



## 9.21 Borough of Washington

This section presents the jurisdictional annex for the Borough of Washington.

### 9.21.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

| Primary Point of Contact   | Alternate Point of Contact  |
|--|---|
| Kristin Blanchard, Borough Manager<br>100 Belvidere Avenue, Washington, NJ 07882<br>(908) 689-3600<br><a href="mailto:kblanchard@washingtonboro-nj.org">kblanchard@washingtonboro-nj.org</a> | Kurt Klausfelder, Coordinator<br>100 Belvidere Avenue, Washington, NJ 07882<br>(908) 319-5643<br><a href="mailto:Truckie8369@gmail.com">Truckie8369@gmail.com</a> |

### 9.21.2 Municipal Profile

The Borough of Washington is a rural community, approximately 1.9 square miles in size, located in southeastern Warren County. According to the U.S. Census, the 2010 population for Borough of Washington was 6,461. The Borough is surrounded by rolling hills, Pohatcong Mountain ridge, and the Appalachian Mountains. The Borough is bordered completely by Washington Township. Additionally, the Borough is part of the New Jersey Highlands Region.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in section 9.21.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.21-1. Growth and Development**

| Property or Development Name                                       | Type (e.g. Res., Comm.) | # of Units / Structures | Location (address and/or Block & Lot)                    | Known Hazard Zone(s) | Description/Status of Development |
|--|-------------------------|-------------------------|--|----------------------|-----------------------------------|
| <b>Recent Development from 2010 to present</b>                     |                         |                         |  |                      |                                   |
| Quick Chek   | Comm.                   | 1                       | Brass Castle Road; Bl. 2.06, Lot 6                       | None                 | Completed                         |
| Washington Square  | Resid.                  | 86                      | NJ. Route 57; Bl.73.01, Lot 1-44<br>Block 73.02 Lot 1-44 | None                 | In Progress                       |
| <b>Known or Anticipated Development in the Next Five (5) Years</b> |                         |                         |  |                      |                                   |
| Town Center @ Wash.  | Mixed                   | 50 Apts.<br>5K sf Com.  | NJ. Route 57; Bl. 95, Lots 3 &4                          | None                 | PB Board Approval                 |

*\* Only location-specific hazard zones or vulnerabilities identified.*

### 9.21.3 Natural Hazard Event History Specific to the Municipality

Warren County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community.





Information regarding specific damages at the municipal level, is presented in the table below. This summary is based on reference material or local sources. For further details on these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.21-2. Hazard Event History**

| Date(s) of Event               | Event Type                     | FEMA Declaration # (If Applicable) | County Designated? | Summary of Damages/Losses  |
|--------------------------------|--------------------------------|------------------------------------|--------------------|--|
| August 26 – September 5, 2011  | Hurricane Irene                | DR-4021                            | Yes                | Widespread flooding throughout the entire Borough. Storm water exceeded the limits of our storm water and sanitary sewer systems, in some instances caused storm water to be forced out from the storm basins on to the streets; forcing road closures throughout the Borough. The flow at the sewer plant was over 7 MGD; splitter box over-flowed which required repairs.  |
| September 28 – October 6, 2011 | Remnants of Tropical Storm Lee | DR-4039                            | Yes                | Remnants of Tropical Storm Lee led to road closures (Gardners Court and South Prospect Street) due to the sewer overflowing.   |
| October 29, 2011               | Snowstorm                      | DR-4048                            | Yes                | Borough wide downed trees, downed wires, power outages due to October snowstorm. Numerous streets were closed due to tree damage and downed power lines.   |
| October 26 – November 8, 2012  | Hurricane Sandy                | DR-4086                            | Yes                | <p>During the days immediately preceding the October 26 – November 28 2012 period, storm forecasters and local predictions anticipated heavy rains and localized flooding. A Borough owned and operated dam on Mill Pond Road is subject to frequent flooding during significant rain. Mill Pond Dam was secured for potential flooding, storm drains were cleaned and opened. During the storm event, loss of electrical service at the Municipal Building prevented operation of equipment bay doors for fire apparatus, disrupted the ability to receive telephone calls from the public, disrupted radio communications. Loss of power to the DPW Garage created hazardous conditions for workers. When Hurricane Sandy moved onshore, strong winds downed trees, limbs, and power lines Borough wide and caused widespread power outages. Debris and downed power lines caused immediate hazards for emergency responders. Over 5,000 cubic yards of debris was collected in the Borough.</p> <p>The Wastewater Treatment Facility and five sewer lift stations lost power; causing an immediate threat to the health and safety of the public. The Sewer Utility Operator procured pumping services for 4 lift stations, deployed and operated a generator to power 1 high-volume lift station on Alvin Sloan and provided fuel for the operation of a standby generator at the main treatment facility.</p> <p>Intersection of Church St. and Belvidere Avenue high winds blew traffic signal over. A contractor was hired to realign the traffic signal and restore to pre-disaster function.</p> <p>The Borough had over \$54,000 in overtime, cleanup and damages.</p> |



### 9.21.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The risk ranking methodology is presented in Section 5.3. However, each municipality had the opportunity to adjust the final ranking based on municipal feedback. The following summarizes the hazard vulnerabilities and their ranking in the Borough of Washington. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Borough of Washington.

