

TOWNSHIP OF WAYNE
New Jersey



FLOOD PLAIN MANAGEMENT PLAN

May 15, 2014

1. INTRODUCTION

The Township of Wayne has a history with flooding. It is situated within the Central Passaic River Basin. It is bordered on the south by the Passaic River, on the west by the Pompton River, and on the north by the Ramapo River. The convergence of these major rivers into a relatively narrow river channel at Beatties Dam and the low lying flood plain within Fairfield, Lincoln Park, and Wayne causes severe flooding. The flood of record is the 1903 event, but in the last seven years there has been an unexplainable frequency of severe floods with Hurricane Irene of August 2011 being the greatest and most devastating. The Township developed Flood Plain Management Plans in 1990 and in 2000. Recent flood events and resurgence in a call for action dictates a total review and development of a new Plan. This plan was developed to coordinate the Township's efforts to minimize flooding and flood damage not only from a major flood event, but also from more frequent minor floods.

2. PLAN PREPARATION

The organizational structure of the Township related to emergencies is thru the Office of Emergency Management. This is established in the Township Code Section 4-61. This Flood Plain Management Plan is based upon the original Flood Plain Management Plan dated 2000, several up-dates, and numerous public meetings attended by the Plan Development Committee. The Plan Development Committee is made up of the following people:

Mayor Christopher P Vergano
Neal Bellet, Business Administrator
George Holzapfel, P E, CFM Director of Public Works
Sandy Galacio, OEM Coordinator
Capt. Mark McGrath, Deputy OEM Coordinator
John Szabo, Township Planner
Robert Place, CFM Engineering Staff
Richard Jasterzbski , First Ward Councilman

This committee encompassed the personnel responsible for developing goals, planning, preparation, interacting with the public in response to all hazards. Unfortunately Wayne has substantial experience in dealing with the flooding hazard. Most of the Plan Development Committee members have been involved responding to this type emergency, many having over twenty years with the Township. Flood Plain Planning is not new within the Township. The Township also adopted a **Local Hazard Mitigation Plan** in 2005. This plan was approved by the State Office of Emergency Management and met FEMA Criteria, making the Township available for federal grants. The Township was a participant in the Passaic County **Multi-Jurisdictional Hazard Mitigation Plan** dated August 2010 which was approved by

the State Office of Emergency Management, met FEMA Criteria. and was adopted by the County Freeholders.

Since the 2000 Plan, there has been a renewed public interest in developing goals and strategies to reduce flooding or at least minimize the impacts within the Central Passaic River Basin. The Plan Development Committee met on May 6, 2014 with six of the members in attendance and one available via phone conference to review the May 2014 Draft. The Final Plan will be reviewed and approved by the Committee prior to submittal to the Township Council for a Resolution at a public meeting. Yearly meetings and review of this document should occur to maintain the Plan.

Central Passaic River Basin Task Force: This Task force was created By Assemblyman Scott Rumana in 2005 as a result of a flood event and the Governor creating a Task Force for the Delaware River. The Task Force was a composite of Elected Officials, technical Staff personnel, local experts, NJDEP, the U.S. Army Corps of Engineers (**ACE**), and the general public. Meetings initially were every other month, but then phased to bi-yearly after recommendations were forwarded to the Governor and State Representatives. Typical meetings had 50 to 80 in attendance. Citizens were provided the opportunity to express their opinions on reports, studies, or flooding conditions. Wayne Township was represented by the Mayor, several Council Members, the Director of DPW, and the OEM Coordinator. Wayne citizens often exceeded 20 people. Recommendations were forwarded to the Governor in 2010. The Governor appointed a Flood Advisory Commission which prepared a January 2011 Report with fifteen specific recommendations for the Central Passaic River Basin.

Central Passaic River Basin Flood Board: In 2011 the Flood Board was created comprised of six towns (Fairfield, Lincoln Park, Little Falls, Pequannock, Pompton Lakes, and Wayne) to develop specific programs or strategies for this region. It was intended to create a smaller, more technical oriented cooperative group to share thoughts and opinions. Meetings are generally every other month with approximately 10 to 12 in attendance. Wayne has been represented by the Mayor and the DPW Director.

