10.2.36 Town of Warwick

This section presents the jurisdictional annex for the Town of Warwick.

10.2.36.1 Contacts

Primary and secondary contacts for this jurisdiction are identified as follows:

- Michael Sweeton – Town Supervisor
  132 Kings Highway
  Warwick, NY 10990
  (845) 986-1124

- Jeffrey J. Feagles – Commissioner of Public Works
  (845) 986-3358

10.2.36.2 Municipal Profile

Population

The 2010 U.S. Census reported a population of thirty-two thousand, sixty-five (32,065) persons. The population at the 2000 census was thirty thousand, seven hundred sixty-four (30,764) for an increase of 1%.

Location

The Town of Warwick is located in the southern portion of the County with a boundary of the New York-New Jersey border. It encompasses the Villages of Greenwood Lake, Florida, and Warwick. Bordering municipalities are the Town of Chester to the north and Town of Tuxedo to the east.

Brief History

The Town of Warwick was founded in 1788. Named for the vast farm on which it was built, Warwick became a hub of the area. Beyond the three (3) incorporated Villages, Warwick also consists of sixteen (16) hamlets.

The Town of Warwick has enjoyed a rich agricultural past, including dairy, fruit, and vegetable production. Beyond this, iron mining and forestry have also been successful industries. The Village of Greenwood Lake has served as a retreat area, as well, popular with outdoorsman and resort going individuals alike.

Governing Body

The Town is served by an elected Supervisor and a five (5) member elected Town Board. The Town Clerk and Receiver of Taxes are also elected positions.

Community Growth & Development Trends

The Town of Warwick utilizes the Comprehensive Plan (2008) to concentrate development in select residential, commercial, and industrial areas.

This is coupled with conservation planning and has led to little development within the past ten (10) years. While several large developments are in the approval process, the Town participates in the Purchase of Development Rights Program. This program was developed to provide a way to preserve farmland and open space.

10.2.36.3 Hazard Vulnerabilities

Overall Vulnerability

Vulnerability was subjectively assigned below using the categories high, moderate, and low. The assessments were based on the Calculated Priority Risk Index (CPRI) values, probability, and severity.

CPRI is calculated by assigning varying degrees of risk to four (4) categories for each hazard, and then calculating an index value based on a weighting scheme. The table below explains these values.

Table 10.2.36a: Calculated Priority Risk Index (CPRI) Categories and Risk Levels

CPRI Category	Degree of Risk		
	Level ID	Description	Index Value
Probability	Unlikely	▪ Extremely rare with no documented history of occurrences or events. ▪ Annual probability of less than 0.001.	1
	Possible	▪ Rare occurrences with at least one documented or anecdotal historic event. ▪ Annual probability that is between 0.01 and 0.001.	2
	Likely	▪ Occasional occurrences with at least two or more documented historic events. ▪ Annual probability that is between 0.1 and 0.01.	3
	Highly Likely	▪ Frequent events with a well-documented history of occurrence. ▪ Annual probability that is greater than 0.1.	4
Magnitude/ Severity	Negligible	▪ Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses are treatable with first aid and there are no deaths. ▪ Negligible quality of life lost. ▪ Shut down of critical facilities for less than 24 hours.	1
	Limited	▪ Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses do not result in permanent disability and there are no deaths. ▪ Moderate quality of life lost. ▪ Shut down of critical facilities for more than 1 day and less than 1 week.	2
	Critical	▪ Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses result in permanent disability and at least one death. ▪ Shut down of critical facilities for more than 1 week and less than 1 month.	3

Table 10.2.36a: Calculated Priority Risk Index (CPRI) Categories and Risk Levels			
CPRI Category	Degree of Risk		
	Level ID	Description	Index Value
	Catastrophic	▪ Severe property damages (greater than 50% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses result in permanent disability and multiple deaths. ▪ Shut down of critical facilities for more than 1 month.	4
Warning Time	More than 24 Hours	Self-explanatory.	1
	12 to 24 Hours	Self-explanatory.	2
	6 to 12 Hours	Self-explanatory.	3
	Less than 6 Hours	Self-explanatory.	4
Duration	Less than 6 hours	Self-explanatory.	1
	Less than 24 hours	Self-explanatory.	2
	Less than one week	Self-explanatory.	3
	More than one week	Self-explanatory.	4

Table 10.2.36b denotes the identified hazard, vulnerability assessment, mitigation priority, and the CPRI score.

Table 10.2.36b: Hazard Vulnerability			
Hazard	Vulnerability	Mitigation Priority?	CPRI Score
Earthquake	Low	No	1.45
Drought	Low	No	1.60
Dam Failure	Moderate	Yes	2.05
Landslide	Low	No	2.20
Severe Thunderstorm / Tornado / Wind / Lightning	Moderate	No	2.50
Extreme Temperatures	Moderate	Yes	2.50
Wildfires	Moderate	No	2.65
Hurricane	Moderate to High	Yes	3.05
Winter Storms	High	Yes	3.05
Flood	High	Yes	3.25

Critical Facilities

A list of community critical facilities was generated to aid in mitigation planning. The tables below summarizes the number of these facilities within the Town of Warwick which may be impacted by any of the previously noted hazards.

This information was used to identify potential needed improvements to existing critical facilities. Critical facilities were identified by the Town as meeting this definition: "Any structure(s) and/or infrastructure within a community whose incapacity or destruction would:

- Have a debilitating impact on the defense or economic security of that community.
- Significantly hinder a community's ability to recover following a disaster."

Discretion was left up to the participating jurisdiction to select these facilities. Addresses and names for the identified critical facilities are noted in the table below.