**Table 9.21-3. Hazard Risk/Vulnerability Risk Ranking**

| Hazard type         | Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup> | Probability of Occurrence | Risk Ranking Score (Probability x Impact) | Hazard Ranking <sup>b</sup> |
|---------------------|--|---------------------------|---|-----------------------------|
| Dam Failure         | Damage estimate not available  | Rare                      | 6   | Low                         |
| Drought             | Damage estimate not available  | Frequent                  | 30  | Medium                      |
| Earthquake          | 100-Year GBS: \$0<br>500-Year GBS: \$189,758<br>2,500-Year GBS: \$3,027,220                | Occasional                | 28  | Medium                      |
| Flood               | 1% Annual Chance: \$5,327,900  | Frequent                  | 18  | Medium                      |
| Geologic            | RCV Exposed to Carbonate Rock Areas: \$386,155,398   | Occasional                | 36  | High                        |
| Hurricane           | 100-year MRP: \$165,105.00<br>500-year MRP: \$1,278,085<br>Annualized: \$13,059.00         | Frequent                  | 48  | High                        |
| Nor'Easter          | Damage estimate not available  | Frequent                  | 48  | High                        |
| Severe Storm        | 100-Year MRP: \$165,105<br>500-year MRP: \$1,278,085<br>Annualized: \$13,059               | Frequent                  | 48  | High                        |
| Severe Winter Storm | 1% GBS: \$2,885,566<br>5% GBS: \$14,427,829  | Frequent                  | 51  | High                        |
| Wildfire            | Estimated Value in the Extreme, Very High, and High Hazard Areas: \$1,267,600              | Occasional                | 16  | Medium                      |
| Hazardous Materials | Damage estimate not available  | Frequent                  | 36  | High                        |

Notes:

GBS = General building stock; MRP = Mean return period.

- a. The general building stock valuation is based on the custom inventory generated for the municipality and based on improved value.
- b. High = Total hazard priority risk ranking score of 31 and above  
Medium = Total hazard priority risk ranking of 20-30+  
Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the estimated value of contents. Loss estimates for the flood and earthquake hazards represent both structure and contents. Potential flood loss estimates were generated using Hazus-MH 2.2 and the 2011 FEMA DFIRM for the 1-percent annual chance event. For the geologic and wildfire hazards, the improved value and estimated contents of buildings located within the identified hazard zones is provided.





### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Borough of Washington.

**Table 9.21-4. NFIP Summary**

| Municipality           | # Policies (1) | # Claims (Losses) (1) | Total Loss Payments (2) | # Rep. Loss Prop. (1) | # Severe Rep. Loss Prop. (1) | # Policies in 1% Flood Boundary (3) |
|------------------------|----------------|-----------------------|-------------------------|-----------------------|------------------------------|-------------------------------------|
| Washington, Borough of | 21             | 3                     | \$25,920                | 0                     | 0                            | 9                                   |

Source: FEMA Region 2, 2014

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 11/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 11/30/14.
- (2) Total building and content losses from the claims file provided by FEMA Region 2.
- (3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.  
 A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.  
 Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

### Critical Facilities

The table below presents the number of critical facilities, by type, in the community located in the effective FEMA flood zones (1% and 0.2% annual chance boundaries).

**Table 9.21-5. Critical Facilities in the DFIRM 1% and 0.2% Annual Chance Flood Boundaries**

| Municipality           | 1% Annual Chance | 0.2% Annual Chance |
|------------------------|------------------|--------------------|
|                        | Gas Station      | Gas Station        |
| Washington, Borough of | 1                | 1                  |

Source: Warren County, FEMA 2011

### Other Vulnerabilities Identified by Municipality

The Borough identified the following vulnerable locations within the community:

- Shabbecong Creek – areas along this waterbody are prone to flooding

### 9.21.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Education/Outreach and Community classification
- Self-Assessment of Capability
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms



**Planning and Regulatory Capability**

The table below summarizes the regulatory tools that are available to the Borough of Washington.

**Table 9.21-6. Planning and Regulatory Tools**

| Tool / Program<br>(code, ordinance, plan) | Do you have this?<br>(Yes/No)<br>If Yes, date of adoption or update | Authority<br>(local, county, state, federal) | Dept. /Agency Responsible     | Code Citation and Comments<br>(Code Chapter, name of plan, explanation of authority, etc.) |
|---|---|--|-------------------------------|--|
| <b>Planning Capability</b>                |   |  |                               |  |
| Master Plan                               | Yes   | Local  | Governing Body/Planning Board | Updated 2006   |
| Capital Improvements Plan                 | Yes   | Local  | Governing Body                | Part of municipal budget; updated annually   |
| Floodplain Management / Basin Plan        | No  |  |                               |  |
| Stormwater Management Plan                | Yes   | Local  | Governing Body                | Chapter 57 Stormwater Management   |
| Open Space Plan                           | No  |  |                               |  |
| Stream Corridor Management Plan           | No  |  |                               |  |
| Watershed Management or Protection Plan   | No  |  |                               |  |
| Economic Development Plan                 | No  |  |                               |  |
| Comprehensive Emergency Management Plan   | Yes   | Local  | Borough OEM                   | Part of EOP  |
| Emergency Operation Plan                  | Yes   | Local  | Borough OEM                   | Updated in 2010  |
| Post-Disaster Recovery Plan               | Yes   | Local  | Borough OEM                   | Part of EOP  |
| Transportation Plan                       | No  |  |                               |  |
| Strategic Recovery Planning Report        | No  |  |                               |  |
| Other Plans:                              | No  |  |                               |  |
| <b>Regulatory Capability</b>              |   |  |                               |  |
| Building Code                             | Yes   | State & Local                                |                               | State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)                            |
| Zoning Ordinance                          | Yes   | Local  | Zoning                        | Chapter 94 – Zoning and Land Development   |
| Subdivision Ordinance                     | Yes   | Local  | Zoning                        | Chapter 94 – Zoning and Land Development   |
| NFIP Flood Damage Prevention Ordinance    | Yes - 2011  | Federal, State, Local                        | Zoning / Engineering          | Chapter 44A – Flood Damage Prevention  |
| NFIP: Cumulative Substantial Damages      | Yes   | Local  | Zoning / Engineering          | Chapter 44A – Flood Damage Prevention  |
| NFIP: Freeboard                           | Yes   | State, Local                                 | Zoning / Engineering          | N.J.A.C 7:13 Flood Hazard Area Control Act   |
| Growth Management Ordinances              | Yes   | Local  |                               |  |
| Site Plan Review Requirements             | Yes   | Local  | Planning Board                | Chapter 94 – Zoning and Land Development   |



