

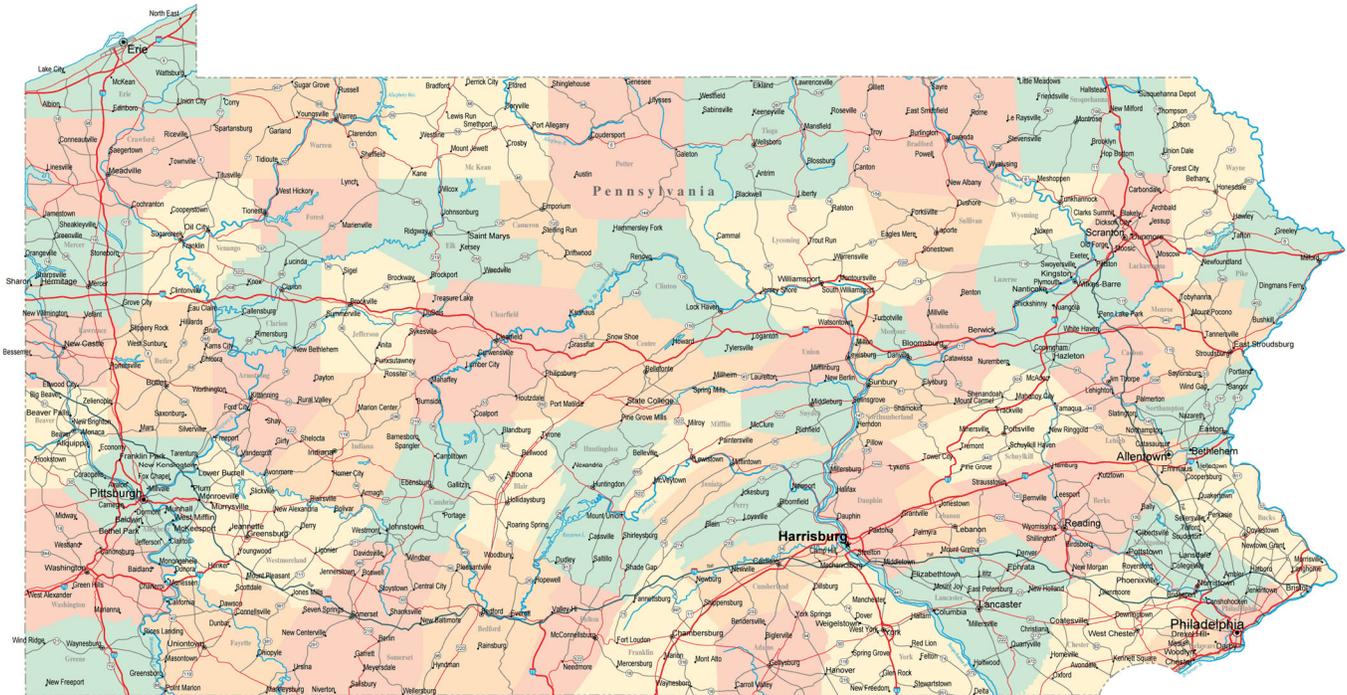
# Commonwealth of Pennsylvania Local Floodplain Manager's Orientation Guide



**pennsylvania**  
EMERGENCY MANAGEMENT AGENCY



**pennsylvania**  
DEPARTMENT OF COMMUNITY  
& ECONOMIC DEVELOPMENT



## **1.0 Introduction**

We believe you will find your job as a Floodplain Manager challenging and rewarding. It is a multifaceted subject which will require your ability to problem solve in different ways and to develop the skill of being a life-long student of floodplain management. In this guide, we have included many initial concepts and ideas that we believe you will find helpful during your initial days in this position. Know that this isn't a complete compendium of what you need to know but will be most helpful in a successful start toward your becoming a respected member of the municipal staff in your community.

### **1.1 Floodplain Management Overview**

Historically, people have been attracted to bodies of water as places for living, industry, commerce, and recreation. During the early settlement of Pennsylvania settlers lived by the water for transportation, a water supply, and sources of industrial water power. As the Commonwealth matured, development near water was spurred by both business needs and the recreational value that water sports offer. This reference booklet will familiarize you with how floodplains development has increased the pressures on the floodplain as well as increasing the damages and destruction caused by regulated and unregulated development of the floodplain.

