



## 9.21 TOWNSHIP OF VERONA

This section presents the jurisdictional annex for the Township of Verona. The annex includes a general overview of the Township of Verona; an assessment of the Township of Verona's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to hazards.

### 9.21.1 Hazard Mitigation Planning Team

The following individuals are the Township of Verona's identified HMP update primary and alternate points of contact and NFIP Floodplain Administrator.

**Table 9.21-1. Hazard Mitigation Planning Team**

Primary Point of Contact	Alternate Point of Contact
Name / Title: Joel Martin, Detective/OEM Coordinator Address: 600 Bloomfield Ave, Verona, NJ 07044 Phone Number: 973-857-4819 Email: Joel.Martin@veronapolice.org	Name / Title: Chris Kiernan, Police Chief Address: 600 Bloomfield Avenue, Verona, NJ 07044 Phone Number: 973-857-4818 Email: Chris.Kiernan@veronapolice.org
NFIP Floodplain Administrator	
Name / Title: Michael DeCarlo Address: 10 Commerce Court, Verona, NJ 07044 Phone Number: 973-857-8146 Email: mdecarlo@veronanj.org	

### 9.21.2 Jurisdiction Profile

In 1702, settlers left Newark and bought land from the Lenni Lenape Native Americans to form what would eventually become the Borough of Verona in 1892. It was not until 1982 that Verona became a Township. Township of Verona is registered as a Sustainable Jersey community which means they are committed to going green, saving money, and sustaining their quality of life (Verona Township of Verona, New Jersey, 2014). Verona Township is located east of Caldwell, west of Montclair, north of the Eagle Rock Reservation, and south of Cedar Grove. The Township of Verona has five Council Members who are elected at-large. The Mayor and Deputy Mayor are selected to serve two year terms (Verona Township of Verona, New Jersey, 2014).

According to the U.S. Census, the 2010 population for the Township of Verona was 13,332. The estimated 2017 population was 13,585, a 1.9 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 6.2 percent of the population is 5 years of age or younger and 19.9 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

### 9.21.3 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to understanding a jurisdiction's overall risk to its hazards of concern. Table 9.21-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.21-1 and Figure 9.21-2 at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development, where available.



Table 9.21-2. Recent and Expected Future Development

Type of Development	2014	2015	2016	2017	2018
<b>Number of Building Permits for New Construction Issued Since the Previous HMP</b>					
Single Family	3	2	3	6	1
Multi-Family	6	3	0	2	0
Other (commercial, mixed-use, etc.)	1	0	0	0	0
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
<b>Recent Major Development and Infrastructure from 2015 to Present</b>					
Verona Place East and West Apartment	Multi-Family – Apartments	20 / 2	435 & 449 Bloomfield Avenue		Completed & Inhabited
Annin Loft & Luxury Apartments	Multi-Family – Apartments	111 / 2	151 Bloomfield Ave		Permits Open, Paperwork Pending, Units Renting
163 Bloomfield Ave	Mixed-Use	Unknown	163 Bloomfield Ave B:9 L:15	None	Completed and Occupied
200 Bloomfield Ave	Mixed-Use	Unknown	200-210 Bloomfield Avenue B:8 L:1	Wildfire: Low	Cancelled by Planning/Zoning Board
623-625 Bloomfield Ave	Commercial	Unknown	623-625 Bloomfield Ave B: 92 L:14	NEHRP: D	Building demolished. Currently open space.
860 Bloomfield Ave	Commercial	Unknown	860 Bloomfield Ave B: 81 L:1	None	Currently in planning spaces, included as part of affordable housing litigation
US Home Corporation d/b/a Lennar	Residential	33 Units	Durrell St B: 72 L:1	NEHRP: D	Completed and Occupied
<b>Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years</b>					
None anticipated					

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

#### 9.21.4 Capability Assessment

The Township of Verona performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community's adaptive capacity for the impacts of climate change.

#### PLANNING, LEGAL AND REGULATORY CAPABILITY

The table below summarizes the legal and regulatory tools that are available to the Township of Verona.



Table 9.21-3. Planning, Legal and Regulatory Capability

Codes, Ordinances, & Requirements					
<b>Building Code</b>	Yes	Local and State	Yes	-	-
<i>Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14</i>					
<b>Zoning Code</b>	Yes	Local and State	Yes	-	-
<i>Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.</i>					
<b>Subdivisions</b>	Yes	Local and State	Yes	-	-
<i>Comment: State mandated - P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Chapter 18 (4/27/76) of the Township code. Planning Board and Governing Body enforces the Subdivision Code.</i>					
<b>Stormwater Management</b>	Yes	Local	Yes	-	-
<i>Comment: Township of Verona Stormwater Management Ordinance, Chapter 123, adopted 11-21-2005, amended in its entirety 10-15-2012. The Township is currently re-writing their Stormwater Management Ordinance and their Stormwater Management Plan to be completed by the end of 2020 as part of the Township's Master Plan update. More stringent development requirements will be put into place, which exceed the NJDEP Standards for Major Development. The new requirement will be any project with 400 Square Feet of impervious surface or 0.25 acres of land disturbance and will require homeowners to institute structural or non-structural mitigation projects to reduce stormwater runoff. The Township will also perform education and outreach as part of the MS4 Permit for Stormwater Mitigation and Green Infrastructure Implementation. State Requirements for Stormwater Management Plans are noted in Title 7 of the NJ Administrative Code, N.J.A.C. 7:8.</i>					
<b>Post-Disaster Recovery</b>	No	-	No	-	-
<i>Comment:</i>					
<b>Real Estate Disclosure</b>	Yes	State – Division of Consumer Affairs	Yes	-	-
<i>Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.</i>					
<b>Growth Management</b>	No	-	Yes	-	-
<i>Comment: State Mandated on a municipal level. See Zoning Ordinance ; Also - Plan Endorsement Process via the State Development &amp; Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.</i>					
<b>Shoreline Development</b>	No	-	Yes – if coastal community	-	-
<i>Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.</i>					
<b>Site Plan Review</b>	Yes	Local	Yes	-	-
<i>Comment: Township of Verona, Chapter 118, effective 05-21-1979. §118-13 states "The Planning Board may require additional information within site plans which is not limited to geologic information, water yields, flood data, environmental information, traffic counts, road capacities, market information, economic data for the proposed business or activity, hours of operation and similar information." General Site Plan Requirements are noted in §118-3 of the ordinance.</i>					
<b>Environmental Protection</b>	No	-	Yes	-	-
<i>Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.</i>					
<b>Flood Damage Prevention</b>	Yes	Local	No	-	-
<i>Comment: Township of Verona, Flood Control Ordinance, effective 05-07-2007 as amended. The code requires a development permit if construction will be in the floodplain. All new construction and substantial improvements must be constructed with materials and utility equipment resistant to flood damage and must be constructed using methods and practices that minimize flood damage.</i>					
<b>Wellhead Protection</b>	No	-	-	-	-
<i>Comment:</i>					
<b>Emergency Management</b>	No	-	-	-	-
<i>Comment:</i>					
<b>Climate Change</b>	No	-	-	-	-
<i>Comment:</i>					