**Table 9.21-6. Planning and Regulatory Tools**

| Tool / Program<br>(code, ordinance, plan)                               | Do you have this?<br>(Yes/No)<br>If Yes, date of adoption or update | Authority<br>(local, county, state, federal) | Dept. /Agency Responsible    | Code Citation and Comments<br>(Code Chapter, name of plan, explanation of authority, etc.) |
|---|---|--|------------------------------|--|
| Stormwater Management Ordinance   | Yes   | Local  | Governing Body               | Chapter 57 Stormwater Management   |
| Municipal Separate Storm Sewer System (MS4)                             | No  |  |                              |  |
| Natural Hazard Ordinance  | No  |  |                              |  |
| Post-Disaster Recovery Ordinance  | No  |  |                              |  |
| Real Estate Disclosure Requirement                                      | Yes   | State  | Division of Consumer Affairs | N.J.A.C. 13:45A-29.1   |
| Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)] | No  |  |                              |  |

**Administrative and Technical Capability**

The table below summarizes potential staff and personnel resources available to the Borough of Washington.

**Table 9.21-7. Administrative and Technical Capabilities**

| Resources   | Is this in place?<br>(Yes or No) | Department/ Agency/Position  |
|---|----------------------------------|--|
| <b>Administrative Capability</b>  |                                  |  |
| Planning Board  | Yes                              | Planning Board   |
| Mitigation Planning Committee   | No                               |  |
| Environmental Board/Commission  | No                               |  |
| Open Space Board/Committee  | No                               |  |
| Economic Development Commission/Committee   | No                               |  |
| Maintenance Programs to Reduce Risk   | No                               |  |
| Mutual Aid Agreements   | Yes                              | Washington Borough Fire Department/Warren County Emergency Management  |
| <b>Technical/Staffing Capability</b>  |                                  |  |
| Planner(s) or Engineer(s) with knowledge of land development and land management practices                  | Yes                              | Governing Body/Planning Board/Board of Adjustment – Finelli Consulting Engineers, Van Cleef Engineering, Heuyer and Gruel Planners                           |
| Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure | Yes                              | Governing Body, Planning Board, Board of Adjustment. Division of Community Affairs (Construction Office) Finelli Consulting Engineers, Van Cleef Engineering |
| Planners or engineers with an understanding of natural hazards  | Yes                              | Governing Body – Finelli Consulting Engineers  |
| NFIP Floodplain Administrator   | Yes                              | Municipal Engineer (Finelli Consulting Engineers)  |
| Surveyor(s)   | Yes                              | Finelli Consulting Engineers   |
| Personnel skilled or trained in GIS and/or Hazus-MH applications  | Yes                              | Finelli Consulting Engineers   |
| Scientist familiar with natural hazards   | No                               |  |





**Table 9.21-7. Administrative and Technical Capabilities**

| Resources   | Is this in place? (Yes or No) | Department/ Agency/Position  |
|---|-------------------------------|--|
| Emergency Manager   | Yes                           | Emergency Management Coordinator/Deputy Emergency Management Coordinator |
| Grant Writer(s)   | No                            |  |
| Staff with expertise or training in benefit/cost analysis | Yes                           | CFO  |
| Professionals trained in conducting damage assessments    | Yes                           | Finelli Consulting Engineers   |

**Fiscal Capability**

The table below summarizes financial resources available to the Borough of Washington.

**Table 9.21-8. Fiscal Capabilities**

| Financial Resources  | Accessible or Eligible to Use (Yes/No/Don't Know) |
|--|---|
| Community development Block Grants (CDBG, CDBG-DR)                 | Yes   |
| Capital Improvements Project Funding                               | Yes   |
| Authority to Levy Taxes for specific purposes                      | Yes   |
| User fees for water, sewer, gas or electric service                | User fees for sewer utility                       |
| Impact Fees for homebuyers or developers of new development/ homes | No  |
| Stormwater Utility Fee   | No  |
| Incur debt through general obligation bonds                        | Yes   |
| Incur debt through special tax bonds                               | Yes   |
| Incur debt through private activity bonds                          | No  |
| Withhold public expenditures in hazard-prone areas                 | No  |
| Other Federal or State Funding Programs                            | Yes   |
| Open Space Acquisition Funding Programs                            | No  |
| Other  |   |

**Education/Outreach and Community Classifications**

The table below summarizes education/outreach programs the community participates in and the classifications for community program available to the Borough of Washington.

