

Flood Awareness In the City of Sunbury, PA



As part of its effort to save you money from flood damage and reduce your flood insurance premiums, the City of Sunbury and the Sunbury Municipal Authority continue to implement a variety of flood protection activities. The Authority strives for very high level of maintenance for our flood control project so it will be in tip-top shape to serve us when needed. The City regulates new construction in the floodplain, and preserves floodprone areas as open space. But there are also some things that you can do. In these pages you will learn about our flood hazard, what we are doing to reduce potential losses and things you can do. Safety tips are spread throughout the pages.

The Flood Hazard

Properties in Sunbury's floodplain are subject to these flood problems: overbank flooding and local drainage. You could be faced with one these hazards.

Overbank Flooding: The City of Sunbury has a flooding risk affecting the majority of the City's industrial, commercial, and residential structures. The Sunbury flood control project provides protection from flooding greater than the 100-year flood event – a very high level of protection. Outside the flood protection system on the 100 year floodplain of the city are residences, commercial buildings and buildings of water treatment facilities of the Sunbury Municipal Authority. Within the flood protection system, but at risk from flooding should the system be overtopped or fail, are 3,100 structures including city and county office buildings, the high school and elementary schools, wastewater treatment plant, fire department buildings, industries, and the downtown central business district.

Find out if your property is in the mapped 100-year floodplain and subject to overbank flooding by calling City Hall at 570-286-4207.

The major flood problem facing Sunbury is flooding of the Susquehanna River. Since 1951 the City of Sunbury has been protected from flooding by a series of floodwalls and levees. Prior to 1951 the City experienced repeated flooding. The known history of flooding at Sunbury extends back to the first recorded flood in 1744, followed by floods in 1758, 1772, 1786, and 1800. The next great flood was recorded on June 1829, and again on March 1846. History also records a great flood in October 1847, which was documented to be at least three to four feet higher than any previous rise. In July 1851, a great storm raged for thirty-two hours and the flood that followed was greater than any previous. The next was the memorable flood of St. Patrick's Day in March, 1865. The City was flooded again in June 1889. The last damaging flood at Sunbury occurred in 1936. Although some of the most notable floods were the result of tropical storms, the majority of flood events are attributed to snowmelts between January and April. Since 1951 the flood control project provided protection from these floods: 1972 (Agnes),

1975 (Eloise), 1984, 1996 and 2004 (Ivan). Shamokin Creek causes repeated flooding outside the protection system in the vicinity of the 1400 blocks of East Market Street near the water plant.

The community was spared from serious damage by its flood protection system from the flooding of Tropical Storm Agnes in June 1972. With floodwater at the top of the wall during this event the protection system was tested and held. The caution from this close call is that an event may occur someday that actually exceeds the level of protection provided by the flood control system and flood the city. Recent modifications to the levee and wall system have increased the level of protection at the southern end. The improvements also provide for a safe failure of the system, should floodwaters exceed the level of protection. In such an event floodwater will flow into the southern section of the levee where Shamokin Creek meets the Susquehanna River between the Route 147 and the railroad bridges. Floodwater will then fill the city slowly from south to north. This slow flooding prevents the catastrophic losses that can occur if the wall is overtopped and floodwaters rush into the city from several locations.

Local Drainage: During intense rainfall there are several areas of local drainage problems where stormwater collects and does not immediately drain away. Spring Creek now flows underground across the City. A large detention basin to help manage storm flows is located near the Ice skating rink. Storm drainage flows through outlets into the Susquehanna River or Shamokin Creek. This drainage is pumped when the river height is above the outlet gates. Occasionally ponding will occur at railroad underpasses.

Map Information

The City will help you review the Flood Insurance Rate Map to determine if a property lies in the regulated floodplain. Call the City at **570-286-4207**

Property Protection

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.

If floodwaters go over the first floor, it is relatively easy to elevate the building to get the first floor above the flood level.

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.

The City Code Office will visit your property to help you decide appropriate actions to reduce flood losses. **Call the City at 570-286-4207**

Flood Warning System

The City of Sunbury is provided with 24 hour flood warning service from the Northumberland County Emergency Management/911 Center. The Center is connected to the National Weather Service River Forecast Center in State College, PA and the Pennsylvania Emergency Management Agency in Harrisburg, PA. River forecasts are received for the Sunbury gage.

