policy covers sewer backup and basement seepage if there is a general condition of flooding in the area. You may do better by checking out sump pump failure or sewer backup coverage that might be available as an addition to your homeowner's insurance policy. Each company has different amounts of coverage, exclusions, deductibles,

and arrangements. Most exclude damage from surface flooding that would be covered by an NFIP policy. The cost varies from nothing to up to \$100 more on your homeowner's insurance premium.

**Keep In Mind:**

*Don't wait for the next flood to buy insurance protection. There is a 30 day waiting period before National Flood Insurance coverage takes effect. Contact your insurance agent for more information on rates and coverage.*

**Flood Protection Regulations**

Lots were originally designed so water would flow away from the building and along property lines to the street, storm sewer, or ditch. Fences, railroad ties, landscaping and regrading block this flow. So do construction projects in the ditches or the floodplain.

| ALWAYS CHECK WITH THE BOROUGH OFFICE BEFORE YOU BUILD ON, FILL, ALTER, OR REGRADE YOUR PROPERTY. A permit is needed to ensure that such projects do not cause problems on other properties.

| Every piece of trash can contribute to flooding. Even grass clippings and branches can accumulate and plug channels. If your property is next to a ditch or storage basin, please do your part and keep the banks clear of brush and debris

DO NOT DUMP OR THROW ANYTHING INTO THE DITCHES OR BASINS. Dumping in our ditches and storage basins is a violation of Borough Code.

| You can do your part in helping the drainage system work. Sweep or pick up your gutters to prevent blockages in the storm sewers. Pick up trash and fallen branches in the ditches.

New buildings in the floodplain must be protected from flood damage. Our development regulations require that new residential buildings must be elevated 1½ feet above the base flood level. These regulations are designed to protect you and your neighbors. By getting the proper permits before you build, we can prevent flooding and other drainage problems.

The ordinance also requires that all substantial improvements and substantial damage to a building be treated as a new building. A

project is "substantial" when the value of an addition, alteration, repair or reconstruction project exceeds 50% of the value of the existing building. In the case of an addition, only the addition must be protected. In the case of an improvement to the original building, the entire building must be protected.

For example, if a house in the floodplain is flooded, has a fire, is hit by a tornado, or is otherwise damaged so that the cost of repairs is more than 50% of the value of the building before the damage, then the house must be elevated above the base flood level.

**Keep in mind:**

*If you see dumping or debris in the ditches or basins, filling or construction near property lot lines, or filling or construction in the floodplain without a permit sign posted, contact the Borough Office 570-473-3414 The debris or project may cause flooding on your property.*

**Safety Tips**

Do not walk through flowing water. Drowning is the number one cause of flood deaths. Currents can be deceptive; six inches of moving water can knock you off your feet. If you go through an area where the water is not flowing, use a pole or stick to ensure that the ground is still there.

Do not drive through a flooded area. More people drown in their cars than anywhere else. Don't drive around road barriers; the road or bridge may be washed out.

Stay away from power lines and electrical wires. The number two flood killer after drowning is electrocution. Electrical current can travel through water. Report downed power lines to the Police Department by calling 911.

Look before you step. After a flood, the ground and floors are covered with debris including broken bottles and nails. Floors and stairs that have been covered with mud can be very slippery.

Look out for animals that have been flooded out of their homes and who may seek shelter in yours. Use a pole or stick to poke and turn things over and scare away small animals.

Be alert for gas leaks. Use a flashlight to inspect for damage. Don't

smoke or use candles, lanterns, or open flames unless you know the gas has been turned off and the area has been ventilated.

Carbon monoxide exhaust kills. Use a generator or other gasoline powered machine outdoors. The same goes for camping stoves. Charcoal fumes are especially deadly when cooking with charcoal outdoors.

Clean everything that got wet. Flood waters have picked up sewage and chemicals from roads, farms, factories, and storage buildings. Spoiled food, flooded cosmetics, and medicine can be health hazards. When in doubt, throw them out.