**Table 9.21-9. Education/Outreach and Community Classifications**

| Program   | Do you have/participate in this? (Yes/No) | Classification (if applicable) | Date Classified (if applicable) |
|---|---|--------------------------------|---------------------------------|
| Community Rating System (CRS)                           | No  | NP                             | N/A                             |
| Building Code Effectiveness Grading Schedule (BCEGS)    | No  |                                |                                 |
| Public Protection (ISO Fire Protection Classes 1 to 10) | No  |                                |                                 |
| Storm Ready   | No  | NP                             | N/A                             |
| Firewise  | No  | NP                             | N/A                             |
| Disaster/Safety Programs in/for Schools                 | Yes                                       |                                |                                 |



**Table 9.21-9. Education/Outreach and Community Classifications**

| Program  | Do you have/participate in this? (Yes/No) | Classification (if applicable) | Date Classified (if applicable) |
|--|---|--------------------------------|---------------------------------|
| Organizations with Mitigation Focus (advocacy group, non-government) | No  |                                |                                 |
| Public Education Program/Outreach (through website, social media)    | Yes                                       |                                |                                 |
| Public-Private Partnerships  | Yes                                       |                                |                                 |

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO’s Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

**Self-Assessment of Capability**

The table below provides an approximate measure of the Borough of Washington’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.21-10. Self-Assessment of Capability**

| Area  | Degree of Hazard Mitigation Capability         |          |      |
|---|--|----------|------|
|   | Limited (If limited, what are your obstacles?) | Moderate | High |
| Planning and Regulatory Capability  |  |          | X    |
| Administrative and Technical Capability                                     |  |          | X    |
| Fiscal Capability   |  |          | X    |
| Community Political Capability  |  |          | X    |
| Community Resiliency Capability   |  |          | X    |
| Capability to Integrate Mitigation into Municipal Processes and Activities. |  |          | X    |





## National Flood Insurance Program

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### NFIP Floodplain Administrator (FPA)

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Michael S. Finelli, P.E.

### Flood Vulnerability Summary

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The Borough does not formally maintain lists of properties that have been damaged by floods. Structures were not damaged during Sandy or other recent events. The FPA makes substantial damage estimates and none were declared during Sandy or other recent events. There is currently no interest in mitigation (elevation or acquisition). If there was interest, the property owner and/or flood insurance would be used to fund those mitigation project types.

### Resources

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The FPA indicated that he is not the sole person assuming the responsibilities of floodplain administration in the Borough. The FPA utilizes a balance of technical staff in the office. NFIP administration services and functions provided to the community include permit review, inspections, damage assessments, and GIS. The Borough provides education and community outreach by producing stormwater management brochures and giving presentations at public meetings. The FPA stated that there are no barriers to running an effective floodplain management program and that he feels adequately supported and trained to fulfill his responsibilities as the FPA. The FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County.

### Compliance History

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The Borough is currently in good standing with the NFIP and the most recent compliance audit was conducted in spring 2014.

### Regulatory

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The Borough's floodplain management regulations meet FEMA and state minimum requirements. Additionally, the Borough has other ordinances, plans and programs that support floodplain management and the planning and zoning boards consider efforts to reduce flood risk when receiving variances.

### Community Rating System

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The Borough of Washington does not participate in the Community Rating System (CRS) program; however, the community has considered joining and would attend a CRS seminar if offered locally.

### Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

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Washington Borough in Warren County has 1,259 acres in the Planning Area of the Highlands Region, where conformance is entirely voluntary. The municipality submitted a Notice Borough's Intent to Petition the Highlands Council for Plan Conformance for all lands lying within the Planning Area.



The 2009 Downtown Redevelopment Plan has a wide scope with goals and objectives aimed at creating vibrant streetscapes, quality open space, pedestrian comfort and adequate parking. Goals related to related to mitigation and open space preservation include developing access to the Shabbecong Creek Greenway and utilizing adjacent properties for public open space and employing environmentally conscious and pedestrian friendly design principles in parking area redevelopments. Open space will be placed within the Public Park District, which not only will provide quality open space for residents but also water quality and flood protection enhancements.

The Borough also has a fire plan that identifies areas of vulnerability and conducts a risk assessment.

### **Regulatory and Enforcement (Ordinances)**

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The Borough has multiple ordinances pertaining to the mitigation of hazards. These ordinances include the NFIP Flood Damage Prevention Ordinance, a stormwater management ordinance, a fire control measures ordinance, a sedimentation and soil erosion control ordinance, and a soil removal ordinance. While updating these and other ordinances, the Borough makes hazard mitigation a priority.

The Borough, when practical, encourages the consideration of low occupancy, low-density zoning in hazard areas. The Borough also limits development in high hazard areas. The permit review process includes addressing hazards. Hazard resistant construction standards are incorporated into the design and location of proposed projects in the Borough. The Borough's rezoning procedures recognize hazard areas as limits on zoning changes.

### **Operational and Administration**

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The Borough has employee job descriptions that include hazard mitigation. Additionally, hazard mitigation actions are incorporated in the daily operations and projects of the Borough.

The Borough has practices in place to protect infrastructure, which includes tree trimming through the Shade Tree Commission, cleaning of culverts, maintenance plan for the sewer plant, and maintaining the stormwater basins each year.

### **Education and Outreach**

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The Borough posts community news alerts, notices, and advisories on its website's homepage that provide residents with up-to-date information regarding the status of the community and emergency preparedness. Additionally, the Borough has a public outreach program that informs citizens on hazards within the community.

## **9.21.6 Mitigation Strategy and Prioritization**

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This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

### **Past Mitigation Initiative Status**

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The following table indicates progress on the community's mitigation strategy identified in the 2011 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.