Here is a short video from the Idaho Silver Jackets explaining some of the duties and responsibilities of a floodplain manager. Silver Jackets is an extension group of federal and state agencies and organizations in each state that collaborates to develop strategies to assist in floodplain management. You may be asked to participate in this group in the Commonwealth in the future.

<https://silverjackets.nfrmp.us/State-Teams/Idaho/So-Youre-a-Floodplain-Manager.cfm>

### **1.2 The Job of the Local Floodplain Manager**

If you are new to floodplain management and flood insurance, there are many ways for you to gain knowledge and expertise. One of the most relevant courses is "Managing the Floodplain through the National Flood Insurance Program". The Federal Emergency Management Agency (FEMA) designation for this course is EO273. It is recommended that you take this course if you have not previously attended. It may also be worth your time to become certified as a CFM (Certified Floodplain Manager). This designation will help in gaining legitimacy and respect from those in the Federal, Commonwealth and local communities. In addition, FEMA's Emergency Management Institute at Emmitsburg, MD is a great resource for you to gain specific knowledge regarding natural and man-made hazards.

The job of the Floodplain Manager deals mainly with overseeing development in the floodplain. As you may be aware, Digital Flood Insurance Rate Maps (DFIRMs) are provided only as a guide to show the risk of flooding for insurance premium calculations and local development permitting. Inundation maps (that show past inundation patterns from flooding) may be available from other Federal and Commonwealth agencies.

The FIRMs are available for all persons at [www.MSC.gov](http://www.MSC.gov). At this site, an address entered on the first page will retrieve the currently effective map for that address. That map is the map under which insurance premiums are calculated; local permitting and development are considered; and mitigation strategies and funding for mitigation projects are developed.

You will have four main roles as the local floodplain manager.

- Coordinator
- Regulator
- Educator
- Planner

Under each of these roles are many “sub-duties” that are a part of the main role. These roles are captured in part by this document but are not a complete listing of the job duties. It is enough to say that the term “other duties as assigned” is a large part of your workday. Providing service to state and local elected and appointed officials to manage their floodplain areas and being a resource for citizens regarding flood/issues will consume much of your work life in this position.

The major duties as **coordinator** are (but not limited to):

- Develop working contacts with Federal, other Commonwealth agency and local floodplain management officers and officials.
- Be the local floodplain management Point of Contact (POC) with both the Federal and local governments.
- Coordinate floodplain management actions within the Commonwealth.
- Interpret Digital Flood Insurance Rate Maps (DFIRMs) and assist in development of new or updated mapping efforts.
- Guide the floodplain development permit process for the Commonwealth
- Participate with FEMA in monitoring local municipal jurisdictions under the Community Assistance Contact (CAC), and initiating enforcement actions as required under the Community Assistance Visit (CAV) programs.
- Advocate the importance of floodplain management to officials and citizens
- Advise of options and sources for flood insurance and advocate the purchase of flood insurance in high risk areas.
- Assist communities to floodplain planning and in the incorporation of floodplain planning in all other local plans (storm water plans, all-hazard plans).

Some examples of the specific duties of the above list are to assist local municipal officials in reviewing and processing difficult permit applications; Coordinate non-permitting activities such as the Community Rating System (CRS, outreach activities and planning activities; and resolution of insurance issues through interpretation of the FIRM, the Letters of Map Amendment (LOMAs) and Letters of Map Revision (LOMRs) processes.

The major duties as **regulator** are (but not limited to):

- Ensure that local regulations
  - Meet minimum requirements of the Commonwealth and NFIP regulations.
    - Are updated on a regular basis
    - Are readily available to the public
  - Assist local governments in establishing and managing an effective permitting process.
    - Determine that permit request adheres to local ordinance and all required permits obtained.
    - Determine whether permit Substantial Damage/Improvement guidelines are adhered to.
    - Review plans and specifications for development.
    - Keep accurate and complete records for properties.
    - Maintain and assist in update of data and maps.
  - Establish and implement an unbiased and effective inspection program to review local municipal processes.
  - Establish and implement unbiased procedures to address non-compliance and violations of the permitting/development regulations.