Table 10.2.36c: Location of CFI

Facility Name	Address (Street, Town/Village/Hamlet)
Pine Island Fire Department	County Route 1, Hamlet of Pine Island
Warwick Fire District	Church Street, Town of Warwick
Warwick Police Department	King's Highway, Town of Warwick
Golden Hill Elementary	Round Hill Road, Town of Warwick
Calvary Christian Academy	Wisner Road, Town of Warwick
Park Avenue Elementary	Park Avenue, Town of Warwick
Warwick Valley Middle School	West Street, Town of Warwick
St. Stephen St. Edward School	Sanfordville Road, Town of Warwick
Warwick Valley High School	Sanfordville Road, Town of Warwick
Sanfordville Elementary	Sanfordville Road, Town of Warwick
AHRC School	Big Island Road, Town of Warwick
Audubon Dam #1	Southwyke Lane, Town of Warwick
Greenwood Lake Middle School	Lakes Road, Town of Monroe
Greenwood Lake School Dam	Lakes Road, Town of Monroe
Howard Lake Dam	Black Rock Road, Town of Warwick
Lower Warwick Reservoir Dam/Warwick Reservoir Dam #1	Reservoir Road, Town of Warwick
Middle Warwick Dam/Warwick Reservoir #2	Reservoir Road, Town of Warwick
Rinaldi Dam	Ashlee Meadow Road, Town of Warwick
Town of Warwick Department of Public Works	Public Works Road, Town of Warwick
Upper Warwick Dam/Warwick Reservoir #3	Reservoir Road, Town of Warwick
Warwick Reservoir	Reservoir Road, Town of Warwick
Wesolowski Pond Dam	Big Island Road, Town of Warwick

The Town of Warwick has twelve (12) critical facilities within the 500-year floodplain or the high hazard Landslide Rating[1] area. One (1) of these facilities is located in both. Below is a table that identifies the structures and hazard issues.

Table 10.2.36d: Town of Warwick Critical Facilities and Infrastructure in Hazard Areas

Critical Infrastructure	500-Yr Floodplain	Landslide Rating Area	Associated Mitigation Action
AHRC School	N	Y	N/A
Audubon Dam #1	Y	N	WT-6
Greenwood Lake Middle School	Y	N	WT-6
Greenwood Lake School Dam	Y	N	WT-6
Howard Lake Dam	Y	Y	WT-6
Lower Warwick Reservoir Dam/Warwick Reservoir Dam #1	Y	N	WT-6
Middle Warwick Dam/Warwick Reservoir #2	Y	N	WT-6
Rinaldi Dam	Y	N	WT-6
Town of Warwick Department of Public Works	Y	N	WT-1, WT-6
Upper Warwick Dam/Warwick Reservoir #3	Y	N	WT-6
Warwick Reservoir	Y	N	WT-6
Wesolowski Pond Dam	N	Y	N/A

As indicated in Section 2.8, participating municipalities did not wish to disclose the locations of public water systems facilities due to security concerns. However, they acknowledge the criticality of such facilities. While it is assumed that most municipal water systems facilities are not located within the floodplain, these jurisdictions will explore hardening/relocation opportunities for those that are located within the floodplain should such actions become necessary due to the incidence of flooding impacts.

By necessity, critical wastewater facilities are located within the 500-year floodplain due to discharge requirements and gravity-fed systems optimization. While relocation is neither desired nor feasible, participating municipalities will seek to harden these facilities where feasibly and fiscally possible.

Table 2.8a – Orange County NPDES Data lists all wastewater facilities in the County, including the Town of Warwick, with a NPDES (National Pollutant Discharge Elimination System) permit. In the case of New York State, NPDES permit listing match State Pollutant Discharge Elimination System (SPDES) permit listings.

[1] Areas with a landslide rating in of greater than 37 are considered hazardous. The data was derived from HAZUS software analysis.

Priority Hazard Events

The following sections detail the priority hazard events identified by the jurisdiction. Additional information about each hazard including frequency, history, and severity within Orange County is included within Section 5.0 of the main body of the Hazard Mitigation Plan (Volume I).

The probability of climate-related hazard events is generally expected to increase in the future within the Town of Warwick. This anticipated increase results from the expected increase in weather volatility associated with climate change. Upstream tributaries such as the Wallkill River, Moodna Creek, and Passaic-Hackensack Watershed will experience increased flooding.

Past occurrences of hazard events are indicated in their respective profiles below. Some hazards may not have locally available documentation of past occurrence, but are nonetheless profiled in this annex to instill future mitigation planning consideration.

Flood

Several waterbodies influence the hydrology of the Town, including the Wallkill River, Wawayanda Creek, Glenmere Lake, and Greenwood Lake. Heavy rain events have created past flooding associated with these waterbodies as well as reservoir failures and other flood control structure failures.

FEMA's Flood Insurance Mapping Program designates areas that are at risk for flooding; low flood risk are areas unlikely to flood, moderate risk are areas within the 500-year floodplain (0.2% likely to flood in any given year), and high risk are areas that frequently flood, up to the 100-year flood risk zone (1% likely to flood in any given year). A total of 17% of the land acreage within the Town of Warwick is designated as being within flood hazard areas; 16% being designated as high risk.

According to the Town of Warwick Multi-Jurisdictional Multi-Hazard Plan (2014), HAZUS – MH 2013 estimates that eight hundred and thirty-nine (839) households will be displaced due to a major flood event. Based upon the Town of Warwick's 2000 population of thirty thousand, seven hundred and sixty-four (30,764) (current data unavailable in HAZUS program); one thousand, four hundred and twenty-one (1,421) people living near an inundated area will need to seek public shelters. Economic losses, including residential property damage (capital stock) and business interruptions (income) are estimated to be at $73 million per major flood event.

Table 10.2.36e: Summary of Land Areas in Flood Hazard Areas
(*Source: FEMA DFIRM Data 2011*)

Municipality	Total Land Area (Acres)	High Flood Risk (Acres) A, AE, AH, AO	Moderate Flood Risk (Acres) X500	Low Flood Risk (Acres) X	Land in High Flood Risk % A, AE, AH, AO	Land in Moderate Flood Risk % X500
Town of Warwick	63,358	10,129	446	52,783	16%	1%

Additionally, 6.3% of the Town's improved value areas (defined as property that is either actively utilized or has been developed) are located within the high risk flood areas (93.1% are within low risk areas). The table below demonstrates building exposure by occupancy in flood risk areas.

Table 10.2.36f: Building Exposure by Occupancy Type
(Source: HAZUS 2013 Software – MH: Flood Event Report)

Occupancy (Building Type)	Exposure ($1000)	Percent of Total
Residential	2,283,613	72.6%
Commercial	640,767	20.4%
Industrial	71,520	2.3%
Agricultural	30,464	1.0%
Religious	47,663	1.5%
Government	16,826	0.5%
Education	56,551	1.8%
TOTAL	**3,147,404**	**100.0%**

The National Flood Insurance Program (NFIP) tracks properties that have had several flood damage claims. Details of these properties in the Town of Warwick, accounted for in the 2014 local jurisdiction plan, are noted below.