Table 9.21-11. Past Mitigation Initiative Status

| 2011 Mitigation Action   | Responsible Agency    | Status<br>(In progress, No progress, Complete) | <u>Describe Status</u><br>1. Please describe what was accomplished and indicate % complete.<br>2. If there was no progress, indicate what obstacles/delays encountered?<br>3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)? | <u>Next Step</u><br>(Include in 2016 HMP? or Discontinue) | <u>Describe Next Step</u><br>1. If including action in the 2016 HMP, revise/reword to be more specific (as appropriate).<br>2. If discontinue, explain why |
|--|-----------------------|--|--|---|--|
| Washington Borough 1: Emergency generator for shelter and Emergency Operations Center located at the Washington Borough Municipal Complex located on Belvidere Avenue. | Borough Administrator | In Progress                                    | Final paperwork being submitted with NJ State Police; 50% complete. However, funding has not been secured and the Borough is awaiting the grant award.   | Include in 2016 HMP                                       | This project is currently in progress and the Borough is awaiting the grant award. This action will be included in the 2015 HMP update.                    |
| Washington Borough 2: Storm-water management system upgrade and improvement along Route 57 between Lenape Trail and Prospect Avenue.                                   | OEM Coordinator       | No Progress                                    | Due to lack of funding and the fact the Borough does not maintain Route 57, this project has not been completed.   | Discontinue   | Route 57 is a state road; borough has no jurisdiction over the stormwater upgrade.   |
| Washington Borough 3: Conduct all hazards public education and outreach program for hazard mitigation and preparedness.  | WCOEM, Twp OEM        | In Progress                                    | Borough uses the municipal website, emails, local media, social media, Nixle, etc.   | Include in 2016 HMP                                       | Continue with the outreach program   |



### **Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy**

The Borough has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2011 Plan:

- Purchased high band radios for communication between clerk, DPW, and OEM to use during emergencies; funded by the Borough

### **Proposed Hazard Mitigation Initiatives for the Plan Update**

The County hosted a mitigation action workshop in March 2015 where the following FEMA publications were provided to all plan participants to use as a resource as part of the municipal comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013). In May 2015, the Borough participated in a second workshop led by FEMA Region 2 and NJOEM and was provided the results to the risk assessment to further assist with the identification of mitigation actions.

Table 9.21-11 summarizes the comprehensive-range of specific mitigation initiatives the Borough would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.21-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.21-12. Proposed Hazard Mitigation Initiatives

| Initiative        | Mitigation Initiative   | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding  | Timeline         | Priority | Mitigation Category | CRS Category |
|-------------------|---|--|---------------------|-----------|---------------------------|--------------------|----------------|---|------------------|----------|---------------------|--------------|
| Washington Boro-1 | The Borough will review the County HMP prior to land use, zoning or development permitting in order to ensure consistent and compatible land use.   | N/A  | All                 | All       | Borough Manager / Clerk   | Medium             | Low            | Municipal Budget  | Ongoing          | Medium   | LPR                 | PR           |
| Washington Boro-2 | The Borough will include a line item in the municipal/operating budget and capital improvement budget for mitigation project funding.   | N/A  | All                 | All       | Borough Manager / Clerk   | Medium             | Low            | Municipal Budget  | Ongoing          | High     | LPR                 | PR           |
| Washington Boro-3 | The Borough will enforce codes and standards beyond FEMA minimum requirements for floodplain management.  | N/A  | All                 | All       | Borough Manager / Clerk   | Medium             | Low            | Municipal Budget  | Ongoing          | Medium   | LPR                 | PR           |
| Washington Boro-5 | The Borough will continue to work on providing protection to buildings/infrastructure in high hazard areas.   | N/A  | All                 | All       | Borough Manager / Clerk   | High               | Low            | Municipal Budget  | Ongoing          | High     | LPR                 | PR           |
| Washington Boro-6 | Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks and what they can do in the way of mitigation and preparedness, including flood insurance. This program will include: <ul style="list-style-type: none"> <li>• Training on best practices for hazard mitigation</li> <li>• Training on grant applications</li> <li>• Community outreach on hazards that may impact the Borough</li> <li>• Including natural hazard risk and risk reduction information through social media channels and email blast systems</li> <li>• Enhance public outreach to residents in NFIP floodplain areas to inform of annual grant opportunities, etc. which may include periodic articles and handouts in the annual newsletter.</li> </ul> |  |                     |           |                           |                    |                |   |                  |          |                     |              |
|                   | See above.  | N/A  | All Hazards         | All       | Borough Officials         | Medium             | Low            | Municipal Budget; HMA programs with local or county match | Ongoing          | High     | EAP                 | PI           |
| Washington Boro-7 | Preparation of a Continuity of Operations (COOP) Plan for the Borough and integrate mitigation into the plan.   | N/A  | All Hazards         | All       | Borough Manager / Clerk   | Medium             | Low            | Municipal Budget  | Short Term / DOF | High     | LPR                 | PR           |
| Washington Boro-8 | Support continuity of operations at critical facilities. The following projects are identified – Purchase and install an emergency generator  | Existing                                   | All Hazards         | 2, 6      | Borough Administrator     | High               | High           | HMGP funding with local cost share                        | Short Term / DOF | High     | SIP                 | PP           |





**Table 9.21-12. Proposed Hazard Mitigation Initiatives**

| Initiative         | Mitigation Initiative  | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | CRS Category |
|--------------------|--|--|---------------------|-----------|---------------------------|--------------------|----------------|--------------------|----------|----------|---------------------|--------------|
|                    | for shelter and Emergency Operations Center located at the Washington Borough Municipal Complex located on Belvidere Avenue.   |  |                     |           |                           |                    |                |                    |          |          |                     |              |
| Washington Boro-9  | Enhance and develop the Borough's public outreach and education program for hazard mitigation and preparedness.  | New and Existing                           | All                 | All       | WCOEM, Twp OEM            | High               | Low            | Municipal Budget   | Ongoing  | High     | LPR, EAP            | PR, PI       |
| Washington Boro-10 | Establish a program to conduct testing of the radio communication system between the OEM, municipal clerk, and DPW. If issues are identified during the test, identify ways to enhance communication and establish mitigation actions. | N/A  | All                 | All       | OEM, Clerk and DPW        | High               | Low            | Municipal Budget   | Ongoing  | High     | LPR                 | PR           |

**Notes:**

Not all acronyms and abbreviations defined below are included in the table.