Codes, Ordinances, & Requirements					
Disaster Recovery Ordinance	No	-	-	-	-
<i>Comment:</i>					
Disaster Reconstruction Ordinance	No	-	-	-	-
<i>Comment:</i>					
Other: Steep Slopes Ordinance, Tree Ordinance	Yes	Local	No	-	-
<b>Comment:</b> Township of Verona, Chapter 150, Article XXI, Effective 04-04-2016. §150-21.3 states "Except as otherwise specifically set forth, this ordinance shall apply to new development, redevelopment or land disturbance on a steep slope on all properties within the Township of Verona. The Planning Board or Zoning Board of Adjustment shall review all plans submitted under this ordinance as part of any application for a construction permit, site plan approval, or subdivision approval. The Township Engineer, in all cases, shall review all applications for compliance with this ordinance. Applicability of the ordinance may be contested by demonstration to the satisfaction of the Township Engineer that no area on the subject property (or proposed or future subdivision thereof) meets the criteria for the presence of a 15 percent or greater slope. Once demonstrated, the subject property, or subdivision thereof, shall be considered to be exempt from the requirements set forth herein. Township of Verona Tree Ordinance, Chapter 136, effective 10-20-1964. The Township is updating/passing a new tree ordinance which will require a Township permit before removal of trees on private property to reduce localized runoff.					
<b>Planning Documents</b>					
Comprehensive / Master Plan	Yes	Local	Yes	-	-
<b>Comment:</b> Township of Verona Master Plan, 2009. Currently being updated to be completed in 2020. According to NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1).					
Capital Improvement Plan	Yes	Local	Allowed	-	-
<b>Comment:</b> Capital Improvement Budgeting is performed annually in November as part of Municipal Budget Updates. Per NJSA 40:55D-29 the governing body is authorized to direct the planning board to prepare a CIP with at least a six year planning horizon.					
Disaster Debris Management Plan	No	-	No	-	-
<i>Comment:</i>					
Floodplain or Watershed Plan	No	-	No	-	-
<i>Comment:</i>					
Stormwater Management Plan	Yes	Local and State	Yes	-	-
<b>Comment:</b> The Township is currently re-writing their Stormwater Management Ordinance and their Stormwater Management Plan to be completed by the end of 2020 as part of the Township's Master Plan update. More stringent development requirements will be put into place, which exceed the NJDEP Standards for Major Development. Any project with 400 Square Feet of impervious surface or 0.25 acres of land disturbance and will require homeowners to institute structural or non-structural mitigation projects to reduce stormwater runoff. The Township will also perform education and outreach as part of the MS4 Permit for Stormwater Mitigation and Green Infrastructure Implementation. Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).					
Stormwater Pollution Prevention Plan	Yes	Local and State	Yes	-	-
<b>Comment:</b> Township of Verona Stormwater Pollution Prevention Plan, Revised April 18, 2012. Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).					
Urban Water Management Plan	No	-	No	-	-
<i>Comment:</i>					
Habitat Conservation Plan	No	-	No	-	-
<i>Comment:</i>					
Economic Development Plan	No	-	No	-	-
<i>Comment:</i>					
Shoreline Management Plan	No	-	No	-	-
<i>Comment:</i>					
Community Wildfire Protection Plan	No	-	No	-	-
<i>Comment:</i>					



Codes, Ordinances, & Requirements					
Community Forest Management Plan	No	-	No	-	-
<i>Comment:</i>					
Transportation Plan	Yes	Local	No	-	-
<i>Comment: Circulation Element to Master Plan</i>					
Agriculture Plan	No	-	No	-	-
<i>Comment:</i>					
Climate Action Plan	No	-	No	-	-
<i>Comment:</i>					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					
<b>Response/Recovery Planning</b>					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes/No	Yes/No
<i>Comment: Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years.</i>					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	Local	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	Yes	Local	No	-	-
<i>Comment: Element to Township of Verona Emergency Operations Plan</i>					
Public Health Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					



Table 9.21-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes – Zoning and Building Department
- If no, who does? If yes, which department?	
Does your jurisdiction have the ability to track permits by hazard area?	Zoning Official Tracks
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes Buildable Lands are identified

### ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Township of Verona.

Table 9.21-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board / Zoning Board of Adjustment
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	-
Economic Development Commission / Committee	Yes	Economic Development Department
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Nixle Share 911 & Honeywell Messenger (Verona Schools)
Maintenance program to reduce risk	Yes	Department of Public Works
Mutual aid agreements	Yes	Surrounding Communities, Essex County, State of NJ
<b>Technical/Staffing Capability</b>		
Planners or engineers with knowledge of land development and land management practices	Yes	Township Planner (Consultant) Township Engineer (Consultant)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer (Consultant)
Planners or engineers with an understanding of natural hazards	Yes	Township Planner (Consultant) Township Engineer (Consultant)
Staff with training in benefit/cost analysis	Yes	Finance Department
Surveyors	Yes	Engineering Manager
Personnel skilled or trained in GIS applications	Yes	Engineering Manager
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Office of Emergency Management
Grant writers	Yes	Engineering Manager, Consulting Grant Writer
Resilience Officer	No	-
Other	No	-

### FISCAL CAPABILITY

The table below summarizes financial resources available to the Township of Verona.





Table 9.21-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes – Included as part of Municipal Budget
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes – Water & Sewer
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	Yes

### EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Verona.

Table 9.21-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Each Agency has separate PIO, but the Township Manager would submit communications on behalf of Township
Do you have personnel skilled or trained in website development?	Yes – Township Administration
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Facebook, Twitter, and Instagram are used
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Public Safety Committee which includes a Township Council Liaison, Law Enforcement Liaison, Citizens, and other liaisons as needed.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes – Nixle, and School Messenger can be used in addition to other social medial platforms and municipal website.
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, the Township has Lightning Alarms and a Town Horn

### COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Verona.

Table 9.21-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	NP	NP
Building Code Effectiveness Grading Schedule (BCEGS)	No	NP	NP
Public Protection (Fire ISO Protection Class)	Yes	3	1/25/2016
Storm Ready Certification	No	NP	NP
Firewise Community Classification	No	NP	NP

### ADAPTIVE CAPACITY

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). In other words, it describes a



jurisdiction's current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for climate change and the jurisdiction's rating.