There are regulatory challenges to the above duties. Some of these are special cases involving other governmental bodies; Nonstructural development (mining, drilling, fencing, placement of pervious and non-pervious ground cover); and regulatory changes to the FEMA standards. Strategies you may employ to assist you are to become familiar with existing Federal and Commonwealth regulations; Act to clarify existing regulations; and precisely describe compliance requirements.

The best method of gaining compliance with current regulations is through continuous education of the local floodplain administrator and his/her elected officials. The major duties as **educator** are (but not limited to):

- Assist developers, residents and officials to understand the value of the following construction higher standards than required in the Pennsylvania Ordinance model within the floodplain:
  - *Freeboard*
  - *Prohibit development in the floodway or entire floodplain*
  - *Cumulative Substantial Improvement/Damage*
  - *Community Identified Flood Hazard Areas*
  - *Restrictions to Subdivision of Land*
  - *Non-Conversion Agreement*
  - *Location Restrictions*
  - *Prohibition*
    - *Development in SFHA or Floodway*
    - *Manufactured Homes*
    - *Fill*
    - *Anchoring of propane tanks and manufactured homes.*

- *Storage*
- *Evacuation planning and execution for recreational vehicle (RV) parks.*
  - *Flood Protection Setback*
  - *Certificate of Compliance*
  - *Historic Structures*
- Informing local audiences about flooding and flood risk.
- Presenting options on how citizens can protect themselves and their properties.
- Offering technical expertise regarding flood insurance coverage.
- Dealing with citizen concerns and angry/emotional reactions to floodplain compliance.
- Providing training to others involved in floodplain management.
- Use existing job aids.
- Develop outreach presentations and materials aimed at local jurisdictions.
- Educate all audiences regarding No Adverse Impact.

The major duties as **planner** are (but not limited to):

- Assist local municipalities in developing higher standards of floodplain development.
- Assist communities to develop All-hazard Mitigation Plans to support mitigation and recovery funding opportunities.
- Assist communities in development of evacuation plans.

### 1.3 Allies in the Stream

Below are some Federal and Commonwealth Agencies that also have flooding programs/concerns.

#### **Federal Emergency Management Agency (FEMA)**

FEMA is the primary agency charged with the prevention and recovery of flooding in the United States. Through the National Flood Insurance Program (NFIP), participating municipalities are required to adopt ordinances that reflect minimum standards for flooding protection for development in the floodplain. FEMA's NFIP Coordinator can assist you in navigating ordinance and permitting requirements in your municipality. In addition, the Federal NFIP Insurance Specialist from FEMA's Region III can also provide guidance.

FEMA also provides funding for mitigation and recovery under its Hazard Mitigation Assistance Programs. These programs provide funding to the Commonwealth (PEMA) who in turn provides opportunities for counties to develop municipal projects either immediately after a disaster under the Hazard Mitigation Grant Program (HMGP), or prior to a disaster under the Pre-Disaster Mitigation (PDM) Program or the Flood Mitigation Assistance (FMA) Program. Your county Emergency Management Agency will be notified when these funds are available.

FEMA also provides training at FEMA's Emergency Management Institute located in Emmitsburg, Maryland. These courses are provided through resident attendance and local offerings. As this facility is near the Commonwealth attendance is not a "big lift". Free lodging is available at the facility and qualified travel expenses can be reimbursed. Instructors

and materials are also available for local courses, and valuable networking with classmates from state and local agencies is just one of the many additional rewards from these informative classes . Support from the local elected officials can provide funding and lead to a robust floodplain management program in your municipality. In addition, education and an understanding of the programs provided can keep the municipality from committing and error in floodplain development. These errors can lead to regulatory and monetary sanctions costing residents additional premiums for flood insurance policies.

Pennsylvania has several Commonwealth agencies that have a regulatory interest as well as programs to assist in reducing or eliminating flooding. These agencies partner to provide comprehensive flood control through a suite of programs. The following is a short list of those agency's departments:

### **Pennsylvania Department of Environmental Protection (PA DEP)**

Though primarily charged with the quality of PA's water, PA DEPs Waterways Engineering and Wetlands program is the agency's administrator of their state-level comprehensive flood protection programs. The program evaluates flood prone areas, designs stream improvement and flood protection facilities, and manages the construction of these projects. It also coordinates the planning, design and construction of federal flood control and bank stabilization projects. The program provides protection to communities during high water events by ensuring that Pennsylvania's existing flood protection projects are in a state of readiness and will function as designed.