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

- CRS Community Rating System
- DPW Department of Public Works
- FEMA Federal Emergency Management Agency
- FPA Floodplain Administrator
- HMA Hazard Mitigation Assistance
- N/A Not applicable
- NFIP National Flood Insurance Program
- NJDEP New Jersey Department of Environmental Protection
- NJOEM New Jersey Office of Emergency Management
- OEM Office of Emergency Management

Potential FEMA HMA Funding Sources:

- FMA Flood Mitigation Assistance Grant Program
- HMGP Hazard Mitigation Grant Program
- PDM Pre-Disaster Mitigation Grant Program
- HMA Hazard Mitigation Assistance Program

Timeline:

- Short 1 to 5 years
- Long Term 5 years or greater
- OG On-going program
- DOF Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

- Low < \$10,000
- Medium \$10,000 to \$100,000
- High > \$100,000

Where actual project costs cannot reasonably be established at this time:

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

- Low= < \$10,000
- Medium \$10,000 to \$100,000
- High > \$100,000

Where numerical project benefits cannot reasonably be established at this time:





Costs:

- Low** Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
- Medium** Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- High** Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

- Low** Long-term benefits of the project are difficult to quantify in the short term.
- Medium** Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
- High** Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- **Local Plans and Regulations (LPR)** – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- **Structure and Infrastructure Project (SIP)**- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- **Natural Systems Protection (NSP)** – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- **Education and Awareness Programs (EAP)** – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- **Preventative Measures (PR)** - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- **Property Protection (PP)** - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- **Public Information (PI)** - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- **Natural Resource Protection (NR)** - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Structural Flood Control Projects (SP)** - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Emergency Services (ES)** - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.21-13. Summary of Prioritization of Actions

| Mitigation Action / Project Number | Mitigation Action/Initiative   | Life Safety | Property Protection | Cost-Effectiveness | Technical | Political | Legal | Fiscal | Environmental | Social | Administrative | Multi-Hazard | Timeline | Agency Champion | Other Community Objectives | Total | High / Medium / Low |
|------------------------------------|--|-------------|---------------------|--------------------|-----------|-----------|-------|--------|---------------|--------|----------------|--------------|----------|-----------------|----------------------------|-------|---------------------|
| Washington Boro-1                  | The Borough will review the County HMP prior to land use, zoning or development permitting in order to ensure consistent and compatible land use.  | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 0             | 0      | 1              | 1            | 1        | 0               | 0                          | 10    | Medium              |
| Washington Boro-2                  | The Borough will include a line item in the municipal/operating budget and capital improvement budget for mitigation project funding.  | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 0      | 1              | 1            | 1        | 0               | 0                          | 11    | High                |
| Washington Boro-3                  | The Borough will enforce codes and standards beyond FEMA minimum requirements for floodplain management.   | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 0             | 0      | 1              | 1            | 1        | 0               | 0                          | 10    | Medium              |
| Washington Boro-5                  | The Borough will continue to work on providing protection to buildings/infrastructure in high hazard areas.  | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 1      | 1              | 1            | 1        | 0               | 0                          | 12    | High                |
| Washington Boro-6                  | Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks and what they can do in the way of mitigation and preparedness, including flood insurance. | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 1      | 1              | 1            | 1        | 0               | 0                          | 12    | High                |
| Washington Boro-7                  | Preparation of a Continuity of Operations (COOP) Plan for the Borough and integrate mitigation into the plan.  | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 1      | 1              | 1            | 1        | 0               | 0                          | 12    | High                |
| Washington Boro-8                  | Support continuity of operations at critical facilities. - Emergency generator for shelter and Emergency Operations Center located at the Washington Borough   | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 0      | 1              | 1            | 1        | 1               | 0                          | 12    | High                |





Table 9.21-13. Summary of Prioritization of Actions

| Mitigation Action / Project Number | Mitigation Action/Initiative   | Life Safety | Property Protection | Cost-Effectiveness | Technical | Political | Legal | Fiscal | Environmental | Social | Administrative | Multi-Hazard | Timeline | Agency Champion | Other Community Objectives | Total | High / Medium / Low |
|------------------------------------|--|-------------|---------------------|--------------------|-----------|-----------|-------|--------|---------------|--------|----------------|--------------|----------|-----------------|----------------------------|-------|---------------------|
|                                    | Municipal Complex located on Belvidere Avenue.   |             |                     |                    |           |           |       |        |               |        |                |              |          |                 |                            |       |                     |
| Washington Boro-9                  | Enhance and develop the Borough's public outreach and education program for hazard mitigation and preparedness.  | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 1      | 1              | 1            | 1        | 0               | 0                          | 12    | High                |
| Washington Boro-10                 | Establish a program to conduct testing of the radio communication system between the OEM, municipal clerk, and DPW. If issues are identified during the test, identify ways to enhance communication and establish mitigation actions. | 1           | 1                   | 1                  | 1         | 1         | 1     | 1      | 1             | 1      | 1              | 1            | 1        | 0               | 0                          | 12    | High                |

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.