Table 10.2.36g: Community NFIP Repetitive Loss (RL) Properties

Community	# of RL Properties	Type of Properties	Total Number of Paid Losses	Total Payments	Average Individual Payment	Location in Mapped Floodplains		
						A (1 % Annual Chance)	X500 (.2% Annual Chance)	X (Low Risk)
Town of Warwick	1	Residential	2	$4,557	$2,279	-	-	1

Table 8.2c also indicates that this single repetitive loss property in the Town of Warwick does not qualify as a severe repetitive loss property.

Historical Occurrence:

Several historic major flooding events have affected the Town since 1980 (excluding Hurricanes Irene and Sandy, and Tropical Storm Lee, which are discussed under the Hurricane hazard heading). A concise list of these major events is as follows:

- March 1980 – Five (5) to eight (8) inches of rain flooded areas in the Village of Warwick and washed away gravel and an earthen berm into Reservoir No. 3.
- April 1983 – The Wallkill River flooded over four thousand and two hundred (4,200) acres of farmland in the Pine Island area.

- April 1984 – Heavy rain/snowmelt caused the Wawayanda Creek to flood the Village of Warwick area.
- April 2005 – The Wawayanda Creek flooded in the Town of Warwick and surrounding areas causing damage to culverts located on Southwyck Drive and Wawayanda Road.
- August 2008 – A low pressure system produced thunderstorms with rainfall that contributed to flash flooding in the area (Lower Hudson Valley). Streets such as Railroad Avenue and Main Street within the Town of Warwick were inoperable due to these flash floods.
- March 2010 – Flooding caused by heavy rain and snow melt took place in the Village of Greenwood Lake.

Below is a table that illustrates the value of property in the Town of Warwick that is located within the 500-year floodplain and is categorized by land use type. This table was derived from FEMA floodplain mapping and parcel data from the Orange County Property Assessor.

Table 10.2.36h: Structures in the Town of Warwick Vulnerable to 500-year Flood Events and Their Estimated Values

Type of Structure	# Structures in Hazard Area	Value of Structures (in millions)
Residential	604	$151.0
Commercial	43	Unknown
Industrial	0	$0
Agricultural	565	Unknown
Religious/Non-profit	0	$0
Government	4	Unknown
Education	1	Unknown
Utilities	0	$0
Dams	5	Unknown
Parks	0	$0
Total	1222	$151.0

Extreme Temperatures

Both extreme heat and cold can be detrimental to human health and property. Associated risks include sunstroke and hypothermia as well as brownouts and flooding caused by the ice dams created by extreme cold.

Historical Occurrence:

There were a total of seven (7) extreme heat events and four (4) extreme cold events between 1993 and 2012 that have affected the Town of Warwick and the surrounding areas. These events are summarized below:

- February 1993 – Extreme cold temperatures ranged less than five below zero (-5˚F) with a reading of 40 below zero (-40˚F) wind chill within the area.
- July 1999 – Extreme heat temperatures peaked in the high 90s with moderate humidity that resulted in heat indexes ranging from 110 to 115˚F in the area.
- January 2000 – There were two (2) extreme cold events within the area with temperatures at 10˚F with the wind chill recorded at 35˚F below zero (-35˚F).
- August 2001 – Extreme heat temperatures rose as high as 94˚F with a heat index of 110 ˚F.
- July 2002 – Two (2) extreme heat events that took place within Orange County.
- Jan 2004 – Extreme cold temperatures as low as one (1) degree above zero (0) with a 26 below zero wind chill (-26˚F).
- August 2006 – Extreme heat temperatures reached around 100˚F with a heat index of 115˚F.
- July 2011 and July 2012 – Extreme heat events took place during these months within Orange County.

Severe Thunderstorm/Tornado/Extreme Wind/Lightning

The National Weather Service (NWS) defines a severe storm as one with a tornado and/or surface hail ¾" or greater and/or wind gusts fifty (50) knots (58 mph) or greater. Such storms can cause damage from wind, hail, heavy rainfall, and/or lightning strikes.

Historical Occurrence:

In the past ten (10) years, four (4) severe storms have been recorded by NOAA Storm Events Database for the Town of Warwick.

- June 6, 2010 – Trees were downed onto wires in Warwick; onto wires on Dekay Road.
- August 19, 2011 – A passing mid level disturbance triggered severe thunderstorms that produced large hail and damaging winds across the Lower Hudson Valley, New York City, and Nassau County. Multiple trees were reported down throughout Warwick.

- September 14, 2011 – Tree limbs were reported down on top of wires on Oakland Avenue in Warwick.
- June 23, 2015 – Numerous trees and wires were reported down across town.

Drought

For a description of this hazard, please see section 5.5.

Historical Occurrence:

In the past ten (10) years there is no record of any Droughts that have explicitly impacted the Town of Warwick, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

Landslide

Landslides occur when a slope fails and moves downward due to gravity; this can be caused by anything that disrupts ground stability, from storms to acts of man. The New York State Geological Survey denotes areas with steep slopes and glacial lake clay soils as landslide vulnerable. There are areas within the Town of Warwick that meet these criteria. The Town has areas with steep slopes and ridgelines, some of which are generally wooded, increasing the probability for a potential landslide in the future. Analysis of critical facilities that fall into these high landslide rating areas can be found in Table 10.2.4e and in Attachment I.

Below is a table that illustrates the value of property in the Town of Warwick that is located within the landslide rating area and is categorized by land use type. This table was derived from GIS mapping and parcel data from the Orange County Property Assessor.

Table 10.2.36i: Structures in the Town of Warwick Vulnerable to Landslide Events and Their Estimated Values

Type of Structure	# Structures in Hazard Area	Value of Structures (in millions)
Residential	574	143.5
Commercial	12	Unknown
Industrial	3	Unknown
Agricultural	88	Unknown
Religious/Non-profit	0	$0
Government	0	$0
Education	1	Unknown
Utilities	0	$0
Dams	2	Unknown
Parks	0	$0
Total	680	$143.5

Earthquake

For a description of this hazard, please see section 5.7.

Historical Occurrence:

In the past ten (10) years there is no record of any Earthquakes that have explicitly impacted the Town of Warwick, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

Hurricane

Due to the inland location of the Town of Warwick, the majority of hurricanes that reach the area are classified as tropical storms and risk of true hurricanes is relatively low. However, due to the severe nature of these storms, numerous costly damages can occur due to high winds, rainfall, and lightning.

Historical Occurrence:

Descriptions of significant hurricane events that have occurred within the Town of Warwick over the last twenty (20) years are summarized below:

- July 1996 – Hurricane Bertha made landfall and dumped 4.5 inches of rain on Greenwood Lake.
- August/September 2011 – Hurricane Irene/Tropical Storm Lee caused flooding that damaged as well as collapsed roads, embankments, culverts and a bridge throughout the Town of Warwick and the Village of Warwick areas.