Wayne OEM Council: The Township established by Code an Office of Emergency Management that meets at least once a year. The OEM is in accordance with the Township Code Section 4-61 and has been active in the planning and management for emergencies since 1988. There is an approved Emergency Operations Plan (**EOP**) to guide the Township and staff in times of emergency. The OEM Council consists of approximately 15 members including the Mayor & Council members, Business Administrator, Police, Fire & First Aid, Public Works, Health, Board of Education, local utilities, and a Public Information Officer. If not activated for an emergency, a yearly coordination meeting occurs and smaller table top or field exercises are developed for practice. Due to events of the recent years, actual activation of the OEM has occurred every year. Over time the OEM developed and

maintained the **EOP**, which has a specific “Alert, Warning, & Communication” Annex and a “Flood” Annex. The OEM also developed the **Local Hazard Mitigation Plan** and an informational booklet titled “*Preparation, Response, and Recovery.....a guide to coping with a FLOOD*”.

Wayne Township Planning Board: The Planning Board is comprised of nine members, seven of which are classified as “public members”. The Municipal Land Use Law (MLUL) requires development of a Master Plan for the community. The MLUL also requires periodic reexamination of this Master Plan to update the recommendations based on events or changes since the adoption of the Master Plan. The Township’s last reexamination was dated August 2010. The Master Plan and all updates recognized the special problems of the flood zone. The Board has considered the existence of the SFHA. One of the notations in the Reexamination Report continues to be “reduce the flood risk in flood hazard areas”. Present Zoning prohibits any subdivisions within the SFHA.

Councilman Richard Jasterzbski: Councilman Jasterzbski represents the residents in the First Ward. The First Ward encompasses the majority of residences within the SFHA of the Township. Traditionally the First Ward Councilman has been an active participant in all planning and responses dealing with flood issues. The Councilman has daily contact and interaction with the impacted community, has firsthand knowledge of the impacts of flooding, and relays opinions and concerns to the Administration and staff.

3. PLAN GOALS

The overall goals are to reduce the risk to residents and responders and to minimize flood losses through the following elements:

- Public Awareness of the flood hazards, flood safety, property protection measures and insurance availability
- Acquisition of the highest risk flood properties
- Preservation of open space within the flood plain
- Maintenance of the drainage systems within the flood areas
- Retrofitting structures to prevent or reduce flood damage
- Possible capital improvements within the flood areas

4. HISTORY OF STUDIES

River flooding within the Central Passaic River Basin has been studied by New Jersey and the Federal Government for more than 100 years. At least eight **ACE** studies have made recommendations to the problem and solutions. Due to the complex nature of the region none of the recommendations have been enacted. The Passaic River is divided into three sections; the Lower Basin, the Central Basin, and the Highlands. Each section has specific problems and solutions which may affect other sections of the river or have an impact within the specific basin. The Highlands

has rather steep river profiles creating a rapid rate of runoff. The Central Basin has flat river profiles with broad flood plains. The Lower Basin has defined river channels but the channels are not sufficient to carry flood flows. No single solution has been established that all parties can accept. This discussion will continue and smaller scale solutions may be undertaken as the overall problem is reviewed

The last major **ACE** recommendation in 1988 was to develop a Dual Inlet Tunnel to intercept flood flows generally at the upstream limit of the Pompton River and at the juncture of the Passaic and Pompton Rivers and divert these flows thru a 22-mile tunnel to Newark Bay. This plan was de-authorized at the direction of the New Jersey Governor in 1995. No major effort to reactivate any plans occurred for 20 years. As a result of the excessive number and intensity of floods in the last 10 years, renewed efforts to develop options or solutions were started. Hence the creation of the Task Force and the Flood Board (noted earlier). The OEM Coordinator, the DPW Director, the Administration, and the First Ward Councilman have been active participants in the meetings. Several sub-groups (technical or outreach) were activated to focus on a specific items. As a result of the activities by these groups, a report to the Governor was developed, dated January 2011, with fifteen specific recommendations. This was the first clear direction to start further investigations into the flooding issue for the Passaic River Central Basin. Recently the **ACE** re-evaluated past studies and is in the process of recommending detailed investigation of four options.