Take good care of yourself. Recovering from a flood is a big job. It is tough on both the body and the spirit and the effects a disaster has on you and your family may last a long time. Keep your eyes open for signs of anxiety, stress, and fatigue in you and your family.

### **Natural and Beneficial Functions of Floodplains**

The natural and beneficial functions of floodplain include the following:

- storage of floodwaters/flood flow attenuation
- shallow infiltration to absorb overland flood flow
- groundwater recharge
- removal/filtering of excess nutrients, pollutants, and sediments from floodwaters
- habitat for flora and fauna
- recreational and aesthetic opportunities

Stream corridors include the channel, floodway, and adjacent riparian (or streamside) lands. Development in and near waterways can result in sediment loads to the stream. Modifications made to streams to allow for development can be detrimental to the natural physical features of the stream, stable streambanks and channel bottoms as well as natural meanders. Unstable stream banks and channels are much more vulnerable to flood damage as are any nearby structures or development. Vegetated areas along streams stabilize the streambank, filter pollutants, and provide habitat. Setbacks and vegetated buffer areas can be used to protect these natural streamside features from the impacts of development.

Wetlands are often found in floodplain areas. Wetland habitats are typically home to a diverse and unique number of species that rely on these habitats for certain life requirements. Wetlands play a valuable role in reducing flood velocities and storing floodwaters, filtering

pollution and improving water quality, and providing groundwater recharge areas.

The Susquehanna River Greenway Partnership is the latest chapter in the Susquehanna Story. The Greenway will link natural, cultural, historic, and recreational resources within a one-mile wide corridor of the Susquehanna River Main Stem and West Branch. It will establish a basin-wide foundation for resource management and community conservation-factors of lasting importance to the economies and quality of life of river communities. The Borough of Northumberland's continued participation insures that its interests and wishes are incorporated in the visioning, strategy preparation and project development phases.

### **Elevation Certificates**

New construction and substantial improvements to buildings on the floodplain requires a FEMA Elevation Certificate. A registered surveyor prepares this certificate. Information on the Certificate include ground elevation and elevation of the first floor of the structure. Elevation certificates are on file at Borough Hall.

### **Real Time River Gage Data**

Real time steam information is available over the Internet

Susquehanna River.

Water levels of the Susquehanna River can be obtained from the Sunbury river gage at Shamokin Dam on this website:

[http://waterdata.usgs.gov/pa/nwis/uv/?site\\_no=01554000&PARAMeter\\_cd=00065,00060,00010](http://waterdata.usgs.gov/pa/nwis/uv/?site_no=01554000&PARAMeter_cd=00065,00060,00010)

River Forecasts

River forecast statements and river conditions can be obtained at the Middle Atlantic River Forecast Center, at State College, from this website:

<http://www.erh.noaa.gov/er/marfc/>

Newer forecast presentations are being demonstrated on the Advanced Hydrologic Prediction Service website at:

<http://newweb.erh.noaa.gov/ahps2/index.php?wfo=ctp>

## Flood Control Reservoir Status

Information on the flood control reservoirs in the Susquehanna River Basin operated by the US Army Corps of Engineers can be found at this site:

<http://www.nab-wc.usace.army.mil/wc/summary.html>

For More Information

These useful documents can be obtained over the Internet or ordered from FEMA by calling 1-800/480-2520,

*Guide to Retrofitting: Six Ways to protect Your House from Flooding*

<http://www.fema.gov/pdf/hazards/hurricanes/guide.pdf>

*Above the Flood: Elevating Your Floodprone House :*

[http://www.fema.gov/pdf/mit/bpat/fema347\\_doc.pdf](http://www.fema.gov/pdf/mit/bpat/fema347_doc.pdf)

The Red Cross book on recovering from a flood, "Repairing Your Flooded Home," is at

[http://www.redcross.org/services/disaster/0,1082,0\\_570\\_,00.htm](http://www.redcross.org/services/disaster/0,1082,0_570_,00.htm)