Estimated damage to the Town of Warwick as a whole (including all Villages) was $1,451,451.

Severe Winter Storms

Winter storms present a frequent hazard to the area. According to the 2014 Multi-Jurisdictional Multi-Hazard Mitigation Plan for the Town of Warwick and Villages of Greenwood Lake, Florida, and Warwick, "storm data information provided by the Town and Villages on the past fifty-seven (57) winter storm incidents that occurred within the jurisdictions indicates that damage estimates totaled approximately $199,851."

These storms cause damage due to high winds and multiple issues due to snow accumulation including dangerous travel due to slick roads and poor visibility.

Historical Occurrence:

- March 1997 – An intense low pressure system developed off the Delmarva Coast and moved northeast, passing south of Long Island. During the afternoon hours, rain developed into heavy wet snow accumulating at least six (6) inches of snow. Power lines and trees fell due from forty (40) mph winds and snow that resulted in the closing of

many roads. A State of Emergency was declared by Towns. Snowfall amounts for Warwick and Cornwall were recorded at seventeen (17) inches.

- March 1999 – Low pressure system, with cold air in place developed over the Gulf Coast States on March 13. As it moved northeast toward the Mid – Atlantic Coast, precipitation was spread across the region. In the afternoon of March 14 the light rain transformed in wet snow then becoming heavy as the low pressure system hit the Mid – Atlantic states. Heavy snow caused power line damage along with tree limbs across the area. Nine (9) inches of snowfall was measured at Chester and Warwick.
- December 2000 – Gusty winds and subfreezing temperatures lingered behind a low pressure storm system accompanied by thunder and lightning. Snowfalls totals were recorded to be twenty-one (21) inches at Warwick and Rock Tavern.
- January 2009 – A combination of deepening low pressure over the Great Lakes and a weak high retreating over the northeast produced a significant accumulation of ice across the northern portions of the Lower Hudson Valley. Power lines and trees were down, with the amount of ice averaging around .5 inch. Orange County ice accumulation ranged from Warwick having .3 inches to .8 inches in Monroe and Middletown.
- March 2010 – A winter storm caused culvert and road collapse in the Town of Warwick on Ryerson Road.

Wildfire

Wildfires can be caused by natural hazards (lightning) but are much more often manmade, either accidental in cause or arson. These most often occur during the summer, associated with the drier conditions which allow vegetation and brush to readily burn.

According to the 2011 Orange County Hazard Mitigation Plan, the Town of Warwick wildfire risk zone is 49%. No historical occurrences are noted with the Town.

One of the major contributing factors to severity of wildfires depends on the presence of humans within areas where wildfires would typically occur. The Wildland/Urban Interface (WUI) is the area where houses and wildland vegetation meet. Housing developments alter the structure and function of forests. The 2014 Annual Report for the NYSDEC Division of Forest Protection indicates that there were twenty-three (23) wildfires within Zone 3B which includes the Town of Warwick. These wildfires burnt a total of two hundred and thirty-nine (239) acres; none of these wildfires were over one hundred (100) acres in size. The 2013 Annual Report for the NYSDEC Division of Forest Protection indicates that there were eleven (11) wildfires in Zone 3B that year. Two (2) of these wildfires were over one hundred (100) acres in size, a total of 672.6 acres were burnt during wildfires during the 2013 wildfire season. The 2012 Annual Report for the NYSDEC Division of Forest Protection shows that there were seven (7) wildfires in Zone 3B that year. One (1) of these wildfires was over one hundred (100) acres in size with a total of 507.6 acres burning during wildfires in the 2012 wildfire season.

The Town of Warwick has an elevated risk of wildfire occurrences within its jurisdiction because of the tracts of undeveloped land within the Town. While the affected areas are usually

uninhabited, these events can have long term implications on the Town's resources as well as discourage the tourism industry.

Dam Failure

Dam failures can be attributed to natural or man-made hazards. The impoundment of large volumes of water poses a threat; the failure of a dam can lead to catastrophic flooding.

The New York State Department of Environmental Conservation (NYSDEC) maintains a database to classify dams based on the event of a failure. Explanations of dam classifications are noted in the table below.

Table 10.2.36j: Dam Hazard Potential Classification

NYSDEC Classification	Description
Class "A" or "Low Hazard"	A dam failure is unlikely to result in damage to anything more than isolated or unoccupied buildings, undeveloped lands, minor roads such as town or country roads; is unlikely to result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; and/or is otherwise unlikely to pose the threat of personal injuring, substantial economic loss or substantial environmental damage.
Class "B" or "Moderate Hazard"	A dam failure may result in damage to isolated homes, main highways, and minor railroads; may result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; and/or is otherwise likely to pose the threat of personal injury and/or substantial economic loss or substantial environmental damage. Loss of human life is not expected.
Class "C" or "High Hazard"	A dam failure may result in widespread or serious damage to home (s); damage to main highways, industrial or commercial buildings, railroads, and/or important utilities, including water supply, sewage treatment, fuel, power, cable or telephone infrastructure; or substantial environmental damage; such as the loss of human life or widespread substantial economic loss is likely.
Class "D" or "Negligible or No Hazard"	A dam that has been breached or removed, or has failed or otherwise no longer materially impounds waters, or a dam that was planned but never constructed. Class "D" dams are considered to be defunct dams posing negligible or no hazard. The department may retain pertinent records regarding such dams.

Two (2) Class "C" dams are located within the Town: the Lower Warwick Dam (Town of Warwick: forty-eight (48) acre-feet) and the Glenmere Lake Dam (Town of Chester: three thousand, three hundred and twenty-seven (3,327) acre-feet). The Town would be severely inundated should either dam breach. The Cascade Lake (thirty-seven (37) acre-feet) and Warwick Meadows (twenty-two (22) acre-feet) dams are classified as "B" and are both located within the Town of Warwick.