Pennsylvania's Storm Water Management Act (Act 167) was enacted in 1978. This Act was in response to the impacts of accelerated stormwater runoff resulting from land development in the state. It requires counties to prepare and adopt watershed-based stormwater management plans. It also requires municipalities to adopt and implement ordinances to regulate development consistent with these plans. These plans are approved by DEP and should be referenced in the County All Hazard Plan. Here is a link to an overview document describing the Act (<http://www.stormwaterpa.org/assets/media/regulatory/3930-FS-DEP4101.pdf>).

### **Pennsylvania Department of Conservation and Natural Resources (DCNR)**

DCNR is an active partner in improving the condition and quality of Pennsylvania's watersheds. Their grant programs partner with local organizations for:

- Acquisition -- purchase or easement of land.
- Planning -- regional or site-based planning, such as Rivers Conservation Plans, stewardship plans, or master site development plans.
- Development -- construction projects such as river access points.
- Partnerships -- outreach initiatives such as a watershed conference or a guide to outdoor recreation. One primary example is the [Coldwater Heritage Partnership \(CHP\)](#). The CHP provides small grants to local organizations to complete studies and projects that support streams and natural trout production.
- Provides funding for open space projects.
- Provides guidance for planning and implementing Riparian Buffer zones.

Here is a link to their website for Conservation:

(<https://www.dcnr.pa.gov/Conservation/Water/RiversConservation/Pages/default.aspx>).

### **Pennsylvania Department of Insurance**

Pennsylvania's Department of Insurance regulates the licensing and sale of flood insurance within PA. With the rise of private insurers in the flood insurance market, PA Department of Insurance has initiated additional oversight and guidance for both agents and consumers. Visit the PA Department of Insurance website at:

<https://www.insurance.pa.gov/Coverage/Pages/Flood.aspx> for more information.

### **Pennsylvania Department of Community Education and Development (DCED)**

DCED provides Community Development Block Grants (CDBG grants) that can be used for many statewide and local projects. These grants are available for projects such as housing rehabilitation, public services, community facilities, infrastructure improvement, development and planning. In the past, PEMA has assisted in using these grants for acquisition projects in concert with the Hazard Mitigation Grant Program (HMGP). Although funded through the federal government, they are not considered to be federal money and are not subject to the percentage of federal funding prohibition under matching funds for Federal Hazard Mitigation Assistance (HMA) programs. Be advised that the use of CDBG funds requires additional information and surveys to ascertain the eligibility to utilize these funds.

A Municipal Assistance Program Grant is available to reimburse up to 50% of the eligible costs for administration of a local Floodplain Management program. More information is available at <https://dced.pa.gov/programs/municipal-assistance-program-map/>.

### **Additional partner prospects**

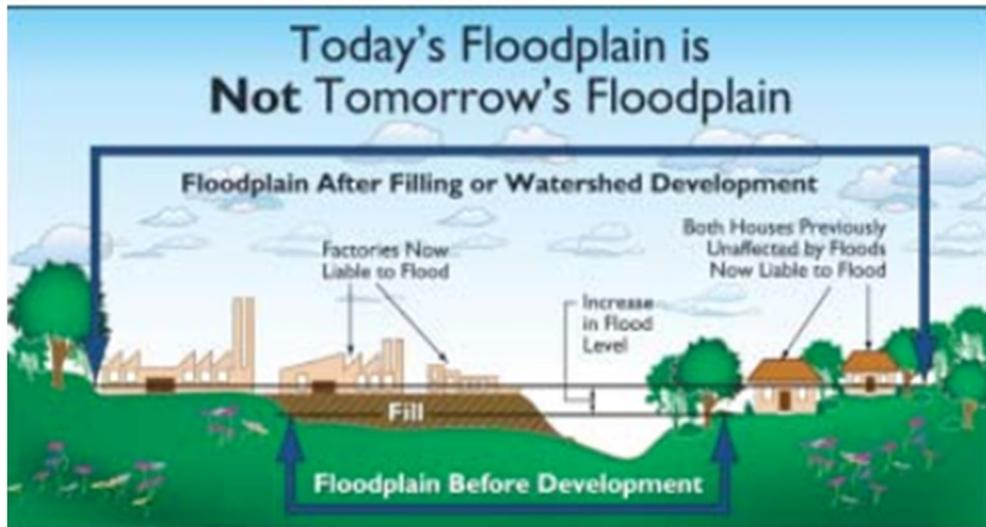
There are additional organizations that may be of help in your management of the floodplain. While most do not have a plethora of funds to use, they have expertise that may help you. Here are a few of those organizations:

- [Delaware River Basin Commission](#)
- [Pennsylvania Department of Community & Economic Development - Flood Insurance](#)
- [Federal Emergency Management Agency](#)
- [Mid-Atlantic River Forecast](#)
- [National Association of Flood and Stormwater Management Agencies](#)
- [Susquehanna River Basin Commission](#)
- U.S. Army Corps of Engineers
  - [Baltimore District](#)
  - [Buffalo District](#)
  - [Philadelphia District](#)
  - [Pittsburgh District](#)

- [U.S. Geological Survey](#)

## 1.4 No Adverse Impact

The concept of No Adverse Impact is primary to overseeing development in the floodplain and is illustrated below:



*If large areas of the floodplain are filled or the watershed developed, then there will be an increase in the land area needed to store flood waters. This means that your home or business may be impacted.*

More simply stated, this concept is “Any development in the floodplain, whether upstream or downstream, impacts the floodplain”. The concept was initiated by the Association of State Floodplain Managers (ASFPM). Both the ASFPM and the PA Association of Floodplain Managers (PAFPM) are resources that can assist you in educating yourself and providing you with information regarding current floodplain management concepts.

### **Community Liability and Property Rights**

When individuals are damaged by flooding or erosion they often file law suits against governments claiming that the government has caused the damages, knowingly allowed actions which contributed to the damages, or failed to provide adequate warnings of natural hazards.

Courts and legislative bodies have expanded the basic rules of liability to make governments responsible for actions which result in or increase damages to others. Courts have, according to common law, followed the adage “use your own property so that you do not injure another’s property”. This adage characterizes the overall landowners’ rights and duties related to common law nuisance, trespass, strict liability, negligence, riparian rights, surface water law rights, surface water law duties, and statutory liability.

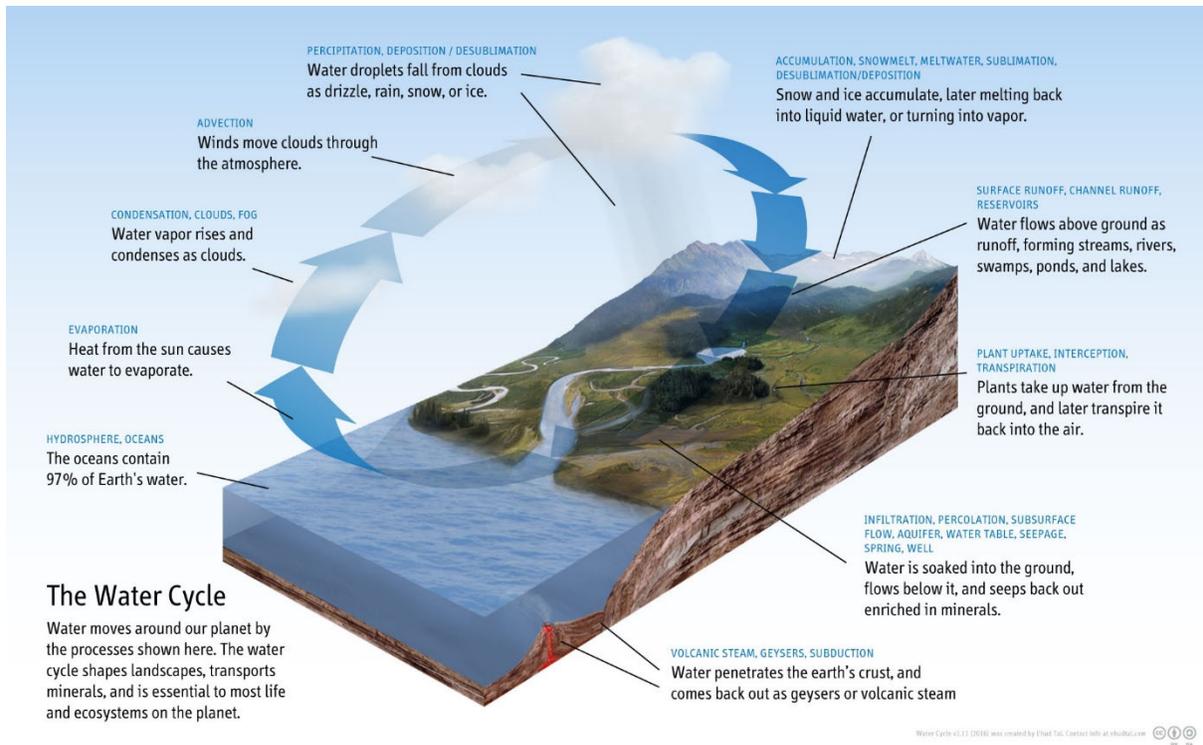
Most successful lawsuits against communities result from actions such as construction or inadequate maintenance of dams, levees, roads and bridges which increase flood damage on other lands.