Table 9.21-9. Adaptive Capacity of Climate Change

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Coastal Erosion and Sea Level Rise	Low
Coastal Storms ( <i>hurricanes/tropical storms, nor'easters, coastal erosion, and storm surge</i> )	Low
Drought	Low
Earthquake	Low
Extreme Temperature	Low
Flood ( <i>riverine / flash flood, SLR</i> )	Medium
Geological Hazards ( <i>landslides and subsidence/sinkholes</i> )	Low
Severe Weather ( <i>high wind, tornado, TSTM, and hail</i> )	High
Severe Winter Weather ( <i>heavy snow, blizzards, and ice storms</i> )	High
Wildfire	Medium
Civil Disorder	Low
Cyber Attack	Low
Disease Outbreak	Low
Economic Collapse	Medium
Hazardous Substances	Low
Utility Interruption	High
Terrorism	High
Transportation Failure	Low

Notes:

High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement;

Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

### NATIONAL FLOOD INSURANCE PROGRAM

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 9.21-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Building & Code Enforcement
Who is your floodplain administrator? (name, department/position)	Engineering Manager / Zoning Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2010
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	CAV: 01/14/2009 CAC: 08/16/2018





Criterion	Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input type="checkbox"/> If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No Additional information on CRS entry/requirements is preferred.
How many flood insurance policies are in force in your jurisdiction?*	66
• What is the insurance in force?	\$17,773,000
• What is the premium in force?	\$77,358
How many total loss claims have been filed in your jurisdiction?*	57
• How many claims are still open or were closed without payment?	3 Open
• What were the total payments for losses?	21 Closed Without Payment \$406,853.72
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	A list is maintained of properties within the floodplain

\*According to FEMA statistics as of 03/30/2019

### 9.21.5 Integration with Other Planning Initiatives

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 jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures, which are indicated below.

#### EXISTING INTEGRATION

In the performance period since adoption of the 2015 HMP, the Township of Verona made progress on integrating hazard mitigation into other initiatives. The following plans and programs currently integrate components of the HMP and strategy:

- **Department of Administration & Economic Development:** The Department of Economic Development is responsible for the supervision of economic development within the Township of Verona. This includes overseeing and assisting in the retention, attraction, promotion and development of local businesses. The Department seeks to foster positive municipal-business relationships and assist in the establishment and expansion of new businesses. The Department strives to make opening, relocating or running a business in Verona as efficient and lucrative as possible.
- **Department of Building and Code Enforcement:** This department manages Construction Code Enforcement, Property Maintenance Enforcement, Zoning & Zoning Board of Adjustment and Rent Control Board.
  - **Construction Code Enforcement:** The Construction Code Department oversees the issuance and inspections for all building, electrical, plumbing and fire permits. The department is staffed by a full time Construction Code Official and Building Inspector, along with part-time Building Inspector, Plumbing Inspector, Electrical Inspector, Fire Inspector, and two full time office staff. All inspectors are licensed through the New Jersey Department of Community Affairs.
  - **Zoning:** The Zoning Department governs residential and commercial zoning along with the Zoning Board of Adjustment. The Zoning Officer determines if proposed construction work to be done or use of buildings



follows the township's zoning ordinance. A variance may be required and must go before the Board of Adjustment for approval if codes are not met. The Zoning Officer provides inspections and enforcement for planning applications. The Zoning Board Secretary and Zoning Officer provide assistance with zoning applications and assist the board.

- **Property Maintenance:** The Building Department also responds to property maintenance related matters. The Code Enforcement Official inspects and enforces the codes for maintaining matters such as, landscaping, weed removal, paint, siding, roofs, doors, sidewalks, garbage, refuse, etc.
- **Board of Adjustment:** The Zoning Board of Adjustment reviews applications to utilize property in a manner not consistent with municipal zoning laws. The Board of Adjustment meetings are held the 2nd Thursday of each month at 8:00pm in the Verona Community Center Ballroom, 880 Bloomfield Ave. Verona, NJ 07044.
- **Planning Board:** The Planning Board is charged with addressing permitted land uses. The Board is also responsible for the Township of Verona Master Plan. Planning Board meetings are held on the 4th Thursday of each month at 7:30pm in the Verona Community Center Ballroom, 880 Bloomfield Ave. Verona, NJ 07044.
- **Sustainable Jersey:** Verona is a Sustainable Jersey certified community--one of only 198 in the state. Verona achieved Sustainable Jersey certification at the bronze level. Certified towns are an outstanding group of municipalities that are making important contributions toward the long-term goal of a sustainable New Jersey and world.
- **Environmental Commission:** The role of the Commission is to study, evaluate and make recommendations to the Township Council and the Planning Board regarding local environmental issues, including (but not limited to) preservation and use of parks and other open spaces; clean water resources; stormwater management; air, noise, and light pollution; solid waste management and recycling; energy conservation and renewable energy resources; transportation and circulation planning; and protection of flora, fauna, soil and landscape throughout the Township.
- **Shade Tree Commission:** The Verona Shade Tree Commission is responsible for the care of our public trees, shrubs, and landscapes. The commission is comprised of volunteers who are residents designated by the Mayor and Council. Public Shade Tree Commission meetings are held the 2nd Monday of each month at 5:00 p.m. in the Verona Community Center Conference Room, 880 Bloomfield Avenue, Verona, New Jersey.
  - The Department of Public Works has a tree maintenance and request form available on the municipal website.
- **Verona Historic Preservation Committee (VHPC):** The Verona Historic Preservation Commission is an agency established by the Town Council to assist in the identification and preservation of our town's landmarks and historical sites.
- **Neighborhood Traffic and Safety Committee:** The Neighborhood Traffic and Safety Committee is hereby charged with the following duties and responsibilities:
  - Work together with residents, elected and appointed officials to study, propose solutions and plan for the implementation of approved traffic calming and pedestrian safety measure.
  - May review and make recommendation to the Zoning Board of Adjustments and the Planning Board on site plans and subdivisions that are submitted to the Boards.
  - May propose, review and make recommendations on ordinances related to public safety.
  - To provide the Council and the Manager periodic reports and recommendations, and advise on traffic safety questions/problems and the adequacy of all Township policies and procedures relating to safety.

### 9.21.6 Hazard Event History Specific to the Jurisdiction

Essex County has a history of hazard events, as detailed in Section 4 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 4.3(Hazard Profiles) and includes a chronology of events that affected Essex County and its jurisdictions. The Township of Verona's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Essex County.



Table 9.21-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events from 2014 to 2019. Information provided in the table below is based on reference material or local sources.

**Table 9.21-11. Hazard Event History**

Date(s) of Event	Event Type (disaster declaration if applicable)	Essex County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22-23, 2016	Winter Storm, Blizzard (DR-4264)	Yes	Low pressure moving across the deep South on Thursday January 21st and Friday January 22nd intensified and moved off the Mid Atlantic coast on Saturday January 23rd, bringing heavy snow and strong winds to northeast New Jersey, and blizzard conditions to the urban corridor and some nearby areas.	Verona Emergency Services responded to 262 service calls between January 21-24, 2016. Extensive overtime hours were logged by police and public works employees to ensure the safety of residents. Fire department standby crews were required due to downed trees and power lines throughout the township. Trees, brush, and branches were collected by Verona Public Works for approximately 7 days following the storm. Trees uprooted in the storm were removed, and damaged properties were repaired by Verona subcontractors.
August 11, 2018	Flash Flood	N/A	A stalled stationary boundary within a very moist airmass provided a focusing mechanism for several rounds of heavy rain that resulted in widespread flash flooding across northeast New Jersey. The Caldwell, NJ ASOS recorded 4.92 inches of rain, and multiple other stations across northeast New Jersey received between 2.5 inches and 4 inches of precipitation.	The Peckman River at Verona rose above its flood stage of 3.5 feet at 4:50pm EDT. The river continued to rise above its moderate flood stage of 4.0 feet (4:55pm EDT) and major flood stage of 5.0 feet (5:10pm EDT) before cresting at a height of 6.36 feet at 5:35pm EDT. The river fell back below flood stage at 6:50pm EDT. The crest of 6.36 feet was within about 0.2 feet of the record crest at this location of 6.6 feet.