### **9.21.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.21.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Borough of Washington that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Borough of Washington has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### **9.21.9 Additional Comments**

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None at this time.

DRAFT



Figure 9.21-1. Borough of Washington Hazard Area Extent and Location Map 1

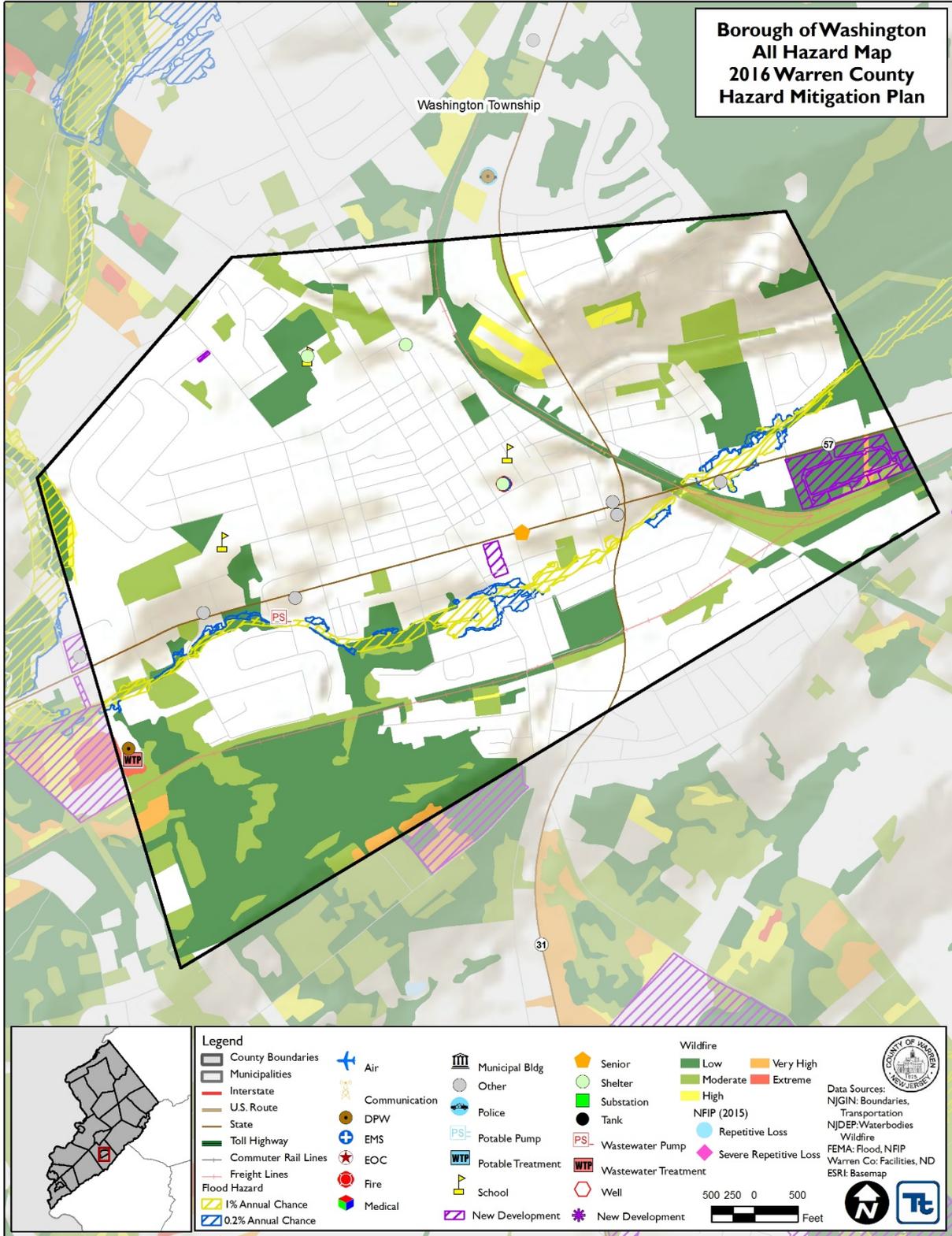
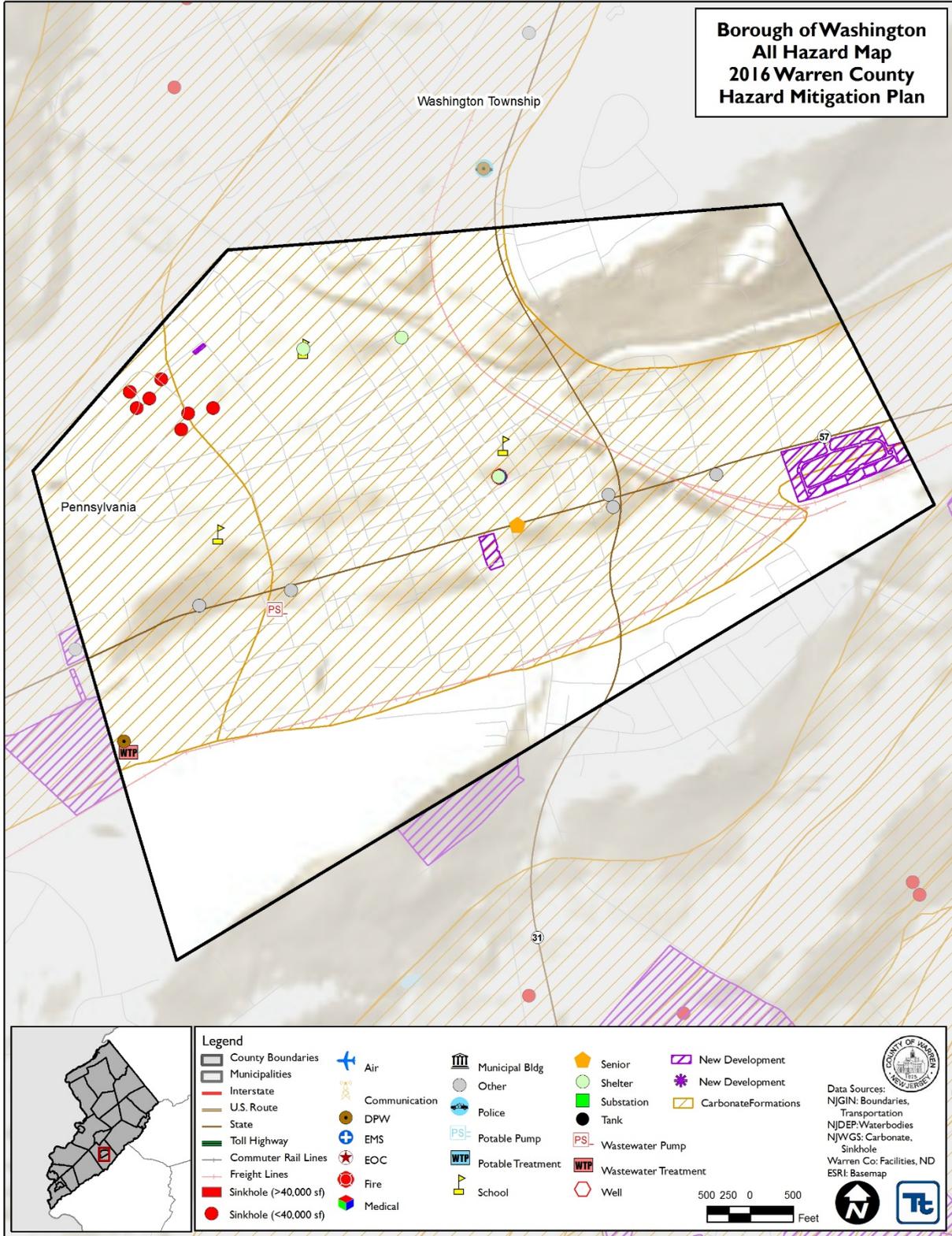