The overall issue, in most instances, is the reasonableness of an action by the community property owner. Due to advances in technology and products, there is an increasingly higher standard of care for “reasonable conduct”. The “act of God” defense is seldom successful because even rare flood events are now predictable. As technology advances, techniques and approaches also advance for “reasonable conduct” by engineers and other professionals. Governments are negligent if they fail to exercise the same “reasonable conduct” expected of technical professionals.

- No Adverse Impact, Community Liability and Property Rights brochure, ASFP, May 2003

The hydrologic cycle is a process that maintains a balance between the three areas where water is found; in the air, on the ground surface and underground.

The illustration below shows the flow of water through the hydrologic cycle. This cycle is important in the understanding of flooding within a watershed caused by violation of the statutory regulations and local ordinances.



## 2.0 Floodplain and Wetland Benefits

Floodplains and wetlands form a unique physical and ecological system rarely found in other areas. Natural or restored floodplains and wetlands provide many benefits to the local area.

### 2.1 Natural Controls

The natural way to control flooding is through the maintenance and restoration of natural floodplains and wetlands. These areas exist from centuries of annual and unexpected flooding and erosion cycles. Their benefits range from reducing the severity of flooding to minimizing pollution and raising water quality through vegetation filtration of nutrients. Additionally, they recharge the aquifer maintaining the storage of underground water sources.

These areas also limit erosion by slowing the water allowing sediment to settle out of the floodwater. The nutrients in the sediment allow plant life to grow and further stabilize the floodplain/wetland soil, allowing for better biodiversity and ecosystem integrity. Excellent habitats for fish and wildlife form and are maintained by continuous replenishment of life sustaining food sources.

Some final benefits are the ability to study plant life for agricultural advancement; study of archaeological sites which may be present; and environmental studies. Parks and recreational areas may also be part of the floodplain when dry.

Open space is protected land that is owned and managed in the public interest to protect water quality; preserve natural resources; manage the production of forests and farmlands; preserve historic and cultural property and protect landscapes and recreational opportunities. Open Space is certainly beneficial to floodplain as it can provide a “take-up area” that allows overbank flooding with an area that doesn’t impact developed areas. Open space also allows water to filter into the aquifer replenishing the available water supply.

A riparian buffer or stream buffer is a vegetated area (a "buffer strip") near a stream, usually forested, which helps shade and partially protect the stream from the impact of adjacent land uses. It plays a key role in increasing water quality in associated streams, rivers, and lakes, thus providing environmental benefits. With the decline of many aquatic ecosystems due to agriculture, riparian buffers have become a very common conservation practice aimed at increasing water quality and reducing pollution.

## 3.0 Types of Flooding

### 3.1 Riverine Flooding

The most common type of flooding in Pennsylvania is **riverine or overbank flooding**. When the volume of water flowing downstream is more than the stream bed can handle, the water flows over the banks and into “take-up areas” or floodplain. The depth and duration of the flooding is dependent upon the amount of water flowing into the stream/river from the watershed into the stream or river.

One of the measures of flooding is velocity or speed of the flow. Velocity is measured in feet per second. Steep narrow areas will tend to cause higher velocity. Conversely, flat areas will result in lower speed or velocity.