### 9.21.7 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 4 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. Table 9.21-12 summarizes the risk assessment results used to inform the calculated hazard ranking.



Table 9.21-12. Summary of Risk Assessment Results

Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
Coastal Erosion and Sea Level Rise	Coastal Erosion: CEHA  Sea Level Rise: NOAA +1ft and +3ft rise	CEHA:	0	CEHA:	0	CEHA:	\$0	High
		SLR +1ft:	0	SLR +1ft:	0	SLR +1ft:	\$0	
		SLR +3ft:	0	SLR +3ft:	0	SLR +3ft:	\$0	
Coastal Storm	100- and 500-MRP Hurricane Wind  Category 1 through Category 4 SLOSH	Category 1:	0	Category 1:	0	100-year Wind Loss:	\$1,223,554	High
		Category 2:	0	Category 2:	0			
		Category 3:	0	Category 3:	0	500-year Wind Loss:	\$7,440,808	
		Category 4:	0	Category 4:	0			
Drought	Drought event	Majority of the County is serviced by water supplies who get water from surface water.		Droughts are not expected to cause direct damage to buildings.		Losses would be limited, due to lack of major agricultural industry.		Low
Earthquake	100, 500-, 2,500-Year Mean Return Period Event	NEHRP D&E:	3,056	NEHRP D&E:	925	100-year Loss:	\$0	High
		Liquefaction Class 4:	0	Liquefaction Class 4:	0	500-year Loss:	\$1,323,391	
						2,500-year Loss:	\$23,452,748	
Extreme Temperature	Extreme temperature event (heat or cold)	Over 65 Population:	2,697	Physical impacts due to extreme temperatures would be limited.		Loss of business function is possible due to unexpected repairs (i.e. pipes bursting) or power failures.		Low
		Population Below Poverty Level:	385					
Flood	100- and 500-Year Mean Return Period Event	100-year	110	100-year	33	100-year Loss:	\$16,950,844	High
		500-year	110	500-year	545			
Geological	High Landslide Susceptibility Areas	Class A:	3	Class A:	1	Class A:	501935.0707	Moderate
		Class B:	0	Class B:	0	Class B:	\$0	
Severe Weather	Severe Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		Entire building stock is exposed; The degree of impact depends on the scale of the incident.		Economic losses could be similar to those of the coastal storm (wind and surge) and flooding hazards.		Low
Severe Winter Weather	Severe Winter Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		Entire building stock is exposed; The degree of impact depends on the scale of the incident.		The cost of snow and ice removal and repair of roads can impact local operating budgets.		Low



Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
<b>Wildfire</b>	Wildfire Fuel Hazard areas (High, Very High, Extreme)	Wildfire:	7	Wildfire:	2	Wildfire:	\$8,372,455	Moderate
<b>Civil Disorder</b>	Civil disorder event	Population in the immediate vicinity will be impacted.		Buildings in the immediate vicinity will be most impacted.		Economic assets in the immediate vicinity will be most impacted.		Low
<b>Cyber Attack</b>	Cyber-attack event	The degree of impact to the population depends on the scale of the incident.		Damages due to a cyber attack may be limited.		The degree of damages depends on the scale of the incident. Loss of utilities/communication would have widespread economic impacts.		Low
<b>Disease Outbreak</b>	West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis, La Crosse Encephalitis, Lyme Disease, Influenza, Ebola Virus	Entire population exposed; The degree of impact to the population depends on the scale of the incident		Disease outbreak would not have a direct impact on buildings.		Impacts to food supply and water supply; Costs of activities and programs implemented to address outbreaks and prevent spread.		Low
<b>Economic Collapse</b>	Recessions, Depressions, Interruption of normal economic conditions	The degree of impact to the population depends on the scale of the incident.		Damages due to economic collapse may be limited; property owners that cannot afford to maintain the structure may become abandoned/rundown.		The degree of damages depends on the scale of the incident. Massive impacts due to loss of jobs, businesses, and tax revenue are possible.		Low
<b>Hazardous Substances</b>	Release at an NPL site:  10 NPL Sites in County	Population impacted will depend on the type of material and scale of the incident. May include population within small radii of site.		The degree of damages to a building depends on the scale of the incident.		The degree of damages depends on the scale of the incident.		Low



Hazard of Concern	Hazard/ Scenario Area Evaluated	Population	Buildings	Economy (Loss)	Certainty Factor
<b>Utility Interruption</b>	Disruption of power or potable water caused by accident, sabotage, natural hazards, or equipment failure.	The degree of impact to the population depends on the scale of the incident.	The degree of damages to buildings depends on the scale of the incident; Physical impacts to structures may occur if utilities are keeping critical functions online (i.e. sump pumps).	The degree of damages depends on the scale of the incident.	Low
<b>Terrorism</b>	Terrorist Attack	The degree of impact to the population depends on the scale of the incident; Population in the immediate vicinity will be impacted.	The degree of damages to buildings depends on the scale of the incident; Buildings in the immediate vicinity will be most impacted.	The degree of damages depends on the scale of the incident.	Low
<b>Transportation Failure</b>	Vehicular accidents, Aviation Accidents, Railway Accidents	The degree of impact to the population depends on the scale of the incident; Population in the immediate vicinity will be impacted.	The degree of damages to asset depends on the scale of the incident; Assets in the immediate vicinity will be most impacted.	The degree of damages depends on the scale of the incident; Assets in the immediate vicinity will be most impacted.	Low

### REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Verona.

- Number of repetitive loss (RL) properties: 2
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 0

*Note: The number of SRL properties excludes RL properties.*

*RL and SRL as of 03/31/2019; SRL includes SRL properties that have been verified only (SRL\_Indicator = V).*

### CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplains and the status of mitigation at each location. If a new mitigation action is identified, the mitigation action ID is listed; refer to Table 9.18-16 for additional details regarding the project.

**Table 9.21-13. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
B&G Garage*	Government	X	X	2020-Verona-007
Verona Park	Government (Park)	X	X	County Park, Verona does not have Jurisdiction

*\*Identified lifeline*





### ADDITIONAL IDENTIFIED VULNERABILITIES

The jurisdiction has identified the following additional vulnerabilities within their community:

- Additional outreach is needed on severe storms.
- Peckman River & Tributaries need a flood study.
- Headwalls for Cole Road Drainage Culvert, Eagle Rock Reservation aren't large enough and flooding occurs after heavy rain events.
- Mt. Prospect & Sunset Ave drainage is poor.
- Verona Park and Bloomfield Avenue drainage is poor.
- Due to build out of Verona, vegetation removal off of private property can lead to runoff flooding between private properties.
- Due to build out of Verona, stormwater and localized flooding is causing significant impacts. Homeowners are renovating and adding additions which is creating runoff flooding.
- Verona's Sanitary Sewer System is aging and is susceptible to breaks and intrusions, specifically at Personette Avenue and Derwent Avenue.
- Verona's stormwater infrastructure is aging and needs to be replaced to enhance capacity.
- Verona's water distribution piping is aging and is subject to breaks and interruption of distribution.
- School need generators.
- The Verona Building and Grounds facility is a critical facility and identified lifeline located in the 1% and 0.2% annual chance flood areas.
- There are 3 repetitive loss properties and 1 severe repetitive loss property in the township.

### HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Verona 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 adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Verona has significant exposure; refer to Figure 9.21-2 and 9.21-2. These maps also display the location of the regulatory floodplain, as well as identified critical facilities, lifelines, and RL/SRL properties within the municipality.

### HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 4 of the plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; and community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.4 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Essex County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Township of Verona. During the review of the calculated hazard ranking, the Township adjusted the calculated rankings to incorporate the perceived adaptive capacity of the community with respect to the relevant hazard and any other changes needed. The Township of Verona has reviewed the Essex County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township indicated the following:



- The Township changed the hazard ranking for drought from medium to low.
- The Township changed the hazard ranking for earthquake from medium to low.
- The Township changed the hazard ranking for extreme temperature from medium to low.
- The Township changed the hazard ranking for flood from low to medium.
- The Township changed the hazard ranking for wildfire from low to medium.
- The Township changed the hazard ranking for hazardous substances from low to medium.
- The Township changed the hazard ranking for terrorism from low to medium.

Table 9.21-14. Township of Verona Hazard Ranking Input

Coastal Erosion and Sea Level Rise	Coastal Storm	Drought	Earthquake	Extreme Temperature	Flood
Low	Low	Low	Low	Low	Medium

Geological Hazards	Severe Storm	Winter Storm	Wildfire	Civil Disorder	Cyber Attack
Low	High	High	Medium	Low	Low

Disease Outbreak	Economic Collapse	Hazardous Substances	Utility Interruption	Terrorism	Transportation Failure
Low	Medium	Medium	High	Medium	Low

### 9.21.8 Mitigation Strategy and Prioritization

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

#### PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. 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 can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.21-15. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
Verona -1: Infiltration of storm water into Verona Waste Water Collection Systems –  Conduct a study and identify the points of infiltration, causes and solutions to problems. From this	Verona WWTP Engineering	In Progress	X	



2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
information a plan to mitigate will be developed then implemented.				
<p>Verona -2: Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable. At the time of this update the following has been identified specific to the Ozone Avenue bridge. The Ozone Avenue bridge needs to be evaluated due to age. The goal is to open up the waterway under the bridge to mitigate flooding as a result of limited water flow.</p> <p>Phase 1: Evaluate the Ozone Ave Bridge over the Peckman River for proper flow and capacity.</p> <p>Phase 2: Develop action plan based on evaluation of the Ozone Bridge.</p> <p>Phase 3: Re-assess the current FEMA flood plain maps to take into account that the Bloomfield Ave and Linden Ave bridges have been re-configured to include a substantial improvement in the flow of storm water and the Peckman River. This along with a future enhancement of the Ozone Ave Bridge potentially will reduce the flooding of adjacent properties to the Peckman River. The result of these efforts is a potential decrease in required flood insurance to the residential properties in this "flood Zone"</p> <p>Specifically identified are properties in the following areas: Peckman river basin from Verona Park north to Ozone Ave / Cedar Grove</p>	Township Engineering, FPA	No Progress		
<p>Verona-3: Bloomfield at Verona Park flooding/pooling of storm water—</p> <p>Current storm water drainage system is not able to handle the storm water runoff. A solution to increase the storm water drainage underground needs to be developed thus reducing flooding of Bloomfield Ave. The underground storm water system needs to be evaluated for proper flow and capacity.</p> <p>See County action in Section 9.1 Essex-15</p>	Essex County	No Progress – County Stormwater System		



2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
Verona-4: Claremont Ave, Derwent Ave, and Bloomfield Avenue need to enhance storm water system capacity. This area of town during heavy rain storms is an area in which manhole covers pop off and cause areas of risk. The underground storm water system needs to be evaluated for proper flow and capacity.	Township Engineering	<b>In Progress – Derwent Ave is schedule for maintenance in 2020. Claremont Ave is completed. Bloomfield Ave is County Jurisdiction</b>	X	
Verona-5: Emergency back-up generators DPW garage, B&G garage, pump stations Linn Drive and Hillwood Terrace, High School, Community Center and Verona WWTP. See also Verona-8, Verona-9	Township OEM	<b>Complete</b>		
Verona-6: In Verona, Fairview Ave and Crest Hill Road area flood from storm water run-off County Hilltop Park. – Identify and study current storm water system for proper sizing for existing storm water flow. Currently storm water runoff causes flooding in adjacent residential properties on the east side of Fairview Ave down to the old railroad bed. The underground storm water system needs to be evaluated for proper flow and capacity.	Township Engineering	<b>Discontinue – County Jurisdiction</b>		
Verona-7: Verona Township shelter generators to add additional back-up power for cooling and heating centers as well as sheltering. Part of Verona-6	Township OEM	<b>Completed</b>		
Verona-8: Verona Township water pump station has no back-up generator. This pump station is a major component in the Verona water system. Part of Verona-6	Township	<b>Completed</b>		
Verona-9: The Township will use the HMP as a guide during rezoning procedures and when updating their transportation plan to limit access to hazard areas.	Township	<b>Ongoing capability</b>		
Verona-10: Install backup power generators at the following critical facilities in the Township to ensure continuity of operations: <ul style="list-style-type: none"> <li>• DPW garage</li> <li>• B&amp;G garage</li> <li>• Wells Linn Drive and Hillwood Terrace</li> <li>• High School</li> <li>• Community Center</li> <li>• Verona Waste Water Treatment Plant (WWTP)</li> </ul>	Township Engineering	<b>Complete</b>		
Verona-11: Create/Enhance/Maintain Mutual Aid Agreements with neighboring communities for continuity of operations	Township	<b>Ongoing Capability</b>		



The Township did not identify any other activities that were completed in addition to those in the 2015 HMP mitigation strategy.

#### PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Verona participated in a risk assessment workshop in September 2019 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Verona was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Essex County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their 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). Section 6 (Mitigation Strategy) and Appendix H (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.21-16 summarizes the comprehensive-range of specific mitigation initiatives the Township of Verona would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 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 (Mitigation Strategy), 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 actions as *High*, *Medium*, or *Low*.

Table 9.21-17 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update and Table 9.21-18 summarizes the actions by type across hazards of concern.