10.2.36.4 Capability Assessment

Planning and Regulatory Capability Assessment and Resources

Table 10.2.36k: Legal and Regulatory Capabilities for Town Of Warwick		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
Codes and/or Ordinances	• 2010 Residential Code of NYS • 2010 Fire Code of NYS • 2010 Building Code of NYS • 2010 Exiting Building Code of NYS • 2010 Energy Conservation Construction Code of NYS • 2010 Plumbing Code of NYS • 2010 Mechanical Code of NYS • 2010 Fuel Gas Code of NYS	Town Building Inspector
	• Town of Warwick Zoning Code of §164 • Town of Warwick Code §89 - Flood Damage Prevention • Traditional Neighborhood Overlay District §164 – 47 • Ridgeline Overlay District §164 – 47.1 • Aquifer Protection Overlay District §164 – 47.2 • Agricultural Projection Overlay District §164-47.3 • Biodiversity Conservation Overlay District §164-47.9 • Lighting §164-43.4 • Cluster Subdivision §164-41.1 • Site Plan and Special Use §164-46	Planning Board
Plans, Manuals, and/or Guidelines	• Stormwater Management §164-47.10 • Town of Warwick NY Comprehensive Plan 2008 • Architectural Design Standards for Commercial and Mixed Use Development, 2010	Planning Board
Studies	• FIRM Flood Insurance Rate Maps, 2009 • Floodplain Studies completed for portions of Pine Island, est. 2010/2011	Town Board/Building Inspector

Administrative and Technical Capability Assessment and Resources

Table 10.2.36l: Summary of Administrative and Technical Staff Capabilities for Town of Warwick		
Staff/Personnel Resources	**☑**	**Department/Agency – Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Town Consultant Engineer, Town Consultant Planner to the Planning Board, Town Planning Board, ZBA
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Town Consultant Engineer, Town Consultant Planner to the Planning Board, Town Planning Board
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Town Consultant Engineer, Town Consultant Planner to the Planning Board, Town Planning Board
Floodplain Manager/Administrator	☑	Town Building Inspector
Surveyors	☑	Town Consultant Engineer
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Department of Public Works Commissioner, Town Consultant Engineer, Town Emergency Management Committee
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	☑	Town Consultant Engineer
Scientists familiar with the hazards of the community	☑	Consultant hired as needed
Emergency manager	☑	Town Supervisor, Town Emergency Management Committee – comprised of the Department of Public Works Commissioner, Police Chief, Police Lieutenants
Grant writer(s)	☑	Department Heads

Fiscal Capability Assessment and Resources

Table 10.2.36m: Fiscal Opportunities For Town Of Warwick		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Due to income levels only certain areas of the Town are eligible
Capital Improvements Project funding	Yes	Preparation of a multi – year plan for infrastructure inventory, and infrastructure & equipment investments
Authority to levy taxes for specific purposes	Yes	Wallkill Drainage Districts
Fees for water, sewer, gas, or electric service	Yes	Water and Sewer Districts
Impact fees for homebuyers or new developments/ homes	Yes	Parkland

Table 10.2.36m: Fiscal Opportunities For Town Of Warwick		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Incur debt through general obligation bonds	Yes	Various projects
Incur debt through special tax bonds	Yes	Various projects

NFIP: Administrator, Vulnerability, Resources, Compliance

The Town of Warwick has participated in NFIP (ID# 360636) since May 31, 1974. Administration is provided through the Commissioner of Public Works. The Town has a total of sixty-seven (67) policies for a value of $16,471,500. More information on the Town's NFIP data can be found in Section 8.2.

The Town of Warwick has adopted means to follow NFIP as noted:

"According to the Town of Warwick Town Code §89 Flood Damage Prevention, the Town's appointed local administrator for floodplain management is the Building Inspector. The Building Inspector is in charge of granting or denying floodplain development permits. Applications for a flood permit are furnished by the local administrator. The local administrator reviews the permit application for compliance with standards and provisions of Town Code §89 Flood Damage Prevention.

According to the Town of Warwick Town Code §89 – 3.2 Basis for establishing areas of special flood hazard, the Town of Warwick's Community # is 360636 and has forty-six (46) Flood Insurance Rate Map Panel Numbers with the most current effective date being August 3, 2009. There is a Letter of Map Revision, Case Number 10-02-1525P, effective February 4, 2011, amending Panels 36071C0208G, and 36071C0236G of the Flood Insurance Map."

The Town Floodplain Administrator has been provided an NFIP best practices guidance package and will be using it to improve local participation in NFIP standards going forward. This package of documents was provided by NYSDHSES and can be found in Appendix F - NFIP Floodplain Administrator Guidance Package.

Hazard Mitigation: Existing and Planning Mechanisms

Emergency Communications, Routes, and Shelters:

The Town of Warwick utilizes the Swift911 Portal, available for subscription on the Town's municipal website, as a community notification system to ensure rapid delivery of alerts, warnings, and bulletins. This technology will allow the Town to reach our residents via telephone, e-mail, and/or fax. Additionally, Orange County uses the CodeRED emergency notification system.

The Town follows emergency route rules set by Orange County. The Town has two (2) designated emergency shelter locations: (Primary) Warwick Middle School (225 West St. Ext., Warwick, NY 10990) and (secondary) Warwick Senior Center (132 Kings Hwy., Warwick, NY 10990). More information on these sites can be found in Attachment III.

Comprehensive Plan:

The Town's Comprehensive Plan was adopted in 2008. The plan lacks detailed hazard mitigation information.

Planning Mechanisms:

While this annex has provided a summary and description of existing plans, policies, and regulatory mechanisms that support hazard mitigation, the 2018 Orange County Hazard Mitigation Plan Update is intended to allow for the integration of its recommendations and data into local plans. Listed below are several planning and policy mechanisms that lend themselves to the integration of materials and objectives from this hazard mitigation plan. Columns to the right indicate whether the municipality has utilized hazard mitigation planning elements in the past (as in the aftermath of a previous local hazard mitigation plan) and whether they intend to be utilized in the future (which most, if not all, do).