### 3.2 Flash Flooding

**Flash Flooding** occurs when a large volume of water is introduced into a small area the watershed in a relatively short time. Steep valleys and deep, narrow river/stream beds will

quickly be overcome by the volume of water. Flash floods may occur after the collapse of a natural ice or debris dam, or a human structure such as a man-made dam, as occurred before the Johnstown Flood of 1889. Streets, low-lying areas, dry lakes, washes and depressions in the ground are just a few of the many paths flash floods can take. Flash flooding can also take place in larger cities and metropolitan areas. Storm sewers can quickly be overcome. Streets, underground facilities and parking lots become filled, with potential loss of lives and property.

Pennsylvania experienced flash flooding in both the Northern and Southern counties in August of 2018. Washington, DC experienced unprecedented flash flooding on July 8, 2019. Muncy, PA experienced flash flooding on August 2, 2019. Finally, on July 12, 2019 a young, pregnant mother and her 8-year old son were killed in Douglas Township, Bucks County, PA. Flash flooding is inherently more dangerous than riverine flooding as there is little warning of the impending event and the water is moving much more rapidly than in most riverine flooding.

### **3.3 Shallow Flooding**

Shallow flooding occurs in flat areas where a lack of channels means water cannot drain away easily. Shallow flood problems fall into three categories: sheet flow, ponding, and urban drainage.

#### **3.4 Sheet flow**

In areas where there are no defined channels, floodwater spreads out over a large area at a somewhat uniform depth in what is called sheet flow. Sheet flows occur after an intense or prolonged rainfall during which the rain cannot soak into the ground. During sheet flow, the floodwaters move downhill and cover a wide area.

#### **3.5 Ponding**

In some flat areas, runoff collects in depressions and cannot drain out, creating a ponding effect. Ponding floodwaters do not move or flow away. Floodwaters will remain in the temporary ponds and depression areas until they infiltrate into the soil, evaporate, or are pumped out.

Ponding is especially a problem in the glaciated areas of Pennsylvania where glaciers carved out depressions. It is also common in areas where man-made features, such as roads and railroad embankments, have blocked outlets. An example of the latter is in the areas protected by levees along the large rivers. Being in floodplains, these areas are flat and don't drain naturally, especially when a levee blocks the flow to the river.

To drain these areas, channels have been built and pumps installed to mechanically move the water. Often, these man-made systems do not have the capacity to handle heavy rains or intense storms.

### **4.0 Erosion**

As water flows downstream, it flows more rapidly in shallow areas of the stream bed and more slowly in deeper areas of the stream bed due to the stream's bathymetry (or stream bed

topography). At the meanders (or curves in the river), the water scours the sand and silt away from the outside of the meander, taking away part of the land area, and deposits that sand and silt on the inside curve of the meander downstream. The erosion of soils can cause upstream flooding in areas not previously at risk. It can also undermine structures located too close to the stream edge. Dredging these filled in areas is not cost effective as this hydraulic action will refill the area that was previously dredged. Good floodplain management will allow for a wider stream setback to avoid damage to structures and infrastructure.

## **5.0 Urban drainage**

An urban drainage system is comprised of the natural channels and man-made ditches, storm sewers, retention ponds, and other facilities constructed to store runoff or carry it to a receiving stream or lake. Other features in such a system include yards and swales that collect runoff and direct it to the streams, sewers, and ditches.

When most of the man-made systems were built, they were typically designed to handle the amount of water expected during a 10-year or smaller storm. Larger storms overload the system and result in backed-up sewers and overloaded ditches which produce shallow flooding.

## **6.0 The Community Status Book**

The Community Status Book (<https://www.fema.gov/national-flood-insurance-program-community-status-book>) will allow you to find which communities that are both participating in the NFIP and non-participant in the NFIP. All communities with designated floodplain areas should be participating in the NFIP. Failure to participate may lead to either or both of the following situations:

- Failure to obtain a mortgage for homes built in the floodplain.
- Failure for the municipal government to secure Public Assistance Grants to repair flood damaged infrastructure.

Municipal participation in the NFIP program requires a letter written by the municipality's highest ranking elected official, stating the municipality wishes to participate in the National Flood Insurance Program, and show that they have adopted a Commonwealth and FEMA approved ordinance covering floodplain development. Once they have been accepted in the program, the NFIP will offer flood insurance policies for structures in the municipal boundaries.