Table 9.21-16. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-Verona-001	Stormwater Infiltration Study	The Verona Wastewater Collection System is being infiltrated by stormwater runoff.	Conduct a study and identify the points of infiltration, causes and solutions to problems. From this information a plan to mitigate will be developed then implemented.	Existing	Flood, Severe Storm	2	Verona Engineering, Township Administration	Federal and State Grant Funding	High	High	Short( DOF)	High	SIP	PP
2020-Verona-002	Stormwater System Upgrade	The stormwater system on Derwent Ave, lack adequate capacity especially during heavy rain events.	The Township will upgrade the stormwater system to increase capacity on Derwent Ave.	Existing	Utility Interruption	2	Verona Engineering	Federal and State Grant Funding, Capital Improvements	High	High	Within 5 Years	High	SIP	PP
2020-Verona-003	Stormwater Ordinance and Stormwater Mitigation Plan Update	Due to build out of Verona, vegetation removal off of private property can lead to runoff flooding between private properties	Re-writing stormwater ordinance and Re-writing stormwater mitigation plan (related to MS4 Tier A Community) – To be completed by NLT 12/31/2020 as part of municipal master plan update • Any project with 0.25 acres of new impervious coverage, or 1 acre of land disturbance (Major Development by NJDEP) o Instituting higher standard with 400 Sq. Feet of impervious coverage, and 0.25 acres of land disturbance. This will require homeowners to	N/A	Flood, Severe Storm	3, 5	Verona Engineering, Verona Administration	Municipal Budget	High	High	Within 1 year	High	LPR	PR





Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
			institute mitigation projects including structural and non-structural projects. • Have to do education and outreach as part of MS4 Permit for Stormwater Mitigation/Green Infrastructure Implementation											
2020-Verona-004	Tree Ordinance	Due to build out of Verona, vegetation removal off of private property can lead to runoff flooding between private properties	Verona is updating/passing a tree ordinance which will require township permit before removal of trees on private property to reduce localized runoff.	N/A	Flood, Severe Storm	5	Verona Engineering, Verona Administration	Municipal Budget	High	Medium	Within 1 year	High	LPR	PR
2020-Verona-005	Sanitary Sewer Upgrades	Verona's Sanitary Sewer System is aging and is susceptible to breaks and intrusions.	<ul style="list-style-type: none"> <li>Having repairs done, starting in 2 weeks.</li> <li>o Personnett Ave, and Derwent Ave</li> <li>• Hitting areas one at a time.</li> <li>• Start 10/2019 to 12/2022</li> </ul>	Existing	Flood, Severe Storm	2	Verona Engineering, Verona Administration	Municipal Budget, Capital Improvements	High	High	Within 3year	High	LPR	PR
2020-Verona-006	Water Distribution Piping Repair	Verona's water distribution piping is aging and is subject to breaks and interruption of distribution	Verona will water distribution piping as time goes on, but will repair in phases: <ul style="list-style-type: none"> <li>o Ann Street, Steven Avenue, Cypress Avenue, Willow Terrace (2020)</li> <li>o Howard Street, Marion Road, Maple Terrace, Hillside Ave, Forest Ave (Identified Area, to</li> </ul>	Existing	Utility Interruption	2	Verona Engineering, Verona Administration	Federal and State Grants, Municipal Budget, Capital Improvements	High	High	Within 3year	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
			be addressed 2-3 years) o Brentwood Drive, Newman Ave, Floyd Rd, Otsego Road (Identified Area, to be addressed 2-3 years) o Fells Rd, Oak Ridge Rd, Bloomfield Ave, Stocker Rd, Upland Way (Identified Area, to be addressed 2-3 years)											
2020-Verona-007	Critical Facility Flood Mitigation	The Verona Building and Grounds facility is a critical facility and identified lifeline located in the 1% and 0.2% annual chance flood areas.	The Township will work to mitigate this structure to the 0.2% annual chance flood event or greater.	Existing	Flood, Severe Storm	2	Verona DPW, Verona Engineering, Verona Administration	Federal and State Grants, Municipal Budget, Capital Improvements	High	Medium	Within 3year	High	SIP	PP
2020-Verona-008	RL/SRL Mitigation Outreach	There are 3 repetitive loss properties and 1 severe repetitive loss property in the Township.	The Township will conduct public outreach to the RL properties to identify if there is interest in mitigation (elevation or acquisition). If there is no interest in mitigation, the Township will provide a list of options homeowners can do to protect their home from future flood damage.	Existing	Flood Severe Storm	1,2,3	Verona OEM, Verona Administration	Federal and State Grants, Municipal Budget	High	High	Within 5 Years	High	SIP, EAP	PP, PI
2020-Verona-009	School Generators	Verona schools currently do not have backup power and therefore lack operational	The Township will work to secure grant funding for the installation of generators at the schools.	Existing	Utility Interruption	2, 6	Verona OEM, Verona Administration	Federal and State Grants, Municipal Budget	High	High	Within 5 Years	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		capabilities during power outage												
2020-Verona-010	Peckman River Flood Study	There Peckman River flows through the Township of Verona and when it floods, it affects many 50-60 homes outside of a PEMA Delineated	The Township of Verona will gather information and submit for FEMA Hazard Mitigation Grant Funding for a flood study of the Peckman River and its tributaries that run through the Township. The best identified alternative will be implemented.	Existing	Flood, Severe Storm	1,2,3	Verona Engineering, Verona Administration	FEMA HMA, BRIC, Capital Improvements, USACE, NJDEP	High	TBD		High	LPR, SIP	PR, PP

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
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
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

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

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 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. 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 preserve or restore the functions of natural systems. 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. 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.*

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Table 9.21-17. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	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
2020-Verona-001	Stormwater Infiltration Study	1	1	1	1	1	1	1	1	0	1	1	1	0	0	11	High
2020-Verona-002	Stormwater System Upgrade	1	1	1	1	1	1	1	1	0	1	1	1	0	0	11	High
2020-Verona-003	Stormwater Ordinance and Stormwater Mitigation Plan Update	0	1	1	1	0	1	1	1	1	1	1	1	1	0	11	High
2020-Verona-004	Tree Ordinance	0	1	1	1	1	1	1	1	1	1	1	0	0	0	12	High
2020-Verona-005	Sanitary Sewer Upgrades	1	1	1	1	1	1	1	1	0	1	1	1	0	0	11	High
2020-Verona-006	Water Distribution Piping Repair	1	1	1	1	1	1	1	1	0	1	1	1	0	0	11	High
2020-Verona-007	Critical Facility Flood Mitigation	1	1	1	1	0	1	0	1	1	0	0	1	0	1	9	High
2020-Verona-008	RL/SRL Mitigation Outreach	1	1	1	1	1	0	1	1	0	1	1	1	0	0	10	High
2020-Verona-009	School Generators	1	1	1	1	0	1	0	1	1	0	0	1	0	1	9	High
2020-Verona-010	Peckman River Flood Study	1	1	1	1	0	0	0	1	1	0	1	1	0	1	9	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.  
Low (0-4), Medium (5-8), High (9-14).