Table 10.2.36n: Incorporation of Hazard Mitigation Planning into Existing and Future Planning Mechanisms

Planning Mechanism	Has been Utilized	May be Utilized
Capital Improvement Budget: Hazard Mitigation Actions to be considered during the development of annual capital improvement plans. Compliance with Hazard Mitigation goals and objectives as well as the hazard vulnerability of site will be a consideration during the evaluation of infrastructure and facilities projects.	X	X
Operating Budget: Hazard Mitigation Actions to be considered within day-to-day operating budgets as funding permits.	X	X
Building & Zoning Ordinances: Review of the hazard mitigation plan and hazard analyses are part of the evaluation of land use, zoning, and development review ordinances and permitted processes.	X	X
Comprehensive Land Use Plan: Elements such as hazard vulnerability and hazard area extents will be considered during the development of future land use maps and other elements of comprehensive planning.	X	X
Human Resource Manual: Employee job descriptions may contain elements related to hazard mitigation planning and associated recommendations.		X
Grant Applications: Support for funding requests in the form of data, maps, and priority recommendations will be drawn from the hazard mitigation plan.	X	X
Fire Plan: Fire Plans for the municipality and local fire departments can utilize data and mapping in the hazard mitigation plan.	X	X
Local School Service Projects: Municipal officials and staff can explore the possibility of collaboration with local school districts to provide avenues for student community service projects as well as educational opportunities.		X

Table 10.2.36n: Incorporation of Hazard Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanism	**Has been Utilized**	**May be Utilized**
Economic Development: Local chambers of commerce and other economic development agencies can utilize the hazard mitigation plan to better inform new/expanding businesses in finding a location.		X

10.2.36.5 Mitigation Strategy and Prioritization

Past, Completed, and Ongoing Initiatives

Many of the actions below were also issued as proposed actions in the most recent local hazard mitigation plan in 2014. None of the actions proposed in the 2014 local plan have yet been implemented due to lack of available funding and/or staff time.

Proposed Initiatives

Table 10.2.36o: Mitigation Actions/Projects Identified by Town of Warwick				
Action ID	**Action**	**Estimated Cost**	**Primary Agency**	**Funding Source(s)**
WT-1	Relocate fuel supply station to higher elevation for DPW and police vehicles; upgrade existing prison pumps, etc, locate alternative facilities; add propane storage to convert generators to dual fuel	$1,500,000	DPW Commissioner (lead), Town Consultant Engineer, Town Board	HMGP, HMA, CDBG, General Fund, NYSDEC Grants, Legislative Members' Initiatives
WT-2	Add emergency generators at 7 water & sewer districts to automatically startup in the event of power failure	$670,000	DPW Commissioner (lead), Town Consultant Engineer, Town Board, Water District Operator, Sewer District Operator	HMGP, Municipal Bonds, User Fees
WT-3	Alternative fuel source for generators - currently run on natural gas; should be outfitted to be able to convert to propane	$100,000	DPW Commissioner (lead), Town Consultant Engineer, Town Board	Municipal Bonds, User Fees

Table 10.2.36o: Mitigation Actions/Projects Identified by Town of Warwick				
Action ID	**Action**	**Estimated Cost**	**Primary Agency**	**Funding Source(s)**
WT-4	Renovate and stock temporary shelters - add showers, bed/cots, food storage, food, ice machines, freezers, potable water trailer, microwaves	$150,000	Town Emergency Management Committee (lead), DPW Commissioner, Town Consultant Engineer, Town Board	HMGP, HMA, CDBG, General Fund, Legislative Members' Initiatives
WT-5	Improve the waterway opening to current design to mitigate overtopping and backwater impacts. Joint project with the V/Warwick	$400,000	DPW Commissioner (lead), Town Consultant Engineer, Town Board	HMGP, General Fund, Legislative Members' Initiatives
WT-6	Removal of natural debris and manmade litter within the Town's streams and stream banks	$40,000	DPW Commissioner (lead), Town Consultant Engineer	General Fund
WT-7	Develop and coordinate an emergency route that will be the first roadways cleaned to maintain traffic and prevent isolation of residents	Municipal Employee Time	Town Supervisor (lead), DPW Commissioner	General Fund
WT-8	Post warning signs at local parks warning public not to swim during thunder or lightning storms	$10,000	DPW Commissioner	General Fund, Recreational Fees
WT-9	Coordinate public education through websites, social media, Town board meetings, news outlets to establish educational opportunities such as "Hazard Awareness Week" and evacuation training	Municipal Employee Time	Town Supervisor (lead), Town Emergency Management Committee	General Fund
WT-10	Provide and maintain electronic backup of all Town of Warwick files in a separate location from Town Hall	Municipal Employee Time	Records Management Officer	NYS Archives, General Fund
WT-11	Combine DPW and Town Hall electronic storage - currently DPW timesheets and files are stored in hard drives or filing cabinets without backup	Municipal Employee Time	Records Management Officer	General Fund, NYS Archives, NYS DOS Local Gov't Efficiency Grants
WT-12	Re-build portions of a Federal Highway (East Shore Rd) - access condition of natural rock above Federal Highway, propose repairs or replacement or extension (width) of roadway to move further from rock	Municipal Employee Time	DPW Commissioner, Town Consultant Engineer (lead)	FHWA, NYSDOT SHIPs and CHIPs
WT-13	Encourage and/or enforce the use of drought resistant landscaping, as appropriate, through ordinance development/enforcement (i.e. xeriscaping incentives)	Staff Time	Town Board (lead), Town Supervisor, Town Planning Board	General Fund

Table 10.2.36o: Mitigation Actions/Projects Identified by Town of Warwick				
Action ID	**Action**	**Estimated Cost**	**Primary Agency**	**Funding Source(s)**
WT-14	Improvement in communication networks helps to facilitate better warning and emergency response for extreme weather conditions.	Phasing of costs at $10,000/ with a minimum of three phases	Town Supervisor (lead), Town Board, Town Emergency Management Committee, with Local Village Gov't Participation	General Fund & Homeland Security Grants
WT-15	Coordinate with Orange and Rockland Utilities to identify primary/critical access routes for post-storm tree trimming and clearing operations. Future storm response would involve coordinated electrical De-energization, tree removal, and electrical restoration between ORU and community DPWs	Municipal Employee Time	DPW Commissioner	General Fund
WT-16	Assist Orange and Rockland utilities with community outreach during distribution line tree trimming and clearing operations.	Municipal Employee Time	DPW Commissioner	General Fund
WT-17	Acquisition of repetitive loss (RL) and severe repetitive loss (SRL) properties within municipal limits.	$750,000	Town Board (lead), , Building Inspector	FEMA – HMGP, HMA, NYS DHSES, Legislative Members' Initiatives, GOSR

STAPLEE forms were completed for each of these actions. A table with these evaluations can be found in Attachment II of this jurisdictional annex.

"STAPLEE" refers to the following lenses of evaluation: social, technological, administrative, political, legal, economic, and environmental.