## **7.0 FMIX (Floodplain Mapping Information eXchange)**

This resource is very helpful in obtaining help to process Letters of Map Amendment (LOMA) and Letters of Map Revision (LOMR) for residents/engineering firms submitting applications for the same. It is important for you to establish a positive working relationship with those manning the FMIX. They can be invaluable in helping work through difficult situations.

An example of their assistance might be a resident whose home (structure) has been included in the floodplain by a lender. Such a finding will cause the "Mandatory Insurance" provision

(when a homeowner is required to have flood insurance coverage to obtain a mortgage) extra expense when purchasing a property. The following steps are helpful prior to contacting the FMIX:

1. Ask the property owner for a copy of his/her Elevation Certificate if available. This is the “gold standard” if the property owner can afford to provide it.
2. If no Elevation Certificate exists, FMIX may be able to calculate the 1% chance flood level from LiDAR (Light Detection and Ranging) meta data.
3. Ask the property owner for a copy of his/her deed showing the “metes and bounds” (property boundary measurements).
4. Ask the property owner to obtain a copy of the plat map for his property/subdivision. This is an engineer’s drawing of the property/subdivision approved for development.
5. Get a copy of the current DFIRM from the Map Service Center ([www.msc.fema.gov](http://www.msc.fema.gov))
6. Review the DFIRM to ascertain the structures position relative to the 1% chance flood level.
7. Call the FMIX and speak with an engineer. If no satisfaction, request to speak with a supervisor.

## **8.0 FEMA Region III NFIP Specialist or Contractor with OST Global**

Richard Sobota ([richard.sobota@fema.dhs.gov](mailto:richard.sobota@fema.dhs.gov)) is the FEMA Region III NFIP Specialist and Walter McGuckin ([wmcguckin@ostglobal.com](mailto:wmcguckin@ostglobal.com)) is the OST Global Contractor at the time of production of this document. Either of these gentlemen can provide answers to NFIP questions about policy, coverage, specific policy information or can direct you to the source of information you may require about the NFIP.

Typically, they can help with anything regarding the NFIP except quoting rates. They (and you) are not licensed within the Commonwealth of PA and therefore are not allowed to give flood insurance rate quotations.

## **9.0 Conclusion**

The information above is an overview of the floodplain and floodplain management program as it pertains to the Floodplain manager. There is much to learn and as floodplain management and the NFIP move forward undoubtedly changes will occur that affect each part in a major or subtle way.

Managing a floodplain program is a large challenge but has great rewards professionally and individually. Adopting the attitude of “it’s my job” is a big step in helping people cope with the challenges of flooding and other disaster events. By doing the job to the best of your abilities, you will find personal satisfaction not afforded from other career choices.

## 10.0 Reference Websites

Here are some links to materials you may need to reference. Some (but not all) information might be suitable to use as handouts to meeting attendees:

- **Community Coordination/Action Visit Guide:** [https://www.fema.gov/media-library-data/20130726-1812-25045-9789/fema\\_f776\\_cacs\\_cavs\\_web\\_final\\_apr2011.pdf](https://www.fema.gov/media-library-data/20130726-1812-25045-9789/fema_f776_cacs_cavs_web_final_apr2011.pdf).
- **PA Commonwealth Hazard Mitigation Plan:** <https://pahmp.com/>
- **Community Information System:** <https://www.fema.gov/national-flood-insurance-program-community-status-book>
- **NFIP Publications Page:** <https://www.fema.gov/national-flood-insurance-program-publications>
- **FIRM Mapping Service Center:** <https://msc.fema.gov/portal/home>
- **FloodSmart:** <https://www.floodsmart.gov/>
- **Hazard Mitigation Assistance Job Aids:** <https://www.fema.gov/media-library/assets/documents/102051>
- **NAI How-to Guide for Emergency Services:** [https://www.floods.org/ace-images/NAI\\_EmergencyServicesMay2019Final.pdf](https://www.floods.org/ace-images/NAI_EmergencyServicesMay2019Final.pdf)
- **The Association of State Floodplain Managers:** [www.floods.org](http://www.floods.org)
- **Protecting Your Home and Property from Flood Damage:** <https://www.fema.gov/media-library/assets/documents/21471>
- **Homeowners Guide to Retrofitting:** <https://www.fema.gov/media-library/assets/documents/21471>
- **Protecting Your Home from Flooding:** <https://www.fema.gov/media-library/assets/documents/165910>