The Sunbury Municipal Authority recently constructed a state-of-the-art Flood Emergency Operations Center located above the flood zone in the Northern hill section of the city. The center incorporates the use of real-time technology to monitor river and stream elevations via telemetry devices located on both the Susquehanna River and Shamokin Creek. The center also utilizes the EMWIN (Emergency Managers Information Network), a complex system of weather satellites that provides critical and timely weather information allowing emergency operations personnel to track the intensity, path, and size of threatening weather systems.

If a flood warning is received the City will notify the public using local media and if necessary by sending Police officers with loudspeakers. If it becomes necessary to alert residents and business of the potential for evacuation the City will use local media and other means.

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. 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.

Evacuation Procedures

Residents will be notified as early as possible of the need to evacuate their properties. This notification will come from City officials, police and fire police officers and local radio stations. Residents are urged to heed this evacuation notification and leave flood prone areas. Postponing an evacuation places both the resident at risk and the rescue crew who may be called for assistance. Rescues are especially hazardous and dangerous at night.

Evacuation Routes

Planning for evacuation is important for residents and business outside the protection system. Planning can save time when time is valuable. Bridges leading out of Sunbury close as the flood protections closure system are installed. Residents who don't leave before then will have to seek shelter in high ground in the City or in neighboring communities. The floodprone sections of the City were evacuated during the Agnes event. Should another equal or greater event occur residents will be asked to evacuate to higher ground and to shelters. The scale of the event causing evacuation from the

protected areas will have already done widespread damage. Roads in upland areas maybe washed away or made impassible by debris.

Special cautions upon return.

After flood events the City will try to provide emergency assistance in the form of debris collection, appliance pick up and the fire department will pump of basements based on the time you requested this service. Care will be taken not to pump too soon in order to avoid collapsing basement walls. Residents will be notified of these services, but can always call City Hall for instructions.

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 City of Sunbury 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 Sunbury 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.

Don't wait for the next flood to buy flood 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.

Safety Tips:

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. Always Cook with charcoal outdoors.

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 CITY HALL 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. Grass clippings and branches can accumulate and plug storm drains. If your property is next to a storm drains or storage basin, please do your part and keep the banks clear of brush and debris.

DO NOT DUMP OR THROW ANYTHING INTO THE STORM DRAINS OR BASINS.

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.

If you see dumping or debris in the storm drains or basins, filling or construction near property lot lines, or filling or construction in the floodplain without a permit sign posted, contact the City Office at 570-286-4207. The debris or project may cause flooding on your property.

The floodwalls and levees provide greater than 100-year flood protection. Properties within the protection system are not required to comply with floodplain regulations. Properties outside the system within the 100-year floodplain must comply. New buildings in the floodplain must be protected from flood damage. Our development regulations require that new residential buildings must be elevated to the regulatory 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.

Substantial Improvement and Substantial Damage

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 to the regulatory flood level.

Safety Tips:

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 Hazard Mitigation Plan for the City of Sunbury set three goals regarding the natural and beneficial functions of floodplains.

1. Continue to Protect existing natural resources and open space, including parks and wetlands, within the floodplain and watershed with state or federal funding
2. Participate in Susquehanna Greenway Planning effort
3. Restore degraded natural resources and open space to improve their flood control function with state or federal and local funding.

Certain areas have unique hydrologic, habitat, or pollution and flood mitigation characteristics that warrant attention. Five categories of natural or sensitive areas are:

- Stream corridors
- Wetlands
- Steep slopes
- Highly erodible soils

These natural and beneficial floodplain functions 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, filters, pollutants, and provides 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.

Steep slopes and highly erodible areas may adversely contribute to flooding if they are left open to development and unprotected by natural vegetation, root systems, and their natural soil structures. When disturbed, these areas can contribute large loads of sediment along with high velocity and large capacities of stormwater run-off to receiving streams or rivers.

Several areas in Sunbury have been identified in the National Wetlands Inventory. Two small wetlands are located inside the levee near 10th Street. Another wetland is

mapped along the Susquehanna River near the PA Fish and Boat Commission access.

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. Sunbury'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 City 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

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://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?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

Flood Awareness

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

Flood Insurance Rate Map for Sunbury, PA