5. FLOOD HAZARD

The Township of Wayne lies within the Passaic River Central Basin. Beatties Dam is at the southerly end of Wayne and the lower limit of what is known as the Central Basin. The drainage area at Beatties Dam encompasses approximately 762 square miles. Wayne is bordered by three rivers. The Ramapo River joins the Pequannock River to form the Pompton River. The Pompton River then merges into the Passaic River along Wayne's south and west border. There are two types of flooding which occur in Wayne, river flooding and stream flooding. River flooding occurs after periods of heavy rains throughout the Passaic River Basin, when the ground is already saturated by previous rainfall, or when the ground is frozen and cannot absorb the rainfall and snow melt. This type of flood event occurs over a period of days, with a substantial warning period. The majority of Wayne's SFHA areas, being low lying and adjacent to the rivers, are affected by this type of flood. The areas of Hoffman Grove and Fayette Avenue suffer this type of flooding on an almost annual basis, whereas the areas of Old Wayne, Riverside and Riverlawn Drives, and Hobson Avenue historically have experienced flooding on approximately a five year cycle. This frequency appears to be increasing if a review of the last ten years is considered. During river flooding periods, the Pompton River typically crests 12 to 24 hours before the Passaic River. The Pompton starts to recede and then the Passaic River begins to rise, restricting the Pompton River flow. This causes the

Pompton and Ramapo Rivers to back-up and re-flood some sections of the Township.

The stream flooding in Wayne occurs along internal streams during heavy local type rain events. When very heavy rains fall over a short period of time, the runoff overflows the streams. There is usually limited warning with this type of storm and although the flood waters subside quickly, they can cause flooding and erosion along the stream banks.

Recent major river flooding in Wayne occurred in 1984, 1999, 2005, 2007, 2010, 2011 and 2012. Hurricane Floyd in September of 1999 was an example of both stream and river flooding. Flash flooding occurred along the entire length of the Preakness Brook during the actual hurricane on September 16th, and river flooding peaked three days later on September 19th as the runoff from the hurricane reached the rivers. Within Wayne, 1100 Homes were affected by this storm and damages were estimated at \$5 million. The river flooding was minimized because the region was in the midst of its' worst drought with upstream reservoirs essentially empty, creating a shock absorbing effect. The reservoirs were re-filled by more than 60 billion gallons of water within a twelve hour period before overflowing. Hurricane Irene in August/September of 2011 occurred after an extended wet summer, the upstream reservoirs were completely filled, and the upper reaches of the basin having the ground completely saturated. Severe rains on August 28 and 29 from Hurricane Irene was the final event to cause the major river flooding. Tropical Storm Lee followed three days later with extremely heavy rains. The Passaic River and the Pompton River never had a chance to recede before being impacted by the second rain event. Flooding equaled or exceeded the 1984 levels with damages estimated at \$12 million within the Township.

SuperStorm Sandy in 2012 was anticipated to create another significant flood event. Plans emergency plans were activated. But rather than excessive rains and flooding, severe sustained winds created massive tree loss and the subsequent downing of power lines within the Township. While the hazard was different, the emergency response was proper. Trees and downed wires blocked many roads. The entire Township was out of power for a few days, many areas were out of power for a week and the northerly section of the Township was without power for eleven days. Fuel supplies were limited and generators were not available for the residential areas. Clearing roads, removal of trunks, limbs, and branches was necessary. Coordinating with utility companies for access and restoration of power had to occur.

Complicating any solutions is the physical nature of the Passaic River. The Central Basin acts as a detention area to reduce downstream flooding. Increasing flood flows downstream of Beatties Dam could increase flooding in the Lower Basin. Widening channels in the lower basin are complicated by the dense development in that area. Slowing flood flows out of the Highlands area is difficult due to development in that region. Any solution to reduce the frequency or intensity of flooding within Wayne must be addressed on a regional basis.

6. REPETITIVE LOSS AREAS

Repetitive Loss (RL) properties are defined by the National Flood Insurance Program (NFIP) as properties that have two or more flood insurance claims of at least \$1000, in any ten year period. Unfortunately Wayne Township has an extensive area subject to repetitive losses. The Repetitive Loss Areas have been designated within the GIS Mapping System (as necessary for the CRS Program). Wayne has approximately 600 repetitive loss properties. The overall majority of these properties lie within 7 main flood areas: Hoffman Grove, Fayette Ave/Fairfield Road, Old Wayne, Hobson Avenue, Riverlawn Drive/Riverside Drive, Packanack Brook and Riverview Community.