Figure 9.21-2. Borough of Washington Hazard Area Extent and Location Map 2





**Action Number:** Washington Boro-8

**Mitigation Action/Initiative:** Support continuity of operations at critical facilities – Purchase and install an emergency generator for shelter and Emergency Operations Center

| Assessing the Risk   |   |
|--|---|
| <b>Hazard(s) addressed:</b>  | All   |
| <b>Specific problem being mitigated:</b>   | Loss of power to the Borough's shelter and Emergency Operations Center, located at the Washington Borough Municipal Complex   |
| Evaluation of Potential Actions/Projects   |   |
| <b>Actions/Projects Considered (name of project and reason for not selecting):</b> | Emergency generator for shelter and Emergency Operations Center located   |
|  | 1. at the Washington Borough Municipal Complex located on Belvidere Avenue.   |
|  | 2. Use portable generators during times of power outages  |
|  | 3. Do nothing – current problem continues   |
| Action/Project Intended for Implementation   |   |
| <b>Description of Selected Action/Project</b>                                      | Purchase and install an emergency generator at the Washington Borough Municipal Complex to allow for the continuity of operations of the shelter and the Emergency Operations Center. |
| <b>Action/Project Category</b>   | SIP   |
| <b>Goals/Objectives Met</b>  | 2, 6  |
| <b>Applies to existing and/or new development; or not applicable</b>               | Existing  |
| <b>Benefits (losses avoided)</b>   | High  |
| <b>Estimated Cost</b>  | High  |
| <b>Priority*</b>   | High  |
| Plan for Implementation  |   |
| <b>Responsible/Lead Agency/Department</b>  | Borough Administrator   |
| <b>Local Planning Mechanism</b>  | Emergency Operations  |
| <b>Potential Funding Sources</b>   | HMGP with local cost share  |
| <b>Timeline for Completion</b>   | Short Term / DOF  |
| Reporting on Progress  |   |
| <b>Date of Status Report/ Report of Progress</b>                                   | Date:<br>Progress on Action/Project:  |



**Action Number:** Washington Boro-8

**Mitigation Action/Initiative:** Emergency generator for shelter and Emergency Operations Center

| Criteria                       | Numeric Rank (-1, 0, 1) | Provide brief rationale for numeric rank when appropriate |
|--------------------------------|-------------------------|---|
| Life Safety                    | 1                       | Provide shelter for residents                             |
| Property Protection            | 1                       | Allow EOC to function during power outages                |
| Cost-Effectiveness             | 1                       |   |
| Technical                      | 1                       |   |
| Political                      | 1                       |   |
| Legal                          | 1                       |   |
| Fiscal                         | 1                       |   |
| Environmental                  | 1                       |   |
| Social                         | 0                       |   |
| Administrative                 | 1                       |   |
| Multi-Hazard                   | 1                       | All hazards   |
| Timeline                       | 1                       | To be installed in the next five years                    |
| Local Champion                 | 1                       |   |
| Other Community Objectives     | 0                       |   |
| Total                          | 12                      |   |
| <b>Priority (High/Med/Low)</b> | <b>High</b>             |   |