Table 9.21-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Coastal Erosion and Sea Level Rise								
Coastal Storms (hurricanes/tropical storms, nor'easters, coastal erosion, and storm surge)								
Drought								
Earthquake								
Extreme Temperature								
Flood (riverine / flash flood, SLR)	2020-Verona-003, 2020-Verona-010, 2020-Verona-004, 2020-Verona-005, 2020-Verona-006	2020-Verona-002, 2020-Verona-007, 2020-Verona-001	2020-Verona-008			2020-Verona-002, 2020-Verona-007, 2020-Verona-001, 2020-Verona-006, 2020-Verona-008		
Geological Hazards (landslides and subsidence/sinkholes)								
Severe Weather (high wind, tornado, TSTM, and hail)	2020-Verona-010, 2020-Verona-001, 2020-Verona-004, 2020-Verona-005, 2020-Verona-006					2020-Verona-001, 2020-Verona-006, 2020-Verona-007		
Severe Winter Weather (heavy snow, blizzards, and ice storms)								
Wildfire								
Civil Disorder								
Cyber Attack								
Disease Outbreak								
Economic Collapse								
Hazardous Substances								
Utility Interruption		2020-Verona-009				2020-Verona-002, 2020-Verona-006, 2020-Verona-009		
Terrorism								
Transportation Failure								





Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

### 9.21.9 Staff and Local Stakeholder Involvement in Annex Development

The Township of Verona followed the planning process described in Section 2 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. The following table summarizes who participated and in what capacity. In addition, several municipal representatives were asked to review and contribute to the draft annex as documented on the annex sign-off sheets in Appendix B (Participation Documentation). Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 2 (Planning Process) and Appendix C (Meeting Documentation).

**Table 9.21-19. Contributors to the Annex**

Entity	Title	Method of Participation
Joel Martin	Detective/OEM Coordinator	Primary POC, represented Verona at HMP Meetings. Provided information for New Development, Capability Assessment, Status of Previous Mitigation Actions, and Proposed Mitigation Strategies
Chris Kiernan	Police Chief	Alternate POC
Michael DeCarlo	Floodplain Administrator/Engineering Manager	FPA, attended municipal annex meeting and mitigation strategy meeting. Provided information for Capability Assessment, Status of Previous Mitigation Actions, and Proposed Mitigation Strategies
Matthew Cavallo	Township Manager	Provided input for municipal annex development for the Capability Assessment and Previous Mitigation Actions
Rick Neale	Fire Official	Provided input for municipal annex development for the Capability Assessment and Previous Mitigation Actions
George Zehander	Verona DPW Supervisor	Provided input for municipal annex development for the Capability Assessment and Previous Mitigation Actions
Vincent Colavitti Jr	Fire Inspector	Provided input for municipal annex development for the Capability Assessment and Previous Mitigation Actions



Figure 9.21-1. Township of Verona Hazard Area Extent and Location Map

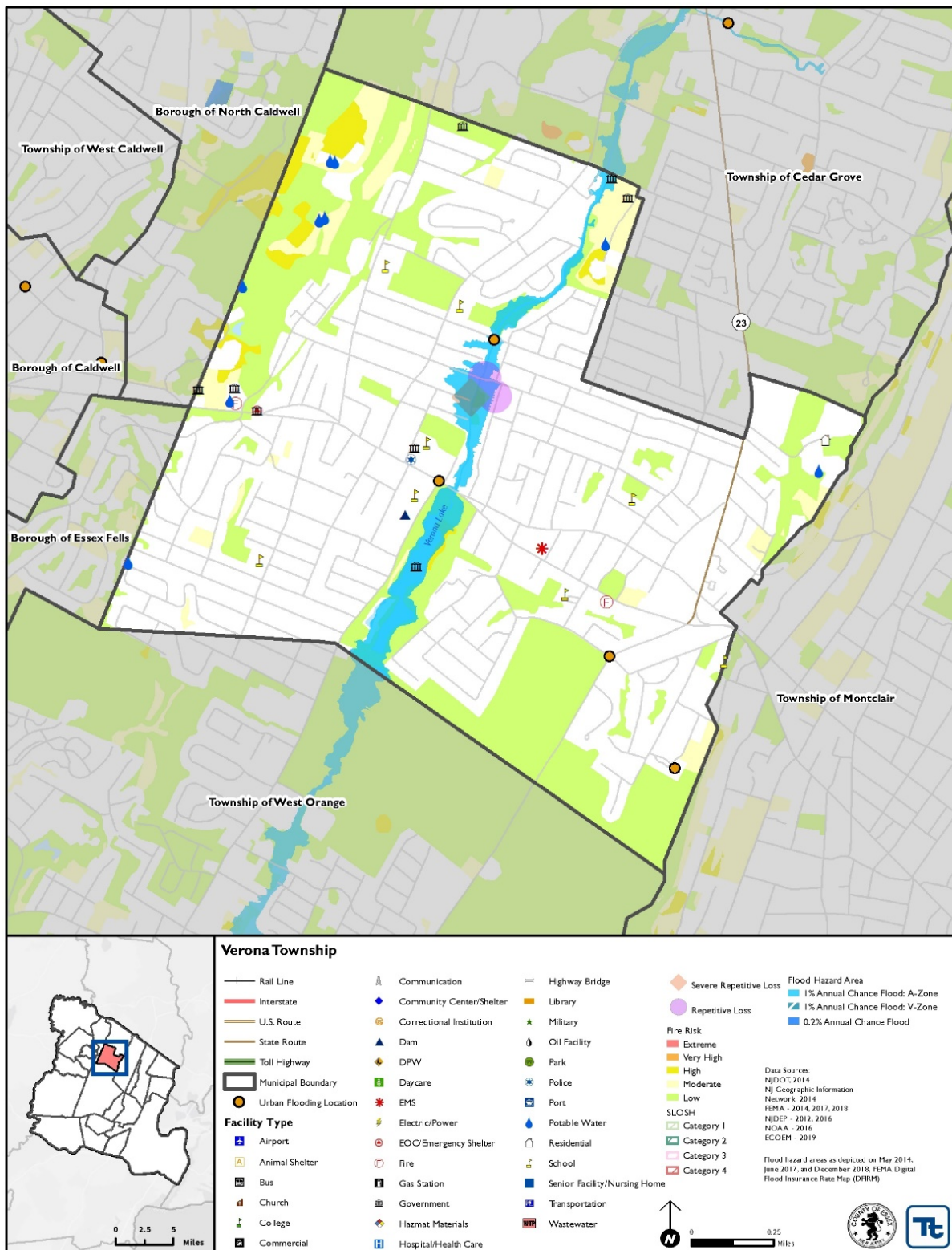
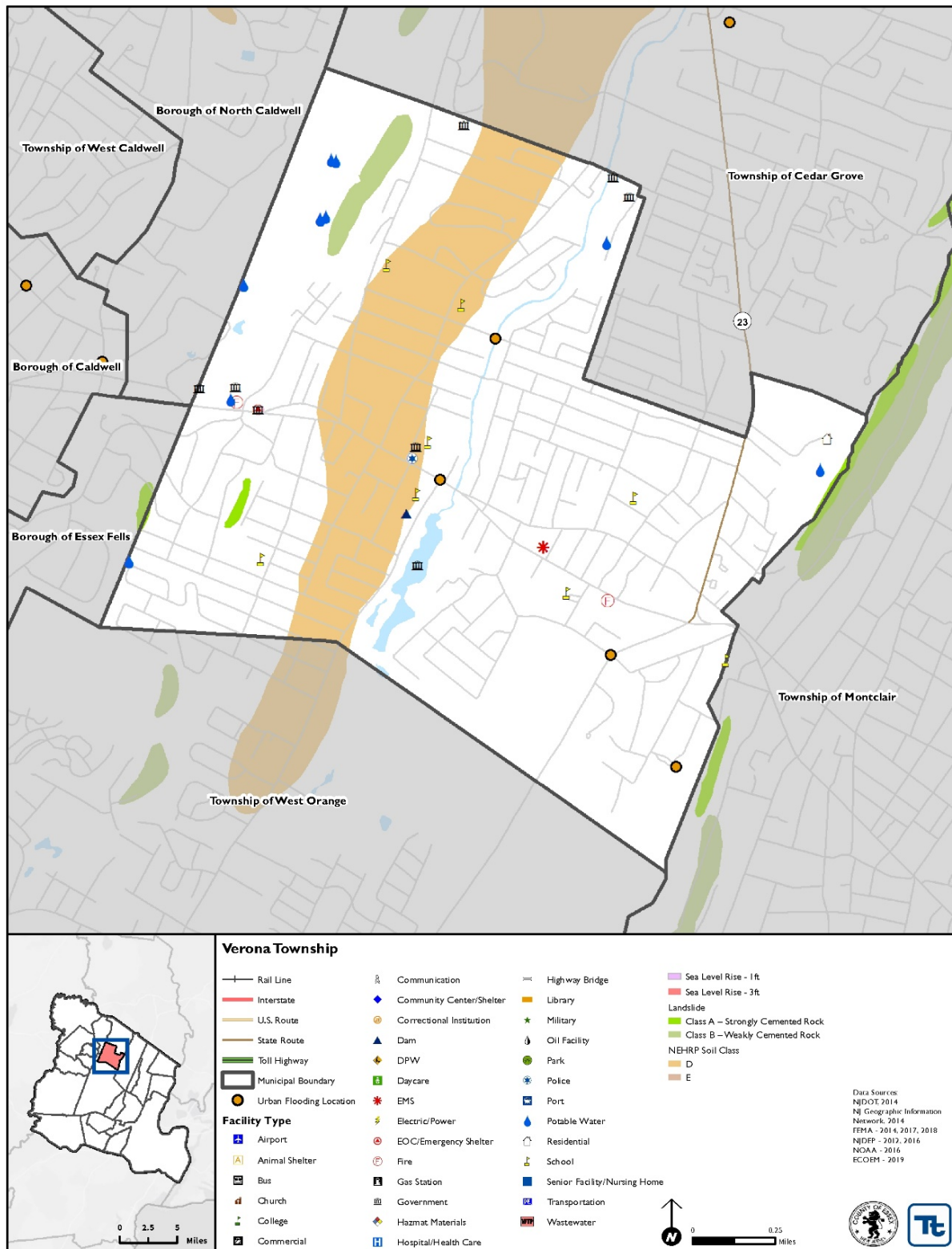