The following is a summary of the approximate number and types of buildings in each repetitive loss area.

Hoffman Grove – This is a residential area off of Meadow Road with approximately 120 small bungalows on the banks of the Pompton River. All of these structures were in the floodway of the Pompton River and any which maintained flood insurance would be a repetitive loss property. Since the last Plan, the lands were subdivided and thru FEMA, Green Acres, and Wayne Township, approximately 93 homes have been purchased, all of which will be demolished. There will remain only 25 or so homes which may be purchased in future programs.

Old Wayne – This is a residential area with some industrial properties scattered throughout. This area falls within the Pompton River flood plain. This is a low lying area on the western border of the Township along the Pompton River. There are approximately 260 residences in this area.

Fayette Avenue/Fairfield Road – This is a residential area of small bungalows on the banks of the Pompton River. All of the residential structures were in the Pompton River floodway and any which maintained flood insurance would have been a repetitive loss property. There are approximately 160 residences in this area

Hobson Avenue – This is a residential area on the banks of the Passaic River. All of the residential structures were in the Passaic River floodway and any which maintained flood insurance would have been a repetitive loss property. There are approximately 24 homes in this area.

Riverlawn Drive/Riverside Drive - This is a residential area along the banks of the Passaic River. All of the residential structures were in the Passaic River floodway and any which maintained flood insurance would have been a repetitive loss property. There are approximately 210 homes in this area.

Packanack Brook – This is a residential area along the banks of the Packanack Brook. This area includes Winding Way, Laguna Drive, Edith Court, Herrick Road, Cedarcliffe Drive and the surrounding areas. There are approximately 155 homes in this area. These residential properties were in the Pompton/Passaic River flood plain. Backwater effects from these two rivers back up waters causing this area to flood. Only those structures immediately adjacent to the Ramapo River are within the RL Area.

Riverview Community – This is a residential area on the northwest border of the Township along the banks of the Ramapo River. These residential properties fall within the flood plain of the Pompton River. There are approximately 210 homes in this area.

Recommendations

The Township has actively sought and obtained grants for the acquisition and demolition of residential structures within the Floodway and the Severe Repetitive Loss properties. It is the opinion that removal of residential structures from the most hazardous areas are in the best interest of the community. Residents are not having to decide whether to evacuate and responders are not having to be placed in harms way as residents change their minds as a flood increases in intensity. Because of the early approval of Wayne's **Local Hazard Mitigation Plan**, we were the only community to meet FEMA criteria for grants. The buy-out is a voluntary program. Initial concerns that the program would not be effective have proven inaccurate. Since 1988 over 255 residential structures have been acquired and removed. There is a waiting list for this program. Indications are that another grant for purchase of 115 structures is pending. Over time it is expected significant areas closest to the rivers will be vacant of residential structures and the area allowed to revert to a natural flood plain condition.

7. FUTURE DEVELOPMENT

Future development within the flood zone is restricted by the stream encroachment regulations from the NJDEP, by the Township Flood Plain Regulations and by the Township Zoning Regulations.

The NJDEP Stream Encroachment regulations prohibit new structures within the floodway. All structures and development within the flood zone must not create additional fill. NJDEP and NFIP regulations require the elevation of structures plus one foot above the Base Flood Elevation. The NJDEP utilizes a BFE of the 100 year flow plus 25%, which is approximately one foot higher than NFIP BFE.

The current Township regulations requires a 1 foot freeboard above the BFE for all residential properties, except for manufactured homes which must be elevated to the

BFE. Commercial properties must be elevated to plus one foot above the Base Flood Elevation or waterproofed to the BFE.

8. EVALUATION OF ACTIVITIES

The existing and proposed activities were evaluated against the goals and either recommended or not recommended. These Activities are in order of the Township's priority.

Acquisition of Flood Properties

It is not the goal of the Township to buy-out the entire flood plain. This would displace a significant number of residents and eliminate entire neighborhoods. The Township will continue to promote the acquisition of the flood properties within the Floodway, lands adjacent to the floodways, and areas within the Severe Repetitive Loss Areas. All acquisitions should be voluntary. Vacant lands in the SFHA should not be developed but allowed to retain flood storage.