Future Needs

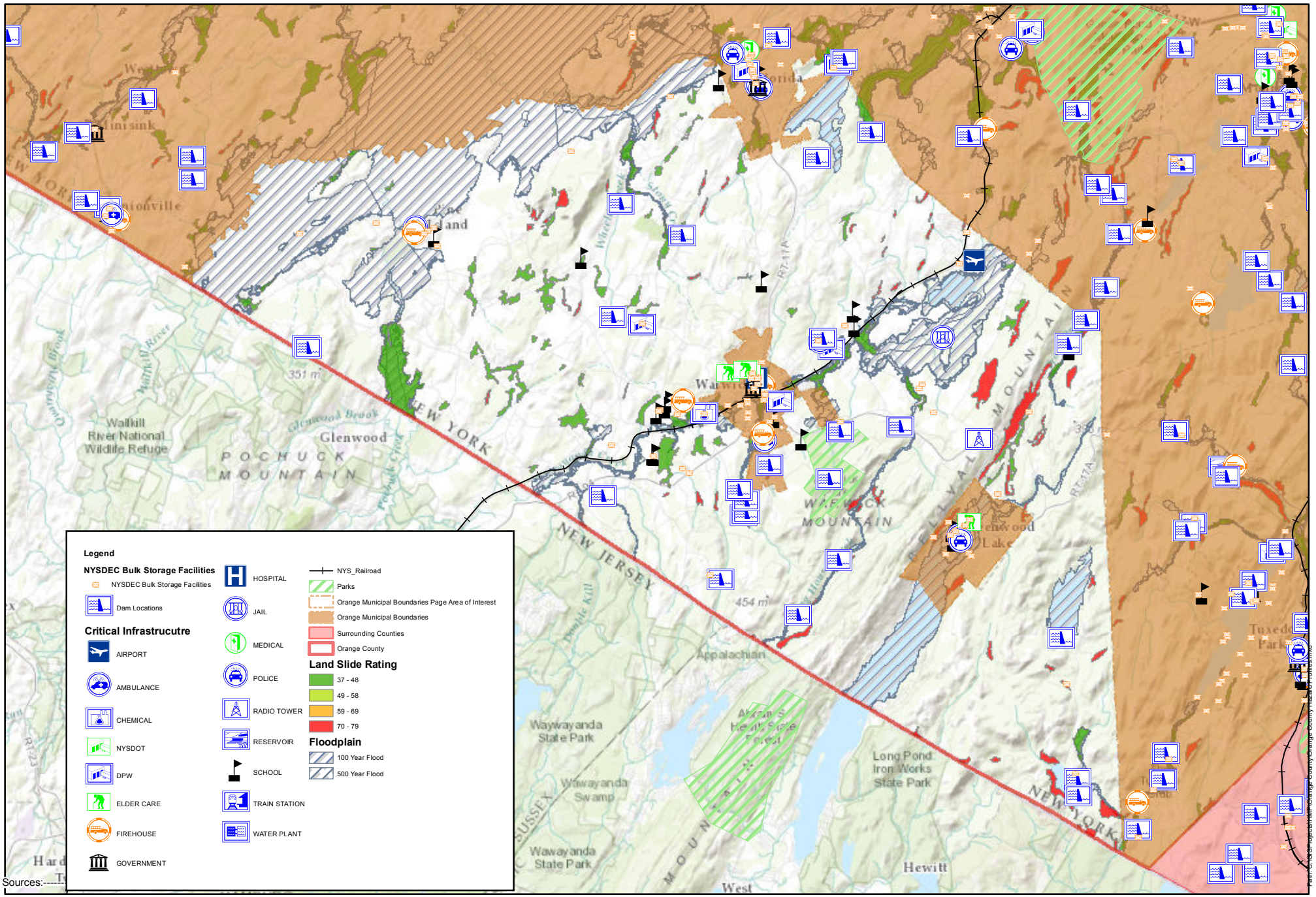
The Town has not identified any future needs.

10.2.36.6 Hazard Area Extent and Location

A map demonstrating the location of certain hazard areas is attached as Attachment I.

Attachment I

Hazard Area Extent and Location Map - Town of Warwick



Sources:----

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

0 0.5 1 2 Miles

Orange County Hazard Mitigation Plan

Town of Warwick

3/14/2016 New York

Figure -

Project No. 1724.002

Attachment II

STAPLEE Mitigation Action Cost/Benefit Analysis - Town of Warwick

STAPLEE Criteria Consideration Tables
Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Warwick

Action ID	Action	S	T	A	P	L	E	E	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
		+ = benefit (favorable), - = cost (unfavorable), 0 = neutral or N/A										Levels = high, medium, or low		
WT-1	Fuel Depot: Relocate fuel supply for DPW and police to higher elevation; upgrade existing prison pumps, etc., locate alternative facilities; add propane storage if convert generators	+	+	+	+	+	0	0	-	+	-	High	High ($1.5 mill.)	High
WT-2	Alternative Power Supply for Town's Seven Water & Sewer District Pump Location: Add emergency generators at each of the Town's seven (7) Water & Sewer Districts district pump locatoins to automatically startup in the event of power failure	+	+	+	+	+	0	0	-	+	-	High	High ($650,000)	High
WT-3	Alternative Fuel Source for Generators: Existing natural gas backup generators should be outfitted so as to be able to use propane if needed	+	+	+	+	+	0	0	0	+	0	Medium	Low ($40,000)	High
WT-4	Renovate and Stock Temporary Shelters: Renovate and stock mass shelters by supplying showers, beds/cots, food storage, food, ice machines, freezers, a portable water trailer, and microwaves	+	+	+	+	+	0	0	+	+	+	Medium	Low ($50,000)	High
WT-5	Repair town owned culvert in Village of Warwick: Improve the waterway opening to current design to mitigate overtopping and backwater impacts. Joint project with the Village of Warwick	+	+	+	+	+	0	0	+	+	-	High	Medium ($400,000)	High
WT-6	Town-wide Stream Debris Cleanup: Removal of natural debris and manmade litter within the Town's streams and stream banks	+	+	+	+	+	0	0	+	+	0	Medium	Low ($40,000)	Medium
WT-7	Emergency Route Plan: Develop and coordinate an emergency route that will be the first roadways cleaned to maintain traffic and prevent isolation of residents	+	+	+	+	+	+	0	0	+	-	Medium	Low ($70,000)	Medium
WT-8	Post Warning Signs at Local Parks: Post signs at local parks warning the public not to swim during thunder or lightning storms	+	+	+	+	+	+	0	+	0	+	Medium	Low ($10,000)	Medium

STAPLEE Criteria Consideration Tables
Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Warwick