Figure 9.21-2. Township of Verona Hazard Area Extent and Location Map 2





Name of Jurisdiction: Township of Verona

Name and Title Completing Worksheet:

Action Worksheet			
Project Name:	Peckman River Flood Study		
Project Number:	2020-Verona-010		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	There Peckman River flows through the Township of Verona and when it floods, it affects many 50-60 homes outside of a PEMA Delineated		
Action or Project Intended for Implementation			
Description of the Solution:	The Township of Verona will gather information and submit for FEMA Hazard Mitigation Grant Funding for a flood study of the Peckman River and its tributaries that run through the Township. The best identified alternative will be implemented.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD By Study	Estimated Benefits (losses avoided):	Reduction in flood risk to structures affected by flooding of the Peckman River.
Useful Life:	TBD By Study	Goals Met:	1,2,3
Estimated Cost:	TBD By Study	Mitigation Action Type:	Local Plan and Regulation, Structure and Infrastructure Project, Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 Years
Estimated Time Required for Project Implementation:	Within 5 Years	Potential Funding Sources:	FEMA HMA, BRIC, Capital Improvements, USACE, NJDEP
Responsible Organization:	Township Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation Planning, Floodplain Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Acquire homes out of the floodplain	\$18,000,000	May adversely impact municipal tax base
	Floodproof or elevate all homes	\$10,000,000	May not fully reduce flood impacts on homes being affected by flooding.
Progress Report (for plan maintenance)			
Date of Status Report:			



<b>Report of Progress:</b>	
<b>Update Evaluation of the Problem and/or Solution:</b>	

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Name of Jurisdiction:

Name and Title Completing Worksheet:

Action Worksheet		
Project Name:		
Project Number:		
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	Township will need to work with property owners to implement a project
Fiscal	0	Will require additional grant funding for this project
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood, severe storm
Timeline	1	
Agency Champion	0	
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	





Name of Jurisdiction: Township of Verona

Name and Title Completing Worksheet:

Action Worksheet			
Project Name:	Emergency Generators for Verona Schools		
Project Number:	2020-Verona-009		
Risk / Vulnerability			
Hazard(s) of Concern:	Utility Interruption		
Description of the Problem:	Verona schools currently do not have backup power and therefore lack operational capabilities during power outage. These are identified Critical Facilities.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will work to secure grant funding for the installation of generators at the schools.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-Year Flood Event	Estimated Benefits (losses avoided):	Continuity of Operations
Useful Life:	19	Goals Met:	2, 6
Estimated Cost:	\$500,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 5 Years
Estimated Time Required for Project Implementation:	Within 5 Years	Potential Funding Sources:	FEMA HMA, BRIC, Capital Improvements
Responsible Organization:	Township OEM, Township Administration	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation Planning, Floodplain Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Solar Panel installation	\$200,000	May not be technically feasible
	Establish Microgrids in Verona	\$2,000,000+	May not fully reduce flood impacts on structure
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Name of Jurisdiction: \_\_\_\_\_

Name and Title Completing Worksheet: \_\_\_\_\_

Action Worksheet		
Project Name:	Emergency Generators for Verona Schools	
Project Number:	2020-Verona-009	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	0	
Timeline	1	
Agency Champion	0	
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Township of Verona

Name and Title Completing Worksheet:

Action Worksheet			
Project Name:	Mitigation the Building and Grounds Building		
Project Number:	2020-Verona-007		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	The Verona Building and Grounds facility is a critical facility and identified lifeline located in the 1% and 0.2% annual chance flood areas.		
Action or Project Intended for Implementation			
Description of the Solution:	In order to effectively mitigate the Building and Grounds facility, the Township would require the purchase of new land and the construction of a new structure outside of the floodplain.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-Year Flood Event	Estimated Benefits (losses avoided):	Reduction in flood risk to Building and Grounds facility.
Useful Life:	25 Year	Goals Met:	2
Estimated Cost:	\$750,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 5 Years
Estimated Time Required for Project Implementation:	Within 5 Years	Potential Funding Sources:	FEMA HMA, BRIC, Capital Improvements
Responsible Organization:	Township Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation Planning, Floodplain Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocate facility	\$2,000,000	May not be technically feasible
	Use green stormwater infrastructure to reduce flood risk	\$10,000	May not fully reduce flood impacts on structure
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Name of Jurisdiction: Verona  
Name and Title Completing Worksheet: \_\_\_\_\_

Action Worksheet		
Project Name:	Mitigation the Building and Grounds Building	
Project Number:	2020-Verona-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	0	Flood, severe storm
Timeline	1	
Agency Champion	0	
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	