Recommendations:

- Continue the FEMA and Blue Acres Buy-Out Programs. These Government funded programs will continue to purchase and demolish homes within the flood plain with additional expenses being provided thru local taxes.
- Assist the Army Corps of Engineers with the Passaic River Preservation of Natural Flood Storage Areas Project. This project seeks to purchase lands or easements on vacant flood properties to prevent future development and to maintain/restore flood storage and wetlands.
- Seek to acquire the highest risk flood properties. The Township should continue to promote the SRL Buyout Program for those properties most frequently flooded.
- Seek to acquire flood properties through tax foreclosures and set a policy to prevent flood properties from being sold at tax sales.
- Investigate land swap legalities. Determine if high risk flood properties can be swapped for lower flood risk Township owned properties.

Timetable: Continue Activities

Budget: Staff Time

Creation of an Open Space Area

As the lands along the river are acquired, they could be used for recreational purposes. Use of the area for formal ball fields was discussed but not considered as optimum. Formal fields in a flood area would require extensive repairs after all flood events. Use of the area around the Route 287 wetlands mitigation site as a "greenway" or a nature preserve was suggested. Items such as walking trails would result in minimal disturbance of the area. Three large and vacant areas have been established; Route 287 Wetlands Site 98.48 acres, Tall Oaks Nature Preserve 87.84 acres, and Buttonwood Floodway Area 15.7 acres. These sites are intended to remain in a natural state for flood storage and mitigation. The Hoffman Grove Area has been the focus of a buy-out program. Approximately 80 of the original 110

homes have been acquired and demolished. The goal is to complete this buy-out and allow the lands to revert to a natural state.

Recommendation: Develop a long term plan to establish “greenway” areas along the Passaic and Pompton Rivers. All properties acquired in this area should be deeded as open space. Once enough area is acquired, a plan of the open space area should be established.

Timetable: For Master Plan Studies

Budget: Staff Time

Mapping of Flood Plain

The Township maintains a GIS System which manages mapping information into a digital data base. Current mapping of the NFIP SFHA flood information, property lot lines, streets, repetitive loss areas, and zoning information is within this digital data bank. Inundation limits of the 2, 10, and 50 year events as estimated by NJDEP also are layered within the GIS. There are digital rectified aerial photos of the Township within this data, so actual comparison of flood information and structures can be accomplished. This mapping must be maintained for future planning.

These maps provide an excellent basis for understanding the flood areas. SRL Properties and RL Areas have been established on this GIS System.

Timetable: Continue Activities

Budget: Staff Time

Housing Rehabilitation Program

This program, administered by the Planning Department, provides CDBG low interest loans to low and moderate income families to make repairs and improvements to their homes. These loans can be used to retrofit buildings within the flood zones to reduce flood damage. Retrofitting can include raising the hot water heater, furnace and/or electrical panel above flood levels, installing a backflow preventor on the sanitary sewer lateral or elevating an entire structure. Currently, 10-15 homes are rehabilitated each year through this program; however, only 2-3 flood zone homes are included in this number.

Recommendation: Promote this program in the flood area as a means of providing funding for retrofitting. A mailer should be sent to the flood areas describing the type of work covered and the funding available under this program.

Timetable: Annual

Budget: Community Development Block Grant

Zoning Regulations

The current development regulations state that all residential buildings must be elevated to 1 foot above the BFE, all non-residential buildings must be either elevated 1 foot above the BFE or flood proofed to the BFE. All manufactured homes must be elevated to the BFE. The current regulations should be updated to be consistent for all land uses.

Recommendation: Modify the regulations so that all new residential buildings, including manufactured homes must be elevated to one foot above the BFE. New commercial buildings should have the option of elevating or waterproofing to one foot above the BFE. Requiring elevation certificates and/or waterproofing certificates for all new structures within the flood zone should also be added to the regulations.

Timetable: 1 Year

Budget: Staff Time

Flood Information

The Public Works Bulletin is mailed to all residential properties in July & January. These brochures provide information on flood history, flood areas, flood safety, stream dumping and maintenance, and building regulations in the flood areas. All properties within the RL areas are mailed a letter providing information about the potential for flooding. These mailings are required under the CRS Program and must be done on an annual basis. These mailings have resulted in numerous inquiries regarding basic flood information and flood insurance.

In 2005, a "Beware of Flooding" brochure was sent to all SFHA properties stating that the subject property is in the flood zone and giving specific safety measures to be taken before, during and after flooding.