Action ID	Action	S	T	A	P	L	E	E	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
		+ = benefit (favorable), - = cost (unfavorable), 0 = neutral or N/A										Levels = high, medium, or low		
WT-9	Public Education, Awareness and Outreach: Educate and council the public on potential hazards in their community and steps they can take to reduce their risk to them including response actions such as evacuating homes. Coordinate through websites, social media, village board meetings, news outlets to establish educational opportunities such as "Hazard Awareness Week".	-	+	+	0	+	0	0	-	+	0	Medium	Low (Staff Time)	Medium
WT-10	Electronic backup of Data: Provide and maintain electronic backup of all Town of Warwick files in a separate location from Town Hall	-	+	+	+	+	0	0	+	+	-	Medium	Low (Staff Time)	Low
WT-11	Combine DPW and Town Hall electronic storage: Combine DPW & Town Hall electronic storage. Currently, DPW timesheets and files are in hard drives or filing cabinets without backup. Critical digital information is susceptible to loss due to power outages during major storm events. Loss of data may hamper town operations resulting in economic losses.	+	+	+	+	0	-	0	+	+	-	Low	Low (Staff Time)	Low
WT-12	Re-build portions of a Federal Highway (East Shore Rd): Assess condition of natural rock above portions of Federal Highway and propose repairs, replacement, or extension (width) of the roadway to move further from rocks.	+	+	+	+	0	-	0	-	0	-	Low	High (Staff Time)	Low
WT-13	Drought Resistant Landscape Regulation: Encourage and / or enforce the use of drought resistant landscaping, as appropriate, through ordinance development.	0	+	+	0	0	+	0	+	0	0	Low	Low (Staff Time)	Low

STAPLEE Criteria Consideration Tables
Mitigation Action Prioritization and Comparison

Jurisdiction: Town of Warwick

Action ID	Action	S	T	A	P	L	E	E	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
		+ = benefit (favorable), - = cost (unfavorable), 0 = neutral or N/A										Levels = high, medium, or low		
WT-14	Enhance Emergency Communication Capabilities: Improve communication networks to help facilitate better warning and emergency response for extreme weather conditions	+	+	+	+	+	+	0	0	+	+	Medium	Medium ($30,000)	Low
WT-15	Prioritized Electrical Distribution De-energization during Storm Cleanup: Coordinate with Orange and Rockland Utilities to identify primary/critical access routes for post-storm tree trimming and clearing operations. Future storm response would involve coordinated electrical deenergization, tree removal, and electrical restoration between ORU and community DPW's	+	+	+	+	+	+	0	0	+	0	Low	Low (Staff Time)	Low
WT-16	Tree Trimming Plan around Above-ground Utility Distribution	+	+	+	0	0	+	0	0	+	0	Low	Low (Staff Time)	Low
WT-17	Acquisition of repetitive loss and severe repetitive loss properties within municipal limits	0	+	0	0	+	0	+	0	+	0	High	Medium	High

Attachment III

Hazard Mitigation Worksheets - Town of Warwick

Mitigation Actions and Strategy Detail Worksheet

Action Worksheet	
Name of Jurisdiction	Town of Warwick
Name of Hazard Mitigation Plan	Orange County Multi-Jurisdictional Hazard Mitigation Plan
Potential Actions/Projects (not being implemented at this time)	
Action/Project Number	WT – 1
Name of Action/Project	Relocation of Fuel Supply
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	Relocate fuel supply station to higher elevation for DPW & police vehicles; upgrade existing prison pumps, etc., locate alternative facilities add propane storage to convert generators to dual fuel. $1,500,000
Plan for Implementation	
Responsible Organization	DPW Commissioner (lead), Town Consultant Engineer, Town Board
Action/Project Priority	High
Potential Funding Sources	HMGP, HMA, CDBG, General Fund, NYSDEC Grants, NYS Legislative Members' Initiatives
Other assisting organizations, entities, etc.	N/A
Local planning mechanisms to be used in project/action implementation, if any	None.
Progress Report	
Date of status report	
Report of progress	
Evaluation of effectiveness	

Mitigation Actions and Strategy Detail Worksheet

Action Worksheet	
Name of Jurisdiction	Town of Warwick
Name of Hazard Mitigation Plan	Orange County Multi-Jurisdictional Hazard Mitigation Plan
Potential Actions/Projects (not being implemented at this time)	
Action/Project Number	WT – 2
Name of Action/Project	Emergency Generators
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	Add emergency generators at 7 water & sewer districts to automatically startup in the event of power failure. $670,000.
Plan for Implementation	
Responsible Organization	DPW Commissioner (lead), Town Consultant Engineer, Town Board, Water District Operator, Sewer District Operator
Action/Project Priority	High
Potential Funding Sources	HMGP, Municipal Bonds, User Fees
Other assisting organizations, entities, etc.	N/A
Local planning mechanisms to be used in project/action implementation, if any	None.
Progress Report	
Date of status report	
Report of progress	
Evaluation of effectiveness	

Orange County
Multi-Jurisdictional All Natural Hazard Mitigation Plan
Emergency Shelter Questionaire

Name of Your Municpality:	Town of Warwick
Common Name of Your Emergency Shelter:	Primary-Warwick Middle School Secondary-Warwick Senior Center
Street Address of Your Emergency Shelter:	Primary-225 West St Ext. Secondary- 132 Kings Highway
Name of the Owner of Your Emergency Shelter:	Primary- Warwick Valley Central School District Secondary- Town of Warwick
Name of the Regular Occupant of Your Emergency Shelter:	Primary- WVCSD Secondary- Town of Warwick

Name of Jurisdiction: _____

RESOLUTION
TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE FOR ORANGE COUNTY, NEW YORK

WHEREAS, the Orange County Department of Emergency Services, with the assistance from Barton & Loguidice, D.P.C., has gathered information and prepared the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York; and

WHEREAS, the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York has been prepared in accordance with the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations (CFR), Part 201; and

WHEREAS, Title 44 CFR, Chapter 1, Part 201.6(c)(5) requires each local government participating in the preparation of a Multi-Jurisdictional Mitigation Plan or Plan Update to accept and adopt such plan; and

WHEREAS, the Town of Warwick, has reviewed the 2016 Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions included in the Plan;

WHEREAS, the Town of Warwick, will consider the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

NOW THEREFORE, BE IT RESOLVED, that the Town of Warwick, as a participating jurisdiction, adopts the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York, dated May 2016.

This resolution was thereupon declared duly adopted on _____.

_____
(Supervisor)

_____
(Clerk)