Recommendation: Continue with these mailings as scheduled and evaluate the response to each. Modify the mailings accordingly. Future mailing to flood properties should also include information on the Housing Rehabilitation Program as discussed above.

Timetable: Twice annually

Budget: Staff Time

Drainage System Maintenance Program

The current drainage system maintenance program is handled by the Waterways crew. This crew inspects and cleans all publicly owned drainage systems within the Township on an annual basis. They also respond after storms and to resident complaints. The existing drainage system maintenance program is adequate but not well documented. There are also areas where access easements need to be obtained.

Recommendation: The Township has created a standard operating procedure for stream maintenance on Township owned properties and park land including an inventory of publicly owned streams and waterways and a comprehensive drainage maintenance plan for these streams. Areas where easements are needed will also be located. Choke points and other problem areas will be addressed and a log will be maintained for all work done. This program will be coordinated through the Public Works Department and Parks Departments.

Timetable: Continue Activities

Budget: Staff time

Flood Warning

Within the Township's Emergency Operations Plan (**EOP**), a specific Alerting, Warning and Communication Annex details duties and responsibilities for notification of impacted parties, including the public. According to this Annex, all OEM and NWS issued warnings are received by the Police 911 Dispatch Center. These warnings are transferred to the OEM Coordinator or his designee.

There are direct links to NWS gauges on the Passaic, Pompton, and Ramapo Rivers which have river height predictions. There is an established protocol for monitoring river conditions, and enacting a State of Emergency if appropriate. The Coordinator and others have access to these gauge readings and predictions. The Passaic River gauge at Little Falls has been the basis for action for more than 25 years. It typically gives reliable predictions 48 or more hours in advance. Recently river predictions from the Ramapo River at Pompton Lakes have been considered, allowing adjustments in response with 24 to 30 hour advance notice. Discussions with OEM, Police, and DPW staff finalize actual Township responses. At that time, the activation of Police, Fire, DPW, and other groups is determined. The procedures for notifying the public or sections of the Township are established in the Warning Annex of the **EOP**. This may be via the WayneWeb site, on the Local Channel 77 TV cable, thru contacting regional public media (TV & Radio), Wayne Emergency Hotline (5050), Facebook & Twitter, thru Reverse 911 calling to specific blocks or areas of the Township. It could also be by police or volunteers going house-to-house.

The Township established an **Alert Notification System** which allows residents to register and receive messages on their cell phones of emergency conditions. The Township has just awarded a contract to construct a low powered AM Radio Transmission Station which will allow the population to get emergency messages thru an AM Radio (either in the car or a small battery powered radio). During SuperStorm Sandy & Hurricane Irene most areas of the Township had no cable or internet service so they had no access to local media nor weather predictions. This will provide information to residents and travelers in the immediate vicinity of the Township.

. The existing system provides sufficient warning times to residents.

Timetable: Continue Activities

Budget: Staff Time

Dike and Levee System

A dike and levee system could be constructed to protect buildings or areas within the flood area. There are several areas that could be separated from the river channels and floodways by a levee system to reduce or eliminate minor or smaller flood events.

A dike and levee system would reduce the flood storage volume in the Central Basin. Any program would have to address impacts throughout the basin and would need State approval. This is beyond the scope of municipal government and would have to be administered on the State or Federal level. A dike and levee system would also require a great deal of area for construction of the dikes and levees and would most likely require the acquisition of many of the homes. A small dike system to prevent more frequent, lower level floods might be within the Township's ability. Any proposal must assess the overall impact within the basin. This is a very complex option, subject to many divergent opinions.

Recommendation: No action by the Township until the **ACE** completes studies and makes recommendations on the overall direction of flood control in the Central Basin. A long term goal should be to study the cost effectiveness of building a limited dike system in the Old Wayne or the Packanack Brook Area to prevent flood waters from reaching the homes in the lower risk areas of the flood plain.

Timetable: Long Term

Budget: Staff Time

9. Adoption of the Plan

This plan will be submitted to the entire Township Council with a summary memo. A resolution for adoption of the plan will be considered at a Public Meeting.

10. Implementation and Evaluation:

Yearly, and/or after a flood event, the plan will be reviewed by the Planning Committee. Any modifications will be considered.